



MERSİN ÜNİVERSİTESİ KILIKIA ARKEOLOJİSİNİ ARAŞTIRMA MERKEZİ
MERSIN UNIVERSITY PUBLICATIONS OF THE RESEARCH CENTER OF CILICIAN ARCHAEOLOGY

KAAM
YAYINLARI

OLBA
VII
(Özel Sayı)



MERSİN
2003

KAAM YAYINLARI
OLBA
VII
(Özel Sayı)

© 2003 Mersin/Türkiye
ISSN 1301-7667

OLBA dergisi hakemlidir ve Mayıs-Haziran aylarında olmak üzere,
yılda iki kez basılmaktadır.
Published each year in May and June.

KAAM'ın izni olmadan OLBA'nın hiçbir bölümü kopya edilemez.
Alıntı yapılması durumunda dipnot ile referans gösterilmelidir.
It is not allowed to copy any section of OLBA without the permit of KAAM.

OLBA'ya gönderilen makaleler aşağıdaki web adresinde yada KAAM tarafından dağıtılan
broşürlerde bildirilmiş olan formatlara uygun olduğu takdirde basılacaktır.
Articles should be written according the formats mentioned in the following web address
or brochures distributed by KAAM

Yayınlanması istenilen makalelerin, her yılın sonuna kadar aşağıda belirtilen
iletişim adreslerine teslim edilmiş olması gerekmektedir.
Articles should be sent to the following correspondence addresses till the end of the year.

OLBA'nın yeni sayılarında yayınlanması istenen makaleler için yazışma adresi:
Correspondance addresses for sending articles to following volumes of OLBA:

Prof. Dr. Serra Durugönül
Mersin Üniversitesi Fen-Edebiyat Fakültesi
Arkeoloji Bölümü
Çiftlikköy Kampüsü
33342-MERSİN
TURKEY

Diğer İletişim Adresleri
Other Correspondance Addresses
Tel:00.90.324.361 00 01 (10 Lines)/162-163
Fax: 00.90.324.361 00 46
web mail: www.kaam.mersin.edu.tr
e-mail: kaam@mersin.edu.tr



MERSİN ÜNİVERSİTESİ
KILIKIA ARKEOLOJİSİNİ ARAŞTIRMA MERKEZİ
(KAAM)
YAYINLARI-VII

MERSIN UNIVERSITY
PUBLICATIONS OF THE RESEARCH CENTER OF
CILICIAN ARCHAEOLOGY
(KAAM)-VII
(Özel Sayı)

Editör

Serra DURUGÖNÜL
Murat DURUKAN

Bilim Kurulu

Prof. Dr. Serra DURUGÖNÜL
Prof. Dr. Coşkun ÖZGÜNEL
Prof. Dr. Tomris BAKIR
Prof. Dr. Hayat ERKANAL
Prof. Dr. Sencer ŞAHİN
Prof. Dr. Yıldız ÖTÜKEN



MERSİN
2003

*OLBA'nın Basılması İçin Vermiş Olduđu Desteklerden Dolayı
Mersin Üniversitesi Rektörü Prof. Dr. Uđur Oral'a
Teşekkür Ederiz.*

İçindekiler/Contents

Fikret K. Yegül <i>Closing Remarks on the III. International Symposium on Cilician Archaeology, 1-4 June 2002</i>	1
Ahmet Ünal <i>Hititler, Akdeniz ve Liman Kenti Ura</i>	13
Emanuela Borgia <i>Archaeology in Cilicia in the Ancient Travellers' Notes</i>	41
Sabine Fourier <i>Cyprus and Cilicia in the Iron Age : a Review of the Evidence</i>	79
Serra Durugönül <i>Archaic Cypriote Statuary in the Museum of Adana</i>	93
Ahmet Kaan Şenol-Gonca Cankardeş Şenol <i>Commercial Ties of Cilicia by Means of Hellenistic and Roman Amphorae</i>	119
Emel Erten <i>Glass Finds From OLBA Survey-2001</i>	145
İsa Kızgut <i>Silifke Müzesi Bronz Heykelciklerine Yansıyan Kilikya Tanrıları</i>	155
Marion Meyer <i>Divinities and their Images. Phenomena of Acculturation in Smooth Cilicia</i>	189
Ruprecht Ziegler <i>Asklepioskult und Kaiserkult im kilikischen Aigeai um die Mitte des 3. Jahrhunderts n.Chr.</i>	205
Murat Durukan <i>Olba/Diocaesarea' daki Piramit Çatılı Mezar Anıtının Tarihlemesi Üzerine Yeni Bir Görüş</i>	219
Bilal Söğüt <i>Dağlık Kilikia Bölgesi Mezar Nişleri</i>	239
Eugenia Equini Schneider <i>Some Considerations on Elaiussa's North-Eastern Necropolis</i>	263

COMMERCIAL TIES OF CILICIA BY MEANS OF HELLENISTIC AND ROMAN AMPHORAE

(LEV. 17-19)

Ahmet Kaan ŞENOL - Gonca CANKARDEŞ-ŞENOL*

ÖZET

Kilikia Bölgesi, Hellenistik ve Roma Dönemlerinde, Doğu Akdeniz’de ticari amphora üreten önemli merkezlerden biridir. İ.Ö. IV. yüzyılda başlayan ve İ.S. VI. yüzyılın sonuna kadar devam eden yoğun şarap ve zeytinyağı üretimi bölgenin ekonomisinde önemli yer tutmaktadır. Kilikia Bölgesi’nde gerçekleştirilen yüzey araştırmaları ve kazılarda yerleri saptanan atölyelerde üretilen amphoralar Akdeniz’in bir çok merkezine ulaşmıştır. Bu amphoraların, ekonomik tarihin yazılmasında önemli maddi kanıtlar olarak kullanıldığı düşünüldüğünde, tipolojik çalışmalarla tanınmalarının ve tarihleyici özelliklerinin önem kazandığı görülmektedir. Bu çalışmada Kilikia Bölgesi’nde üretildiğini düşündüğümüz ve “Nagidos grubu” olarak adlandırdığımız yeni bir mühürlü amphora grubu tanıtılmaktadır. İ.Ö. III. yüzyıla terihlenen bu mühürlü amphora grubunun yanında Pamphylia amphoraları olarak tanımlanan ve Kilikia’da da üretilen amphoralarla Kilikia Bölgesi’nin önemli ihraç ürünü olan reçineli şarapın taşındığı Agora G199 amphoraları ayrıca Pompei V, Agora M 54, Zemer 40 ve LR 1 amphoraları incelenmektedir.

Cilician Commerce and Trade Relations

Although the earlier period of Cilician exports is still uncertain except the commerce of grain to Cyprus which was rather important during the Classical Period¹, the archaeological evidence, such as coins but mainly amphorae points out an agricultural production of this region. This issue will be the focus of argument in this paper.

* Yrd. Doç. Dr. Ahmet Kaan Şenol – Yrd. Doç. Dr. Gonca Cankardeş-Şenol, Ege Üniversitesi, Edebiyat Fakültesi Arkeoloji Bölümü. 35100 Bornova, TR-İzmir.

¹ Heichelheim 1964, p. 49.

Cilicia was known as a production center of wine, sesame, linen, fish and fish sauces, almond, fruits and vegetables, especially pumpkin, from the early Hellenistic to Byzantine Periods². We should point out that the forest resource of the region was very attractive for having raw material in need of the fleets of Eastern Mediterranean centers, especially Egypt³. However, Rauh has proposed that the production of olive oil and the viticulture of Cilicia increased because of lessening the trees for timber trade⁴, the amphora symbols on the coins of the region proved that production of wine and olive oil must have been important, even in the Classical Period as in the Roman Era. The viticulture and the commerce of timber and forest crops still continued synchronically in the Roman Period, as known by the written sources⁵. Moreover, the Cilician amphora producers took into consideration the need of energy for firing the kilns so that the mass production of Cilicia from the fourth to the seventh centuries could have been flourished. Another acceptable evidence of the production of wine in Cilician Region is the remarks of ancient authors who mentioned that some special vines were brought to Egypt in order to reach a good quality of wine as they did the same for Chian, Thasian, Mendean and Maroneian vines⁶.

The Amphorae Produced in Cilicia

The notable evidence comes from the site of Nagidos which has been recently excavated by Mersin University. The coins of Nagidos dated to the fourth century BC bear a different type of amphora and this can be considered as the earliest evidence which may show the amphora production of the site (Fig. 1). This amphora type seen on the coins is globular and pear shaped with a long pointed foot resembling to Mendean amphorae produced in the fifth and fourth centuries BC (Fig. 2). In fact,

² For sesame, see Columella XI, 2, 56; for linen in Tarsus, see Dion de Pruse XXXIV, 21; Heichelheim 1970, p. 52; Johnson 1949, p. 107-151.

³ Jones 1937, p. 199; Strabon XIV, 6, 5; Plinius NH, XVI, 203.

⁴ Rauh-Slane 2000, p. 329.

⁵ The south eastern corner of Asia Minor was rather important resin source of Egypt. The resin using as an isolation substance was provided from Anemurion as mentioned on some papyrus dating to the third-fourth centuries AD. Kruit-Worp 2000, p. 98.

⁶ Lewis 1988, p. 140; Schnebel 1925, p. 252; Rostovtzeff 1941, p. 975; Plinius, NH XIV, 74-75

among the amphora finds imported to Nagidos we have already noticed a good deal of Mendeian amphorae fragments. Due to the commerce between two centers, it is natural to imitate the Mendeian amphorae which were well reputed in the Mediterranean markets.

