

A MAMLUK-PERIOD GLASS ASSEMBLAGE FROM THE AL-WAṬṬA QUARTER, SAFED (ẒEFAT)

Yael Gorin-Rosen

INTRODUCTION

The salvage excavation conducted in the al-Waṭṭa quarter in Safed (see Dalali-Amos and Getzov, this volume) yielded a large and rich glass assemblage dated to the Mamluk period.¹ The significance of this group lies in its being the first well-documented assemblage unearthed in a dwelling area that was dated by coins and pottery to a short, specific period.

Until the last decade, the publication of Mamluk-period glass was limited. Fragments of such vessels were found in salvage excavations, usually in small numbers, and only part of the material was published. The al-Waṭṭa corpus is one of the largest Mamluk-period glass assemblages ever studied in Israel, together with three other glass assemblages from Safed: one from a previous excavation in the al-Waṭṭa quarter (Katsnelson 2014a), and two, from the medieval castle. The two excavations within the medieval castle yielded Crusader glass (Gorin-Rosen 2015) in one, and Mamluk glass, mostly dated to the fourteenth–fifteenth centuries CE, in the other (Katsnelson 2017). The most useful comparative assemblage, in terms of geographic and historic associations, vessel shapes and decoration techniques, is from Ḥama, Syria (Riis 1957).

Other published Mamluk-period glass assemblages from Israel include those from Yoqne'am (Lester 1996), Ḥammat Gader (Lester 1997), Giv'at Yasaf (Tell ar-Ras; Gorin-Rosen 1999), Banias (Gorin-Rosen and Jackson-Tal 2008) and Bet She'an (Hadad 2005; Katsnelson 2014b).² An important group of Mamluk glass finds was also discovered at Mary's Well, Nazareth (Alexandre 2012).

A few major assemblages are known from Jerusalem. One is a large group of Mamluk-period vessels uncovered in the Cardo and the Nea Church in the Jewish Quarter excavations

¹ I wish to thank the excavators, Edna Dalali-Amos and Nimrod Getzov, for inviting me to study this interesting and challenging glass assemblage, and for giving me all the information, as well as help and support, during the long working process. The glass was mended and photographed by the author, and drawn by Hagit Tahan-Rosen.

² Another diverse glass assemblage was discovered in Bet She'an (unpublished) and studied by the author. It includes similar vessels in a better state of preservation than those from the al-Waṭṭa quarter in Safed. My thanks to the excavator, Jon Seligman, for allowing me to mention it here prior to publication.

in the Old City (Brosh 2005a; 2012). The second is part of the Islamic Museum collection, consisting of pieces collected in the Old City during construction (e.g., Hasson 1983). The latter was recently reexamined in light of the well-dated assemblages from the Jewish Quarter (Brosh 2017). Additional Mamluk assemblages from Jerusalem have been studied, but not published, e.g., from the excavation near Herod's Gate (Avni, Baruch and Weksler-Bdolah 2001)³ and from the Western Wall Plaza excavations (Weksler-Bdolah et al. 2009). Other fragments from Jerusalem were recovered on Misgav Ladakh Street in the Jewish Quarter (Katsnelson 2009), at Jaffa Gate (Ouahnouna 2014) and at the Church of the Holy Sepulchre (Winter 2012).

Two additional Mamluk glass assemblages were retrieved from an installation in Ramla (Gorin-Rosen 2009a) and from a site in Ramla–Be'er Ya'akov.⁴

Additional studies that provide significant material for comparison for the Mamluk period are Meyer (1992), for Quseir el-Qadim, and Shindo (1992) and Scanlon and Pinder-Wilson (2001), for Fustat.

Within the Mamluk-glass repertoire, two groups have generated much interest and discussion from the very beginning of glass research until the present. The first group is the so-called gilded and enameled glass (for a discussion of this type, see Ward 1998; Carboni 2001a:323–369; Carboni 2001c:203–207) and the second group is the marvered glass (see Allan 1995; Carboni 2001a:291–321; 2001b:105–109). A very important study was conducted by Brosh (2005b), who collected all the published and unpublished information about groups of marvered glass. Fragments of both decorative groups from Safed contribute to our knowledge of these groups.

The glass finds from the al-Waṭṭa quarter allow for an interesting comparison between the glass from Safed, a major city and district capital during the Mamluk period, and Jerusalem, only a minor city in a subdistrict and therefore of less importance (for a historical background, see Dalali-Amos and Getzov, this volume). Notwithstanding the significance of Safed as a major city, our knowledge of Mamluk glass from Jerusalem is more extensive thanks to the publications of Brosh (2005a; 2005b) and Hasson (1983), and the studies of glass finds from the salvage excavations near Herod's Gate and at the Western Wall Plaza (see above).

Most of the glass vessels presented below were uncovered in Area B, in Strata II and III, except for a few surface finds and one fragment, which came from Area A. Most of the vessels in these strata date to the fourteenth century CE, while those from Stratum II may continue into the fifteenth century CE. No clear differences were found between the vessels from Strata II and III.

³ I wish to thank the excavators, Gideon Avni, Yuval Baruch and Shlomit Weksler-Bdolah, for allowing me to mention this information prior to publication.

⁴ My thanks to the excavator Ofer Sion for allowing me access to this material, not yet published (Permit No. A-4929).

The glass assemblage is discussed mainly typologically. Plain and decorated vessels are presented in the figures. The discussion of the decorated vessels starts with the large group of marvered vessels, followed by mold-blown decoration, and last, enamel painting. A group of miscellaneous glass vessels was also catalogued and discussed below.

As this is the first detailed study of Mamluk glass from the region, each fragment is described in detail to facilitate future studies and comparisons. The comparative study was difficult, as many subtypes did not appear in previous publications and studies. Therefore, in many cases, use was made of collection catalogues to reconstruct a complete shape, or to cite a highly decorated vessel for its shape rather than the decorative elements and *vice versa*. In this respect, for some of the vessels, this study constitutes a pioneer work.

THE GLASS FINDS

DAILY WARES

Bowls (Fig. 1:1–7)

Bowls with Fused-In Trail (of a Different Color) on Rim Edge (Fig. 1:1, 2).—Two small rim fragments of this type are characterized by a short curving wall and a rounded rim decorated with a horizontal trail in a contrasting color. Fragment No. 1 is made of colorless glass with a turquoise trail, and fragment No. 2 is made of cobalt blue glass decorated with a white trail. They were found together in the same basket with other finds assigned to Stratum II, dated to the end of the fourteenth century CE (see Dalali-Amos and Getzov, this volume). Shallow and deep bowls with marvered decoration on the rim and the body were discovered in almost every Mamluk glass assemblage excavated in Israel, although so far, publications are few. A purple bowl with white horizontal trails and a slightly incurving rim was found at Ḥama, dated to the Medieval period (Riis 1957:63–64, Fig. 188).

1. Wide shallow bowl (L213, B2189/1). Small rim and wall fragment. Colorless glass with turquoise trail. Black and silver weathering, iridescence and pitting. Bubbly. Slightly in-curving rim decorated with a fused-in turquoise trail on the rim's edge. Curving wall. Rim diam. 14 cm.

2. Wide shallow bowl (L213, B2189/4). Small rim and wall fragment. Cobalt blue glass with white trail. Black and silver weathering, iridescence and pitting. Bubbly. Slightly in-curving rim decorated with a fused-in white trail on the rim's edge on both sides. Uneven curving wall. Rim diam. c. 15 cm.

Bowl with Bent-Out Rim (Fig. 1:3). This rim type could belong to a bowl with a ring base or to a footed bowl, which could be identified as a goblet. A vessel with a similar rim was found at Ḥama, made of colorless glass and identified as a large goblet, with a comparison to a decorated goblet from Musée de Cluny, Paris, dated to the fourteenth century CE (Riis 1957:32–33, Fig. 22).

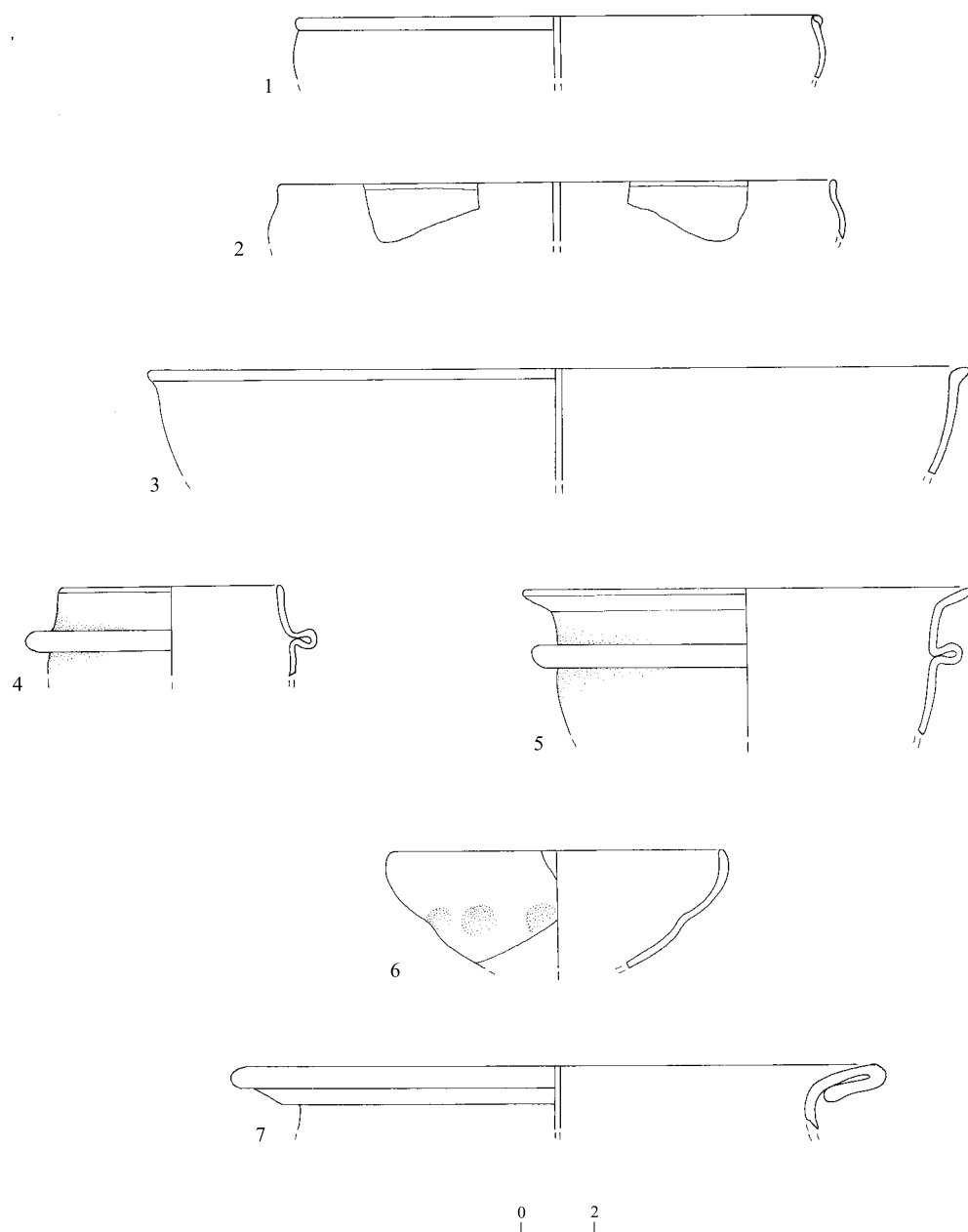


Fig. 1. Bowls.

3. Bowl (L205, B2034/1). Rim fragment. Colorless glass. Brown and silver weathering, iridescence and pitting. Low quality fabric, very bubbly with oval horizontal bubbles. Rounded thickened rim bent out and upward. Rim diam. c. 22 cm.

Bowls with Tooled-Out Tubular Fold below Rim (Fig. 1:4, 5). Bowl Nos. 4 and 5 are different in shape and size, but both are characterized by a tooled-out tubular fold below the

rim. This fold might have been used to suspend the bowls in a metal holder or a chandelier. Bowl No. 4 is small, with an upright, slightly incurving rim, while No. 5 is wider, with a flaring rounded rim. Number 4 was found in a locus attributed to Stratum III, where the latest coin is dated to 1342–1345 CE (see Kool and Berman, this volume: No. 73), while No. 5 was retrieved from the same locus as bowl Nos. 1 and 2 (above), dated to the end of the fourteenth century CE.

Two vessels with a tooled-out tubular fold were discovered at Mary's Well, Nazareth. One is a rim fragment like No. 4 and the second is the lower part of the vessel—with the fold but without the rim; both are dated to the Mamluk period (Alexandre 2012:92, Fig. 4.4:3, 6).

A rim similar to that of No. 5 was found in a Mamluk-period installation excavated on Ha-Palmah Street, Ramla (Gorin-Rosen 2009a: Fig. 13:10) and was assigned to an oil lamp. The lower part of a small vessel with a tooled-out fold was found at Ḥama, made of colorless glass (Riis 1957:32–33, Fig. 20). The fragment from Ḥama has a pushed-in bottom with a high kick and a small cylindrical body that slants slightly inward, above the tooled-out fold; it provides an idea as to how to reconstruct the lower part of Fig. 1:4. Two fragments with a tooled-out fold below the rim were found at Fustat in Stratum I, dated to the Mamluk period (Shindo 1992:588–589, Pl. IV. 6–9:17, 18; 2000:233–234).

4. Bowl (L219, B2418). Fragment of rim and wall. Emerald green with white trail. Patches of gold crust and slight iridescence. Upright rounded rim decorated with marvered white trail on the edge on both sides. Tooled-out tubular fold below the rim on the exterior at the widest part of the body. Rim diam. 6 cm; max. diam. 7.8 cm.

5. Bowl (L213, B2143/1). Rim and wall fragment. Colorless glass with green tinge. Black and silver crust, iridescence and severe pitting. Flaring rounded rim. Slightly curving wall with a tooled-out, hollow fold on exterior, below rim. Rim diam. 12.2 cm.

Small Bowl with Indented Decoration (Fig. 1:6). The colorless fabric of bowl No. 6 is typically Mamluk, but the indented decoration is rare. The bowl was dated to the Mamluk period based on its context and associated finds. The earliest coin from this locus dates to 1279 CE and the latest, to 1566 (see Kool and Berman, this volume: Nos. 25 and 283 respectively).

6. Small bowl (L236, B2579). Fragment of rim and wall. Colorless glass. Iridescence and severe pitting. Bubbly. Rounded slightly in-curving rim. Hemispherical shape with bulgy wall. Shallow indents in the wall, in the bowl's center. Rim diam. 9 cm.

Deep Bowl with Flaring Out-Folded Rim (Fig. 1:7). This rim belongs to a rather large wide-mouthed vessel similar in shape to one found in Area T in the Jewish Quarter, Jerusalem, that was identified as a pot (Brosh 2005a:188–189, Fig. 6). Brosh observed that ceramic

pots of similar shape were extremely common during the Mamluk period and were found in many excavations in Israel. Concerning their use, she noted that they were generally thought to be chamber pots or potties for children (Brosh 2005a:189 and see therein for further discussion). This vessel was found in L213, dated to the end of the fourteenth century CE (see above, bowl Nos. 1, 2, 5).

7. Bowl (L213, B2386/2). Small rim fragment. Colorless glass with greenish tinge. Patches of black, brown and white weathering, iridescence and pitting. Flaring out-folded hollow rim, tooled and thickened. Thick wall. Rim diam. c. 18 cm.

Various Bowls, Beakers and Oil Lamps (Fig. 2:1–8)

Several types are discussed here, characterized by their simple shape and local fabric. In most cases, it is difficult to assign the fragment to a specific group in terms of its use. The vessels were found in Strata I (No. 7), II (Nos. 1, 2, 6) and III (Nos. 3–5, 8), but are all dated to the fourteenth century CE.

Vessels with Flaring, Short Shelf-Like Rims (Fig. 2:1–7). These rims are very common on several subtypes, and are all rounded, flaring to a short shelf. The walls are upright or slightly curving. They appear in different sizes; Nos. 1 and 2 are rather small, while No. 6 is rather large and wide, and might also be identified as a deep bowl. Rims like Fig. 2:1, 3–6 were discovered in the medieval castle at Safed and were identified as beaker-shaped oil lamps (Katsnelson 2017:314, Fig. 2:1, 2). Two rims similar to Nos. 4 and 5 were found in Area B at Banias, and were identified as “vessels with overhanging rims,” dated to the medieval period (Gorin-Rosen and Jackson-Tal 2008:84–86, Fig. 5.4:9, 10, and see therein for further discussion and possible reconstructions).

Number 3 is the only example in which a rim and a base from the same vessel could be almost completely reconstructed, in the shape of a squat cylindrical beaker with applied trail wound around the base. The center of the base is broken and we therefore do not know whether an additional wick-tube was attached to it, as in Fig. 3:4, 5.

Another possible reconstruction is based on the similarities of these rims to vessels found in Jerusalem and identified as oil lamps: the first subtype has a cylindrical body with a flared rim (like Fig. 2:3, 4) with two small ring-loops on the rim for hanging. The second subtype has a basket shape with walls tapering inward (like Fig. 2:2) and a basket handle attached to the rim’s shelf (Brosh 2005a:188, Fig. 5, on right). The rims in Fig. 2:1–7 have no remnants of handles of any type. The only vessel with a basket handle found at the site and identified as an oil lamp is Fig. 12:1, but its rim is incurving and out-folded.

Figure 2:6 is a wide example of this rim type, and therefore could have belonged to a deep bowl or even to a pot, like the one from Jerusalem mentioned above (see Fig. 1:7).

