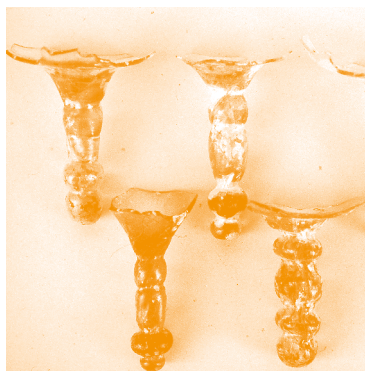


The glass from Jerash/Gerasa (Polish excavations in 1982–1983)



Abstract: The glass finds presented in this article—the catalog encompasses 200 pieces constituting a representative selection of tableware, lamps and windowpanes—span a time from the 1st century through the 9th, corresponding to the Roman, Byzantine and early Islamic/Abbasid periods in Jordan. The assemblage derives from 15 months of uninterrupted fieldwork, carried out within the frame of the Jerash International Project run by the Department of Antiquities of Jordan between October 1982 and the end of 1983, at two locations within the ancient urban site in Jerash, the ancient Gerasa. These locations were: a residential area by the South Decumanus and a small church founded by Bishop Marianos in the vicinity of the hippodrome and Hadrian's Arch.

Keywords: Jerash/Gerasa, glass tableware, glass lamps, cosmetic utensils, glass windowpanes

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The Jerash International Project, initiated in 1981 by H.R.H. Prince Hassan bin Talal and organized by the Department of Antiquities of Jordan, then headed by Dr. Adnan Hadidi, assembled seven national teams¹ which were assigned particular sites within the area of ancient Gerasa. The North Theatre and the street leading to it from the tetrapylon, as well as the nearby church of Bishop Isaiah, were excavated and studied by three Anglo-Saxon teams (Ball et al. 1986; Clark 1986; Clark, Bowsher, and Stewart 1986). The sanctuary of Zeus in the southern part of the site was covered by the French team (Seigne 1986; Rasson and Seigne 2019; 2020), while the domain of the Italian team was the Artemis sanctuary (Parapetti 1986; 1989), and the Spanish focused on the *macellum* near the *tetrakionion* (Olávarri 1986; Martin-Bueno 1989). These sectors concerned mainly monuments of the Roman period [Fig. 1].

Prior to the Jerash Project of the 1980s, it was commonly thought that urban life in Gerasa did not extend into the Islamic period. No standing monuments could be attributed to the times after 634, and the extensive excavations of the Yale expedition in the 1930s either ignored or misdated the late remains. Laconic mentions of “wretched hovels” on the Oval Plaza or a “confusing network of walls”

on the circular plaza around the *tetrakionion* made their way into the publications (Kraeling 1938: 69, 105; Harding 1967: 90). The trial trench dug by the Polish team in the northwest quadrant of the *tetrakionion* plaza yielded the 9th-century material. More attention was accorded the residential quarter uncovered west of St Theodore’s church (Fisher and McCown 1931: 10–36; Fisher 1938: 281–294). However, as far as can be judged, the 7th-century pottery was always dubbed Byzantine (Sauer 1986). The statement that “purely Arabic wares are scantily represented” presumably means no more than the absence of glazed sherds. And if “the Arab period left few traces in this section of the city, except in coins and lamps”, that was because only these discrete categories were correctly appreciated in the contexts which the excavators dated from the 5th century to the 7th (Fisher and McCown 1931: 10–36). The dig being re-filled, no verification is possible.

Urban continuity into Islamic times became manifest thanks to the results of the Jerash Project (Walmsley 2007). The Polish team worked in a residential area by the South Decumanus, sloping down from the old dig west of St Theodore’s church to the street (Gawlikowski 1986) [Fig. 2].² Dense housing from the 1st cen-

1 The teams and their respective directors were as follows (in alphabetical order): American (Vincent Clark), Australian (Alan Walmsley), British (Julian Bowsher), French (Jacques Seigne), Italian (Roberto Parapetti), Polish (Michał Gawlikowski) and Spanish (Emilio Olávarri). The fruit of a regular exchange of ideas and experiences, aside from bonds of friendship that have lasted a lifetime in some cases, was a notable increase of knowledge about the ancient town. The results were consigned to various publications, foremost two volumes edited by the Department of Antiquities of Jordan (Zayadine 1986; 1989).

2 The archaeological work was supervised by Gawlikowski and Tomasz Scholl, while the architectural remains were recorded by the late Antoni Ostrasz, who stayed on at Jerash after the conclusion of the Project to complete the restoration of the Umayyad House and, more

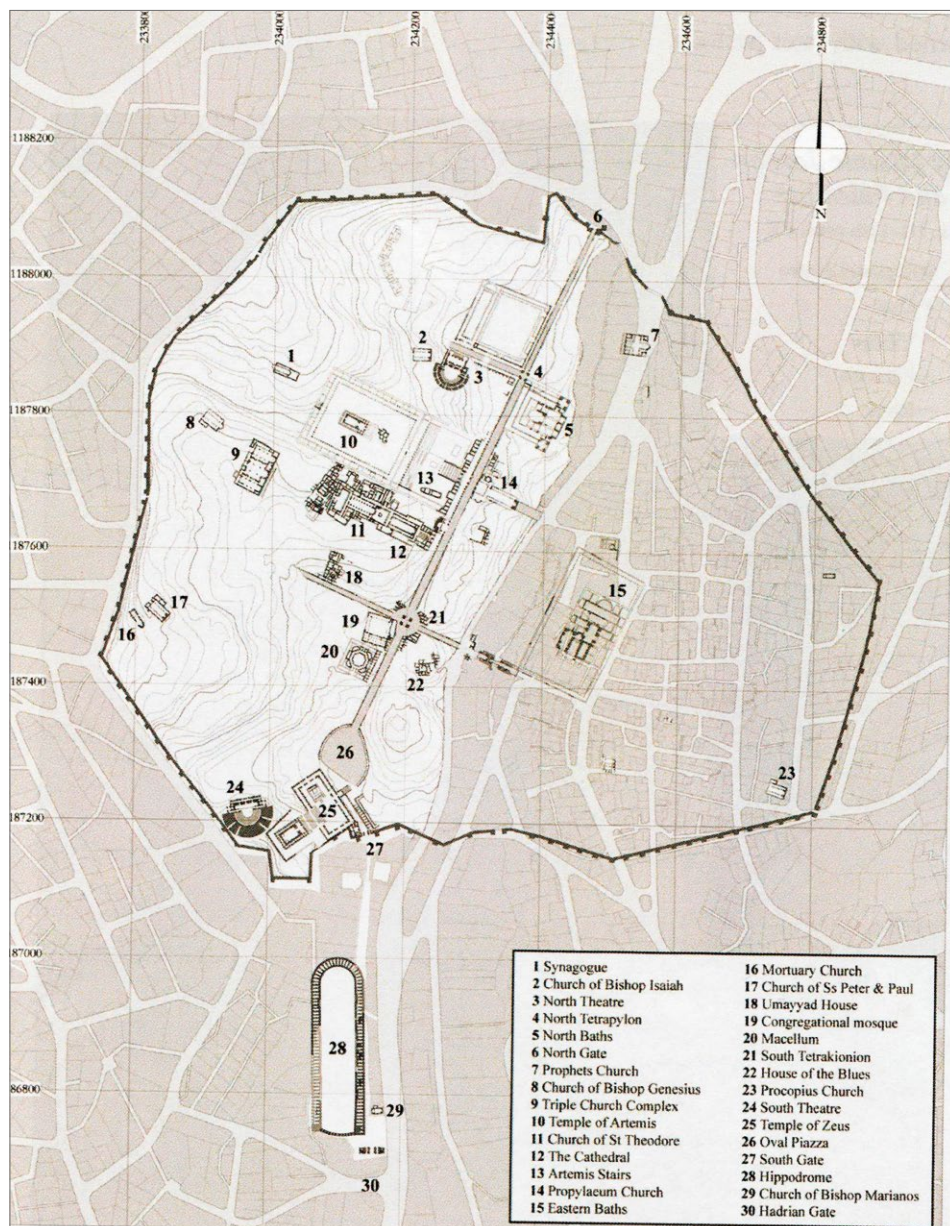


Fig. 1. The site of the ancient city of Gerasa within modern Jerash (T. Lepaon; courtesy J. Seigne)

importantly, of the hippodrome (Ostrasz 1989; Ostrasz and Kehrberg-Ostrasz 2020). The present author was responsible for registering and recording movable finds, especially glass (I later specialized in this field of material studies at other sites, too), as well as the overall photographic documentation.

ture down to the 9th, reconstructed after an earthquake, was uncovered [Fig. 3]. The Roman remains there consist mainly of several cisterns containing pottery sherds and coins from the Hellenistic to the Antonine periods. The corresponding buildings, apparently of residential character, were razed under the *decumanus*, not before 170. Buildings, which might have occupied the sector from the later 2nd century on, survive as disparate bits of walls, the effect of a massive tremor that imposed a complete reconstruction of the district. The rubble contained material which could be dated to the first half of the 7th century, in particular Jerash bowls and coins of Constantius II (641–668), the last Byzantine issues to have circulated in the provinces lost to the Caliphate. It is safe to place the destructive earthquake in June 658, a date given by the *Chrono-*

graphia of Theophanes (Grumel 1958: 479).

This calamity also marks the end of the tradition of Roman tableware with its profusion of dishes, plates and shallow bowls, represented in Jerash by the imported stamped sigillata and their local imitations, the painted bowls. The house rebuilt on the spot contained a new, red and white-painted pottery and a new type of lamps with typical handles in the form of animal heads (Scholl 1986; 1991). A hoard of coins found under a floor consists of Arab-Byzantine *filūs*, local imitations of the 6th century pieces of Justin II (Gawlikowski 1986: 111; Bates 1992; Morrisson 1992). They were minted at several mints, Jerash included, from about the mid-7th century, prior to the coinage reform of Caliph Abdel Malik in the last years of this century. The new pottery corresponds to the contents of



Fig. 2. Aerial view of the district around the South Decumanus (Photo H. Cowherd, 1983)

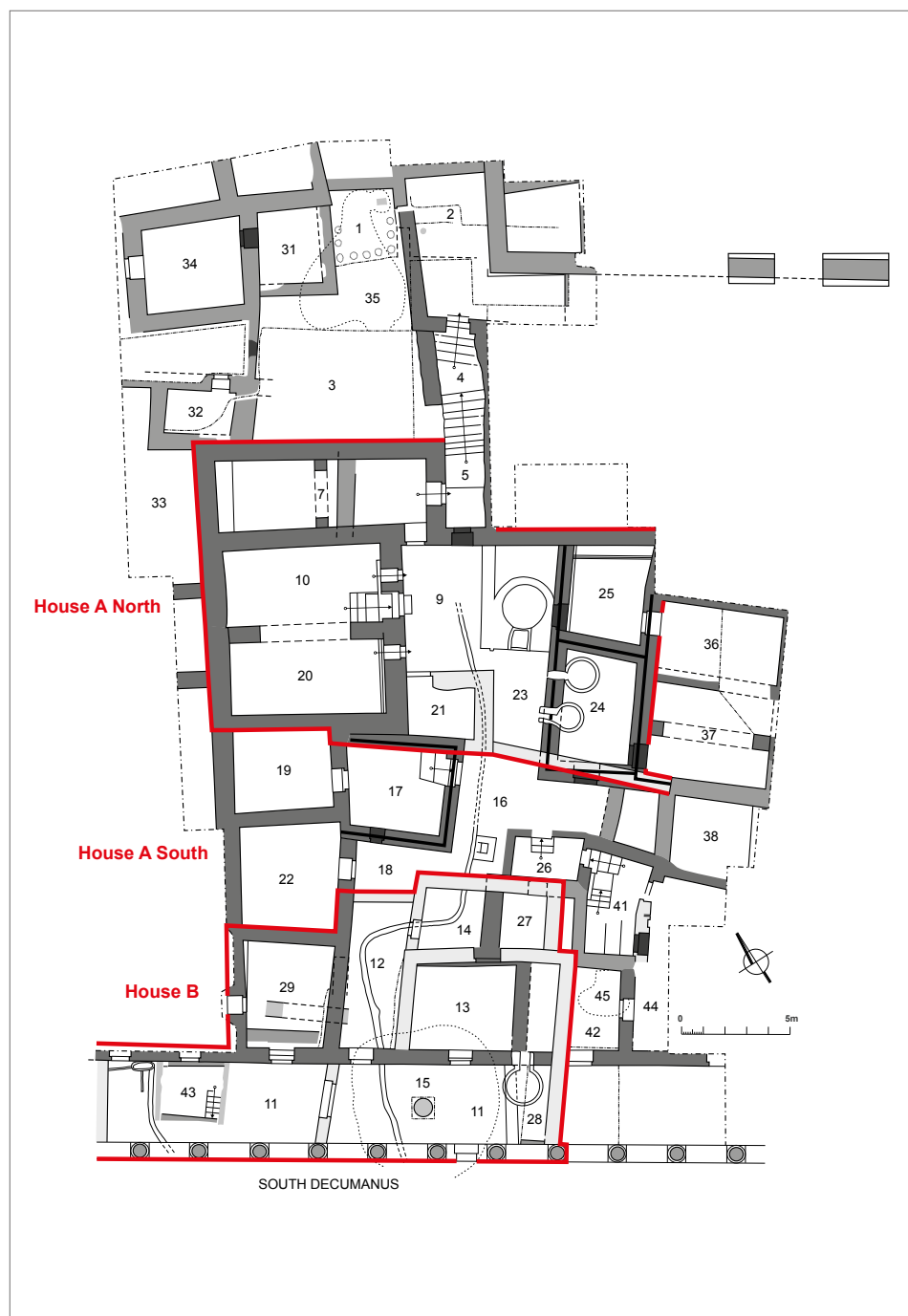


Fig. 3. South Decumanus area, general plan: dark grey – Umayyad House, moderate grey – Roman, lines in black – Umayyad on Roman foundations, light grey – Abbasid, lines in red – Abbasid house boundaries (Plan A. Ostrasz)

a cistern in the Zeus sanctuary (Rasson and Seigne 1989 ; 2019; 2020a; 2020b), and finds close parallels in Pella (McNicol, Smith, and Hennessy 1982: 143–157; Homès-Fredericq and Franken 1986: 234).

The house, later dubbed the Umayyad House, was irregular in plan [Figs 3; 4]. It was constructed in the second half of the 7th century on a plot cleared of quake-related rubble. The house was accessible by steps from a higher level to the north and from the colonnaded street beneath. Two large rooms supported by arches formed a reception suite near the staircase. Three units, each composed of two rooms, opened onto the courtyard; they were probably the private rooms of family members.

The main bulk of the glass finds from this house comes from the late 7th/8th

centuries, being found with typical forms of pottery and with the so-called Jerash lamps dated by Scholl from about 640 to 750. The house was destroyed in the late 8th century or even later by another earthquake, apparently later than the tremor of 749. The rooms continued to be used, making the distinction between the Umayyad and Abbasid forms dependent on external evidence only. The latest occupation, pottery kilns installed in the ruins, is dated to the 9th century, well in the Abbasid period (Gawlikowski 1986).

The other location investigated by the Polish team was a small cemetery church in the necropolis opposite the hippodrome on the Amman road, close to Hadrian's Arch, excavated jointly with Jordanian colleagues (Gawlikowski and Musa 1986) [Fig. 5]. The church was built



Fig. 4. The Umayyad House on the South Decumanus as restored by Antoni Ostrasz: view from the northeast, loci 7, 10, 20, 19 (Photo K. Gawlikowska)

by Bishop Marianos in 570 and remained in use in the 8th century. No material later than Umayyad was observed. Its collapse in an earthquake resulted in many elements of the lighting equipment being preserved on the church floor. On the other side of the road from the church were three chambers (part of the hippodrome) adapted as lodgings for one Deacon Elias. Both locations yielded material roughly contemporary to the Umayyad House, including some glass.

Towards the end of the Project, the Polish team also extended the old excavation in the northwest quadrant of buildings around the *tetrakionion* at the crossing of the *cardo* and the south *decumanus* (Kraeling 1938: 108–110). In the back rooms of the front shops (Loci 106, 107 and 108), the pottery evidence indi-

cated a late 8th/9th century date, and the same applies to the glass bottles, goblets, bowls and lamp found in Locus 108.

The once spacious Umayyad House was divided in the 8th century into three smaller units, no doubt by inheritance partitions [see Fig. 3]. The colonnade in front was annexed; several new rooms were built incorporating the columns or their stumps in the wall fabric. The street itself may have been covered with shabby structures, as was the case elsewhere, but any evidence of these were removed by earlier archaeologists. The structure was abandoned following yet another tremor and pottery kilns, of a type found also in the North Theatre, were installed in the ruins. By this time, the pottery assemblage was dominated by deep bowls



Fig. 5. Aerial view of the church of Bishop Marianos between the Hadrian Arch, the hippodrome and the modern road (Photo H. Cowherd, 1983)

with vertical walls, painted with white festoons, and later also similar bowls decorated with incisions ('cut-ware'). These wares were typical of the later 8th and 9th centuries.

Urban continuity into Islamic times was later confirmed by the work of a Danish expedition in the early years of the 21st century on the other side of the same colonnaded street, and also in the northwestern part of the site (Lichtenberger and Raja 2015; 2017; 2018; 2019; 2020 Rattenborg and Blanke 2017; Walmsley 2018). A major discovery was the Friday Mosque built at the southwest corner of the *cardo* and *decumanus*, on the site of the public baths and close to the *macellum* (Walmsley and Damgaard 2005; Blanke et al. 2007). The building, dated about 725, is similar to many contemporary mosques: a spacious square courtyard surrounded by colonnades and a prayer hall on the south side of it, composed of three transverse aisles. As required by the rules of Islam, the mosque faces Mecca and thus, does not comply with the Roman street grid oriented according to the cardinal points.

Indeed, the ancient street grid tended to be relinquished in the face of accumulated rubble and soil left by yet another quake. Although in the 9th century Jerash was still referred to as a town, the residential quar-

ters must have moved to other parts of the ancient city. The excavated areas were used by potters, as in the sector of the Umayyad House. Other kilns were installed in the Artemis courtyard, which had remained as a vacant lot, suggesting a patchy use of the ancient built space. There is no trace of occupation there beyond the 10th century.

POTTERY FINDS

Excavations of the last 40 years have given a better understanding of the local pottery from Late Roman to Umayyad and Abbasid times (Homès-Fredericq and Franken 1986; Rasson and Seigne 1989; 2019; 2020b). Needless to say, the abandonment fill contains earlier material, too. It is remarkable that, while Roman Gerasa partook in the general repertoire of contemporary forms and Islamic Jerash likewise conformed to the trends of the time, the 6th–7th century complex showed elements of a distinct local style: the so-called Jerash bowls (Watson 1989) and characteristic Jerash lamps [Fig. 6], as well as other vessel types. This local style was replaced with the widely popular blue glazed pottery, which appears elsewhere in the 9th century, but is practically absent from Jerash. The glass production, however, although also local, tends to conform to general trends (Kehrberg 1986; Meyer 1988; Dussart 1998).

GLASS FINDS

Other assignments have delayed the publication of the small finds much too long. The pottery lamps have been presented already by Tomasz Scholl (1986; 1991), and the pottery has been described in general in a few papers by Michał Gawlikowski (1995a; 1995b; 2004). The glass

finds, however, have been given only a brief overview so far (Gawlikowska in Gawlikowski 1986: 120, 151–153).

A significant quantity of glass fragments from the Polish excavation could be reconstructed, either on paper or actually restored from joining fragments. The

drawings³ render the forms as implied by the surviving fragments. Needless to say, some of the body fragments were not drawn, but their fabric, color and weathering condition were recorded for consideration in the statistics. Blue of different hues was the predominant color of the glass (60%), followed by green (31%), olive-green (6.6%), and single examples of yellow-brown, colorless, turquoise and black. The glass is bubbly with impurities, sometimes very weathered. Some cullet and fragments of wasters suggest local production, but so far only pottery kilns have been uncovered in Jerash.

The prevailing category is tableware: bottles and flasks, beakers, goblets, bowls and plates. Lighting and cosmetic utensils are in second place. Lamps could have been used single or in sets inserted in

polycandela. Balsamaria (otherwise unguentaria) or small bottles were used for unguents or perfumes, jars for ointment and double cosmetic tubes as *kohl* containers. One nearly complete sprinkler was found. The finds include also windowpanes and glass mosaic cubes. Personal adornments are represented by a number of bracelets.

Save for a few mould-blown specimens, marked as such in the descriptions in the catalogue, the vessels were all free-blown and for the most part undecorated. Still, when adorned, the decoration would consist of grooves, slanting ribs, applied threads or trails wound around the vessel; a very few were pinched.

Most of the glass finds are dated from the 4th to the 8th centuries. Only the bracelets are later.

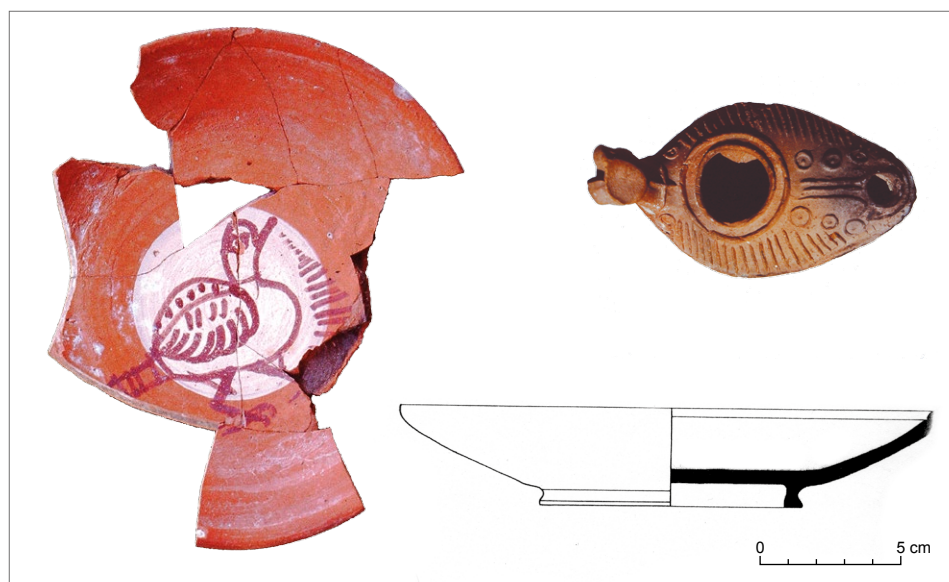


Fig. 6. Examples of so-called Jerash painted pottery bowls and local Jerash lamps (Photos & drawing K. Gawlikowska)

³ Drawn by Michał Gawlikowski and inked then by Dorota Lawecka, and now digitized from the original drawings by Olena Savchuk and Iryna Melnyk under the eye of Marta Momot.

ROMAN GLASS

A few glass pieces from the early to late Roman period were discovered in three of five cisterns found under the house (Loci 15, 29 and 41). The pottery assemblage from these cisterns (including two without any glass finds, Loci 28 and 43) dates from the 2nd–3rd centuries. The glass from one of these cisterns (Loc. 15) included some beakers, a fragmentary unguentarium with a outfolded, horizontally flattened rounded rim (Cat. 162),⁴ and bowls: a shallow form with thickened rim and tapering walls (Cat. 89) and a crimped grip handle that belongs to a bowl decorated with an applied trail, tooled into regular ribs and fixed on the rim (Cat. 88, not drawn). This model was very popular in the Near East in the 1st through end of the 3rd centuries in both the eastern and the western parts of the empire (see Arveiller-Dulong and Nenna 2005: 182, Nos 522–525, with references to many sites in Near East).

The ceramics and clay oil lamps from the second of the cisterns (Loc. 29) span a time from the Hellenistic period to the 3rd century AD. The glass finds comprise some bases with hollow base rings, from either bottles or bowls, a high base ring of a bowl or plate, and a hollow folded-out collar rim from a deep bowl. Also found in this cistern was a nearly complete cosmetic glass container, a sprinkler (Cat. 180), with an ovoid body on pinched-out toes, decorated with vertical, roughly equidistant ribs. This type of object is characterized by a folded diaphragm with a small aperture at the base of the neck to avoid the loss of a precious liquid.

Loci 31, 32, 34, 35, 38, as well as 1, containing ceramic material from middle and late Roman times, yielded a glass assemblage that included a dozen or so bases of glass beakers: solid pad bases and pushed-in bases with cylindrical or conical bodies. Added foot ring bases occurred on bowls or plates, and folded foot rings with high or low foot on beakers or deep bowls.

Late Roman and early Byzantine glassware was recorded in Loci 21 and 31: a funnel-shaped *polycandelon* lamp with a groove tooled below the rim, a jug with a thread around the neck, cosmetic double tubes and one bracelet with thick diagonal ribs.

The last Roman-period cistern with glass finds (Loc. 41) was filled in Byzantine times and leveled under the Umayyad House. The finds were identified mostly as bottles decorated with threads (Cat. 5) and a trailed goblet (Cat. 71). Stems of *polycandelon* lamps are also present in the assemblage.

EARLY ISLAMIC GLASS

Other loci with early Roman material (Loci 17 and 22) yielded only Umayyad-period glassware. Loc. 17 yielded a large hollow foot with cylindrical stem, small pieces of goblets, lamps and many fragments of handles. The early Islamic glass assemblage, which is the most numerous overall, included different types of lamps coming from both the residential area and the church of Bishop Marianos: free-standing lamps in the form of tumblers or bowls, hanging lamps used either individually or as a set inserted in *polycandela*. Single lamps with handles could have been suspended from metal chains, while the *polycandelon*

4 For the same kind of rim on Syro-Palestinian candlestick unguentaria see Atallah and Gawlikowska 2007: Nos 29–31, 32–36; Al-As'ad and Gawlikowska 2017: Nos 7, 16–17.

lamps with hollow or beaded stems could have been inserted into the openings in metal rings. Goblets and bottles are also well represented. Cosmetic containers, both small perfume bottles or flasks and the so-called ox-balsamaria and jars, are a significant part of the Umayyad glass assemblage. Windowpanes of the crown type are also present. Known earlier, they became popular in early Islamic times.