The amphora stamps are also considered to be important evidence to demonstrate the amphora production in the region. Till today, the studies on stamped amphora handles have demonstrated that some special groups among all those attributed to the known amphora producer centers are easily distinguished with regard to the characteristic of their clays, the form of handles and inscriptions they bear. These groups dated to Hellenistic Period are named mostly by V. Grace according to the names appearing on the stamps, as *Parmeniskos*, *Nikandros*, *Petos* and *Pistos* Groups. The latest group, called “*Pistos Group*” is known with a bunch of grape in the middle and some letters around reading *P...stou* (Fig. 3). Its reddish clay is micaceous and calcereous with some inclusion of grits. Depending on the characteristic of clay, Grace has pointed out its resemblance to Thasian fabric and dated them to the third century BC⁷. Stamps of this group have mostly been recorded in the Eastern Mediterranean centers such as Alexandria (Egypt)⁸, Salamis (Cyprus)⁹, Tarsus¹⁰ and Nagidos¹¹ (Cilicia-Anatolia) and Ras el Bassit¹² (Syrie), with the exception of three samples from Thasos¹³ and Troia¹⁴ in Northern Aegean Sea and Satu Nou in Black Sea¹⁵. Regarding to these finds, we have identified mainly five groups based on the style of the grape symbol and the inscription they bear¹⁶.

⁷ Grace 1950, p. 146, nos. 85-87.

⁸ Şenol 2000, p. 375, no. 181 and p. 380, no. 189; Breccia 1907, p. 81, no. 137. Several stamps are held in the Benaki Collection in the Greco-Roman Museum in Alexandria (M/ABC 477, 508-511; P11076, 11090 and 11102, unpublished).

⁹ Calvet 1972, p. 67, no. 143 and p. 68, no. 144; Calvet 1978, p. 230, no. 70, pl. LVI.

¹⁰ Grace 1950, p. 146, nos. 85-87, fig. 118.

¹¹ These are very recent finds (Inv. nos. NAG. 2000/241, 246, 394 and NAG. 2001/518).

¹² Empereur-Hesnard 1987, p. 58, no. 5, pl. 2 (this group was first presented in this article) and some other unpublished stamps belonging to this group from the mentioned site (Personal communication with J.-Y. Empereur).

¹³ Unpublished. Personal communication with J.-Y. Empereur.

¹⁴ Panas-Pontes 1998, p. 250-251, no. 94, fig. 26.

¹⁵ Conovici-Irimia 1991, p. 168, no. 335, fig. 16.

¹⁶ These groups will be discussed in detail in an article in the publication of the Nagidos excavations.

During the excavations at Nagidos in 2000 and 2001¹⁷, besides four stamps of Pistos Group, we realised that a certain group of stamps, although very resembling to Pistos Group, began to be notable both in style and quantity¹⁸ with five samples all of which seem to be from the same die¹⁹. The only published identical stamp was attested in Cyprus and dated to the end of the third century BC with regard to a Rhodian stamp naming the fabricant Aristion²⁰. Another identical unpublished stamp, now held in the Greco-Roman Museum in Alexandria, was found during the excavations in the site of the new Library of Alexandria²¹. All these stamps bear a large *nu* above, a pomegranate symbol²² in the middle with a short twisted stalk below and *alpha* or *delta* on the upper right of the symbol²³.

On the stamps, we think that the letters nu and alpha or delta are used referring to the abbreviated form of the ethnic of Nagidos (NA for ΝΑΓΙΔΕΩΝ or ΝΑΓΙΔΙΚΟΝ) as seen on the coins²⁴, and the pomegranate symbol to the goddess adored here²⁵. When combining all these clues, it seems possible that the production place of this group, now we are in a position to call it as “Nagidos Group”, is most probably in the territory of Nagidos, although we have not discovered the workshops yet (Fig.4). The reddish clay²⁶ of the group is micaceous and calcereous, just as of the Pistos

¹⁷ I would like to thank Prof. Dr. Serra Durugönül for her kind permission to study on the stamps from this group found in the excavations at Nagidos.

¹⁸ It is known from published samples that in no other centers, stamps belonging to these groups have been recorded in that quantity more than at Nagidos.

¹⁹ NAG. 2000/130, 214 and NAG. 2001/451, 457, 471.

²⁰ Calvet 1972, p. 68, no. 145, fig. 157 (here the fabricant has been given to Period II (c. 240-210) of Rhodian stamp chronology. But the presence of his stamps in the Pergamon deposit, he is dated to Period III, c. 210-175 BC).

²¹ I had an opportunity in 2001 to study on the stamps coming from this site, called Bibliotheca Alexandrina. This stamped handle was numbered as BA 311.

²² Note a stamp from Nagidos having the same symbol in a circular frame without any inscription or monogram (NAG. 2000/201).

²³ On one sample from Nagidos, above the letter nu, a small dot is seen probably representing the letter omicron, or it is only the rest of a small piece of clay which misleads us to interpret it as the letter nu. Since on other stamps this is not clear.

²⁴ Durugönül 2001, p. 431.

²⁵ The goddess Aphrodite is known to be worshipped at Nagidos and one of her attributes is a pomegranate.

²⁶ HUE 2.5 YR 5/8 red.

Group. We know from other material of Nagidos that besides buff-coloured clay, reddish clay is also available in the region. The resemblance of the clay and the profiles of lips and handles of both groups draws our attention to suggest that the production center of Pistos Group is most probably in the same area and they both were produced in the same period. The contexts at Nagidos have provided ceramic material datable to the third century BC.

In the middle of the Hellenistic Period, the pirates encouraged by the serrated coasts of the region, started to run wild by using the gap of the authority in the east of the Mediterranean Sea²⁷. The alliance pacts were signed between the rival cities in order to continue their commercial activities without problems, until the achievements of Pompei²⁸. Unfortunately the crisis created by pirates effected the economy of the region after the second half of the second century BC²⁹.

The interest in Cilician products existed even in a century before the corruption of the commerce, according to the records in the archives of Zenon. The export of wine and honey from Korakesion to Egypt was documented in the records of Apollonios³⁰. The interest towards Cilician wine consequently increased in the period of quarrel between the chiefs of trade such as Rhodes, Cnidos and Cos. The containers used for commercial goods of Cilicia in the third century BC is not known, however, a new type –called Pamphylian amphorae– appeared just after this period, mainly in the East Mediteranean markets (Fig.5)³¹. Although the production center has not been located in Pampylia until now, the waste products of similar amphorae have been discovered in the deposits of Syedra workshops

²⁷ Berthold 1984, p. 227.

²⁸ Hassall-Crawford-Reynolds 1974, p. 195-220; Sherwin-White 1976, p. 1-14.

²⁹ Heichelheim 1970, p. 49.

³⁰ Orrieux 1984, p. 84; Among the texts refers the name of Korakesion only the Michigan text mentions wine. Kruit-Worp 2000, p. 81-2; P. Michigan Zenon. 1 (22)

³¹ These amphorae are called Pamphylian because of the existence of Pamphylian names on the stamps of their handles. Grace has published some complete Pamphylian amphorae and stamps from Delos, Athens and Alexandria with later examples dated from the first to the third centuries AD. Grace 1973, p. 180-208; for the Pamphylian amphora stamps, See, Brixhe 1976, p. 295-300; Grace-Petropoulakou 1970, p. 284; Slane 1986, p. 282; Calvet 1993, p. 74-75, nos. 110-1 ; Sztetyllo 1976, p. 9-109; Prof. Brixhe is preparing the publication of the corpus of Pamphylian amphora stamps.

during the surveys³² which may be related to the commercial activity of Western Rough Cilicia.

The local administrators of Cilicia effected by the general view of the period, realized that the agricultural potential was not enough to provide the alimentation of the public³³, so the commerce became vital importance of Cilicia for the economies of coastal cities³⁴. The roads between the coastal cities and their hinterlands were constructed, in order to supply the goods to the ports, so the sea trade of Cilicia started to boom proved by the existence of Agora M 54, G 199 and Pompei V amphorae throughout the Mediterranean centers in the beginning of the first century AD. The increasing performance of the Cilician merchants enabled them to export their goods beyond the Red Sea by using the transit trade of Alexandria and desert roads. The evidence of Alexandrian transit trade of Cilicia can be seen in Mons Claudianus which was located on the road of the Red Sea ports of Egypt. Among the finds in the surveys, Cilician M 54, Zemer 41 and certainly LR 1 amphorae have been identified³⁵.

Agora G 199 amphorae or so called pinched-handle amphorae (Benghazi MRA4; Zemer 41; Williams Type A; Mau XXVII/XXVIII) were the most common local mass production of Cilicia between the first and the fourth centuries AD, by the evidence of discovering 5 different fabrics during the archaeological surveys (Fig.6)³⁶. Another similar type of this distinctive form with pinched handles and solid knobbed spikes with mushroom type attachments, with regard to the clay compositions, were produced in Paphos³⁷. These amphorae were divided into two different clay groups. While Cilician fabric is light pinkish (7.5 YR 6/6 reddish yellow), micaceous and well fired, the amphorae produced in Cyprus has buff-creamish-yellowish colour (10 YR 8/6 yellow) and is non-micaceous fabric. These bulky amphorae with a capacity of c.50 lt., are considered as the evidence of wine trade of both regions³⁸. However, they have some

³² Rauh-Slane 2000, p. 322, fig. 8. 8-12.

³³ Hopwood 1991, p. 305.

