

CERAMIC PATCHWORK IN HELLENISTIC TO BYZANTINE PHOENICIA: REGIONALIZATION AND SPECIALIZATION OF VESSEL PRODUCTION

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Abstract: An analysis of pottery production in ancient Phoenicia reveals not only the land division into city-states in Hellenistic times, but also the blending in individual periods of the multifarious cultural influences reaching in from the western coast of Asia Minor, the Aegean, North African coast and Italy. The native Phoenician tradition clearly loses in significance with the arrival of the Romans in the East.

Keywords: Phoenicia, Jiyeh/Porphyreon, Hellenistic/Roman/Byzantine pottery, pottery workshops/production, amphorae, kitchen vessels, common ware

Phoenicia stretched along the coast from the northern part of present-day Israel through Lebanon into Syria.¹ Its fame depended on the well-known ports: Sidon, Tyre and Berytus, but its economic and commercial success lay with the rural settlements of subordinate status. The pottery produced in this region has been studied to a somewhat modest extent and although the situation has recently

improved, the level of identification of pottery production in some parts of the land corresponding to ancient Phoenicia is far from satisfactory. This is due primarily to the low number of pottery workshops identified to date, there being namely one in the Acre/Akko/Ptolemais region (Berlin 1997: 12), another in the Tyre hinterland (Berlin 1997: 9–10) and others in Jiyeh/Porphyreon (Waliszewski

¹ The borders of Phoenicia are defined imprecisely in available historical sources (Pseudo-Skylax, *Periplus* 104; Strabo 16.2.15–34; Pliny the Elder, *NH* 5.13, 17). Modern studies on the topic, based on an analysis of the historical and political events, as well as on archaeological research (see Elayi 1982: Figs 2, 87), provide a relatively vague picture of the boundaries of this land. Taking into account the said limitations and recent investigations, the term 'Phoenicia' with respect to the Hellenistic and Roman periods denotes an area of the coast from the city of Arados in the north to Mount Carmel in the south, including the Mount Lebanon range in the east. For the Roman and Byzantine periods, the Beqaa Valley and part of northern Galilee are also included in the territory of Phoenicia.

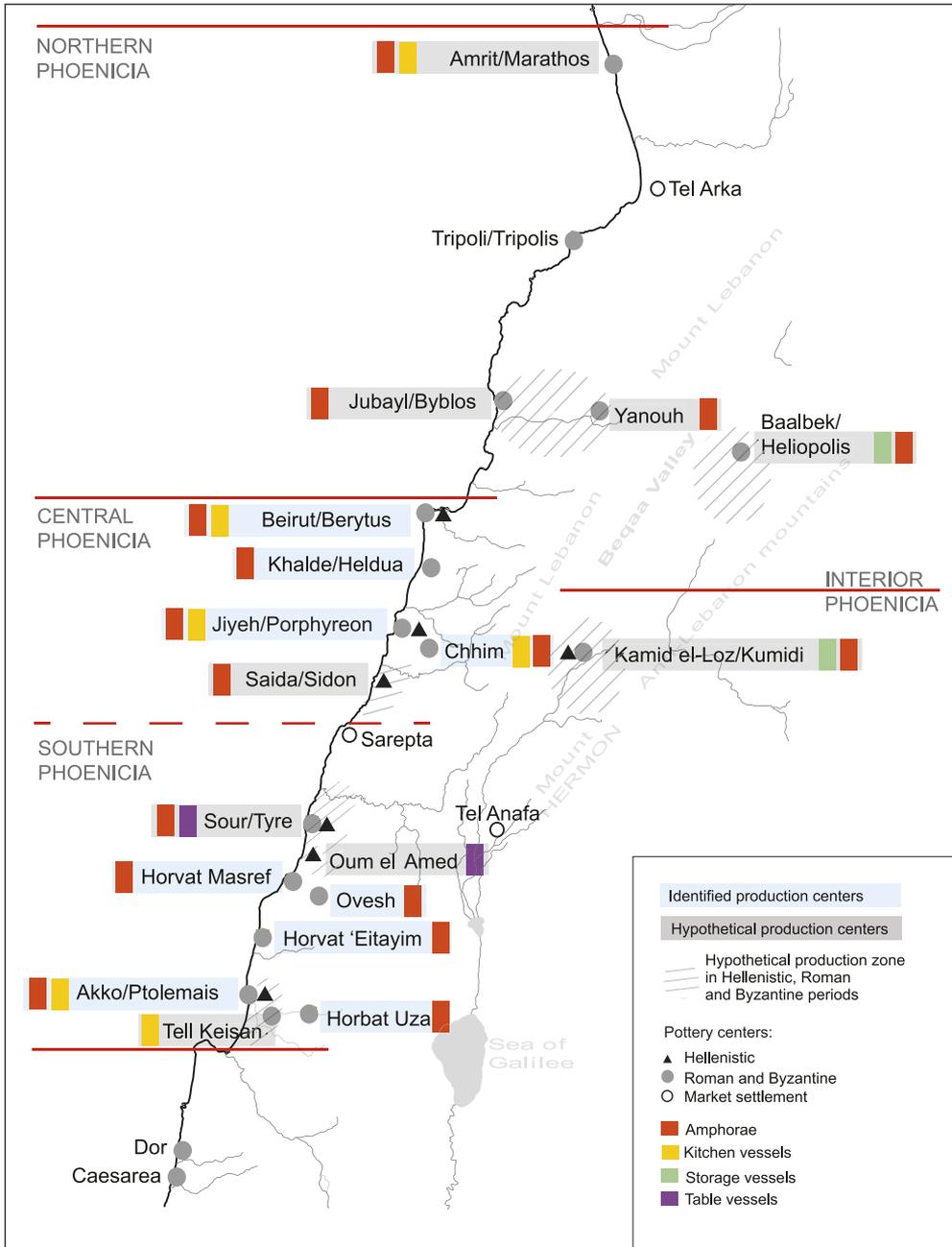


Fig. 1. Pottery production sites/centers in Phoenicia (Processing U. Wicenciak)

et al. 2008: 40–79), Khalde/Heldua (P. Reynolds, personal communication), Beirut/Berytus (Reynolds et al. 2010) and Chhîm (U. Wicenciak, personal observation) [Fig. 1]. Knowing so little about the local pottery makes it difficult for excavators to identify vessels macroscopically on the spot.

Another handicap is the brevity of preliminary and interim reports as far as the pottery finds are concerned. The presentation is often limited to select vessel categories, primarily imported ware or local-made fine-ware vessels, and amphorae, for the transportation of goods. There are very few comprehensive publications treating on the combined aspects of clay fabrics and form typology of kitchen and storage vessels. Pottery production of the Hellenistic and Roman periods on the Phoenician coast is much more difficult to classify and characterize than in the case of pottery from the Bronze and Iron Ages.

Hellenistic and Roman settlements from Phoenicia may be grouped as follows, taking into account their role in pottery production and distribution. First come the archaeologically confirmed pottery production centers already mentioned above. Next are centers or regions presumed to be the location of pottery workshops. The last group is made up of centers operating solely as distribution markets in all likelihood.

Several settlements on the coast have been listed as hypothetical pottery production sites: Tell Keisan (see below, page 635), Saida/Sidon and/or its hinterland (see page 642), Jubayl/Byblos (see below, page 668) and its resource base Yanouh (see below, page 670) and Amrit/Marathos (see below, page 671). The Beqaa

Valley, both the south, around the Kamid el-Loz/Kumidi site (see below, page 675) and the north, that is, Baalbek/Heliopolis (see below, page 673, are considered as possible locations of pottery production on archaeological grounds. Finds from excavations at the site of Yanouh (see below, page 670) in the northern Lebanon Mountains suggest the production of clay vessels, primarily amphorae, in this region, believed to have been subordinate to Byblos at this time. However, most of the collected ceramic material from fieldwalking in this area represented vessels imported from workshops in the Beqaa Valley and Berytus.

Similar conclusions arise from an initial analysis of pottery material from the site of Chhîm (Waliszewski et al. 2004: 62–76; Wicenciak 2010; Waliszewski and Wicenciak 2015), located in the southern part of the Chouf foothills. The vessel repertoire and the results of a macroscopic analysis of the fabric point to the Mediterranean coast, the Beqaa Valley and northern Galilee, as the region of production for this pottery (Wicenciak 2010). No pottery workshops have been identified either at Chhîm or in its vicinity (Waliszewski et al. 2004: 10–11). However, a macroscopic comparison of clay used for oven construction (Arabic *tannurs* from the ancient village, Waliszewski 2003: 273, Fig. 8) with the fabric of a distinctive group of vessels from among the finds shows that at least some vessel forms must have been produced on the spot in Chhîm (personal observation).

In the Hellenistic period in Phoenicia, *Phoenician Semi-Fine Ware* vessels were produced, as were table vessels and amphorae (see below, page 639). Pottery wasters found in Jiyeh/Porphyreon indicated the production of kitchen vessels

and amphorae in local ateliers at the site (see below, page 650); evidence in the case of other sites came from macroscopic studies and chemical clay composition analyses (Mount Carmel massif, environs of Acre/Akko/Ptolemais, northern Galilee, Tyre, Sidon, Berytus, southern part of the Beqaa Valley, Golan Heights).

For the Roman period, the production of kitchen vessels and amphorae was attested by finds of workshop remains and pottery wasters in Acre/Akko/Ptolemais

and its environs (Horbat Uza, Horvat 'Eitayim, Ovesh) (see below, page 632), Jiyeh/Porphyreion (see below, page 645), Khalde/Heldua (see below, page 651), Beirut/Berytus (see below, page 652), Baalbek/Heliopolis (see below, page 673). At the same time, macroscopic studies and comparative analysis of vessel forms and types have pointed to the presence of pottery production ateliers in this period in Tell Keisan, Jubayl/Byblos and Amrit/Marathos.

GEOLOGY AND CLAY TYPES

Analyses of the clay are at the root of most modern research into pottery production. Fabrics² are established through the identification and description of the kind of clay and the nature of the inclusions, both mineral and organic in origin. Being typical of individual settlements or areas, fabrics may designate, at least in theory, places of vessel production, that is, specific geographical and geological regions from which they originated.

The first stage of fabric identification is macroscopic examination ("pottery reading") of vessel or sherd appearance after firing (color, hardness, core). The second stage involves archaeometric tests, such as petrographic studies (thin-section analyses), establishing the nature and function of the inclusions. This supplies the grounds for identifying clay and temper sources (Orton, Tyers, and Vince 1995: 140; Adan-Bayewitz 1993: 44; Cox, Price, and Harte 1988; Kerr 1977). Tests

are carried out only on selected pottery samples, but there is a growing tendency to identify natural mineral elements in the matrix by means of costly chemical studies (Adan-Bayewitz 1993: 44; Dyczek 1999: 34–35).

The procedure is not always effective with regard to differentiating between products from workshops located close to one another, which used the same geological clay sources and frequently produced the same vessel forms and types. Workshops operating in the early Roman period in Berytus, Heldua and Porphyreion, all located within a 35-kilometer long section of the coast, exemplify this in the best possible manner. Studies of the ware and detailed morphological analyses are necessary to identify the exact place of pottery production in these cases. The results are much more informative, the ware being, in contrast to the fabric, not only a geographical and geological

² 'Paste' as used by ceramologists is synonymous with 'fabric' (Orton, Tyers, and Vince 1995: 67; Berlin 1997: 6, Note 18), whereas 'ware' refers to defined pottery groups, that is, ready products with specific properties resulting from the character of the clay used for production, as in, for example, *Phoenician Semi-Fine Ware*, *Late Hellenistic Jiyeh Ware* and *Early Roman Jiyeh Ware*.

criterion, but also distinctive for specific time periods and pottery workshops. In consequence, defining the geographical and geological zones producing individual clay and fabric types is key to determining places of pottery production.

GEOLOGICAL ZONES

Phoenicia was composed of three different geographical zones. First was the coastal belt stretching from Mount Carmel in either direction, to the Akko/Ptolemais plain in the south and the Marathos settlement in the north. The second zone was constituted by the Lebanon Mountains and the third by the Beqaa Valley. In geological terms, the mountains are made up of low-quality, brittle and light-colored limestone (El Kareh 2010: 1516). These rock formations are quite uniform and fine-grained, the differences between varieties from the various regions detectable only by means of microscopic studies. These differences are easiest to establish in the case of deposits dated from the late Jurassic to the mid-Cretaceous, when many types of limestone, sandstone, loam and volcanic ash were formed (Walley n.d.: Fig. 5; Abdel-Rahman and Nader 2002). Basalt folds are the only kind of volcanic (igneous) rock identified in this region, located primarily on the southern and northern peripheries of Phoenicia. Most of the Jurassic deposits are relatively thick, in some places up to 2 km, and most common in the following three regions: Mount Lebanon range, north of the road between Beirut and Damascus (BouDagher-Fadel and Noujaim Clark 2002: 84, Fig. 4), the Chouf foothills located to the southeast of Beirut (including Chhîm and Jiyeh at the base of the foothills), and the central

and southern part of the Anti-Lebanon Mountains.

In turn, the coast is made up of shallow layers of marine limestone, sand with fragments of anthozoa/corals and sponge reefs (Walley n.d.). Until the mid-Cretaceous period, the sea deposited sand along the coast; however, when the sea level rose limestone began to settle along the coast, in places forming reefs (Walley n.d.). The changes which occurred toward the end of the Cretaceous period and at the beginning of the Cenozoic caused a dramatic rise in the sea level. This fundamentally influenced the biosystem of the area. Many species of fish died out due to a deficiency of oxygen in the water, leading to the formation of many fossils (Arslan, Gèze, and Abdul-Nour 1995). The highest geological layers of the coast are composed of Quaternary coastal sands and limestone outcrops formed during the Cretaceous period (Walley n.d.: Fig. 1).

Despite varying quality, soil on the Israeli, Lebanese and Syrian coasts is classed as typically Mediterranean. It developed mainly due to erosion of limestone rock and, to a lesser extent, of basalt deposits wherever present. Periodical watercourses flowing down from the mountains (Arab. *wadi*), caused by intense rainfall during the winter season, have also had a huge impact on soil formation. Water running down from the mountains contains many mineral elements, forming so-called alluvium and/or colluvium sediments (Ministry of Environment 2001: 168–169). The soil cover in most of the discussed area, especially the mountain ranges, is relatively thin. The Beqaa Valley is the sole exception, retaining a layer of cultivable soil one meter thick.

As said above, most of the soil is of the limestone type, except for the sandy soil formed from Cretaceous strata layers (El Kareh 2010: 1516; Verheye and de la Rosa 2005). However, 70% of the soil comprises the so-called terra rossa (Verheye and de la Rosa 2005; El Kareh 2010: 1518).

CLAY TYPES

Studies into pottery production in Phoenicia in the Hellenistic to Byzantine periods have distinguished five types of clay used for making vessels: calcareous, volcanic, fossil foraminifera, as well as kaolinitic and non-calcareous [*Table 1*]. Unfortunately, for most of the studied pottery assemblages from the region, the clay from which the vessels were made was identified by macroscopic examination alone and not confirmed by chemical or petrographic analyses. Thus, the results of these studies should be approached with caution.

Information on the clay types used in particular settlements is modest and scattered in different publications. The most distinguished researcher in the field is Paul Reynolds (Catalan Institution for Research and Advanced Studies, University of Barcelona). He was able to distinguish the four of the five basic clay types listed above, based on his acquaintance with the ceramic material from most of the excavations in Lebanon, combined with petrographic and chemical analyses conducted primarily on the pottery from excavations in Beirut³ in cooperation with Yona Waksman (Laboratoire de Céramologie, CNRS,

Lyon) and Mohamed Roumié (Accelerator Laboratory, Lebanese Atomic Energy Commission, National Council for Scientific Research, Beirut). Reynolds also proposed possible locations of the major production regions using these clay types. The non-calcareous clay group was distinguished by Hanna Hamel studying the pottery from Baalbek/Heliopolis (see below, page 673).

Calcareous clay

Calcareous clay, that is, sandy clay with high limestone content, is the most characteristic clay for the coastal regions, and predominates in the eastern part of the Mediterranean. Sedimentary limestone rock, such as limestone, dolomite or marl, is the important component. Calcareous clay is characterized by diversified mineral composition, hardness and permeability (Verheye and de la Rosa 2005), and has been used for vessel production throughout all periods. Its usage for the Berytus vessel production in the Roman period has been well studied. It was also used for vessels produced in the Porphyreon workshops and is characteristic of vessels made in Akko/Ptolemais, Tyre, Sidon, Heldua, Berytus and Chhîm (see page *Table 1*).

Volcanic clay

This second clay type contained fragments of basalt rock (Abdel-Rahman and Nassar 2004), which is present in the region stretching from the vicinity of the city of Homs in central Syria to the Akkar province in northern Lebanon. The second zone of basalt rock is located in

³ The first petrographic analyses of pottery from excavations in Beirut were conducted by Prof. 'Abd al-Rahman from the Department of Geology at the American University of Beirut (AUB) (Saghieh 1996: 45). Yona Waksman and Mohamed Roumié carried out the chemical analyses [see page 652].

the southern part of Lebanon, stretching in the south from Mount Hermon to the Golan Heights and Jebel Druze. Basalt deposits have also been identified in a few places northeast of Beirut in the Mount Lebanon range, near the village of Yanouh (Walley n.d.: Fig. 1; BouDagher-Fadel and Noujaim Clark 2002: Fig. 3).

Fossil foraminifera clay

The third type is fossil foraminifera clay (BouDagher-Fadel and Lord 2002: 87), which is characterized by mostly Jurassic and Cretaceous ammonites, foraminifera fossils, fragments of shells, fish, anthozoa, sponges and amber nuggets (Arslan, Gèze, and Abdul-Nour 1995). Outcrops of this clay prevail on the northern coast of Lebanon (Walley n.d.). However, it should be emphasized that most of the mountains in Lebanon are comprised of sedimentary rocks that may contain the kind of fossils, with are characteristic inclusions in this particular type of clay.

According to Reynolds, vessels found in Amrit/Marathos were produced of this type of clay (see page 671).

Kaolinitic clay

Kaolinitic clay is characteristic of the inland Beqaa Valley and, in Israel, of the Jordan Valley and the vicinity of Lake Tiberias. It is white or pink-orange-red in color due to the presence of iron oxide.

Reynolds has confirmed the use of kaolinitic clay for the production of vessels in ancient Phoenicia, namely, *CW 34* ware, for example (Roumié et al. 2005) (see below, pages 665, 675). According to Reynolds, vessels of this type of clay were made in the southern Beqaa Valley. They are very popular in the Hellenistic material from the Kamid el-Loz/Kumidi site, located in the southern Beqaa Valley (P. Reynolds, personal communication). They are also encountered as imports in Baalbek/Heliopolis and south of Beirut, in Chhîm (see below, pages 665, 676).

POTTERY PRODUCTION IN SOUTHERN PHOENICIA

AKKO/PTOLEMAIS

Excavations in the Akko/Ptolemais area have been conducted since the 1970s (Dothan 1976), but the pottery from the Hellenistic and Roman periods has yet to be studied comprehensively and published. Select aspects of Hellenistic pottery have been discussed (Naveh 1997: 117–119; Regev 2000; 2009–2010) as have also the Islamic ceramics from this settlement (Stern 2012; Waksman et al. 2008; Shapiro 2012). The latest research is presented online within the framework

of the Levantine Ceramic Project coordinated by Andrea Berlin (<http://www.levantineceramics.org>).

Studying the pottery excavated in 1991 from the Courthouse site (Hartal 1997a; 1997b), Regev distinguished three ware groups: *Coastal Sandy Ware*, *Phoenician Coarse Ware* and *White Phoenician Ware* (Regev 2009–2010: 117). Most of the kitchen ware was made from Taqiya marl clay, which made it theoretically possible, according to Regev, for vessels made of this fabric to have originated from

Table 1. (on centerfold) Ware identified for Phoenicia from the Hellenistic to the Byzantine periods and the types of clay and fabric used for their production (Processing U. Wicenciak)

Types of clay	Fabric	Ware	Historical period and/or precise dating
SOUTHERN PHOENICIA			
Calcareous clay		<i>Akko Sandy Cooking Ware</i>	Persian, Hellenistic to early Roman
		<i>Akko Hellenistic Gritty Cooking Ware</i>	Hellenistic
	FAM 7		Roman and Byzantine (3rd–7th century AD)
	FAM 7	<i>Workshop X</i>	Roman and Byzantine Periods (4th–7th century AD)
	FAM 10	<i>Phoenician Semi-Fine Ware A</i>	Persian, Hellenistic, early Roman
		<i>Phoenician White Ware</i>	Persian, early Hellenistic
CENTRAL PHOENICIA			
	Sidonian fabric	<i>Sandy light red-yellow ware</i>	Hellenistic (3rd–1st century BC)
	Jiyeh fabric	<i>Late Hellenistic Jiyeh Ware</i>	late Hellenistic (mid-2nd–first half of 1st century BC)

Settlements and/or production zones	Vessel categories and/or forms	Figure	Page
SOUTHERN PHOENICIA			
Northern coastal plain; Haifa region; Akko/Ptolemais region	Kitchen vessels: cooking pots, casseroles, lids	-	631
Akko/Ptolemais and the nearest vicinity	Kitchen vessels: cooking pots, casseroles	-	631
Akko/Ptolemais region (Horvat Masref, Ovesh, Horvat 'Eitayim, and Horbat Uza/Khirbet Aiyadiya)	Amphorae (types: AM 14, Agora M334, AM 339, AM 148, LRA 5); kitchen vessels	<i>Fig. 2</i>	632
Environs of Tell Keisan? Environs of Akko/Ptolemais	Kitchen vessels: cooking pots, casseroles, lids, jugs	<i>Fig. 3</i>	634
Tyre and its environs (coast of south Lebanon between Sour/Tyre and Mansouri), Oumm el-Amed	Amphorae; table vessels: bowls, table amphorae, jugs, juglets, amphoriskoi, unguentaria, lagynoi, ointment vessels, lids, funnels; storage vessels; oil lamps	<i>Fig. 4</i>	639
Tyre and its environs, Sidon? (coast of south Lebanon)	Amphorae; table vessels: juglets, table jugs, amphoriskoi, cylindrical ointment pots, mortars	-	641
CENTRAL PHOENICIA			
Sidon and its environs	Amphorae (types: Sidon 1, 2, 3)	<i>Fig. 6</i>	642
Porphyreon	Amphorae; kitchen vessels: cooking pots, casseroles, lids, jugs, stands, braziers	<i>Fig. 7</i>	648

Table 1. Continued

Types of clay	Fabric	Ware	Historical period and/or precise dating
Calcareous clay		<i>Early Roman Jiyeh Ware</i>	early Roman (late 1st BC to 2nd century AD)
	Jiyeh fabric	<i>Late Roman Jiyeh Ware</i>	late Roman (early 3rd to end of 4th century BC)
		<i>Byzantine Jiyeh Ware</i>	Byzantine (mid-6th to early 7th century AD)
	Khalde fabric		late Hellenistic, Roman, Byzantine (2nd/1st century BC to mid-7th century AD)
	Beirut fabric		late Hellenistic, Roman, Byzantine (2nd/1st century BC to mid-7th century AD)
	Chhîm fabric 1	A, B, C, D, E	late Hellenistic, early and late Roman
	Chhîm fabric 2		early Roman
NORTHERN PHOENICIA			
Volcanic clay	FAM 43A, B, C		Roman (1st–3rd century AD)
Fossil foraminifera clay	FAM 44		Roman (2nd–4th century AD)
INLAND PHOENICIA			
NORTHERN BEQAA VALLEY			
Non-calcareous clay	BA01		Roman (2nd–5th century AD)
SOUTHERN BEQAA VALLEY			
Kaolinitic clay		CW 34	Hellenistic and Roman (2nd–1st century BC?; 1st–7th century AD)