The shapes of Umayyad period glass follow Roman and Byzantine traditions, although it is difficult to identify any developments in this respect.

Three multicolored, inlaid bracelets, all surface finds, are dated to Islamic

times. The glass mosaic cubes found occasionally as individual tesserae in several places in the houses farther north of the Umayyad House, the part nearest to the church of St Theodore, are difficult to date.

The glass assemblage in question is presented divided into five categories:

- I. Tableware: bottles (Cat. 1–39), jug (Cat. 40), goblets (Cat. 41–71), beakers (Cat. 72–87), bowls and plates (Cat. 88–106)
- II. Lamps (Cat. 107–161)
- III. Cosmetic utensils (Cat. 162–184)
- IV. Windowpanes (Cat. 185–196)
- V. Bracelets (Cat. 197–200).

I. TABLEWARE

BOTTLES/FLASKS

Bottles constitute the most numerous category, outnumbering goblets, beakers and bowls.

Of early Roman date is a square bottle found in the courtyard fill, with a partly damaged base (the mark on the base was not preserved) and missing handle. Square bottles of this kind with a handle were common in the 1st–2nd centuries (see Arveiller-Dulong and Nenna 2005: 29, Figs 66–78 for a western model with a workshop mark on the base; and 184 for eastern square bottles, Figs 555–556; 291, Fig. 884, Black Sea region). Most of the bottles come from Byzantine layers and the abandonment fill, from Loci 23, 24, 41 and 108. No intact examples were found.

The bottles have either long or short necks, sometimes constricted at the point where the neck joins the body. They are for the most part unadorned or bear decoration in the form of a thread wound

many times around the neck, either a thin simple thread or a set of thicker wavy threads sometimes referred to as “ruffles”. Some bottles have tall, narrow cylindrical necks, slightly flared near the rim; specimens with conical necks have also been found. Rims, if present, are rounded, ranging from 1.4 cm to 2.8 cm in diameter (1.2 cm to 3 cm for the short necks).

Bottles with threads wound around the neck are usually made of thin glass of light blue, blue or bluish-green color. Threads are either of the same color as the vessel or a contrasting darker color (dark blue, turquoise, or brown). The threads are wound horizontally on most bottles; on some they spiral downward.

The bodies of these bottles are spherical or piriform in shape, with kicked bases. The height of two bottles with cylindrical threaded necks has been restored as 13 cm (Cat. 10, 11). The third restored bottle, approximately 10 cm tall, has a conical neck

constricted at the junction with the body, and stepped shoulders (see Fitzgerald 1931: Pl. XXXIX:25; Baur 1938: 545, Nos 59, 61, Fig. 31; Dussart 1998: Pls 32:3, 42:34; Jennings 2006: 159–164, Figs 7.4, 7.8) (Cat. 12).

Bottles of Islamic date have elliptic bodies with cylindrical necks and inverted and flattened rims forming a narrow aperture (see Lamm 1931: Pl.LXXVIII:2; Baur 1938: 539–541, No. 87, Fig. 28; Lacam 1961: Fig. 2:b; Brisch 1965: Figs 41, 43, 45; Reiche 1996: Fig. 1:3,5 ; Jackson-Tal 2021: 33–34, Nos

45–59) (Cat. 30–32). Bottles with bodies either rounded or elliptical were common throughout the Umayyad period.

The assemblage includes large flasks with tall flaring necks and a funnel-shaped mouth with one thread around the neck (Cat. 33–38). Rims are rounded or inverted and inclined. The diameter of the rim ranges from 7.5 cm to 8.2 cm, except for one which is 5.5 cm. Bodies of thin glass are hardly well preserved. The predominant colors are light blue and light green.

1	[Fig. 7]	Square bottle	Reg. No. R/G1/83 Loc. 18 (courtyard fill)
1st–2nd centuries	Light green glass; heavy iridescence		
Restored (two fragments)	Mould-blown		
H. 17.0 cm Dia. rim 5.5 cm Dia. base 6.5 cm Th. 0.3–0.4 cm	Concave base, partly preserved. Body indented on four sides. Cylindrical neck, constricted at the junction with horizontal, rounded shoulders. Everted and folded-in rim.		

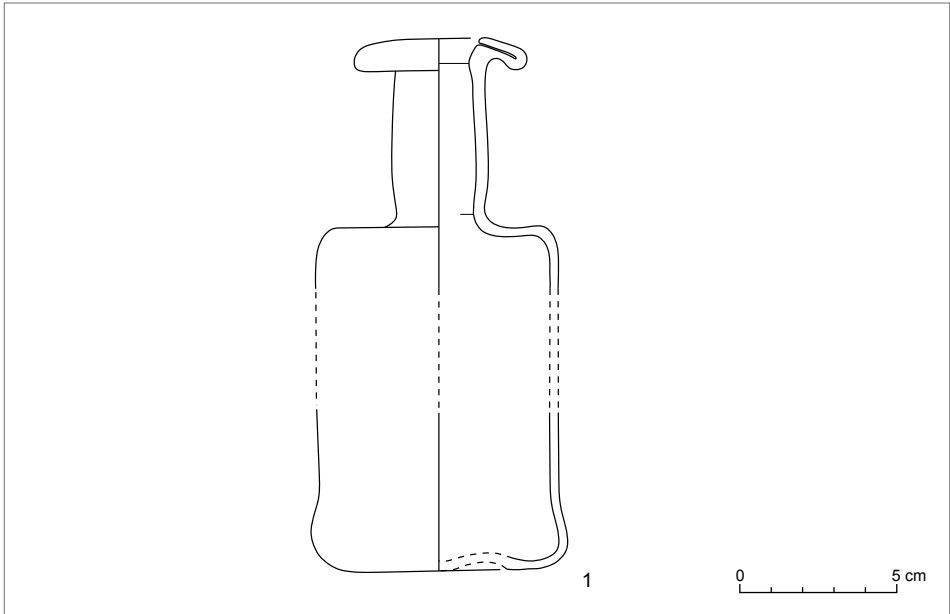


Fig. 7. Square bottle (Cat. 1) (PCMA UW | drawing M. Gawlikowski; digitizing O. Savchuk)

2	[Fig. 8]	Bottle with thread, tall neck	Reg. No. R/G176/83 Loc. 108
		Bluish, bubbly glass (body and thread)	
H. pres. 10.5 cm		Tall cylindrical neck flaring at the top, toward the missing rim. Thread wound four times around.	
3	[Fig. 8]	Bottle with thread, tall neck	Reg. No. R/G20/83 abandonment fill
		Blue glass with a greenish vertical smudge (body and thread); pitted, iridescent	
H. pres. 8.0 cm Th. 0.18 cm		Preserved upper part from the rounded shoulders. High cylindrical neck flaring toward the missing rim. Thread wound seven times around the flaring part of the neck.	
4	[Fig. 8]	Bottle with thread, tall neck	Reg. No. R/G22/83 uncertain context
		Light green glass (body and thread); pitted, white weathering	
H. pres. 8.0 cm Th. 0.1 cm		Preserved upper part from the rounded shoulders. High neck, slightly flaring in the upper part toward the missing rim. Thread spiraling four times around.	
5	[Fig. 8]	Bottle with thread, tall neck	Reg. No. R/G194/83 Loc. 41
		Light blue, bubbly glass (body and thread); iridescent	
H. pres. 8.2 cm Dia.rim 3.0 cm		Tall flaring neck, rounded rim. Thread wound horizontally ten times.	
6	[Fig. 8]	Bottle with thread, tall neck	Reg. No. R/G17/83 abandonment fill
		Blue glass (body and thread); iridescent	
H. pres. 6.0 cm Dia. rim 3.4 cm		Flaring neck with rounded rim. One thicker thread just below rim and 13 thinner threads, horizontally wound around the full height of the neck.	
7	[Fig. 8]	Bottle with thread, medium-long neck	Reg. No. R/G167/83 Loc. 108
		Light green, bubbly glass (body and thread)	
H. pres. 6.5 cm Dia. rim 3.0 cm Th. 0.3–0.15 cm		Preserved upper part from a sloping shoulder. Conical neck constricted at the base. Hollow, folded-in rim. Thin thread wound tightly 15 times around the neck.	
8	[Fig. 8]	Bottle with thread, medium-long neck	Reg. No. R/G168/83 Loc. 108
		Olive green glass with air bubbles (body and thread)	
H. pres. 5.2 cm Dia. rim 3.4 cm		Preserved upper part from a rounded shoulder. Conical neck constricted at the base. Rounded rim. Three horizontal threads wound around upper part of neck.	
9	[Fig. 8]	Bottle with threads, medium-long neck	Reg. No. R/G169/83 Loc. 108
		Blue glass of the body; turquoise color of the threads	
H. pres. 5.0 cm Dia. rim 3.5 cm		Rounded shoulder, conical neck widening toward the rim. Folded-in and flattened rim. Thread wound eight times along the full height of the neck.	

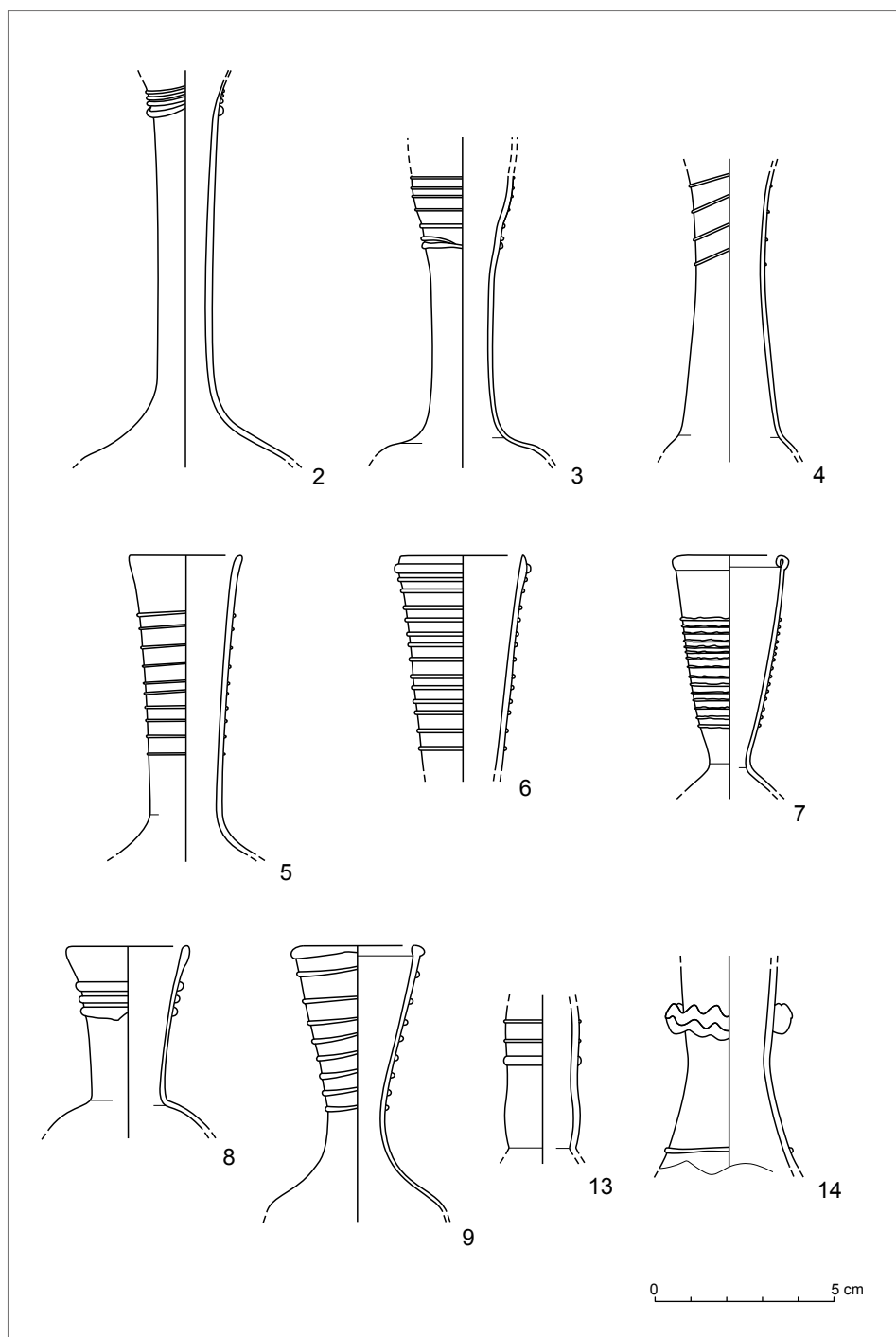


Fig. 8. Bottles decorated with threads: tall necks (Cat. 2–6) and medium-long necks (Cat. 7–9, 13–14) (PCMA UW | drawing M. Gawlikowski; digitizing I. Melnyk, O. Savchuk)

10	[Fig. 9] Bottle with thread, medium-long neck	Reg. No. R/G19/83 Loc. 23
Blue body glass with blue-green threads; flaking, iridescent		
Restored H. 13.0 cm Dia. rim 3.0 cm Dia. base 3.6 cm Th. 0.1–0.2 cm		
Concave base, piriform body. Neck constricted at the base, short cylindrical neck with funnel-shaped mouth, rounded rim. Three evenly spaced, thicker bands on the neck, with threads wound around the mouth between them.		
11	[Fig. 9] Bottle with thread, medium-long neck	Reg. Nos R/G45/83; R/G16/83 Loc. 24
Bluish, bubbly glass (body), light blue glass (thread); slightly iridescent		
Restored H. 13.0 cm Dia. rim 3.3 cm Dia. base 5.0 cm Th. rim 0.24 cm Th. body 0.15 cm		
Concave base, globular body. Flaring neck constricted at the junction with the body, straight rounded rim. Three evenly spaced, thicker bands and four spiral threads between them.		
12	[Fig. 9] Bottle with thread, medium-long neck	Reg. No. R/G18/83 Loc. 24
Bluish-green body glass, dark green thread glass; pitted, iridescent		
Restored H. 10.2 cm Dia. rim 3.2 cm Dia. base 2.4 cm Th. 0.1 cm		
Slightly concave base, globular body with stepped shoulders, conical neck constricted at the base, rounded thickened rim. Six spiral threads on the neck.		

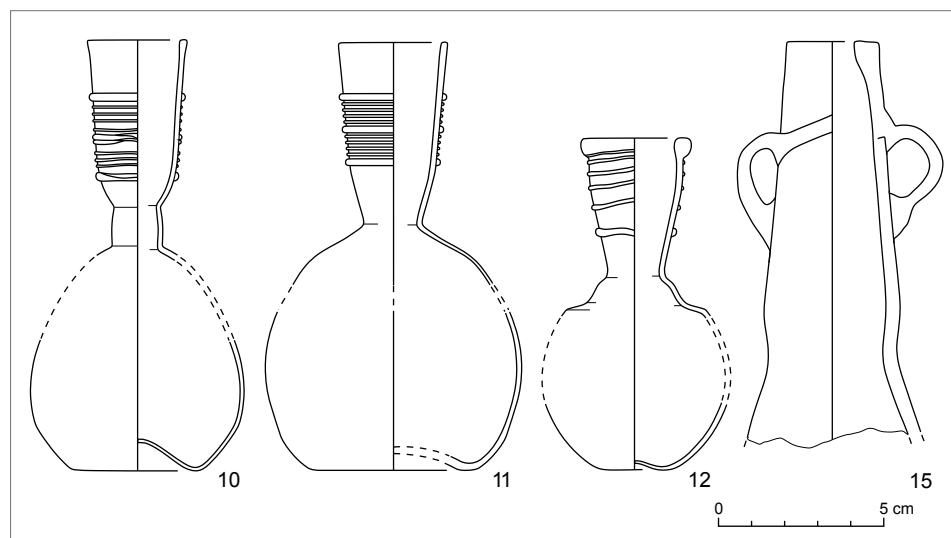


Fig. 9. Bottles with threads: medium-long necks (Cat. 10–12) and neck with one thread and two handles (Cat. 15) (PCMA UW | drawing M. Gawlikowski; digitizing I. Melnyk, O. Savchuk)

13	[Fig. 8]	Bottle with thread, medium-long neck	Reg. No. R/G24/83 abandonment fill
		Green glass (body and thread); pitted, iridescent	
H. pres. 4.2 cm		Preserved fragment of an uneven neck, slightly pinched at the base, missing the rim. One thicker and four narrower threads wound around the neck.	
Th. 0.18 cm			
14	[Fig. 8]	Bottle with thread, neck with wavy threads	Reg. No. R/G21/83 abandonment fill
		Greenish-blue glass (body and thread); white weathering	
H. pres. 5.6 cm		Preserved fragment of the neck narrowed at the junction with steep shoulders. Neck flaring, missing rim. Double wavy thread at the base of the neck, a single thin, simple trail on the shoulder.	
Th. 0.24 cm			
15	[Fig. 9]	Bottle with thread, two handles	Reg. No. R/G2/83 Loc. 18 (courtyard fill)
		Green glass (body and thread); white flaking weathering	
H. pres. 12.0 cm		Upper part of a bottle with thick walls; body not preserved but probably piriform with steep shoulders. Slight constriction at base of a tall neck narrowing toward the top. Rim thickened and grounded. Two small handles 2.5 cm below the rim, linked by a thread which also forms one of these handles.	
Dia. rim 2.8 cm			
Th. 0.4 cm			
		See Salam-Liebich 1978: 139, Fig. GI-2; Hadad 2005: Pl. 39:825	
16	[Fig. 10]	Bottle, undecorated neck	Reg. No. R/G25/83 abandonment fill
		Blue glass; pitted, white weathering	
H. pres. 7.5 cm		Preserved tall narrow neck from the shoulder; rim missing.	
Th. 0.18 cm			
17	[Fig. 10]	Bottle, undecorated neck	Reg. No. R/G26/83 abandonment fill
		Light green, bubbly glass; iridescent	
H. pres. 7.6 cm		Preserved tall cylindrical neck; rim and body missing.	
Th. 0.18 cm			
18	[Fig. 10]	Bottle, undecorated neck	Reg. No. R/G175/83 Loc. 108
		Light blue, bubbly glass; iridescent	
H. pres. 9.5 cm		Piriform body missing the base, narrowing gently to the neck. Tall neck flaring toward the missing rim.	
Th. 0.1 cm			
19	[Fig. 10]	Bottle, undecorated neck	Reg. No. R/G29/83 abandonment fill
		Blue, bubbly glass; slightly iridescent	
H. pres. 8.5 cm		Flat shoulders with rounded edge, long conical neck tapering toward the missing rim (probably a flange rim).	
Th. 0.1–0.2 cm			
		See Dussart 1998: Pl. 47:7–8, 11, 7th–8th centuries	

20	[Fig. 10]	Bottle, undecorated neck	Reg. No. R/G30/83 Loc. 3'
		Blue glass; heavy iridescence	
H. pres. 6.2 cm Th. 0.15 cm	Steep shoulder, wide cylindrical neck, rim missing.		
21	[Fig. 10]	Bottle, undecorated neck	Reg. No. R/G170/83 Loc. 108
		Blue glass, small bubbles	
H. pres. 7.3 cm Th. 0.1 cm	Shoulder rounded, joining a cylindrical then flaring neck; rim not preserved.		
See Fitzgerald 1931: Pl. XXXIX,13; Dussart 1998: Pl. 42:30, end of 6th century			
22	[Fig. 10]	Bottle, undecorated neck	Reg. No. R/G171/83 Loc. 108
		Blue-green glass; pitted	
H. pres. 5.8 cm Th. 0.3 cm	Slightly constricted neck at junction with sloping shoulder, rim missing.		

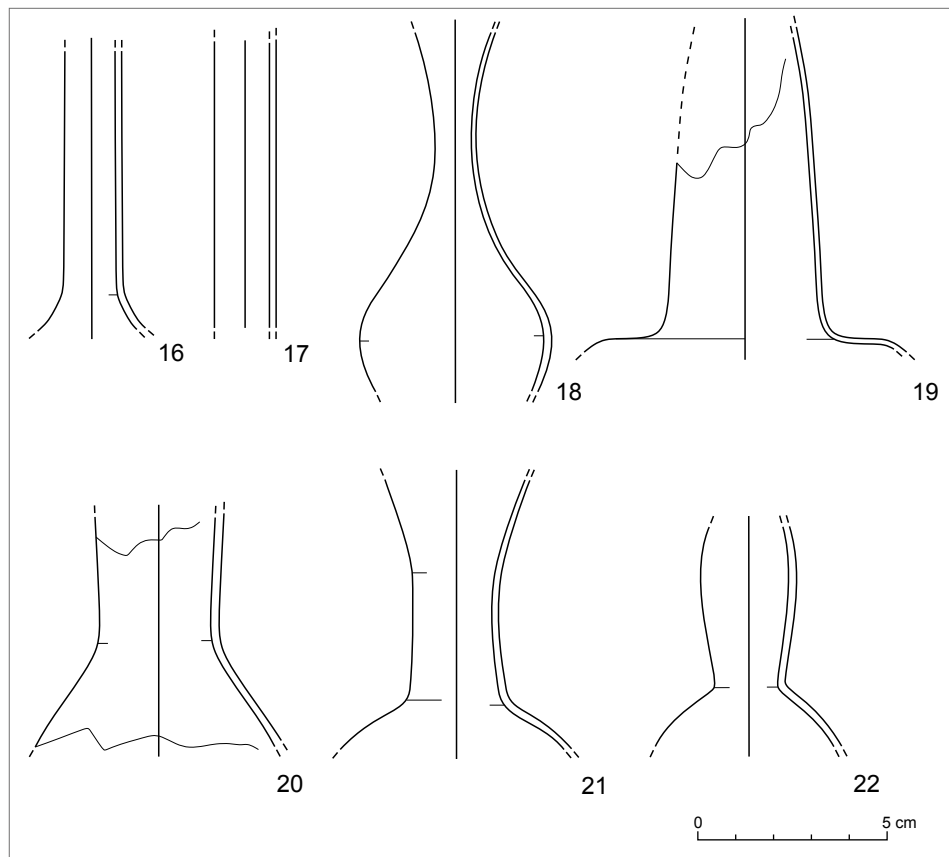


Fig. 10. Bottles: undecorated necks (Cat. 16–22) (PCMA UW | drawing M. Gawlikowski; digitizing I. Melnyk, O. Savchuk)

23	[Fig. 11] Bottle, undecorated body	Reg. No. R/G48/83 Loc. 18
Green glass; iridescent		
H. pres. 6.5 cm Dia. base 8.0 cm Concave base, large globular body. Th. 0.18–0.20 cm		
24	[Fig. 11] Bottle, undecorated body	Reg. No. R/G156/83 Loc. 108
Light blue glass, small bubbles		
H. pres. 5.4 cm Dia. base 5.0 cm Slightly concave base, globular body. Th. 0.1–0.3 cm		
25	[Fig. 11] Bottle, undecorated body	Reg. No. R/G161/83 Loc. 108
Light blue glass; pitted		
H. pres. 1.0 cm Dia. base 7.8 cm Highly pushed up base, shaped over a former. Th. 0.1–0.5 cm		
See late Roman unguentaria about AD 500, Jennings 2006: 119–120, Fig. 5.34.14		

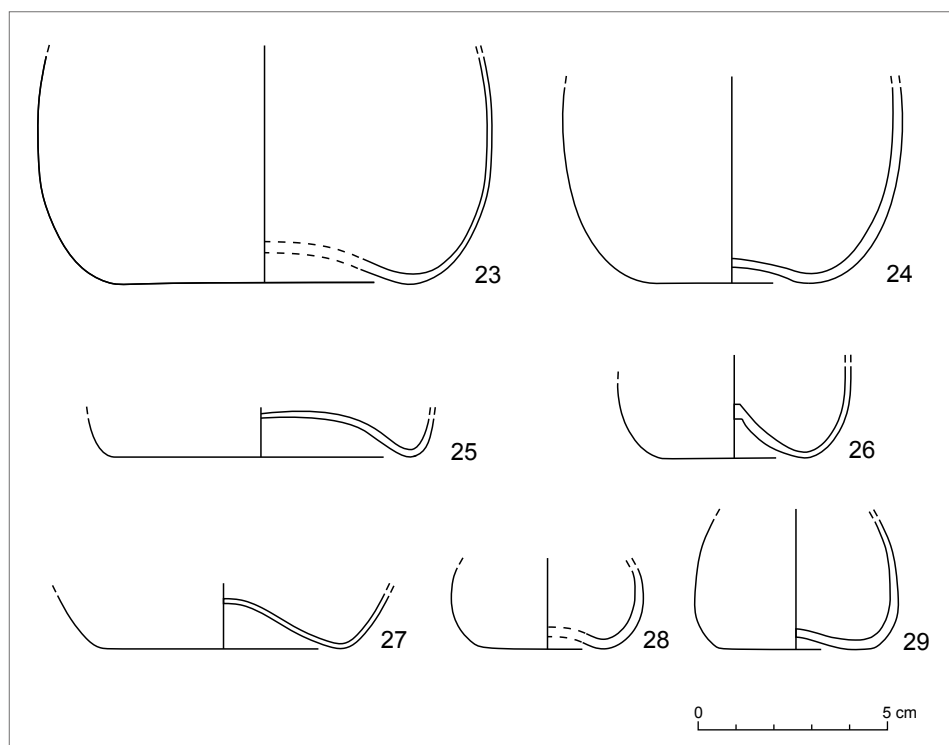


Fig. 11. Bottles: undecorated bodies (Cat. 23–29) (PCMA UW | drawing M. Gawlikowski; digitizing I. Melnyk, O. Savchuk)