³⁴ Plinius NH II, 127; Tacitus, Hist II. 98; Lucianus, hars. VII, 259.

³⁵ Tomber 1996, p. 43-44.

³⁶ Rauh 1999, p. 341; Rauh-Slane 2000, p. 328.

³⁷ Hayes 1977, p. 100.

³⁸ Zemer 1977, p. 52.

smaller versions as we are used to observing for most of the amphora forms –fractional or not–, some miniature models of this form with the capacity of 1.5 - 2 lt. are discovered as Spatheian amphorae³⁹.

The earliest examples of pinched handle amphorae have been dated to the third quarter of the first century AD in Pompei. Although in the excavations of the centers around Mediterranean, these amphorae have been found in number of contexts dated from the second half of the first to the fourth centuries AD, an absolute form development has not been constituted till today⁴⁰. These amphorae are known as well distributed forms especially to the Eastern Mediterranean consumption centers as Berenice, Alexandria, Athens, Corinth, Benghazi, even to Palestine, Sinai and naturally their native lands, Cyprus⁴¹ and Cilicia⁴². Among these two production centers, Cypriot Agora G 199 amphorae have been used for exportation more intensively than the Cilician products⁴³ which were used for inner commerce, according to the clay observations.

After the elimination of the troubles caused by pirates, the commercial activity of the region started to increase and consequently, the new types of amphorae appeared such as Pompei Type V (Fig 7) and Agora M

³⁹ Small versions of pinched handle amphorae are held in the Bodrum Underwater Museum. AlpözeBerkaya-Özdas 1995, p. 75, Inv. no. 9.1.95; Another miniature model of Zemer 41 amphora has a capacity of 1.59 lt. and is held in İçel Museum. Şenol-Kerem 2000, p. 96, no. 20 (Inv. no. 94.17.25).

⁴⁰ In Athenian Agora, see Robinson 1959, p. 43, G199, L11, M239; in Kerameikos, see Böttger 1992, p. 340, taf. 99.6, kat. no. 65; in Marina el Alamein, see Daszewski-Majcherek-Sztetyllo 1990, p. 49, fig. 12.4; Majcherek 1993, p. 215; in Caesarea, see Riley 1979, p. 186; in Berenice, see Riley 1970, p. 187, fig. 32; in Pelusium, see Ballet 1993 p. 16; in Israel, see Zemer 1977, p. 52, no. 41, pl. XV; in Ostia, see Panella 1974, p. 474-476; in Corinth, see Slane 1994, p. 136, no. 24, pl. 34; in Sinai Arthur-Orwen 1998, p. 199; in Ayios Philon, see Plat Taylor-Megaw 1981, p. 248, nos. 479-81; in Paphos, see Hayes 1991, p. 91-92, Type III, pl. XXIV, nos. 3, 6-8; Hayes 2000, p. 286, fig. 3; in Tomis, see Opait 1996, p. 209, pl. 10, 9A-B.

⁴¹ A shipwreck found near Dtirousha-Kioni at the extreme western point of Cyprus contains a cargo of Agora G199 amphorae. However, we do not know whether it was sunk while entering to or leaving the port. Leonard 1995, p. 236.

⁴² Williams 1989, p. 92-93.

⁴³ The Cypriot Agora G199 amphorae found during the prospections at Bir Abu Qreiya, Wadi Gerf and Dweig which are located on the desert road between Coptos and Berenice. Ballet 1996, p. 820; G. Majcherek claimed that the majority of these amphorae found in the excavations at Marina el Alamein in Egypt were produced in Cyprus although they have two different clay groups. Daszewski 1995, p. 31-32.

54⁴⁴. Although these amphorae are thought to have been produced near Aigeai after the archaeological prospections around the bay of Iskenderun⁴⁵, none of the workshops or deposits has been excavated until now. Pompei V amphorae have influences of late rhodian amphorae according to the general proportions of the form except its triangular rims and distinctive grooved handles. Moreover, these amphorae have flat ringed bases which is not familiar to the commercial amphorae produced in Anatolia during the Early Roman Period.

The Pompei V amphorae and naturally the content of them –we do not know what they carried– have never been abundant in the Mediterranean commercial history although they were produced during the Pax Romana. While these amphorae were found in a context dated to the c.79 AD in Stabia⁴⁶, the latest examples have been dated to the beginning of the second century AD in Athenian Agora⁴⁷. The general dispersion of these amphorae shows some similarities with Agora G 199 amphorae. The examples of Pompei V amphorae have been found in the excavations in Athens, Kerameikos⁴⁸, Argos, Alexandria and Tarsus.

The production center of Agora M 54 amphorae has been found out during the surveys of J.-Y. Empereur and M. Picon in Cilicia (Fig.8). They discovered the waste production areas of Agora M 54 amphorae in Elaioussa Sebaste and Aigeai located in the eastern part of Cilicia, and Seleuceia Pieria⁴⁹. Although a chronology of this type has not been formed yet, they are considered to have been produced from the end of the first century to the second century AD, based on the stratigraphical data from the Athenian Agora, Keramaikos, Paphos, Alexandria, Berenice and Delos⁵⁰.

⁴⁴ This form was first classified in Pompei and called Pompei V, relating to the finding place as the production center has not been discovered. CIL IV, nos. 2731-2.

⁴⁵ Empereur-Picon 1989, p. 137, fig. 20-21.

⁴⁶ Caro 1987, p. 72, fig. 88, no. 85.

⁴⁷ Grace 1961, p. 13, fig. 33.

⁴⁸ For a selected bibliography of this form, see Böttger 1992, p. 370 and Empereur-Picon, 1989, p. 237, with note. 31.

⁴⁹ Empereur-Picon 1989, p. 232; Empereur-Garlan 1992, p. 13, fig. 2; Abadie-Reynal 1992, p. 361; Satre 1995, p. 298.

⁵⁰ Hayes 1991, p. 93, nos. 31-32, pl. 25, fig. 3; in Keramaikos, see Böttger 1992, p. 338-339, taf. 99.2, kat. nos. 55-60, abb. 1.12; in Berenice, see Riley 1979, p. 146, D106; in Alexandria, see Empereur 1999, p. 397, Inv. Alex. G.1006, for two different scales of Agora M 54 amphorae, see Senol 2002a; in Athens SEE, Robinson 1959, M54.

The Agora M 54 amphorae or so called *Pseudo-Cos en cloche* were more common in the Eastern Mediterranean centers rather than in occident, particularly in the Cilician Region⁵¹ and Cyprus. Nevertheless, the content of this form has not been discovered yet. In spite of the lack of evidence, except our knowledge on non-existence of pitch inside the jars, as a conventional belief, one should bear in mind that these amphorae may have been used to carry olive oil of the region.

These amphorae have not been distributed widely as Pompei V amphorae. They have been found in the eastern markets such as Myus Hormos (Quseir) and Alexandria in Egypt⁵², in Agia Napa located in the south-east of Cyprus, and the Levant Region⁵³.

DR 2-4 types, considered as the imitation of Koan amphorae (Augst 5; Peacock-Williams 10; Ostia LI; Cam.182-183; Callender 2; Benghazi ER4) are known as the most diffused form of Roman amphorae (Fig.9). Although they were first produced in the same workshops of DR 1 amphorae in Campania region after 50 BC⁵⁴, they have been in demand until the end of the second to the beginning of the third centuries AD. Because of its strong structure and distinctive features, which were accepted in foreign markets, they have been produced in numerous centers with small differences in form, in the Mediterranean Basin such as Gallia, Tarraconensis, Narbonensis, Western Anatolia (Myndos, Knidos, Kos, Theangela, Halikarnassos), Rhodes, Cilicia, and even in Egypt and until Britannia⁵⁵. Apart from the located workshops, the clay analysis related with the production centers call attention to the diversity of some undiscovered workshops which produced DR 2-4 amphorae; these workshops have not been discovered yet⁵⁶. Among these different forms of DR 2-4

⁵¹ Senol-Kerem 2000, p. 92, no. 15.

⁵² Ballet 1996, p. 821, with note 71; Whitcomb-Johnson 1980, pl. 27.f.

⁵³ Hadjisavvas 1997, p. 82, fig. 67, no. 13.

⁵⁴ Arthur-Williams 1992, p. 250.

⁵⁵ In Tarraconensis, see Tchernia 1987, p. 328-329; Sciallano-Liou 1985, p. 12-23; Lund 1993, p. 123; in the Western coasts of Anatolia and the islands, see Empereur-Picon 1989, p. 225; in Britannia, see Sealey 1985, p. 128-30; Empereur-Hesnard 1987, p. 23, for Egyptian manufacture, see Empereur 1986, p. 599-608; Empereur-Picon 1992, p. 145-152; Empereur-Picon 1989, p. 228-229; Empereur-Picon 1999, p. 75-91; Şenol-Şenol 2000, p. 125-133.

⁵⁶ Berker-Constantin-Desbat 1986, p. 69; Peacock-Williams 1986, p. 88; Empereur-Picon 1986, p. 112.

amphorae, type 4 is considered as one of the earliest amphora type which seems to have been influenced by Campanian production⁵⁷.

Although a complete example of a DR 4 amphora has not been discovered, or at least not published, from the excavations at production centers in Cilicia until now, the distinctive peculiarities of DR 4 amphora fragments found from the surveys have proved the manufacture of this form in the region. After the first amphora surveys of Cilicia, Empereur suggested that these amphorae were produced on the coasts of the region, at least in two different workshops one of which was located at Aigeia and the second must have been between Tarsus and Antakya. The recent surveys done by Rauh in Rough Cilicia have demonstrated the deposits of the workshops near Selinus⁵⁸.