LEBANON

Settlements and/or production zones	Vessel categories and/or forms	Figure	Page
	Amphorae; kitchen vessels: cooking pots, casseroles, jugs, stands	<i>Fig. 8</i>	648
Porphyreon	Amphorae (type: AM 14)	<i>Fig. 9</i>	649
	Amphorae (type: Agora M334)	<i>Fig. 10</i>	649
Heldua	Amphorae (types: Beirut 2 and 7); kitchen vessels	<i>Fig. 11</i>	651
Berytus	Amphorae; kitchen vessels; pipes; tiles	<i>Figs 11–15</i>	652
Chhîm (foothills of the Mount Lebanon range)	Amphorae; kitchen vessels: jugs, bowls, funnels, stands	<i>Fig. 16</i>	666
	Bowls, olive lamps, pans(?)	-	668
NORTHERN PHOENICIA			
Byblos, Yanouh, Tripoli (?)	Amphorae (types: AM 72/Amphora 1, 2, 3, AM 52, AM 202)	<i>Fig. 17</i>	668
Marathos	Amphorae (type: AM 77); kitchen vessels	<i>Fig. 18</i>	671
INLAND PHOENICIA			
NORTHERN BEQAA VALLEY			
Heliopolis	Amphorae (types: BA1, BA2) storage vessels; tiles	<i>Fig. 19</i>	672
SOUTHERN BEQAA VALLEY			
Kumidi and its environs	Table vessels; kitchen vessels; storage vessels/pithoi	<i>Fig. 20</i>	675

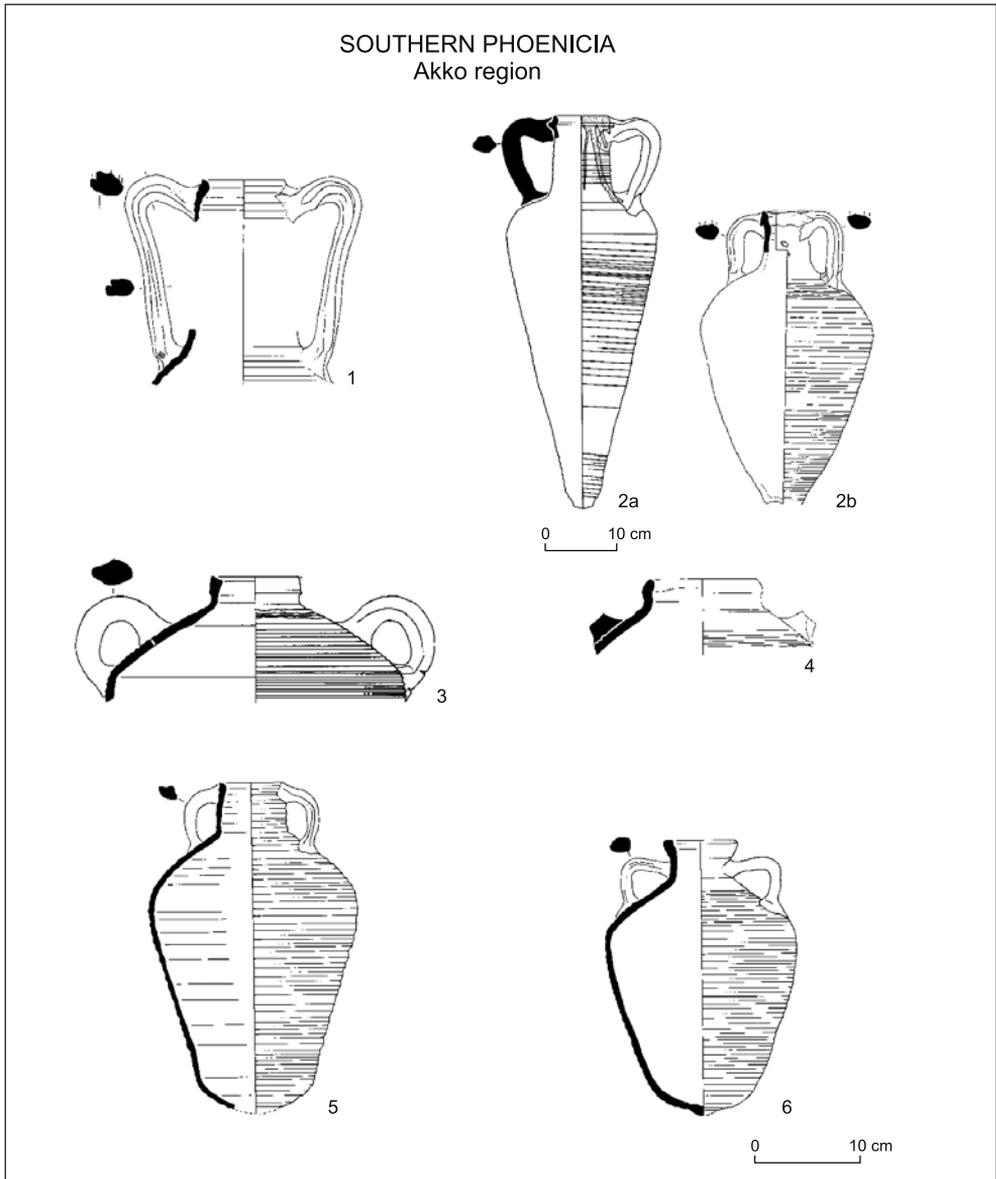


Fig. 2. Amphorae produced in Akko/Ptolemais and in its hinterland, from the Roman to the Byzantine periods: 1 – AM 14, Chbîm (after Reynolds 2005a: Pl. 14:103); 2a and 2b – Agora M334, Museum AUB (after Reynolds 2005a: Pls 15:114, 16:116); 3 – Late Roman Amphora 5, Horvat Uza (after Reynolds 2005a: Pl. 19:149); 4 – Late Roman Amphora 5, Caesarea (after Reynolds 2005a: Pl. 19:146); 5 – AM 339, Tell el-Ras, Western Galilee (after Reynolds 2005a: Pl. 17:128); 6 – AM 148, Qasrawet, Sinai (after Reynolds 2005a: Pl. 17:134)

pottery workshops located anywhere between Akko/Ptolemais and Tripoli. The typically Phoenician vessel forms are proof that Akko/Ptolemais was a Phoenician settlement during the Hellenistic period (Regev 2000; 2009–2010: 115).

Archaeological excavations conducted thus far in Akko/Ptolemais and its hinterland have failed to provide direct evidence for the existence of pottery workshops in this region during the Hellenistic period. However, macroscopic examination and petrographic analyses of the ceramic material from Akko/Ptolemais and from other settlements, such as Tel Dor, Tell Keisan, Tel Kedesh, as well as from the Mount Carmel massif area, combined with the outcome of geological studies within the region, have led to the identification of two groups of pottery products, probably manufactured in this area primarily during the Hellenistic period. This would include the following: *Akko Sandy Cooking Ware* and *Akko Hellenistic Gritty Cooking Ware*.

Akko Sandy Cooking Ware

Vessels from this group were produced from the Persian to the early Roman period. The ware has a characteristic red-brown color after firing (10R 4/6–2.5YR 4/8); it is brittle and very gritty, with small- and middle-sized white inclusions. The vessel cores are usually dark grey or brown (Berlin and Monnickendam-Givon 2016).

Various kitchen vessels were made in the fabric typical of this ware, such as closed cooking pots, casseroles and lids. They have been identified in the ceramic assemblage from Dor (Stern 1995: 299–300, 302), as well as from Ramat Hanadiv in the Mount Carmel area (Silberstein 2000). The forms of these vessels, especially

those of casseroles and lids, correspond to vessel forms produced in the late Hellenistic period in Porphyreon (see below, page 648 and Fig. 7).

The results of petrographic analyses of *Akko Sandy Cooking Ware* and those for the so-called *Acre Ware* (Shapiro and Stern 2016), produced in Akko/Ptolemais in the mediaeval period (Stern 2012; Waksman et al. 2008), show many similarities upon comparison, enough to claim that the workshops producing vessels from the *Akko Sandy Cooking Ware* group should also be located in the region of Haifa.

Akko Hellenistic Gritty Cooking Ware

The second group is characterized by well-fired but brittle clay, with an insignificant amount of small- and middle-sized white inclusions. The discussed fabric is dark grey in color (7.5YR 4/1) with a black core (5YR 3/1). The surface of the vessels is uneven, orange or dark grey in color (2.5YR 4/6–7.5YR 4/1) (Berlin, Shapiro, and Stone 2016a). In the Hellenistic period, two cooking pot types with short necks were produced; the first was plain-rimmed (Berlin 1997: 88, Pl. 21:PW 187–190), while the second had a groove in the rim (Berlin 1997: 89–90, Pls 24:PW 197–200; 78:PW 197). Casseroles with rims of triangular shape in section and straight body walls were also made of this fabric.

Shapiro's petrographic analyses demonstrated conspicuous similarities between the composition of granular inclusions in the *Akko Hellenistic Gritty Cooking Ware* and *Akko Sandy Cooking Ware*. It shows that workshops producing vessels of this fabric were located in the Akko/Ptolemais area (Berlin, Shapiro, and Stone 2016a).

Other pottery workshops in the Akko/Ptolemais region

Remains of pottery workshops have been identified in the hinterland of Akko/Ptolemais, in the modern-day locations of Horvat Masref, Ovesh, Horvat 'Eitayim, and Horbat Uza/Khirbet Aiyadiya (Getzov et al. 2009: 23) [see *Fig. 2*]. These remains could be sourced to the Hellenistic period (Pseudo-Skylax, *Periplus* 104; Grainger 1991: 24; Lemaire 1976) as well as Roman times (Flavius Josephus, *BJ* 2.188). These workshops functioned in the Roman and Byzantine periods, and specialized primarily in production of transport amphorae [see *Fig. 2*].

Common ware vessels and amphorae of the AM 14, Agora M334 (Robinson 1959: 82, 84, 115, Pl. 33) and Late Roman Amphora 5 (LRA 5) have been confirmed as being produced in Horbat Uza/Khirbet Aiyadiya (Getzov et al. 2009: 23). This production took place in the late Roman and Byzantine periods, from the beginning of the 4th to the 7th century AD (Getzov et al. 2009: 23, 48–49).

Type AM 14 amphorae have carrot-shaped bodies, long handles with flat straps in the middle and hollow toe bases [*Fig. 2:1*]. They have been encountered at many coastal Phoenician sites, but the most numerous discoveries were made in Beirut, in contexts dated from the beginning of the 3rd century AD and especially the 4th century AD (Reynolds 2005a: 570, Pl. 14). According to Reynolds, the specimens from Beirut were made from two kinds of fabric. The first, referred to as *FAM* [*Fabric Amphora*] 7,⁴ is characterized by a buff or salmon orange color. The second, the one used for AM 14

amphorae, is red-brown. Visually, it is very similar to the Beirut city fabric (Reynolds 2005a: 570) (see below, page 653). However, Reynolds emphasizes that the quartz grains in the fabric of the AM 14 amphora are small and evenly distributed, unlike the unevenly spread quartz particles in the Beirut city fabric (P. Reynolds, personal communication). Analyses with the PIXE method determined that the chemical composition of the red-brown AM 14 does not correspond to the Beirut city fabric used for the Beirut amphorae. On this ground, the production of AM 14 in Berytus was excluded (Reynolds 2005a: 570).

Agora M334 amphorae are the second type of carrot-shaped amphorae produced in Horbat Uza/Khirbet Aiyadiya from the 4th to the 7th centuries AD [see *Fig. 2*]. The typology of these amphorae has been proposed by Reynolds based on finds from Beirut (Reynolds 2005a: 570–571, Pls 15, 16; 2008: 68, *Fig. 2*). The rim of the early form of the Agora M334 amphora type has a distinctive flange at the top of the neck, which is connected to the rounded shoulders by massive handles with one or more ridges running down their length. The base is conical with a button-shaped bottom [*Fig. 2:2a*] or ring-type base in later forms [*Fig. 2:2b*]. These vessels were produced from various types of fabric referred to as *FAM* 7. These are coarse-grained fabric types with a high limestone content, characteristic of southern Phoenicia, Akko/Ptolemais and its hinterland. In Beirut, this type of amphora was made of *FAM* 7 fabric as well; specimens of containers were found in contexts dated from the beginning of

⁴ Fabric names follow a terminology introduced by Reynolds (1999; 2005a).

the 4th to the 5th century AD, also in Tyre (Pieri, Haïdar-Vela, and Yassine 2012: 261–262).

The *FAM 7* fabric used for the Agora M334 amphorae produced in Horbat Uza/Khirbet Aiyadiya contains marine sand inclusions and small amounts of white grains, and it is usually light brown or red-yellow in color (Reynolds 2005a: 571). The second type of fabric, probably used in workshops located east of Akko/Ptolemais, is very similar to the one used for the production of kitchen ware in *Workshop X* (see below, page 634).

Early versions of Agora M334 amphorae were produced in at least two other places: Horvat Masref and Horvat 'Eitayim (Reynolds 2000: 390, No. 46; 2005a: 571) [see *Fig. 2*]. The type continued to be produced, smaller in size and with a ring base, probably from the first half of the 6th century and in the 7th century AD.

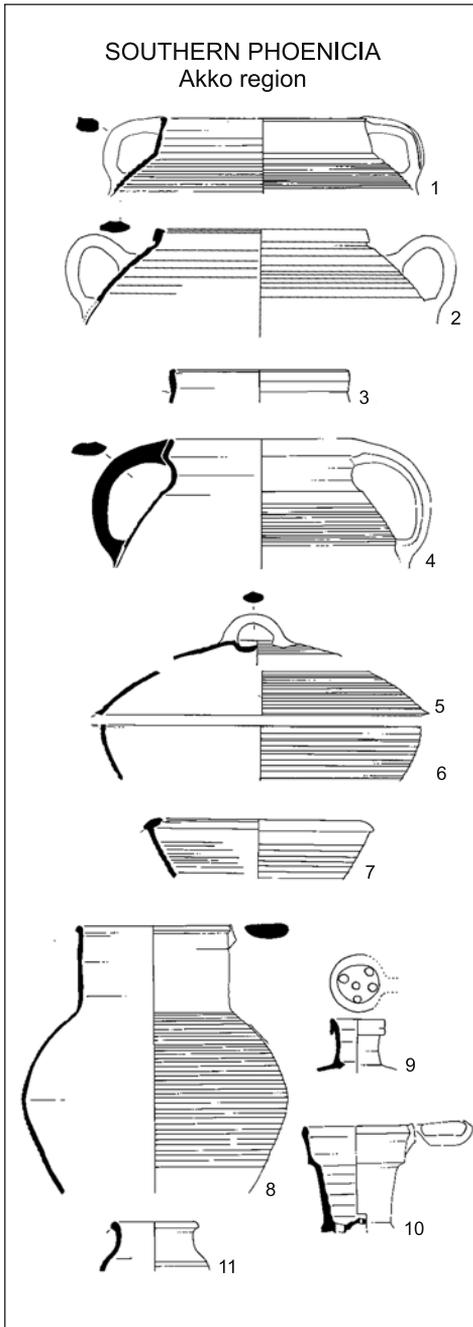
Reynolds noted the proximity of workshops producing Agora M334 and AM 14 amphorae to Akko/Ptolemais. In his opinion, the vessels were integrated closely with the city's economy. Reynolds uses the term "city amphorae" (Reynolds 2005a: 563) in reference to these containers and suggests that they may have been used for the purposes of the local wine industry.

Amphorae of these two types were also made outside the Akko/Ptolemais region, as attested by the pottery assemblages from Chhim and Beirut (Ortali-Tarazi and Stuart 2004: 128–129; Reynolds 2005a: 572). Small versions of Agora M334 and AM 14 amphorae were also produced in workshops in Jiyeh/Porphyreon; this has been confirmed by finds of production wasters and by chemical analyses conducted

on material from the site (see below, pages 650–651) [see *Fig. 10*].

One should mention three other types of amphorae identified in the material from Beirut which were made of the *FAM 7* fabric. According to Reynolds, they might have been produced in the vicinity of Akko/Ptolemais. The first of these is the Late Roman Amphora 5 (LRA 5) (Riley 1979: 224) [see *Figs 2:3* and *4*], resembling a form characteristic of south Phoenician production from the 1st century BC. LRA 5 was produced in the same period as the already mentioned Agora M334 amphorae at Horbat Uza, Caesarea and Beth She'an. Next is AM 339 [*Fig. 2:5*], which was much like AM 14 in that the rim was thickened on the inside, the body was piriform and the base button-shaped. The type prevailed in Beirut in contexts dated from the 3rd to the end of the 4th century AD (Reynolds 2005a: 572, Pl. 17: 123–129). Finally, there is the AM 148 amphora [*Fig. 2:6*], also with piriform body and a slightly concave inner rim surface. The specimens known from Beirut were found in contexts from AD 400 to AD 450 (Reynolds 2005a: 572–573, Pl. 17:130–134). Both AM 339 and AM 148 are rarely encountered outside Beirut.

In summary, vessels produced in Akko/Ptolemais or to put it more broadly, in workshops located in southern Phoenicia, meaning northern Palestine and western Galilee, are frequent in the material from Beirut, where they are dated to the period from the 2nd to the 7th century AD. Among these, Reynolds lists primarily LRA 5 amphorae. They were produced mainly in central Palestine, but also in southern Phoenicia, where other amphorae — with the carrot-shaped body characteristic of Phoenicia (types AM 14



and Agora M 334) — were also produced (Reynolds 2005a: 570–574, Pls 14–18).

UPPER GALILEE

The designation ‘*Workshop X*’ describes an atelier that has not been identified precisely (Waksman et al. 2005: 311), which produced mainly thin-walled vessels referred to as *Brittle Cooking Ware* [Fig. 3]. This pottery group was distinguished by Reynolds in the late Roman and Byzantine material from excavations conducted in the center of Beirut (sectors: BEY 006, 007, 054). According to Reynolds, this group should be collated with pottery from the north of Syria referred to as *Brittle Ware*⁵ (Reynolds 2003b: 542; Dyson 1968; Bartl, Schneider, and Böhme 1995; Vokaer 2005; 2010; 2014).

Most vessels of this type, known from the excavations conducted in Beirut, come from layers dated from the second half of the 6th to the beginning of the 7th century AD (Waksman et al. 2005: Fig. 4; Reynolds and Waksman 2007: 61, Fig. 3); the earliest that they appear there is the 4th century AD.

Aside from Beirut and sites in Phoenicia, this pottery type was common also in the western part of the Mediterranean, among other places, especially in southern France (Waksman et al. 2005: 311–313).

Fig. 3. Kitchen vessels representing the *Workshop X* group from Beirut and southern France: 1–4 – three different types of cooking pots; 5+6 – casserole with type 2 lid; 7 – spouted bowl; 8 – jug with trefoil rim; 9, 10 – jug with strainer; 11 – miniature handled vessel (After Waksman et al. 2005: Fig. 1)

⁵ The present author has not had the opportunity to verify this observation.

Reynolds and Waksman favored the idea that *Workshop X* vessels came from workshops operating in northern Israel (Waksman et al. 2005). One fact cited in favor of this hypothesis is the substantial presence of *Workshop X* vessels in the material from Tell Keisan, a city located about 9 km east of Akko/Ptolemais, and its hinterland (Florimont 1984). Notably, as pointed out by Reynolds and Waksman, some vessel types found at Tell Keisan were not encountered in Beirut, but were present in Khalde/Heldua, which lies about 12 km south of Beirut (Reynolds and Waksman 2007: 61; Waksman et al. 2005: 314). Reynolds drew attention to the workshop in Horbat Uza/Khirbet Aiyadiya [see *Fig. 1*], which produced LRA 5 amphorae with an identical rim shape as one of the cooking pot types characteristic of the *Workshop X* production [compare *Fig. 2:3* with *Fig. 3:2*] (Florimont 1984: Pl. 16; Reynolds 2005a: Pl. 19:149, 150). According to Reynolds, this fact in itself makes the location of *Workshop X* in northern Israel very probable (Reynolds and Waksman 2007: 61).

The results of chemical analyses of the Beirut pottery, compared with material from Tell Keisan, provide a clue to the whereabouts of *Workshop X*. Vessels classified as originating from *Workshop X* have shown a homogeneity of the chemical composition (Waksman et al. 2005: *Fig. 2*). A low concentration of calcium oxide is characteristic of this fabric, whereas iron and titanium content are relatively high. Such proportions are typical of the *terra rossa* soil type, found practically throughout the

Mediterranean (see above, page 624). Yet despite the general similarity of chemical composition, the clay used in *Workshop X* differs from fabrics used in Cyprus, Egypt and Syria by the lower concentration of aluminium oxide (Al_2O_3) (Waksman et al. 2005: Table 2; Daszkiewicz, Bobryk, and Schneider 2007).

Speculation about the location of *Workshop X* does not translate, however, into precise whereabouts. Clays used by the various workshops in the Levant from the Roman to the Islamic period share many chemical features and it is still too early to differentiate conclusively between products from different Levantine ateliers. The database is still relatively modest and researchers searching for the location of *Workshop X* have juxtaposed the products from this workshop with types of kitchen ware produced in Jerash, Horbat Uza near Tell Keisan, and vessels from the *Kefar Hananya Ware* group from northern Galilee,⁶ as well as the *Brittle Ware* group produced in central Syria, near Homs and Apamea (Vokaer 2014; Reynolds 2014: 63). Syrian products are the only ones to bear a similarity to pottery from *Workshop X*, although basalt inclusions, not present in *Workshop X* pottery, make their fabric different (Reynolds and Waksman 2007: 61).

Workshop X products are made of a fine-grained fabric, well fired to a red-brown color. The surface is smooth, covered with a kind of dark red patina. The fabric features a large content of quartz grains, limestone grits and probably clayish inclusions (Reynolds and

⁶ In the Roman and Byzantine periods, production centers probably functioned at some distance from the coast. Production of kitchen vessels for a strictly Jewish clientele (*Kefar Hananya Ware*) was confirmed by Adan-Bayewitz for Upper Galilee, but vessels of this make have been recorded also on the northern coast of Palestine, the Golan Heights and the northern part of the Jordan Valley (Wieder and Adan-Bayewitz 2002).

Waksman 2007: 59). Vessel walls are very thin, while their external surface is covered with fairly deep and distinct ribbing. As a whole, this group is homogeneous in terms of both typology and fabric (Reynolds and Waksman 2016). Based on his studies of the material from Beirut, Reynolds claims that *Workshop X* specialized in the production of kitchen vessels, cooking vessels, cooking pots and casseroles in particular. The researcher distinguished a few basic vessel forms, of which some were produced also in Cyprus, Jordan and northeastern Syria [Fig. 3:4].

The most common and simultaneously the most outstanding vessel types in this group are the closed-shaped cooking pots. Three types were distinguished. The first of these appeared in Beirut in contexts from the end of the 4th century AD [Fig. 3:1]. It has a plain rim and a vertical neck; the handles connect the rim to the globular body. This is a late variant of vessels known from Beirut dated from the 2nd to the 5th centuries AD, made of Beirut fabric and of the *CW 34* ware (Reynolds and Waksman 2007: 59, 62, Fig. 21). According to Reynolds, the shape was derived from vessels of the Persian and Hellenistic periods. This type of cooking pot, as well as pots believed to be the prototype, is very common on sites throughout the Levant (in Lebanon, Palestine and Jordan).

The second type, with subtypes, predominated in contexts from the 5th and 6th century AD [Fig. 3:2–3]. It had a rim band that resembled the bands on LRA 5 amphorae [see Fig. 2:3]. The band is narrow in the case of older vessels and broadens in later specimens. Strap handles, vertically looped in profile, attached to the shoulders, make for the most characteristic feature of this type. This form was produced in

central Syria until the Islamic period. It has been encountered in early Islamic contexts, for example, in Dehes, Apamea, and also near Homs. Sherds from vessels of this type have also been found in layers dated to the Byzantine period at sites in Lebanon (Tel Arqa, Chhîm), but also in Jordan (Jerash) (Reynolds and Waksman 2007: 61–62).