Very few parallels have been published so far. Rims like those in Fig. 2:1, 3 were found in salvage excavations in the Jewish Quarter, Jerusalem, and defined as oil lamps dated to the Mamluk period (Katsnelson 2009: Fig. 5:4), and in a Mamluk-period installation

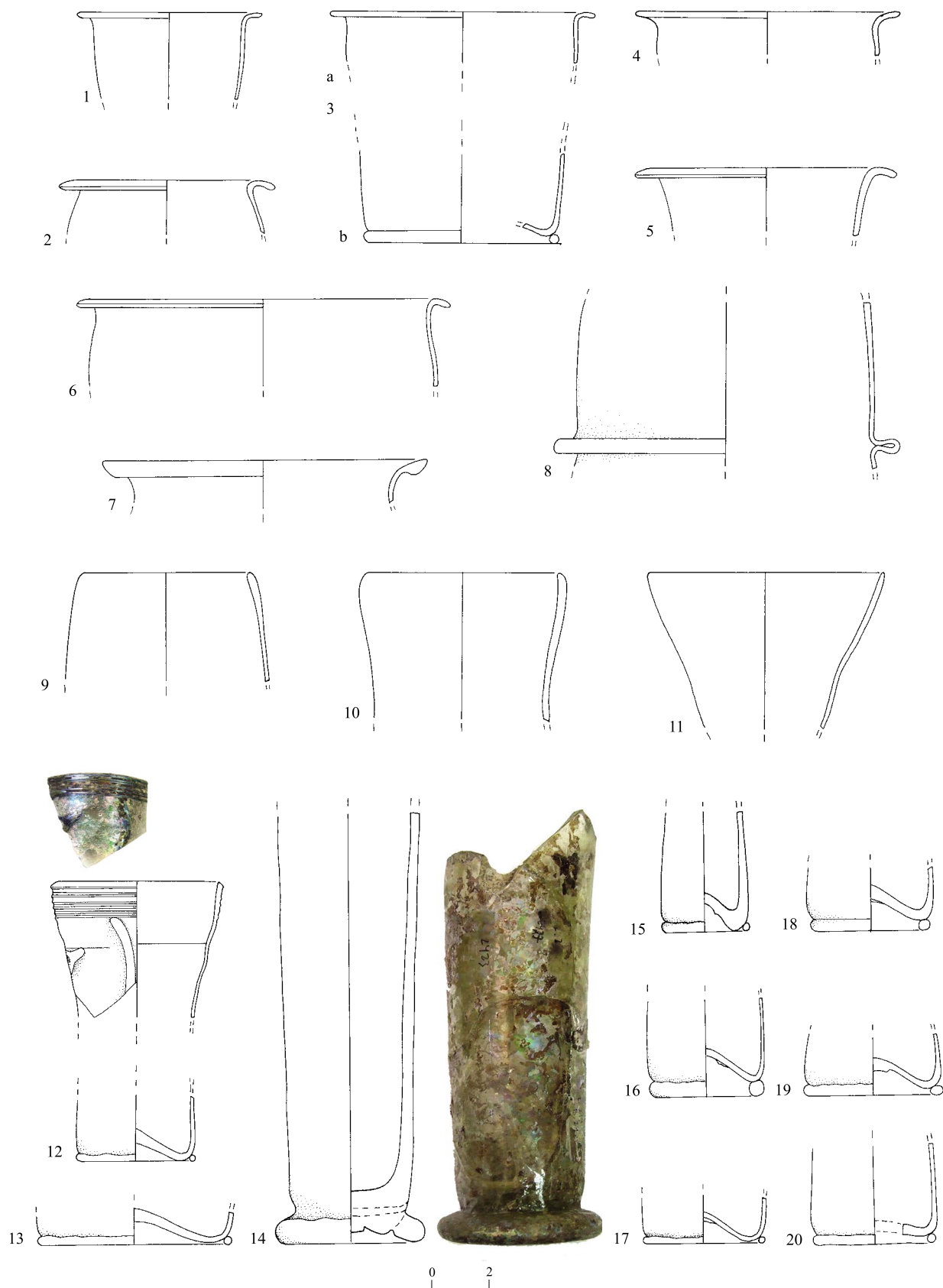


Fig. 2. Bowls, beakers and oil lamps.

in Ramla (Gorin-Rosen 2009a: Fig. 13:8). A fragment similar to No. 6 was discovered in Fustat in Stratum I, and dated to the Mamluk period (Shindo 1992:602–603, Pl. IV.6–16:20; 2000:233–234).

Figure 2:7 could also be part of wide-mouthed jar. It bears similarities to a small rim fragment from the Mamluk strata at Fustat (Shindo 1992:602–603, Pl. IV.6–16:17; 2000:233–234).

1. Small vessel (L205, B2034/2). Rim and wall fragment. Colorless glass with green tinge. Brown and silver weathering, iridescence and pitting. Bubbly. Flaring rounded rim. Slightly curving wall, uneven thickness. Rim diam. 6.4 cm.

2. Small bowl/jar (L213, B2143/2). Rim fragment. Colorless glass. Black and silver weathering, iridescence and severe pitting. Flaring shelf-like rim, rounded at edge. Slightly concave wall. Rim diam. 7.6 cm.

3a. Beaker (L242, B2584/1). Small rim fragment. Colorless glass. Patches of black and silver weathering, iridescence and pitting. Flaring, short shelf-like rounded rim. Upright thin wall. Rim diam. 9.2 cm.

3b. Beaker (L242, B2584/2). Small base fragment. Colorless glass. Patches of black and brown weathering, iridescence, pitting and sand deposits. Pushed-in bottom, with wound trail base of the same color. Base diam. c. 8 cm.

4. Beaker (L215, B2215/1). Rim and wall fragment. Colorless glass. Brown and black weathering, iridescence and severe pitting. Flaring rounded rim. Upright wall. Rim diam. 9.2 cm.

5. Beaker (L219, B2453/1). Rim and wall fragment. Colorless glass. Brown and silver weathering, iridescence and pitting. Bubbly. Flaring rounded rim. Slightly slanting wall. Rim diam. 9 cm.

6. Bowl? (L223, B2472/2). Rim and wall fragment. Colorless glass with green tinge. Black weathering, iridescence and pitting. Bubbly with elongated and diagonal oval bubbles. Flaring rounded rim. Slightly curving wall. Rim diam. 12.8 cm.

7. Bowl or Jar (L212, B2079/1). Rim and wall fragment. Colorless glass with light purple tinge. Dull surface with black and silver weathering, iridescence and crust. Very bubbly. Flaring, uneven, out-folded thickened rim. Rim diam. 11.3 cm.

Cylindrical Vessel with Tooled-Out Tubular Fold on Exterior (Fig. 2:8). This body fragment is from a plain cylindrical vessel with a tooled-out tube. Exterior tubes such as this often

appear on similar vessels with mold-blown ribs, e.g., Fig. 9:3, and see the discussion and references therein for further examples. A reconstruction of this type was published from a salvage excavation in the Jewish Quarter, Jerusalem (Katsnelson 2009: Fig. 5:5), and other examples were found at Bet She'an, as yet unpublished. A reconstruction of two beaker-shaped oil lamps with a tooled-out tubular fold and a beaded stem, suspended in a footed plate, were published by Lamm, one among the group of vessels dated to the eleventh–fifteenth centuries CE (Lamm 1929–1930: Taf. 5:2).

8. Beaker? (L245, B2604). Wall fragment. Colorless glass. Black weathering, iridescence and severe pitting. Low-quality fabric, very bubbly. Upright wall with a tooled-out, hollow fold on the exterior. Diam. 10.2 cm, diam. of fold 12 cm.

Beakers

Beakers with Rounded Rims (Fig. 2:9–11). These rims could belong to a variety of beakers based on their size and shape, but they could also belong to bottles. Rim No. 9 was found on the surface, while No. 10 was found in Stratum II with coins dated to the end of the fourteenth century CE. Number 11 came from Stratum III, where the latest coin is dated to 1342–1345 CE (see Kool and Berman, this volume: No. 73).

The angle of rim Nos. 10 and 11 is similar in shape to that of Mamluk beakers with marvered decoration found at Hama (Riis 1957:67, Fig. 205) and to a beaker with a gilded and enamel-painted decoration from Egypt, dated to the thirteenth century CE (Shindo 2002:16, 78, Fig. 1). The example from Egypt has a base like those in Fig. 2:12, 15–20.

9. Beaker or bowl (L203, B2032). Fragment of rim and wall. Purple glass with brownish tinge. Black crust removed, iridescence and pitting. Slightly incurving rounded rim. Thin wall. Rim diam. 6 cm.

10. Bottle or beaker (L213, B2316/2). Fragment of rim and neck. Colorless glass. Black, brown and silver weathering, iridescence and severe pitting. Pointed rounded rim, slightly curving wall. Rim diam. 6.8 cm.

11. Beaker? (L219, B2418). Fragment of rim and wall. Colorless glass. Patches of black, silver and white weathering, iridescence and pitting. Slanting rounded rim. Funnel mouth with a shallow bulge. Rim diam. 8.2 cm.

Beaker with Horizontal Trails on and below Rim with Vertical Trails on Body, and an Applied Trail Base (Fig. 2:12). This beaker, found on the surface, was assigned to Stratum I. A coin dated to 1519 CE was found in the same locus; however, the beaker probably dates to the fourteenth century CE and not later. The base of a similar vessel was discovered in the tower gate of the medieval castle at Safed (Katsnelson 2017:314–315, Fig. 1:3).

A beaker of this type, made of colorless glass decorated with emerald green trails, is in the Metropolitan Museum in New York, and is dated to the Early Medieval period (Jenkins 1986:36–37, Photograph 43). Another beaker with vertical dark green and greenish colorless trails, without horizontal trails above except for one green trail on the edge of the rim, is in the Toledo Museum of Art, and is assigned a Syrian provenance; it is dated to the twelfth–thirteenth centuries CE (Carboni 2001b:125–126, Cat. No. 42).

A slightly smaller version decorated with horizontal trails on the upper part, vertical trails of colorless and dark blue alternately on the body, and additional suspended rings is in the collection of the Fondation Custodia (Frits Lugt Collection) in Paris; it is dated to the eighth–ninth centuries CE and is ascribed to Syria (Stern 1977:142–145, Pl. 4:45 and see therein for further discussion and parallels from various collections). Fortunately, I saw this beaker at the Institut Néerlandais in Paris. Based on several similar fragments of this vessel-type unearthed in medieval contexts in Israel, it seems to me that all the characteristics of the Frits-Lugt Collection vessel indicate a Crusader- or Mamluk-period date rather than an Early Islamic one.

12. Beaker (L228, B2505). Fragment of rim, wall and an almost complete base. Mended. Colorless with light greenish tinge and blue trail decoration on rim and wall. Black and silver weathering, iridescence and severe pitting. Slightly flaring rounded rim decorated with seven horizontal thin blue trails on the rim's edge and below it. Additional thick blue trails drawn on the body below the horizontal trails; one is elongated and the other creates an unidentified pattern. Thin walls. Pushed-in bottom with scar and traces of glass from the pontil. Thin wound trail base of the same color. Rim diam. 6 cm., base diam. 4.1 cm.

Beakers with Applied Wound Trail Base (Fig. 2:13–20). The applied wound trail base is characteristic of several beaker types from the medieval period. The trail can be the same color as the vessel, like most of the bases in our group, or a darker color like No. 19. The body of the beaker can be either plain or adorned in a variety of ways.

Two bases with an applied trail were found in Area B at Banias, one from a plain beaker and the other, decorated with a horizontal applied trail on the lower part of the body; both date to the medieval period (Gorin-Rosen and Jackson-Tal 2008:85–86, Fig. 5.4:11, 12, and see therein for further references to Ḥama and Emmaus). The same type of applied wound trail is attached to the pruned beaker bases found at the Courthouse Site in 'Akko, dated to the thirteenth century CE (see Gorin-Rosen 1997:83, Fig. 2:20b, 23). Similar bases were found in the Souks excavations in Beirut; one is dated to the medieval/post medieval period and the other, to the twelfth/thirteenth centuries CE (Jennings 2006:229–231, Fig. 10.10:15, 16). Many bases of this type were found in Fustat Stratum I, dated to the Mamluk period (Shindo 1992:590–591, Pl. IV.6–10:12–20; 2000:233–234). A variety of bases identified as 'coiled bases' was found at Quseir al-Qadim, dated to the Mamluk period (Meyer 1992:80, Pl. 16:412–421, and see therein for further references).

Vessel No. 14 is very heavy and rough with a very thick wall. The lower part of a thick-walled colorless beaker found at Hama bears similarities to No. 14 (Riis 1957:37–38, Fig. 58), which was found in Stratum III, dated to the fourteenth century CE.

13. Beaker (L231/232, B2537/b/2). Almost complete base and wall fragment, mended. Colorless glass, white paint on inside. Pushed-in bottom with pontil scar. Thin uneven wound trail base of same color. Inside the vessel is a white colored layer. Base diam. 6.7 cm.

14. Beaker? (L267, B2423). Almost complete body and base, mended, missing rim. Colorless glass with greenish tinge. Brown and black weathering, iridescence and pitting. Double-blob base, the lower part pinched out to create a base-ring. Horizontal hollow between the two blobs and a huge scar with traces of glass from the pontil. Cylindrical body with very thick walls. Base diam. 5.2 cm.

15. Beaker (L213, B2386/3). Half base and wall. Colorless glass with greenish tinge. Black weathering, iridescence and pitting. Thick pushed-in bottom with crude scar and traces of glass from the pontil. Thin, uneven trail wound as base of the same color. Rather thick wall, slightly tapered. Base diam. 3 cm.

16. Beaker (L220, B2275). Almost complete base and wall fragment. Colorless glass with greenish tinge. Black weathering, iridescence and pitting. Pushed-in bottom with scar and traces of glass from the pontil. Thick, uneven wound trail base of the same color. Rather thin wall, slightly tapered. Base diam. 4 cm.

17. Beaker (L231/232, B2454/1). Almost complete base and wall fragment. Clear colorless glass. Black and white weathering, iridescence and severe pitting. Pushed-in bottom with scar and traces of glass from the pontil. Thin wound trail base of the same color. Base diam. 4.2 cm.

18. Beaker (L223, B2345/1). Complete base and wall fragment. Greenish glass. Black and brown weathering and iridescence. Bubbly. Thick, pushed-in bottom with scar and traces of glass from the pontil. Thick, uneven wound trail base. Rather thick wall. Base diam. 4.1 cm.

19. Beaker (L207, B2126). Almost complete base and wall fragment. Colorless glass with blue trail. Black and silver weathering, iridescence and severe pitting. Pushed-in bottom with crude scar and traces of glass and metal from the pontil. Thick, blue, uneven wound trail base. Base diam. 4.8 cm.

20. Beaker (L223, B2472/3). Small fragment of base and wall. Colorless glass with yellowish tinge. Black and brown weathering, iridescence and pitting. Thick concave bottom with a wound trail base of the same color. Rather thick wall. Base diam. 4.2 cm.

Oil Lamps with Applied Wick-Tube in Center

Four different subtypes of vessels with a central wick tube were found, all dated to the Mamluk period. Oil lamps with an additional wick-tube in the center appeared during the Byzantine period and spread throughout the Byzantine Empire. They continued to be used during the Early Islamic period, but were made from different fabrics and were usually made in slightly different vessels shapes. They regained popularity again during the Mamluk period, as can be seen in the variety of vessel shapes found in this excavation, and are characterized by the remains of a wick-tube.

Beaker-Shaped Oil Lamps with Pushed-In Base and Wick-Tube (Fig. 3:1, 2). This type is probably the simplest, continuing the Byzantine tradition of a pushed-in base with a wick in the center. Both base Nos. 1 and 2 were found in loci assigned to Stratum II: No. 1 with 18 coins mainly from the fourteenth century CE; the earliest coin is from 1332–1339 and the latest is from 1406–1412, while three are attributed generally to the fourteenth/fifteenth centuries CE (see Kool and Berman, this volume: Nos. 5, 29, 64, 68, 114, 116, 121, 131, 161, 168, 171, 175, 178, 179, 199, 200, 279, 284). Number 2 was found with four coins, one dated to 1310–1341 CE, the second to 1363–1373 CE and two dated generally to the fourteenth/fifteenth centuries CE (see Kool and Berman, this volume: Nos. 62, 112, 278 and 280, respectively).

An oil lamp of this type was discovered in the medieval castle at Safed within the fills of the corridor, which was dated to the mid-fifteenth century (Katsnelson 2017:314, Fig. 2:6).

Oil lamps of this type, made of colorless glass, were found at Hama (Riis 1957:37–38, Figs. 60, 61, with parallels at al-Mina dated to the ninth–tenth centuries CE). A similar pushed-in base with the remains of a wick-tube was discovered on Ha-Palmah Street, Ramla, in an installation dated to the Mamluk period (Gorin-Rosen 2009a: Fig. 13:11).

1. Oil lamp (L214, B2190/2). Part of base and complete wick-tube. Colorless glass. Black and silver weathering, iridescence and severe pitting, sand deposits. High pushed-in bottom with crude scar and traces of glass from the pontil. A complete wick-tube inside, in the center, with cut-off rim and thin walls. Base diam. c. 6 cm.

2. Oil lamp (L224, B2359/3). Half base. Colorless glass with greenish tinge. Black and silver weathering, iridescence and pitting. Bubbly. High pushed-in bottom with small pontil scar. Remains of the lower part of a wick-tube inside, in the center. Base diam. 4.5 cm.

Oil Lamp with Pushed-In Base-Ring and Wick-Tube (Fig. 3:3). This type of base was widely used during the Mamluk period for various types of vessels. In this case, it was identified as an oil lamp because of the typical wick-tube. Number 3 was found on the surface, Stratum I. Nine coins from the fourteenth century CE and two later coins, one dated to 1458 and another to the fourteenth/fifteenth centuries CE, were found in the same locus (see Kool and Berman, this volume: Nos. 182 and 240, respectively). However, as the type appeared

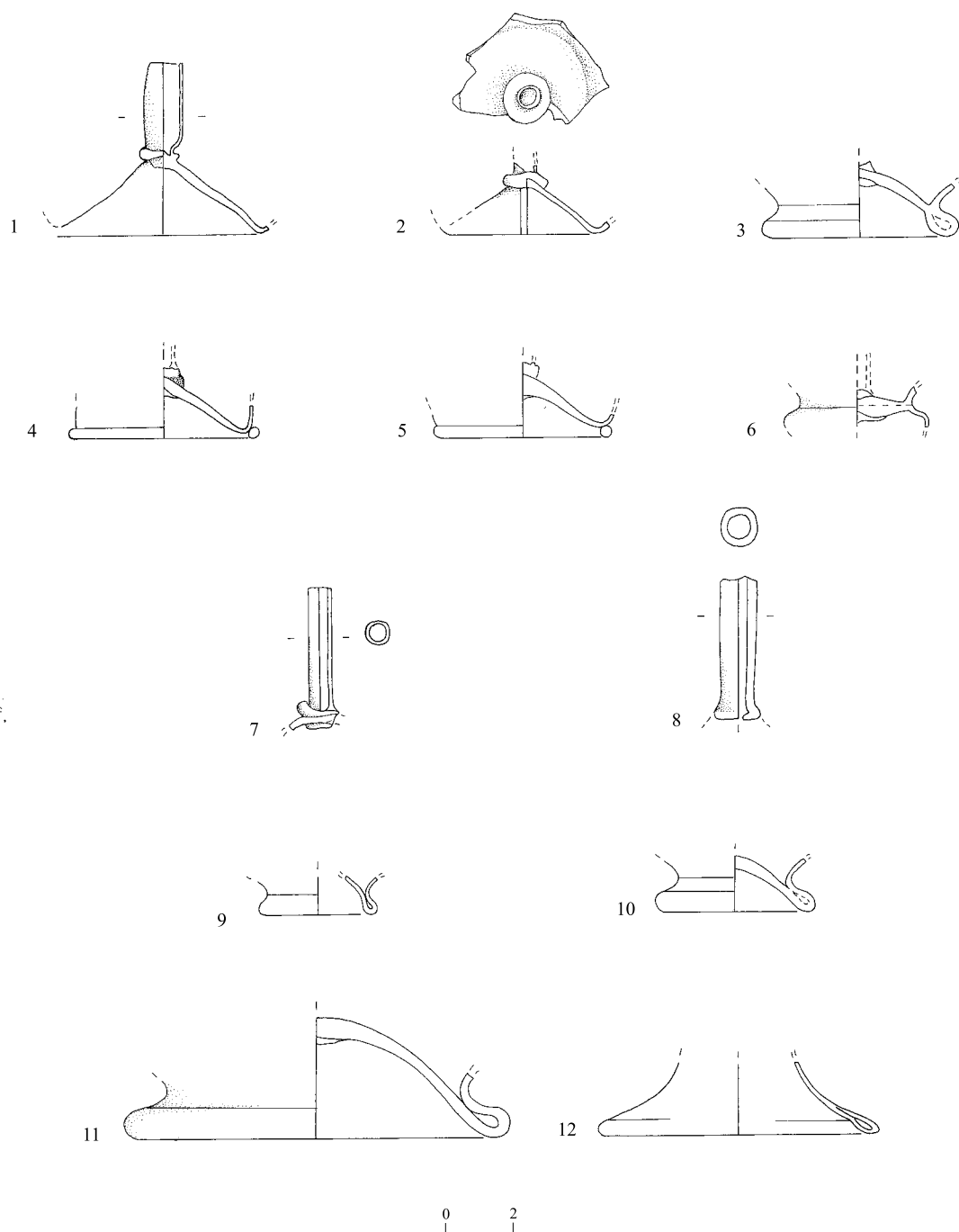


Fig. 3. Oil lamps (1-8) and various bases (9-12).

already during the Early Islamic period and there are earlier finds among the surface finds, it probably dates to the fourteenth century CE, like most of the assemblage.