Although DR 2-4 amphorae are known as wine containers, they are used for some other local products in different regions, such as defretum, sauces, fruits and olive oil in minor quantity⁵⁹. The DR 4 amphorae produced in Cilicia should have been used for wine trade according to the ancient sources and the evidence from the surveys and the excavations. R.Tomber has pointed out a relation between DR 2-4 amphorae of the region and the famous Laodicean wine from the archives of Nicanor, we know the distribution of this type from Egypt to India⁶⁰. The clay compositions of Dressel 2-4 amphorae found in the excavations at Mons Claudianus have close relations with Cilician LR 1 amphorae that started to be produced after the fourth century AD⁶¹. In addition to the clay resemblance, as they have form characteristics close to Cilician DR 4 amphorae, we agree with the suggestion of Tomber that the Laodicean wine was carried by these amphorae⁶². Moreover, if we take into

⁵⁷ Freed, J., "Adaptation of the Form of the Koan Amphora to the Production of 'Dressel 2-4' Amphoras in Italy and Northeastern Spain", RCRF, XXIst International Congress 1998, Ephesus and Pergamum.

⁵⁸ Rauh-Slane 2000, p. 324, fig. 14.

⁵⁹ For Tarraconensian wine, see Tchernia 1971, p. 38-84; Tchernia-Zevi 1972, p. 35-67; for Coan wine, see Will 1989, p. 306; for Aminnean wine, see Desbat-Lequément-Liou 1987, p. 162.

⁶⁰ Fuks 1951, p. 207-216.

⁶¹ The Cilician DR 2-4 amphorae display the range of orange red and buff colors (2.5 YR 5/6-6/6 - 10 YR 8/4) and includes limestone, a few mica, red or black grits and quartz particles.

⁶² Tomber 1998a, p. 214.

consideration the proposed dates⁶³ of the Laodicean wine commerce between Laodiceia ad Mare and the Red Sea, Gulf of Aden and India, we may confirm that not only Laodicean but also successive wine of the region after the end of the first century AD may have been transported by DR 2-4 amphorae to the Eastern markets⁶⁴.

After the troublesome centuries due to struggles in the Roman Empire, the Cilician commerce revived in the late fourth century AD⁶⁵. Zemer 40 and LR 1 amphorae were produced abundantly owing to the diminishing rates of taxes applied on local producers in this period. Zemer Type 40, which are also called carrot-shaped amphorae, are well diffused in the late Roman commerce according to the evidence in the excavations and the shipwrecks in the Mediterranean Basin (Fig.10). As the workshops of these amphorae in the eastern Mediterranean and the Black Sea coasts have determined, the concentration of Zemer 40 amphorae around these two regions, became more clear. After the excavations maintained by French archeologists in Sinope, an important production center of these amphorae which sustained its activity from the fourth to the fifth centuries AD was discovered in the city⁶⁶. Besides, the investigations during the excavations around Black Sea proved that this form continued to have been produced until the beginning of the seventh century AD⁶⁷.

Apart from the North Sea manufacture of Zemer 40, the minor production of North Syria or/and Cilicia (particularly Seleuceia Pieria) is distinctive. The surveys of Empereur and Picon proved that these amphorae started to be produced in Cilicia just before the famous LR 1 amphorae which flooded in the Mediterranean commerce after the fourth century AD⁶⁸. On the other hand, the clay analysis of the samples found in the Eastern Mediterranean

⁶³ Periplus Maris Erythraei 6, dates mid first century AD. Whitehouse 1990, p. 489-93; Casson 1991, p. 8.

⁶⁴ For the bibliography on the distribution of these amphorae in Egypt, see Tomber 1998a, p. 216; for the Indian diffusion, see Sedov 1996, p. 11-29; Slane 1992, p. 204-215; Will 1992, p. 151-166.

⁶⁵ Kislinger 1998, p. 204.

⁶⁶ Kassab Tezgör 1996 b, p. 277-291; Kassab Tezgör 1996a, p. 335-354; Garlan-Kassab Tezgör 1996, p. 331, fig. 11; Kassab Tezgör-Tatlıcan 1997, p. 20; Kassab Tezgör-Tatlıcan 1999, p. 316-317.

⁶⁷ Sazanov 1995, p. 185-196.

⁶⁸ Empereur-Picon 1989, p. 232-3.

centers demonstrated that some of them must have been produced in Sinop⁶⁹. One can think a possible relation between Sinopean and Cilician potters as we realize some inspirations of the amphorae produced in both regions. From this point of view, after the Sinopean carrot-formed amphorae had been imitated in Cilicia, similar form aspects of Cilician LR 1A amphorae appeared in Sinopean white clayed manufacture.

The carrot-formed amphorae produced in the territory of Cilicia were found particularly in the excavations in the Eastern Mediterranean centers and in the cargoes of the shipwrecks discovered nearby these regions⁷⁰. The interest of neighboring areas to Cilician wine can be explained by the period of booming the viticulture in Cilicia started in the fourth century AD.

The Eastern Mediterranean agricultural centers attached importance to wine production after the decline of the Italian wine production during the beginning of the fourth century AD⁷¹. The domination of the Mediterranean markets of the Eastern centers was proved by the overwhelming existence of LR 1 amphorae (August 58; Ballana 6; Benghazi LR1; Thomas Bii; Egloff 164-167; Kartaca LR1; Keay 18; Keay LIII; Kuzmanov XIII; Peacock Form 2; Peacock-Williams 44; Sabratha Tip 27; Scorpan 8B) found in the excavations. These amphorae were divided into two major groups as A and B, by Bonifay and Pieri according to their general form aspects and their capacities (Fig.11-12)⁷². Besides, Pieri attached a new group called C which seems to be the smaller version of LR 1B and presumably the latest series of LR 1 amphorae⁷³. Furthermore, the successors of this form produced all through the Mediterranean and Black Sea coasts after the seventh century AD.

As LR 1 amphorae produced abundantly from the East Mediterranean coasts to the Western Anatolia and Cyprus, the clay compositions of these amphorae bear important variations. These dissimilar aspects can be observed even in different workshops of LR 1A amphorae. Among the LR 1A amphorae, two basic clay compositions were identified. While the

⁶⁹ Kassab Tezgör 2002

⁷⁰ In Tarsus, see Grace 1950, fig. 167, no. 831.

⁷¹ Bowersock-Brown-Grabar 1999, p. 749; Tomber 1993, p. 158.

⁷² Bonifay-Pieri 1995, p. 118-119.

⁷³ This new form has been produced until the middle of the seventh century AD. Pieri 1998, p. 99.

colour of the first group is buff, and the ingredient has limestone, calciferous, piroxene, serpentine, quartz and mica with a creamy-pseudo slip on the surface, the second group has a lighter reddish colour and is more refined. Similar diversities on clay compositions can be observed in LR 1B amphorae, produced in the same workshops or neighboring areas⁷⁴.

However, the numerous workshops of the LR 1 amphorae have been discovered in Cilicia and elsewhere as in Marmaris and Rhodes⁷⁵, some others have been found in Amathous, Kourion and Paphos in Cyprus which must be considered as other exportation centers of the period⁷⁶. Moreover, the imitations of this form were produced with Nile silt clay even in Egypt nearby the workshops of Saint Jeremia at Saqqara⁷⁷. Due to the diversity of the manufacture centers, it was not possible to establish a proper form development of these amphorae except the valuable study of Sazanov based on the amphorae found around the Black Sea centers⁷⁸.

Although LR 1 amphorae were considered as wine transporters⁷⁹ and the great amount of Cilician commerce had been dominated with wine trade, the analysis of these amphorae proved that they were also used for oil trade as Liebeschuetz and Riley proposed⁸⁰. It is not easy to estimate the exact scale of wine trade of Cilicia only regarding the amphora finds as their contents are still not determined precisely. Besides the well known dippinti applied on the necks, shoulders and the handle attachments underneath of LR 1 amphorae do not explain the contents of them as they bear

⁷⁴ While the clay of Cilician amphorae has reddish, black and white quartz particles, Cypriot production is determined by the ingredients of reddish grits and non micaceous fabric.

⁷⁵ The workshops of LR 1 amphorae were discovered in Seleuceia Pieria, Arsus/Ulumiçi, Yumurtalık, Karataş, Tarsus, Soles and Ayaş by Empereur and many more can not be found out because of the alluvion mass. Empereur-Picon, 1989, p. 239, fig. 18; Abadie-Reynal 1992, p. 363.

⁷⁶ Lund 1993, p. 130; Michaelides 1996, p. 149; Demesticha 2000; Manning-Monks-Sewell, Demesticha 2000, p. 233-256.

⁷⁷ Ghaly 1992, p. 168, fig. 16 a-b.

⁷⁸ Sazanov 1999, p. 265-279.

⁷⁹ Grape seeds were found in LR 1 amphorae in Yassıada Shipwreck. Bass-Doorninck 1982, p. 164-5. The traces of pitch was identified inside of the LR 1 amphorae found in the excavations in Marseilles. Pieri 1998, p. 104; Bonifay- Piéri 1995, p. 109.

⁸⁰ Liebeschuetz 1972, p. 79; Riley 1979, p. 216; Riley 1980, p. 116; Thomas 1959, p. 92; Steckner 1989, p. 68; Bonifay-Villedieu 1989, p. 25; Reynolds 2000, p. 55, with note 15.

the proper names and the capacities. Moreover, the type of the presses which were used for wine discovered around the region, confirms the opinion of Hild and Hellenkemper⁸¹.