The third type presents a completely different shape of rim. It appears in Beirut, in contexts dated to the 6th century AD. Its characteristic features include a concave rim and long strap handles arched in profile, linking the rim to the shoulders [Fig. 3:4]. This type was also produced outside the Levant, for example, in workshops in Dhiorios on Cyprus, making for this island's most typical, although not necessarily the most frequently encountered product. Hence the term *Cypriot cooking pot shape* is used in archaeological publications today to reference this vessel type (Waksman et al. 2005: 314), even though it is impossible at the current stage of research to establish the precedence of either region in the emergence of this particular form. Reynolds has considered the possibility that the form came to Cyprus from Carthage, where it appears in contexts dated to as early as the 5th century AD. However, it is not a very common find there (Fulford and Peacock 1984: 185, 187, Fig. 69.5).

Another characteristic form of cooking vessel from *Workshop X* is a casserole with lid [Fig. 3:5,6]. It is a thin-walled and relatively deep vessel with a sliced rim and well-fitted lid. The casserole has two slightly twisted horizontal loop handles. Vessels of this type have been identified in Beirut, where they are present in contexts dated to the period from the 6th to the 7th century AD. Prototypes were produced already at the beginning of the 3rd century AD.

They were made from the Beirut fabric and *CW 34* ware (Reynolds and Waksman 2007: 64, Fig. 52; see below, page 665).

Spouted bowls are another form distinguished in the *Workshop X* repertoire (Waksman et al. 2005: 315; Reynolds and Waksman 2007: 64, Figs 62–66) [Fig. 3:7]. This is a thin-walled shallow bowl with a spout and flat base. According to Reynolds, these bowls are common in layers dated to the end of the 6th through 7th century AD. Sherds of this vessel type are sometimes indistinguishable from fragments of funnels with two handles as both forms have identically shaped rims. Funnels, like the spouted bowls, appear in Beirut after AD 551, that is, after the great earthquake that destroyed a large part of the city (Waksman et al. 2005: 315; Reynolds and Waksman 2007: 61, Fig. 67).

Among closed vessels for liquid storage and serving, two jug types were the most common. The first of these, a thin-walled jug with a trefoil rim [Fig. 3:8], is present in Beirut contexts dated to AD 500–550. The second is a jug with strainer [Fig. 3:9,10], fitted into a narrow neck, a rounded body and spout on the shoulder. It is known from contexts dated to between the 6th and 7th century AD from Beirut, northern Syria and Gaul (Reynolds and Waksman 2007: Figs 77–79).

Miniature vessels with a handle are also typical of the *Workshop X* production (Reynolds and Waksman 2007: Fig. 68) [Fig. 3:11]. This form was produced also from the Beirut fabric and was popular from the 2nd to the 5th century AD.

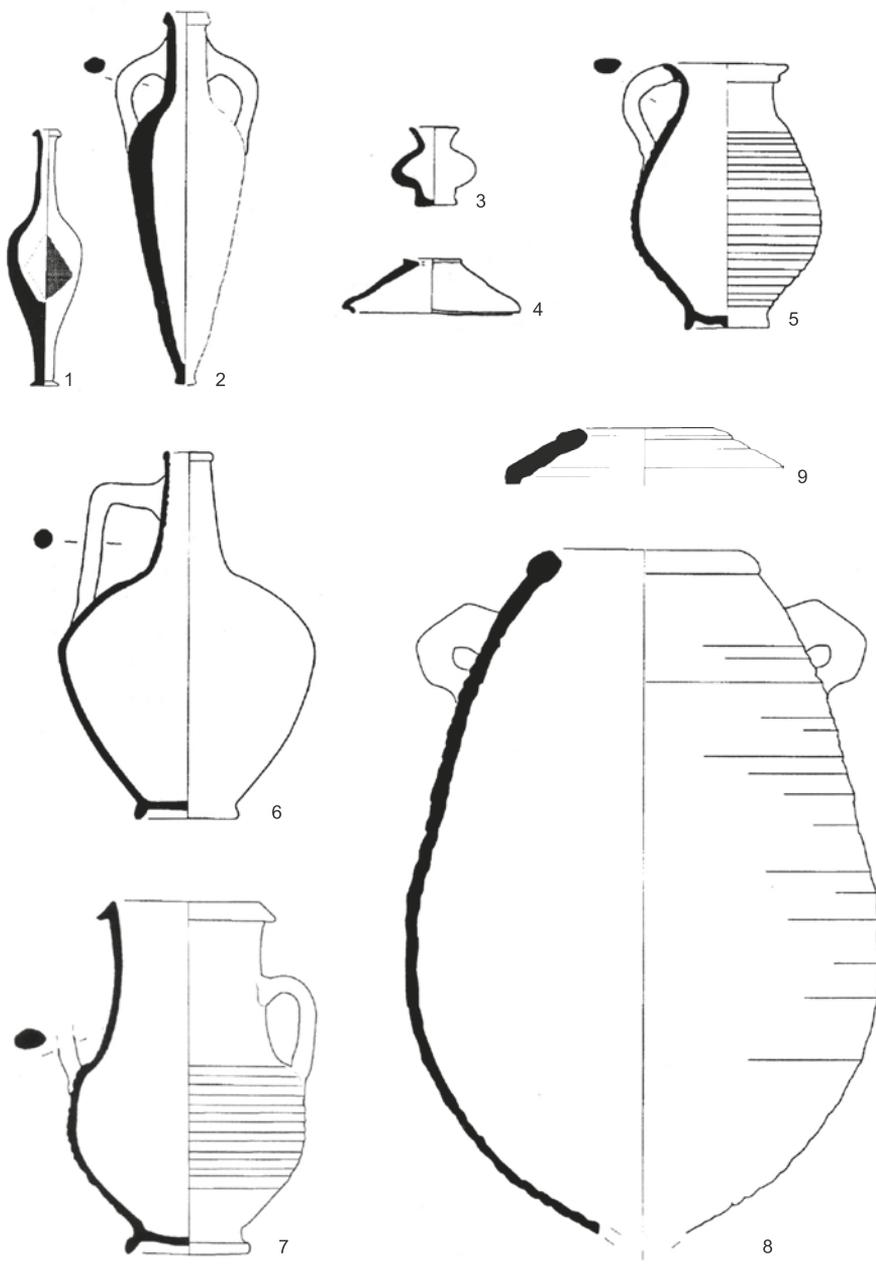
In Lebanon, aside from Beirut, products from *Workshop X* have been recorded at Khalde/Heldua (Reynolds 2003b: 542, Fig. 5.6,11), Chhîm (see below, page 666) and Tell Arqa (Thalman 1978).

In summary, finds from Beirut, as well as from southern France (Waksman et al. 2003; 2005: 311–313), support the idea that *Workshop X* was an important supplier of kitchen vessels, especially cooking pots, from the end of the 6th to the beginning of the 7th century AD. This is reflected in a wide distribution of its products, reaching even the western Mediterranean, especially southern France. Reynolds and Waksman have put forward the idea that *Workshop X* products may have been exported through the port of Akko/Ptolemais or Caesarea. Their presupposition is based on the results of excavations conducted in Beirut, where large quantities of amphorae, produced near Akko/Ptolemais (Agora M334) and Caesarea (LRA 5), appear along with the *Workshop X* vessels (Reynolds and Waksman 2007: 65; Reynolds 2005a: 570–575). However, the precise location of ateliers (probably more than one) forming the *Workshop X* group remains unresolved.

TYRE AND ITS HINTERLAND

Little is known of Tyre as a center for the production of ceramic vessels. Published Hellenistic and Roman pottery studies are scarce (Bikai, Fulco, and Marchand 1996: 23–27, 32–40). No remains of pottery workshops or production wasters from the Hellenistic and Roman periods have been found in Tyre or its vicinity. However, it seems that *Phoenician Semi-Fine Ware A* are typical products of Tyre and its hinterland (Berlin 1997: 9–11). Nonetheless, relatively little would have been known about these vessels were it not for the excavations at Tel Anafa in Hula Valley in northern Israel, where a colony of Tyre was located on the route connecting Tyre with Damascus and Babylon.

SOUTHERN PHOENICIA
Tyre region



The longstanding archaeological project has contributed to the identification and characterization of two groups, *Phoenician Semi-Fine Ware A* and *Phoenician White Ware*, the provenance of which has been established as Phoenician, and more precisely as connected with Tyre and its hinterland (*chora*).

Phoenician Semi-Fine Ware A

The first group, *Phoenician Semi-Fine Ware A* (abbreviated to *PSFW A*) (Berlin 1997: 9–10), also called *Powder Ware*, is the most characteristic vessel group for Phoenician pottery in the Hellenistic period [Fig. 4]. This is a group of tableware vessels and amphorae of the *Baggy-shaped jar* type made of *FAM 10* fabric (Reynolds 1999: 42). Identified at the beginning of the 1970s by Weinberg (1970; 1971: 103; 1972: 16), this ceramic group was studied further by Andrea Berlin (1997: 9–10; Berlin, Shapiro, and Stone 2016b).

The clay in the case of the *PSFW A* group was very well-levigated, rinsed, and thus soft with a few fine inclusions. After firing, the fabric is chalky and dusty, very prone to scratches (Berlin, Shapiro, and Stone 2016b). The chemical composition of the fabric and the presence of shell fragments, established by Neutron Activation Analysis (NAA) and petrographic studies of the *PSFW A* group (Berlin 1997: 9–11), have lent credence to the idea of locating the production on the Phoenician coast.

According to Berlin, the most probable place of production was the area between Sour/Tyre and the settlement of Mansouri to the south (Berlin and Frankel 2012: 36, 70; Berlin 1997: 77; Reynolds 1999: 43) [see Fig. 1]. Berlin's assumptions are based on the similarity of the *Powder Ware* fabric from the Oumm el-Amed site (near Tyre) (Dunand and Duru 1962: 199–203, Figs 78a, 80) and the *PSFW A* fabric from Tel Anafa (Berlin 1997: 10, Note 30).

An additional argument to support the Phoenician origins of the discussed pottery group comes in the form of a large storage vessel from the *PSFW A* group found in Tel Anafa. There is an inscription, in the Phoenician language, on its handle. An identical stamp, with the name of Germelqart, was also discovered in Byblos, while the name itself appears in inscriptions originating from the excavation at Sarepta (see below, note 8), a settlement subordinate to and situated near Tyre, as well as on imports from Cyprus (Berlin 1997: 9). According to Berlin, both the character of the stamp and the form of the vessel indicate its Phoenician provenance.

According to Berlin, the Tel Anafa assemblage of *PSFW A* consisted primarily of personal and table vessels, such as: bowls, table amphorae, jugs, juglets, amphoriskoi, unguentaria, lagynoi, ointment vessels, lids, funnels, oil lamps and storage vessels [Fig. 4]. In the hinterland of Tyre, amphorae known as *Phoenician baggy jars*

Fig. 4. Hellenistic Phoenician Semi-Fine Ware A vessels from Tel Anafa (After Berlin 1997) and Beirut (After Reynolds 2005a): 1 – unguentarium (After Berlin 1997: Pl. 14:PW99); 2 – amphoriskos (After Berlin 1997: Pl. 11:PW75); 3 – miniature vessel (After Berlin 1997: Pl. 15:PW123); 4 – lid/saucer(?) (After Berlin 1997: Pl. 19:PW168); 5 – jug (After Berlin 1997: Pl. 8:PW38); 6 – lagynos (After Berlin 1997: Pl. 5:PW24); 7 – table amphora (After Berlin 1997: Pl. 1:PW1); 8 – amphora/jar (After Berlin 1997: Pl. 57:PW483); 9 – amphora (After Reynolds 2005a: Pl. 12:85)

were also produced from *PSFW A* (see, for example, Regev 2004) [Fig. 4:8]. *PSFW A* properties made the fabric unsuitable for the production of kitchen vessels or those used for cooking purposes. Unguentaria and amphoriskoi aside, tableware of *PSFW A* was thin-walled, fired usually a light beige, pink, orange or buff color, containing characteristic inclusions of grey or red color, as well as angular grains of quartz (Berlin 1997: 77). The surfaces of some vessel forms and types, such as unguentaria, are coated with red or red-brown semi-slip. Most vessels lack decoration however.

PSFW A vessels are recorded at many sites in Israel and Lebanon, not only on the coast (Berlin 1997: 75–88). Nevertheless, a vast majority of the finds comes from the Phoenicia.⁷

The production of *PSFW A* vessels is dated on the basis of finds from three sites located in Israel: Tel Anafa, Shiqmona and Dor. The first vessels of this type are recorded in Tel Anafa in contexts dated to the mid-2nd century BC (Tel Anafa *Stratum Hell 1B*, 198–125 BC). Berlin's research has demonstrated a steady growth of *PSFW A* vessels between 125 and 75 BC (Tel Anafa *Stratum Hell 2A* to *Hell 2C*), followed by a decline in imports during the early Roman period (Tel Anafa *Stratum Rom 1B–C*, first half of the 1st century AD) (Berlin 1997: 10). At the Shiqmona site, tableware and baggy-shaped amphorae were found in a room

destroyed about 130 BC (Elgavish 1976: Figs 4:9–11, 5:14–16, 6:18). Similar vessel assemblages were discovered in contexts dated to the second half of the 2nd century BC at the site of Dor (Stern 1995: Figs 6:25.7–17, 6:28.9–12, 6:29.1–6, 6:38.8–9). Interestingly, the pottery finds from Tell Keisan were dated contextually to as early as the 3rd century BC (Młynarczyk 2001: 247–249).

To sum up, *PSFW A* vessels appeared at the sites mentioned here in contexts dated to the 3rd century BC, and increased in volume in the second half of the 2nd century BC. Sherds are present also in early Roman contexts, but are considered there as residual by Berlin, which is in line with observations made at Jiyeh/Porphyreion and Chhîm (author's personal observation).

Research by Dina Frangié on the *PSFW A* group from Beirut contributed further data, demonstrating that ceramics made of an identical or similar fabric were present in layers dated to a much earlier period than in Tel Anafa (Frangié 2009: 94, 96, 97, 99, 101–103). They include various types of figurines from contexts dated, in sector BEY 02/026, to the Persian period. Numerous sherds of characteristic Hellenistic *PSFW A* amphorae from Tyre were identified in sector BEY 006.

A group of Phoenician jars/amphorae, produced in Sarepta/Sarafand in the Persian period,⁸ was identified in Beirut

⁷ To the basic list of sites from Phoenicia (Berlin 1997: 9) one should add Sussita/Hippos and Sha'ar-Ha'Amakim from the territory of modern-day Israel (Młynarczyk 2000) and Porphyreion/Jiyeh and Chhîm from central Phoenicia (author's observation).

⁸ While the production of Phoenician amphorae in Sarepta exceeds the chronological scope of this paper, a look at this center may help to understand the long tradition of vessel production in this region (see also Anderson 1987; 1989; Khalifeh 1988; Pritchard 1975; 1978; 1988; Bettles 2003). The large number of sedimentary basins and kilns for firing pottery discovered at Sarepta (Anderson 1989: 197–199) suggests that the production zone could have covered 3000 m² in area and encompassed an estimated 100 workshops at least (Bettles 2003: 63). Production on a mass scale is borne out by the commonness of these products in the pottery assemblages from the studied Phoenician sites.

Persian period and presumably *PSFW A* was derived directly from this form.

PWW was fired to reach a dirty (smoke-stained) grey or greenish-white color. The clay was much more coarse-grained than *PSFW A* (Berlin and Frankel 2012: 41). Large amounts of fine grey and white inclusions are also easily observable in the clay. Vessels made in this fabric are thick-walled and usually left undecorated on the surface. The one exception in this regard are juglets, as they were painted red, the decoration encircling the upper parts of the vessel (Berlin 1997: PW 49–52).

PWW vessel sherds are a marginal group in the material from Tel Anafa (Berlin 1997: 10, Fig. 3). Four vessel forms were identified: juglets and table jugs, amphoriskoi, cylindrical ointment pots, and mortars. All the forms mentioned by Berlin, aside from the mortars, were later encountered in the *PSFW A* pottery assemblage.

Petrographic examination identified the inclusions as crushed shell and angular quartz grains. The composition of the inclusions revealed the tested pottery to be identical in structure with true *PSFW A* vessels. However, the NAA analysis did not confirm similarities in the chemical composition between the two groups.

Berlin placed the production of vessels from the *PWW* group in the Tyre hinterland (Berlin 1997: 10–11). Distribution is limited to Phoenicia and its close surroundings (Elayi 1982: Figs 2, 87). However, according to Frangié (2009: 106–108), pottery of this kind was produced in the Sidon region, where in the Persian period a mortar type, referred to as *Persian bowls* or *Levantine mortaria*,⁹ was made with *PWW* (Blakely and Bennett 1989: 45–65). This group of products is also very common in the material from Jiyeh/Porphyreion (personal observation) and Tell Keisan (Młynarczyk 2001: 240–244).

POTTERY PRODUCTION IN CENTRAL PHOENICIA

SIDON

No remains of Hellenistic or Roman pottery workshops have been found in Sidon despite more than a hundred years of excavations. However, three different types of amphorae, presumably produced in Sidon between the Persian and late Hellenistic periods, were identified in the assemblage of pottery from the Beirut excavations. They were distinguished by typological form analyses and macroscopic examination of the fabric. All three types are referred to in the literature as “amphorae from Sidon”, hence their

numbering: “Sidon 1” for amphorae from the Persian period [Fig. 6:1], “Sidon 2” for Hellenistic containers [Fig. 6:2] and “Sidon 3” for amphorae in the Greco-Italic style [Fig. 6:3].

All three types were produced from the same kind of calcareous and sandy clay (Reynolds 2000: 387, Figs 3–6). The *Sandy light red-yellow ware* is a pale red-yellow or buff in color with numerous inclusions visible to the naked eye, identified as quartz, limestone, probably iron and small amounts of shell fragments.

⁹ This is a very common vessel form within the ceramic material from the residential quarter (sector D) in Jiyeh/Porphyreion in contexts dated to the Persian period (Wicenciak 2012: 449, Fig. 1:7,14,15; 2016).

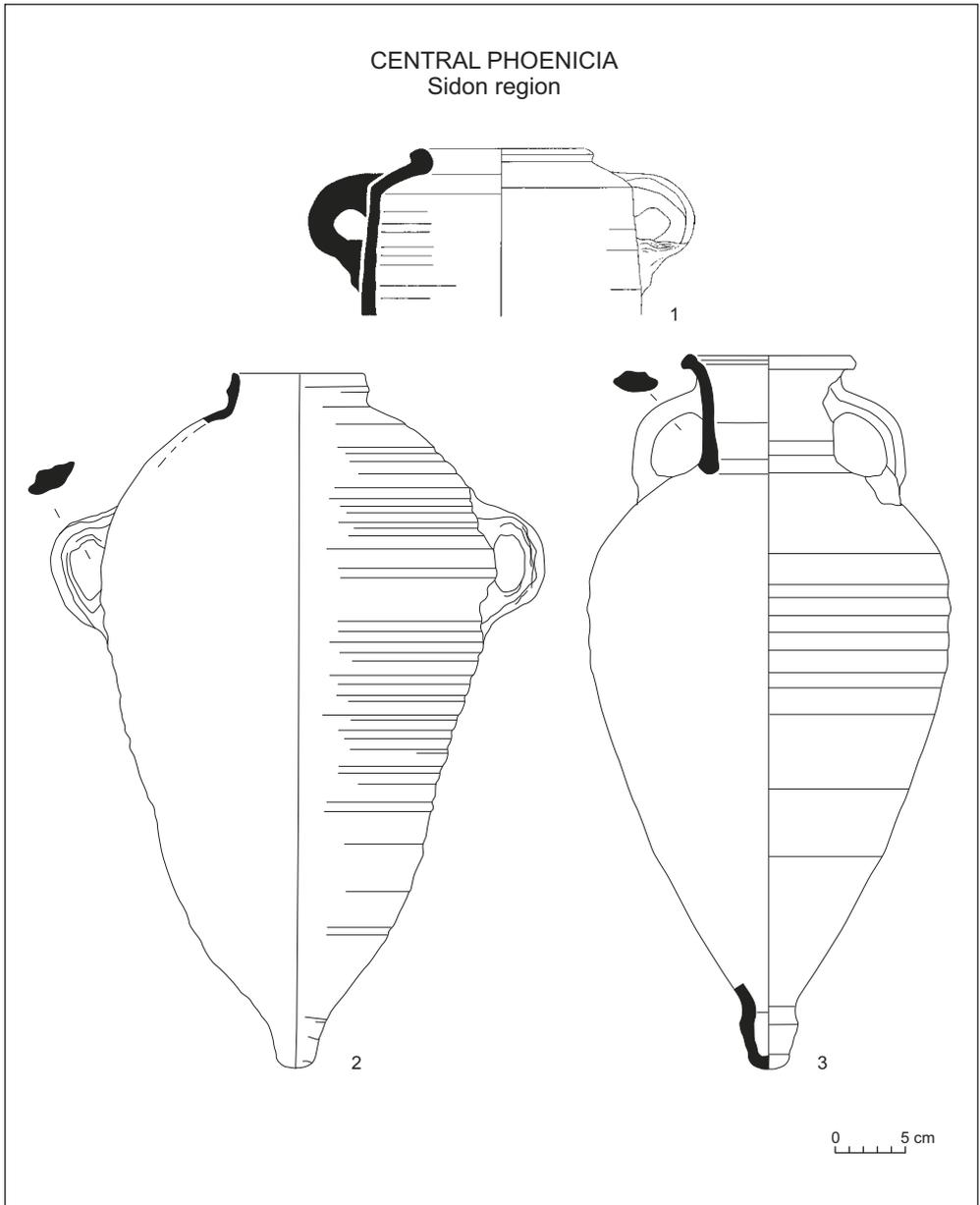


Fig. 6. Amphorae produced in Sidon from the Persian to the late Hellenistic periods: 1 – Sidon 1, Persian period, Beirut, sector BEY 006 (After Reynolds 2005a: Pl. 12: 86); 2 – Sidon 2, Hellenistic period, Museum AUB (After Ala Eddine 2003: Fig. 33); 3 – Sidon 3, Late Hellenistic period, Museum AUB (After Reynolds 2008: Fig. 1a)

The Sidon 1 amphorae [*Fig. 6:1*], dated to the Persian period, typify a Phoenician tradition (production from Sarepta). These vessels, also called torpedo jars (Jabak-Hteit 2003), are distinguished by the absence of necks, thickened rims, carinated shoulders, cylindrical bodies and two small twisted loop handles in profile, attached just below the carination between the shoulder and the body.

The Hellenistic Sidon 2 type [*Fig. 6:2*] features elements typical of Phoenician amphorae, that is, no neck or a very short one and loop handles attached to the upper part of the body, and of Hellenistic ones, that is, a more or less pointed hollow toe (Ala Eddine 2003: 109; Aubert 2007: 8–10, Fig. 4).

Amphorae paralleling the Sidon 2 type were produced in Berytus from the end of the 3rd to the beginning of the 1st century BC. Another workshop making this type of amphora has been confirmed by archaeometric studies in Jiyeh/Porphyreion (see below). Amphorae of the said type from Beirut were made of two different fabrics. The first, probably Sidonian, identified in the material from the BEY 002 and BEY 006 sites, is light yellow or yellow-beige with quartz and limestone inclusions (Reynolds 2000: 387; Ala Eddine 2003: 109). Amphorae of identical form but in the Jiyeh fabric (*LHJW*, see below, page 648) were also identified at Jiyeh/Porphyreion (Wicenciak 2016: 43–44, 101–103).

The second type of fabric, distinguished in the material from BEY 002, oscillates from light to dark orange (Aubert 2007: 9; Lemaître 2007: 278, Fig. 8.1–5). This fabric is a typical Beirut fabric and is very similar to the fabric characteristic of the late Hellenistic production from Porphyreion.

It should be emphasized, however, that the amphorae from Beirut that were made of a local fabric were often stamped on the handles with Greek or Semitic letters (Aubert 2004: 37–38; 2007: Figs 5–8; Ala Eddine 2003: 111–114, Figs 1–10; Reynolds 1999: 387). A few amphora sherds have been discovered with the name ‘Berytus’ on the stamps (Aubert 2007: 9). According to Aubert, the wine production that Pliny the Elder wrote about (*HN* 14.7, 74; 15.17 66) was supervised by local authorities, who also commissioned the production of stamped vessels (Wicenciak 2012: 450).