Complete examples are known mainly from collections, e.g., an example assigned to the tenth–eleventh centuries CE, from Egypt or Iran (Shindo 2002:28, 85, Cat. No. 41).

3. Oil lamp (L202, B2004/20). Complete base and beginning of wall. Colorless glass with greenish tinge. Black and silver weathering, iridescence and pitting, lime deposits. Bubbly. High pushed-in hollow base-ring with crude scar and traces of glass from the pontil. Remains of the lower part of a wick-tube inside, in the center. Base diam. 5.8 cm.

Beaker-Shaped Oil Lamps with Applied Trail Wound Base and Wick-Tube (Fig. 3:4, 5). This type of base was discussed above (Fig. 2:12, 13, 15–20) and attributed to various beaker types. The typical wick-tube attached to its center is what defines it as an oil lamp. Numbers 4 and 5 were found in loci assigned to Stratum II. However, the type seems to have been in distribution during the fourteenth century CE as well. An oil lamp with a similar base was discovered in the medieval castle at Safed within the fills in the corridor, which were dated to the mid-fifteenth century CE (Katsnelson 2017:314, Fig. 2:6).

4. Oil lamp (L214, B2190/1). Fragment of base and beginning of wall. Colorless glass. Black weathering and iridescence. Pushed-in bottom with scar and traces of glass from the pontil. Thin, uneven wound trail base of the same color. Remains of the lower part of a wick-tube inside, in the center. Base diam. 5.6 cm.

5. Oil lamp (L213, B 2316/3). Fragment of base and beginning of wall. Colorless glass with greenish tinge and turquoise trail. Black and silver weathering, iridescence and pitting. Pushed-in bottom with crude scar and traces of glass from the pontil. Rather even wound turquoise trail base. Remains of the lower part of a wick-tube inside, in the center. Base diam. 5.2 cm.

Beaker-Shaped Oil Lamp with Wick-Tube and Applied Base from Additional Blob (Fig. 3:6). This fragment, in a poor state of preservation, represents a common vessel type known as a ‘mosque lamp’. The common types are usually larger and mainly decorated with paint, but small versions are also known from excavations. Complete examples are known from collections, like the mold-blown, enameled and gilded lamp in the Victoria and Albert Museum, London, assigned a Syrian provenience and dated to the mid-thirteenth century CE (Carboni 2001c:226–227, Cat. No. 113).

6. Oil lamp (L223, B2472/4). Fragment of bottom or foot, complete perimeter. Colorless glass. Black and silver weathering, iridescence and severe pitting. Double-blob bottom, with horizontal bubble between the blobs and a crude scar with traces of glass from the pontil. Remains of the lower part of a wick-tube inside, in the center. Very careless workmanship.

Wick-Tubes (Fig. 3:7, 8)

These two examples of complete wick-tubes could belong to all the different versions. Both are characterized by a short tube with a cut off rim, such as in Fig. 3:1.

7. Oil lamp (L231/232, B2565/2). Complete wick-tube and small base fragment. Colorless glass. Black and silver weathering, iridescence and pitting. Bottom with crude scar and traces of glass from the pontil. Complete wick-tube inside, in the center, with cut-off rim and thin walls.

8. Oil lamp (L214, B2193). Complete wick-tube. Colorless glass. Black and silver weathering, iridescence and pitting. Complete wick-tube inside, in the center, with cut-off rim.

Various Bases (Fig. 3:9–12)

Vessels with Pushed-In Tubular Base-Ring (Fig. 3:9–11). These three bases differ in size and color, and could belong to various types of vessels. Base No. 9 is very small and characterized by its emerald green color, which was popular during the Mamluk period. The vessel could have been a small bowl or a tiny jar, plain or decorated. It was found on the surface, but it can be assigned to the Mamluk period based on the typical combination of shape and color. Number 10 is also a surface find. It could belong to an open vessel, such as a small bowl or jar, but could just as well belong to a bottle or jug. Number 11 is larger and could belong to a bowl, a jar, a bottle or a jug. It was found in a locus in Stratum II. A similar base was discovered in the medieval castle at Safed (Katsnelson 2017:314, Fig. 1:8).

9. Small bowl (L212, B2079/2). Small base fragment. Emerald green. Black and gold weathering, iridescence and pitting. Pushed-in hollow ring base with high kick. Base diam. 3.5 cm.

10. Small bowl? (L202, B2008). Complete base and wall fragment. Light green glass. Black and silver weathering, iridescence and pitting. Uneven, pushed in hollow ring base with thickened high kick. Pontil scar visible on base. Base diam. 4.7 cm.

11. Bowl or jar (L205, B2027/1). Large base fragment. Light green glass. Black and silver weathering, iridescence and pitting. Pushed in hollow ring base with thickened high kick. Very large pontil scar with traces of glass on base. Base diam. 11.4 cm.

Vessel with High ‘Trumpet-Shaped’ Base with Tubular Ring (Fig. 3:12). Found on the surface, this type of base could belong to tall beakers, jugs or mosque lamps with a base made of an additional blob. Bases of this type were found in the Crusaders’ Tower at ‘Akko (Gorin-Rosen 1997:81–82, Fig. 2:16, and see therein for further references to ‘Atlit and Emmaus/el-Qubeibeh).

12. Beaker or jug (L203, B2067/1). Base fragment. Colorless glass. Black and silver weathering, iridescence and severe pitting. High pushed-in ring base. Very thin and delicate. Diam. 8.2 cm.

Plain Bottles (Fig. 4)

Several types of plain bottles were found, made mainly of low-quality colorless fabric and of inferior workmanship. They were probably made locally, for everyday use. Colorless vessels with various greenish tinges were very popular in the Mamluk period, e.g., the assemblage found in Area T in the Jewish Quarter, Jerusalem, where 70 out of 140 vessels (i.e., 50%) were colorless (Brosh 2005a:186).

Small and Medium-Sized Bottles with Flaring Rims (Fig. 4:1–3). These bottles are the simplest in the assemblage, in shape and fabric, and were probably produced locally. Bottle Nos. 1 and 2 have a flaring, uneven rounded rim, while No. 3 has an uneven bent-out rim. Number 2, with a very thin wall, is slightly wider than No. 3. Numbers 1 and 3 were discovered in Stratum III; No. 2 was found in Stratum II.

Two bottles from Banias bearing similarities to Nos. 1–3 were attributed to the Mamluk period and seem to have been local productions (Gorin-Rosen and Jackson-Tal 2008:86–87, Fig. 5.4:15, 16, and see therein further references to Bet She'an). Two bottles like Nos. 1 and 2 were discovered at Mary's Well, Nazareth, and dated to the Mamluk period (Alexandre 2012:94, Fig. 4.4:7, 8).

1. Bottle (L215, B2313/1). Complete rim and part of neck. Colorless glass. Black and silver weathering, iridescence and pitting. Very bubbly with elongated bubbles. Uneven flaring rounded rim and asymmetrical neck. Thin wall. Rim diam. 2 cm.

2. Bottle (L213, B2357). Fragment of rim and neck. Colorless glass. Black and silver weathering, iridescence and pitting. Uneven flaring rounded rim and asymmetrical neck. Thin wall. Rim diam. 2.6 cm.

3. Bottle (L219, B2423). Fragment of rim and neck. Colorless glass. Black and silver weathering, iridescence and pitting. Uneven flaring rounded rim, bent downward and asymmetrical neck. Thin wall. Rim diam. 3.1 cm.

Bottle with Short Cylindrical Mouth (Fig. 4:4). Bottle No. 4 is characterized by an upright rounded rim and a wide neck and shoulder. This simple shape appeared during the Early Islamic period, mainly in the ninth–tenth centuries CE, and continued into the Mamluk period. This bottle differs from others in its relatively fine fabric, and it is possible that the body was originally decorated. It was found in a locus assigned to Stratum II.

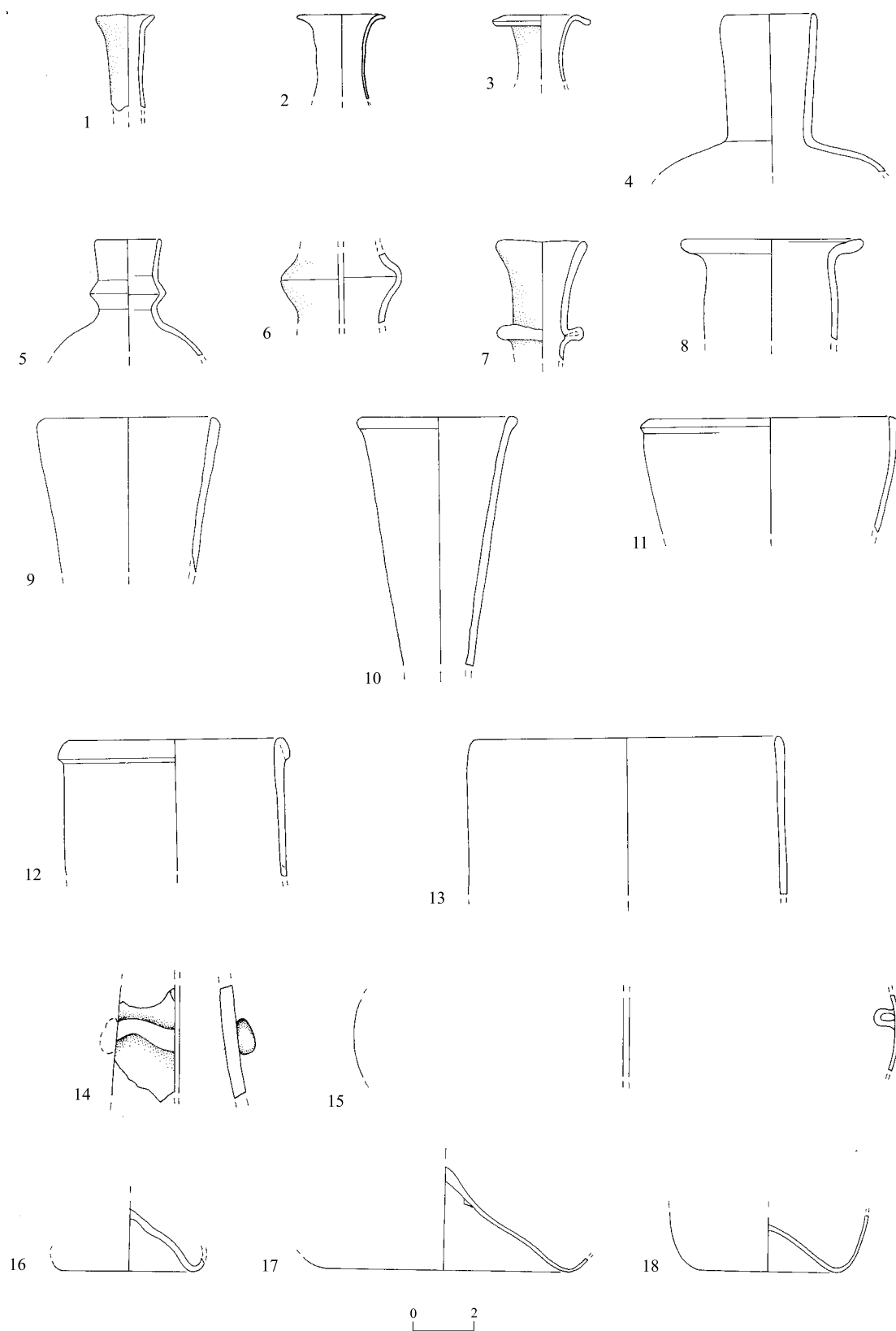


Fig. 4. Plain bottles.

4. Bottle (L210, B2052/2). Fragment of rim, neck and shoulder. Clear colorless glass. Black and brown crust, iridescence and severe pitting. Fine fabric compared to the other bottles. Upright rounded rim, cylindrical neck and slightly curving shoulders. Rather thick wall. Rim diam. 3.2 cm.

Bottles with a Bulge on the Neck (Fig. 4:5, 6). Bottle Nos. 5 and 6 are characterized by an open fold on the neck below the rim. They were found in the same locus and basket, attributed to Stratum II, dated to the end of the fourteenth century CE. Number 5 is a small bottle with a rounded rim and a short neck with an open fold between the rim and the neck. The body is probably globular. Bottle No. 6 presents another subtype, with a slightly flaring rim and a cylindrical neck with a bulge at the neck. Bottles of this type were found at the Crusader fortress at Montfort: one was published by Dean (1927: Fig. 56:J) and a few more were published later by Whitehouse (2005:191, Color Pl. 43: lower line, two bottles on right). Bottles with a bulge or bulges at the neck were found at Bet She'an and dated to the Ayyubid and Mamluk periods (Katsnelson 2014b:46*, 49*–50*, Fig. 13:1, 2). Bottles of different sizes and shapes with bulges at the necks were discovered in excavations in the Jewish Quarter, Jerusalem: an early group of medium-sized and large bottles was dated to the twelfth century CE, and a later group of medium-sized cosmetic bottles was dated to the fourteenth century CE (Brosh 2012:401, 403, 411, 413, 415–416, Pls. 15.1:G7–G10; 15.2:G35–G36). A similar bottle was found at Quseir al-Qadim, within a group of vessels dated to the late Ayyubid–early Mamluk periods (Meyer 1992:76–77, Pl. 15:374).

This type is one of the most common types dating from the medieval period. In most of the recent excavations at 'Akko, as well as in other Crusader or Mamluk complexes, bottles with an open bulge below the rim or on the neck were uncovered, but have not been published.

5. Small bottle (L213, B2163/1). Almost complete rim and neck with beginning of shoulder. Colorless glass. Black weathering, iridescence and pitting. Relatively fine fabric and workmanship. Uneven rounded rim, short neck with open fold on the neck. Rim diam. 2.2 cm.

6. Bottle (L213, B2163/3). Small fragment of neck. Colorless glass with greenish tinge. Black and silver weathering, iridescence and sand deposits. Neck with open fold. Wall of uneven thickness.

Bottle with Tooled-Out Tubular Fold on Neck (Fig. 4:7). Bottles with tooled-out folds were common during the Crusader period and continued throughout the Mamluk period and even later. A Crusader-period example from the Jewish Quarter excavations, Jerusalem, was dated to the twelfth century CE (Brosh 2012:401–402, 411, 413, Pl. 15.1:G11, with further references to Hama and Beirut).

The tooled-out fold of No. 7 is typical of Mamluk bottles of different types. Some of the large bottles with a tooled-out fold on the neck are colorfully painted in enamel while others are plain. An example of an enamel-painted bottle from Egypt is in the Metropolitan

Museum of Art, New York and is dated to the first half of the fourteenth century CE (Carboni 2001c:206, Fig. 101). A similar rim from an enamel-painted bottle was found at Fustat, in Mamluk strata (Shindo 1992: Pl. 6–8:17). Bottle No. 7 was found in a locus assigned to Stratum II.

7. Bottle (L223, B2345/2). Complete rim and part of neck. Colorless glass with grayish green tinge. Patches of black crust, iridescence and severe pitting. Careless workmanship. Uneven rounded rim. Funnel mouth with a tooled-out hollow fold on the narrow neck.

Bottle with Tooled Bent Out, Short Shelf-Like Rim (Fig. 4:8). The shape of this vessel is not clear, but the diameter of the rim and the wide neck suggest that it belongs to a bottle. The fragment was discovered in a locus assigned to Stratum II. A bottle with a flaring rim like that of No. 8 was discovered at Mary's Well, Nazareth, and dated to the Mamluk period (Alexandre 2012:94, Fig. 4.4:9).

8. Bottle (L224, B2369). Rim and wall fragment. Colorless glass. Black and silver crust, iridescence and severe pitting. Flaring in-folded thickened rim and slightly curving wall, of uneven thickness.

Bottles with Long Funnel-Mouth and Thick Wall (Fig. 4:9, 10). These two colorless bottles are characterized by their simple funnel-mouth and rounded rim. This shape was common mostly during the Byzantine period and decreased in frequency over time. Bottle No. 10 was a surface find, assigned to Stratum I.

9. Bottle (L231/232, B2565/1). Fragment of rim and neck. Colorless glass. Black and silver weathering, iridescence and severe pitting. Thickened rounded rim, slightly slanting, rather thick wall. Rim diam. 6 cm.

10. Bottle (L202, B2008/3). Fragment of rim and neck. Colorless glass. Black weathering, iridescence and severe pitting. Thickened rounded rim, slightly slanting, rather thick wall. Rim diam. 5.3 cm.

Various Bottles

Rim Nos. 11, 12 are also made of colorless glass and are wide and rounded, with slight differences. Both rims have a triangular section. They were found in loci assigned to Stratum II. Rounded rim No. 13 belongs to a bottle or a beaker.

11. Bottle? (L220, B2317). Fragment of rim and wall. Colorless glass. Patches of black, brown and silver weathering, iridescence and pitting. Bubbly—oval horizontal bubbles. Thick rounded rim with triangular section. Slightly curving wall/neck. Rim diam. c. 7.2 cm.

12. Bottle (L213, B2338). Fragment of rim and wall. Colorless glass with yellowish tinge. Patches of brown and silver weathering, iridescence and pitting. Thick rounded rim with triangular section, vertical wall/neck. Rim diam. c. 7.4 cm.

13. Large bottle or wide beaker (L213, B2316/1). Fragment of rim and wall. Colorless glass. Patches of black, brown and silver weathering, iridescence and severe pitting. Thick rounded rim. Vertical, rather thick wall. Rim diam. 10.2 cm.

Bottle with Applied Horizontal Trail on Neck (Fig. 4:14). Wound, plain or wavy horizontal trails were a very common decoration on bottle necks. They were most frequent during the Byzantine and Umayyad periods, and reappeared during the Crusader period, mainly on jugs with pinched rims. This bottle was a surface find.