26	[Fig. 11]	Bottle, undecorated body	Reg. No. R/G53/82 abandonment fill
Light green glass; white weathering			
H. pres. 2.6 cm Dia. base 4.0 cm Pushed-up base, globular body. Th. 0.1–0.3 cm			
27	[Fig. 11]	Bottle (small), undecorated body	Reg. No. R/G47/83 Loc. 22
Light blue, bubbly glass; iridescent			
H. pres. 2.0 cm Dia. base 6.4 cm Concave base, rounded body. Th. 0.1 cm			
28	[Fig. 11]	Bottle (small), undecorated body	Reg. No. R/G63/83 abandonment fill
Light green, bubbly glass; slightly iridescent			
H. pres. 2.4 cm Dia. base 3.4 cm Slightly concave base, tapering sides. Th. 0.1–0.3 cm			
29	[Fig. 11]	Bottle (small), undecorated body	Reg. No. R/G64/83 abandonment fill
Blue glass, small bubbles; no iridescence			
H. pres. 3.4 cm Dia. base 4.0 cm Slightly concave base, tapering sides. Th. 0.1–0.3 cm			

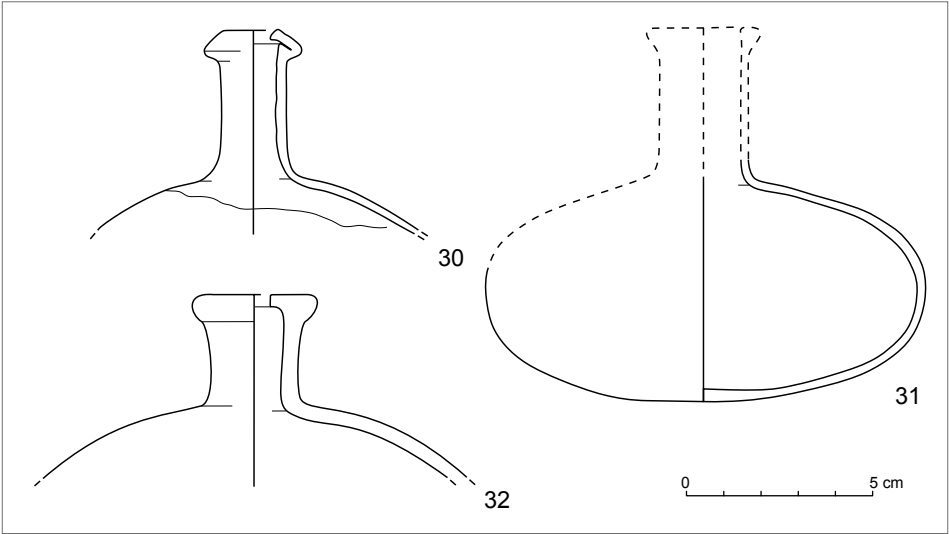


Fig. 12. Elliptical bottles of Umayyad date (Cat. 30–32) (PCMA UW | drawing M. Gawlikowski; digitizing I. Melnyk, O. Savchuk)

30	[Fig. 12] Elliptic bottle	Reg. No. R/G11/82 abandonment fill
Light green glass; brown weathering		
H. pres. 5.5 cm Dia. rim 2.6 cm Th. 0.4 cm	Preserved upper part from large, rounded shoulders, cylindrical neck slightly constricted at the base. Collar rim everted then inverted, slightly sloping.	
31	[Fig. 12] Elliptic bottle	Reg. No. R/G3/82 subsurface
8th century	Dark green glass; no weathering	
Restored (five fragments) H. pres. 6.5 cm Dia. body 11.7 cm Th. 0.2 cm	Rounded thickened base, elliptic body with beginning of a vertical neck (upper part reconstructed).	
32	[Fig. 12] Elliptic bottle	Reg. No. R/G193/83 Loc. 42
Early Islamic 7th–8th centuries	Green glass; pitted, heavy iridescence	
H. pres. 5.0 cm Dia. rim 3.0 cm	Preserved upper part from the rounded shoulders; slightly flaring neck with a thick infolded, flattened rim, thick short cylindrical neck, convex shoulders; narrow flow aperture.	
33	[Fig. 13] Flask (large), flaring neck	Reg. No. R/G42/83 Loc. 22
Light blue glass; slightly iridescent		
H. pres. 4.0 cm Dia. rim 8.0 cm Th. 0.1 cm	Wide, sharply flared neck, thickened folded-in rim.	
34	[Fig. 13] Flask (large), flaring neck	Reg. No. R/G33/83 uncertain context
Blue, bubbly glass; slightly iridescent		
H. pres. 4.5 cm Dia. rim 5.5 cm Th. 0.1 cm	Flaring neck, folded-in rim.	
35	[Fig. 13] Flask (large), flaring neck	Reg. No. R/G35/83 abandonment fill
Light green glass (body and thread); slightly iridescent		
Restored (three fragments) H. pres. 6.0 cm Dia. rim 8.0 cm Th. 0.1 cm	Elongated flaring, funnel-shaped neck, thickened rounded rim. A single thread wound around the neck 1.5 cm below the rim.	

36	[Fig. 13] Flask (large), flaring neck	Reg. No. R/G36/83 abandonment fill
Light green glass, bubbly with small and large bubbles; little iridescence		
H. pres. 2.0 cm		
Dia. rim 7.5 cm	Fragmentary flaring neck; rounded, thickened, folded-in rim.	
Th. 0.1 cm		
37	Flask (large), flaring neck	Reg. No. R/G38/83 abandonment fill
Light blue glass; iridescent		
H. pres. 3.2 cm		
Dia. rim 8.0 cm	Strongly flaring neck; rounded, folded-in, thickened rim.	
Th. 0.1 cm		
38	[Fig. 13] Flask (large), flaring neck	Reg. No. R/G39/83 abandonment fill
Light blue glass; little iridescence		
H. pres. 3.8 cm		
Dia. rim 8.2 cm	Flaring neck; thickened, folded-in rim.	
Th. 0.1 cm		

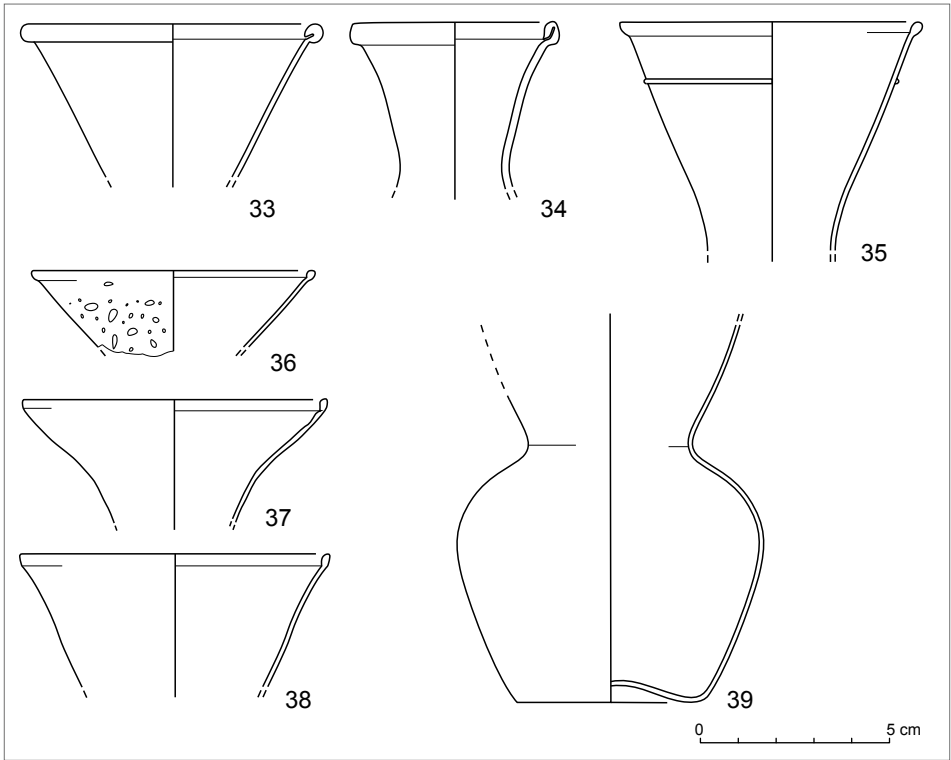


Fig. 13. Flasks with flaring necks (Cat. 33–39) (PCMA UW | drawing M. Gawlikowski; digitizing I. Melnyk, O. Savchuk)

39	[Fig. 13]	Flask (large), flaring neck	Reg. No. M/G224/83 Room E3, hippodrome
5th–6th centuries	Green glass		
H. pres. 10.0 cm	Concave base, ovoid body constricted at junction with wide, conical, flaring neck; missing rim.		
Dia. base 4.5 cm			
Dia. body (max) 8.0 cm			
Th. wall 0.1 cm	See Dussart 1998: 274, Pl. 34.2; Arveiller-Dulong and Nenna 2005: Nos 1047–1048; Al-Asʿad and Gawlikowska 2017: 148–149, No. 77		
40	[Fig. 14]	Jug	Reg. No. R/G178/83; R/G182/83 Loc. 21
4th–5th centuries	Light green glass (body and thread); iridescent		
Restored	Folded hollow low base-ring, concave in the center, ovoid body, sloping shoulders, cylindrical then flaring neck, funnel-shaped mouth, folded-in rim. One thick thread wound around the narrowest part of the neck. Thick handle, circular in section, starts from the shoulder and reaches the top edge with fold under the rim.		
H. 14.0 cm			
Dia. rim 4.0 cm			
Dia. base 5.6 cm	See Crowfoot 1957: 414–416, Fig. 96:9; Isings 1957: Form 120; Bagatti and Milik 1958: 145–146, Fig. 34:17; Goethert-Polaschek 1977: Form D,126; Weinberg and Goldstein 1988: 64–69, Fig. 4-28; Dussart 1998: Pl. 60:9; Arveiller-Dulong and Nenna 2005: Nos 2026–2028; Atallah and Gawlikowska 2007: No. 164		

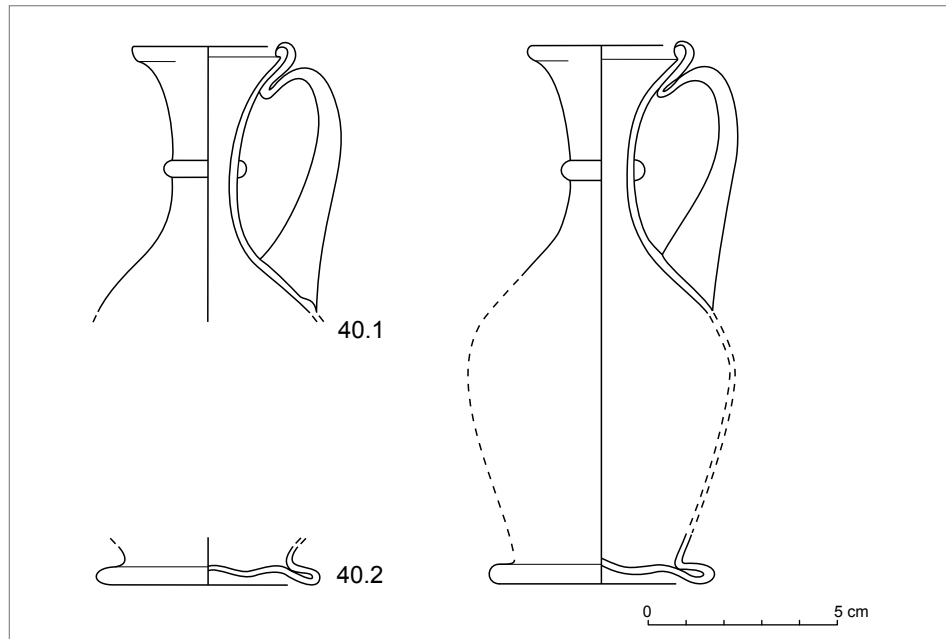


Fig. 14. Jug, two fragments (Cat. 40) and reconstruction on right (PCMA UW | drawing M. Gawlikowski; digitizing I. Melnyk, O. Savchuk)

One nearly complete flask of medium size was found in a room in the hippodrome opposite the church of Bishop Marianos. The ovoid body is constricted with a flaring neck without a preserved rim (Cat. 39).

GOBLETs

Stemmed goblets were the most common kind of drinking vessels in Byzantine and early Islamic times (von Saldern 1980a: 53–60 with reference therein). Unsurprisingly, a large number of fragments of this form, especially the most resistable to breaking goblet bases and stems, were uncovered in the residential area in Jerash.

The bowl-shaped upper parts, made of thin glass, are much less likely to survive, but if preserved, the Jerash goblets could be decorated in different ways: mould-blown lines arranged either horizontally or diagonally (Dussart 1998: 271, Pl. 31:44–46), abraded horizontal lines (Kehrberg 1986: 368, Fig. 9:16–17), or threads wound around the body. Decoration in the form of horizontal threads of the same color glass as the vessel body was the most numerous, although the goblets from Jerash were not adorned on the whole. Blue is the prevailing color of the glass with green coming a close second.

Loci 20 and 41 yielded the most sizable assemblage of broken goblets, and two nearly complete specimens. These were about 9 cm high, with diameters of 5 cm for the foot and 7 cm for the rim. The thread decoration of the goblet bowl (Cat. 70–71) is ensconced in a register between about 2.5–3.0 cm below the rim and 1.5–2.0 cm above the joining with the stem. Goblets with such decoration were very popular at the end of the 5th and in the

early 6th centuries, and prominent in the 7th–8th centuries (Harden 1936: 171–172, Nos 482–487, Pls VI, XVI; Leciejewicz, Tabaczyńska, and Tabaczyński 1977: 124–127, Fig. 112, Nos 20–26; Isings 1980: 322, No. 912, Fig. 28:2; Foy 1995: 205, 216, Pl. 14:151–152, 161; Ivachenko 1995: 329, Fig. 12, Nos 3a and 6; Sternini 1995: 261, Fig. 19:38, 41; Dussart 1997: 100, Pl. 26:7–8; 1998: 271, Pl. 31:43; Katsnelson 2004: 274, Nos 11–12; Mossakowska-Gaubert 2004: 1460, Fig. 2, Cat. 1,3; Jennings 2006: 168, Fig. 7.14:7, 9–10; Israeli 2008: 391, 418, Nos 257–258; Kucharczyk 2011: Fig. 4.1,3; Antonaras 2012: 140, No. 194; O’Hea 2012: 307–308, No. 74, Fig. 658).

Footed goblets fall in two main categories depending on whether the foot is hollow and folded (in which case it can be either flat or conical) or solid and flat. Stems can be partly hollow or solid, sometimes with a larger rounded part at mid-height. Bowls can be cylindrical, hemispherical or conical in shape. The folded, hollow-foot goblets most commonly had a foot diameter of 3.5 cm to 7 cm, and stems that were partly hollow or solid, long or very short. They come from Loci 7, 17 and 108. Solid flat foot goblets (with a foot diameter of 4.2 cm to 5.4 cm) have solid stems straight or thickened in the middle. They come from Loci 23 and 108. Bases are flat and not rounded. Two of the goblets (from Loci 108 and 10/20) have no stem and the bowl rises from the base separated by a waist constriction. These two come from an Umayyad context (see von Saldern 1980a: Pl. 24: Nos 442, 445).

Of the goblet assemblage from the excavations, 95 folded bases and 56 flat bases were found in the subsurface contexts

41	[Fig. 15]	Goblet, folded foot	Reg. No. R/G74/83 Loc. 20
Light green glass; iridescent			
H. pres. 2.5 cm			
Dia. foot 7.0 cm			
Hollow folded foot.			
42	[Fig. 15]	Goblet, folded foot	Reg. No. R/G76/83 Loc. 20
Green glass; pitted, iridescent			
H. pres. 2.2 cm			
Dia. foot 4.0 cm			
Hollow folded foot, cylindrical partly hollow stem.			
43	[Fig. 15]	Goblet, folded foot	Reg. No. R/G77/83 Loc. 7 (window)
Green glass; white and rainbow weathering			
H. pres. 2.5 cm			
Dia. foot 5.0 cm			
Hollow folded foot, partly preserved cylindrical stem.			
44	[Fig. 14]	Goblet, folded foot	Reg. No. R/G78/83 uncertain context
Blue glass; pitted, iridescent			
H. pres. 2.4 cm			
Dia. foot 4.0 cm			
Hollow irregular folded foot, cylindrical, partly hollow stem.			

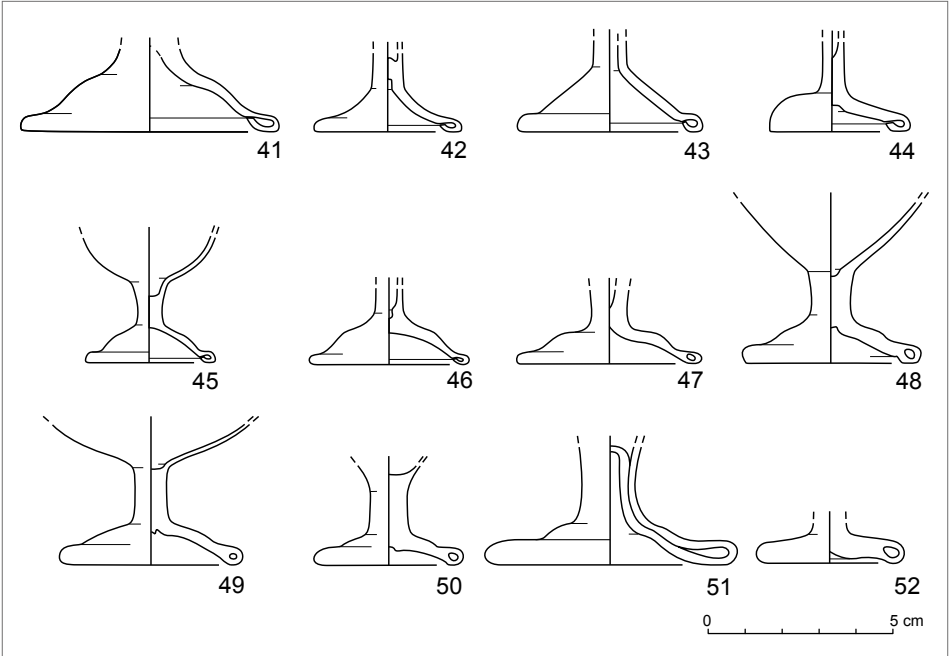


Fig. 15. Goblets with folded foot (Cat. 41–52) (PCMA UW | drawing M. Gawlikowski; digitizing I. Melnyk, O. Savchuk)

45	[Fig. 15]	Goblet, folded foot	Reg. No. R/G79/83 uncertain context
Light blue glass; pitted, iridescent			
H. pres. 3.5 cm			
Dia. foot 3.5 cm			
Th. bowl			
0.18–0.2 cm		Hollow folded foot, solid cylindrical stem, curving, partly preserved bottom part of the bowl.	
46	[Fig. 15]	Goblet, folded foot	Reg. No. R/G80/83 uncertain contextl
Blue glass; iridescent			
H. pres. 2.0 cm			
Dia. foot 4.4 cm		Hollow folded foot, hollow cylindrical stem.	
47	[Fig. 15]	Goblet, folded foot	Reg. No. R/G140/82 Loc. 14
Blue glass; heavy iridescence			
H. pres. 2.0 cm			
Dia. foot 4.0 cm		Hollow folded bulging foot, partly hollow cylindrical stem.	
48	[Fig. 15]	Goblet, folded foot	Reg. No. R/G149/83 Loc. 108
Blue, bubbly glass; slightly iridescent			
H. pres. 4.4 cm			
Dia. foot 4.6 cm		Hollow folded foot, solid cylindrical stem, conical, partly preserved bowl. Similar to Cat. 49	
49	[Fig. 15]	Goblet, folded foot	Reg. No. R/G150/83 Loc. 108
Blue-green glass			
H. pres. 3.8 cm			
Dia. foot 5.0 cm		Hollow folded foot, solid cylindrical stem, flaring bowl. Similar to Cat. 48	
50	[Fig. 15]	Goblet, folded foot	Reg. No. R/G151/83 Loc. 108
Green, bubbly glass			
H. pres. 2.5 cm			
Dia. foot 4.0 cm		Hollow folded foot, solid cylindrical stem; freeblown; tooled.	
51	[Fig. 15]	Goblet, folded foot	Reg. No. R/G181/84 Loc. 17
Light green glass; pitted, heavy iridescence			
H. pres. 3.2 cm			
Dia. foot 6.6 cm		Hollow folded foot, hollow cylindrical stem.	
52	[Fig. 15]	Goblet, folded foot	Reg. No. R/G184/83 uncertain context
Blue, bubbly glass			
H. pres. 1.0 cm			
Dia. foot 3.8 cm		Hollow folded foot, solid stem.	

53	[Fig. 16] Goblet, folded flat foot	Reg. No. M/G219/83 outside Bishop Marianos church, behind diaconicon
Greenish-blue, bubbly glass; iridescent		
H. pres. 3.5 cm		
Dia. foot 5.0 cm		
Th. bowl 0.1 cm	Hollow folded flat foot, solid cylindrical stem, flaring bowl.	
54	[Fig. 16] Goblet, folded flat foot	Reg. No. M/G220/83 outside Bishop Marianos church, behind diaconicon
Greenish-blue glass; iridescent		
H. pres. 1.2 cm		
Dia. foot 4.5 cm	Flat folded foot.	
55	[Fig. 16] Goblet, solid flat foot	Reg. No. M/G68/83 uncertain context
Blue glass; pitted, iridescent		
H. pres. 4.0 cm		
Th. bowl 0.3 cm	Flat foot, partly preserved; thick, solid bulging stem; sloping sides of bowl, rim not preserved.	
56	[Fig. 16] Goblet, solid flat foot	Reg. No. R/G69/83 uncertain context
Blue glass; flaking, iridescent		
H. pres. 3.8 cm		
Dia. foot 5.5 cm		
Th. bowl 0.18 cm	Flaring neck, thickened inclined rim.	
57	[Fig. 16] Goblet, solid flat foot	Reg. No. R/G70/83 uncertain context
Blue glass; flaking, iridescent		
H. pres. 4.5 cm		
Dia. foot 4.5 cm		
Th. bowl 0.18 cm	Flat foot, solid cylindrical stem, cylindrical bowl, rim not preserved.	
58	[Fig. 16] Goblet, solid flat foot	Reg. No. R/G71/83 uncertain context
Blue glass; iridescent		
H. pres. 5.0 cm		
Dia. foot 5.0 cm		
Th. bowl 0.18 cm	Flat foot, solid bulging stem, cylindrical irregular bowl, rim not preserved.	
59	[Fig. 16] Goblet, solid flat foot	Reg. No. R/G72/83 Loc. 23
Blue glass; iridescent		
H. pres. 5.3 cm		
Dia. foot 4.2 cm		
Th. bowl 0.1 cm	Flat foot; thick, solid cylindrical stem; angular bottom of bowl, then flaring walls, rim not preserved.	

60	[Fig. 16] Goblet, solid flat foot	Reg. No. R/G73/83 Loc. 23
Blue glass; iridescent and white weathering		
H. pres. 5.0 cm		
Dia. foot 4.5 cm		
Th. bowl 0.1 cm		
Flat foot, thick solid bulging stem, flaring sides of bowl.		