One should add that type Sidon 2 amphorae found in Beirut, made of a Sidonian fabric, were also stamped on the handles with Greek letters (Ala Eddine 2003: 111–114).

Ala Eddine found no Sidon 2 amphorae in the pottery assemblages he studied from Byblos, Tel Arqa, Tyre and Sarepta in Lebanon and Paphos on Cyprus. He suggested two sites as potential places of production of this vessel type: Khalde/Heldua and Jiyeh/Porphyreion (Ala Eddine 2003: 111). Reynolds in turn wanted to see Sidon as the place of production of Sidon 2 amphorae (Reynolds 2000: 387, Figs 5–6). So far, however, no chemical or petrographic analyses have been conducted to verify these hypotheses (Aubert 2007: 9).

Information about the Sidon 3 type of amphora [*Fig. 6:3*] is even more scarce than in the case of the two previous types. According to Reynolds, these amphorae, dated to the period from the end of the 3rd to the second half of the 2nd century BC (Reynolds 2014: 57, Fig. 2:g), were produced south of Beirut. He published an amphora that he believed was produced in Sidon or its hinterland, but did not give any

information about its findspot (Reynolds 2008: Fig. 1a; 2014: 57, Fig. 2:g; Reynolds et al. 2010: Fig. 5a). He also stated that the type was a source of inspiration for Beirut amphorae of the Beirut 1a type (Reynolds et al. 2010: 74–75; Reynolds 2008: 65–66, Fig. 1a; Ala Eddine 2005: 188–189, Fig. 4) (see below, page 653) and type 2 from Jiyeh (Wicenciak 2014: 104, Fig. 4: 1, 2; 2016: 44–45).

The Sidonian amphora types constitute the most frequently discovered amphora types in Persian and Hellenistic contexts in Beirut (Reynolds 2005a: 570, Fig. 86–88). According to Reynolds, Sidon 2 and Sidon 3 types gradually disappeared around 175/150 BC. The absence of finds from contexts post-dating 150 BC may be due to the devastation of layers from this period during the reconstruction of the city in the reign of Augustus (Ala Eddine 2003: 109, Note 1). One should add that one of the best-preserved specimens of Sidon 2 amphorae, originating from the Beirut excavations, was dated by Ala Eddine to about 135 to 100 BC (Ala Eddine 2003: 116–117, Fig. 33). Moreover, the Hellenistic Sidon 2 and Sidon 3 types were not encountered at any sites other than Beirut, Jiyeh and Chhîm (author's personal observation), which indicates a limited distribution or else few publications on the subject.

To sum up the current state of research, it is likely that a number of types of amphorae was produced in Sidon and/or its hinterland (the Sidon *chora*) during the Persian and Hellenistic periods. There is nothing to indicate, however, that pottery workshops also functioned in Sidon in the Roman period or that kitchen vessels or tableware were produced there during the Hellenistic and Roman

periods. Nevertheless, vessel forms such as unguentaria, small plates and oil lamps, made of a fabric visually very similar to Sidonian fabric, are very common in the Hellenistic material from sites located in northern Palestine, as well as in southern and central Phoenicia.

PORPHYREON

Pottery production in ancient Porphyreon was attested for the first time in the course of a salvage excavation conducted in 2004 and 2005 at a site in Jiyeh (Waliszewski et al. 2007; 2008; Wicenciak et al. 2004; Wicenciak 2005; 2014; 2016; Domzalski et al. 2005; Frangié and Wicenciak 2012).

Production wasters and, much less frequently, intact vessels were found in two sectors. One was B with its attested late Hellenistic and early Roman pottery, situated below a necropolis from the Roman–Byzantine period (sector A), about 200 m north of the residential quarter (sector D). The other was sector C, where late Roman and Byzantine pottery production wasters were discovered; it was situated between sectors D and A.

Research identified four production phases, based on parallels, primarily for the pottery material from Beirut, supported by a few imported tableware sherds (Domzalski et al. 2005). The first phase was dated to the late Hellenistic period, from the mid-2nd century to the first half of the 1st century BC. The second phase fell during the early Roman period, from the mid-1st century BC to the beginning of the 2nd century AD. The third and fourth phases, about which relatively little is known, were dated from the 3rd to the end of the 4th century AD and from the mid-6th to the 7th century AD respectively. The data on the operation of pottery

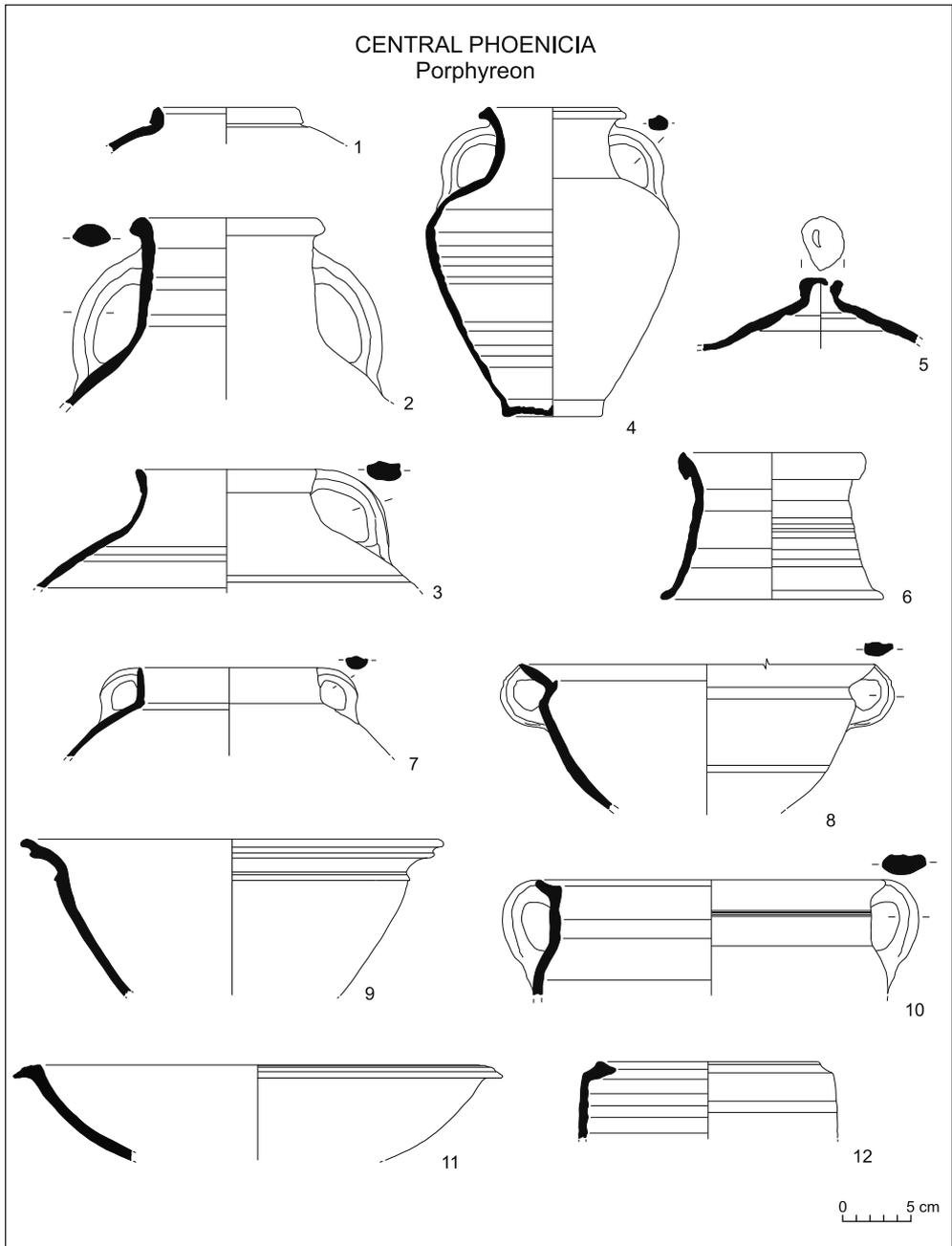


Fig. 7. Amphorae and kitchen ware produced in Porphyreon in the late Hellenistic period
(Drawing U. Wicenciak)

LEBANON

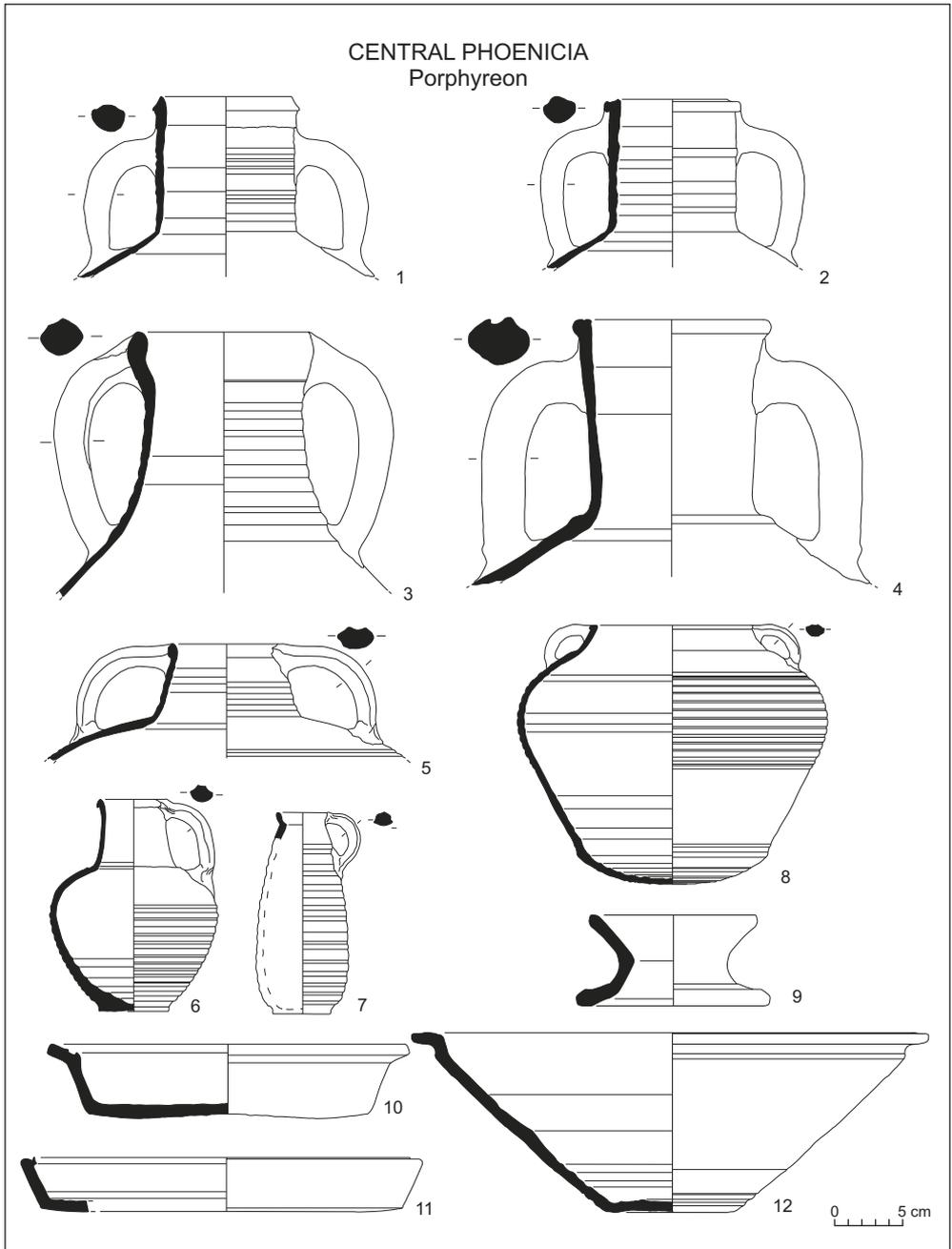


Fig. 8. Amphorae and kitchen ware produced in Porphyreon in the early Roman period
(Drawing U. Wicenciak)

workshops in Porphyreon in the late Roman and Byzantine periods is limited owing to the restricted area of the rescue excavations, amounting to a stratigraphic trench 84 m long running along an embankment in sector C (Waliszewski et al. 2008: 67–79).

Macroscopic examination and PIXE analyses of vessel sherds from all four production phases in Porphyreon led to defining a fabric type characteristic of Porphyreon (Roumié et al. 2010). Referred to as *Jiyeh Fabric*, it constituted the basis of each of the four distinguished ware types specific to particular production phases.

Jiyeh Fabric, which contains inclusions of limestone grains and round or ovoid quartz grains, is dense and well fired (Roumié et al. 2010). It is orange-red or brown-red in color (10 R 5/8, 5YR 7/6, 2.5 YR 4/8, 10R 4/8). The core has a narrow grey or dark grey streak. Visually, it is very similar to the Beirut fabric. Correspondingly to the production phases, the fabric has been designated as *Late Hellenistic*, *Early Roman*, *Late Roman* and *Byzantine* (Wicenciak 2016: 42, 76).

Late Hellenistic Jiyeh Ware

LHJW is red or red-orange in color (10R 5/8 or 5YR 7/6) with very narrow black or grey core; it is sandy and contains inclusions in the form of medium- or small-sized limestone grains.

Two categories, amphorae and kitchen vessels, are present in this group. The enormous diversity of forms produced during this period should be noted. Some of these forms are derived from local Phoenician tradition; most of them, however, imitate typical Hellenistic vessel forms [*Fig. 7*] (Wicenciak 2014: 104–113; 2016: 41–74).

Amphora sherds are less numerous than the kitchen ware. The *LHJW* amphorae were produced in two styles: Phoenician and Greek. The Phoenician style is represented by the Sidon 2 amphorae discussed above [*Fig. 6:2*]. Four other types are in the Greek style and have no direct parallels. Their shape hints at Aegean influences.

The kitchen vessel category has been divided into three groups based on the functionality of forms: closed vessels for liquids, cooking vessels and utensils, and finally, miscellaneous kitchen vessels, serving broadly-understood culinary purposes.

Early Roman Jiyeh Ware

ERJW is a red clay (2.5YR 4/8 or 10R 4/8) with a narrow black or grey core. The clay is much less sandy and more compact compared to *LHJW*. The surface is smooth, covered with kind of patina. The walls of most of the vessel types are ribbed.

The vessel assemblage, comprising sherds and over a dozen fully intact specimens (found in the fill of a well in sector B4, see Wicenciak 2014: 113–121), has been divided into the same categories and groups as the late Hellenistic assemblage. Typological continuity has also been retained for each of the forms [*Fig. 8*]. The standardization of the vessel repertoire merits note. There is usually one type of each particular form, while in the case of four of the forms from the kitchen ware category, the same vessel types were produced earlier.

Five types more compared to *LHJW* were distinguished in the amphora category. Among these, the dominant group is the type 6/Beirut 2 amphorae, which was also produced in Berytus and in Khalde/Heldua.

Late Roman Jiyeh Ware

LRJW vessels have a brown-red surface and black core, or else dark beige with lighter beige core. The fabric contains a large quantity of fine or middle-sized quartz grains and single, unidentified, small grains of a brown-red color. Large- or middle-sized multi-angular white grains, probably limestone, have been noted sporadically, in the form of blemishes on the vessel surface. The clay is more porous than in the case of the wares discussed above. The surface is uneven and covered with a similar kind of patina as in the case of vessels from the *ERJW* group.

This ware was used for the production of carrot-bodied amphorae of AM 14 type [Fig. 9], known to have been produced in the Akko/Ptolemais region [see Fig. 2:1]. The AM 14 made in Porphyreon features a few variants of rim shape not matched elsewhere, hence its value as a potential chronological marker.

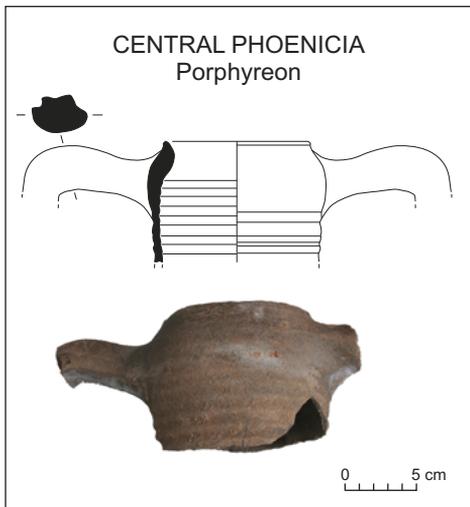


Fig. 9. Amphora AM 14 produced in late Roman Porphyreon (Drawing U. Wicenciak)

The only workshop producing AM 14 amphorae, located at Horbat Uza in Israel (see above, page 632), was dated there to the period from the beginning of the 4th to the end of the 5th century AD (Getzov et al. 2009: 23, 48–49, Fig. 2.36:8, 9). The rims of AM 14 amphorae from Porphyreon correspond most closely to the RB.A.1b type from Horbat Uza, present in large quantities in a layer dated to the twenty years between AD 310 and AD 330. Consequently, this particular production may be dated on the grounds of the Beirut and Horbat Uza finds, to a period from the beginning of the 3rd to the end of the 4th century AD.

Byzantine Jiyeh Ware

BJW is visually very similar to *LHJW*, in terms of both the characteristic orange-red color and its inclusions. It is much more coarse-grained than *ERJW* and *LRJW* products. Like *LHJW*, it contains fine limestone grains and large quantities of middle-sized angular quartz grains, giving a characteristic shine. Individual large red (iron oxide?) grains, irregular in shape, are also present.

A small version of the Agora M334 type of amphorae, described above as a form typical of the area around Akko/Ptolemais, was produced in *BJW* in Porphyreon [Fig. 10]. It is also the only place where the production of this small amphora has been evidenced.

This amphora type was distinguished by Reynolds, based on finds from Beirut and from a necropolis located near Chhîm (Ortali-Tarazi and Stuart 2004: 128–130). The amphora forms found at these sites: variant c at Chhîm and variants e and g at Beirut (Ortali-Tarazi and Stuart 2004: Pl. 4:c, e, g), as well as

the fabric correspond perfectly to *BJW*. The variant from Chhîm, found in a grave pit, was discovered together with LRA 1 amphora sherds dated to the 6th century AD. Such a dating for the small version of Agora M334 is supported by the results of excavations in Beirut, where similar specimens were found in contexts dated to the mid-6th century AD (Ortali-Tarazi

and Stuart 2004: 128, Pl. 4:f; Reynolds 2005a: Fig. 119). According to Reynolds, this dating can be confirmed by finds from Carthage (Riley 1981: 108, Fig. 8.65) and Istanbul (Reynolds 2005a: Fig. 121).

However, despite a considerable similarity of the fabric of amphorae from the Chhîm necropolis and from Beirut to the fabric of vessels produced in the Akko/Ptolemais region or in Caesarea, Reynolds argues that they are not imports from southern Phoenicia. His view derives from the fact that the form cannot be found in published Byzantine assemblages from either Caesarea or Beirut (Reynolds 2005a: 573).

So far, the Jiyeh material has not produced any late antique contexts for the two amphora forms discussed here, hence their dating has to depend on chronological evidence from other sites. The sherds from Chhîm and perhaps also those from Beirut could represent the production of Porphyreon workshops, but this requires confirmation through chemical analyses.

Archaeometric analyses of amphorae produced in Porphyreon

The chemical composition of the Jiyeh fabric was tested by the PIXE method on 40 vessel sherds and production wasters representing four amphora types definitely produced in Porphyreon (Roumié et al. 2004; 2010). The late Hellenistic type was a Jiyeh type 2 amphora (Roumié et al. 2010: Fig. 1; Wicenciak 2016: 44–45), sherds of which predominate in the assemblage from this period. Sherds from a type 6/Beirut 2 amphora were chosen for the second production phase. The other two selected types were AM 14 and the small version of Agora M334.

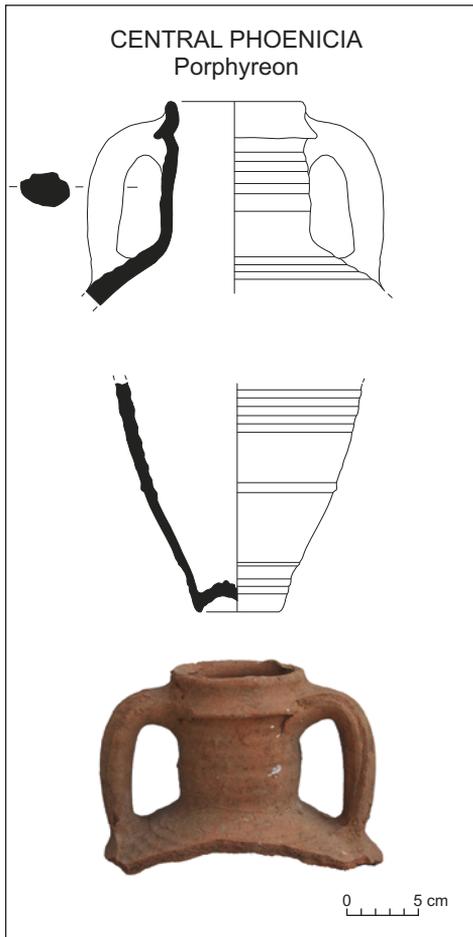


Fig. 10. Amphora Agora M334 produced in Byzantine Porphyreon (Drawing U. Wicenciak)

The analysis led to three main groups being distinguished based on the content of trace elements in the fabric (see *Fig. 15*):

1. Group 1: low concentration of Ca, Ni, Zn, Sr elements, very high concentration of the remaining elements.
Early Roman type 6/Beirut 2 amphora sherds (10 samples).
2. Group 2: high concentration of Ca, Ni, Sr, trace presence of remaining elements.
Small version of Agora M334 from the Byzantine period (7 sherds) and one late Hellenistic Sidon type 2 amphora sherd.
3. Group 3: chemical composition very similar to the two groups above, but with different concentration of Ca and K.
Late Hellenistic Jiyeh type 2 amphorae (9 sherds), Agora M334 (3 sherds) and AM 14 amphora (4 sherds).

Analyses of chemical composition of the four basic amphora types for the pottery production in Porphyreon have confirmed assumptions concerning their local origin.

In addition, their results have attested that the established division into four wares — introduced based on macroscopic observations — was fully justified.

They have also shown that the similarities between the Late Hellenistic type 1 amphorae and the Byzantine type Agora M334 amphorae were not only visual.

HELDUA

Reynolds collected the data on the role of this settlement, situated about 12 km south of Beirut, as a pottery production center. The site was first excavated in the 1960s by Roger Saidah (Saidah 1966: 51; 1975; 1976), then by the American University of Beirut (AUB). Based on

the presence of production wasters in the studied assemblage, Reynolds was able to determine that Beirut amphorae of the Beirut 2 type were produced at Heldua during the early Roman period, and that Beirut 7 amphorae and kitchen vessels were made there around the 5th century AD (Reynolds 2005a: 569; Reynolds et al. 2010: 73). Amphorae and kitchen vessels were made of a fabric that was light orange in color and tempered with fine limestone inclusions. A characteristic feature of the vessels produced in Heldua, possible to observe only when handling the material, are the orange traces that it leaves on the fingers.

As described by Reynolds (“A bright orange fabric. Gritty, but with a slight soapy texture. Leaves traces of orange colour on your hands. Quartz and lime inclusions. Some oxide? Not distinctive in this respect but does stand out from standard Beirut products which have more quartz. The orangy quartz rich fabric recalls the products of Sidon (just to the south) but is distinguishable from Khalde Ware because Sidonian products have more (rounded) quartz” [Reynolds and Waksman 2012]), the Heldua fabric bears no similarity to the *Jiyeh Fabric*. Reynolds also noted the difference of this fabric from the fabric of type Beirut 2/Jiyeh type 6 amphorae from Berytus and Porphyreon, despite the overall morphological uniformity of these vessels from all three settlements (the amphora fabric and wares from Berytus and Porphyreon are practically impossible to differentiate, even by macroscopic and chemical analyses). Reynolds also observed the absence of amphorae identified as products from Khalde in material from Beirut (Reynolds et al. 2010: 75, Note 5).