14. Bottle (L203, B2067/3). Small fragment of neck. Bluish green glass. Black and silver weathering, iridescence and severe pitting. Thick wall decorated with applied thick wavy trail. Neck diam. 4 cm.

Bottle or Jug with Horizontal Tooled-In Tube (Fig. 4:15). This technique was used mainly during medieval times with large bottles, *omoms* and jugs. One complete jug whose provenance is attributed to Iran, dated to the eleventh–twelfth centuries CE, is from a collection in Japan (Shindo 2002:20, No. 15). Four complete vessels, different in shape, have this characteristic feature at the widest part of their bodies. They too were assigned an Iranian origin and were dated to the twelfth century CE by Carboni (2001a:182–183, 194, Cat. Nos. 46a–c, 3.28), who suggested that this inner tube is a decoration technique that created a horizontal line in a darker hue, dividing the body of the vessel into two sections (2001a:182). Brosh (2012:402) suggested that it might have been used as a mark for measuring purposes. As this phenomenon appeared already during the late Byzantine and Umayyad periods on small and medium-sized vessels, such as cups and oil lamps, and continued later, during the Crusader period, appearing in the middle of jugs, it seems that the tooled-in tube might have had a functional purpose rather than a decorative one, e.g., for shaking the liquids. Probably, however, it was a means of strengthening the vessels' walls.

A similar fragment was retrieved from the Crusader tower at 'Akko (Gorin-Rosen 1997:80–81, Fig. 2:9, and see therein further discussion and references to earlier and later examples, e.g., from the Crusader occupation at the Red Tower [al-Burj al-Aḥmar] and from Corinth). Another fragment was recovered from a Crusader assemblage in the Jewish Quarter, Jerusalem, which was dated to the twelfth century CE (Brosh 2012:402, 414, 416, Pl. 15.2: G27, and see further references therein). Similar body fragments with internal folds were found in medieval contexts in Beirut (Jennings 2006:237–238, Fig. 10.22:1, 2).

15. Bottle or jug (L223, B2345). Small wall fragment. Colorless glass with greenish tinge. Black and silver weathering, iridescence and pitting. Thin curving wall with tooled thick hollow fold inside.

Bottles with High Pushed-In Bottoms (Fig. 4:16–18). The high pushed-in bottom with a pointed kick, such as in Nos. 16 and 17, is the most common base type during the Mamluk period. This type appears alongside the type with the concave bottom; both were used from the beginning of glassblowing until the Ottoman period. Attributing a date to these bottoms is usually based on small technical variations, fabrics and chiefly, their contexts. Numbers 16 and 17 were retrieved from Stratum II.

16. Bottle? (L223, B2449/1). Base fragment. Colorless glass. Black and silver weathering, iridescence and severe pitting. Uneven pushed-in base with high kick and scar with traces of glass from the pontil. Very asymmetrical—might belong to a lentoid-shaped vessel. Base diam. c. 5 cm.

17. Bottle? (L205, B2120). Half base. Colorless glass with light green tinge. Black and brown weathering, iridescence and severe pitting. Low quality, very bubbly glass. Uneven pushed-in base with high pointed kick and a scar with traces of glass from the pontil. Very thin wall. Very asymmetrical—might belong to a lentoid-shaped vessel. Base diam. c. 9.5 cm.

18. Bottle? (L221, B2314/1). Half base and beginning of wall. Colorless glass. Black and silver weathering, iridescence, pitting and sand deposits. Uneven pushed-in base with high pointed kick and small pontil scar. Thin wall. Base diam. c. 5 cm.

Jars (Fig. 5)

Four vessels were identified as subtypes of jars. All have a wide mouth with a flaring rim, a short wide neck, and a globular or squat body. The glass is usually of poor quality, very bubbly, with many impurities, indicative of mass production. However, the very large size of the jars suggests manufacture by skilled glassblowers. The vessels differ in size, the shape of the rim and the thickness of the wall.

Two complete jars from Caesarea are good examples for the general shape, size and proportions of this type. These jars were dated to the late tenth or early eleventh centuries CE (Pollak 2000:239–240, Figs. 4, 6:1, 2).

The overall shape is also like the shape of jars found at Fustat, Egypt, identified as ‘toilet jars’, dating from the eighth to early eleventh centuries CE (Scanlon and Pinder-Wilson 2001:50–52, Fig. 22, Pl. 22h). Similar jars, such as a colorless jar from Hama, Syria, appear later in the Late Islamic periods, and date from the tenth to twelfth centuries CE (Riis 1957:32–33, Fig. 24). Small, medium and large jars were among the glass vessels found in the Serçe Limani shipwreck and were dated to the first quarter of the eleventh century CE (van Doorninck 1990:60, 118, Figs. 76, 77). Van Doorninck mentioned large numbers of jars for daily use made of very bubbly glass.

Many jars were uncovered in Ramla, Caesarea, Banias, Bet She’an and other sites, where they were in wide distribution (see below). The smaller subtypes appeared during the ninth and tenth centuries CE whereas the larger specimens date to the Late Islamic and medieval periods.

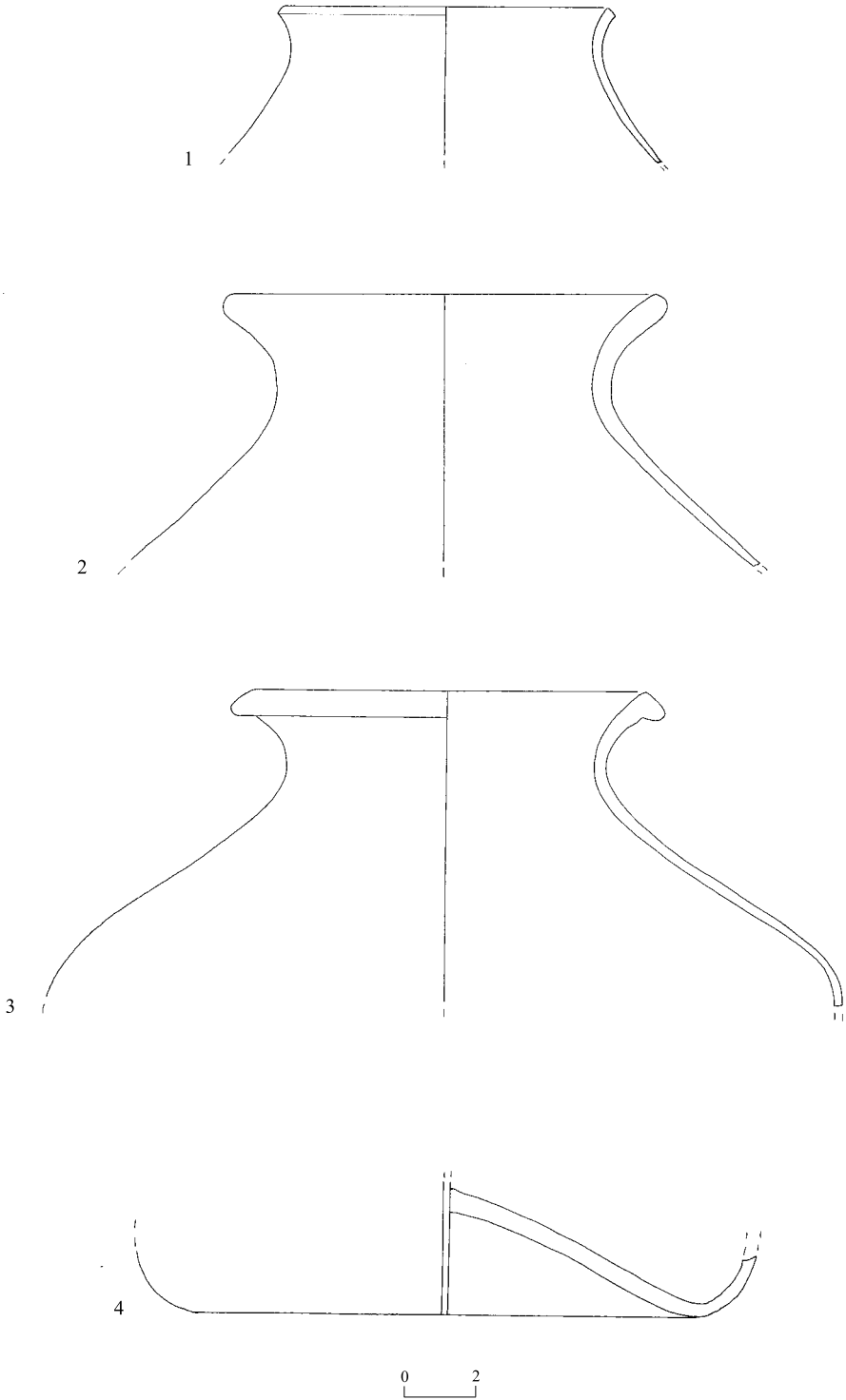


Fig. 5. Jars.

Jars with Flaring Rim and Wide Neck (Fig. 5:1–4). Large jars with a flaring rounded rim and a wide neck were common mainly during the Late Islamic and medieval periods. They are characterized by their size, wide mouth, thick walls and thick, concave or pushed-in base, low-quality fabric, crude shape and careless workmanship.

This type was widely distributed. A similar, albeit slightly thinner, rim was found on Marcus Street, Ramla, in a context dated to the tenth century CE (Pollak 2007:116, 118–119, Fig. 8:45); another early example dated to the late tenth or eleventh century CE came from a hoard from Caesarea (Pollak 2000:239–240, 242, Figs. 4—left; 6:1); three rims of this type were found at Bet She'an in 'Abbasid–Fatimid contexts and three rims, in Ayyubid–Mamluk contexts—all identified as large bottles, not jars (Hadad 2005:45, 61, Pls. 42:871, 873–875; 52:1081, 1082; 53:1083). Similar jars, including an almost complete example, were found in an undisturbed storage pit in Bet She'an; these jars date mainly to the thirteenth century CE (Katsnelson 2014b:46*–48*, Fig. 12). Additional jars of this type were discovered at Mary's Well, Nazareth, and dated to the Mamluk period (Alexandre 2012:95, Fig. 4.5:3–6). A large jar of this type was found at Şarafand el-Kharab, Nes Ziyiyona (with further references to Bet She'an; see Gorin-Rosen 2004:62, Fig. 1:10). Another example, although with a thinner wall, was found in Area B at Banias (Gorin-Rosen and Jackson-Tal 2008:87, and see therein further references to Beirut, dated to the Fatimid period). A complete jar with a similar rim was found in the Serçe Limani shipwreck and dates to the first quarter of the eleventh century CE (Bass 1996:47). Another similar rim was found at Hama (Riis 1957:40, Fig. 75) and farther south, at Quseir al-Qadim (Meyer 1992:86, Pl. 18:502).

Based on the large quantities of such jars found in the storeroom of the sugar factory excavated at Bet She'an, I suggested that this type of large jar, widespread during the Crusader period, might have been used for one of the sugar products, like molasses or sugar syrup, which became very popular at that time (Gorin-Rosen 2004:62). The size, poor quality of the fabric and careless workmanship of these jars support an industrial use. Moreover, they would have been very useful for viscous, sticky liquids as they would have been easy to clean and reuse. The appearance of this type is connected with the development of sugar production in the Early Islamic world.

Base No. 4 is thick and heavy; it probably belongs to this jar type.

1. Jar (L211, B2243/2). Rim and wall fragment. Colorless, clear glass. Black and silver weathering, iridescence and pitting. Flaring, uneven cut rim, finished by fire. Wall thickens downward, wide body. Rim diam. 9.4 cm.

2. Large jar (L202, B2004/3). Half rim and neck. Colorless glass. Patches of black and silver crust, iridescence, severe pitting and lime deposits. Flaring, thickened rounded rim, short wide neck, sloping shoulders and wide body. Rim diam. 12.4 cm.

3. Large jar (L231/232, B2564). Rim, neck and shoulder fragment. Mended. Colorless glass. Black and brown weathering, iridescence, severe pitting and sand deposits. Bubbly. Flaring, uneven, thickened triangular rounded rim, short wide neck, sloping shoulders and wide body. Rim diam. 12 cm.

4. Large jar (L213, B2386/1). Base fragment. Colorless glass with yellowish green tinge. Patches of black and silver weathering, iridescence, pitting and sand deposits. Very bubbly—small and medium-sized bubbles. Very thick, pushed-in concave base with pontil scar and traces of glass and metal from the pontil. Thick wall. Base diam. c. 16 cm.

DECORATED VESSELS

Bichrome Vessels Decorated with Marvered Trails

Most of the vessels in this group were made of dark glass, mainly purple, and also, two brown, two blue and two emerald green vessels. They were decorated with light-colored trails, mostly opaque white or an opaque pale greenish gray. Only a few were colorless and decorated with darker trails—in blue or turquoise. The trails were applied to a wide variety of vessels; after application, they were flattened on top of a flat working surface (the marver—hence, the name of the technique) and in most instances, they were reheated and combed into feathered designs or undulating patterns. In addition, some of the vessels were mold-blown. This technique, characteristic of Mamluk glass assemblages (Brosh 2016, with further references and discussion therein), was widely used and distributed and is therefore found in almost every site occupied during the Mamluk era, although there have been relatively few publications of this material to date. This group includes a wide variety of types, such as bowls—which usually form the majority, as in this assemblage from Safed and the assemblage from the Jewish Quarter in the Old City, Jerusalem—bottles of diverse forms, cosmetic (*kohl*) bottles, sprinklers, jars, beakers and bird-shaped vessels (Brosh 2016:361, Fig. 3).

Small Bowls (Fig. 6:1–4). The amount of small bowls decorated with marvered decoration published to date is minute compared with the published large specimens. Therefore, the four bowls presented here are an important contribution to the study of the glass repertoire of the period. The small bowls are mainly characterized by the dense marvered trails that cover the surface in various patterns. Small bowls were found in Area T in the Jewish Quarter, Jerusalem (Brosh 2016:361–362, Fig. 4:1–3).

Bowl No. 1 is the best preserved of the group, presenting a complete profile. The rim is slightly in-curving compared with that of bowl No. 2. A slightly larger bowl with a similar color combination and pattern was found at Ḥama (Riis 1957:64, 66, Fig. 196). A small bowl, similar in size to No. 1, was found in a Mamluk assemblage in the Jewish Quarter, Jerusalem (Brosh 2005b:22, Figs. 17:2; 23:1).

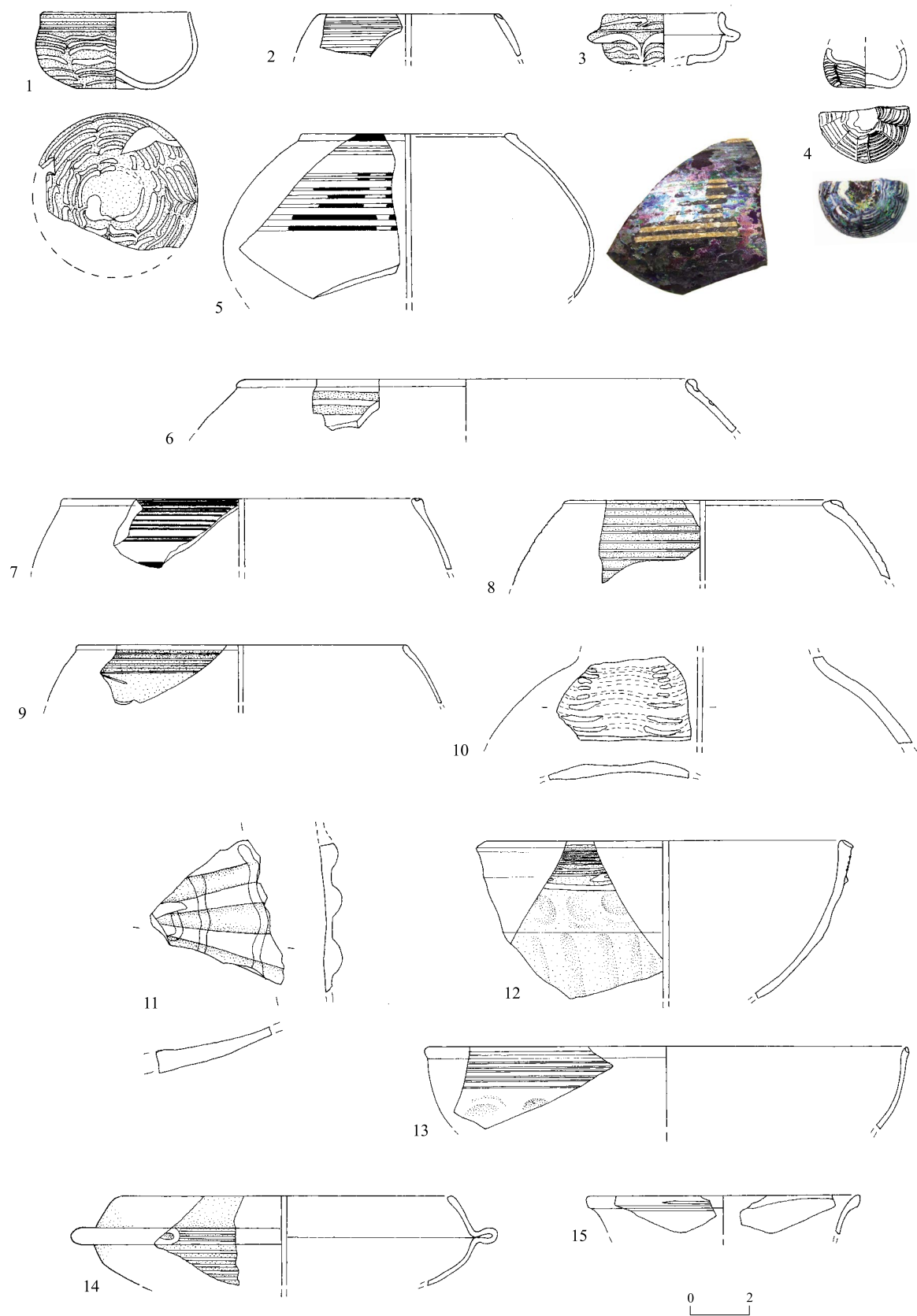


Fig. 6. Bowls decorated with marvered trails.

A small bowl like No. 2, differing only in the addition of a greenish blue trail on the rim's edge and dense horizontal white trails all over the body, was discovered in the medieval castle at Safed (Katsnelson 2017:314, Fig. 5:2).

Fragment No. 3 could belong to a small bowl (as presented in the figure) with a flat or a ring base, but could just as well be a small lid. In addition to the marvered pattern, this vessel is characterized by a tooled-out fold below the rim. A lid with a tooled-out fold with marvered decoration, larger than No. 3, was found in the Jewish Quarter, Jerusalem (Brosh 2016:361–362, Fig. 4:9).

Miniature vessel No. 4 could be a small bowl or a jar. An example of a small vessel such as this, although slightly larger, is in the Newark Museum collection (Auth 1976:233, Cat. No. 543). The latter is made of deep purple glass with white threads. The extremely dense marvered and combed pattern on vessel No. 4 resembles the pattern on a larger, lidded bowl in the Metropolitan Museum, dated to the second half of the thirteenth century CE; the place of manufacture was attributed to 'Greater Syria' (Jenkins 1986:45, Cat. No. 50). A vessel with a densely marvered and combed pattern resembling Fig. 6:1, 3, 4 was found in the medieval castle at Safed (Katsnelson 2017:314, Fig. 5:5).