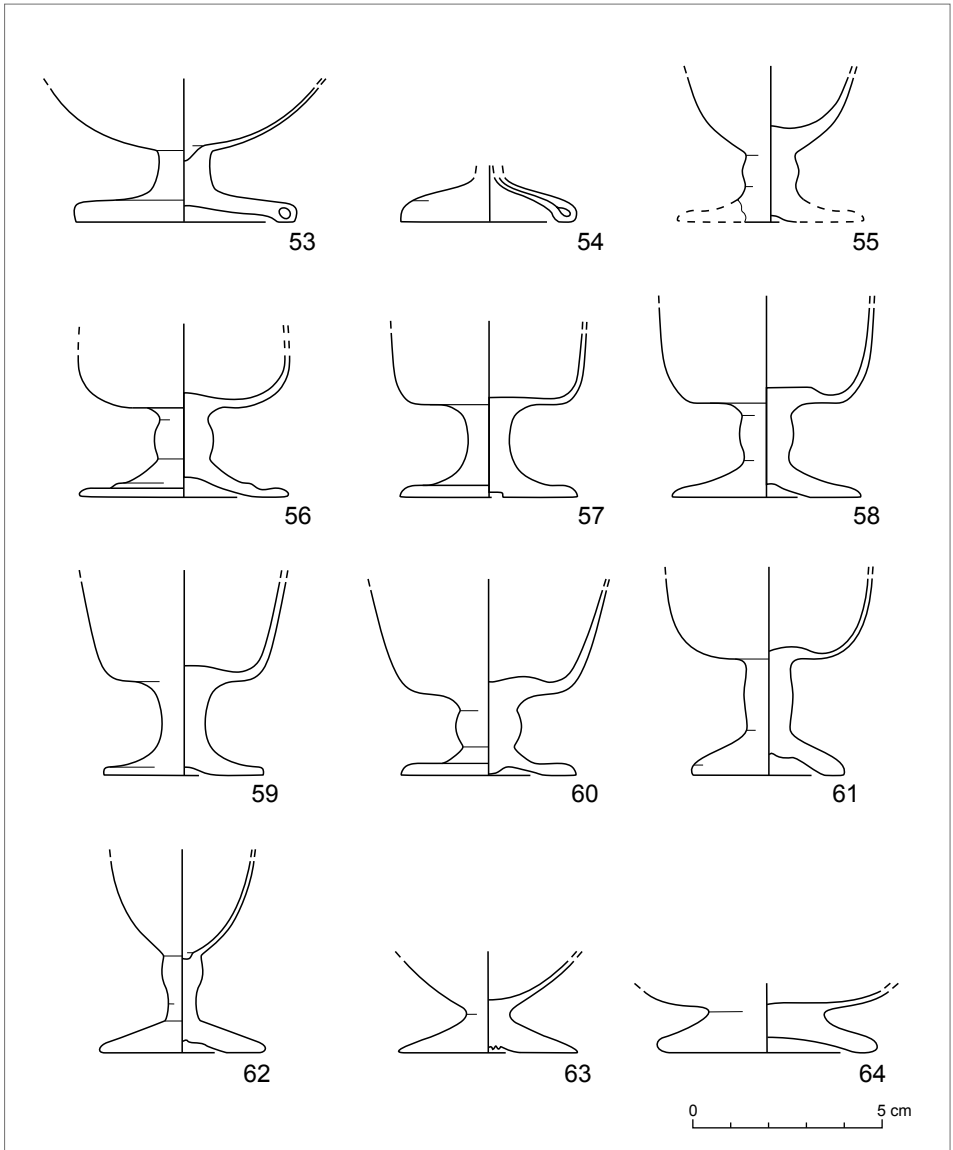


Fig. 16. Goblets with folded flat foot (Cat. 53–54) and solid flat foot (Cat. 55–62), and waist constriction (Cat. 63–64) (PCMA UW | drawing M. Gawlikowski; digitizing I. Melnyk, O. Savchuk)

61	[Fig. 16]	Goblet, solid flat foot	Reg. No. R/G147/83 Loc. 108
Blue-green glass; without iridescence			
H. pres. 5.0 cm Dia. foot 4.0 cm	Flat foot, long, solid stem, bowl with straight sides.		
62	[Fig. 16]	Goblet, solid flat foot	Reg. No. R/G148/83 Loc. 108
Blue-green glass			
H. pres. 4.5 cm Dia. foot 4.4 cm	Flat foot, long bulging stem, conical bowl.		
63	[Fig. 16]	Goblet, waist constriction	Reg. No. R/G152/83 Loc. 108
Green, bubbly glass			
H. pres. 2.5 cm Dia. foot 4.8 cm	Flat foot, conical bowl with waist constriction; pontil scar with glass from the pontil.		
See Meyer 1987: 200, Fig. 9: K–L			
64	[Fig. 16]	Goblet (or bowl), waist constriction	Reg. No. R/G180/83 Loc. 10/20
Blue glass; slightly iridescent			
H. pres. 1.5 cm Dia. foot 5.6 cm	Flat foot, slightly concave; flaring cylindrical bowl with waist constriction.		
65	[Fig. 17]	Goblet bowl	Reg. No. R/G81/83 uncertain context
Light blue glass, small bubbles; little iridescence			
H. pres. 2.0 cm Th. wall 0.18–0.20 cm	Curved bowl fragment.		
66	[Fig. 17]	Goblet bowl	Reg. No. R/G82/83 uncertain context
Light blue glass; iridescent			
H. pres. 2.4 cm Th. wall 0.18–0.20 cm	Curved bowl fragment.		

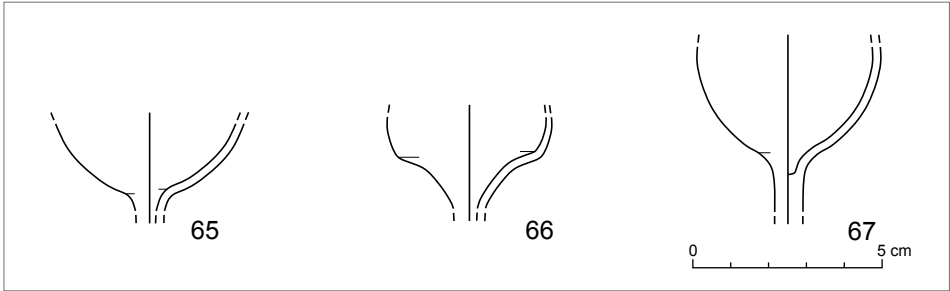


Fig. 17. Goblet bowls (Cat. 65–67) (PCMA UW | drawing M. Gawlikowski; digitizing I. Melnyk, O. Savchuk)

67	[Fig. 17] Goblet bowl	Reg. No. R/G83/83 uncertain context
Light green glass; pitted, iridescent		
H. pres. 4.0 cm	Fragment of cylindrical solid stem and curved bowl.	
Th. bowl 0.1–0.2 cm		
68	[Fig. 18] Goblet bowl	Reg. No. R/G40/83 abandonment fill
Blue glass; iridescent		
H. pres. 2.8 cm	Straight, then flaring sides, rounded rim.	
Dia. rim 7.5 cm		
Th. 0.2 cm		
69	[Fig. 18] Goblet bowl	Reg. No. M/G223/83 outside Bishop Marianos church, behind diaconicon
Olive-green glass; iridescent		
H. pres. 4.0 cm	Flaring body, rounded thickened rim.	
Dia. rim 7.3 cm		
Th. wall 0.15 cm		

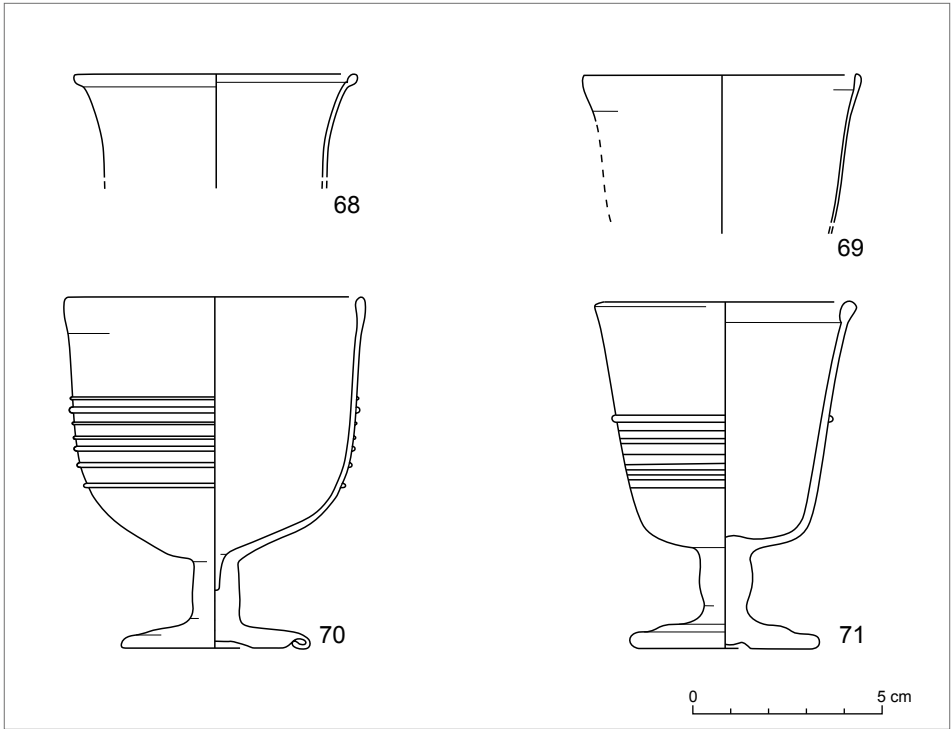


Fig. 18. Goblet bowls (Cat. 68–69) and trailed goblets (Cat. 70–71) (PCMA UW | drawing M. Gawlikowski; digitizing I. Melnyk, O. Savchuk)

70	[Fig. 18] Trailed goblet	Reg. No. R/G41/83; R/G75/83 Loc. 20
	Blue glass (body and thread); slightly iridescent	
Restored (two fragments)	Freeblown, applied	
H. 9.3 cm	Hollow folded flat foot, thick partly hollow stem, cylindrical body, rounded thickened rim. Thread (of different thickness) wound seven times around the lower part of the bowl (2.5 cm below the rim). Similar to Cat. 71.	
Dia. base 5.0 cm		
Dia. rim 7.0 cm		
Th. bowl 0.18 cm	See Harden 1936: Pl. XVI, Nos 482, 484; Tushingham 1972: Fig. 13:30; Foy 2000: 267, Fig. 19:7–11, 17–19; Israeli 2008: 391, Nos 257–258, 6th–7th centuries; Kucharczyk 2011: Fig. 4:1,3	
71	[Fig. 18] Trailed goblet	Reg. No. R/G195/83, R/G196/83 Loc. 41
6th–7th centuries	Blue-green glass (body and thread); pitted, slightly iridescent	
Restored (two fragments, complete)	Freeblown, applied	
H. 9.0 cm	Thick flat foot, solid one-bead stem, cylindrical body, rounded and thickened rim, slightly flaring. A single thicker thread and nine thinner ones wound around the lower part of the bowl (3 cm below the rim). Similar to Cat. 70	
Dia. base 5.0 cm		
Dia. rim 7.0 cm		

(Isings 1957: Form 111; see Baur 1938: 524, Fig. 20:16, 18, 20–21, 527, Fig. 21:19, 22–23, 27; Kehrberg 1986: 368, Fig. 9:16, 17, 24–28; Meyer 1988: 196–197, Fig. 8:Y–cc; 200–201, Fig. 9:A–D; Dussart 1998: 267–270, Pls 27–30, 29:1; Foy 2000: 263–268, Fig. 18; Jennings 2006: 123–130, Figs 6.1, 6.2, 6.3).

Beakers

Beakers make up another significant group of glass drinking vessels. This assemblage did not produce any complete examples. The glass is blue (mostly the upper parts of beakers), green and blue-green with a single instance of olive-green (mostly bases). However, different colors never appear together on a preserved fragment.

Late Roman beakers are preserved mostly in the form of bases, which are crucial for distinguishing types. There are two types found at Jerash. The first one is a pad base, such as that found commonly in the

Syro-Palestinian area. It belongs to a tall cylindrical beaker with a single trail on the body and rounded, slightly everted and thickened rim (diameter in the 6.5-to-7.0 cm range, bases from 4.4 cm to 5.0 cm in diameter) (Cat. 72–77). Colors in the case of this type are dark green and shades of green. Beakers of this kind are known from excavations (see Meyer 1988: 190–192, Figs 6:Z, 7:A–B; Weinberg and Goldstein 1988: 60–62, Fig. 4-23; Jennings 2006: Fig. 8.2:1–4) and museum collections (see Hayes 1975: 105–104, Nos 373–377; Antonaras 2012: 136–137, Nos 186–187).

The other beaker type has a pushed-in base, either solid or hollow (Cat. 78–82). Only the bases and the thickened rounded rims survive, the conical bodies, which were made of very thin glass, being most exposed to breaking. The base diameter exceeds that of the lowest part of the body and ranges from 3 cm to 6 cm. Colors are blue and

blue-green (Isings 1957: Form 109 c, see Crowfoot 1957: 416, Fig. 96:10; Tushingham 1972: Fig. 13; von Saldern 1980a: 63, Pl. 24; Meyer 1988: 186, Figs 5:S–U (rims), 5:V–Z (bases); Weinberg and Goldstein 1988: 62–63, Fig. 4-24; Katsnelson 2004: 274–277, Fig. 61:16–17; Antonaras 2012: 137, No. 188).

Added foot-ring bases (Cat. 83–86) appearing conjoined with thick walls are suggestive of drinking cups called *carchesia* (although with thin walls), which were in use in the Syro-Palestinian region in the 1st and 2nd centuries.⁵ In Jerash, the context of the finds is from early to late Roman times.⁶ Foot-rings are 0.5 cm thick, base diameters fall between 4.6 cm and 5.4 cm. Similar bases were used on deep bowls as well.

Finally, folded foot-ring bases (Cat. 87) with either high or low foot with a hollow ring were common in the mid-Roman period and later. These bases, too, could have

been used on deep bowls (see below; see also Jennings 2006: 189, Fig. 8.9:18).

Bowls and plates

Bowls and plates make up a large tableware category. Popular Roman ribbed and linear-cut bowls are not present in the Jerash assemblage from the residential area. Only one fragmentary bowl with a crimped trail applied on the outside of the rim is dated to the 1st–3rd centuries (Isings 1957: 59). Made of blue or green glass, bowls could have a rounded thickened rim or an external hollow one, folded or inturned and flattened to the wall. Folded collar rims are also present, upright and very close to the vessel.

Bowl sizes range from small to large: rim diameters of 8 cm on one hand and from 20 cm to 24 cm on the other. Both may have bases of the “added base-ring” type (see beakers above), dated to late

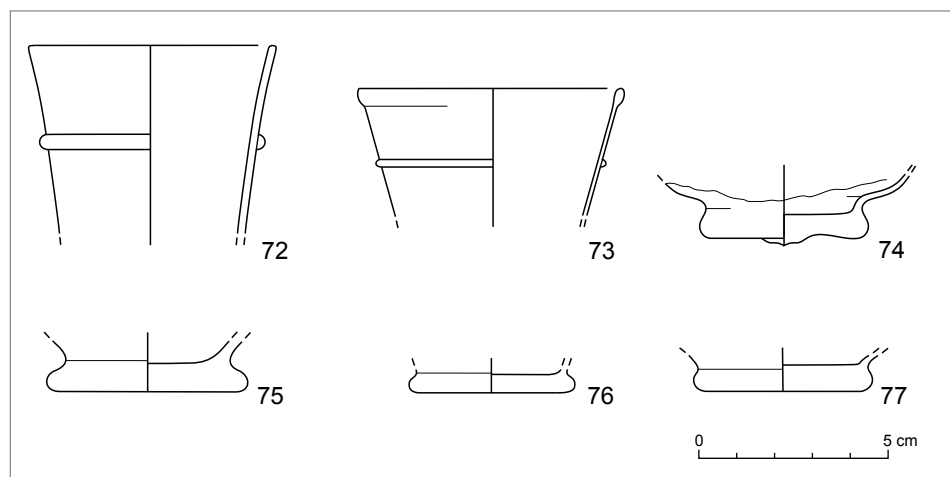


Fig. 19. Beakers with pad base and rounded rim (Cat. 72–77) (PCMA UW | drawing M. Gawlikowski; digitizing I. Melnyk, O. Savchuk)

5 Found in large numbers in the mitraic cave in Hawarte in Syria; Gawlikowska 2012: 496–500, Figs 1–2, with references.

6 Added foot-ring bases, made with applied glass, from the Beirut Souks excavations, are dated to the 5th–6th centuries (see Jennings 2006: 191–193, Fig. 8.5:4–7).

Roman times. The bigger ones, with a base diameter of 9–10 cm, have high solid bases typical of large bowls or plates. Folded hollow foot-ring bases were also recorded (see Jennings 2006: Fig. 8.3:1–3).

Shallow or deep bowls and plates from the Jerash residential area are dated to the 4th and early 5th centuries. Two bowls with mould-blown decoration come from Umayyad times.

72	[Fig. 19] Beaker, pad base and rounded rim	Reg. No. R/G34/83 abandonment fill
Light green glass; iridescence		
Partly mended		
H. pres. 5.0 cm		
Dia. rim 6.4 cm		
Th. 0.18 cm		
Preserved upper part with slightly flaring sides. One thick thread wound around the body, 2.5 cm below the straight rounded rim.		
73	[Fig. 19] Beaker, pad base and rounded rim	Reg. No. R/G37/83 abandonment fill
Blue glass; white weathering		
H. pres. 3.5 cm		
Dia. rim 7.0 cm		
Th. 0.1 cm		
Preserved upper part with slightly flaring sides. One thick thread wound around the body, 2 cm below the rounded thickened rim.		
74	[Fig. 19] Beaker, pad base and rounded rim	Reg. No. R/G125/82 Loc. 1
Green glass		
H. pres. 1.5 cm		
Dia. base 4.4 cm		
Th. 0.3 cm		
Pad base with pontil mark and wad still attached, thin flaring body walls with rounded outline.		
75	[Fig. 19] Beaker, pad base and rounded rim	Reg. No. R/G138/83 Loc. 14
Green glass; heavy iridescence		
H. pres. 1.4 cm		
Dia. base 5.0 cm		
Th. 0.4 cm		
Complete thick pad base, flat, no pontil mark; flaring side wall.		
76	[Fig. 19] Beaker, pad base and rounded rim	Reg. No. R/G189/83 Loc. 29
Light green glass; heavy iridescence		
H. pres. 0.7 cm		
Dia. base 4.4 cm		
Complete thick pad base, flat, no pontil mark.		
77	[Fig. 19] Beaker, pad base and rounded rim	Reg. No. R/G183/83 uncertain context
Green, bubbly glass; slightly iridescent		
H. pres. 1.0 cm		
Dia. base 4.6 cm		
Complete thick pad base, flat, no pontil mark.		

78	[Fig. 20] Beaker, pushed-in base and rounded rim	Reg. No. R/G43/83 Loc. 22
Blue glass; white weathering		
H. pres. 7.0 cm (est. 10.5 cm)		
Dia. rim 7.0 cm		
Th. 0.17 cm		
Slightly flaring wall, straight rounded rim.		
See Cohen 1997: Pl. III,9		
79	[Fig. 20] Beaker, pushed-in base and rounded rim	Reg. No. R/G126/82 Loc. 1
Blue glass; iridescent		
H. pres. 1.4 cm		
Dia. base 3.5 cm		
Th. 0.15 cm		
Solid pushed-in base, flaring wall.		
80	[Fig. 20] Beaker, pushed-in base and rounded rim	Reg. No. R/G124/82 Loc. 1
Blue-green glass; no iridescence		
H. pres. 1.0 cm		
Dia. base 5.5 cm		
Th. 0.7 cm		
Thick, solid pushed-in base, fragment of straight wall.		
81	[Fig. 20] Beaker, pushed-in base and rounded rim	Reg. No. R/G144/82 Loc. 15
Blue glass; heavy iridescence		
H. pres. 1.0 cm		
Dia. base 4.0 cm		
Th. 0.46 cm		
Hollow pushed-in base, flaring walls.		

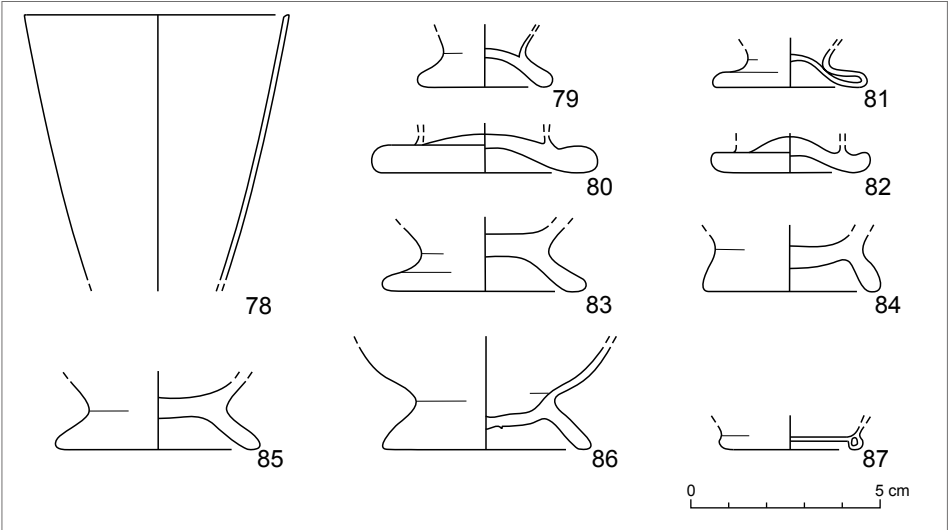


Fig. 20. Beakers with pushed-in base and rounded rim (Cat. 78–82), added foot-ring base (Cat. 83–86) and folded foot-ring base (Cat. 87) (PCMA UW | drawing M. Gawlikowski; digitizing I. Melnyk, O. Savchuk)

82	<i>[Fig. 20]</i>	Beaker, pushed-in base and rounded rim	Reg. No. R/G87/83 uncertain context
		Green glass; pitted and iridescent	
H. pres. 0.7 cm			
Dia. base 4.0 cm		Solid pushed-in base, fragments of a straight wall.	
83	<i>[Fig. 20]</i>	Beaker, added foot-ring base	Reg. No. R/G128/82 Loc. 1
		Olive-green, bubbly glass; iridescent	
H. pres. 1.8 cm			
Dia. base 5.4 cm			
Th. 0.5 cm		Foot-ring base, fragments of flaring walls.	
84	<i>[Fig. 20]</i>	Beaker, added foot-ring base	Reg. No. R/G129/82 Loc. 1
		Light green glass; pitted, iridescent	
H. pres. 1.5 cm			
Dia. base 4.6 cm			
Th. 0.5 cm		Foot-ring base, fragments of flaring walls.	
85	<i>[Fig. 20]</i>	Beaker, added foot-ring base, rounded rim	Reg. No. R/G130/82 Loc. 1
		Green glass; brown weathering	
H. pres. 1.5 cm			
Dia. base 5.4 cm			
Th. 0.45 cm		Foot-ring base, small fragment of a wall.	
86	<i>[Fig. 20]</i>	Beaker (or jug?), added foot-ring base, rounded rim	Reg. No. R/G131/82 Loc. 1
		Blue, bubbly glass; pitted and iridescent	
H. pres. 2.4 cm			
Dia. base 5.4 cm			
Th. foot 0.5 cm			
Th. wall 0.2 cm		Foot-ring base, flaring wall.	
87	<i>[Fig. 20]</i>	Beaker, folded foot-ring base	Reg. No. R/G145A/82 Loc. 15
		Blue-green glass; pitted, slightly iridescent	
H. pres. 0.7 cm			
Dia. base 3.6 cm			
Th. 0.4 cm		Flat base on a hollow ring-foot.	
		See Meyer 1987: Fig. 7 E, 4th–5th centuries	
88	<i>[not drawn]</i>	Bowl with grip handles	Reg. No. R/G146A/82 Loc. 15
2nd–3rd centuries		Green glass; iridescent	
L. 4.5 cm		Applied and tooled	
W. 0.8–0.12 cm		Crimped grip handle, half preserved	
		See Isings 1957: Form 43; von Saldern 1980b: No. 136; Meyer 1988: 186, Fig. 5:G–H (1st–3rd centuries); Weinberg and Goldstein 1988: Fig. 4-16:118 (1st–3rd centuries); Jennings 2006: 75, Fig. 4.5:2	

89	[Fig. 21]	Bowl, with rounded rim	Reg. No. R/G145/82 Loc. 15
Light green glass; heavy iridescence			
H. pres. 2.5 cm Dia. rim 12.0 cm Th. wall 0.1 cm Th. rim 0.3 cm			Tapering walls, rounded thick rim.
90	[Fig. 21]	Bowl, deep, with outfolded rim	Reg. No. R/G95/83 subsurface
Light blue glass; iridescent			
H. pres. 1.2 cm Dia. rim 20.0 cm Th. 0.1 cm			Walls flaring to outfolded hollow rim.
91	[Fig. 21]	Bowl with outfolded rim	Reg. No. R/G94/83 subsurface
Blue glass; slightly iridescent			
H. pres. 0.8 cm Dia. rim 20.0 cm Th. wall 0.1 cm			Flaring wall, hollow outfolded rim with thickened edge.
92	[Fig. 21]	Bowl, with outfolded rim	Reg. No. R/G96/83 subsurface
Blue-green glass; iridescent			
H. pres. 1.0 cm Dia. rim 11.0 cm Th. wall 0.1 cm			Flaring wall, hollow outfolded rim.
93	[Fig. 21]	Bowl with outfolded rim	Reg. No. R/G97/83 subsurface
Blue-green glass; iridescent			
H. pres. 1.6 cm Dia. rim 18.0 cm Th. wall 0.1 cm			Flaring wall, turned-in outfolded hollow rim.
			See Tushingham 1972: 157, Fig. 13, Nos 24–25; Dussart 1998: Pl. 5:27, 28, 4th–5th centuries; Jackson-Tal 2021: 27–28, No. 12.
94	[Fig. 21]	Bowl, with outfolded rim	Reg. No. R/G98/83 subsurface
Light blue glass; slightly iridescent			
H. pres. 1.2 cm Dia. rim 12.0 cm Th. wall 0.1 cm			Flaring wall, hollow outfolded rim.
95	[Fig. 21]	Bowl (plate?), with outfolded collar rim	Reg. No. R/G136/82 Loc. 1
Green, bubbly glass; iridescent			
H. pres. 2.6 cm Dia. rim 20.0 cm Th. wall 0.1 cm			Wide, upright outfolded collar rim.
			See Jennings 2006: 75–76, Fig. 4.7:2, 4th century