BERYTUS

Excavations in Beirut, commenced in 1993 by the Lebanese Directorate General of Antiquities (DGA), have yielded extensive pottery material from 156 sectors concentrated in the central part of the city (BEY 001–156). Despite covering a huge area of about 15 ha (Sader 1997; Curvers and Stuart 2007), no Hellenistic remains of pottery workshops, such as kilns or at least pottery production wasters, were discovered in the course of 13 years of archaeological work.

It cannot be excluded that traces of the above were destroyed during the reconstruction of the city center, which took place toward the end of the 1st century BC, at the time of the arrival of Roman settlers (Marquis 2004). However, despite the lack of pottery workshops from the Hellenistic period, the analysis of the ceramic material from Beirut and macroscopic examination of the fabric used for its production leads to the conclusion that pottery workshops existed and operated in Berytus during the Hellenistic period, perhaps even in Persian times.

The operation of pottery workshops in Berytus in the Hellenistic period is confirmed by the fabric and by the results of macroscopic analyses of kitchen vessels, such as cooking pots, casseroles and stands, found in large quantities in sectors BEY 004, 125, 144 (D. Frangié, personal communication; Frangié-Joly 2014: 92) in layers dated to the turn of the 2nd and 1st centuries BC. Similar conclusions can be reached based on an analysis of Hellenistic braziers from sector BEY 004 (Masri 2005). According to Catherine Aubert and Paul Reynolds, Sidon 2 type amphorae with stamped handles were produced in

Berytus [see *Fig. 6:2*] in the Hellenistic period, around the 2nd century BC.

For the Roman period, remains of pottery workshops were discovered in sector BEY 015 (Kowatli et al. 2008). An artisanal quarter, which included workshops manufacturing glass vessels and glass, as well as metallurgical workshops, was also discovered.

Not all the workshops functioned at the same time. In this way, tanks used for the production of raw glass, dated to the mid-1st century AD, were substituted with time by four kilns for firing vessels. Numerous vessel sherds and production wasters were found in the context of the kilns. Pottery-making there is dated to the end of the 1st and beginning of the 2nd century AD (Reynolds et al. 2010: 71). Some researchers have attempted to narrow down this horizon, suggesting a time frame between AD 80 and AD 125 as plausible for this operation, based on the typology of amphorae and cooking pots, as well as on results of chemical tests (Roumié et al. 2004: 197). However, a few fragments of production wasters from amphorae dated to a slightly earlier period, from AD 50 to AD 75, were identified in the material from BEY 015. It is a pity that the BEY 015 assemblage is, like the Jiyeh one, unstratified and hence does not lend itself to dating the material from Jiyeh.

GEM 002 is the other sector situated in the center of Beirut, in which remains of pottery kilns were found (Reynolds et al. 2010: 71). Pottery from these contexts was dated to the mid-1st century AD preceding thus, in chronological terms, the beginning of production in the workshop from BEY 015 (Reynolds et al. 2010: 71). GEM 002 is situated about 100 m south of BEY 015 and encompasses a necropolis from the

Hellenistic period, located beyond the city borders of the time. Unfortunately, the pottery material from this site has not been published. Both workshops, BEY 015 and GEM 002, functioned for a rather short period, probably no longer than about 50 years, and in the case of BEY 015 probably even shorter.

The pottery from Beirut is the most appropriate, in chronological and typological terms, comparative material for the pottery produced in Porphyreon. The vessel collection from BEY 015 and GEM 002 is exceptional in terms of its quantity and the abundance of variants compared to assemblages known from other sectors in the Beirut city center; it is, however, more homogenous in terms of vessel forms and types than the production from Porphyreon [see *Figs 7, 8*].

Most of the vessels that are products of Berytus workshops were made from one kind of fabric, calcareous clay, which is typical of almost the entire Phoenician coast. This fabric was named *Classic Beirut clay* or *Beirut City fabric* by Reynolds (Reynolds 2005b).

The most common vessel types produced in the BEY 015 and GEM 002 workshops can be divided into four groups: 1) Beirut amphorae types 1 to 7; 2) Beirut *carrot-shaped* amphorae; 3) AM 72/1, Amphora 2A–D and Amphora 3; and 4) kitchen vessels.

Beirut type amphora

A typology of Beirut amphorae was proposed by Reynolds [*Fig. 11*] and then developed by Abdallah Ala Eddine (Ala Eddine 2005).¹⁰

It is presently accepted that the production of Beirut amphorae started as early as toward the end of the 2nd or at the beginning of the 1st century BC (the oldest type Beirut 1a, see below). It ended ultimately in the mid-7th century.

Beirut amphorae made for the most numerous group in all the studied sectors of the site, whereas they were seldom observed at other sites, both in Phoenicia and in other parts of the Mediterranean (Reynolds 1999: 63; 2000: 391; 2005a: 569) save for settlements producing certain Beirut amphora types: Heldua (types Beirut 2 and 7) and Porphyreon (type Beirut 2/Jiyeh type 6) (Wicenciak 2014; 2016). Reynolds uses the term “city amphora” to refer to the Beirut amphorae types 2 and 7, the production of which was closely linked to wine production (Pliny the Elder, *HN* 14.7, 74; 15.17, 66).

Beirut 1 amphora [*Fig. 11:1*]

The four subtypes of late Hellenistic amphorae included by Reynolds in this group are simultaneously the oldest examples of Beirut amphorae.

Amphorae of the Beirut 1a (Reynolds 2008: 64, 67, *Fig. 1a:b*)/Ala Eddine type 1 (Ala Eddine 2005: 188–189, *Fig. 4*) were produced of the Beirut fabric from the turn of the 2nd until the 1st century BC (Ala Eddine 2005: 188; Reynolds 2008: 64). According to Reynolds, the direct predecessor of Beirut 1a amphora was the Sidon 3 amphora [see *Fig. 6:3*]. These two forms differ mainly in base and rim shape, which in the Beirut amphora group was changed more or less every 25 years. Ala Eddine points to the likeness of Beirut

¹⁰ In 2008, Reynolds (2008: 64–68, *Fig. 1a–y*) published an updated version of the typology of Beirut amphorae that he had created a few years earlier, taking into account some of the amphorae types identified by Ala Eddine in the material from sector BEY 004.

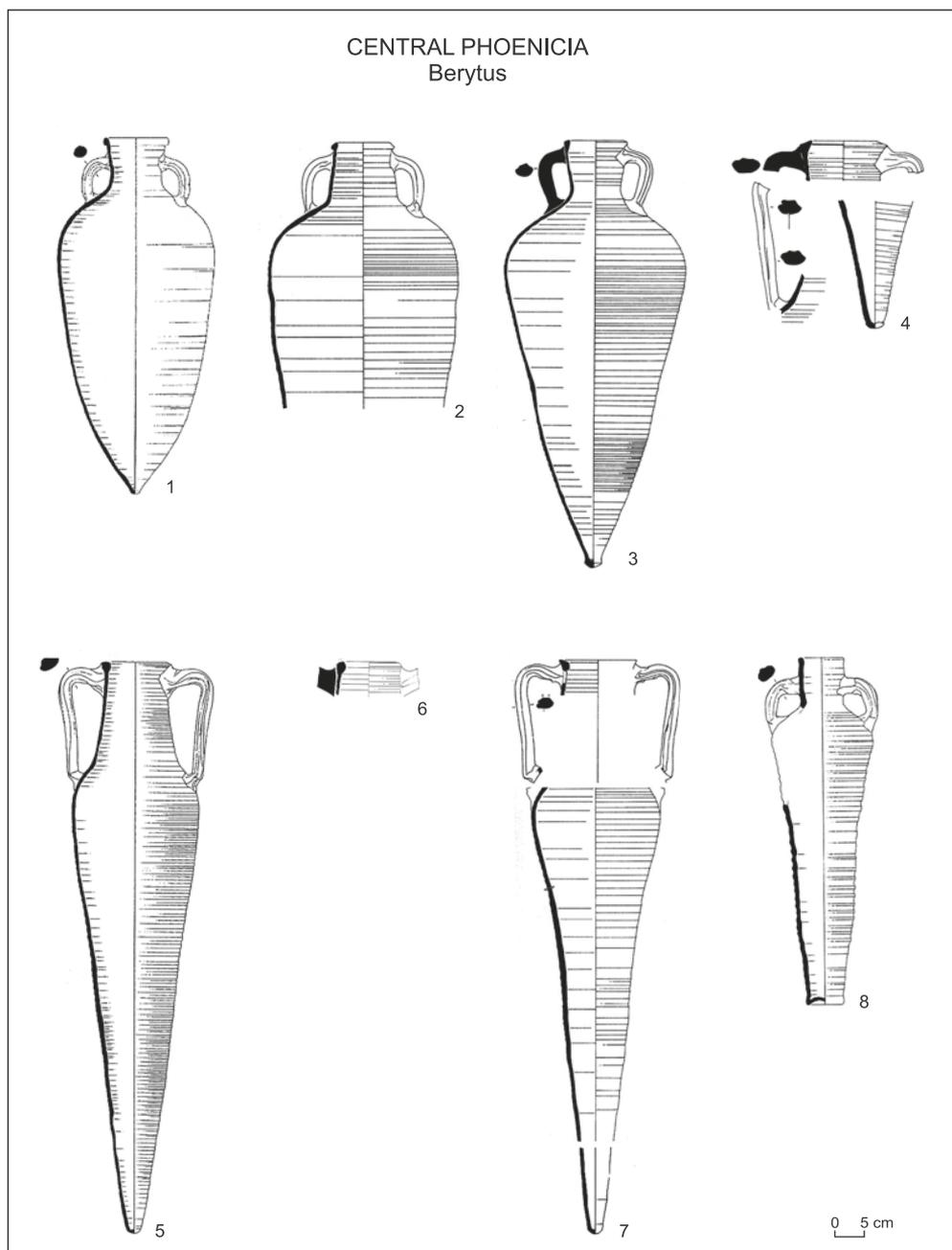


Fig. 11. *Typology of Beirut amphorae: types Beirut 1–8*
(After Reynolds et al. 2010: Fig. 5)

type 1a with vessels from Knidos, Rhodes or Kos.

The subtype Beirut 1b (Reynolds 1999: 59–60, Figs 220–223; 2000: 387, Fig. 2; 2003a: Figs 1–2)/Ala Eddine type 2 (Ala Eddine 2005: 189, Fig. 5) was produced in Beirut workshops in the second half of the 1st century BC. It had a thickened rim which differentiated it from the first subtype, but otherwise was largely similar to it in the shape of the body as well as of the handles, as emphasized by Ala Eddine.

The subtype Beirut 1c/Ala Eddine type 3 (Ala Eddine 2005: 189, Fig. 6) is dated more or less to the period from the end of the 1st century BC to the reign of Emperor Tiberius, which is evidenced by the co-presence of imported tableware of Eastern Sigillata A type (forms 4, 22B, 12, 24, 28, 29) (Ala Eddine 2005: 189). Subtype Beirut 1c has a protruding rim developing into a bulb-shaped neck. It differs from previous types in its elongated handles and conical button-shaped base.

Beirut 1d was the first type of Beirut amphora (type Beirut 1.1) to be distinguished by Reynolds (1999: 107; 2000: 387, Fig. 2:7). It was dated, based on the find context, to the beginning of the 1st century AD. Rim and base shapes are similar to that of subtype Beirut 1c (Reynolds 1999: 107, Fig. 221.283).

Interestingly, so far only the Beirut 1a amphora subtype has been recorded in the Jiyeh excavation.

Beirut 2 amphora [Fig. 11:2]

Beirut 2/Ala Eddine types 4 and 4a (Ala Eddine 2005: 190–191, Figs 7, 9) were produced from the first half of the 1st century AD until the beginning of the 2nd century AD (Reynolds 1999: 50, Figs 224–227; 2000: 387–388, Fig. 3; 2003a:

120, Fig. 3a–c; Reynolds et al. 2010: 73, 75, 82, Fig. 6.1–3).

It was a significantly different amphora in terms of shape, being thin-walled with a short cylindrical neck, a folded-band triangular rim, tapered body and knob base (Reynolds 1999: 59). The maximum height was probably about 70 cm (Ala Eddine 2005: Fig. 7, complete vessels from Saida/Sidon). The vessel had handles, oval in section, centrally located flat bands and two grooves to both its sides (Reynolds et al. 2010: 75). This shape of handle, known as the Beirut-type handle, is typical of all Beirut products, both the other amphora types and the kitchen vessels. It was also characteristic of the early Roman pottery production from Porphyreon.

The appearance of a new amphora in the Beirut repertoire in the early Roman period may reflect political and economic changes in the Levant upon the arrival of the Romans (Frangié-Joly 2014: 93). The stamped Latin inscription “BER(ytus) COL(onia)” on a few Beirut 2 shoulder sherds (Saghieh 1996: 50, Fig. 17; Reynolds 1999: 60; 2003a: 120, Fig. 3c; Ala Eddine 2005: 190, Fig. 8) makes this particular type stand out as the practice of stamping amphorae, especially with Latin inscriptions, was rare in this period (Hayes 2000: 285–286).

Reynolds has suggested that stamping amphorae could signify top-down supervision of their production and, in his opinion, the recipients of these vessels were not private individuals (Reynolds 2003a: 120). Reynolds also suggested the reign of Augustus as the beginning of the production of Beirut 2 amphorae, earlier than assumed based on the remains from sector GEM 002. However, it should be emphasized that the stamping of Beirut

amphorae was not a common practice. Only a few such sherds were found during the excavations (three from BEY 006 and three from BEY 004, Reynolds 1999: 60 and Saghih 1996: 50, respectively).

According to Reynolds, Beirut 2 amphorae may have been used for storing and transporting wine, which is attested by dark stains on the inner sides of their rims and necks (Reynolds 1999: 60–61, 107, Fig. 224). He cites a Byzantine Agora M334 amphorae bearing similar stains and having been used most certainly for the transportation of wine produced in the Akko/Ptolemais region (Reynolds 2005a: 569). Chemical analyses would be helpful in establishing the composition of substances used to cover the internal surface of these vessels.

Beirut 2 (type) amphorae from the Beirut excavation have been found in the form of a number of different wares. This fact in itself allows for the supposition that they were produced in different workshops. Two workshops where they were undoubtedly produced are the ateliers discovered in sectors BEY 015 and GEM 002 in Beirut. Another production site, apart from Jiyeh/Porphyreion, is the settlement of Khalde/Heldua (Reynolds et al. 2010: 73). So far, no stamped examples of the Beirut 2 amphorae produced in Heldua and Porphyreion have been found.

This type is sporadic at best on Lebanese sites, possibly indicating a strictly local (or provincial) production; in this sense, they would have been city amphorae. They have been identified, however, in low numbers, at sites in the

eastern part of the Mediterranean Basin, among others, in Cyprus. A shoulder sherd found in Paphos bore a partly preserved 'ER' stamp (Hayes 1991: Fig. 14; a rim sherd with partly preserved handle, Fig. LXIV: 78; Megaw and Hayes 2003: 465, Figs 64, 85). One sherd of the upper part of such an amphora comes from the Ancient Agora of Athens (Hayes 2000: 290, Fig. 13). They have been encountered also in Egypt, at the site of Marina el-Alamein site (personal observation) and in Alexandria, at Kom el-Dikka (G. Majcherek, personal communication). Sherds of Beirut 2 amphorae have been identified at Berenike/Benghazi in Libya (Riley 1979: Fig. 93: 367, 369, 372). Based on the publication of pottery material from Tel Anafa, it can be assumed that one of the vessels published there is also a Beirut 2 amphora sherd, classified by Berlin as an unidentified form (Berlin 1997: Pl. 61:PW 501).

Beirut 3 amphora [Fig. 11:3]

The Beirut 3 amphora group can be divided into three subtypes, of which one has two variants, distinguished by Reynolds on the grounds of differences in rim shape. Their production is dated to the period between the end of the 1st and the mid-2nd century AD.

The Beirut 3.1a subtype¹¹ is dated to the end of the 1st century AD. Influences of the Beirut 1c amphorae can be observed in carrot-shaped body ending in a knob base of the Beirut 3.1a subtype, while the rim and the shape of small handles resemble those of the Beirut 2 amphorae (Reynolds 1999: 59; 2000: Figs 4, 5.16–18).

¹¹ Ala Eddine's type 6 differs from subtype Beirut 3.1a in nothing but the longer neck and the appropriately longer handles (Ala Eddine 2005: Fig. 11).

Variant Beirut 3.1b and subtypes Beirut 3.2, and Beirut 3.3 are all dated from AD 100 to AD 150. Based on the differences in rim shape, Reynolds claims that these subtypes were not contemporaneous, but rather that they were subsequent forms introduced in succession every 25 years.

A common feature of this group is a thickened triangular rim. The rim diameter of the Beirut 3.2 and Beirut 3.3 subtypes is larger compared to the earlier variants.

Beirut 3 amphorae were produced locally, which is confirmed by the type of fabric used in their making, and by the finds of production wasters in the BEY 015 workshop area (Reynolds et al. 2010: 75, Fig. 6.4–14). Generally, rim sherds of this vessel type are abundantly represented in this sector, while this type is also well evidenced in sector BEY 006 (Reynolds 1999: Figs 228–231).

This amphora type is also encountered outside the city. It has also been noted in the material from the residential sector in Jiyeh/Porphyreion (author's personal observation).

Outside Phoenicia, it has been identified in material from the Marina el-Alamein site located on the Egyptian coast, about 100 km west of Alexandria (Daszewski et al. 1990: 51, Fig. 12.12).

Beirut 4 amphora [Fig. 11:4]

The Beirut 4 type (Reynolds 1999: Figs 232–236; 2000: 388; 2003a: 121, Fig. 22e–i)/Ala Eddine type 7 amphora (Ala Eddine 2005: 193, Fig. 15) was produced from the end of the 2nd until the mid-3rd century AD. Reynolds noted differences of rim shape and distinguished on this basis four subtypes: Beirut 4a through 4d (Reynolds et al. 2010: Fig. 5, k–p). They

all are distinctly larger in size than the older types of Beirut amphorae presented above (Reynolds 2000: 388, Fig. 5.19–23). An intact specimen reached 114 cm in height (Ala Eddine 2005: 193). There are differences in neck lengths, while the handles are clearly longer than in the case of the AM 14 amphorae from southern Phoenicia. As compared to the earlier variants, the rim of the Beirut 4 type amphorae is more curved and everted outwards (Reynolds 1999: 61). Its base is conical, while the walls of the vessel part nearest to the base are straighter than in the case of the earlier Beirut amphorae. In terms of the form of the body, which is carrot-shaped, this amphora type shows similarities to the Beirut 1 and 3 types.

According to Ala Eddine and Reynolds this is a common amphora form, not only in Beirut but also at other sites in the Mediterranean Basin (Reynolds 2000: 388, 391; Ala Eddine 2005: 193).

Beirut 5 amphora [Fig. 11:5]

In the 4th through the 5th centuries AD, a new type of Beirut amphorae appeared as a result of the evolution of the earlier vessels of this type. The beginning of the production of Beirut 5 type is dated to the second half of the 4th century AD.

As compared to the early Roman Beirut amphorae, the Beirut 5/Ala Eddine type 10 (Ala Eddine 2005: 194–195, Fig. 21) amphora has a thinner rim and a rounded external protruding lip (Reynolds 1999: 61, Figs 237–245). The handles are equally massive as in the case of the older amphorae and likewise in the types described above they diverge outwardly in their upper sections.

Reynolds points their morphological similarity to the slightly earlier type Agora

M334 amphorae (see above, pages 632, 649). Agora M334 amphorae are one of the most frequently encountered imports in Beirut. Therefore, in my opinion, it cannot be excluded that their form was the source of inspiration for later similar Beirut amphorae of the Beirut 5 type.

Beirut 6 amphora [Fig. 11:6]

The Beirut 6 type of amphora, present in Reynold's first typology (Reynolds 1999: Figs 245, 246; 2000: Figs 32, 33) was excluded from his latest version, possibly because of ambiguities associated with its place of production.

It was produced from the mid-4th to the 5th century AD. Reynolds distinguishes two variants: 6.1 with a bulbiform rim with a groove and ribbing on the neck (Reynolds 1999: 61–62, Fig. 245) and 6.2 without the groove on the rim and the abruptly ascending handles (Reynolds 1999: 62, Fig. 246). Variant 6.1 was made of a sandy fabric, atypical for Beirut, of buff color.¹² It was very common in Beirut, in deposits dated to the 5th century AD, whereas variant 6.2 was present in contexts dated to the second half of the 4th century AD and was made from the Beirut fabric.

Beirut 7 amphora [Fig. 11:7]

The Beirut 7/Ala Eddine type 11 amphora (Ala Eddine 2005: 195, Fig. 22) was produced from the mid-5th to the mid-6th century AD (Reynolds 1999: 62; Reynolds et al. 2010: Fig. 5t; Ala Eddine 2005: 195). Their dating is based on the simultaneous presence of table ware of the sigillata type: Cypriot Red Slip (CRS

form 1) and Phocaean Late Roman C (LRC forms 1, 2, 3).

The shape of the Beirut 7 type amphora is very similar to that of Beirut 5, from which it differs only in the rounded rim truncated on its inner side (Reynolds 1999: Figs 247–248). The handles of Beirut 7 amphorae diverge further outwards than in the case of the Beirut 5 type.

The form was produced also in Heldua (see above, page 651).

Beirut 8 amphora [Fig. 11:8]

The Beirut 8 amphora is the last type to be discussed in this group. It is dated to the period from the second half of the 5th to the mid-7th century AD (Reynolds 1999: 62). Reynolds distinguished two subtypes, Beirut 8.1 and Beirut 8.2,¹³ which, as he emphasizes, clearly deviate from the remaining Beirut amphorae described above.

He also indicated two variants of the first subtype: Beirut 8.1a, present in contexts from the second half of the 5th century AD, and 8.1b in deposits dated to AD 551, the date of an earthquake that destroyed much of the city. The second subtype, Beirut 8.2, comes from layers dated to the mid-7th century AD.

Changes in the shape of the last Beirut amphora type consisted, firstly, of significant size reduction as compared to earlier types. Secondly, these amphorae differed in the shape of the handles and in terms of where these handles were attached. Handles connected the lower part of the vessel neck to the shoulders and ran along the radius of a circle, not an

¹² Reynolds draws attention to the fact that variants of the Beirut 4 type, dated to the 2nd–3rd century AD, were produced of a similar fabric (Reynolds 1999: 62).

¹³ The Beirut 8.2 subtype probably corresponds to Ala Eddine type 14 (Ala Eddine 2005: 196, Fig. 26).

ellipsis as in previous types. Thirdly, the shape of the base was modified, as for the first time in the case of Beirut amphorae it is flat or concave (Reynolds 1999: Figs 252–253; 2008: 67–68).

Reynolds draws attention to a similar phenomenon, that is, decrease in size and changes in the type of base, observed in the case of the evolution of the Byzantine type of the Agora M334 amphora (Reynolds 2008: 68).

The Beirut 8 type was made of two fabric types. The first is the Beirut fabric, the second is *CW 34* on a kaolin clay base, linked to workshops active probably in the southern part of the Beqaa Valley (see below, page 675).

Beirut carrot-shaped amphorae

The Beirut carrot-shaped/Ala Eddine type 5 (Ala Eddine 2005: 191, Fig. 10) amphora forms the second group for which production has been confirmed in the workshop operating at BEY 015 in Beirut¹⁴ (Carreras Monfort and Williams 2002) [Fig. 12]. It is also referred to as: Schöne-Mau XV/Camulodunum 189/August 44/Pompeii 15/Oberaden 85/Peacock and Williams Class 12 (Peacock and Williams 1986: 109–110; Hawkes and Hull 1947; Martin-Kilcher 1994; Mau and Zangemeister 1909).

It was a small amphora showing the influence of the Phoenician tradition from the Iron Age in its making. Reynolds draws attention to the hole-mouth rim typical of Phoenician vessels, the characteristic round handles attached to the shoulders and the carrot-shaped or conical body. He distinguished two basic groups: A and B.