Vessel Nos. 2–4 were discovered in loci attributed to Stratum III, dated to the fourteenth century CE.

1. Bowl (L244, B2597). Half bowl, complete profile. Mended. Purple glass with white trails. Black weathering, iridescence and severe pitting. Slightly incurving rounded rim, hemispherical body. Slightly concave base with pontil scar. Decorated with marvered white trails from rim to base. Well-made pattern. Rim diam. 5 cm, height 2.6 cm.

2. Bowl (L239, B2602/9). Small fragment of rim and wall. Purple glass with white trails. Black and silver crust, iridescence and severe pitting. Incurving rim, decorated with marvered trail flattened at its edge. Curving wall decorated with horizontal white marvered trails. Rim diam. 6 cm.

3. Small bowl (L219, B2437/1). Fragment of rim and part of wall. Purple glass with white trails. Silver weathering, iridescence, severe pitting and sand deposits. Upright rounded rim with tooled-out tubular fold just below the rim on exterior. Small shallow body with thick walls. Decorated with marvered white trails from rim to base. Well-made pattern. Rim diam. 4 cm.

4. Small bowl (L215, B2147). Half base and fragment of wall. Color is not clear—either purple or blue glass with white trails. Dull surface, iridescence and severe pitting. Slightly incurving wall. Slightly concave thick base with pontil scar. Decorated with very fine marvered white trails on the body down to the base. Very well-made pattern. Base diam. 2 cm.

Bowls with Incurving Mouth (Fig. 6:5–9). The bowls illustrated here represent a rather large group of medium-sized and large marvered bowls characterized by an incurving mouth.

This is the most common Mamluk-type bowl, with a wide distribution. Most of the bowls from this group were made of purple glass and decorated with white horizontal trails. Some are made of brown, green or blue glass and decorated with trails in white or other light colors with pale greenish or bluish hues.

Similar bowls made of purple and brown glass were found in Syria at Hama (Riis 1957:63–68, Figs. 186; 189; 190; 192; 197; 207) and in Damascus (Foy 2015:433, Pl. 2:36, 38). Some were discovered in Bet She'an (Brosh 2005b: Fig. 10.1:1–3, 5, 6),⁵ One bowl, from Ḥamat Gader, was dated to the thirteenth–fourteenth centuries CE (Lester 1997:438, Pl. I:16, with further references therein to Yoqne'am). A fairly large group was found in several areas of Jerusalem, e.g., from the Jewish Quarter (Brosh 2005b: Fig. 17.2:5, 6), and one such bowl, of yellowish brown glass decorated with white trails, was found in the Church of the Holy Sepulchre in Jerusalem (Winter 2012:335, Fig. 4:9); two large bowls were found in the Mamluk installation at Ramla (Gorin-Rosen 2009a: Fig. 13:2, 3); and one, at Khirbat el-Ni'ana (Gorin-Rosen and Katsnelson 2007:147–148, Fig. 40:1).

5. Bowl (L223, B2466). Small fragment of rim and part of wall. Purple glass with white trails. Black and silver crust, iridescence and severe pitting. Incurving rim, decorated with marvered trail flattened at its edge. Curving wall decorated with horizontal white marvered trails along body. Rim diam. c. 7.2 cm.

6. Bowl (L223, B2345). Small fragment of rim and part of wall. Purple glass with white trails. Iridescence and pitting. Incurving thickened rim, decorated with marvered thick trail. Curving wall decorated with thick horizontal white marvered trails below rim. Rim diam. c. 15.5 cm.

7. Bowl (L223, B2449/2). Small fragment of rim and part of wall. Purple glass with white trails. Iridescence and pitting. Incurving thickened rim, decorated with marvered thick trail flattened at its edge. Curving wall decorated with very thin horizontal white marvered trails below rim and on body. Rim diam. c. 12 cm.

8. Bowl. L131, B1131. Small fragment of rim and part of wall. Purple glass with white trails. Brown crust (partly removed), iridescence and severe pitting. Incurving thickened rim, decorated with marvered thick trail flattened at its edge. Curving thick wall decorated with uneven horizontal white marvered trails below rim and on body. Rim diam. c. 9.5 cm.

9. Bowl (L224, B2346/2). Small fragment of rim and wall. Purple glass with white trails. Black, brown and silver weathering, iridescence and severe pitting. Incurving rim, decorated with marvered

⁵ Brosh 2005b: Fig. 10.1:3 is recorded in the relevant table as No. 4.

trail. Curving wall decorated with horizontal white marvered trails below rim. Delicate wall. Rim diam. c. 11 cm.

Bowls with Mold-Blown Decoration in Addition to Marvering (Fig. 6:10–13). Two different subtypes are presented below. The first and most frequent subtype is represented by Nos. 10 and 11, which are made of purple glass decorated with white trails with mold-blown ribs. They could belong to bowls similar in shape to Nos. 5–9. The ribs radiate from the base to the upper wall. Both fragments were found in the same locus in Stratum II.

A bowl of this type was found in the medieval castle at Safed (Zefat; Katsnelson 2017:314, Fig. 5:6). Other examples were found in the Jewish Quarter, Jerusalem (Brosh 2016: Fig. 4:4, 5). This type is better known from collections worldwide; see, for example, the bowl from the Museo Civico Archeologico, Padua, which was excavated in 1855 and assigned to Egypt or Syria, thirteenth century CE (Carboni 2001b:105–109, 141–142, Cat. No. 56, with a reference to a bowl in the Ashmolean Museum, Oxford).

The second subtype, less common than the first, is characterized by shallow mold-blown patterns on the body and applied trails of contrasting color on and below the rim. Bowl No. 12 is hemispherical in shape; the marvered trails are attached only to the upper part, below the rim, and the rest of the body is covered with a shallow mold-blown pattern. This bowl was found in Stratum III.

Shallow, thin-walled bowl No. 13 is exceptional in its color combination—brown glass with dense, thin white trails applied to the upper part with a mold-blown pattern that starts below it, as in bowl No. 12. This bowl was found in Stratum III with three coins, one dated to 1310–1341 CE, the second, to the fourteenth–fifteenth centuries CE, and the third, to the sixteenth–seventeenth centuries CE (Kool and Berman, this volume: Nos. 33, 251 and 288, respectively). However, the glass bowls found with these coins are probably not later than the fourteenth or early fifteenth century CE. Bowl Nos. 12 and 13 probably represent one of the local types. The rim and the lower part of a turquoise body fragment from a large luxury bowl, with a white horizontal trail on the rim's edge and a shallow mold-blown pattern on the body, was unearthed in a Mamluk assemblage at Revadim Quarry (Katsnelson 2012: Fig. 12:1, 2).

10. Bowl (L223, B2472). Body fragment (near shoulder). Purple glass with white trails. Iridescence and severe pitting. Thick curving wall decorated with wide mold-blown shallow ribs and white marvered trails.

11. Bowl (L223, B2454/4). Fragment of base. Purple glass with white trails. Iridescence and pitting. Thick base decorated with radiating mold-blown ribs and white marvered trails.

12. Bowl (L215, B2313/2). Rim and wall fragment. Purple glass with opaque white trails. Patches of black and silver crust, iridescence and severe pitting on both sides. Hemispherical with rounded

rim. White trails wound on the rim's edge and projecting below it. Mold-blown decoration on body creates shallow indentations and vertical ribs. Rim diam. c. 12.5 cm.

13. Bowl (L230, B2540/1). Rim and wall fragment. Brown glass with white trails. Iridescence and severe pitting. Hemispherical with rounded rim. Fused-in white trails on the rim's edge and below it. Shallow mold-blown or pressed decorations on the body create shallow indentations. Rim diam. 16 cm.

Bowl with Incurving Mouth and Tooled-Out Tubular Fold below Rim on Exterior (Fig. 6:14). The typical rim and marvered decoration, as well as the tooled-out fold, are characteristic of the Mamluk period. Similar rims were found in a Mamluk pit at Ramla.⁶ This type of rim could also be part of a lid, such as the rim found in the Jewish Quarter, Jerusalem (Brosh 2016: Fig. 4:9), and one in the medieval fortifications at Bet She'an (Brosh 2005b: Fig. 10.1:4).⁷ A similar lid was found in Damascus (Foy 2015:433, 435, Pl. 2: 41).

14. Bowl (L220, B2304). Fragment of rim and wall. Purple glass with white trails. Slight iridescence and sand deposits. Very bubbly. Incurving rounded rim with tooled-out tubular fold below rim on exterior at the widest part of the body. Curving walls. Decorated with white horizontal lines on the body, probably painted rather than marvered. Well-made pattern. Rim diam. 11.2 cm; max. diam. 14.3 cm.

Vessel with Flaring Rim Decorated with Marvered Trail on Edge (Fig. 6:15). This vessel is characterized mainly by its color combination. The very small size of the fragment makes it difficult to reconstruct its complete shape. The rather wide mouth could belong to a bowl or a jar. The fragment bears similarities to three jar rims found in a Mamluk assemblage from Fustat (Shindo 1992: Pl. 6-4:28–30). It was found in Stratum II.

15. Jar (L240, B2594). Small rim fragment. Brown glass with white trails. Black and silver weathering, iridescence and severe pitting. Flaring rounded thickened rim with marvered white trail on the rim's edge. Another thin trail just below the rim. Rim diam. 9.2 cm.

Bottles with Marvered Decoration (Fig. 7)

The variety of bottles with marvered decoration is extensive, enriching the repertoire known so far from excavations. The simplest are the bottles, for example, Nos. 1 and 2, decorated with one or two marvered trails on the rim's edge. Rim Nos. 3 and 4 are decorated with

⁶ See n. 4, above.

⁷ Brosh 2005b: Fig. 10.1:4 is recorded in the relevant table as No. 3.



Fig. 7. Bottles decorated with marvered trails.

horizontal trails on the rim and neck, while on Nos. 5–12, the marvered trail decoration is more complicatedly tooled or combed, and is combined with mold-blown patterns as well.

Bottle No. 1 is small; the slightly curving rim is decorated with a white trail. The emerald green color of this vessel is most characteristic of the Mamluk period (see also the base in Fig. 3:9). Bottles of this type were discovered in Area T in the Jewish Quarter, Jerusalem (Brosh 2016:363–364, Fig. 5:23) and in a Mamluk installation in Ramla (Gorin-Rosen 2009a: Fig. 13:5). Bottle No. 2 is made of colorless glass decorated with a light emerald green trail. This combination is also very typical of local glass production in the Mamluk period. Both examples derive from Stratum II.

The slight curve of rim No. 3 could belong to a bottle or to a small bowl. The vessel is made of colorless glass decorated with blue trails. This color combination was also very common in the local glass repertoire of the Mamluk period. This rim, found in the same locus as No. 1, dates to the late fourteenth century CE.

Bottle No. 4 was made of purple glass decorated with trails made of two colors—green and white. The color combination is similar to that of the bowls with marvered decoration, which is the most characteristic of the Mamluk period. This bottle was found in L231/232, together with coins from the first half of the fourteenth century CE and one coin dated more generally to the fourteenth–fifteenth centuries CE (Kool and Berman, this volume: Nos. 10, 34, 35, 231). A similar rim was discovered in a Mamluk installation in Ramla (Gorin-Rosen 2009a: Fig. 13:4). Another rim was found in Fustat, in a Mamluk context (Shindo 1992: Pl. 6–5:10).

Rim Nos. 3 and 4 are delicate, with a thin wall, while bottles with similar horizontal marvered trails on the rim and the neck, found in Jerusalem, have thickened walls (Winter 2012: Fig. 4:10; Brosh 2016:363–364, Fig. 5:25).

Bottle No. 5 is made of purple glass decorated with a white trail on the rim and the remains of combed festoons on the neck. This bottle is unique so far; however, its characteristic colors and decoration technique assign it to the Mamluk horizon. It was found in Stratum I.

Bottle No. 6 is very finely made of purple glass with white marvered trails combed to a more-or-less even festoon pattern, similar to a neck fragment from Ḥama (Riis 1957:65–66, Fig. 198). Rim No. 7 flares out to a shallow funnel shape. It probably belongs to a bottle, as the neck narrows downward like the bottle found in Area T in the Jewish Quarter, Jerusalem (Brosh 2016:363–364, Fig. 5:22). Bottle No. 8 and neck fragment No. 9 show a combination of marvered and mold-blown decoration techniques. They were both discovered in the same locus, assigned to Stratum III. A vessel with a similar pattern was found in Area T in the Jewish Quarter, Jerusalem (Brosh 2016:363–364, Fig. 5:26), and body fragments with a similar pattern were discovered in the Mamluk assemblage at Revadim Quarry (Katsnelson 2012: Fig. 12:6).

Base No. 10 is decorated with radiating mold-blown ribs and marvering. A base fragment with a similar combination was discovered in the medieval castle at Safed (Katsnelson 2017:314, Fig. 5:6). A similar base was found at Ḥama (Riis 1957:67, Fig. 204). Body fragment No. 11 is adorned with an uneven chessboard-like pattern, similar to a pattern on a vessel from Ḥama (Riis 1957:65–66, Fig. 200). A complete bowl with such a pattern on the body, defined as diamond-shaped, was found in Area J in the Jewish Quarter, Jerusalem, dated to the fourteenth century CE (Brosh 2014, with further discussion and references therein).

1. Bottle (L213, B2163/2). Rim fragment. Emerald green glass with opaque white trail. Bubbly—small and medium-sized bubbles. Black and silver weathering, iridescence and pitting. Upright, rounded rim decorated with uneven fused-in trail on its edge. Thin, slightly curving wall. Rim diam. 3.6 cm.

2. Bottle (L223, B2454/2). Rim fragment. Colorless glass with light emerald green trail. Brown weathering, iridescence and pitting. Upright rounded rim decorated with fused-in emerald trail on its edge. Thin, slightly curving wall. Poor quality fabric. Rim diam. 6.4 cm.
3. Bottle (L213, B2189/2). Rim fragment. Colorless glass with blue trails. Black and silver crust, iridescence and pitting. Upright rounded rim decorated with uneven fused-in trail on its edge and prominent horizontal trails below. Thin, slightly curving wall. Rim diam. 5.6 cm.
4. Bottle (L231/232, B2537/b/1). Rim fragment. Purple glass with opaque green and white trails. Upright, slightly incurving rim decorated with fused-in opaque green trails on its edge and one trail below. Prominent opaque white trails wound below the green trails. Rim diam. 3.6 cm.
5. Bottle (L202, B2008/2). Purple glass with white trail. Thick black crust with iridescence and severe pitting. Upright, slightly incurving rim decorated with fused-in white trail on its edge. Below the rim slight remains of festoon decoration visible on the dull glass. Rim diam. 4.2 cm.
6. Bottle (L210, B2052/1). Rim fragment. Probably purple glass with opaque white trails. Patches of brown crust, dull surface. Dark glass decorated with fused-in marvered opaque white trails, pattern very even and sharp. In-curving mouth, thick walls. Rim diam. 7.5 cm.
7. Bottle (L231/232, B2564). Fragment of rim, mouth and beginning of neck. Purple glass with white trails. Black and brown weathering, iridescence and pitting. Flaring rounded thickened rim. Funnel mouth with beginning of neck. Marvered trails from rim to neck, of uneven thickness. Rim diam. 10.1 cm.
8. Bottle (L219, B2423). Rim and neck fragment. Purple glass with white trails. Rounded rim with fused-in trails on the rim's edge and below it and a bulge between the rim and the neck. Mold-blown elongated ribbed decoration on neck with dotted white marvered line above. Beginning of sloping shoulders. Rim diam. 5.2 cm.
9. Bottle (L219, B2453). Fragment of neck. Purple glass with white trails. Iridescence and severe pitting. Neck decorated with mold-blown vertical ribs and remains of white dotted marvering.
10. Bottle (L231/232, B2537/b/2). Part of base. Purple glass with white trails. Patches of black, brown and silver crust, iridescence and severe pitting. Concave base decorated with shallow mold-blown radiating ribs and marvered white trails. Remains of pontil scar. Base diam. 5.5 cm.
11. Bowl or bottle (L221, B2349). Body fragment. Purple glass with white trails. Brown weathering, iridescence and pitting. Marvered white trails.

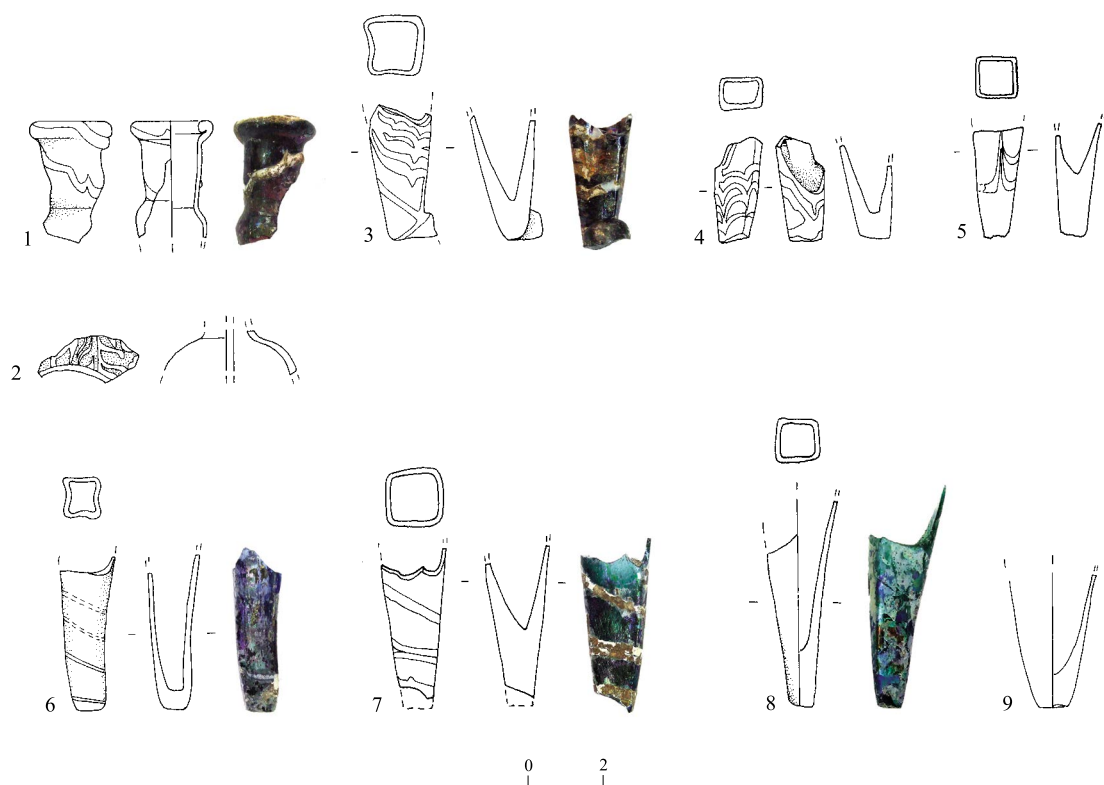


Fig. 8. Cosmetic bottles decorated with marvered trails.