The domination of these amphorae in all Mediterranean consumption centers⁸² can explain the rise of the agricultural activity of Cilicia between the fourth and the sixth centuries AD, by means of the achievements of the church organization. The evidence of the trade, mainly the names of wine importers in this period mentioned on the funerary inscriptions were found in Corycus⁸³. Although the production was effected by the general decline during the sixth century AD⁸⁴, the producers changed the direction of the commerce to the north, thus the loss of the crisis got over⁸⁵. As a result, the LR 1 amphorae have been found in the excavations and the surveys of the North Aegean centers more abundantly than Western Mediterranean sites⁸⁶ which effected the forms of later amphora manufacture of the region.

The eastern dispersion of the LR 1 amphorae displays a different outline. While they were found numerously in the Eastern Mediterranean centers such as Carthage and Alexandria in the contexts dated between the end of the fifth and the beginning of the sixth centuries AD⁸⁷, they were found in minor quantities in the layers dated to the same period in the excavations at Hispania, Italia, Gallia, Britannia and Switzerland.

The LR 1 amphorae have a special position in the commerce of Alexandria during the fifth and the sixth centuries AD. The commercial

⁸¹ Diler 1995, p. 88, with note 23.

⁸² For the dispersion tables and detailed bibliography of LR 1 amphorae, see Pacetti 1995, p. 275-279; for the dispersion in Egyptian centers, see Bailey 1998, p. 121-122; Ballet-Picon 1987, p. 26; Tomber 1998b, p. 179, nos. 75-6;

⁸³ Even though the production of wine is known in the hinterland of Corycus, this city was not considered as a producer-center because of the superabundant rates of the wine importers' names on funerary stels. Besides the important role of Corycus in the commerce of Cilicia is indisputable. Trombley 1987, p. 19. Moreover, some stamps of Corycus have been identified on LR 1B amphorae in Tomis. Opait 2002.

⁸⁴ Tomber 1993, p. 158.

⁸⁵ The peak point of the commerce between Cilicia and the centers around Black Sea dates to the sixth century AD due to the dispersion of the LR 1 amphorae.

⁸⁶ Boardman 1961, p. 111; Abadie 1989, p. 55. The dominance of the LR 1 amphorae at Saraçhane excavations in Istanbul is remarkable. Hayes 1968, p. 215.

⁸⁷ Riley 1981, p. 120; Peacock 1984, p. 119-120, fig. 34.1

activity in Alexandria was strengthened after the Roman authority had been re-installed in the middle of the fourth century AD⁸⁸, as it can be seen on the diagrams of the amphora sherds found in the excavations in the city⁸⁹. In this period, the abundance of the Cilician amphorae was remarkable. The presence of LR 1 amphorae has been increased to 13% of the total amphora sherds dated between the fifth and the beginning of the seventh centuries AD, found in the rescue excavations of CEA in Alexandria. In this period Alexandria was effected by general commercial trends in Mediterranean⁹⁰ so they changed the orientation of trade and turned to the eastern production centers especially Cilician region as these amphorae were predominant in the layers dated to the fifth-sixth centuries AD.

Due to the reduction of the tax rates enforced on local producers in Cilicia during the fourth century AD⁹¹, the exportation of the first LR 1A amphorae of the region started in the same period with the Cypriot LR 1 amphorae⁹². We may talk about the achievements of Cilician and Cypriot merchants in the commerce of Eastern Mediterranean so that they could have transported their goods in LR 1 amphorae to the Eastern centers via Alexandria⁹³. The predominance of LR 1 amphorae all through the Mediterranean centers and even from Ireland to Yemen⁹⁴, was over in the North African centers and North Syria-Palestine region after the Arabian invasions⁹⁵. The latest examples of the characteristic LR 1 amphorae found in Carthage and Tocra dated to the end of the seventh century AD⁹⁶.

⁸⁸ Martin 1998, p. 14.

⁸⁹ Senol 2000b, lev. 43, tab. 7; Majcherek 2002.

⁹⁰ Done-Keay 1989, p. 70.

⁹¹ Hild-Hellenkemper 1990, I, p. 34-42.

⁹² Egloff 1977, Type 164-7; The first known examples of this type found in the destruction layers in Kourion dated to 365 AD. Lund 1993, p. 130.

⁹³ For the Cilician and Cypriot amphorae found in Alexandria, see Senol 2001, p. 375-381.

⁹⁴ Ballet 1996, p. 827; Michaelides 1996, p. 149.

⁹⁵ Vogt 1997, p. 257; Sodini-Villeneuve 1992, p. 197.

⁹⁶ Majcherek 1992, p. 102, with notes 20-1; in Tocra, see Boardman-Hayes 1973, p. 116-117; in Carthage, see Riley 1980, p. 116.1

Abbreviations and Bibliography

- Abadie-Reynal 1992 Abadie-Reynal, C., “The Siena Amphora Conference : Part 2: Amphores romaines d’Orient”, JRA, vol. 5, 361-366
- Alpözen – Berkaya – Özdas 1995 Alpözen, O. – Berkaya, B. – Özdas, H., Bodrum Sualtı Arkeoloji Müzesi Ticari Amphoraları, Bodrum
- Arthur – Williams 1992 Arthur, P. – Williams, D., “Campanian Wine, Roman Britain and the Third Century A.D.”, JRA, vol. 5, 250-260
- Arthur – Orwen 1998 Arthur, P. – Orwen, E.D., “The North Sinai Survey and the Evidence of Transport Amphorae for Roman and Byzantine Trading Patterns”, JRA 11
- Bailey 1998 Bailey, D., Chapter 9: Amphorae, Excavations at El-Ashmunein V, Pottery, Lamps and Glass at the Late Roman and Early Arab Periods, British Museum Press, 121-122
- Ballet 1993 Ballet, P., “Relations céramiques entre l’Égypte et Chypre à l’époque gréco-romaine et byzantine”, Hellenistic and Pottery in the Eastern Mediterranean-Advances in Scientific Studies, Acts of the II Nieborow Pottery Workshop, 18-20 December 1993, 11-25.
- Ballet 1996 Ballet, P., “De la méditerranée à l’océan indien l’Égypte et le commerce de longue distance l’Époque Romaine: les données céramiques”, Topoi, 6, 809-840
- Ballet – Picon 1987 Ballet, P. – Picon, M., “Recherches préliminaires sur les origines de la céramique des Kellia”, CCE 1, 17-48
- Bass – Doorninck 1982 Bass, G. – Frederic, H. – van Doorninck, J.R., Yassı Ada, Vol. I, A Seventh Century Byzantine Shipwreck, Texas, 155-165
- Berker – Constantin – Desbat 1986 Berker, C. – Constantin, C. – Desbat, A., “Le dépôt d’amphores augustéennes de la rue de la Favorite a Lyon”, Figlina 7, 656-659
- Berthold 1984 Berthold, R.M., Rhodes in the Hellenistic Age, Ithaca and London
- Boardman 1961 Boardman, J., “Underwater Reconnaissance off the Island of Chios”, BSA, no. 56, 111
- Boardman – Hayes 1973 Boardman, J. – Hayes, J.W., Excavations at Tocra, 1963-65, II, London,
- Bonifay – Piéri 1995 Bonifay, M. – Piéri, D., “Amphores du Ve au VIIe s. a Marseille: nouvelles données sur la typologie et le contenu”, JRA, vol. 8, 94-120

- Bonifay – Villedieu 1989 Bonifay, M. – Villedieu, F., “Importation d’amphores orientales en Gaule”, BCH Suppl. 18, 17-46
- Bowersock – Brown – Grabar 1999
Bowersock, C.W. – Brown, P. – Grabar, O., Late Antiquity, London
- Böttger 1992 Böttger, B., “Die Kaiserzeitlichen und Spätantiken Amphoren aus dem Kerameikos”, AM Band 107, 315-381
- Breccia 1907 Breccia, E., Bulletin de la Société Archéologique d’Alexandrie IX
- Brixhe 1976 Brixhe, C., Timbres d’Amphores, Le Dialecte Grec de Pamphylie, Bibliothèque de l’Institut Français d’Etudes Anatoliennes d’Istanbul, XXVI, Paris, 295-300
- Calvet 1972 Calvet, Y., “Les timbres amphoriques (1965-1970)”, Salamine de Chypre III, Paris, 1-105.
- Calvet 1978 Calvet, Y., “Timbres amphoriques de Salamine (1971-1974)”, Report of the Department of Antiquities Cyprus, Nicosia, 222-234
- Calvet 1993 Calvet, Y., “Timbres Amphoriques”, Les Niveaux Hellénistiques, Kition-Bamboula IV, Paris, 61-79
- Caro 1987 Caro, S.D., “Villa rustica in localita Petrarò (Stabiae)”, Rivista Dell’Istituto Nazionale D’Archeologia E Storia Dell’Arte, S. III, X, 5-89
- Conovici – Irimia 1991 Conovici, N. – Irimia, M., “Timbres amphoriques et autres inscriptions céramiques découverts à Satu Nou (comm. d’Oltina, dép. de Costantza)”, Dacia XXXV, 139-175
- Daszewski – Majcherek – Sztetyllo 1990
Daszewski, W.A. – Majcherek, G. – Sztetyllo, Z., “Excavations at Marina el- Alamein 1987-1988”, MDAIK, 46, 46-51
- Daszewski 1995 Daszewski, W.A., “Cypriot Sigillata in Marina el-Alamein”, Hellenistic and Roman Pottery in the Eastern Mediterranean, II Nieborow Pottery Workshop, 31-32.
- Demesticha 2002 Demesticha, S., “A Late Roman Amphora Kiln in Paphos-Cyprus”, RCRF, XXIst International Congress 1998, Ephesus and Pergamum
- Desbat – Lequément – Liou 1987
Desbat, A. – Lequément, Liou, B., “Inscriptions peintes sur amphores: Lyon et Saint-Roman-en-Gal”, Archaeonautica 7, 141-166
- Desbat – Picon 1986 Desbat, A. – Picon, M., “Les importations d’amphores de Méditerranée Orientale a Lyon, fin de I^{er} siècle Avant J.-C. et I^{er} siècle Après”, BCH Suppl XIII, Recherches Sur les Amphores Grecques, Paris, 637-648