Group A has thin walls with narrow ribbing on them. Due to the differences in the rim shape, which is either a flattened or grooved rim, group A is further subdivided into two variants: Carrot 1 (subgroup A.1) and Carrot 2 (subgroup A.2). Amphorae from group A are dated to the period from

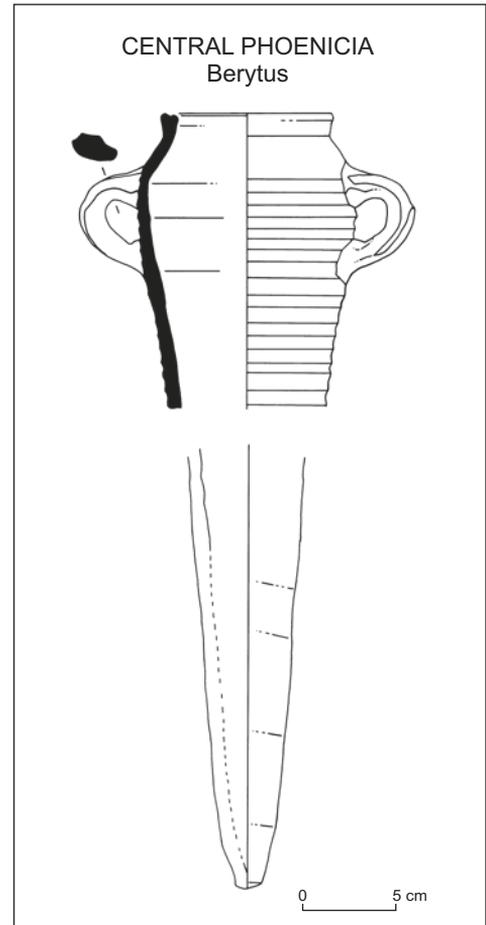


Fig. 12. Early Roman carrot-shaped amphora, sector BEY 015 (After Reynolds et al. 2010: Fig. 7)

¹⁴ Even though no production wasters of carrot-shaped amphorae could be found in the material from BEY 015, chemical analyses have shown they were produced of the Beirut fabric, similar to the one used for making vessels in this pottery workshop (Roumié et al. 2004).

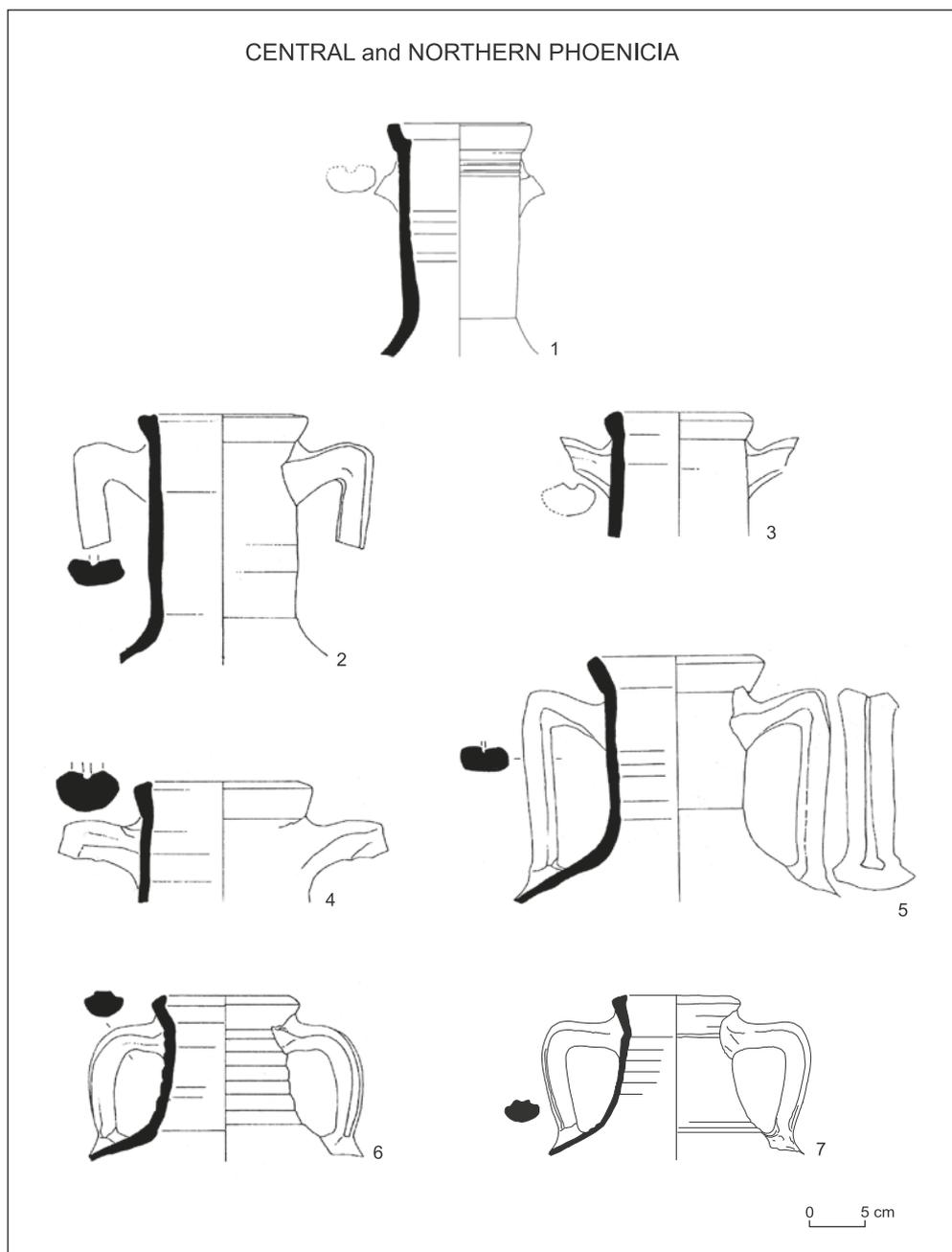


Fig. 13. Amphora types produced in Berytus and in northern Phoenicia in the Roman period
(After Reynolds et al. 2010: Fig. 15)

the 1st to the 2nd century AD. They were produced of the Beirut fabric.

Group B is dated to the 2nd and beginning of the 3rd century AD (Reynolds et al. 2010: 77, Figs 7–10). It differs from group A by having thicker walls and more convex ribbing. The clay from which these amphorae were made is much more calcareous, resulting in a greater tendency to flake on the surface. The vessels were fired to a pale green color.

This type of amphora was used to store dried fruit, primarily dates, prunes, figs, raisins and olives. It has also been suggested that it was used for the transportation of salted fish or *garum* fish sauce, and purple (Vipard 1995: 65–68; Carreras Monfort and Williams 2002; Reynolds 2005a: 571; 2008: 76).

Carrot-shaped amphorae are present in the area of present-day France, Italy, Germany and Britain (Roumié et al. 2004). It merits note that of all the Near Eastern imports found in the western part of the Roman Empire, these amphorae were the most frequent. In Beirut, however, they are found only occasionally. Barely over a dozen sherds have been found in sector BEY 006 in Beirut, in contexts dated to the end of the 1st century AD (Reynolds et al. 2010: 77); one sherd has been recorded from sector BEY 004 (Ala Eddine 2005: 191).

Type AM 72 amphora

Type AM 72 is a group of diverse amphora types [Fig. 13], which, as Reynolds points out, requires further extensive research regarding place of production, typological division and distribution. Reynolds distinguishes three main types: AM 72/1, 2A–D and 3 (Reynolds et al. 2010: Figs 13–14).

AM 72/1 amphorae are dated to the period from the turn of the 1st to the beginning of the 3rd century AD [Fig. 13:1]. They are frequent in all the sectors excavated in Beirut. The fabric leads Reynolds to conclude that they were produced both in Berytus (the workshops in sector BEY 015 among others) and in the northern part of Phoenicia.

This particular amphora is large and thick-walled, featuring a tall cylindrical neck which develops into wide shoulders (Reynolds 1999; 2003a; 2005a). Specimens of later date have more conical necks (Reynolds et al. 2010: 79). The handles, characteristic of the type, are furnished with a deep groove down the middle (much like the Jiyeh type 8 amphora; Wicenciak 2014: Fig. 19:4, 114) and so is the concaved rim, made for fitting a lid (Jiyeh type 7 amphora; Wicenciak 2014: Fig. 19:3, 114). The base was probably cylindrical or conical and ended with a knob.

Reynolds noted similarities to the Dressel 2–4/Koan wine amphorae, and to the Dressel 7–11 vessels used for *garum* fish sauce (Reynolds et al. 2010: 79).

The Amphora 2 type comprises variants 2A through 2D (Reynolds et al. 2010: Fig. 14.1–5) [Fig. 13:2–5]. They are alike primarily in handle shape, with a deep groove down the middle, but different in terms of rim shape.

According to Reynolds, the 2A–2B vessels, like AM 72/1, are imitations of type Dressel 2–4/Koan amphorae used for keeping wine (Peacock and Williams 1986: 105–106, Class 10; Reynolds et al. 2010: 79, Fig. 14.1–3).

Amphora 2C [Fig. 13:4] resembles AM 202 vessels [Fig. 16:1] produced in northern Phoenicia (Reynolds et al. 2010:

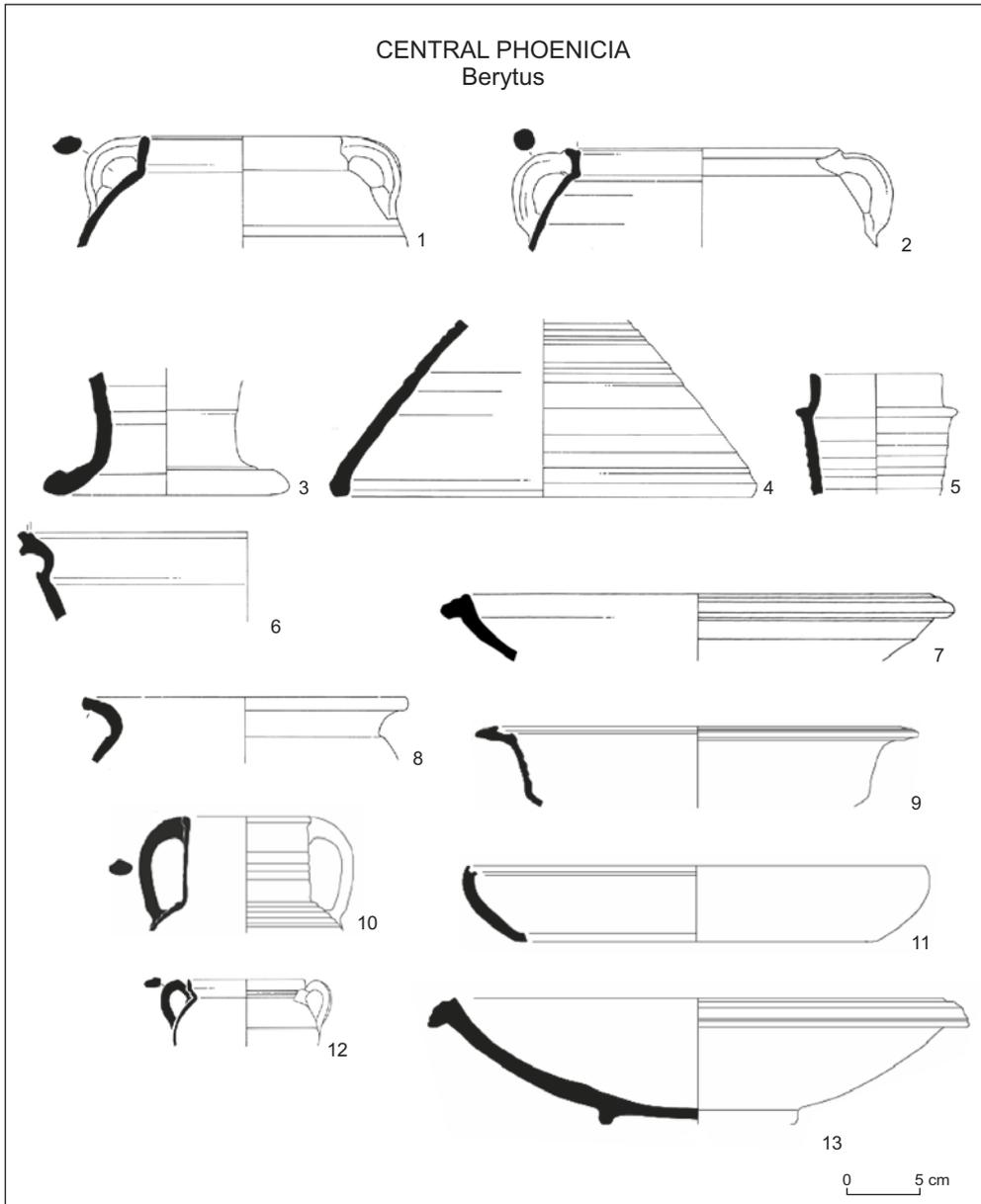


Fig. 14. Kitchen ware produced in Berytus in the early Roman period: 1, 2 – cooking pots; 3 – stand; 4 – lid; 5 – pipe; 6 – lekane; 7 – bowl; 8 – jar; 9 – casserole; 10 – table amphora; 11 – pan; 12 – thin-walled pot (1–8, 12: after Reynolds et al. 2010: Figs 18, 19; 9–11, 13: after Pellegrino 2007: Figs 8, 10, 11)

79, 87, Fig. 14.4; Reynolds 2005a: 568; see also below, page 668). They have triangular rims, strong wide handles and wide necks. It is not certain what they were used for, possibly for transportation of fruit, fish sauce or olive oil. The scant amount of finds of this vessel type in Beirut might suggest they were either meant for export or the timespan of their production was short, from the end of the 1st to the mid-2nd century AD (Reynolds et al. 2010: 79).

In shape, Amphora 2D is similar (Reynolds et al. 2010: 79, Fig. 14.5) to Dressel 7–11 vessels (Peacock and Williams 1986: 117–119, Class 16). It constituted a marginal percentage of the production from the Beirut workshop uncovered in sector BEY 015, much the same as Amphora 2C. Macroscopic examination of the fabric has shown a lot of similarity to the above-described fabric of AM 72/1 (Reynolds et al. 2010: 87).

The last type, Amphora 3, has a concave rim like Amphora 1 for fitting a lid or stopper (Reynolds et al. 2010: Fig. 14.6–8) [Fig. 13:6, 7]. However, it has a short neck, sharp ribbing and Beirut-type handle, all of which differentiate it from the other subtypes. None of the vessels have been preserved intact, but the preserved rims and necks indicate that these vessels were much smaller than Amphorae 1 and 2. Sherds representing the subtype have been encountered in Beirut only in sector BEY 015. One sherd was found in Chhîm (author's personal observation). According to Reynolds, this type, like Amphora 2C, showed a similarity to vessels produced in northern Phoenicia, and was identified also at the Yanouh site (see below, page 670).

Kitchen vessel production in Roman Berytus

Roman-age kitchen vessels of local make (Reynolds 2003b: 542–544; 2008: 72–75; Waksman et al. 2005; Reynolds and Waksman 2007) are next to the amphorae one of the most abundantly represented product categories from the workshops located in sector BEY 015 (Kowatli et al. 2008: 119, Pl. 3). The local kitchen ware from the 2nd century AD was first published by Reynolds (1999: 45–49). This was followed by a publication of the imported kitchen pottery from northern Palestine and the southern Beqaa Valley, dated to the period from the 2nd to the 7th century AD (Reynolds and Waksman 2007).

The following vessel forms have been distinguished in this assemblage: two types of closed cooking pots, lids, stands, *lekanai*, mortaria-shaped bowls, jars,¹⁵ and also water pipes (Reynolds et al. 2010: Fig. 19.1–13) [Fig. 14:1–8]. The first type of closed cooking pot has a high neck and a pointed or thickened rim [Fig. 14:1] (Reynolds et al. 2010: Fig. 18.1–8). The second type [Fig. 14:2] has a short neck and a flattened horizontal everted rim (Reynolds et al. 2010: Fig. 18.9–12). Dated to the second half of the 1st century AD, these forms are direct parallels for vessels produced in Porphyreon in early Roman times.

Vessel stands are notably abundant in this assemblage, predominated as it is by amphorae. Few of the vessels except for a small number of cooking pots could have been placed on stands. This questions the functionality of these stands [Fig. 14:3]. It is possible that they were used by potters

¹⁵ Vessel form present in the material from the first production phase (late Hellenistic) in Porphyreon, it has been classified as a krater (Wicenciak 2014: 110, Fig. 11:2).

for standing amphorae to dry during the production process.

Some local vessel forms and types distinguished in the assemblage are not attested among the finds from the workshop in sector BEY 015. They include the early Roman kitchen ware studied by Pellegrino (2007), excavated between 1993 and 1998 in sector BEY 002 (Aubert 1996: 60–84), which lies in the neighborhood of BEY 015. This assemblage contained no production wasters, but was clearly of Beirut origin as indicated by the macroscopic examination of the clay. It is dated to the period from the end of the 1st century BC to the beginning of the 2nd century AD. It consists of 4000 sherds and complete vessels, of which 91% are local products. In Pellegrino's view, these products are identical with vessels made in Berytus in the Hellenistic period in terms of technology, fabric and firing. The following kitchen vessel forms from

this group were produced in Berytus: casseroles, pans of the *orlo-bifido* type, mortarium-shaped bowls, *lekanai*, kraters, jugs and table amphorae [Fig. 14:9–12].

Another local product are imitations of thin-walled table vessels (Hayes 1997: 67–71; 2000: 292) [Fig. 14:13–15]. These vessels from sector BEY 006 copied prototypes from northern Italy, imported to Berytus in the first half of the 1st century AD (D. Frangié, personal communication). Finds of production wasters of this pottery in sector GEM 002 confirm that in the mid-1st century AD it was imitated in workshops situated in this part of Beirut (Reynolds et al. 2010: 71).

Kitchen vessels continued to be produced in Berytus through the late Roman and Byzantine periods, but on a much smaller scale than earlier (Waksman et al. 2005: Fig. 4; Reynolds and Waksman 2007: Fig. 3). This conclusion is based

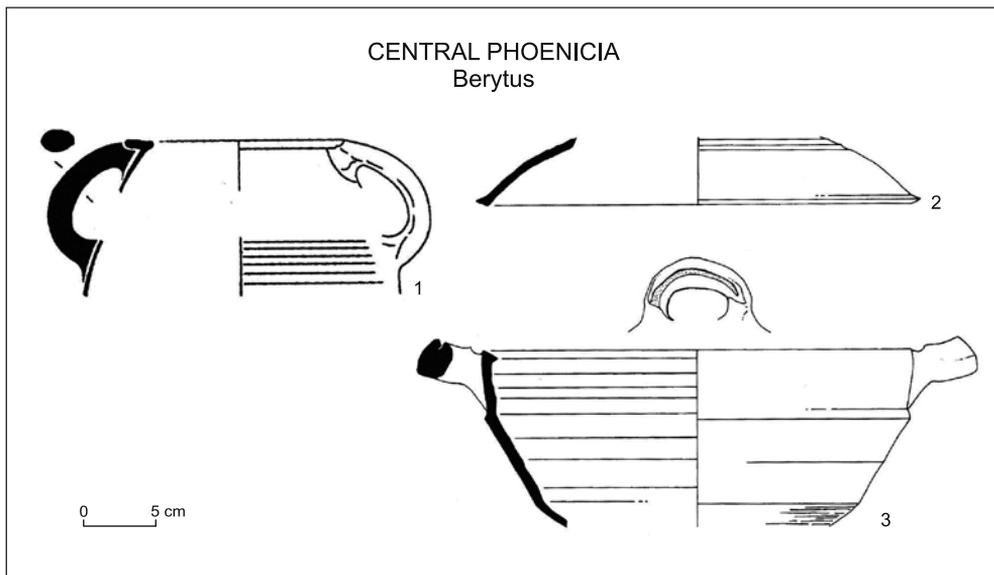


Fig. 15. Kitchen ware produced in Berytus in the late Roman period: 1 – cooking pot; 2 – lid; 3 – casserole (After Reynolds and Waksman 2007: Figs 14, 53, 54)

exclusively on vessel typology combined with macroscopic and chemical analyses, because so far no remains of late Roman or Byzantine workshops have been found. The fabric was a Beirut one, which when fired became dark red and light brown or buff in color. The core is dense or sandy, depending on the amounts of quartz in the clay (Reynolds and Waksman 2007: 61; Waksman et al. 2003; Waksman 2002: 71).

Many of the vessels dated to the period from the second half of the 2nd through the 6th century AD represent a different production referred to as *CW 34* ware made of kaolinic clay (see above, page 625) [see *Fig. 19*]. This clay is thought to come from the southern part of the Beqaa Valley (see below, page 675). However, it is unknown whether the vessels were made in Berytus of clay brought in from the Beqaa Valley or whether the vessels were in fact imported. Researchers have been prompted to such considerations by the type Beirut 8 amphorae, which were made of both Beirut fabric and *CW 34* ware, and which are dated to the mid-6th century AD.

Reynolds included the following forms among those produced in Berytus in the late Hellenistic and Byzantine periods: cooking pots, casseroles, lids, jugs and bowls (Reynolds 1999: 45–49; 2003b: 542; Reynolds and Waksman 2007: 62–65). These forms show a number of parallels with products from *Workshop X* (see above, page 634 and *Fig. 3*). Cooking pots were produced of both Beirut fabric [*Fig. 15:1*] and *CW 34* ware [see *Fig. 19:1,2*]. They are dated to the period from AD 100 to AD 480 (Waksman et al. 2005: 314). One type has everted horizontal flattened rims and handles linking the rim to the shoulders (Reynolds 1999: 47, Figs 150–154; 2003b: 542, *Fig. 5:3*; Reynolds

and Waksman 2007: Figs 11–17) [*Fig. 15:1*]. The second one features a straight neck, and rounded base and body, the handles similarly connecting the rim to the shoulders (Reynolds and Waksman 2007: 62, Figs 18–19) [see below, *Fig. 20:2*].

The shape of the second cooking pot type is very characteristic of late Roman production in the Levant; it is encountered in Lebanon, Palestine and Jordan. It was also produced from the end of the 4th century AD in *Workshop X* (Waksman et al. 2005: 314, *Fig. 1.1*; Reynolds and Waksman 2007: 62, Figs 20, 21) [see above, *Fig. 3:1*].

In the mid-6th century AD, these popular cooking pot forms were replaced by a new form, very characteristic of *Workshop X*, that is, the so-called Cypriot-shaped cookingpot [see *Fig. 3:4*]. A modest number of finds of this form made of Beirut fabric suggests that it was produced on a small scale in Berytus (Reynolds 2003b: 542, *Fig. 5:11*; Waksman et al. 2005: 314; Reynolds and Waksman 2007: 63, Figs 37–45).

The next form in the kitchen pottery category that was produced of both Beirut fabric and *CW 34* ware is the casserole (Reynolds 1999: Figs 131–134; Reynolds and Waksman 2007: 64, Figs 52, 54) [*Figs 15:3; 20:4*]. These vessels are present in layers dated from as early as the beginning of the 3rd through the mid-6th century AD. Produced on a mass scale in Berytus, they have sliced rims, which enabled a precise fitting of a lid [*Fig. 15:2*]. Specimens dated to the 4th and 5th century AD have characteristic horizontal handles that are oval in section, and given two or three grooves. Specimens dated to the 4th century AD have relatively thin walls, which is also characteristic of casseroles

produced in *Workshop X* [see *Fig. 3:5*]. The later Beirut vessels of this type, dated to the end of the 5th and the 6th century AD, have handles made in the *Workshop X* style, plain and without grooves. However, the walls of these casseroles are much thicker, which makes it easier to distinguish them from the vessels from *Workshop X* (Waksman et al. 2005: 315; Reynolds and Waksman 2007: 64, Figs 52–61).

The Beirut workshops also produced jugs during the Byzantine period, assuming a form very characteristic of *Workshop X* [see *Fig. 3:8*]. The first type of this form, with a spout, was popular in the first half of the 6th century AD (Reynolds and Waksman 2007: 64, Fig. 69). A narrow neck and strainer characterize the second type, which comes in two sizes (Reynolds and Waksman 2007: Figs 69–71). A smaller variant of the jug, with a strainer, appears in contexts dated to the 4th century AD, a larger one in assemblages from the end of the 6th century AD (Reynolds and Waksman 2007: Figs 75, 77).