Cosmetic Bottles with Marvered Decoration (Fig. 8:1–7)

The rim, neck and base fragments in Fig. 8 belong to cosmetic bottles with an incurved or infolded rim, a short neck and a conical or pyramidal body that are usually called ‘*kohl* bottles’ (Brosh 1993; Shindo 1993:303; Carboni 2001a:305; Carboni 2001b:106–107, Fig. 94, and see therein for further references). The large group found in this excavation was retrieved from Strata II and III and dated mainly to the fourteenth century CE. The majority is made of purple glass with white marvered trails (Fig. 8:1–5), while one example is blue (Fig. 8:6) and another, emerald green (Fig. 8:7). The sections reveal uneven walls, asymmetric in shape, and of careless workmanship. One vessel (Fig. 8:3) has the remains of glass from the pontil attached to its bottom.

These vessels were widely distributed in the Eastern Mediterranean. Many were found in excavations, although only some of the assemblages have been published so far (see below). Complete specimens are known from collections, for example, those in the Dobkin collection at the Israel Museum, dated to the thirteenth–fourteenth centuries CE (Brosh 2003:382, Cat. Nos. 517, 518, and see further references therein). Others are known from private collections, such as the bottles from the al-Sabah collection, presumably from Egypt or Syria, which are dated to the twelfth–thirteenth centuries CE (Carboni 2001a:304, Cat. Nos. 80a, b, and see further references therein).

Fragments, usually bases, of bottles of this type were discovered in excavations in northern Israel, e.g., at Giv'at Yasaf (Gorin-Rosen 1999:138–139, Fig. 1:9) and Bet Yerah (Brosh 1993:290–291, Fig. 4)—both dating to the Mamluk period—and at Yoqne'am, where they are classified as Islamic glass (Lester 1996:212, Fig. 17.12:3, No. 66). A base of this type was discovered at Mary's Well, Nazareth, and dated to the Mamluk period (Alexandre 2012:97–98, Fig. 4.6:6). Others were uncovered in Jerusalem, e.g., four bottles of purple glass with white marvered trails, unearthed in Area T of the Jewish Quarter excavations and dated to the Mamluk period (Brosh 2005b:25–26, 45–47, Figs. 22:35; 23:8; 2016:363–364, Fig. 5:15, and see further references and discussion therein). A rim and fragment of a base that could belong to the same vessel type, made of purplish glass decorated with marvered trails like those in Fig. 8:3–7, was found at Khirbat Ka'kul (Pisgat Ze'ev H), north of Jerusalem (Gorin-Rosen 2006:109, Fig. 2:6, 7) and dated to the Mamluk period. One rim of this type was retrieved from Khirbat el-Ni'ana, dated to the Mamluk period (Gorin-Rosen and Katsnelson 2007:147–148, Fig. 40:2).

Such vessels were also found at Hama (Riis 1957:66, Fig. 201) in an assemblage that included other vessels similar to those found at Safed. They were found at Heshbon and further south, at at-Ṭur. Shindo (1993:303, Fig. 7) wrote that the *kohl* bottles with marvered decoration were used after the thirteenth century CE, during the Mamluk and Ottoman periods.

They were found further south at Qasr al-Qadim (Meyer 1992:90, Pl. 19:548–553; No. 549 is very much like our No. 6). Meyer refers to this type of decoration as 'Herringbone Marvered Decoration' and dates it to the Mamluk period.

1. Bottle (L213, B2343). Complete rim and part of neck. Purple glass with white trails. Patches of brown and black weathering, iridescence and pitting. Infolded rim, short bulgy neck with beginning of shoulder. Partly fused-in white trail drawn from rim to shoulder. Rim diam. 2 cm.
2. Bottle (L210, B2052/3). Body fragment. Purple glass with white trails. Patches of brown and black weathering, iridescence and pitting. Sloping shoulder decorated with fine marvered trails.
3. Bottle (L239, B2602/9). Base and part of body. Purple glass with white trails. Patches of brown and white crust, iridescence and severe pitting. Uneven square section of body above base. Conical knocked-off base with remains of glass from the pontil. Body decorated with uneven marvered trails.
4. Bottle (L213, B2143/4). Base and part of body. Purple glass with white trails. Knocked-off base. Uneven rectangular section of body above base. Body decorated with uneven marvered trails.
5. Bottle (L213, B2143/3). Base and part of body. Purple glass with white trails. Severe pitting and lime deposits. Thick conical knocked-off base. Uneven square section of body above base. Body decorated with uneven marvered trails.

6. Bottle (L214, B2164). Base and part of body. Blue glass with white trails. Patches of black and silver weathering, iridescence and pitting. Conical knocked-off base. Uneven square section of body above base. Body decorated with uneven diagonal marvered trails. Thin walls.

7. Bottle (L215, B2215/2). Base and part of body. Emerald green glass with white trails. Thick conical knocked-off base. Uneven square section of body above base. Body decorated with uneven diagonal marvered trails.

Plain Cosmetic Bottles (Fig. 8:8, 9). Base Nos. 8 and 9 belong to cosmetic bottles that are similar in shape to the bottles above with marvered decoration. They are both characterized by bright colors; No. 8 is emerald green in color, often used during the Mamluk period, while No. 9 is of typically Mamluk purple glass. The color and fabric of these bottles are easily distinguished. Number 8 was found in Stratum II and No. 9, in Stratum III. Two examples of bottles of this type, one almost complete from Hama and another from Tell el-Ajjul, were dated many years ago to the ninth–tenth centuries CE (Brosh 1993:290, Figs. 2, 3). A plain cosmetic bottle with a base like No. 9 was found in the Cardo in the Jewish Quarter excavations, Jerusalem, and dated to the fourteenth century CE (Brosh 2012:415–416, Pl. 15.2: G35). Today, with the development of the study of Islamic glass and the discovery of Mamluk assemblages, we can assign this type to the Mamluk period.

8. Bottle (L213, B2067/2). Base and part of body. Emerald green glass. Black and silver weathering, iridescence and severe pitting. Thick conical knocked-off base. Uneven square section of body above base.

9. Perfume bottle/flask (L219, B2418). Complete base. Purple glass. Black and silver weathering, iridescence and pitting. Thick pointed base, knocked-off from the pontil, with pontil scar. Tapering wall. Base diam. 0.8 cm.

Vessels with Mold-Blown Decoration (Fig. 9)

Various types of vessels were decorated with mold-blown patterns. Discussed above was the group of bowls and bottles with marvered trails that were also decorated with vertical wide-spaced ribs (Figs. 6:10, 11; 7:8–10) or bowls with elongated ovals (Fig. 6:12, 13). Other forms with mold-blown patterns, such as cylindrical beakers with flaring rims (Fig. 9:1, 2), a tooled-out fold (Fig. 9:3) or a small jar (Fig. 9:5) and various bases (Fig. 9:6–8), are discussed below.

Cylindrical Beakers/Oil Lamps with Mold-Blown Ribs (Fig. 9:1–4). This vessel type is characterized by its cylindrical shape, flaring rim and applied trail base. Often, a fold was tooled-out in the center of the body (Fig. 9:3). The vessels are either plain or decorated. These four fragments are decorated with mold-blown ribs—twisted, like in Nos. 1 and 2

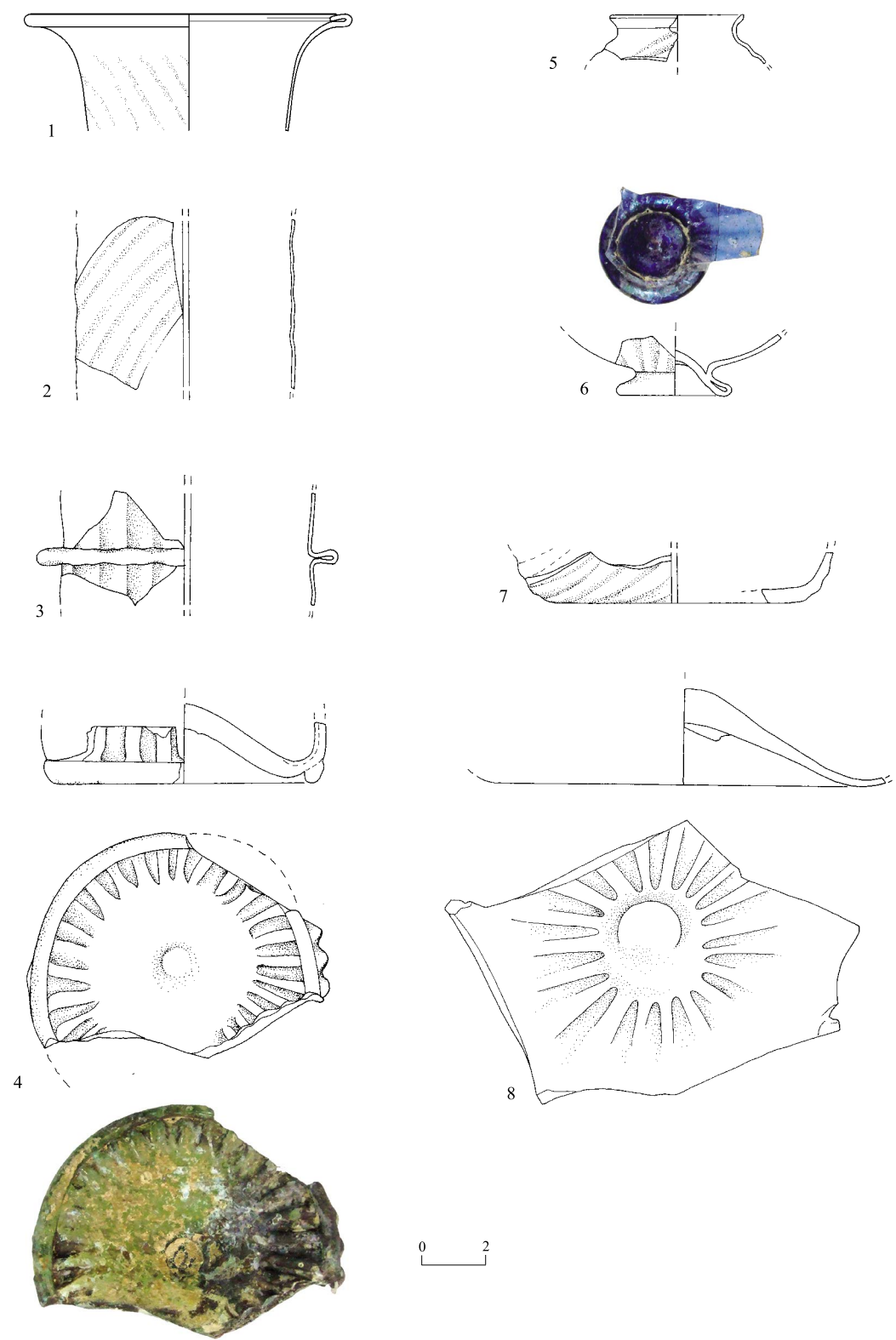


Fig. 9. Vessels with mold-blown decoration.

or vertical, as in Nos. 3 and 4. Although this type has hardly been published, it was widely distributed and is common in Mamluk assemblages. Vessels of this type, both plain and decorated, were discovered in the medieval castle at Safed (Katsnelson 2017:314, Fig. 2:3, 4). Rim and body fragments with vertical and twisted ribs were found at Ḥama (Riis 1957: Figs. 122, 123). A vessel similar to No. 1, but with an out-folded rim and a plain beaker with a flaring rim and a tooled-out tube like No. 3 were found in a Mamluk assemblage at Ramla (Gorin-Rosen 2009a: Fig. 13:9–10). A fragment similar to No. 3 was found in the excavations at the Church of the Holy Sepulchre in Jerusalem (Winter 2012:335, Fig. 3:5). Two mold-blown vessels with an applied trail base similar to No. 4—one with a wick-tube attached to its center and the second without—were discovered in the excavations north of the White Mosque in Ramla (Gorin-Rosen 2010:257–258, Pl. 10.13:3, 4).

Numbers 1 and 3 were discovered in Stratum II. Body fragment No. 2 is from a locus assigned to Stratum III, and No. 4 was found on the surface in Stratum I.

1. Beaker (L224, B2346/1). Two fragments of rim and wall. Colorless glass. Black and silver weathering, iridescence and severe pitting. Flaring in-folded rim. Very thin wall decorated with shallow, widely spaced twisted ribs. Diam. 10.2 cm.

2. Beaker (L219, B2437/2). Large body fragment. Clear colorless glass. Iridescence and lime deposits. Very bubbly—round and diagonal oval bubbles. Thin-walled cylindrical vessel decorated with widely spaced diagonal ribs.

3. Beaker (L223, B2454/5). Body fragment. Colorless. Iridescence and lime deposits. Bubbly. Thin-walled cylindrical vessel with widely spaced vertical ribs. A fold was tooled-out in the center of the body.

4. Beaker (L212, B2079/4). Large fragment of base and beginning of wall. Colorless glass with yellowish green tinge. Black and silver weathering, iridescence, pitting and lime deposits. Massive cylindrical body with mold-blown vertical ribs. Pattern on body partly continues on bottom. Thick, pushed-in bottom with large pontil scar. Applied uneven coil base. Base diam. 8.5 cm.

Small Jar with Mold-Blown Pattern (Fig. 9:5). Rim No. 5 is rather small, with a faint mold-blown twisted rib pattern on the body. The rim might belong to a small jar with a simple concave or pushed-in base and a squat or rounded body. Another possible reconstruction is the upper part of an elongated cylindrical vessel, like the rare one discovered at Bet She'an, which was compared with a pottery type known as *albarello* jars, examples of which are known from Crusader Acre ('Akko; Katsnelson 2014b:50*, Fig. 13:4). Rim No. 5 was found in Stratum I.

5. Small jar (L202, B2004/5). Rim and shoulder. Colorless glass. Black and silver weathering, iridescence and pitting. Uneven, flaring, rounded rim. Remains of mold-blown twisted ribs on shoulder. Rim diam. 4.3 cm.

Various Bases (Fig. 9:6–8)

The decorated bases belong to three different vessel types. Number 6 is a small vessel with mold-blown decoration and a pushed-in base-ring, characterized by its blue color. It probably belongs to a small bowl or a jar. It bears similarities to a dark green ‘footed cup’ in the al-Sabah Collection, attributed to the Iranian or Mesopotamian region and dated to the tenth–eleventh centuries CE (Carboni 2001a:249, Cat. No. 3.39). The mold-blown vessel from the al-Sabah Collection appears very similar to Mamluk bowls that have been found at different sites in Israel. First, in shape, it could easily be described as a bowl rather than a cup, as the vessel has no handles and the base is a simple ring-base. Second, the color can be described as emerald green—a typical Mamluk hue. The dearth of publications on local well-dated Mamluk groups was such that curators and researchers, publishing glass from collections, would misattribute these vessels. The material from the al-Waṭṭa excavation sheds new light on the dating and the attributions of these vessels.

Base No. 6 was found in Stratum I, on the surface. Base No. 7 may belong to a bowl or a bottle with mold-blown twisted ribs on the body. It was found in Stratum II. Number 8 may belong to a jar—the thick, concave bottom is similar to the bottoms of medium and large-sized jars. It was found in Stratum II with several coins that dated to a rather wide time span. The earliest coins date to the second half of the thirteenth century CE, a few date to the fourteenth century CE and the latest coin dates to the sixteenth/seventeenth centuries CE (Kool and Berman, this volume: Nos. 13, 14, 18, 55, 75, 77, 127, 142, 287). However, a more probable date would be earlier, in the fourteenth century, as all its characteristics point to it belonging to the local glass production of that period.

6. Bowl/bottle/jug (L212, B2079/3). Complete base and fragment of wall. Blue glass. Body decorated with vertical mold-blown ribs. Pushed in hollow ring-base with high kick and crude pontil scar. Base diam. 3.6 cm.

7. Bowl/bottle (L213, B2189/5). Small fragment of base and wall. Clear colorless glass. Black weathering and iridescence. Very bubbly with diagonal bubbles matching the twisted ribs. Twisted, wide, even ribs. Base diam. 8.8 cm.

8. Bowl/bottle/jar (L211, B2243/1). Large base fragment. Bluish green glass. White and gold enamel-like crust, iridescence and severe pitting. Severely corroded from both sides. Thick pushed-in concave bottom decorated around the center with radiating shallow ribs. Very large crude scar, off-center, with traces of glass from the pontil. Poor-quality workmanship. Base diam. c. 13.2 cm.

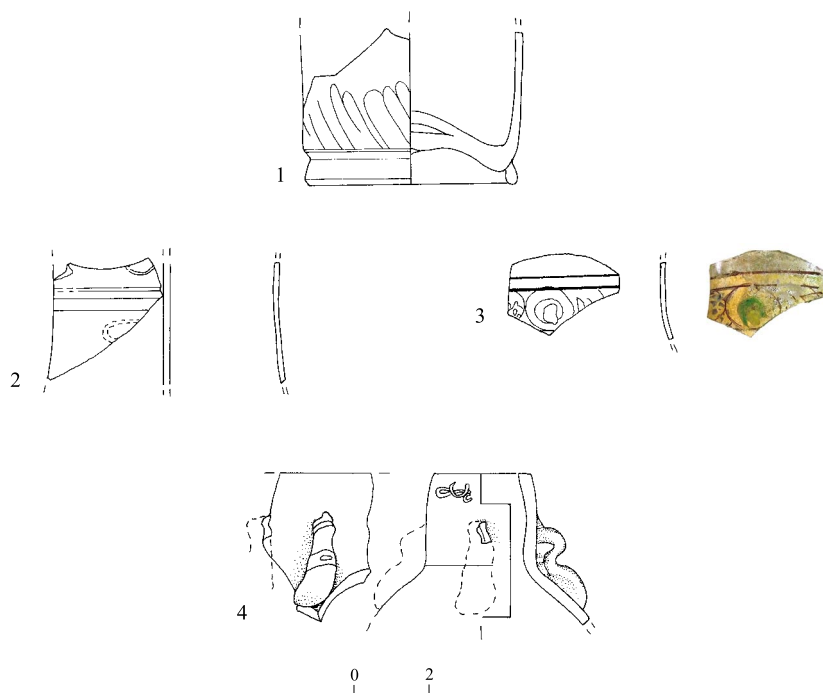


Fig. 10. Vessels with enamel decoration.

Vessels with Enamel Decoration (Fig. 10)

Four fragments with faint remains of enamel painting are presented below. A few poorly preserved fragments were not included. Each of the fragments belongs to a different vessel.