- Diler 1995 Diler, A., "The Most Common Wine-Press Type Found in the Vicinity of Cilicia and Lycia", *LYKIA II*, 83-98
- Done – Keay 1989 Done, J. – Keay, N., *The Amphorae, Coarse Pottery and Building Materials, Excavations at Sabratha 1948-1951*, vol. II, Finds, Part I, 5-85
- Durugönül 2001 Durugönül, S., "Nagidos'un Tarihteki Yeri", *La Cilicie: Espace et Pouvoirs Locaux. Table Ronde Internationale, İstanbul, 2-5 Novembre 1999, Paris*, 429-443
- Egloff 1977 Egloff, M., *La potterie copte. Quatre siècles d'artisanat et d'échanges en basse- Égypte, Kellia III, Geneve*, 108-119
- Eiseman – Ridgway 1987 Eiseman, C.J. – Ridgway, B.S., *The Porticello Shipwreck, A Mediterranean Merchant Vessel of 415-385 BC, Texas*, 37-53
- Empereur 1986 Empereur, J.Y., "Un atelier de Dressel 2-4 en Egypte au IIIe siècle de notre ère", *BCH Suppl. 13*, 599-608
- Empereur 1999 Empereur, J.Y., "Les amphores complètes du Musée d'Alexandrie: Importations et productions locales", *BCH Suppl. 32, Commerce et artisanat dans l'Alexandrie Hellénistique et Romaine*, 393-399
- Empereur – Garlan 1992 Empereur, J.-Y. – Garlan, Y., "Les ateliers amphoriques Grecs", *Les Amphores Grecques, Saraton*, 8-31
- Empereur – Hesnard 1987 Empereur, J.Y. – Hesnard, A., "Les amphores hellénistiques", *Céramiques Hellénistiques et Romaines II*, 17-71.
- Empereur – Picon 1989 Empereur, J.Y. – Picon M., "Les régions de production d'amphores impériales en Méditerranée Orientale", *Anfore Romane e Storia Economica: Un Decenio Di Richerce, Collection De L'Ecole Française De Rome*, 114, 224-248.
- Empereur – Picon 1992 Empereur, J.Y. – Picon, M., "La reconnaissance des productions des ateliers céramiques: l'exemple de la Maréotide", *Extraits des Cahiers de la Céramiques Égyptienne, Tome 3*, 145-152
- Empereur – Picon 1999 Empereur, J.Y. – Picon, M., "Les ateliers d'amphores du lac Mariout", *BCH Suppl. 32, Commerce et artisanat dans l'Alexandrie Hellénistique et Romaine*, 75-91
- Freed 2000 Freed, J., "Adaptation of the Form of the Koan Amphora to the Production of 'Dressel 2-4' Amphoras in Italy and Northeastern Spain", *RCRF, XXIst International Congress 1998, Ephesus and Pergamum*
- Fuks 1951 Fuks, A., "Notes on the Archive of Nicanor", *Journal of Juristic Papyrology*, 5, 207-216

- Garlan – Kassab Tezgör 1996 Garlan, Y. – Kassab Tezgör, D., “Prospection d’ateliers d’amphores et de céramiques de Sinope”, *Anatolia Antiqua* IV, 325-334
- Ghaly 1992 Ghaly, H., “Pottery workshops of Saint-Jeremia (Saqqara)”, *CCE*, 3, 168
- Grace 1950 Grace, V., “The Stamped Amphora Handles”, *Tarsus I, Excavations at Gözlükule*, (ed.) Hetty Goldman, Princeton, 135-227
- Grace 1961 Grace, V., *Amphoras And The Ancient Wine Trade, Excavations Of The Athenian Agora Picture Book No: 6, American Schools Of Classical Studies at Athens*, Princeton
- Grace-Petropoulakou 1970 Grace, V., Petropoulakou, M.S., “Les timbres amphoriques Grecs”, *Exploration Archéologique de Délos, Delos XXVII, L’Ilot de la Maison des Comédiens*, Paris, 277-382
- Grace 1973 Grace, V., “Imports from Pamphylia”, *BCH Suppl. 1, Etudes Déliennes*, 180- 208
- Hadjisavvas 1997 Hadjisavvas, S., *Agia Napa, Excavations at Makronisos and the Archaeology of the Region*, Nicosia, 50-160
- Hassall – Crawford – Reynolds 1974 Hassall, M. – Crawford, M. – Reynolds, J., “Rome and the Eastern Provinces at End of the Second Century B.C.”, *JRS* 64, 195-220
- Hayes 1968 Hayes, J.W., “A Seventh Century Pottery Group”, *Dumbarton Oaks Papers*, no. 22
- Hayes 1977 Hayes, J., “Early Roman Wares from the House of Dionysus”, *RCRF Acta* 17-18, 96-101.
- Hayes 1991 Hayes, J.W., “Commercial Amphorae: Hellenistic Types, Roman Types”, *The Hellenistic and Roman Pottery, PAPHOS*, vol. III, Nicosie, 58-223.
- Hayes 2000 Hayes, J.W., “From Rome to Beirut and Beyond: Asia Minor and Eastern Mediterranean Trade Connections”, *RCRF Acta* 36
- Heichelheim 1964 Heichelheim, F.M., *An Ancient History*, vol. II, Leyden
- Heichelheim 1970 Heichelheim, F.M., *An Ancient Economy*, vol. III, Leyden, 1-339.
- Hild – Hellenkemper 1990 Hild, F. – Hellenkemper, H., *Kilikien und Isaurien, I-II (“Tabula Imperi Byzantini”)*, Wien, 34-42
- Hopwood 1991 Hopwood, K., “The Links Between the Coastal Cities of Western Rough Cilicia and the interior during the Roman Period”, *De Anatolia Antiqua, Eski Anadolu I, Bibliotheque de L’Institut française d’etudes anatoliennes d’Istanbul* 32

- Johnson 1949 Johnson, A. Ch. – West, L.C., *Byzantine Egypt: Economic Studies*, 107-151.
- Jones 1937 Jones, A.H.M., *The Cities of the Eastern Roman Provinces*, Oxford
- Kassab Tezgör 1996a Kassab Tezgör, D., “Demirci-Sinop Anfora Atölyelerinin Kazısı”, *KST XVII, II*, 29 Mayıs-2 Haziran 1995 Ankara, 277-291
- Kassab Tezgör 1996b Kassab Tezgör, D., “Fouilles des ateliers d’amphores à Demirci près de Sinop en 1994 et 1995”, *Anatolia Antiqua IV*, 335-354
- Kassab Tezgör 2002 Kassab Tezgör, D., “Etude typologique des amphores sinopéennes et analyses de laboratoire pour le tracé des routes commerciales à l’époque romaine en mer Noire et en Méditerranée”, *Transport Amphorae and the Trade in the Eastern Mediterranean*, International Colloquium at the Danish Institute at Athens 26-29 September 2002
- Kassab Tezgör – Tatlıcan 1997 Kassab Tezgör, D. – Tatlıcan, İ., “Sinop Demirci Anfora Atölyelerinin Kazısı”, *KST, XVIII-II*, Ankara, 18-25
- Kassab Tezgör – Tatlıcan 1999 Kassab Tezgör, D. – Tatlıcan, İ., “Sinop Demirci Malzemesi 1998 Yılı Araştırma Dönemi”, *KST, XXI-II*, Ankara, 316-317
- Kislinger 1998 Kislinger, E., “Dulcia Bacchi Munera Quae Gaza creant, Quae Fertilis Africa Mitit”, *L’Aventura del vino nel Baccino del Mediterraneo*, Rome, 204
- Kruit – Worp 2000 Kruit, N. – Worp, K., “Geographical Jar Names: Towards a Multi-Disciplinary Approach”, *Archiv für Papyrurforschung und Verwandte Gebeite Band. 46*, 2000, Heft. 1, 65-146.
- Leonard 1995 Leonard, J.R., “Evidence for Roman Ports, Harbours and Anchorages in Cyprus”, *Cyprus and the Sea*, Nicosia, 236
- Lewis 1988 Lewis, N., *La mémoire des sables, La vie en Egypte sous la domination romaine*, Paris
- Liebeschuetz 1972 Liebeschuetz, J.H., *Antioch: City and Imperial Administration in the Later Roman Empire*
- Lund 1993 Lund, J., *The Land of the Paphan Aphrodite, Vol.2, Studies in the Mediterranean Archaeology*, vol. CIV.2, 118-138.
- Majcherek 1992 Majcherek, G., “The Late Roman Ceramics from the Sector ‘G’ (Alexandria 1986-1987)”, *ET, XVI*, 82-117
- Majcherek 1993 Majcherek, G., “Roman Amphorae from Marina el-Alamein”, *AM Abteilung Kairo, Band 49*, 215-220