The last of the forms considered to be local is a miniature one-handed vessel with globular body. These vessels were probably used for perfume storage (Waksman et al. 2005: 315, Fig. 1; Reynolds and Waksman 2007: 64, Fig. 68). They appear in Beirut as early as in the 2nd century AD; however, their popularity was highest during the 6th through 7th century AD.

The production of closed cooking pots whether of Beirut fabric or *CW 34* ware declined toward the end of the 5th century AD, as shown by the finds from primarily sectors BEY 006, 007 and 045 studied by Reynolds and Waksman (Waksman et al. 2005: 314, Fig. 4). From the 6th century AD, the local market was “flooded” with vessel imports from the *Workshop X* group, which

may have been because of the destruction of the artisanal district in the earthquake of AD 551 (Reynolds and Waksman 2007: 61). However, Beirut amphorae (type Beirut 8) continued to be produced until the mid-7th century AD, although no longer of Beirut fabric, but from another type of clay, visually similar to the kaolinite *CW 34* ware. Reynolds has suggested that the change of raw material used might have been effected by earthquake-related destruction; the pottery workshop may have been moved or the clay sources used earlier were no longer available or access to them was lost (Waksman et al. 2005: 314; Reynolds and Waksman 2007: 62).

FOOTHILLS OF MOUNT LEBANON RANGE (CHOUF): CHHÎM

This archaeological site lies on the outskirts of the modern-day town of Chhîm in the Chouf mountains, located some 35 km south of Beirut and 10 km east of Jiyeh [see *Fig. 1*]. Pottery categorized as Chhîm Fabrics is a largely diverse group, both in terms of fabrics and vessel forms. Local production was affirmed by two fabrics.

The pottery from Chhîm dated to the Roman and late Roman periods (for the Polish excavations in 1996–2009, see Waliszewski et al. 2004; Waliszewski and Wicenciak 2015) is dominated by local vessels manufactured of a *Lime-rich Chhîm Fabric/Chhîm Fabric 1* (ChF1). This fabric was first identified by Reynolds, who also noted a previously unknown type of amphora, which he called the “Chhîm Amphora” [*Fig. 16:1*], in pottery material from the Chhîm necropolis (Ortali-Tarazi and Stuart 2004: 126–127, Pl. 1; Reynolds 2005a: 570, Pl. 13:92–93). Considering

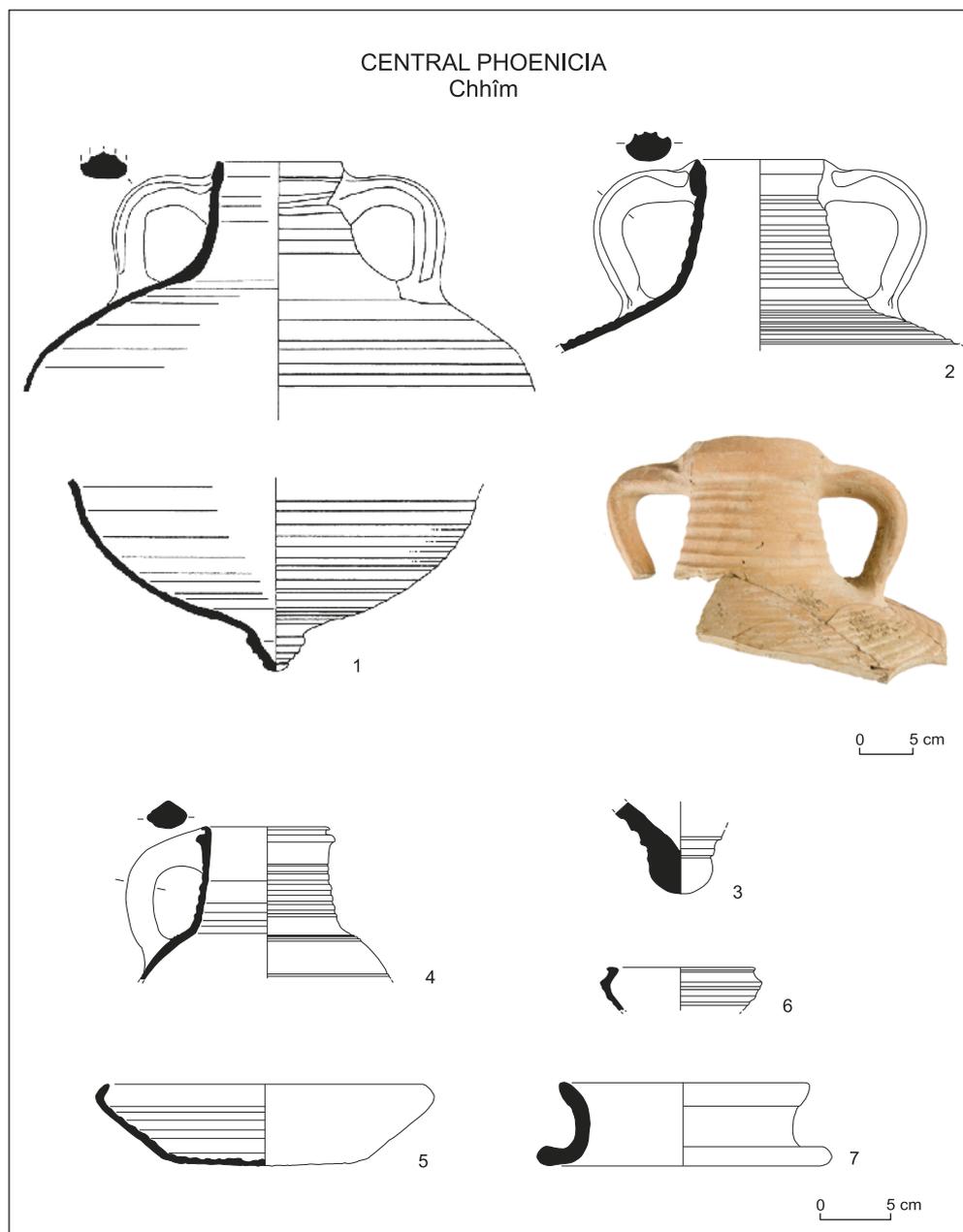


Fig. 16. *Chhîm* lime-rich fabric: 1, 2 – amphorae; 3 – base of amphora; 4 – jug; 5 – bowl; 6 – funnel; 7 – stand (1: after Reynolds et al. 2010: Fig. 17:1; 2–7: drawing U. Wicenciak, photo A. Oleksiak)

the economy model of Chhîm, which was profiled towards the production of olive oil and perhaps also wine, the making of amphorae on the spot is justified.

Lime-rich Chhîm Fabric is a very diverse group, encompassing at least five types of wares (Chhîm Fabric 1 Wares A, B, C, D and E) (personal observation). ChF1 ware is distinguished by the quantity and size of limestone grains, as well as glazing. Various types of open kitchen vessel forms for meal preparation were manufactured, as well as closed forms for liquids: jugs, funnels,

stands or bowls. Cooking vessels were not produced [see *Fig. 21*].

Apart from kitchen vessels and several types of amphorae [*Fig. 16:2–7*] there is much to indicate that Chhîm in the Roman period also manufactured oil lamps, although this issue definitely needs further study. The fabric of one type of lamp from Chhîm, designated as ChF2, resembles in macroscopic terms the clay used for making an open *tannour* discovered in a chamber adjacent to the temple temenos (personal observation).

POTTERY PRODUCTION IN NORTHERN PHOENICIA

Identification of pottery production in northern Phoenicia [see *Fig. 1*] is the result of research conducted by Reynolds on material from Beirut, especially from sector BEY 015, but also from BEY 006, 007 and 045. Macroscopic and chemical analyses of the material (Roumié et al. 2005) led him to distinguish several types of fabrics not linked to the Beirut workshops: *FAM 43A*, *B*, *C* and *FAM 44*. These fabrics are related to geological zones. According to Reynolds, vessels produced of these fabrics during the Roman period, primarily amphorae, were imported to Berytus from northern Phoenician cities: Byblos, Marathos and probably Tripoli, or from areas under their rule. Nonetheless, no pottery workshops have thus far been identified in any of these settlements.

Reynolds distinguished several types of amphorae which, in his opinion, were manufactured both in Berytus and in northern Phoenicia: amphorae AM 72/1, Amphora 2A–D, Amphora 3, AM 202, AM 52 and also some kitchen vessels types

(Reynolds et al. 2010: 79, 87; Reynolds 2005a: 568).

BYBLOS HINTERLAND

Despite longstanding research in one of the oldest Phoenician settlements, as Byblos is widely regarded, the pottery material from the excavations still awaits comprehensive research. Maurice Dunand's work in the 1930s involved only a minor number of vessels dated to between the Persian and Roman periods, dealing mainly with imported table vessels and oil lamps (Dunand 1954–1958).

Even though no remains of pottery workshops were identified at the site, Reynolds (1999: 40; 2003a: 122, *Fig. 11 a–b*) came to the conclusion that a pottery workshop manufacturing amphorae must have been located in Byblos or its vicinity. His conclusions were based on the pottery from Beirut and supported by material from the Yanouh site (see below, page 670), located east of Jbeil/Byblos.

The first type of amphora presumably manufactured in Byblos or its vicinity is AM 202, dated to the first half of the 2nd century AD (Reynolds et al. 2010: 79,

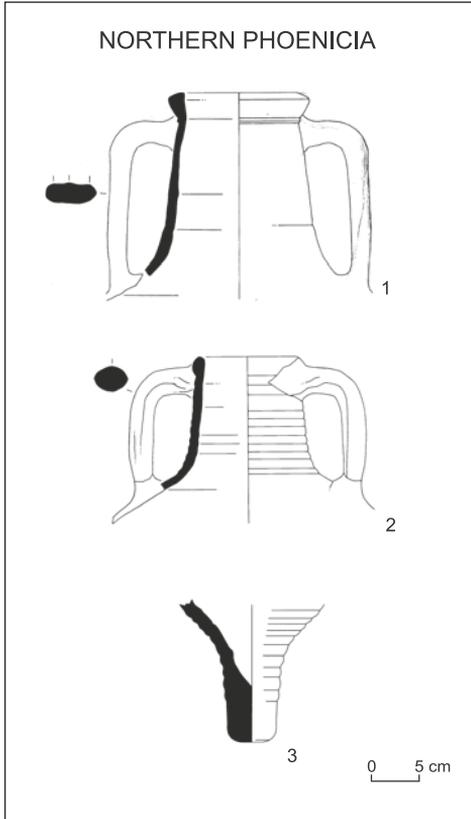


Fig. 17. Amphora types produced in northern Phoenicia in the Roman period: 1 – AM 202 (After Reynolds et al. 2010: Pl. 15:1); 2 – AM 52 (After Reynolds et al. 2010: Pl. 15:4); 3 – AM 202/ Amphora 2C? (After Gatier et al. 2001: Pl. 1:1)

Fig. 15) [Fig. 17:1]. The rim shape shows similarities to the previously described Amphora 2C (see above, page 661), but the handle shape differs, this being rectangular in section and lacking the deep groove down the middle [compare Figs 13:4 and 17:1]. With his knowledge of the material from Beirut and from fieldwalking around Yanouh, Reynolds believes that this was the most common model of northern Phoenician amphorae.

AM 202 amphorae assumed to have been produced in Byblos or its vicinity are made of FAM 43C fabric (Reynolds 1999: 40). This is red-brown clay, containing abundant inclusions of limestone, shell fragments and pyroxene.¹⁶ Reynolds indicates that the clay most likely originated from the region east of Byblos.

According to Reynolds, the shape of the AM 202 amphora rim suggests that, in similarity to Amphora 2C, they were used for the transportation of fruit, fish sauce and olive oil. One should note, however, the presence of at least 175 wine presses, recorded in a survey of the region east of Byblos, where the described amphora may have been produced (Reynolds et al. 2010: 79). These presses were located northeast of Beirut, in the Mount Lebanon range, amongst others in Mtein, Michikha and Baskinta. The implication is that amphorae manufactured in the direct vicinity of the presses may have satisfied a local demand for wine containers.

Another type of northern Phoenician amphorae, also presumably produced in the Byblos region, is AM 52 (Reynolds

¹⁶ FAM 43 fabric shows similarities to the late Roman materials used in the production of vessels in Ras al-Basit (Syria, south of Latakia), where, amongst others, mortaria, basins, storage vessels (*dolia*) and amphorae were produced (Reynolds 2005a: 567; Evans and Mills 2012; Mills and Reynolds 2014). Reynolds emphasizes the absence of limestone inclusions in fabrics typical of Ras al-Basit, which excludes the possibility of FAM 43 being connected with northern Syria.

et al. 2010: 79, 87, Fig. 15.1–2, 4) [Fig. 17:2]. It is a thick-walled vessel with convex rim and conical neck, the external surface of which is covered with narrow convex ribbing. Handles are massive, oval in section, connecting the rim to the shoulders. One of the best-preserved specimens, unearthened during excavations in sector BEY 045 in Beirut, is dated to the beginning of the 3rd century AD (Reynolds et al. 2010: Fig. 15.4). These vessels were probably made of two fabrics: *FAM 43B* and *FAM 43C* (Reynolds et al. 2010: 87–88).¹⁷ However, most sherds from these amphora types show a fabric with high limestone content, similar to that of the Berytus amphorae. Reynolds emphasizes that some amphorae of this type produced in the north, outside of Berytus, do not have the kind of calcareous fabric that is the standard for *FAM 43B*. This may be due to the inclusions being burnt out during vessel firing (Reynolds et al. 2010: 87–88).

Yanouh

Yanouh lies in the Nahr Ibrahim river valley in the Mount Lebanon range, some 20 km directly east of Jbeil/Byblos. The settlement was part of the Byblos economic supply base (Elayi 1982: 92; Grainger 1991: 677; Salles 2003: Notes 35, 36). It was excavated first by a German team in 1938 (Krencker and Zschietzschmann 1938) with regular excavations being undertaken in 1995–2005 by a French–Lebanese mission (Gatier et al. 2003; 2004; 2005; 2007). The pottery was studied by Dominique Pieri (Gatier et al. 2003: 26–43; 2004; 2005; 2007). It was found to represent five

chronological phases, from the Bronze Age through the times of the Umayyad dynasty.

The set of kitchen vessel fragments from the Hellenistic period (first half of the 2nd century AD) was typologically very diverse. Based on macroscopic studies, certain types of vessels, such as bowls, goblets or jugs have been identified as Beirut products (Gatier et al. 2004: 245, Pl. 7:1,2,10,11). In Pieri's opinion, inasmuch as the collection of kitchen vessels dated to the Roman period is modest in terms of the repertoire of forms, it is typical of the period in question. Most of the vessels are examples of regional pottery. According to Pieri, the Yanouh pottery, with the exclusion of imported table vessels and amphorae from the Phoenician coast, represents above all a strong affinity to ceramics manufactured in settlements located in the Beqaa Valley (Gatier et al. 200: 117). Popular forms include mortaria and bowls with wide grooved rims (Gatier et al. 2004: 249, Pl. 9:9,11). However, the most interesting part of the collection comes in the form of several amphora types, among them AM 202 [Fig. 17:3] which, according to Pieri, could have been produced on the northern coast of Lebanon (Gatier et al. 2004: 249, Pl. 9:7). Reynolds assigns the fabric of the Yanouh AM 202 amphorae to the *FAM 43* group (Reynolds 2005a: 568).

As said above, type AM 72/1 amphorae [Fig. 13:1], identified on the basis of macroscopic analysis of the fabric as one of the products of northern Lebanese workshops, were distinguished by Reynolds during research into Beirut material (Reynolds et al. 2010: 79–80,

¹⁷ *FAM 43B*, compact fabric, with pale brown-orange color and pale grey-brown core; the surface smooth but featuring limestone blemishes and rare inclusions of obsidian grains. *FAM 43C*, fabric of ferruginous color, well-hardened with multiple limestone grains; shell fragments seldom present.

Fig. 13; Reynolds 1999: 40–41, Figs 33–36, FAM 43; 2003a: 122, Fig. 9; 2005a: 568, Pl. 9, Figs 59–60). This type of amphora is encountered in two types of fabric and in two sizes. In Beirut, they were manufactured in the BEY 015 workshop (Reynolds 1999: 40, Figs 41–43, FAM 43 group; 2000: 390, Figs 41–42; 2003a: 123; 2005a: 568, Pl. 9; Reynolds et al. 2010: 79, Fig. 13; Roumié et al. 2004: 201), from the end of the 1st to the beginning of the 3rd century AD (Reynolds et al. 2010: 79; Reynolds 1999: 41). The production of amphorae made of this characteristic fabric with high limestone content ended in northern Phoenicia most likely around the 3rd century AD, surviving in Berytus alone until the 7th century AD (P. Reynolds, personal communication, 2010). However, the northern Phoenician version was manufactured most likely in Tripoli of a fabric known as *FAM 43* (Reynolds 1999: 40; Reynolds et al. 2010: 79, 86, Fig. 13.15), which is considerably dense, with sizeable limestone content, and red-brown in color (Reynolds 2000: 390; 2005a: 568; Reynolds et al. 2010: 79). It shows many similarities to the amphora fabric of the Late Roman Amphorae 1 type (Peacock and Williams 1986: Class 44, 185–187).

MARATHOS (AMRIT)

No remains of pottery workshops have been identified in Amrit/Marathos, the city which in the Hellenistic and Roman period marked the northern border of Phoenicia. However, the predominance of one type of amphorae in the pottery assemblage from this site suggests that the local potters in Marathos produced their

own type of amphora just like in other Phoenician towns (Reynolds 1999: 90; 2003a: Fig. 10; 2005a: Fig. 46) [Fig. 18]. Research has demonstrated that the AM 77¹⁸ type of amphora that Reynolds distinguished in the Beirut material was manufactured in Marathos and possibly also in Tartus (Reynolds 1999: 41, Figs

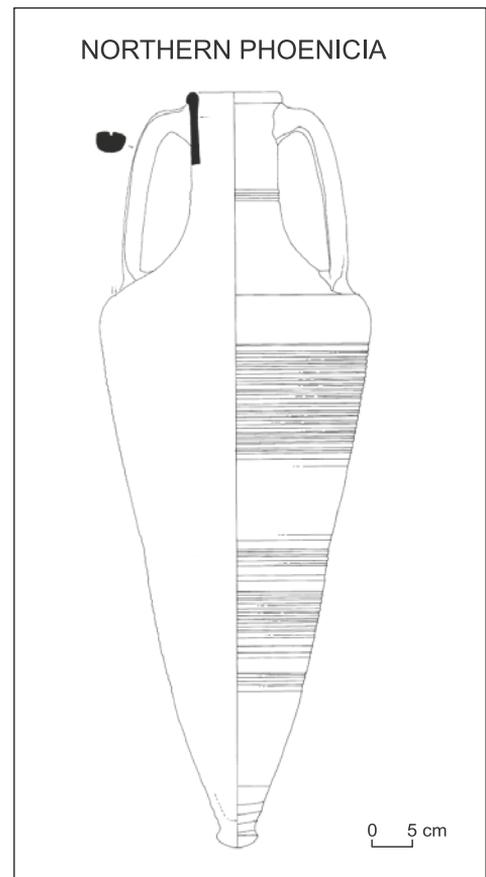


Fig. 18. Amphora AM 77 produced in Marathos in the Roman period (After Reynolds 2005a: Fig. 46)

¹⁸ PIXE chemical analysis of the clay of imports identified in the Beirut material as coming most likely from Amrit and Ras al-Basit on the northern Syrian coast has shown substantial difference of clay composition, allowing the products of these two centers to be distinguished (Roumié et al. 2006).

38–39; 2000: 390, Fig. 43). These vessels were produced of the *FAM 44* fabric, rich in shell fragments, as well as limestone and quartz inclusions (Reynolds 1999: 41, 90; 2000: 390, No. 43; 2003b: 541; 2005a: 568; 2005b). Reynolds revised his earlier assumption about this type of amphora having been produced on Cyprus from a fabric similar to *FAM 44*, containing grey stone, grey fossils and shell inclusions; the fabric was used in Cyprus during the Iron Age for the production of basket-handled containers (Calvet 1986; Reynolds 1999: 90).

Type AM 77 amphorae were very common in Beirut contexts dated from the 2nd to the beginning of the 5th century AD (Reynolds 1999: 41, 90), while imports from Amrit comprised up to 70% of all the imported amphorae from the Levant in the Beirut material (Reynolds 2005a: 568, Map 2).

AM 77 amphorae were good imitations of Dressel 2–4/Koan amphorae. According to Reynolds (2005a: 568), they corresponded to Hayes' Type IX, dated in Paphos to the 2nd century AD (Hayes 1991: 94, Pl. 25.7). The Amrit amphorae with their characteristic Dressel 2–4/Koan handles loosely influenced the Porphyreon-made type 8 amphorae (Wicenciak 2014: 114, Fig. 19:4). AM 77 has carrot-shaped bodies, rounded rims, high necks and

spirally ribbed conical bases, ending in massive knobs (Reynolds 2005a: 568, Fig. 46; Reynolds et al. 2010: 79). AM 77 handles are oval in section and have evident deep grooves. There is a double ribbing at mid-height of the amphora neck, while the surface of the vessel body is covered with shallow ribbing.

The fabric as well as morphology both lead to the conclusion that AM 77 amphorae were manufactured from the 2nd to the 4th century AD (Reynolds 2005a: 568, Figs 50–53).

Braziers and basket-handled amphorae were also manufactured in Marathos in the Hellenistic period. Analogous amphorae were produced in eastern Cyprus as well (Reynolds 1999: 90, Note 62).

Amphorae, storage vessels and bowls were produced in Marathos during the Roman and Byzantine periods. These products were very common as imports in the material from Beirut, in deposits dated from the 2nd to the beginning of the 3rd century AD. The only products of workshops operating in this northern Phoenician city not imported to Berytus are the kitchen vessels, which were produced solely for use in Marathos and its vicinity. Amphorae manufactured in Marathos have not been identified at any other Phoenician location except for Beirut.

POTTERY PRODUCTION IN THE PHOENICIAN “HINTERLAND”

BEQAA VALLEY

The pottery production of the Beqaa Valley is poorly investigated. So far, two groups of products have been identified as being of Roman date, manufactured, respectively,

in the northern and southern parts of the Bekaa Valley.

The first group of wares, referred to as *CW 34* ware, was distinguished in the material from Beirut. The second, a strictly

local group defined as *BA01* (*Baalbek 01*), was identified as products of the Heliopolis workshops.

These two groups are distinguished not only by the fabric type, but also by the vessel repertoire. Kitchen and storage vessels were manufactured primarily in the south, then exported on a mass scale to locations in the Mount Lebanon range and the central Phoenician coast, whereas Heliopolis specialized in amphorae and storage vessels, made first and foremost for the local market as well as for the central Syrian markets. Products from this

settlement are not encountered on the Phoenician coast.

Northern Beqaa Valley–Heliopolis/Baalbek — *BA01* fabric

No traces of pottery workshops were found either during excavations in Heliopolis/Baalbek or during the surveys around this settlement (Hamel 2008; 2010: 877; 2014: 67). However, analyzing the material from German excavations in 2001 (Hamel 2008; 2010; 2014: 67), Hanna Hamel identified local products made of a non-calcareous fabric designated as *BA01* (Hamel 2008: 204).

Hamel's macroscopic observations were corroborated by chemical analyses demonstrating conspicuous differences between the clay used in Heliopolis and in other centers on the Phoenician coast. According to Hamel, the source from which the clay for *BA01* was taken, was in use from the Neolithic age. The same fabric was also used for making roof tiles.

Two types of table amphorae were produced of *BA01* fabric [Fig. 19:1,2], very characteristic and distinctive with regards to their morphology. They are found in contexts dated to the period from the 2nd to the 5th century AD (Hamel 2008: 205; 2010: 877–878). Type 1 table amphora, BA1, has a rounded rim and slightly convex neck. The handles, with a groove down the middle, connecting the neck with the shoulders, are distinctive (Hamel 2008: Fig. 3:1–2) [Fig. 19:1]. It is a faithful imitation of the Dressel 2–4 type of amphora.