Glass vessels with enamel paint are known from Crusader settlements, such as Montfort (Brosh 1999:266—right, 270; Whitehouse 2005:191), Ḥorbat ‘Uẓa (Gorin-Rosen 2009b:181–182, Fig. 3.39:6, and see therein for further discussion of the technique and the specific type of enameled beaker), Arsuf (Apollonia-Arsuf; Jackson-Tal and Tal 2013:90–95, Figs. 5–8) and from the Church of the Holy Sepulchre, Jerusalem (Winter 2012:337, Fig. 4:13). Several fragments from enameled glass vessels were found in ‘Akko: the largest group discovered so far, but not yet published, comes from the Ha-Abirim Parking Lot (Syon and Thatcher 1998:17–24) in a context dated to the thirteenth century CE; and one fragment was found on Yehoshafaṭ Street (Feig 2010: Fig. 7:4).

Beakers Decorated with Enamel Painting (Fig. 10:1–3). Fragment No. 1 belongs to a cylindrical beaker with a tapering mouth and an applied base, similar in shape to a beaker with gilded and enamel-painted decoration found at Arsuf (Jackson-Tal and Tal 2013:91, Fig. 6) dated to the last days of the castle in 1265 CE. Another similar beaker from Egypt is dated to the thirteenth century CE (Shindo 2002:16, 78, Fig. 1). Plain beakers of this type were also found in al-Waṭṭa (see Fig. 2:14–20). The beaker was found on the surface in Stratum I with a coin dated to 1457. However, the shape and fabric are similar to beakers

attributed to the thirteenth and fourteenth centuries CE. In my opinion, there is no reason to date this beaker later than the fourteenth century CE.

Body fragment Nos. 2 and 3 probably belong to beakers. They are poorly preserved, but the remains bear similarities to decorative friezes on beaker walls. See for example the beakers found at Arsur (Jackson-Tal and Tal 2013:91, Figs. 6–8), dated to the last days of the castle in 1265 CE. Number 2 was found in Stratum II.

Vessel No. 4 is exceptional—it was made of vivid blue glass decorated with gold. “Blue and purple gilt and enameled Mamluk glass was much less common than colorless” (Newby 1998:37). A group of Mamluk gilt and enamel-colored vessels, including at least nine blue vessels, one of which is the well-known Cavour Vase, and two purple vessels dated to the end of the thirteenth–mid-fourteenth centuries CE, is presented by Newby (1998). None of the colored vessels grouped together by Newby are an exact parallel for No. 4. However, the wide variety of shapes reflects the diversity of the Mamluk glass repertoire and the vessel from Safed fits well within this repertoire.

The vessel in Fig. 10:4 also features the remains of small decorative handles drawn from neck to shoulder. The vessel’s short simple rim and the addition of handles, as well as the remains of gold, resemble a well-known, highly decorated vessel from the British Museum, London. This vessel, identified as “canteen”, is assigned to Egypt or Syria and is dated to the third quarter of the thirteenth century CE (Carboni 2001c:247–249, Cat. No. 123, and see therein for further discussion and references). This unique vessel was found on a floor in Stratum III, dated to the fourteenth century CE.

Another body fragment of a beaker(?) (L223, B2472; not illustrated) is made of colorless glass, with remains of gold and red colors. The body is decorated with enamel painting. Very little was preserved of the pattern: horizontal lines in red and gold with remains of a scroll pattern.

1. Beaker (L202, B2004/1). Fragment of base and wall. Colorless glass with green tinge and remains of red color. Black and silver weathering, iridescence and severe pitting. Cylindrical body with a rather thick vertical wall. Pushed-in base with a second blob applied to it, creating a double base with a solid ring around it. Large pontil scar with remains of glass. On lower part of wall are remains of enamel red decoration: one horizontal line above the base and remains of a pattern above it. Base diam. 5.5 cm.

2. Beaker? (L223, B2454). Body fragment. Colorless glass with remains of gold, red and blue colors. Cylindrical body with enamel decorations. Very little preserved of pattern. Horizontal lines in red and gold with a thicker line of blue glass. Below blue line—a pattern in gold and red, of which very little remains, only on exterior wall.

3. Bottle? (L231/232, B2537/b/3). Small body fragment. Colorless glass with remains of gold and red colors. Scant remains of pattern include two horizontal lines probably with a floral frieze below it.

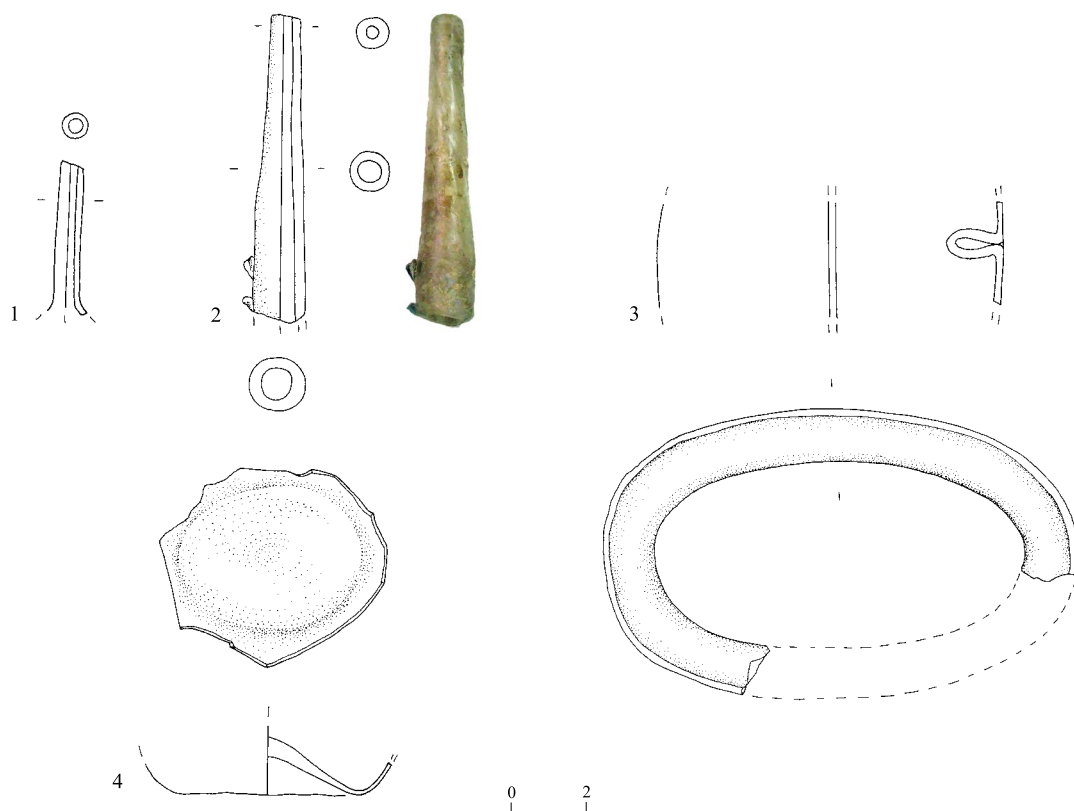


Fig. 11. *Omoms* and *qumqums*.

4. Flask (L242, B2600). Rim, neck, beginning of shoulder and complete handle. Dark vivid blue. Very unusual color and fabric. Upright, knocked-off rim, short wide neck with rather thick wall. Sloping shoulders. Small tooled handles drawn from shoulders up to middle of neck; one is complete and of the other, a very small fragment is visible. Remains of gold enamel decoration below rim, poorly preserved, but there appears to be an inscription and three horizontal lines below rim, on neck and on handle. Rim diam. 2.6 cm.

Omoms (Fig. 11). These sprinklers, also called *qumqums*, are characterized by a tapered narrow neck and a very small opening at the upper part, for pouring drops of precious liquids (e.g., perfume or rosewater); they have a cut-off or fired rim. The body is rounded or squat, sometimes lentoid with a high, pushed-in base. Two rims, a body fragment and a base, represent this well-known and widely distributed type. A few more fragments of this type were found in the excavation. Their manufacture became widespread during the Ayyubid and Mamluk periods (twelfth–fourteenth centuries CE; Carboni 2001a:150–151 and see therein for two complete examples from the al-Sabah Collection that were assigned a Syrian origin with further references).

Similar *omoms*, including one with applied handles at the connection between the neck and the body, like Fig. 11:2, were found in the medieval castle at Safed (Katsnelson 2017:314, Fig. 3:1–4). Parallel vessels, most not yet published, were found in different areas of Banias. Only one specimen of this type has been published; it differs slightly from our vessel in its bulge on the lower neck above the connection with the shoulder (Gorin-Rosen and Jackson-Tal 2008:87, Fig. 5.4:17). *Omoms* were also found at Mary's Well, Nazareth, and dated to the Mamluk period (Alexandre 2012:94–95, Fig. 4.4:13–15 with further discussion therein).

Two other vessels of this kind were found—in Hama, dated to the second half of the fourteenth century CE (Riis 1957:34, Fig. 32), and in Beirut (Jennings 2006:232–233, Figs. 10.14:1, 3; 10.15: left, and see therein for further discussion and references). Two sprinklers of this type were unearthed in Bet She'an with pottery and coins from the Mamluk period (Hadad 2005:61, Pl. 53:1090, 1091). The largest group of these vessels published so far from one location includes 20 vessels found in the Jewish Quarter, Area T, Jerusalem; they were dated to the thirteenth–fifteenth centuries CE (Brosh 2005a:188, Figs. 1–3).

Omom No. 1 is a small, thin specimen with the typical tapering neck and a very small opening at the top. It was found in Stratum II. Two complete *omoms* of this small, thin-walled subtype were found in a Mamluk pit at Ramla.⁸

Omom No. 2 represents the more common subtype, of medium size with thick walls and sometimes, decorated with small handles on the lower part of the neck or just with applied wavy trails. Three different *omoms* with a similar neck and handles were found in Jerusalem, two are decorated with a mold-blown pattern on the body and the third is decorated on the shoulder with a series of pinches (Brosh 2005a: Figs. 2, 3). Another *omom*, with better preserved handles on the lower neck, was found in the excavations at the Church of the Holy Sepulchre, Jerusalem (Winter 2012:337, Fig. 4:4). Number 2 was found in Stratum III together with two identifiable coins—one dated to 1300–1399 CE and the other, to the fourteenth/fifteenth centuries CE (see Kool and Berman, this volume; Nos. 252, 117).

Omom No. 3 is a typical body fragment characterized by the oval section of a lentoid vessel and the tooled-in tube in the vessel's interior. Most *omoms* are asymmetrical with an uneven section. A good example is the *omom* from the Fondation Custodia, assigned a Syrian provenance and dated to the twelfth–fourteenth centuries CE (Stern 1977:145–146, No. 46, Pl. 10:46 and see therein for further references). This fragment was found in a locus in Stratum II.

Number 4 is a base fragment that probably belongs to a vessel of this type. It was found in Stratum III.

1. *Omom* (L223, B2449/4). Rim and neck. Emerald green. Iridescence and severe pitting. Low-quality glass with large elongated bubbles. Uneven, diagonally cut-off rim. Short, uneven thin neck. Beginning of shoulder. Rim diam. 0.8 cm.

⁸ See n. 2, above.

2. *Omom* (L239, B2602). Rim and part of neck. Colorless glass with turquoise handles. Brown and silver weathering and iridescence. Cut-off rim, rounded by fire. Long, tapering neck with rather thick walls. Beginning of small decorated handles made of turquoise glass. Rim diam. 0.8 cm.

3. Vessel with lentoid body (L205, B2027/2). Body fragment.

4. Vessel with lentoid body (L215, B2329). Almost complete base. Colorless glass. Black and silver weathering, iridescence and severe pitting. Pushed-in oval base with small pontil scar.

Miscellaneous Vessels (Fig. 12:1–8)

Handled Vessel (Fig. 12:1). This small rim fragment has the remains of a basket-shaped handle and an in-curving and out-folded rim. The vessel was found in Stratum III. Eight basket-shaped vessels with marvered decoration were found in the Jewish Quarter excavations in Area T, and dated to the Mamluk period (Brosh 2016: 361, 364, Fig. 5:29, 31, 32); the illustrated examples are characterized by their flaring rounded rim. Brosh noted that their function is uncertain, but they may have been used as lamps. She mentioned that Carboni suggested they were used as ink pots, as glass is easily cleaned (Brosh 2016:361, with further references therein).

1. Rim and beginning of handle (L221/2, B2314/2). Colorless glass with yellowish tinge. Brown and silver weathering, and iridescence. Bubbly. In-curving out-folded rim and curving wall. Beginning of trail, basket handle drawn from rim's edge upward. Rim diam. 5.2 cm.

Miniature Jar (Fig. 12:2). This small vessel, characterized by a wide, open mouth, a flaring rim, a very short neck and a wide squat body, was found in Stratum II. A very similar small jar was found at Arsuf within the glass assemblage dated to the last days of the castle in 1265 CE (Jackson-Tal and Tal 2013:91, Fig. 9:3).

2. Small jar (L213, B2260/1). Complete rim, neck and shoulder. Colorless glass. Black and silver weathering, iridescence and pitting. Very bubbly. Flaring, uneven rounded thickened rim. Short, wide neck and wide, sloping shoulders. Rim diam 3.6 cm.

Miniature Mosque Lamp (Fig. 12:3). The shape of fragment No. 3 bears similarities to a much larger, highly decorated lamp, a gilt-and-enameled example from the Victoria and Albert Museum, London, that was assigned a Syrian provenance. It was dated to the mid-thirteenth century CE (Carboni 2001c:226–227, Cat. No. 113). A larger, plain example from the Madina Collection, New York, is dated to the second half of the thirteenth century CE (Atil 1981:140, Cat. No. 58).

This vessel was found in Stratum III together with three coins. One coin dates to 1310–1341 CE, the second, to the fourteenth/fifteenth centuries CE and the third, the latest coin,

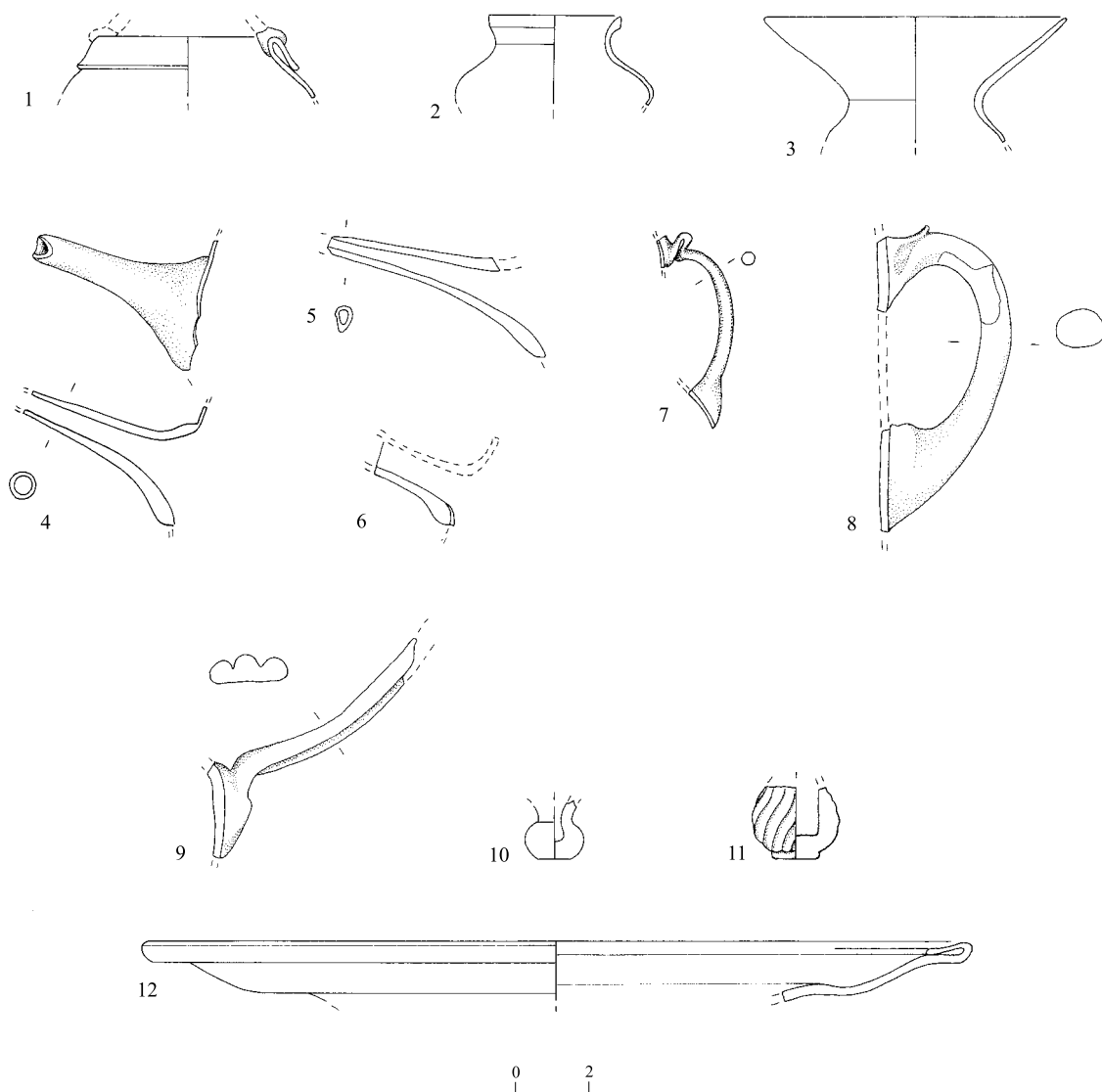


Fig. 12. Miscellaneous vessels.

is from the sixteenth/seventeenth centuries CE (Kool and Berman, this volume: Nos. 33, 251, 288).

3. Small mosque lamp (L230, B2540/2). Fragment of rim, mouth and shoulder. Colorless glass with greenish tinge. Black and silver weathering, iridescence and pitting. Slanting rounded rim. Funnel mouth connected to sloping shoulder. Rim diam. 8.2 cm.

Spouts (Fig. 12:4–6). Three spouts were found and are presented below. As no parts remained from the vessel to which they were attached, we suggest two options based on typical

Mamluk spouted vessels known mainly from unpublished assemblages. The first option is that they were parts of Late Islamic *alambics*, e.g., an example from the Benaki Museum, Athens, assigned to Egypt and dated to the Early Islamic period (Clairmont 1977:110–111, Pl. 23:386).⁹

The second option is based on a group of spouted jugs from several excavations in the Old City of Jerusalem. Four juglets of this type were found in the Jewish Quarter in Area T (Brosh 2005a:188, Fig. 4). Brosh suggested that this shape appeared in the fourteenth century CE in the glassmaking workshops of Jerusalem, and similar items are still manufactured to this day in Hebron.

Numbers 4 and 5 were found in Stratum II and No. 6, in Stratum I.

4. Complete spout and beginning of wall (L213, B2417). Colorless glass with green tinge. Black and silver weathering, iridescence and pitting. Very bubbly—elongated bubbles. Tapering spout, broken. Two layers of glass are visible in the spout's walls.

5. Almost complete spout (L213, B2535/a). Greenish blue glass. Silver weathering, iridescence and severe pitting. Bubbly with black impurities. Tapering spout, knocked-off edge.

6. Small spout fragment (L202, B2004). Colorless glass with green tinge. Black and silver weathering, iridescence and pitting. Similar to No. 3, above.