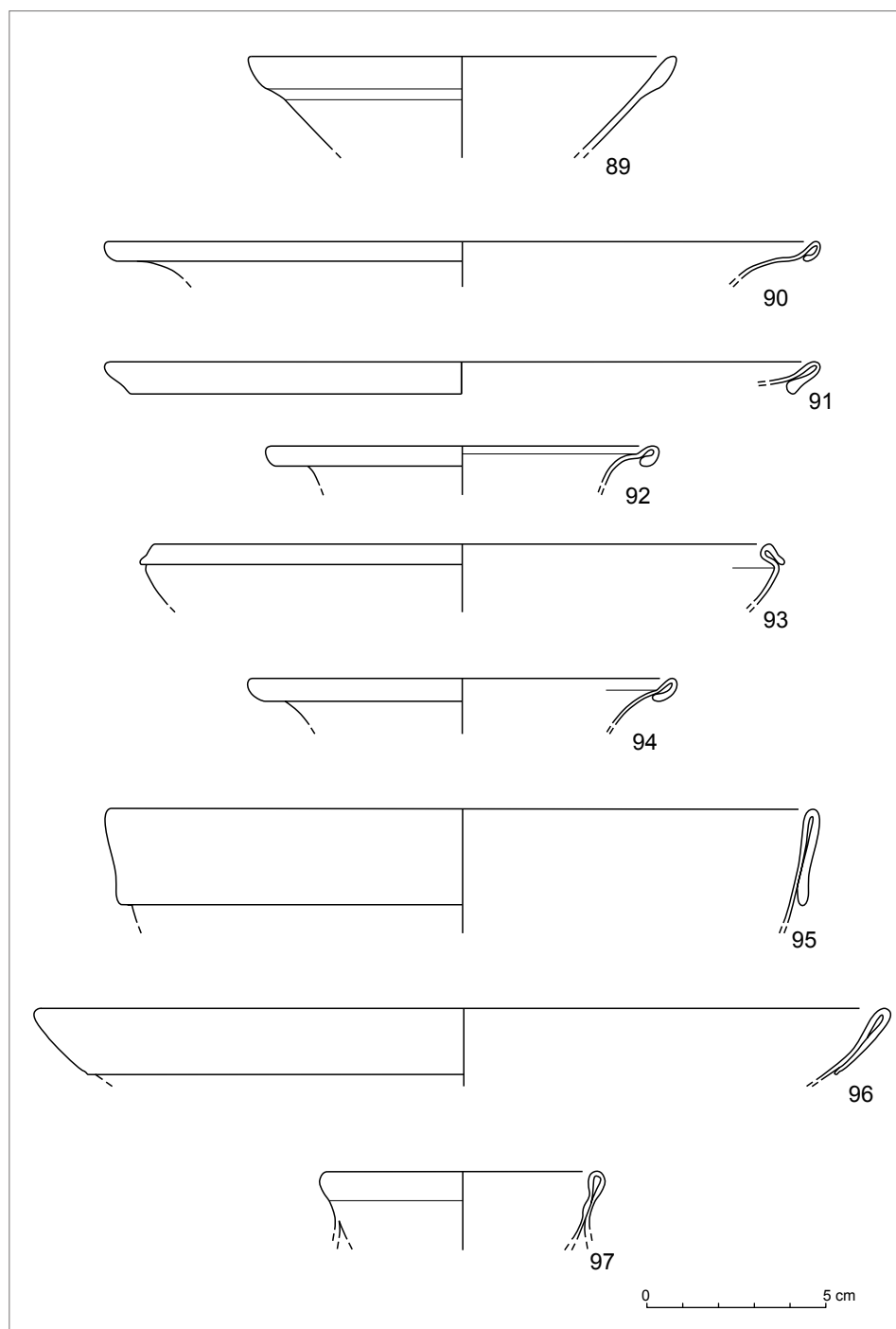


Fig. 21. Bowls(?): with rounded rim (Cat. 89), outfolded rim (Cat. 90–94), outfolded collar rim (Cat. 95–97) (PCMA UW | drawing M. Gawlikowski; digitizing I. Melnyk, O. Savchuk)

96	[Fig. 21]	Bowl (plate?), with outfolded collar rim	Reg. No. R/G137/82 Loc. 1
		Green, bubbly glass; iridescent	
H. pres. 2.0 cm			
Dia. rim 24.0 cm			
Th. wall 0.1 cm		Wide, outfolded collar rim, thin wall.	
97	[Fig. 21]	Bowl, with outfolded collar rim	Reg. No. R/G142/82 Loc. 28
		Blue glass; pitted, iridescent	
H. pres. 1.8 cm			
Dia. rim 8.0 cm			
Th. wall 0.1 cm		Wide, upright outfolded collar rim.	
98	[Fig. 22]	Bowl with folded hollow foot-ring base	Reg. No. R/G85/83 uncertain context
		Blue glass; slightly iridescent	
H. pres. 2.2 cm			
Dia. base 5.8 cm			
Th. 0.2 cm		Base and wall fragment. Hollow tooled-out tubular base; uneven convex bottom, thickening at center; thin flaring wall.	

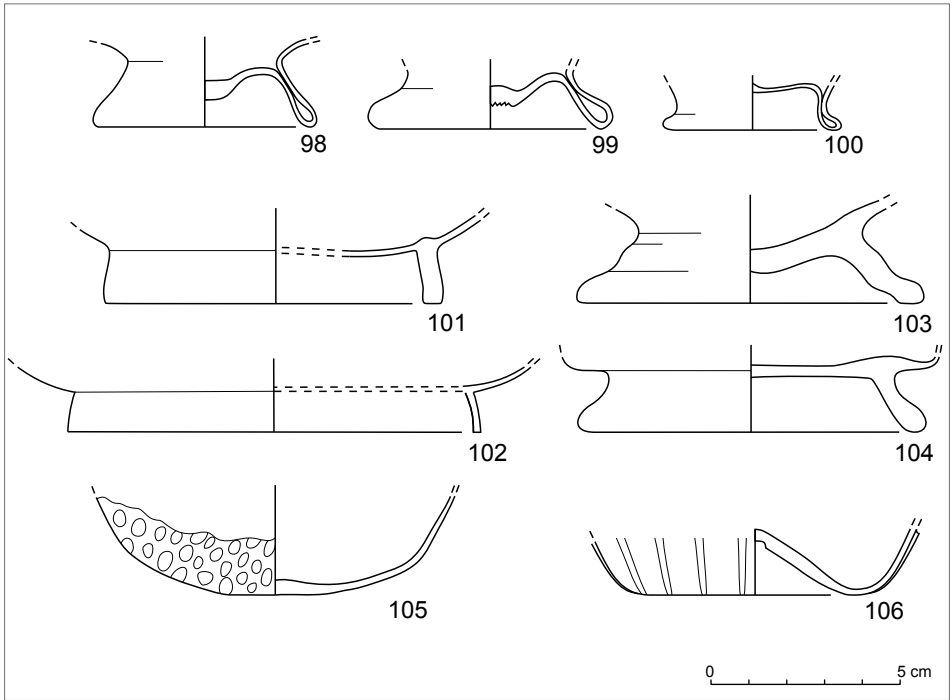


Fig. 22. Bowls (plates?) with folded hollow foot-ring base (Cat. 98–100), added base-ring (Cat. 101–104) and mould-blown decoration (Cat. 105–106) (PCMA UW | drawing M. Gawlikowski; digitizing I. Melnyk, O. Savchuk)

99	[Fig. 22]	Bowl with folded hollow foot-ring base	Reg. No. R/G86/83 uncertain context
Blue glass; slightly iridescent			
H. pres. 1.6 cm			
Dia. base 6.4 cm			
Th. 0.2 cm		High hollow base-ring, uneven concave floor, pontil mark.	
100	[Fig. 22]	Bowl with folded hollow foot-ring base	Reg. No. R/G139/82 Loc. 14
Blue, bubbly glass; light iridescence			
H. pres. 1.2 cm			
Dia. base 4.6 cm			
Th. 0.25 cm		High hollow folded foot-ring base.	
101	[Fig. 22]	Bowl (plate?) with added base-ring	Reg. No. R/G84/83 uncertain context
Olive-green glass; white weathering			
H. pres. 2.5 cm			
Dia. base 9.0 cm			
Th. foot 0.5 cm			
Th. wall 0.2 cm		Solid base-ring added to a flaring wall.	
See Meyer 1992: No. 109			
102	[Fig. 22]	Bowl (plate?) with added base-ring	Reg. No. R/G141/82 Loc. 29
Colorless, bubbly glass; iridescent			
H. pres. 1.8 cm			
Dia. base 10.0 cm			
Th. foot 0.27 cm			
Th. wall 0.1 cm		High base-ring.	
See Meyer 1992: No. 112			
103	[Fig. 22]	Bowl (plate?) with added base-ring	Reg. No. R/G127/82 Loc. 1
Green, bubbly glass; pitted			
H. pres. 3.0 cm			
Dia. base 9.0 cm			
Th. base 0.6 cm			
Th. wall 0.4 cm		High solid base.	
104	[Fig. 22]	Bowl with added base-ring	Reg. No. R/G132/82 Loc. 1
Green, bubbly glass; iridescent			
H. pres. 2.0 cm			
Dia. base 9.0 cm			
Th. foot 0.6 cm			
Th. wall 0.25 cm		High solid base of a bowl.	

105	[Fig. 22]	Bowl with mould-blown decoration	Reg. No. R/G160/83 Loc. 108
		Blue, bubbly glass	
H. pres. 2.5 cm		Mould-blown	
Dia. base 3.0 cm		Thickened base with pontil mark, carinated body, flaring towards the missing rim. Mould-blown round dimples on the body.	
Th. base 0.4 cm			
Th. wall 0.1 cm			
		See Baur 1938: Fig. 22:50; Meyer 1988: 213–215, Fig. 13:Q–R; Hadad 2008: Pl. 5.3, No. 30	
106	[Fig. 22]	Bowl with mould-blown decoration	Reg. No. R/G50/83 uncertain context
		Blue, bubbly glass; slightly iridescent	
H. pres. 2.0 cm		Mould-blown	
Dia. base 6.0 cm		Pushed-in base, flaring body with vertical ribs from the bottom (four preserved).	
Th. 0.1–0.3 cm			

II. LAMPS

Oil lamps make up nearly one third (28%) of the collection of glass finds from the residential area (Umayyad House in Loci 20, 24, 25, 31 and 108) and the Bishop Marianos church (on the floor and near the diaconicon). They date from the late Roman–early Byzantine period to Umayyad times and later. Most of the glass is blue in color with some bluish-green or greenish-blue pieces and one that is yellow-brown. Almost all were weathered, some pitted or with small bubbles. The lamps were freeblown, transparent or translucent; only a few were mould-blown.

There are two types of oil lamps: freestanding and hanging. The freestanding ones are shaped like tumblers or bowls. Tumbler-shaped lamps have bodies that are either cylindrical or straight and widening toward the top, with either narrow or wide bases. The most common

size are narrow bases with a diameter between 2.8 cm and 3.4 cm, while wide bases are about 6 cm in diameter. All the bases are concave. No examples with rims have been preserved. However, judging by the dimensions, these lamps can be compared with complete specimens found in Jerash in the Cathedral Fountain Court (see Baur 1938: 522–523 with narrow bottom, Fig. 19:10, H. 11 cm, base dia. 3.5 cm, rim dia. 8.5 cm, and with wide bottom, Fig. 19:7, H. 8.5 cm, base dia. 5.5 cm, rim dia. 9 cm).⁷

Baur (1938) failed to mention any lamps with a glass wick tube in his publication. However, the present collection includes a tumbler lamp with wide base (Cat. 121), with traces of a possible wick holder in the middle of the bottom (see also Meyer 1988: 205, Fig. 10:Q, captioned as Fig. 11:Q, tumbler lamp, wick tube(?), late Byzantine–early Umayyad period). Since the upper part

7 For a complete vessel, which could be a tumbler-shaped lamp, found in the Zeus temple in Jerash, see Dussart 1998: 254, Pl. 14:15 (H. 9.8 cm, base d. 3.6 cm, rim d. 8.8 cm), dated to the Byzantine period.

is not preserved, it cannot be said whether there were any handles in these cases. Both possibilities seem feasible: a lamp with a glass wick holder inside it, either standing or hanging.

Bowl-shaped lamps are represented by wide and deep bowls with hollow folded-out rims, straight bodies and flat bases (Cat. 122–123). One is mould-blown, decorated with shallow diagonal ribbing. It is 5.5 cm high, while the other one exceeds 10 cm in height, and both have a rim diameter of 9 cm. They were found in Loc. 20 in the reception suite of the house.

The hanging lamps come in two types. The first comprises individual lamps in the shape of shallow or deep bowls, usually with three handles. The shallow bowls can have a hollow folded-out rim, slightly concave base and circular plain handles starting from the upper part of the body and ending over the rim. Large single hanging lamps are never less than 20 cm in rim diameter (Baur 1938: 528, Fig. 23:37, large dish or shallow bowl with three handles, rim diameter 22.8 cm). Our sole example (Cat. 124) was found broken into smithereens to the right of the chancel of the Bishop Marianos church.⁸ It was dated to the first half of the 8th century, similarly as a parallel lamp from the Umayyad period found in the church of Bishop Isaiah in Area F (Meyer 1988: 210–212, Fig. 12:T).

Lamps in the form of deep bowls with handles were discovered in the residential area by the South Decumanus and outside the Bishop Marianos church, behind the diaconicon. They have straight or slightly

flaring bodies, and hollow folded-out or inward-bent rim. Handles start from the upper or middle part of the body and end over the rim. The average height of the handles is 4 cm. There were no bases to be found anywhere closeby (see Crowfoot and Harden 1931: Pl. 30:40–41; Baur 1938: 526–530, Figs 21:49; 22:29; 23:34, 36–37; Isings 1957: Form 134; Kehrberg 1986: 368, Fig. 9:29, 35–36; Meyer 1988: Figs 10:O–R captioned as Fig. 11:O–R, 12:P–T; Dussart 1998: 254, Pl. 14:16–18, 25–27; 255, Pl. 15:3–5, 10–16; Hadad 2005: Pl. 22:413–414; Jennings 2006: 148, Fig. 6.22:1–9).

A great number (60 fragments altogether) of small coil handles and fragments of lamp rims with handles—of blue, green and brown color of the glass—have been found on the subsurface, in Umayyad-dated fill in the northern part of the Umayyad House.

Much more numerous were lamps hung in polycandela, that is, stemmed lamps [Fig. 24]. The bowls of these lamps were made of very thin glass, which broke easily and required painstaking reconstruction. However, some of the elements like stems, hollow or solid, were stronger and survived more easily, allowing an estimate of the overall number of individual lamps. All kinds of solid stems—plain, beaded, partly plain, partly beaded or spirally twisted—were attested in the Polish sector.

The 16 oil lamps found inside the Bishop Marianos church were recorded to the right and left of the apse and in front of the chancel screen [Fig. 23]. Six stemmed lamps could be restored (three

8 Restored from many fragments by K. Gawlikowska, reconstructed on paper by M. Gawlikowski, first published in Gawlikowski and Musa 1986: 153, No. 40, Fig. 9:4. Dated to the first half of the 8th century.

were published in Gawlikowski and Musa 1986: 151–153, Nos 36–39, Fig. 9:1–3) [Fig. 25]. The other nine are preserved as solid stems with the lower parts of the bowl. The colors of the glass are mostly blue; some are bluish-green or with a shade of green. All come from the last occupation phase dated to the first half of the 8th century.

The reconstructed lamps with stems from the church of Bishop Marianos helped to determine the actual shapes and dimensions of other stemmed lamps found as fragmentary bowls and stems in the residential area. The bowls have vertical, rounded and thickened rims, and are hemispherical or cylindrical in shape. The overall height of the lamps is between 11.2 cm and 12.5 cm, the bowls range from 5.5 cm to 6.3 cm, and all have

a rim diameter of 8 cm. All of them were worked on a pontil with the pontil mark sharply cut without a wad attached to the stem. Stem height oscillates between 5 cm and 7 cm; for beaded stems it is between 6.5 cm and 7.6 cm. Some of the stems are bulbous, while others can be thinner and more elongated. The solid beaded stems are executed fairly carelessly as a rule. Most were tooled four times to make the four knobs. The number of preserved tooled beads can vary from four to just two or three at the end of a long, plain stem.

Lamps with beaded stems from the residential area are all dated to the Umayyad period or later (see Crowfoot and Harden 1931: Pl. 29:21–23; Baur 1938: 520, Fig. 17:1, 3; Kehrberg 1986: 368, Fig. 9:66; Meyer 1988: Fig. 13:A–C; Dussart 1998: 256, Pl. 16:13, 19; Foy 2000: 244, Figs 4:6–10; 6:12–17; 7:18–22; Hadad 2005: Pl. 22:425–432; Jennings 2006: 146, Fig. 6.20:5–7).

One lamp from the Bishop Marianos church presents a full profile, indicating that it was furnished with a partly hollow stem, which is narrow at the bottom and bulges toward the top before being constricted at the junction with the lamp bowl (Cat. 138). In this case, the stem takes up 7.5 cm of the full reconstructed height of the lamp, which is 12.5 cm. Such lamps were common not only in Jerash, but also in the other cities of the Decapolis and beyond (for Jerash see Crowfoot and Harden 1931: Pl. 29:24; Baur 1938: 520–521, Fig. 17:5; Kehrberg 1986: Fig. 9:62–64; for Hammat Gader see Cohen 1997: 399, Pl. II:18–19; for Bet Shean see Hadad 2005: 135, Pl. 23:444–452; and for Hippos see Burdajewicz 2011: 32, Fig. 5:26–27). The hollow, nearly cylindrical stems from the

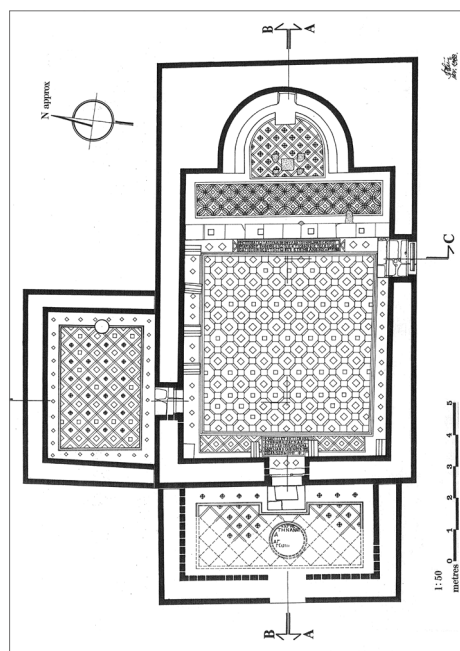


Fig. 23. Ground plan of the Bishop Marianos church (Drawing A. Ostrasz)

residential area are numerous, mainly in the large or narrow versions (see Crowfoot and Harden 1931: Pl. 29:25–26; Baur 1938:

520, 522, Figs 17:5, 14; 18:12–13; Kehrberg 1986: 368, Fig. 9:62–65; Meyer 1988: Fig. 10:H–L captioned as Fig. 11:H–L; Dussart



Fig. 24. Stems of polycandelon glass lamps (Photo K. Gawlikowska)



Fig. 25. Two glass lamps from the Bishop Marianos church, restored (Photo K. Gawlikowska)

1998: 256, Pl. 16:1–8, 11; Foy 2000: 244, Fig. 4:11–13; 246, Fig. 6:19–25; 249, Fig. 8:1–22; Jennings 2006: 143, Fig. 6.16:1–11). The hollow-stemmed lamps from Jerash start from

the late 4th and 5th centuries, and are in common use from the end of 5th century on. In the 7th century, both hollow and beaded stems functioned simultaneously



Fig. 26. Metal lamp hanger from Loc. 106, 8th–9th centuries (top right) and bronze chandeliers with glass lamps: left, ancient example from the Marianos Church (Umayyad period); bottom right, modern copy of bronze by Mariusz Dybich, glass lamps from a Cairo glass atelier (drawing M. Gawlikowski; photos K. Gawlikowska)

(Foy 2000: 245, beaded stem not before the 7th century). Solid stems prevailed in Umayyad times.

The form of the hollow-stemmed lamp may have derived from the funnel as suggested by Axel von Saldern (1980a: 49–51); the only difference being that the tube in funnels remains open. This form was frequent in antiquity and can be found in many glass collections (Morin-Jean 1913: 47, Form 117, Fig. 202; Isings 1957: Form 74; Auth 1976: 156, No. 209; Rütli 1991: Form 3 AR 105; Whitehouse 1997: 203, No. 354; Arveiller-Dulong and Nenna 2005: No. 37). Isings' Form 74 (example from Pompei with a cut-out ridge below the rim) can be compared with the upper part of our Cat. 129, but without a complete tube. The shape of the upper part resembles that of vessels with the same cut groove or grooves on the body, but usually without a preserved base, all classified as bowl or cup (Meyer 1988: Fig. 6:E [Early Byzantine]; Weinberg and Goldstein 1988: Fig. 4-49:483–484; Jennings 2006: 96, Fig. 5.10.4 [hemispherical bowl with

incomplete base, Late Roman]). Cat. 129 has a partly preserved stem and a funnel shaped bowl. It can be described as a hanging lamp with hollow stem, dated to late Roman–early Byzantine times (Cohen 1997: 403–404, Pl. II:22 [bowl-shaped lamps with hollow stem, Byzantine]). Only one fragmented lamp stem in our assemblage is twisted (Cat. 161).

Hanging glass lamps can be suspended from *polyangistra* or *polycandela*, accessories made of bronze or other metals. The residential area, north of Loc. 106 near the tetrapylon, yielded a lamp hanger, Reg. No. A38/83, stratigraphically dated to the 8th–9th centuries, found along with three flat rods, short chains and hooks [Fig. 26 top right]. Individual hanging lamps with handles were hooked to such hangers. In the Bishop Marianos church, a bronze chandelier was found in the chancel, left of the apse, close to several broken glass lamps [Fig. 26 left].⁹ It consists of a flat disk with four circular holes to hold lamps, and four chains joined to one solid hook for suspension.¹⁰

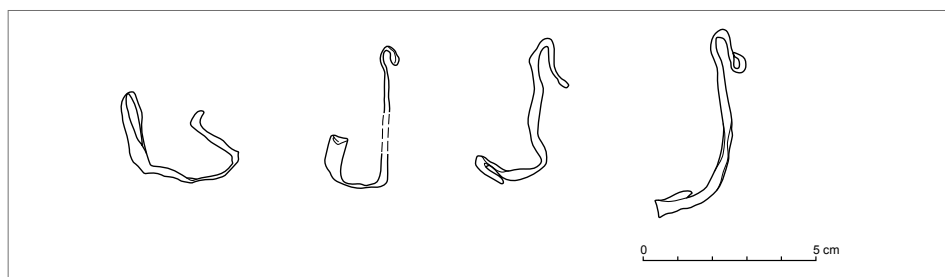


Fig. 27. Metal wick holders from Gerasa, dating uncertain (Drawing M. Gawlikowski)

9 First published in Gawlikowski and Musa 1986: 153, No. 41, Fig. 10, Pl. VIB.

10 A similar *polycadelon* was found in Pella (McNicoll, Smith, and Hennessy 1982: 180–181, Pl.150.2), Umm er-Rasas (Bujard and Schweizer 1992: 9–10, Figs 5–6) and Hippos (Burdajewicz 2011: 37, Fig. 8) with sometimes more holes for stemmed lamps.

A large number of lead or copper-alloy wick holders was found in various locations in the Umayyad House [Fig. 27]. The thin strips of varying length were broken into small fragments and in poor condition. In hollow stems the wick can be placed inside the stem filled with oil. In lamps with solid stems, they have to be placed in a holder of some kind in order to be able to float in the bowls. Metal wick holders consisted of a single strip of metal bent to hang over the rim, the other end looped to hold the

wick. Holders of this kind have been found on many archaeological sites, for example, Jerash, Nessana, Mount Nebo, Dhiban, Tiberias, Jabal Harun, Hawarte, and Deir 'Ain 'Abata (Baur 1938: 517; Saller 1941: Fig. 18:3, Pl. 135.1:8–9; Colt 1962: Pl. 22, No. 27; Tushingham 1972: 158, Fig. 13, Nos 48–50, 55–56, 58–60 [made of lead and leaded copper]; Lester 2004: 200–201, Fig. 7.12:158–159; Pouta 2008: 369, Fig. 20:6–7; Pouta and Whiting 2008: 398–399, Fig. 13:2–3; Gawlikowska 2012: 504–505, Fig. 9; O'Hea 2012: 296–297).