The second type, BA2, was comparably more widespread. It has a thickened rim, triangular in section, and a notch on its outer side. This type of amphorae was also equipped with a handle with a deep groove

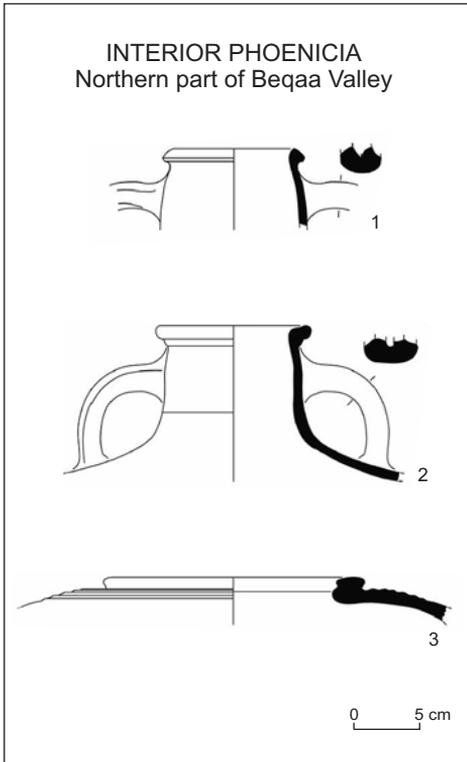


Fig. 19. Amphorae and storage vessel types produced in Heliopolis in the Roman period: 1, 2 – amphorae; 3 – jar (After Hamel 2008: Pls 3, 4)

down the middle (Hamel 2008: Fig. 3:3–5) [Fig. 19:2].

Despite no known intact specimens of the two types, Hamel claims that the shoulders shape points to a rounded body. Furthermore, these amphorae might have had ring bases since such bases, of the same fabric as the BA1–2 amphora rims, are widespread in Baalbek. Hamel’s hypothesis with regard to the shape of this type of

vessel is corroborated by an intact amphora kept in a private collection in Baalbek (Hamel 2014: 70, Fig. 5:13).

Amphorae of the described type have been discovered only in the Homs area (central Syria) (Reynolds 2014: 57, Fig. 2h). The limited distribution range could reflect the state of research, but it could also be linked to the functionality of the BA1 and BA2 amphorae, which were

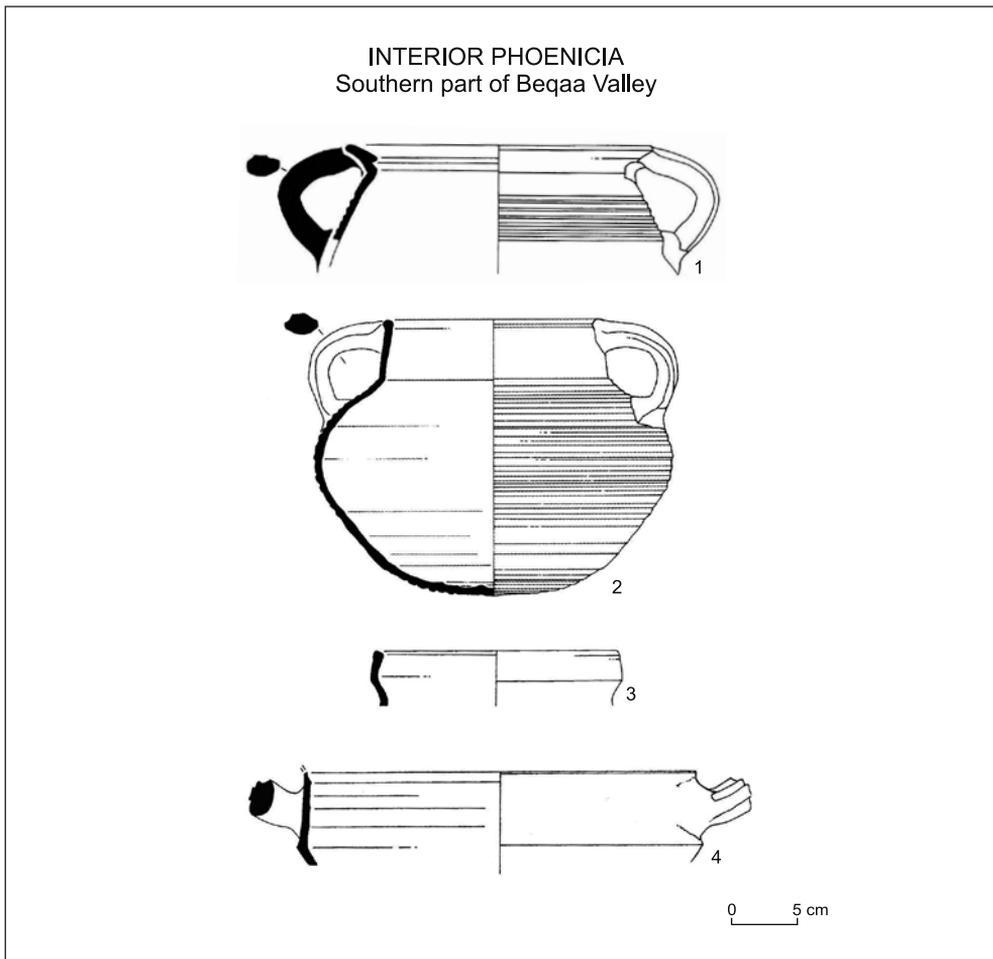


Fig. 20. Kitchen ware from the CW 34 group: 1–3 – cooking pots; 4 – casserole (After Reynolds and Waksman 2007: Figs 12, 18, 45, 52)

more likely to be for table use because of the base ring, rather than for transportation. Reynolds saw them as being for wine storage, a function he claims is suggested by the shape of the handles, similar to that of the north Phoenician AM 72/1 and Amphora 2 types, imitations of the wine amphora types Dressel 2–4/Koan (Reynolds et al. 2010: 74).

Moreover, the *BA01* fabric was used in Heliopolis to manufacture storage vessels [Fig. 19:3] sharing many characteristics with the BA1 amphora, but differing with regard to the shape of the handles and rims (Hamel 2008: Fig. 4:1).

Southern Beqaa Valley–Kumidi/Kamid el-Loz — *CW 34*

Pottery production in the southern part of the Beqaa Valley is an under-researched subject. Identification of vessels made in this part of the Roman Phoenician hinterland is based again on Reynolds' study of the material from Beirut (Reynolds 1999: 48; 2008: 72–75; Reynolds and Waksman 2007: 59–81; Roumié et al. 2005). *CW 34* was identified in consequence (Reynolds 1999: 48), made of kaolinite clay (see above, page 665) with a characteristic light pink or orange pink color containing red or brown inclusions (Reynolds and Waksman 2007: 59). These vessels are covered by a kind of patina in the same color as the clay, but of darker tone, therefore reminiscent of African Red Slip Ware (Reynolds 2008: 74, Fig. 6i). Furthermore, the surface of vessels from the *CW 34* group often has cracks and crevices.

Vessels of this fabric from Beirut include cooking pots and casseroles with horizontal handles, dated from the 2nd to the 5th century AD (Reynolds and Waksman 2007: 65) [Fig. 20]. *CW 34* or some very similar fabric was used also for certain types of Beirut amphorae from the mid-3rd to the beginning of the 5th century AD, and then from the end of the 6th through the beginning of the 7th century AD (Reynolds et al. 2010: 74, Note 3; see above, page 658, Beirut 8).

Reynolds describes vessels made of *CW 34* as originating from the southern part of the Beqaa Valley. The identification of the place of production follows from his observation of the visual similarity between this fabric and the pottery from Kamid el-Loz/Kumidi, Baalbek/Heliopolis and Tel Anafa. Archaeological research in Kamid el-Loz/Kumidi, a site in the southern part of the Beqaa Valley, focuses mostly on excavating remains from the Bronze Age. However, large quantities of table vessel sherds from the Hellenistic age were found along with storage vessels/pithoi, dated to the 1st–2nd century AD (Reynolds and Waksman 2007: 59). The latter could have been manufactured for the storage and transfer of regionally produced olive oil. According to Reynolds, production of vessels from the *CW 34* group commenced precisely in the vicinity of this settlement. The same type of clay has been used there to make pottery until the present-day.¹⁹

Another group correlated with *CW 34* is the kitchen vessel category from Baalbek/Heliopolis, dated to the turn of the 3rd century AD (Hamel 2008).

¹⁹ Analogous forms of large storage vessels meant for olive oil are still produced today in the same region, specifically in the modern-day town of Rashaiya al Fuhar located a few dozen kilometers south of Kamid el-Loz (Reynolds et al. 2010: 74, Note 3). I thank my brother Dominik, Zofia Kowarska and Marek Puszkarski for accompanying me on a venture to corroborate this observation in person.

According to Hamel, who studied Roman ceramic material from Baalbek and Kamid el-Loz, the fabric of which the said vessels were made, referred to as *Kt01* (*Kitchen ware 01*), visually corresponds to *CW 34* (Hamel 2008: 204).

The third pottery group, referenced by Reynolds, is the *spatter ware* category first identified by Berlin in material from the Tel Anafa site located in the Hula Valley (Berlin 1997: 7–9).

Reynolds' observations with regards to *CW 34* have not always stood the test of time. Implied similarities to the aforementioned Tel Anafa ceramics have recently been refuted by Andrea Berlin (personal communication, 2010).

CW 34 vessels have also been found at the Chhîm site and small amounts of vessel sherds similar to *CW 34* were also recorded in Jiyeh during the 2010 season in sector D.

SUMMARY

An in-depth analysis of pottery finds from excavations in the territory of ancient Phoenicia reveals an array of regional characteristics for all three periods in question: Hellenistic, Roman and Byzantine. There are many shared characteristics as well as evident diversity, seen in both the repertoire of manufactured vessel forms and the types of clay used for their production.

Clays and fabrics

Five main types of clay were used, largely corresponding to the division of the area into geological zones [see *Table 1*]. A red, sandy calcareous clay predominated in the timespan considered throughout the southern and central Phoenician coast. The following fabrics were identified based on this clay type: *Carmel Coast Sandy Cook Ware*, *Akko Hellenistic Gritty Cook Ware*, *EAM 7*, *Workshop X*, *Phoenician Semi-Fine Ware/EAM 10*, *Sidonian fabric*, *Late Hellenistic Jiyeh Ware*, *Early Roman Jiyeh Ware*, *Late Roman Jiyeh Ware*, *Byzantine Jiyeh Ware*, *Khalde fabric*, *Beirut fabric* and *Chhîm fabrics* [*Fig. 21*]. In the northern part of Phoenicia, which corresponds to the second geological zone, two types of

clay were used. The first contains inclusions of foraminifera fossil fragments (*Fossil foraminifera clay*) and was used to prepare the *EAM 44* fabric. The second, used to produce *EAM 43A, B* and *C*, contains natural volcanic rock inclusions (volcanic clay). Further inland, that is, in the Beqaa Valley, an area deemed to be part of Phoenicia during the Roman period, the clay used was entirely different. In the southern part of the valley, which constituted a separate geological zone, this was a kaolinitic clay; the *CW 34* fabric was made of it. The northern part of the region and the last geological zone features a non-calcareous clay used to make the *BA01* fabric.

Cultural regions and workshops

Additional criteria for classifying the pottery material need to be introduced to study further the pottery production in Phoenicia. First, the repertoire of vessel forms should be considered, indicating the cultural affinity of the workshop. Second are features like fabric, ware and morphological characteristics, which enable assignment of the finds to specific workshops. The first criterion enables a designation of cultural region, the

second attributes specific groups to given production zones [see *Fig. 21*].

For the Hellenistic period, two cultural regions were distinguished, southern Phoenicia and central Phoenicia, and in each region production zones were recognized: two in southern Phoenicia and three in central Phoenicia. The two in the south were Akko/Ptolemais and Tyre, the three in the center were Sidon, Porphyreon and Berytus. Nothing is known so far of Hellenistic pottery production in northern Phoenicia.

The borderline between the two cultural regions appears to have passed directly through Tyre [see *Figs 1; 21*]. From the 2nd to the beginning of the 1st century BC, this town, as well as possibly other settlements located in its vicinity, such as Oumm el-Amed, specialized in the production of table vessels and *Phoenician jars* made of the so-called *Phoenician Semi-Fine Ware A/FAM 10*. However, nothing seems to indicate that these workshops manufactured kitchen vessels for cooking and meal preparation. Other workshops, located south of Tyre (southern Phoenicia), in the vicinity of Akko/Ptolemais and in the Mount Carmel region, have been found to produce such vessels. Vessels manufactured there represented the so-called *Sandy Cooking Ware* and *Gritty Cooking Ware*.

The central Phoenician region encompassed workshops scattered across the area from Sidon to Berytus [see *Figs 1; 21*]. At the beginning of the Hellenistic period (from the 4th to the 3rd century BC), Sidon, which lay at the southern borders of this area, specialised in producing *Phoenician-type amphorae* with forms identical to those produced in Tyre (*Phoenician jars*). They differed from the

southern Phoenician vessels only in the fabric, which is designated as *Sidonian fabric*.

Key information on pottery production in central Phoenicia during the late Hellenistic period was provided by the material from Beirut and Jiyeh. The rich pottery collection from these two settlements reflects the diversity characterizing the production of local workshops. They manufactured not only Hellenistic-style kitchen vessel forms, but also amphorae in the Greco-Phoenician style: Sidon types 2 and 3. Kitchen vessels produced in this period in the central Phoenician workshops imitated forms characteristic of Hellenistic culture.

For the Roman period, five cultural regions were distinguished: southern, central, and northern Phoenicia, as well as two inland regions, namely the northern and southern parts of the Beqaa Valley [see *Figs 1; 21*].

The same production zones as in Hellenistic times functioned in southern Phoenicia: Akko/Ptolemais and Tyre. In central Phoenicia, pottery production has been confirmed in Porphyreon, Heldua, Berytus and Chhîm. In northern Phoenicia, production zones were identified in the Byblos and Marathos regions. In the northern Beqaa Valley, vessels were manufactured in Heliopolis, and in the southern Beqaa Valley in ancient Kumidi (Kamid el-Loz).

New pottery workshops appeared in southern Phoenicia in the vicinity of Akko/Ptolemais in the late Roman period, specifically at the beginning of the 3rd century AD [see *Figs 1; 21*]. Most of these were located north of the settlement, but two were situated in the hinterland of Tyre. All the said workshops specialized

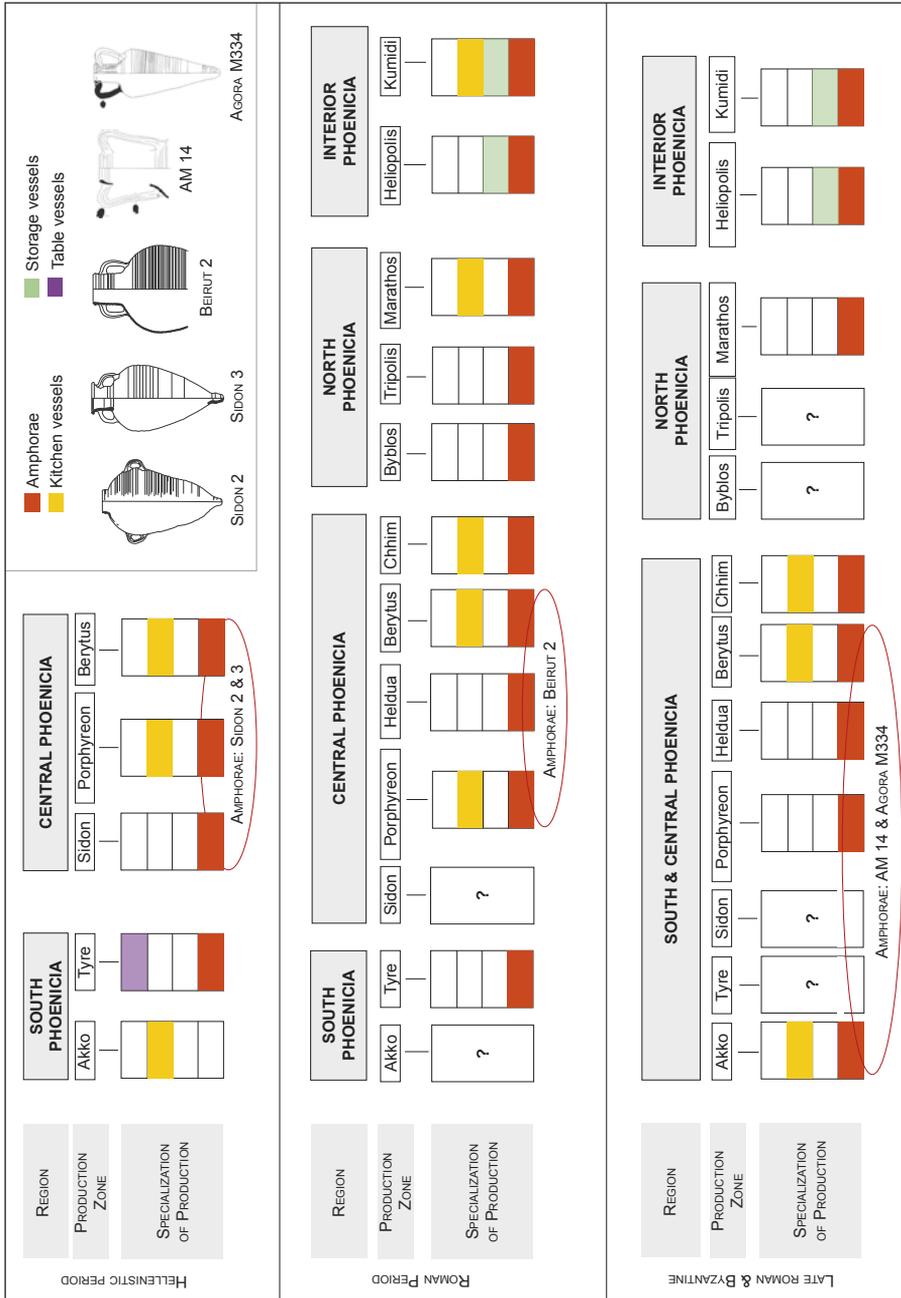


Fig. 21. Classification of pottery workshops by regions, production zones, and specializations (Processing U. Wicenciak)

in amphora production. During the period from the 3rd to the 7th century AD, they produced at least five types of storage containers: AM 14, Agora M334, LRA 5, AM 339, AM 148. These vessels were made of a fabric designated *FAM 7* [see *Table 1*]. Two of these amphora types, AM 14 and Agora M334, were also produced in central Phoenicia, in Porphyreon and possibly also in Berytus. Despite their widespread distribution, the look of Agora M334 and AM 14 amphorae is a key criterion for determining the cultural and administrative boundaries of Phoenician provinces.

Across the border to the south, in Palestine, the tradition of manufacturing large amphorae featuring bag-shaped bodies and small rounded handles was upheld. LRA 5 and LRA 6 are among the said forms. Yet another type produced in the southern part of the Levant was the LRA 4.

Kitchen vessels were also manufactured in southern Phoenician workshops from the 4th to the 7th century AD. These vessels were classified as *Workshop X* products. They are predominant in the material from southern and central Phoenician sites, and they have also been identified as imports at sites outside the Levant.

In the Roman period, Tyre did not play such a pivotal role in pottery production as in the Hellenistic period. By the end of the 1st century AD Phoenician-style amphora production recommenced in the region. However, these vessels, produced until the 3rd century AD, differ noticeably from specimens from the Persian or Hellenistic periods.

Once again, the pottery assemblage from excavations in Beirut and Jiyeh has supplied key data on the central Phoenician

production in the Roman period. Kitchen and amphora vessel production continued in both settlements, albeit representing the Greco-Roman rather than the Phoenician tradition from more or less the 1st century BC. During the early Roman period, by the end of the 1st century AD, the same kitchen vessel forms and identical Beirut 2/Jiyeh 6 amphorae were being made of very similar fabric both in Berytus and in Porphyreon, located about 35 km apart. These amphorae were being produced at the same time also in Heldua, a settlement probably in the hinterland of Berytus. Over the next few centuries, Beirut 7 amphorae as well as kitchen vessels were also manufactured there. The products of this workshop, despite being similar to those from Berytus and Porphyreon, differ in terms of fabric, which can be determined through macroscopic analysis only with great difficulty.

In Berytus, vessel production presumably continued uninterrupted from the 1st century BC to the 7th century AD, whereas in the case of Porphyreon it was found that the operation of local workshops was halted at the beginning of the 2nd century AD and production recommenced sometime during the 3rd century AD. It was then that the production of amphorae of the southern Phoenician type AM 14 was initiated and continued most likely until the 4th century AD. In the mid-6th century AD, following another decline in production activity, this settlement initiated the manufacture of Agora M334 amphorae. Vessels of this type were presumably made in Porphyreon until the 7th century AD.

In the third cultural region, northern Phoenicia, encompassing the area from

Berytus to Marathos, vessels made during the Roman period were of two fabric types, that used two types of clay. The first fabric, *FAM 44*, was used in Marathos, a settlement that marked the northern border of Phoenicia.²⁰ The second, designated as *FAM 43A, B* and *C*, was used in workshops somewhere north of Beirut, probably in the vicinity of Byblos. Analysis of the pottery material, predominantly represented by imports recorded from the excavation in Beirut, indicates that northern Phoenician workshops from the turn of the 1st century AD through the turn of the 4th century AD and going into the 5th century AD, specialized in making amphorae (*AM 77*, *AM 202*, *AM 52*, *Amphora 1/72*) as storage containers for locally produced wine and olive oil.

Pottery produced in the Beqaa Valley, that is, the Roman Phoenician hinterland (fourth and fifth distinguished cultural region), differs completely from the wares made in the coastal area. It cannot be excluded, however, that some of the observed differences between regions derive from the unbalanced state of research. Nonetheless, it is beyond doubt that pottery from the inland regions differs greatly from typical Phoenician products at least in terms of the fabric used, made of clay types specific to the Beqaa Valley.

Two production zones may currently be distinguished, in the southern and northern parts of the valley, respectively. The workshops in the first zone were located most likely at Kumidi and in its vicinity, where the beginnings of pottery production can be traced back to the Hellenistic period. A collection of tableware made of a characteristic pinkish

kaolinitic clay, referred to as *CW 34*, was dated to this period. The vessel repertoire changed in the course of the Roman period. From the 2nd to the 5th century AD, local workshops manufactured storage and kitchen vessels. The latter are reminiscent of the production of *Workshop X* in the Akko/Ptolemais area, both in terms of general form as well as the specificities of their production.

CW 34 pottery is widespread in large quantities in other parts of Phoenicia, not only in the northern border zone of the Beqaa Valley, in Baalbek, but also predominantly in Chhîm and Beirut. It should be noted that not all the identified pottery from beyond the Beqaa Valley and made of *CW 34* fabric can be treated as imports, as this characteristic material was also most likely used to manufacture vessels in Berytus (like the Beirut 8 amphora).

In the second production zone of the northern part of the Beqaa Valley, or more precisely in Heliopolis, two types of amphorae and storage vessels were produced from the 2nd to the 5th century AD. A local fabric, *BA01*, was used for their production and they differed significantly from those found on the Phoenician coast as well as from *CW 34*.

Comparative analyses of pottery production during the Hellenistic and Roman periods have led to the conclusion that many more pottery workshops existed for the latter period. The extent to which this is the result of the current state of research remains an open question. We can observe a partial transfer of production from the coastline to the inland areas during the Roman period. These observations

²⁰ The border of northern Phoenicia is also demarcated by amphorae produced in Ras al-Basit, where the amphora model with characteristic globular body was popular during the Roman period (Reynolds 2005a: 568, Map 2, 586).

need to be taken with caution, however, as it is not certain whether this is due to actual inland settlement expansion or research limitations. Intensified research in the Mount Lebanon range, which has already confirmed settlement development

in this area from as early as the Bronze Age, has raised hopes for a verification of these observations. Therefore, it cannot be excluded that our store of data on the development of pottery production in Phoenicia will soon be supplemented.

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