- Majcherek 2002 Majcherek, G., "Long-Distance Trade of Late Roman Alexandria: The Amphora Evidence", *Transport Amphorae and the Trade in the Eastern Mediterranean*, International Colloquium at the Danish Institute at Athens 26-29 September 2002
- Manning – Monks – Sewell – Demesticha 2000
Manning, S.W. – Monks, S.I. – Sewell, D.A., Demesticha, S., "Late Roman Type 1a Amphora Production at the Late Roman Site of Zygi-Petrini, Cyprus", *Report of the Department of Antiquities Cyprus, Nicosia*, 233-256.
- Martin 1998 Martin, A., "Alexandrie a l'époque romaine tardive: l'impact du christianisme sur la topographie et les institutions", *Alexandrie médiévale* 1, (ed.) C. Decobert, J.-Y. Empereur, *Etudes Alexandrines* 3, 14-18
- Michaelides 1996 Michaelides, D., "The Economy of Cyprus During the Hellenistic and Roman Periods", (ed.) V.Karageorghis, D. Michaelides, *The Development of the Cypriot Economy, From the Prehistoric Period to the Present Day*, Nicosie, 139-152
- Opait 1996 Opait, A., *Aspecte Ale Vietii Economice din Provincia Scythia (secolele IIV-VI p.Ch.) Productia ceramicii locale si de import*, Institutul Roman de Tracologie Bibliotheca Thracologica XVI, Bucuresti
- Opait 2002 Opait, A., "The Eastern Mediterranean Amphorae in the Province of Scythia", *Transport Amphorae and the Trade in the Eastern Mediterranean*, International Colloquium at the Danish Institute at Athens 26-29 September 2002.
- Orrieux 1984 Orrieux, Cl., *Zénon de Caunos, parépidemos et la destin grec*, Paris
- Pacetti 1995 Pacetti, F., "Appunti su alcuni tipi di anfore orientali della prima eta Bizantina centri di produzione, contenuti, cronologia e distribuzione", *Agricoltura e Commerci nell'Italia antica atlante tematico di topografia antica*, I Supplemento, 275-279
- Panas – Pontes 1998 Panas, C.I. – Pontes, H.R., "Stamped Amphora and Lagynos Handles from the 1989-1995 Seasons", *Studia Troica*, 8, 250-251
- Peacock 1984 Peacock, D.P.S., "The Amphorae: Typology and Chronology", *Excavations at Carthage: The British Mission*, vol. I, 2, London, 116-140
- Peacock-Williams 1986 Peacock, D.P.S., Williams, D.F., *Amphorae And The Roman Economy*

- Pieri 1998 Pieri, D, “Les importations d’amphores orientales en Gaule méridionale durant l’antiquité tardive et le haut-moyen age (IVe-VII siècles après J.-C.)”, SFECAG, Actes du Congrès d’Istres, 97-105.
- Plat Taylor – Megaw 1981 Plat Taylor, J. – Megaw A.H.S., “Excavations at Ayios Philon, the Ancient Carpasia, Part II: The Early Christian Buildings”, RDAC, 248
- Rauh 1999 Rauh, N.K., “Dağlık Kilikia Yüzey Araştırma Projesi: 1997 Sezonu Raporu”, AST-I, 25-29 Mayıs 1998, Ankara, 339-348
- Rauh-Slane 2000 Rauh, N.K. – Slane, K.W., “Possible Amphora Kiln Sites in W.Rough Cilicia”, JRA 13, 319-330
- Reynolds 2000 Reynolds, P., “Pottery Production and Economic Exchange in Second Century Berythus”, Berythus 43, 1997-1998, 25-75
- Riley 1979 Riley, J.A., The coarse pottery from Benghazi, Excavations at Sidi Khrebish, Benghazi (Berenice), Vol. II, (ed.) J. A. Lloyd, Suppl. to Libya Antiqua V, vol. II, Tripoli, 91-497
- Riley 1980 Riley, J., “New Light on Relations Between the Eastern Mediterranean and Carthage in the Vandal and Byzantine Periods: The Evidence from the University of Michigan Excavations”, Actes colloque sur la ceramique Carthage, 23-24 Juin 1980, 111-122.
- Riley 1981 Riley, J.A., “The Pottery from the Cisterns 1977.1, 1977.2, 1977.3”, Excavations at Carthage 1977, Vol. II, Michigan, 111-120
- Robinson 1959 Robinson, H.S., Pottery of the Roman Period, Volume 5, The Athenian Agora, Princeton
- Rostovtzeff 1941 Rostovtzeff, M., *Social and Economic History of the Hellenistic World*, vol.I
- Sartre 1995 Satre, M., L’Asie Mineure et l’Anatolie d’Alexandre a Dioclétien, I ve siècle av.J.C./IIIe siècle ap. J.C., Paris
- Sazanov 1995 Sazanov, A.B., “Anfori Carottes v Severnom Priçernomore Pannibizantiniskova Vremeni. Tipologia i Khronologia”, Bosforski Cvornik 6, Çest 60, Letiya Professora G.A. Kollienko, Moscow, 185-196
- Sazanov 1999 Sazanov, A., “Les amphores ‘LA 1 Cartage’ dans la region de la Mer Noire”, Production et Commerce des Amphores Anciennes en Mer Noire, Colloque international organisé à Istanbul 25-8 mai 1994, Aix-en-Provence, 265-279
- Schnebel 1925 Schnebel, M., *Die Landwirtschaft im Hellenistischen Aegypten*

- Sciallano – Liou 1985 Sciallano, C., M. – Liou, B., Les Amphores Dressel 2-4 de Taraconaise, Les épaves de Taraconaise a Chargement d’amphores Dressel 2-4, Paris, 12-23
- Sedov 1996 Sedov, A.V., “Qana’ (Yemen) and the Indian Ocean The Archaeological Evidence”, Tradition and the Archaeology Early Maritime Contacts in the Indian Ocean, Proceedings of the International Seminar Techno-Archaeological Perspectives of Seafaring in the Indian Ocean, 4th cent.B.C.-15th century A.D., New Delhi, February 28-4 March, 1994, (ed.) H.P.Ray, J.-F., Salles, Lyon, 11-29
- Sealey 1985 Sealey, P.R., Amphoras from the 1970 Excavations at Colchester Sheepen, BAR 142, 128-30
- Sherwin-White 1976 Sherwin-White, A.N., “Rome, Pamphylia and Cilicia, 133-70 BC.”, *JRS*, vol. LXVI, 1-14.
- Slane 1986 Slane, K.W., “Two Deposits from the Early Roman Cellar Building, Corinth”, *Hesperia* 55, 280-288
- Slane 1992 Slane, K.W., “Observations on Mediterranean Amphoras and Tablewares found in India”, Rome and India The Ancient Sea Trade, 204-215
- Slane 1994 Slane, K.W., “Tetrarchic Recovery in Corinth: Pottery, Lamps, and Other Finds from the Peribolos of Apollo”, *Hesperia* 63, 136
- Sodini – Villeneuve 1992 Sodini, J.-P. – Villeneuve, E., “La passage de la céramique byzantine a la céramique omeyyade en Syrie du Nord en Palestine et en Transjordanie”, La Syrie de Byzance a l’Islam VIIe-VIIIe s., Actes du colloque international, Institut français de Damas, Damas, 197
- Steckner 1989 Steckner, C., “Les amphores LR 1 et LR 2 en relation avec le pressoir du complexe ecclésiastique des thermes de Samos”, *BCH Suppl.* 18, 57-71
- Sztetyllo 1976 Sztetyllo, Z., “Les timbres céramiques (1965-1973)”, *Nea Paphos* I, Centre D’Archéologique Méditerranée de l’Académie Polonaise des Sciences, Varsovie, 9-109
- Şenol 2000a Şenol, G.C., İskenderiye (Mısır) Kurtarma Kazılarında Ele Geçen Hellenistik Dönem Amphora Mühürleri, (Unpublished doctoral thesis) İzmir
- Şenol 2000b Şenol, A.K., İskenderiye Kazılarında Ele Geçen Roma Dönemi Amphoraları Işığında Kentin Şarap, Zeytinyağı, Salamura Balık ve Sos Ticareti, (unpublished doctoral thesis) İzmir
- Şenol 2001 Şenol, A.K., “Amphoras from the Necropolis of Gabbari”, *Nécropolis 1*, e Ed. J.-Y., Empereur, M.D., Nenna), *Etudes Alexandrines* 5, Cairo, 375-381