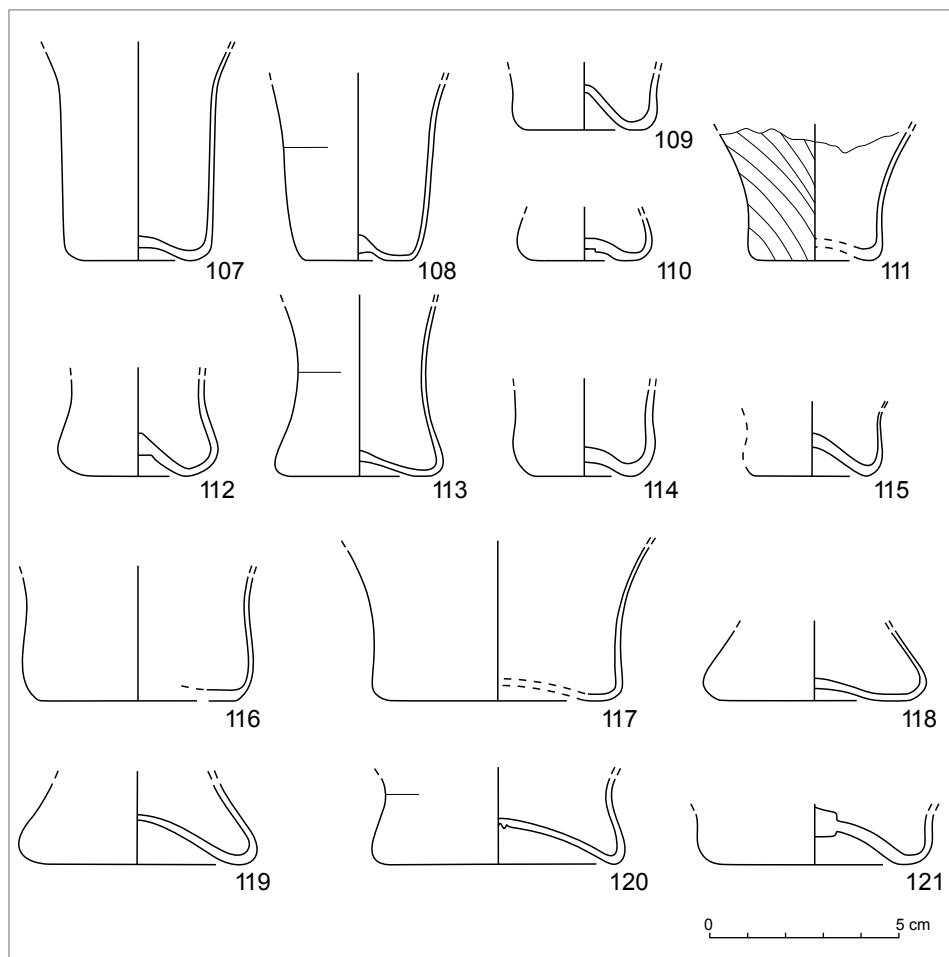


Fig. 28. Freestanding tumbler lamps (Cat. 107–121) (PCMA UW | drawing M. Gawlikowski; digitizing I. Melnyk, O. Savchuk)

107	[Fig. 28] Freestanding tumbler lamp	Reg. No. R/G120/83 Loc. 25
	Blue glass; iridescent	
H. pres. 5.4 cm Dia. base 3.4 cm	Concave base with pontil mark, cylindrical body flaring to missing rim.	
108	[Fig. 28] Freestanding tumbler lamp	Reg. No. R/G154/83 Loc. 108
	Blue-green, bubbly glass	
H. pres. 4.7 cm Dia. base 3.0 cm Th. 0.1 cm	Narrow base, nearly flat with a kick in the center, cylindrical body, flaring to missing rim.	
109	[Fig. 28] Freestanding tumbler lamp	Reg. No. R/G56/83 Loc. 20
	Blue glass; pitted with white weathering	
H. pres. 1.5 cm Dia. base 3.4 cm Th. 0.2 cm	Narrow base, pushed in; body straight, widening.	
	Similar to Cat. 114 and 115	
110	[Fig. 28] Freestanding tumbler lamp	Reg. No. R/G57/83 Loc. 20
	Blue green glass; slightly iridescent	
H. pres. 1.2 cm Dia. base 3.0 cm Th. 0.2 cm	Base slightly concave.	
111	[Fig. 28] Freestanding tumbler lamp	Reg. No. R/G60/83 uncertain context
	Yellow-brown glass with small bubbles; slightly iridescent	
H. pres. 3.5 cm Dia. base 3.2 cm Th. base 0.25 cm Th. sides 0.1 cm	Mould-blown Narrow, concave base, body flaring. Sides with faint diagonal ribs.	
112	[Fig. 28] Freestanding tumbler lamp	Reg. No. R/G59/83 uncertain context
	Blue glass; iridescent	
H. pres. 2.8 cm Dia. base 3.0 cm Th. 0.18–0.25 cm	Narrow base pushed-in, with pontil mark, body flaring, rounded profile at bottom.	
113	[Fig. 28] Freestanding tumbler lamp	Reg. No. R/G153/83 Loc. 108
	Light blue glass	
H. pres. 4.5 cm Dia. base 3.7 cm Th. wall 0.1 cm	Narrow concave base, body concave, then flaring to missing rim.	

114	[Fig. 28] Freestanding tumbler lamp	Reg. No. R/G119/83 Loc. 25
Blue glass; iridescent		
H. pres. 2.3 cm Dia. base 2.8 cm Th. bottom 0.4 cm Th. sides 0.2 cm	Narrow base, concave, with pontil mark, body straight, widening upward.	
Similar to Cat. 109 and 115		
115	[Fig. 28] Freestanding tumbler lamp	Reg. No. M/G221/83 outside Bishop Marianos church
Greenish-blue glass; pitted, iridescent		
H. pres. 1.7 cm Dia. base 3.2 cm Th. 0.15 cm	Narrow base, pushed-up, with pontil mark, body straight, widening to the top.	
116	[Fig. 28] Freestanding tumbler lamp	Reg. No. R/G46/83 abandonment fill
Blue glass; slightly iridescent		
H. pres. 3.4 cm Dia. base 5.6 cm Th. base 0.3 cm Th. wall 0.1 cm	Wide base, fragmentary, body straight, slightly flaring to the top.	
117	[Fig. 28] Freestanding tumbler lamp	Reg. No. R/G67/83 uncertain context
Light blue glass; slightly iridescent		
H. pres. 4.0 cm Dia. base 6.0 cm Th. 0.10–0.25 cm	Wide base, body straight, widening, splayed out.	
118	[Fig. 28] Freestanding tumbler lamp	Reg. No. R/G66/83 uncertain context
Light green glass; iridescent		
H. pres. 1.7 cm Dia. base 5.0 cm Th. 0.1–0.3 cm	Wide base, slightly concave, body straight, strongly tapering sides.	
119	[Fig. 28] Freestanding tumbler lamp	Reg. No. R/G185/83 uncertain context
Blue, bubbly glass; iridescent		
H. pres. 2.2 cm Dia. base 5.4 cm	Wide base, concave, body straight, strongly tapering sides.	
120	[Fig. 28] Freestanding tumbler lamp	Reg. No. R/G157/83 Loc. 108
Green glass		
H. pres. 2.2 cm Dia. base 6.0 cm Th. 0.2 cm	Wide base, pushed-up, body straight, narrowing in and widening to the top.	

121	[Fig. 28]	Freestanding tumbler lamp	Reg. No. R/G44/83 Loc. 24
		Blue glass; flaking iridescence	
H. pres. 1.4 cm	Pontil mark		
Dia. base 6.1 cm			
Th. 0.2 cm	Wide base, pushed up, body straight, widening. Traces of a tube fixed to the floor.		
		Similar to Meyer 1988: Fig. 10:Q, captioned as Fig. 11:Q	
122	[Fig. 29]	Freestanding bowl-shaped lamp	Reg. No. R/G55/83 Loc. 20
Restored (2 fragments)	Green glass with yellow smudges; pitted, slightly iridescent		
H. (est.) 9.8 cm			
Dia. base 5.2 cm	Flat base, sides vertical then turned slightly inward at mid-height, hollow, out-		
Dia. rim 9.4 cm	folded rim.		
Th. 0.18–0.24 cm			
		See Baur 1938: 531, No. 49; Matheson 1980: No. 111	
123	[Fig. 29]	Freestanding bowl-shaped lamp	Reg. No. R/G58/83 Loc. 20
		Greenish-blue glass; pitted, white weathering	
Restored (four fragments)	Mould-blown, pontil mark with wad still attached		
H. 5.5 cm			
Dia. base 5.7 cm	Flat base, slightly flaring body, rim turned outward and flattened. Faint diagonal		
Dia. rim 8.8 cm	ribs.		
Th. 0.1 cm			

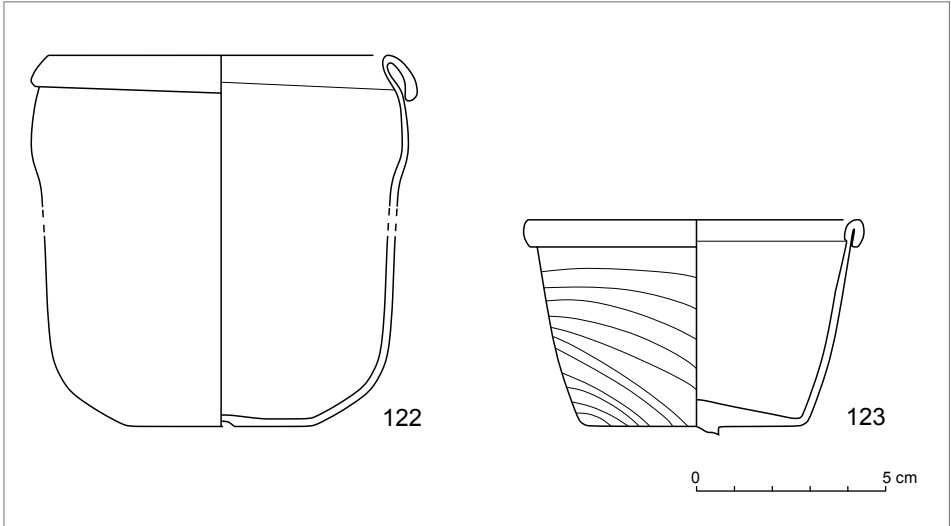


Fig. 29. Freestanding bowl-shaped lamps (Cat. 122–123) (PCMA UW | drawing M. Gawlikowski; digitizing I. Melnyk, O. Savchuk)

124	[Fig. 30]	Hanging bowl-shaped lamp with handles	Reg. No. M/G217/83 Bishop Marianos church		
Blue, bubbly glass; iridescent					
Restored (complete)					
H. pres. 6.2 cm		Shallow lamp, hanging individually. Thick, slightly concave base, flaring sides, hollow outfolded rim. Plain circular rod handle (one preserved).			
Dia. base 6.8 cm					
Dia. rim 20.0 cm					
Th. sides 0.1 cm					
Published in Gawlikowski and Musa 1986: 153, No. 40; see Baur 1938: 528, Fig. 23:37; Meyer 1988: 210–211, Fig. 12:T					
125	[Fig. 30]	Hanging bowl-shaped lamp with handles	Reg. No. R/G117/83 uncertain context		
Blue-green glass; pitted, iridescent					
H. pres. 3.0 cm		Deep lamp, hanging individually. Thick, slightly flaring sides, rim outfolded and down, rod handle, circular in section (one preserved).			
Dia. rim 9.0 cm					
Th. 0.1 cm					
See Baur 1938: 529, Fig. 22:29; Kehrberg 1986: 368, Fig. 9:29; Meyer 1988: Fig. 10:0 captioned as Fig. 11:0					
126	[Fig. 30]	Hanging bowl-shaped lamp with handles	Reg. No. R/G118/83 uncertain context		
Green glass; slight iridescence					
H. pres. 6.0 cm		Deep lamp, hanging individually. Straight, slightly flaring sides, rim outfolded and down. One large ear-shaped handle preserved, drawn up from the body, turned in onto top of the rim with thread back from the top.			
H. handle 5.5 cm					
Dia. rim 20.0 cm					
127	[Fig. 30]	Hanging bowl-shaped lamp with handles	Reg. No. R/G166/83 Loc. 108		
Blue glass, small bubbles					
H. pres. 3.7 cm		Deep lamp, hanging individually. Flaring wall with hollow folded-in rim. Handle (one preserved) starting from the lower part of the body, then angular turn to join the rim.			
Dia. rim 9.0 cm					
See Meyer 1988: Fig. 12:R; Foy 1996: Fig. 2:35					
128	[Fig. 30]	Hanging bowl-shaped lamp with handles	Reg. No. M/G222/83 outside Bishop Marianos church, behind diaconicon		
Blue glass; iridescent					
H. pres. 4.3 cm		Deep lamp, hanging individually. Vertical body, hollow rim, outfolded and down. Handle attached to the body and bent at an angle to the rim, ending over the rim.			
129	[Fig. 31]	Polycandelon lamp with hollow stem	Reg. No. R/G54/82 Loc. 31		
Blue glass; strong rainbow iridescence					
H. pres. 7.0 cm		Funnel-shaped bowl, flaring above a large incomplete hollow stem; deeply cut, external, wide groove, 2 cm below the rim; rim ground.			
Dia. rim 10.5 cm					
Th. 0.2–0.3 cm					
See Cohen 1997: 403–404, Pl. II:22 late Roman–early Byzantine					

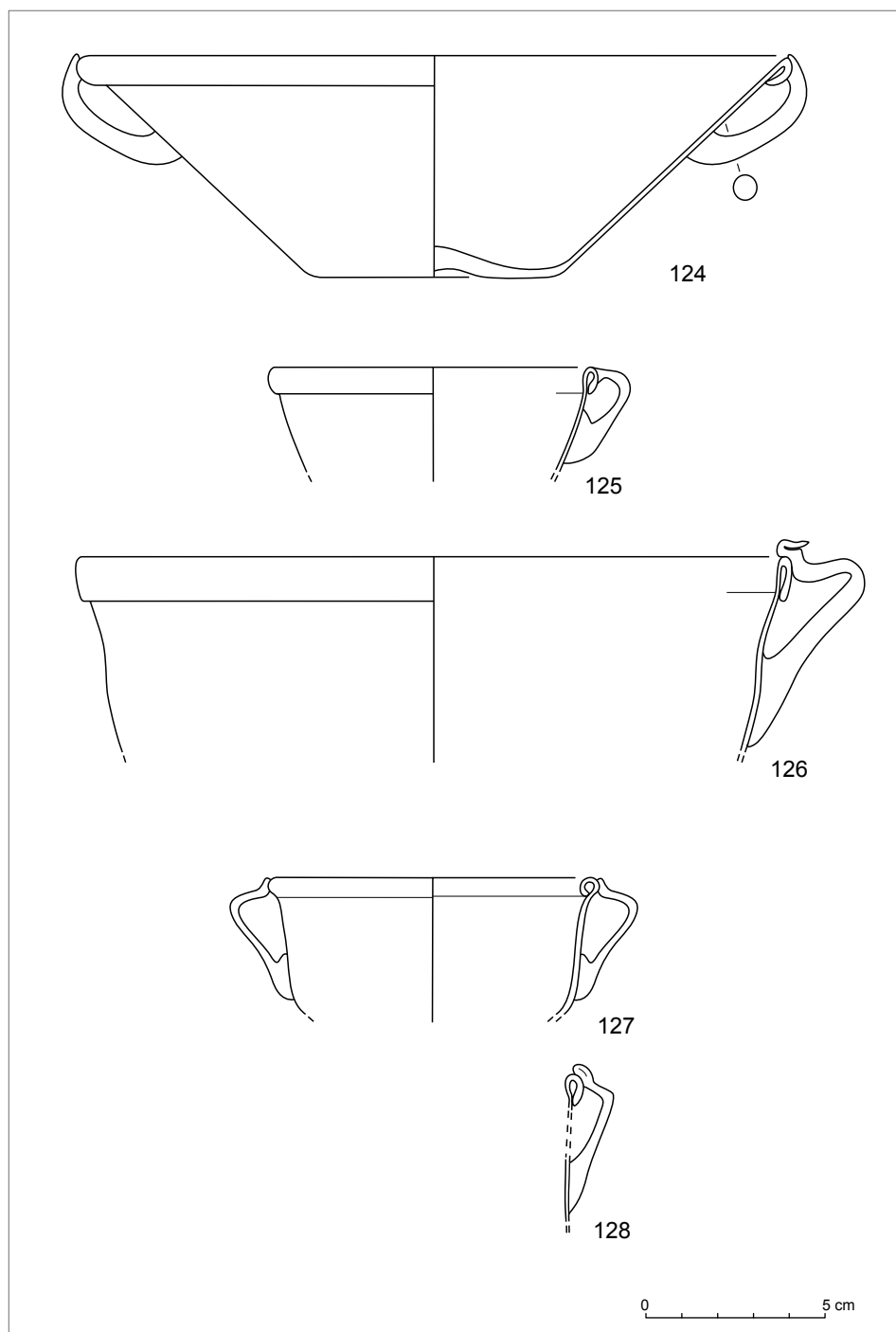


Fig. 30. Single hanging bowl-shaped lamps (Cat. 124–128) (PCMA UW | drawing M. Gawlikowski; digitizing I. Melnyk, O. Savchuk)

130	[Fig. 31] Polycandelon lamp with hollow stem	Reg. No. R/G114/83 uncertain context
	Blue glass; iridescent	
H. pres. 3.0 cm Th. 0.3 cm	Large hollow, cylindrical stem.	
131	[Fig. 31] Polycandelon lamp with hollow stem	Reg. No. R/G113/83 uncertain context
	Olive-green glass; iridescent	
H. pres. 5.0 cm Th. 0.18 cm	Large hollow cylindrical stem, flaring at the top.	
	Similar to Cat. 132	
132	[Fig. 31] Polycandelon lamp with hollow stem	Reg. No. R/G110/83 uncertain context
	Light green glass; iridescent	
H. pres. 4.5 cm Th. 0.18 cm	Large hollow cylindrical stem.	
	Similar to Cat. 131	
133	[Fig. 31] Polycandelon lamp with hollow stem	Reg. No. R/G173/83 Loc. 108
	Blue-green glass; pitted, iridescent	
H. pres. 6.5 cm Th. 0.3–0.1 cm	Large hollow, cylindrical stem, flaring sides.	
	See Meyer 1988: 203–205, late Byzantine/Umayyad (630–670)	
134	[Fig. 31] Polycandelon lamp with hollow stem	Reg. No. R/G174/83 Loc. 108
	Blue glass; slightly iridescent	
H. pres. 6.5 cm Th. 0.1 cm	Narrow hollow cylindrical stem, flaring sides.	
135	[Fig. 31] Polycandelon lamp with hollow stem	Reg. No. R/G115/83 uncertain context
	Olive-green glass; flaking, iridescent	
H. pres. 7.0 cm Th. 0.18 cm	Narrow hollow stem, strongly flaring sides, base missing.	
	See Baur 1938: Fig. 18:12–13	
136	[Fig. 31] Polycandelon lamp with hollow stem	Reg. No. R/G116/83 uncertain context
	Blue glass; iridescent	
H. pres. 6.2 cm Th. 0.1–0.2 cm	Narrow hollow stem, strongly flaring sides.	
	Similar to Cat. 135	
137	[Fig. 31] Polycandelon lamp with hollow stem	Reg. No. R/G111/83 uncertain context
	Blue glass; iridescent	
H. pres. 4.0 cm Th. 0.2 cm	Narrow hollow stem, flaring at the top.	
	Dussart 1998: Pl. 16:4–7	

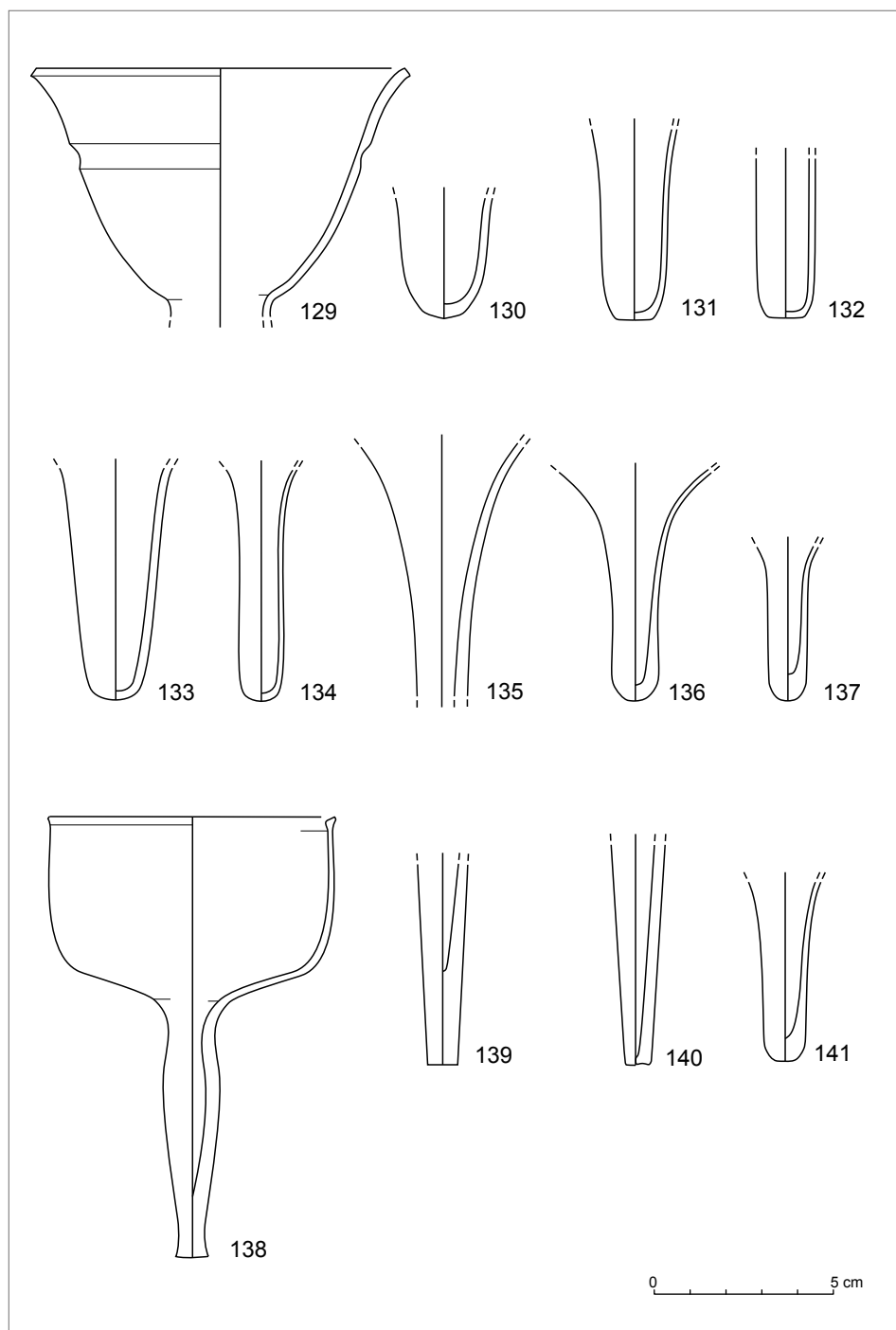


Fig. 31. *Polycandelon* lamps with hollow stem (Cat. 129–141) (PCMA UW | drawing M. Gawlikowski; digitizing I. Melnyk, O. Savchuk)

138	[Fig. 31] Polycandelon lamp with partly hollow stem	Reg. No. M/G202/83 Bishop Marianos church
	Blue, bubbly glass; iridescent	
	Pontil mark	
Restored, complete (from pieces)	Partly hollow stem, solid section 2 cm from the bottom, tapers to a point and constricted at the junction with the bowl. Bowl rounded, sides vertical, thickened rim.	
H. 12.3 cm	Published in Gawlikowski and Musa 1986: 151–153, No. 37, Fig. 9:2	
H. stem 7.3 cm	See Crowfoot and Harden 1931: Pl. XXIX, 24; Baur 1938: 520, Fig. 17:5;	
Dia. rim 8.0 cm	Saller 1941: Pl. 140:16–18; Kehrberg 1986: Fig. 9:62–64; Cohen 1997: 399,	
Th. bowl 0.1 cm	Pl. II:18–19; Katsnelson 2004: 272, Fig. 60:10; Hadad 2005: 135, Pl. 23:444–452; Dussart 2007: 235, Fig. 7:1; Burdajewicz 2011: 32, Fig. 5:26–27	
139	[Fig. 31] Polycandelon lamp with partly hollow stem	Reg. No. R/G108/83 uncertain context
	Blue glass; iridescent	
	Pontil mark	
H. pres. 5.5 cm	Partly hollow, conical stem, solid section 2.5 cm long from the bottom.	
Th. 0.4 cm	Similar to stem of Cat. 138.	
140	[Fig. 31] Polycandelon lamp with partly hollow stem	Reg. No. R/G109/83 uncertain context
	Blue, bubbly glass; iridescent	
	Pontil mark	
H. pres. 6.3 cm	Partly hollow, conical stem.	
Th. 0.3 cm		
141	[Fig. 31] Polycandelon lamp with partly hollow stem	Reg. No. R/G112/83 uncertain context
	Light green, bubbly glass; iridescent	
	Pontil mark	
H. pres. 5.0 cm	Partly hollow, conical flaring stem.	
Th. 0.18 cm		
142	[Fig. 32] Lamp with solid beaded stem	Reg. No. M/G201/83 Bishop Marianos church
	Blue, bubbly glass; slightly iridescent	
	Pontil mark	
Restored, complete (many fragments)		
H. 11.2 cm		
H. stem 4.8 cm	Stem with four irregular beads, bowl with vertical sides, thickened rounded rim.	
Dia. rim 8.0 cm		
Th. bowl 0.1–0.3 cm		
	Published in Gawlikowski and Musa 1986: 151, 153, No. 36, Fig. 9:1	
143	[Fig. 32] Lamp with solid beaded stem	Reg. No. M/G203/83 Bishop Marianos church
	Blue glass with brown-greenish smudges on the stem, bubbly; iridescent	
	Pontil mark	
Restored, complete (many fragments)		
H. 12.3 cm		
H. stem 4.8 cm	Irregularly beaded stem, irregular bowl, rounded curved rim.	
Dia. rim 8.0 cm		
Th. bowl 0.1–0.2 cm		
	Published in Gawlikowski and Musa 1986: 151, 153, No. 38, Fig. 9:3	