- Şenol 2002a Şenol, A.K., “The Amphorae Found in the Necropolis of Gabbari in Sector III”, *Etudes Alexandrina* (in press)
- Şenol 2002b Şenol, A.K., *Marmaris Müzesi’nde Bulunan Ticari Amphoralar*, Ankara
- Şenol – Kerem 2000 Şenol, A.K. – Kerem, F., “İçel Müzesinde Bulunan Bir Grup Amphora”, *OLBA III* (ed. S. Durugönül - M. Durukan), Mersin, 81-114
- Şenol – Şenol 2000 Şenol, G.C., Şenol, A.K., “Yeni Bulgular Işığında Mısır Amphoralarının Tipolojik Özellikleri ve Akdeniz’deki Dağılımı”, *SBT 2000*, Ankara, 125-133
- Tchernia 1971 Tchernia, A., “Les amphores vinaires de Tarraconaise et leur exportation au début de l’Empire”, *Archivo Español de Arqueologia*, no. 123-124, 38-84
- Tchernia 1987 TchernTchernia, A., “Modèles économiques et commerce du vin a la fin de la république et au début de l’empire”, *El vi a l’antiguitat Economia Producció I Comerç al Mediterrani Occidental*, Actes, 328-329
- Tchernia – Zevi 1972 Tchernia, A. – Zevi, F., “Amphores vinaires de campanie et de Tarraconaise à Ostie”, *Recherches sur les amphores romaines*, Rome, 35-67
- Thomas 1959 Thomas, A.C., “Imported Pottery in Dark Age Western Britain”, *Medieval Archaeology*, no.3, 92
- Tomber 1993 Tomber, R., “Quantitative Approaches to the Investigation of Long-Distance Exchange”, *JRA*, vol.6, 142-165.
- Tomber 1996 Tomber, R., “Provisioning the Desert: Pottery Supply to Mons Claudianus”, *Archaeological Research in Roman Egypt, The Proceedings of the 17th Classical Colloquium of the Department of Greek and Roman Antiquities*, BM, 1-4 December 1993, (ed.) D.M.Bailey, *JRA*, Suppl.19, Ann Arbor, 43-44.
- Tomber 1998a Tomber, R.S., “Laodicean Wine Containers in Roman Egypt”, *Life on the Fringe, Living in the Southern Egyptian Deserts during the Roman and Early-Byzantine Periods*, (ed.) O.E.Kaper, Leiden, 213-219.
- Tomber 1998b Tomber, R.S., *The Pottery, Report of the Excavations at Berenike (Egyptian Red Sea Coast) and the Survey of the Eastern Desert*, (ed.) S. Sidebottom, W. Wendrich, 163-180
- Trombley 1987 Trombley, F.R., “Korykos in Cilicia Trachis: The Economy of a Small Coastal City in the Late Antiquity (Saec. V-VI)-A Precis”, *The Ancient History Bulletin* 1/1, 19

- Vogt 1997 Vogt, C., “Les céramiques ommeyyades et abbasides d’istabl’antar-fostat : Traditions méditerranéennes et influences orientales”, *La céramique Médiévale en Méditerranée*, Actes du VIe Congrès de l’AIECM2, Aix-en Provence, (13-18 novembre 1995), Aix-en Provence, 243-260
- Will 1989 Will, E.L., “Relazioni mutue tra le anfore Romane”, *ARHEDAR, CollécfRome* 114, 296-309
- Will 1992 Will, E.L., “Mediterranean Shipping Amphores from Arikamendu”, *Rome and India, The Ancient Sea Trade*, 151-6.
- Williams 1989 Williams, C., *Anemurium, The Roman and Early Byzantine Pottery*, (*Subsidia Mediaevalia* 16), Toronto, 92-93
- Whitcomb – Johnson 1980 Whitcomb, D.S. – Johnson, J.H., *Quseir al Qadim 1978. Preliminary Report*, ARCE, Princeton
- Whitehouse 1990 Whitehouse, D., “The Periplus Maris Erythraei”, *JRA* 3, 489-93
- Zemer 1977 Zemer, A., *Storage Jars in Ancient Sea Trade*, Haifa



Fig. 1 A coin of Nagidos found in the site, bearing an amphora in the middle and dating to the 5th c. BC.

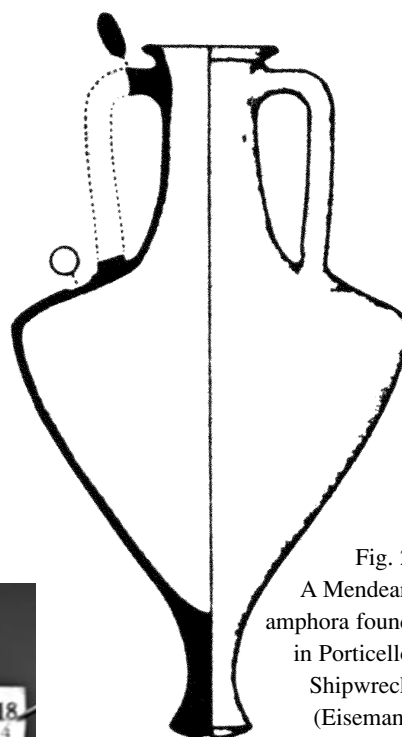


Fig. 2 A Mendeian amphora found in Porticello Shipwreck (Eiseman-Ridgway 1987, 39, fig. 4.2, C1) Scale 1:10



Fig. 3 A stamp of Pistos group found in Nagidos.



Fig. 4 A stamp found in Nagidos bearing a pomegranate and a Nu.

LEVHA 18

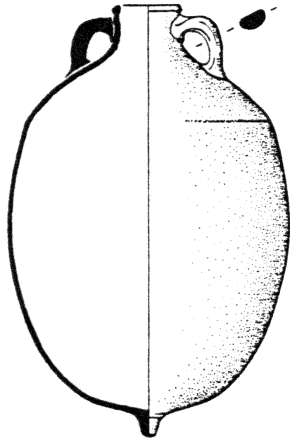


Fig. 5 A Pamphylian amphora in the Greco-Roman Museum in Alexandria (Empereur 1999, p. 396, fig 5, Inv. Alex 22.989) Scale 1:10

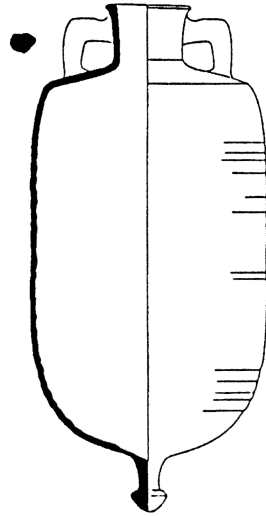


Fig. 6 An Agora G 199 type amphora found in Israel (Zemer 1977, p. 54, no. 41) Scale 1 :10

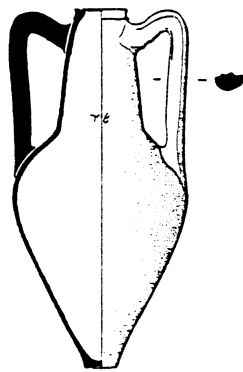


Fig. 7 A Pompei V amphora in the Greco-Roman Museum in Alexandria (Empereur 1999, p. 397, fig 10, Inv. Alex 23.007) Scale 1:10

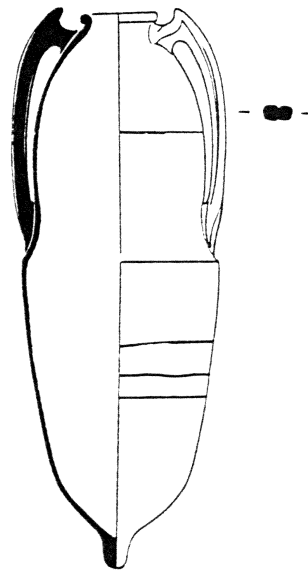


Fig. 8 An Agora M 54 amphora in the Museum of İcel (Şenol-Kerem 2000, Lev. 17, Fig. 15, 94.7.1) Scale 1:10

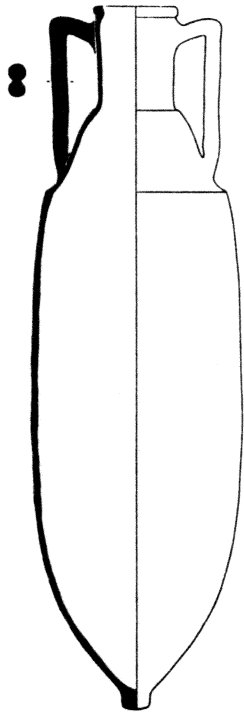


Fig. 9 An oriental Dr 2-4 amphora found in Lyon (Desbat-Picon 1986, p. 643, fig. 5.4) Scale 1:10

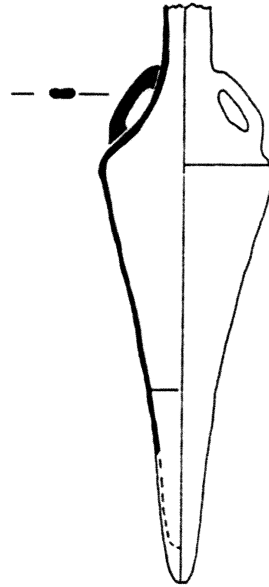


Fig. 10 A Zemer 40 amphora in the Museum of İçel (Şenol-Kerem 2000, lev. 17, fig. 16, 94.1.12) Scale 1:10

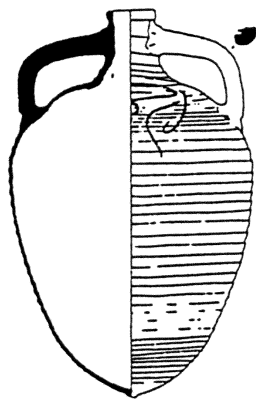


Fig. 11 A LR 1A amphora found in Kellia (Pieri 1998, Fig. 2) Scale 1:10

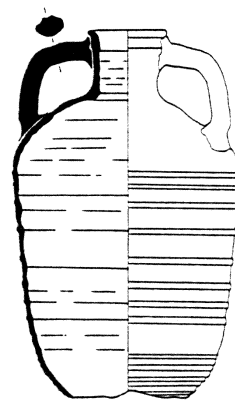


Fig. 12 A LR 1B amphora in the Museum of Marmaris (Şenol 2002b, p. 87, fig. 30, 39.10.91) Scale 1:10