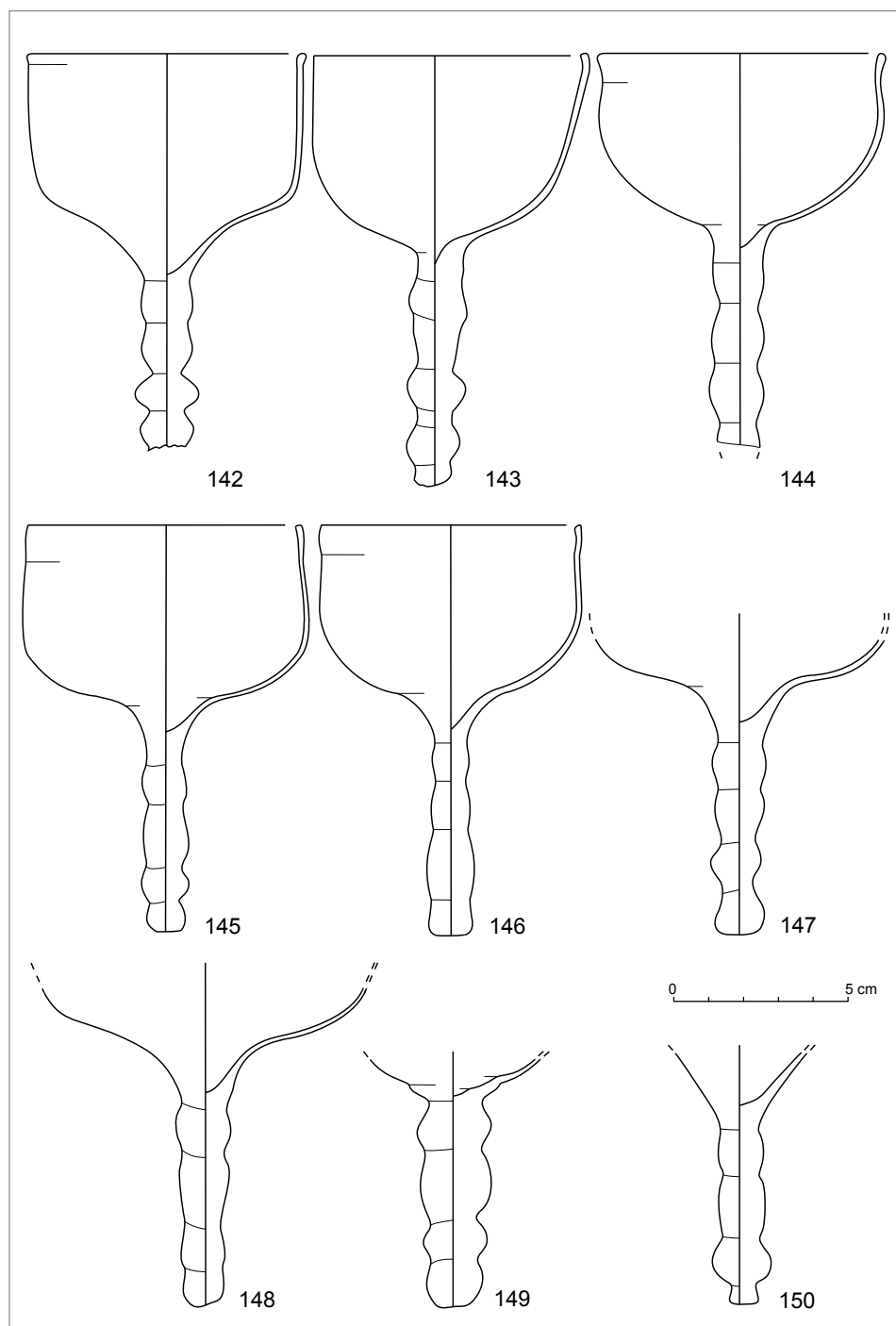


Fig. 32. Lamps with solid beaded stems (Cat. 142–150) (PCMA UW | drawing M. Gawlikowski; digitizing I. Melnyk, O. Savchuk)

144	<i>[Fig. 32]</i>	Lamp with solid beaded stem	Reg. No. M/G204/83 Bishop Marianos church
		Blue, bubbly glass; iridescent	
Restored, complete (many fragments)			
H. 11.2 cm			
H. stem 6.0 cm		Stem with four irregular beads; hemispherical bowl incurved to a rounded rim.	
Dia. rim 8.2 cm			
Th. bowl 0.1 cm			
145	<i>[Fig. 32]</i>	Lamp with solid beaded stem	Reg. Nos M/G205/83, M/G212/83 Bishop Marianos church
		Blue, bubbly glass; heavy iridescence	
Restored, complete (many fragments)		Pontil mark	
H. 11.7 cm			
H. stem 5.7 cm		Stem with four irregular beads; bowl with vertical sides, thickened rounded rim.	
Dia. rim 8.0 cm			
Th. bowl 0.1 cm			
146	<i>[Fig. 32]</i>	Lamp with solid beaded stem	Reg. No. M/G206/83 Bishop Marianos church
		Olive-green glass; heavy iridescence	
Restored, complete (many fragments)		Pontil mark	
H. 11.6 cm			
H. stem 5.8 cm		Stem with four irregular beads; bowl with vertical sides inclined to a curved rim.	
Dia. rim 7.5 cm			
Th. bowl 0.1 cm			
147	<i>[Fig. 32]</i>	Lamp with solid beaded stem	Reg. No. M/G207/83 Bishop Marianos church
		Blue glass with smudges	
H. pres. 8.4 cm		Pontil mark	
H. stem 6.0 cm		Stem with four irregularly tooled beads; lower part of rounded bowl.	
Th. bowl 0.15 cm			
148	<i>[Fig. 32]</i>	Lamp with solid beaded stem	Reg. No. M/G208/83 Bishop Marianos church
		Green-blue glass with smudges; iridescent	
H. pres. 9.0 cm		Pontil mark	
H. stem 6.0 cm		Stem with four irregular beads; lower part of large, rounded bowl.	
Th. bowl 0.1 cm			
149	<i>[Fig. 32]</i>	Lamp with solid beaded stem	Reg. No. M/G209/83 Bishop Marianos church
		Blue glass, green smudges, bubbly	
H. pres. 7.0 cm		Pontil mark	
H. stem 6.0 cm		Bulbous stem with four irregular beads; lower part of bowl.	
Th. bowl 0.1–0.2 cm			

150	[Fig. 32]	Lamp with solid beaded stem	Reg. No. R/G210/83 Bishop Marianos church
		Green glass; slightly iridescent	
H. pres. 7.4 cm		Pontil mark	
H. stem 5.5 cm		Stem tooled four times to make the beads (three beads are rectangular); lower part of narrow bowl.	
Th. bowl 0.2 cm		See Meyer 1992: No. 112	
151	[Fig. 33]	Lamp with solid beaded stem	Reg. No. M/G211/83 Bishop Marianos church
		Blue glass, small smudges on the stem; heavy iridescence	
H. pres. 7.8 cm		Pontil mark	
H. stem 6.2 cm		Stem tooled four times to make irregular beads; rounded lower part of bowl.	
Th. bowl 0.2 cm			
152	[Fig. 33]	Lamp with solid beaded stem	Reg. No. M/G213/82 Bishop Marianos church
		Greenish-blue, bubbly glass; iridescent	
H. pres. 7.5 cm		Pontil mark	
H. stem 6.3 cm		Stem with four beads, one bead rectangular; small fragment of bowl.	
Th. bowl 0.25 cm			
153	[Fig. 33]	Lamp with solid beaded stem	Reg. No. M/G214/83 Bishop Marianos church
		Blue glass; iridescent	
H. pres. 7.9 cm		Pontil mark	
H. stem 7.3 cm		Stem with four beads, one bead elongated; very small fragment of bowl.	
Th. bowl 0.2 cm			
154	[Fig. 33]	Lamp with solid beaded stem	Reg. No. M/G216/83 Bishop Marianos church
		Blue glass; iridescent	
H. pres. 6.8 cm		Pontil mark	
H. stem 6.0 cm		Stem with four beads, one bead elongated; very small fragment of bowl.	
Th. bowl 0.2 cm			
155	[Fig. 33]	Lamp with solid beaded stem	Reg. No. M/G218/83 outside Bishop Marianos church
		Bluish-green glass; little iridescence	
H. pres. 7.5 cm		Pontil mark	
H. stem 6.0 cm		Stem with four beads, one bead elongated; rounded lower part of bowl.	
Th. bowl 0.1 cm			
156	[Fig. 33]	Lamp with solid beaded stem	Reg. No. R/G105/83 uncertain context
		Blue-green glass; iridescent	
H. pres. 7.0 cm		Pontil mark	
		Stem with four beads, incomplete.	

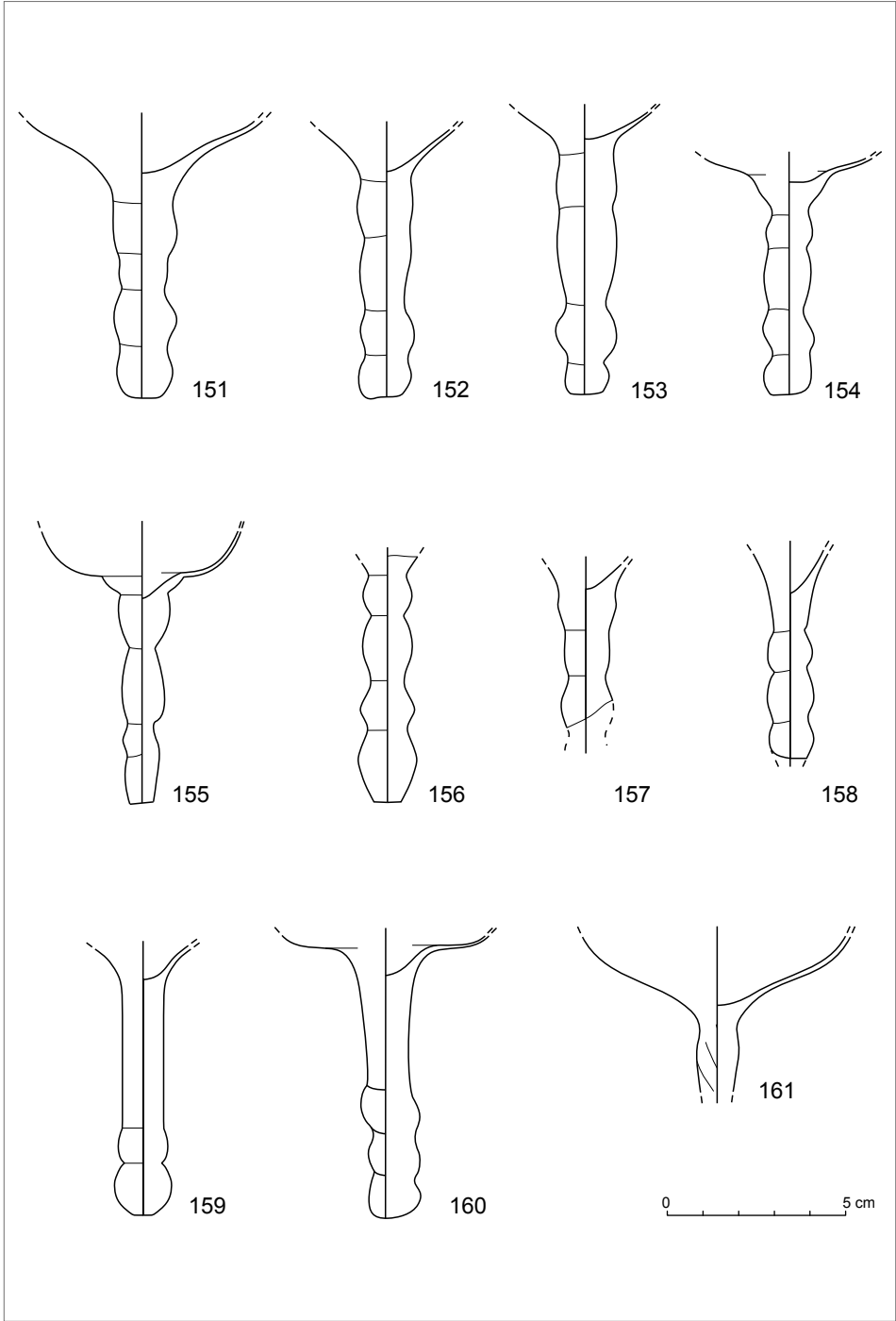


Fig. 33. Lamps with solid beaded stems (Cat. 151–160), with solid twisted stem (Cat. 161)
(PCMA UW | drawing M. Gawlikowski; digitizing I. Melnyk, O. Savchuk)

157	[Fig. 33]	Lamp with solid beaded stem	Reg. No. R/G106/83 uncertain context
		Blue glass slightly iridescent	
H. pres. 4.5 cm		Incomplete stem with three beads preserved.	
158	[Fig. 33]	Lamp with solid beaded stem	Reg. No. R/G107/82 uncertain context
		Green glass; strongly iridescent	
H. pres. 6.0 cm		Incomplete stem with three beads preserved.	
159	[Fig. 33]	Lamp with solid beaded stem	Reg. No. R/G104/83 uncertain context
		Blue glass; iridescent	
H. pres. 7.5 cm		Pontil mark	
H. stem 6.5 cm		Solid stem with two beads at the bottom; very small part of a bowl.	
Th. bowl 0.1 cm			
160	[Fig. 33]	Lamp with solid beaded stem	Reg. No. R/G177/83 Loc. 108
		Blue-green glass; slightly iridescent	
H. pres. 7.8 cm		Pontil mark	
H. stem 6.7 cm		Solid stem with three beads at the bottom; very small section of rounded lower part of a bowl.	
Th. bowl 0.1 cm		See Meyer 1988: 212–213, Umayyad (661–741 or later); Dussart 1998: Pl. 16:13–17	
161	[Fig. 33]	Lamp with solid twisted stem	Reg. No. M/G215/83 Bishop Marianos church
		Blue glass; iridescent	
H. pres. 4.5 cm		Incomplete twisted stem; rounded lower part of a bowl	
H. stem pres. 2.5 cm			
Th. bowl 0.1 cm			

III. COSMETIC UTENSILS

Small perfume or medicine bottles form a distinct category among bottles of early Islamic date from the residential area. These bottles with tall narrow necks and folded-in rims resemble late Byzantine unguentaria (see Meyer 1988: 110, 112, Fig. 12:M–O). Also in this category are two specimens from the abandonment fill: a bottle with a tall neck and a funnel mouth (Cat. 170), and a small probably lentoid bottle (Cat. 171).

Another category are flasks with short everted necks, slightly concave bases, globular bodies and folded-in flattened rims (see Jennings 2006: 110–111, Figs 5.24, 5.25 dated to the 5th century). The vessels from Jerash are dated to the 7th century (Meyer 1988: 210, Fig. 12:4).

Other forms of glass cosmetic accessories include perfume bottles or small flasks of different size and form, jars for

ointments and sprinklers. There are also two animal vases (Cat. 183, 184). These vessels stylized as quadrupeds, that is, horses, donkeys or oxen, bearing loads, were used as *balsamaria* for essence or perfume, or *kohl*. The receptacle was placed in a sort of cage composed of tiers of trails built one upon the other in an openwork structure. This “cage” animal *balsamaria* were very popular in the Near East in the 7th and 8th

centuries. The two from Jerash were found in the Umayyad House, Loc. 42, together with an elliptic bottle (see above).

The assemblage also includes small jars with globular bodies and short necks furnished with narrow or wide mouths. The jars were used for cosmetic products or ointments (Baur 1938: 536, Figs 25:72, 29:69–70; Hayes 1975: No. 141; Isings 1980: Fig. 26:3; von Saldern 1980a: Pl. 27:517). The

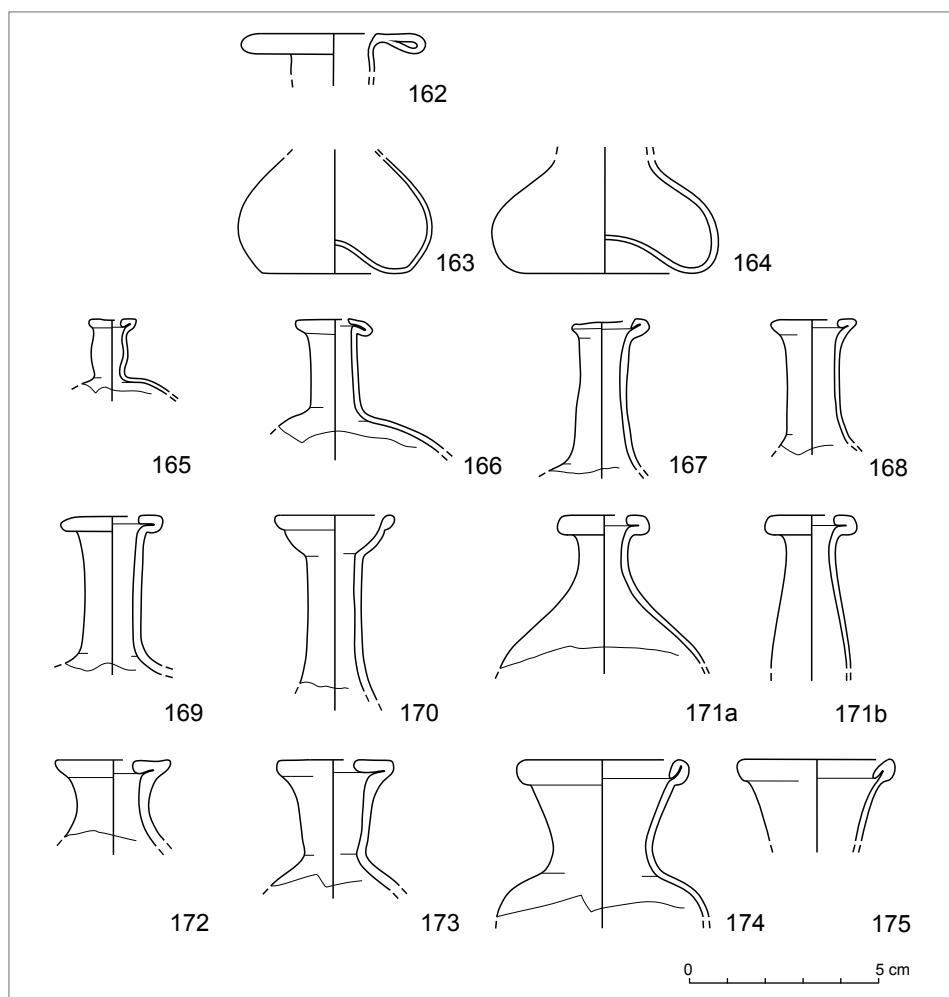


Fig. 34. Cosmetic vessels: unguentaria (Cat. 162–164), perfume bottles (Cat. 165–170 and 171, two sections a, b) and flasks (Cat. 172–175) (PCMA UW | drawing M. Gawlikowski; digitizing I. Melnyk, O. Savchuk)

four examples presented here, all limited to the upper parts of the vessels, were of glass of light blue, blue-green to green color. These small jars are plain, not decorated. Two jars from the collection have short narrow necks with rim diameters of 4.6 cm and 5 cm, and hollow folded-in rims. They are dated to late Roman times (for complete examples see Bagatti and Milik 1958: 147, Fig. 35:2; Dussart 1998: 90, Pl. 17:17). One has a very short wide neck with a rounded, thickened rim, 7 cm in diameter. Wide-necked jars, 7-to-10 cm in diameter, are dated from the late 4th to the early 5th centuries; they are also known from Umayyad times (see Bagatti and Milik 1958: 147, Fig. 35:9; Meyer 1988: 212, Fig. 12: I–J [wide mouth jars]; Dussart 1998: 90, Pl. 17:10).

The neck of another jar represents a large group of jars with cut-out bulge on the neck and a rounded rim (Cat. 179). Often, the body of vessels of this sort was decorated with trails wound around it, and could have handles attached to the rim and

bulged neck and body. In Syro-Palestine, they are dated from the 3rd to the early 5th centuries. The fragment discussed here bears no trace of either threads or handles (see Gorin-Rosen and Katsnelson 2007: 94, Fig. 9:4; Antonaras 2012: No. 291).

Twin-bodied glass unguentaria are another form of cosmetic utensil from the 4th through 7th centuries. They have rounded bases, elongated cylindrical bodies divided into two tubes with flaring rims. Such tubes are well adapted to use as *kohl* containers. Decoration, usually in the form of trailing threads, became common in the 5th and 6th centuries. It became more elaborate on the handles and bodies, usually as winding threads. Vessels of this kind are rare from Jerash (Baur 1938: 513–514, 546; Meyer 1988: 194, Fig. 7:U–V; Dussart 1998: 297–299, Pls 57:16, 18; 58:8–10; Schwarzer 2014: 94, No. 164; Jackson-Tal 2021: 21, Nos 86–87). Several fragments of double cosmetic tubes were found in the residential area. Two of the bigger ones dated to the 4th–6th centuries are shown here.

162	[Fig. 34] Unguentarium	Reg. No. R/G144A/82 Loc. 15
2nd century	Blue glass; heavy iridescence	
H. pres. 1.0 cm	Rounded rim, outfolded and in, horizontally flattened, beginning of cylindrical neck.	
Dia. rim 5.0 cm		
	See Weinberg and Goldstein 1988: Fig. 4-37:332	
163	[Fig. 34] Unguentarium	Reg. No. R/G65/83 uncertain context
	Light green bubbly glass; pitted, iridescent	
H. pres. 3.0 cm		
Dia. base 4.0 cm		
Th. wall 0.1 cm	Pushed-in base, rounded body tapering to a missing neck.	
164	[Fig. 34] Unguentarium	Reg. No. R/G186/83 uncertain context
	Light blue, bubbly glass	
H. pres. 3.0 cm		
Dia. base 4.5 cm	Concave base, rounded body, missing neck.	

165	<i>[Fig. 34]</i>	Perfume bottle, small	Reg. No. R/G8/82 abandonment fill
Blue glass; slightly iridescent			
H. pres. 2.0 cm	Vertical, slightly sagging neck, constricted at the junction with rounded shoulders. Rim turned out and flattened in.		
Dia. rim 1.2 cm	See Fitzgerald 1931: Pl. XXXIX:21		
166	<i>[Fig. 34]</i>	Perfume bottle, small	Reg. No. R/G9/82 Loc. 7, under window sill
Light green glass; brown weathering			
H. pres. 3.5 cm	Rounded body, cylindrical neck constricted at the base, rounded shoulders, rim turned slightly out and in.		
Dia. rim 2.0 cm			
Th. 0.1 cm			
167	<i>[Fig. 34]</i>	Perfume bottle, small	Reg. No. R/G10/82 abandonment fill
Blue, bubbly glass; iridescent			
H. pres. 4.0 cm	Cylindrical then flaring neck, rim folded in.		
Dia. rim 1.4 cm			
Th. 0.12 cm			
168	<i>[Fig. 34]</i>	Small bottle	Reg. No. R/G12/82 abandonment fill
Blue-green glass with yellow-brown smudges, bubbly; iridescent			
H. pres. 3.5 cm	Cylindrical neck, rim turned out and flattened in.		
Dia. rim 2.2 cm			
169	<i>[Fig. 34]</i>	Small bottle	Reg. No. R/G15/83 Loc. 11
Blue, bubbly glass; iridescent			
H. pres. 4.0 cm	Cylindrical, flaring neck, rim turned out and flattened in.		
Dia. rim 2.7 cm			
Th. 0.15 cm			
170	<i>[Fig. 34]</i>	Small bottle	Reg. No. R/G14/82 abandonment fill
Light green glass; white and rainbow weathering			
H. pres. 4.8 cm	Cylindrical neck, flaring into a funnel-shaped mouth, thickened rounded rim turned inward.		
Dia. rim 3.0 cm			
Th. 0.15 cm	See Baur 1938: 539, No. 55, Fig. 28; Meyer 1988: 200–202, Fig. 9:O-Q		
171	<i>[Fig. 34]</i>	Perfume bottle, small	Reg. No. R/G7/82 abandonment fill
Blue glass; white weathering			
H. pres. 4.0 cm	Rounded body, flattened, width 5 cm and 2 cm. Shoulders taper to vertical neck with thick rim, turned out and flattened in.		
Dia. rim 2.4 cm			
Th. 0.1–0.2 cm			

172	[Fig. 34]	Flask, small	Reg. No. R/G5/82 subsurface
Blue glass; iridescent			
H. pres. 2.0 cm			
Dia. rim 3.0 cm			
Th. 0.25 cm			
Short, flaring neck, rim inverted and flattened on top.			
173	[Fig. 34]	Flask, small	Reg. No. R/G6/82 subsurface
Blue glass; slightly iridescent			
H. pres. 3.5 cm			
Dia. rim 3.0 cm			
Sloping shoulders, flaring neck constricted at the base, rim inverted and flattened.			
174	[Fig. 34]	Flask, small	Reg. No. R/G28/82 uncertain context
Blue glass; iridescent			
H. pres. 4.0 cm			
Dia. rim 4.6 cm			
Th. 0.17 cm			
Rounded shoulders, short flaring neck, folded-in rim.			
See Fitzgerald 1931: Pl. XXXIX:12			
175	[Fig. 34]	Flask, small	Reg. No. R/G134/82 Loc. 1
Green glass; pitted and iridescent			
H. pres. 2.0 cm			
Dia. rim 4.0 cm			
Th. 0.2 cm			
Flaring neck, inverted and flattened rim.			
176	[Fig. 35]	Jar	Reg. No. R/G27/83 uncertain context
Light blue glass; pitted, little iridescence			
H. pres. 2.0 cm			
Dia. rim 5.0 cm			
Th. 0.2 cm			
Short, narrow neck, large in-folded rim.			
177	[Fig. 35]	Jar	Reg. No. R/G31/83 uncertain context
Blue glass; iridescent			
H. pres. 2.0 cm			
Dia. rim 4.6 cm			
Th. 0.2 cm			
Short, narrow neck, large hollow in-folded rim.			
178	[Fig. 35]	Jar	Reg. No. R/G32/83 uncertain context
Blue glass with green smudges; pitted, iridescent			
H. pres. 1.8 cm			
Dia. rim 7.0 cm			
Th. 0.1 cm			
Very short broad neck, flaring rounded rim.			

179	[Fig. 35] Jar	Reg. No. R/G133/82 Loc. 1
Green glass; iridescent		
H. pres. 2.5 cm Dia. rim 6.0 cm Th. 0.3 cm	Short neck with rounded rim; open-fold bulge on the neck.	
180	[Fig. 35] Sprinkler	Reg. No. R/G191/83 Loc. 29
3rd–4th centuries	Light brown, bubbly glass; heavy iridescence	
H. pres. 5.4 cm Dia. base 3.0 cm Dia. body (max) 4.5 cm	Pontil mark Pinched base (six pinched-out toes), ovoid body with pinched-out vertical ribs (five preserved) about 2.5 cm long; flaring neck (incomplete) constricted at the base forming a folded diaphragm with an aperture 1 cm wide in the center. A similar fragment of an ovoid body with toes was found nearby (not drawn). Negro Ponzi 1972: Fig. 21, No. 38; Hayes 1975: Fig. 17:550; Auth 1976: 120, No. 148; Matheson 1980: No. 225; Dussart 1998: Pls 49:7, 19:4; Whitehouse 2003: 167–168, No. 1185; Kucharczyk 2004: 45, Fig. 1B; Arveiller-Dulong and Nenna 2005: No. 1126; similar to Atallah and Gawlikowska 2007: No. 50	

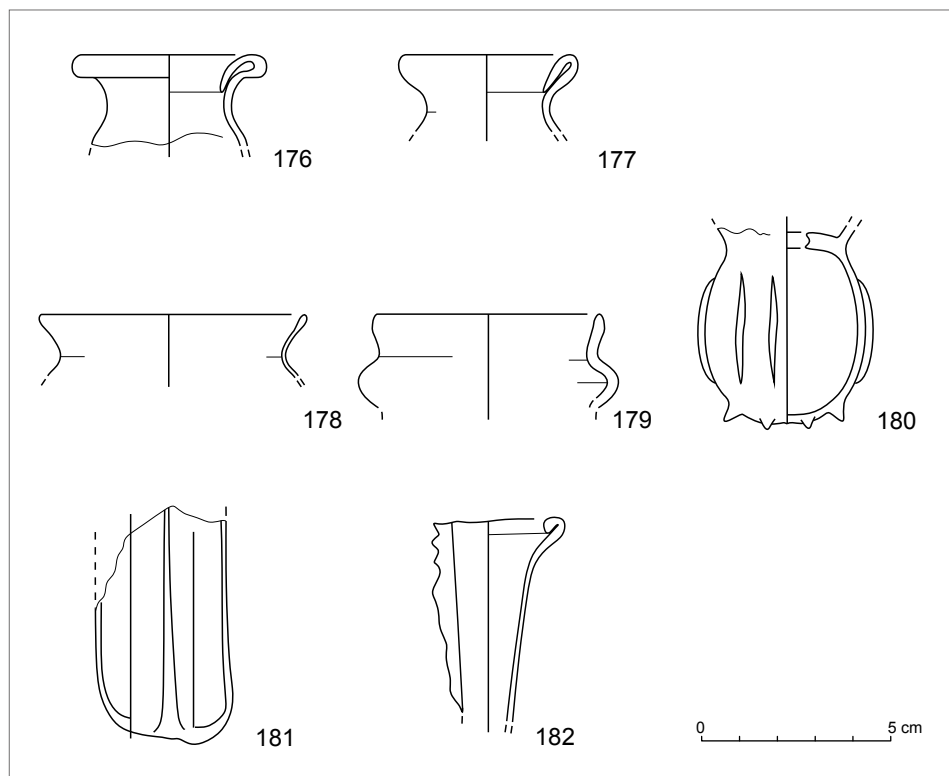


Fig. 35. Cosmetic jars (Cat. 176–179), sprinkler (Cat. 180) and double cosmetic tubes (Cat. 181–182) (PCMA UW | drawing M. Gawlikowski; digitizing I. Melnyk, O. Savchuk)

181	[Fig. 35]	Double cosmetic tubes	Reg. No. R/G121/83 Loc. 31
5th–6th centuries		Light blue glass; pitted, iridescent	
H. pres. 6.4 cm		Pontil mark	
Th. 0.18–0.2 cm		Two tubular phials with flattened base (lower part preserved). Undecorated.	
		See Delougaz and Haines 1960: Pl. 50:11–12; Dussart 1998: 297, Pl. 57:16	
182	[Fig. 35]	Double cosmetic tubes	Reg. No. R/G122/83 Loc. 31
5th–6th centuries		Olive-green glass; pitted	
H. pres. 5.4 cm		Upper part of one of two phials. Thickened rim, folded in; trace of a handle.	
Dia. rim 3.0 cm			
		See Matheson 1980: Nos 321–324; Meyer 1988: Fig. 7:U,V	
183	[Fig. 36]	Animal vase	Reg. No. R/G192/83 Loc. 42
Early Islamic 7th–8th centuries		Olive-green glass; slightly iridescent	
H. pres. 6.8 cm		Freeblown and applied, tooled on a pontil	
L. max. from snout to tail 7.3 cm		Stylized horse or donkey with pointed snout, long ears and tail. The back legs are not complete. An elongated bottle is placed in a sort of cage with two trailed tiers. The top of the vessel and part of the animal's tail are damaged.	
L. between legs 5.4 cm		Similar to Cat. 184.	
		See Eisen 1927: Fig. 240, Pl. 144; Lamm 1929–1930: Pls 20–21, 23 No. 4; 1931: Pl. LXXVII,4; von Saldern 1968: No. 64; Dusenbery 1971: 28, No. 55, Fig. 54; von Saldern et al. 1974: No. 749 (with bibliographic references); von Saldern 1980b: No. 184; von Folsach 1990: Fig. 224; Kondoleon 2000: 194, No. 84; Carboni and Whitehouse 2001: 112–114, Nos 29–32; Katsnelson 2004: 286–287, Fig. 64, Phot. 285–287	

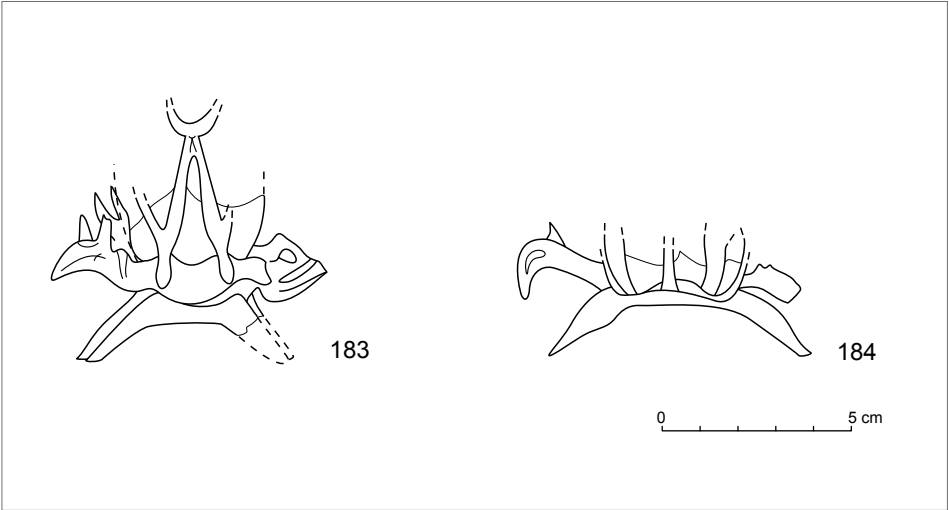


Fig. 36. Animal vessels (Cat. 183–184) (PCMA UW | drawing M. Gawlikowski; digitizing I. Melnyk, O. Savchuk)

184	[Fig. 36] Animal vase (fragment)	Reg. No. R/G200/83 Loc. 42
Early Islamic 7th–8th centuries	Light green glass; iridescent	
H. pres. 3.5 cm L. max. from snout to tail 7.8 cm L. between legs 7.0 cm	Freeblown and applied Base of a double tube with a diaphragm in the center, embedded in the body of an animal. Two vertical fragments of an openwork cage preserved. Long neck and head with an ear and the snout of an animal pointed down. The tail not well preserved. Legs extended forward and back. Similar to Cat. 183	
See Whitehouse 2014: 188–189, No. 932		

IV. WINDOWPANES

The windowpanes identified in the assemblage were all circular, of unequal thickness, thick in the middle and thin around the edges. They were blown in the crown technique. On one side of the disk the center is convex, surrounded by a depressed part and bordered by a thin flat edge extending to a hollow, folded-out rim. The other side of the disk is concave or pushed-in at the center, with a pontil mark. The ridge around this center corresponds to the depression on the other side and the flat surface extends to the rim.

The catalog illustrates seven larger fragments of hollow, outfolded rims diameters between 22 cm and 24 cm, and five centers of crown panes, three concave, two pushed up. Three of them have pontil marks. The diameter of the central part is between 7 and 11 cm.

There are two kinds of folded back rims: flat tubular and tubular with a marked thickened edge (Baur 1938: 532, Fig. 24:40, reconstruction profile drawing and below, an alternative rim, described as a dish). Rim thickness is between 0.2 cm and 0.4 cm, the central part 0.4 to 0.6 cm thick, while the sides are 0.1 cm and 0.3 cm thick; these dimensions parallel those of windowpanes found elsewhere (Harden 1939: 91; Crowfoot

1957: 420–421; Clark 1986: 318; Meyer 1988: 207–209, Fig. 11:O–U captioned as Fig. 10:O–U; 1989: 213–219; Whitehouse 2014: 258–259, nos 1071–1072; Keller 2015: 206, Nos 247–264, Fig. XVI.4:67–73 window glass from Umm Qeis in comparison with finds from Jerash [hippodrome and Upper Temple of Zeus], Jebel Harun and other places in the Syro-Palestinian region: Bet Shean and Tiberias, Hadad 2008: Nos 132–134).

Small round disks were probably used whole (not cut into smaller parts) in windows and mounted in series in plaster frames (see Harden 1961: 39–40; Kanyak 2009: 33–38).

No stucco frames for crown panes were found in the residential area where many fragments of crown panes—40 center parts and more than 50 thinner parts with the edges—were discovered, without any traces of attached plaster. The finds come from the subsurface in Loci 1, 2, 11E, 24, 31 and 108.

The windowpanes are light green or blue in color in general, although blue-green or olive-green have also been recorded. They are transparent or iridescent, and date to the 7th century and later.

No glass windowpane fragments were found inside the Bishop Marianos church near the hippodrome.

185	[Fig. 37]	Windowpane rim	Reg. No. R/G88/83 Loc. 24
Green glass; pitted, iridescent			
Dia. rim 24.0 cm			
Th. body 0.1 cm			
Th. rim 0.4 cm			
Circular windowpane with folded-back hollow rim.			
186	[Fig. 37]	Windowpane rim	Reg. No. R/G89/83 Loc. 24
Light green glass; pitted, iridescent			
Dia. rim 24.0 cm			
Th. body 0.1 cm			
Th. rim 0.4 cm			
Hollow, folded-back rim of a circular windowpane with markedly thickened edge.			
187	[Fig. 37]	Windowpane rim	Reg. No. R/G90/83 Loc. 24
Blue glass; slightly iridescent			
Dia. rim 22.0 cm			
Th. body 0.15 cm			
Th. rim 0.4 cm			
Hollow, folded back rim of a circular windowpane.			
188	[Fig. 37]	Windowpane rim	Reg. No. R/G91/83 Loc. 24
Light green glass; pitted, iridescent			
Dia. rim 24.0 cm			
Th. body 0.1 cm			
Th. rim 0.3 cm			
Very thin, hollow, folded back rim of a circular windowpane.			
189	[Fig. 37]	Windowpane rim	Reg. No. R/G92/83 subsurface
Bluish-green glass; iridescent			
Dia. rim 24.0 cm			
Th. body 0.1 cm			
Th. rim 0.5 cm			
Hollow, folded back rim of a circular windowpane with markedly thickened edge.			
190	[Fig. 37]	Windowpane rim	Reg. No. R/G93/83 subsurface
Blue-green glass; heavy iridescence			
Dia. rim 23.0 cm			
Th. body 0.1 cm,			
Th. rim 0.5 cm			
Circular windowpane with a rounded, hollow, outfolded rim.			
191	[Fig. 37]	Windowpane rim	Reg. No. R/G164/83 Loc. 108
Olive-green glass			
Dia. rim 24.0 cm			
Th. body 0.1 cm			
Th. rim 0.4 cm			
Hollow outfolded rim of a circular windowpane with thin wall and markedly thickened edge.			
192	[Fig. 37]	Windowpane center	Reg. No. R/G99/83 subsurface
Green glass; iridescent			
Dia. center 9.0 cm			
Th. 0.2–0.4 cm			
Concave central part of a circular windowpane, rim missing.			

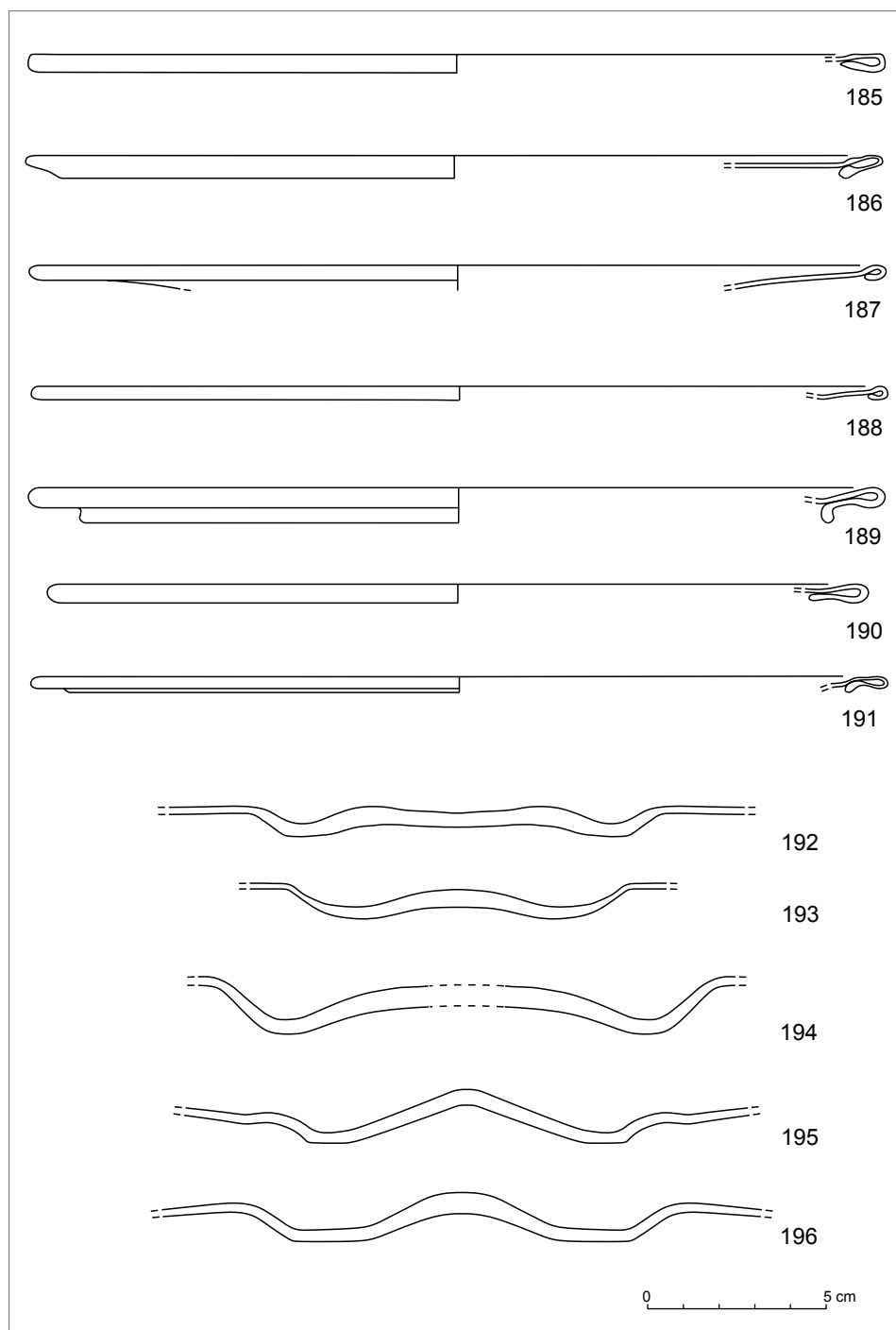


Fig. 37. Crown type of windowpanes (Cat. 185–196) (PCMA UW | drawing M. Gawlikowski; digitizing I. Melnyk, O. Savchuk)

193	[Fig. 37]	Windowpane center	Reg. No. R/G100/83 subsurface
		Light green glass; iridescent	
Dia. center 7.0 cm		Concave central part of a circular windowpane, trace of a pontil mark, rim missing.	
Th. 0.15–0.50 cm			
194	[Fig. 37]	Windowpane center	Reg. No. R/G101/83 subsurface
		Blue-green glass; iridescent	
Dia. center 11.0 cm		Concave central part of a circular windowpane, incomplete, rim missing.	
Th. 0.2–0.6 cm			
195	[Fig. 37]	Windowpane center	Reg. No. R/G102/83 Loc. 24
		Green glass with yellow-brown smudge, bubbly; iridescent	
Dia. center 9.0 cm		Pushed in central part of a circular windowpane, trace of a pontil mark.	
Th. 0.2–0.5 cm			
196	[Fig. 37]	Windowpane center	Reg. No. R/G103/83 Loc. 11E
		Blue glass; iridescent	
Dia. center 9.8 cm		Pushed in central part of a circular windowpane, trace of a pontil mark.	
Th. 0.3–0.6 cm			

V. BRACELETS

Four fragmentarily preserved bracelets were recorded from the residential area. A monochrome piece (Cat. 197) was found in Loc. 21 with a glass jug (Cat. 40) and some ceramic vessels of pre-Umayyad

date. Three polychrome bracelets come from the subsurface and are dated to Islamic times. Their decoration consists of applied and marvered patches and trails in contrasting colors.¹¹

197	[Fig. 37]	Bracelet	Reg. No. R/G179/83 Loc. 21
Late Roman–Byzantine		Opaque black glass; pitted	
Dia. ≈6.0 cm		Monochrome, tooled, semicircular and flattened in section	
Th. 0.8 cm		Inside flat, on outside decorated with strongly protruding diagonal ribs (three on the preserved fragment).	
W. 1.4 cm			
		See Spaer 1988: 56, Fig. 5; 2001: 199, No. 447, Type B3	

11 Terminology after Spaer 1988; 1992; 2001: 192–205, Pls 33–36. See also Zouhdi 1974; Salam-Liebich 1978: 145; von Saldern 1980a: 98–100, Pl. 18; Meyer 1988: 216; 1992: 90–94; Carboni 1994.

198	[Fig. 37]	Bracelet	Reg. No. R/G197/83 subsurface
Islamic		Opaque black, opaque turquoise patches; heavy iridescence	
Dia. ≈7.0 cm W. 0.6 cm		Polychrome, tooled, applied, marvered	
		Semicircular and flattened in section on the inside; on outside decorated with unevenly spaced patches (three on the preserved half of the bracelet).	
		See von Saldern 1980a: 100, Type 4; Meyer 1992: No. 583, Pl. 20; Spaer 2001: 194, Type D 1d, Nos 474–475, 477	
199	[Fig. 37]	Bracelet	Reg. No. R/G198/83 subsurface
Islamic		Light blue, translucent glass with turquoise coating and overlaid polychrome opaque striped patches	
Dia. ≈6.4 cm W. 0.8 cm		Polychrome, tooled, applied, marvered	
		Semicircular and flattened in section, patches on the outside, made up of colored stripes in a symmetrical arrangement (orange-yellow-black-white-black-white-black-yellow-orange). Three patches on the preserved part.	
		See Zouhdi 1974: 91 Fig. 3; von Saldern 1980a: Type 4, No. 760, Pl. 18; Meyer 1988: 215–216, Fig. 13:dd; similar to two bracelets in Spaer 1992: 52, Fig. 11 (above); Carboni 1994: 127, Fig. 1; Whitehouse 2014: 247, No. 1048 (dated 13th to 20th centuries)	

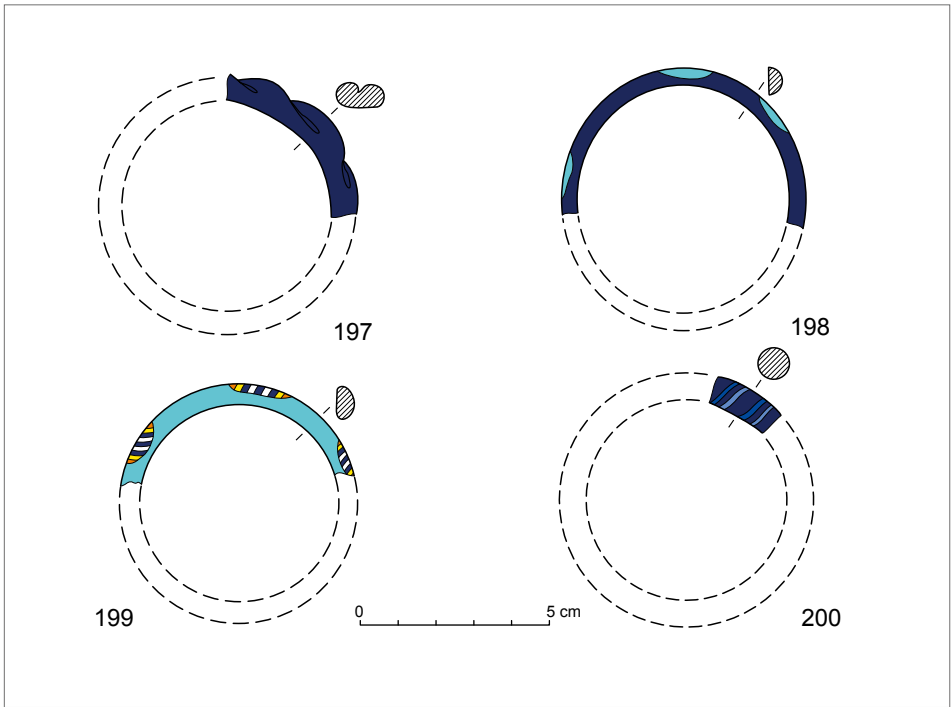


Fig. 38. Bracelets (Cat. 197–200) (PCMA UW | drawing M. Gawlikowski; digitizing I. Melnyk, O. Savchuk)

200	[Fig. 37] Bracelet	Reg. No. R/G199/83 subsurface
Early Islamic 8th century	Black opaque glass, blue and dark blue trails, small fragment	
Dia. ≈7.0 cm W. 0.6 cm	Polychrome, twisted with applied trails, marvered	
	Seamed, circular in section; applied twisted trails on an apparently black opaque background.	
See Spaer 1988: 58, Type C2 (multicolored with applied trail); Meyer 1988: Fig. 13:W; 1992: 179, Nos 562–565; Spaer 2001: 202, No. 467		

VI. MOSAIC GLASS CUBES

Single glass cubes, altogether 118, were found in secondary contexts, that is, not in the original plaster bedding. These were Loci 23N and 29E where other glass finds were dated to the 5th–6th centuries.

Of the cubes 68 are of a translucent light or dark blue, 25 are green; 20 are of clear transparent glass with sandwiched gold leaf, and five are of brown glass. Average dimensions are 1 cm by 0.5 cm by 0.7 cm, and a thin upper layer (0.1 cm) of transparent glass on the cubes made of sandwiched glass. Green glass tesserae found among the stone cubes

in the church of Bishop Isaiah in Jerash are 15 mm by 20 mm (Clark 1986: 311). However, the fill from inside the Bishop Marianos church did not yield anything but stone cubes from the mosaic floors.

Tesserae would have been cut from a “cake” of glass (see Baur 1938: 517–518, 546; von Saldern 1980a: 92–94; Marii 2001: 379 [more than 50 cakes]; Gawlikowska 2015: 292–293, Figs 1–3). The described assemblage included some cullet from Loci 23N, 25, 41 and 110, but there were no actual “cakes” from which mosaic cubes could have been cut.

SUMMARY

The glass finds from the Polish sector in the residential district around the South Decumanus, of which there was a great abundance, could have been produced locally, as suggested by a fragment of molten glass found in late occupation contexts in the lower courtyard of the Zeus temple (Jacques Seigne, personal communication). The fabric is for the most part blue or bluish-green, covered with iridescence.

Tableware is the main category among the glass finds: bottles, goblets, and beakers, as well as bowls and plates. A variety of forms and threading decoration is manifest-

ed not only on the bottle necks, but also on the bowls of the goblets. Lamps of various types were found both in the residential area and the church of Bishop Marianos. Some were freestanding, others would have been suspended from metal hangers or inserted into *polycandela*. Another fairly prolific category are cosmetic utensils: unguent or perfume bottles, ointment jars, *kohl* containers and a sprinkler. Some personal adornments in the form of bracelets were also found. Windowglass and mosaic glass cubes, found out of context, complete the glass inventory. All in all, the assemblage

can be broken down as follows: 53% tableware, 28% lamps, 11% cosmetic utensils, 6% windowpanes and 2% bracelets.

The collection is most abundant with regard to glass from Umayyad and Abbasid times. Many specimens are dated to Byzantine times, while Roman-age material is limited to a few single pieces.

The glass from the Polish sector shows many similarities, both in categories and in forms, with earlier published material

(Baur 1938) and material from the other sectors excavated during the International Project in 1982–1983: the temples of Zeus and of Artemis and the North Theatre. There is, however, a considerable variety of shapes, especially with regard to the inventory coming from the domestic quarters. Glassware, lamps and toiletry articles were apparently quite popular in the later phases of the occupation of Gerasa in Umayyad and early Islamic times.

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