Handles (Fig. 12:7–9). Three different types of handles are presented, belonging to different types of vessels, judging by their shape, size and angle. Handle No. 7 is thin and delicate with a gentle pinch on its upper part. The handle is attached to a vessel with a rather thin wall, drawn from the shoulder up to the neck. It might therefore belong to a small jug. Handle No. 8 is thick and attached to an almost vertical thick wall. It might belong to a pot or a large jar. One colorless jar with a wide mouth, flaring rim and globular body and a similar handle was found at Ḥama (Riis 1957:33–34, Fig. 26). Handle No. 9 is large, with a wide section and three ridges; the angle of the handle is unusual. It was found in Stratum II. One colorless handle with two ridges was found at Ḥama (Riis 1957:49–50, Fig. 125).

7. Jug (L211, B2191). Complete handle. Clear colorless glass. Black and silver weathering and iridescence. Thin trail handle delicately tooled on the upper part. Very thin wall.

⁹ Based on many examples that were found in excavations, we know how to separate the earlier types of *alambics* from the later types. Clairmont (1977:110–111) suggested an Early Islamic date for both types (Nos. 386, 387). Therefore, I quoted only the one we attribute to the later periods, although Clairmont assigned both an earlier date.

8. Two joined handle fragments (L231/232, B2537/b/4). Handle of bluish green glass, vessel of colorless glass. Black and silver weathering, iridescence and sand deposits. Very large elongated bubbles. Wide trail handle has semicircular section. Upright wall.

9. Handle fragment (L213, B2405/b). Purple glass. Brown and silver weathering, iridescence and severe pitting. Small wall fragment and beginning of wide strap handle with three uneven ridges.

Bead-Shaped Bottom or Miniature Vessels (Fig. 12:10, 11). The two small fragments presented below probably belong to different objects; however, they share a bead-shaped bottom. Number 10 was found in Stratum II below No. 11, while No. 11 was found in Stratum I, on the surface.

Number 10 might be the lower base of an oil lamp with a hollow beaded stem. One such base, made of green glass, was found at Ḥama (Riis 1957:50–51, Fig. 129). A small number of such vessels were found in the Mamluk strata at Fustat (Shindo 1992: Pl. 6-19:26–28). On the other hand, it could also be the upper part of a lid, like the one found at Ḥama (Riis 1957:60, Fig. 169) and the one found at Mary's Well, Nazareth, dated to the Mamluk period (Alexandre 2012:95–96, Fig. 4.5:1). Another example of such a lid comes from a complete, highly decorated footed bowl with a lid from the glass collection of the Toledo Museum of Art. This unique vessel is finely decorated with colored enamels and gold. It is attributed to Egypt and dated to the mid-fourteenth century CE (Carboni 2001c:268–269, Cat. No. 133).

Number 11 could belong to a miniature colorless vessel, judging by the similarities it bears to a vessel decorated with cut decoration found at Ḥama and assigned an Early Islamic date (Riis 1957:53–54, Fig. 141).

10. Oil lamp? (L213, B2189/3). Complete base. Yellowish green glass. Black weathering, iridescence and sand deposits. Hollow beaded base with tapering walls. Knocked-off base with scar. Base diam. 0.9 cm.

11. Perfume bottle or piece from chandelier (L203, B2067/4). Clear colorless glass. Silver and white weathering and iridescence. Thick, flat base. Molded, even diagonal ribbed decoration. Base diam. 1.2 cm.

Windowpane (Fig. 12:12). This fragment is part of a very common type of a circular 'bull's-eye' window. The type is characterized by a folded, hollow or pinched rim, a rather thick wall and a thickened and crude center with pontil scars. The average diameter ranges between 20 and 30 cm. A similar purple window was found at Ḥama (Riis 1957:46, Fig. 109). A group of well-preserved windowpanes of the 'bull's-eye' type was found in the excavations of the Frankish keep at Baysān (Bet She'an) excavated by Jon Seligman (Boas 2010:44, Fig. 7). A fairly large number of similar rims were found in the Crusader bathhouse excavated at 'Akko (Gorin-Rosen 2013:111–113, Fig. 2:1–9, and see therein for further discussion and

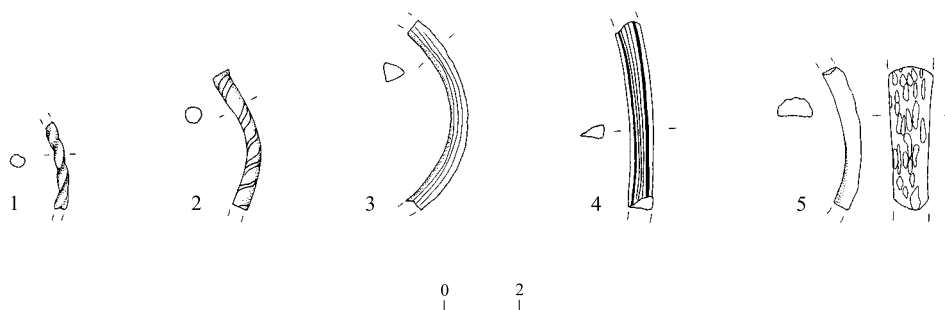


Fig. 13. Bracelets.

references). Several windows with folded rims were discovered at Mary's Well, Nazareth, and dated to the Mamluk period; they differ slightly in their deep conical shape (Alexandre 2012:98–100, Fig. 4.7:4–6 with further discussion therein). Rounded windows found at Arsur were dated not later than 1265 CE (Jackson-Tal and Tal 2013:91, Fig. 13:1). This windowpane was found in Stratum III.

12. Windowpane (L215, B2329). Rim fragment. Colorless glass. Patches of black and silver weathering, severely corroded. Flaring in-folded hollow rim. Bulgy thick wall. Rim diam. 22.5 cm.

Bracelets (Fig. 13)

Five bracelets are presented below. They were found in loci assigned to Stratum II. Numbers 2, 4 and 5 were found in the same locus as four coins, one dated to 1310–1341 CE, another to 1363–1377 CE and the other two, to the fourteenth/fifteenth centuries CE (see Kool and Berman, this volume: Nos. 62, 112, 278, 280). Large quantities of similar bracelets were found among the 530 glass bracelet fragments discovered at Mary's Well, Nazareth, dated to the Mamluk period (Alexandre 2012:100–105, Figs. 4.10:3–15; 4.11:2, 5 with further discussion therein).

Bracelet Nos. 1 and 2 were made of colorless glass trail, simply twisted, with a circular section. They differ in thickness and density of the twisting. Bracelet No. 3 is characterized by its pointed triangular section. A bracelet of this type was found at Giv'at Yasaf (Tell er-Ras; Gorin-Rosen 1999:138–139, Fig. 1:10, and see therein for further discussion and references). Number 4 is decorated with glass layers and trails. Bracelet No. 5 is characterized by its colorful speckles. It belongs to a group classified by Spaer as bracelets with a semicircular cross section and a speckled pattern, dated to the pre-Ottoman period (Spaer 1992: Figs. 51, 88). Later, this type was called 'bracelets with crumbs'; a complete example appears in the Israel Museum collection (Spaer 2001:202, Cat. No. 469, Pl. 35:469). Spaer mentioned that similar bracelets were found in both Umayyad and Mamluk levels at Khirbat el-Minyeh (Spaer 1992:88, Figs. 24:5; 25:14; 2001:202). A bracelet of this type was uncovered at Giv'at Yasaf (Tell er-Ras; Gorin-Rosen 1999:138–139, Fig. 1:12).

1. Bracelet (L205, B2034/3). Colorless glass with green tinge. Black and silver weathering, iridescence and severe pitting. Thin uneven twisted trail.
2. Bracelet (L224, B2359/1). Colorless. Iridescence film. Slightly uneven twisted trail. Circular section. The iridescence on the surface created the prominent twists.
3. Bracelet (L223, B2449/3). Dark color. Dull surface because of deterioration. Uneven rectangular pointed section. Remains of the applied trails in the section.
4. Bracelet (L224, B2359/2). Colorless with green, red and white. Iridescent film. Two layers of glass: the first layer is colorless with red streaks and on top of this layer is a green layer decorated with red and white threads. Remains of the seam.
5. Bracelet (L224, B2509). Blue glass with white, yellow, red and orange. Black and silver weathering, iridescence and pitting. Blue glass trail decorated with colorful crumbs. Semicircular section.

SUMMARY AND CONCLUSIONS

This report is among the first studies of glass vessels from the excavations at Safed, exhibiting the variety of types recovered thus far from most excavated areas in the city.

The rich and diverse Mamluk glass repertoire includes plain domestic wares, such as tableware, drinking and pouring vessels, storage vessels and lighting devices, alongside decorated vessels. The most common decoration technique is that of marvering, a technique widely used in terms of quantity and variety of vessels (Figs. 6–8). The second technique is mold-blowing, which was used to decorate beakers, oil lamps and other vessels (Fig. 9). The third and most luxurious decoration technique is gilt and enamel decoration (Fig. 10); unfortunately, only small fragments in a poor state of preservation were found. However, their existence is significant and may be an indication of trade with the well-known Syrian production centers of gilded and enamel glass vessels in Aleppo or Damascus. Another center for highly decorated vessels was Egypt. Glass production is mentioned in medieval sources, and these centers were famous for the production of luxury items (Irwin 1998).

Most of the vessels found in this excavation were probably locally produced. The fabrics and shapes, as well as the workmanship, seem to have originated in a local glass atelier. The exceptions are the very few gilt and enamel vessels that were probably brought from one of the glass centers in Syria. As the clear majority of the coins come from Syria rather than Egypt, it would appear that trade with the north was easier and less expensive. Therefore, it is more probable that the gilt and enameled vessels came from Syria rather than Egypt. Although the data acquired during the many excavations conducted in Safed point to the existence of a local glass industry, the furnaces have yet to be discovered.

A subject generating much interest, already mentioned in the *Introduction*, is the comparison between the Mamluk glass assemblages found in Jerusalem and those found in Safed. Although most of the types have parallels, there are some differences. Since most of the recent finds are not yet published, the comparison is based on general impressions through classification processes and the study of the material.

There is a similarity between the wide variety of marvered bowls and small cosmetic containers from Jerusalem and Safed. However, decorated *omoms* occur frequently in Jerusalem (e.g., Brosh 2005a: Fig. 1), while in Safed they are totally lacking. As for mold-blown decoration, it too was much more popular in Jerusalem, and appears in a variety of patterns on bottles, jugs and *omoms* (Brosh 2005a: Figs. 2, 4), while in Safed, mainly ribbed decoration on beakers or beaker-shaped oil lamps prevails (Fig. 9). In contrast, the appearance of gilt and enameled fragments in Safed and their near absence in Jerusalem is striking. Nonetheless, the poor state of preservation of the items from Safed and the option that such vessels might be discovered in future studies must be taken into consideration. Another difference between the two centers is the number of beakers. Many beakers were found in Safed (Fig. 2), far more than those found in Jerusalem. This may be because in the north of the country, the manufacturers continued to make the traditional Crusader beakers, but probably in a different way.

Further study and comparison of Mamluk glass from Jerusalem, Ramla, Bet She'an and Safed will probably shed more light on the Mamluk glass repertoire and traditions in the region and enhance our understanding of the Mamluk glass repertoire.

An additional important aspect of publishing Mamluk glass from well-dated complexes is the opportunity to re-date and provenance vessels in collections. Usually, complete examples from collections assist in the reconstruction of the fragments we find in excavations. As these local well-dated Mamluk products have not been published before, we now have the chance to shed light on the dating and attributions of these vessels in collections.

REFERENCES

- Alexandre Y. 2012. The Glass Finds. In Y. Alexandre. *Mary's Well, Nazareth: The Late Hellenistic to the Ottoman Periods* (IAA Reports 49). Jerusalem. Pp. 89–106.
- Allan J. 1995. Investigations into Marvered Glass I. *Oxford Studies in Islamic Art* 10:1–30.
- Atil E. 1981. *Renaissance of Islam: Art of the Mamluks*. Washington, D.C.
- Auth S.H. 1976. *Ancient Glass at the Newark Museum from the Eugene Shaefer Collection of Antiquities*. Newark, N.J.
- Avni G., Baruch Y. and Weksler-Bdolah S. 2001. Jerusalem, the Old City—Herod's Gate. *HA-ESI* 113:76*–79*.

- Bass G.F. 1996. Serçe Limani. In G.F. Bass. *Shipwrecks in the Bodrum Museum of Underwater Archaeology* (Bodrum Museum of Underwater Archaeology Publications 3). Ankara. Pp. 36–53.
- Boas A. 2010. *Domestic Settings: Sources on Domestic Architecture and Day-to Day Activities in the Crusader States* (Medieval Mediterranean 84). Leiden–Boston.
- Brosh N. 1993. Kohl Bottles from Islamic Periods Excavated in Israel. In *Annales du 12^e Congrès de l'AIHV (Vienne-Wien, 26–31 août 1991)*. Amsterdam. Pp. 289–295.
- Brosh N. 1999. Between East and West: Glass and Minor Arts in the Crusader Kingdom. In S. Rozenberg ed. *Knights of the Holy Land: The Crusader Kingdom of Jerusalem* (Israel Museum Catalogue 422). Jerusalem. Pp. 266–271.
- Brosh N. 2003. Glass in the Islamic Period. In Y. Israeli. *Ancient Glass in the Israel Museum: The Eliahu Dobkin Collection and Other Gifts* (Israel Museum Catalogue 486). Jerusalem. Pp. 317–383.
- Brosh N. 2005a. Islamic Glass Finds of the Thirteenth to Fifteenth Century from Jerusalem—Preliminary Report. In *Annales du 16^e Congrès de l'AIHV (London 2003)*. Nottingham. Pp. 186–190.
- Brosh N. 2005b. *A Mamluk Glass Workshop in Jerusalem: Marvered Glass*. M.A. thesis. Tel Aviv University. Tel Aviv (Hebrew; English summary, pp. 1*–7*).
- Brosh N. 2012. Glass Objects from the Cardo and the Nea Church. In O. Gutfeld. *Jewish Quarter Excavations in the Old City of Jerusalem, Conducted by Nahman Avigad, 1969–1982 V: The Cardo (Area X) and the Nea Church (Areas D and T); Final Report*. Jerusalem. Pp. 400–425.
- Brosh N. 2014. Mamluk Glass Bowl from Area J. In H. Geva. *Jewish Quarter Excavations in the Old City of Jerusalem, Conducted by Nahman Avigad, 1969–1982 VI: Areas J, N, Z and Other Studies; Final Report*. Jerusalem. Pp. 302–305.
- Brosh N. 2016. Mamluk Glass Workshops in Jerusalem: Marvered Glass. In R.A. Stucky, O. Kaelin and H.-P. Mathys eds. *Proceedings of the 9th ICAANE, 9–13 June 2004, Basel 2*. Wiesbaden. Pp. 357–368.
- Brosh N. 2017. Reexamination of a Mamluk Glass Collection from Jerusalem. In *Annales du 20^e Congrès de l'AIHV (Fribourg/Romont 7–11 septembre 2015)*. Romont. Pp. 300–306.
- Carboni S. 2001a. *Glass from Islamic Lands: The al-Sabah Collection, Kuwait National Museum*. New York.
- Carboni S. 2001b. Hot-Worked Glass. In S. Carboni and D. Whitehouse. *Glass of the Sultans*. New York–Corning–Athens–New Haven–London. Pp. 101–145.
- Carboni S. 2001c. Painted Glass. In S. Carboni and D. Whitehouse. *Glass of the Sultans*. New York–Corning–Athens–New Haven–London. Pp. 199–273.
- Clairmont C.W. 1977. *Benaki Museum: Catalogue of Ancient and Islamic Glass*. Athens.
- Dalali-Amos E. and Getzov N. This volume. Remains from the Mamluk Period in the al-Waṭṭa Quarter, Safed (Zefat).
- Dean B. 1927. *A Crusaders' Fortress in Palestine: A Report of Explorations Made by the Museum, 1926* (Metropolitan Museum of Art Bulletin 22/II). New York.

- Doorninck F.H. van. 1990. The Serçe Limani Shipwreck: An 11th-Century Cargo of Fatimid Glassware Cullet for Byzantine Glassmakers, In *1st International Anatolian Glass Symposium April, 26th–27th 1988*. Istanbul. Pp. 58–63.
- Feig N. 2010. 'Akko, Yehoshafat Street. *HA–ESI* 122 (August 12). http://www.hadashot-esi.org.il/report_detail_eng.aspx?id=1447&mag_id=117 (accessed 27.3.2011).
- Foy D. 2015. Verres islamiques de la Citadelle de Damas (IX^e–XIII^e s.): Un aperçu. In *Annales du 19^e Congrès de l'AIHV (Piran, 17th–21st September)*. Koper. Pp. 429–437.
- Gorin-Rosen Y. 1997. Excavation of the Courthouse Site at 'Akko: Medieval Glass Vessels (Area TA). *'Atiqot* 31:75–85.
- Gorin-Rosen Y. 1999. Glass Vessels from Giv'at Yasaf (Tell er-Ras). *'Atiqot* 37:137–140 (Hebrew; English summary, p. 175*).
- Gorin-Rosen Y. 2004. Glass Vessels from a Salvage Excavation at Şarafand el-Kharab, Nes Ziyiyona. *'Atiqot* 46:59–64 (Hebrew; English summary, pp. 131*–132*).
- Gorin-Rosen Y. 2006. The Glass Vessels from Khirbat Ka'kul. *'Atiqot* 54:107–112.
- Gorin-Rosen Y. 2009a. The Glass Vessels from Installation 114. In R. Kletter. Ramla, Ha-Palmah Street. *HA–ESI* 121 (July 29). http://www.hadashot-esi.org.il/report_detail_eng.aspx?id=1168&mag_id=115 (accessed 20.4.2010).
- Gorin-Rosen Y. 2009b. The Glass Vessels from Strata 5–1. In Strata 5–1: The Early Islamic, Crusader and Mamluk Periods. In N. Getzov, D. Avshalom-Gorni, Y. Gorin-Rosen, E.J. Stern, D. Syon and A. Tatcher. *Horbat 'Uza: The 1991 Excavations II: The Late Periods* (IAA Reports 42). Jerusalem. Pp. 175–182.
- Gorin-Rosen Y. 2010. The Islamic Glass Vessels. In O. Gutfeld. *Ramla: Final Report of the Excavations North of the White Mosque* (Qedem 51). Jerusalem. Pp. 213–264.
- Gorin-Rosen Y. 2013. Glass Finds from the Crusader-Period Bathhouse in 'Akko (Acre). *'Atiqot* 73:109–116.
- Gorin-Rosen Y. 2015. Glass Vessels from Jerusalem Street, Safed (Zefat). *'Atiqot* 81:85*–89*.
- Gorin-Rosen Y. and Jackson-Tal R.E. 2008. Area B: The Glass Vessels. In V. Tzaferis and S. Israeli. *Panias I: The Roman to Early Islamic Periods Excavations in Areas A, B, E, F, G and H* (IAA Reports 37). Jerusalem. Pp. 81–89.
- Gorin-Rosen Y. and Katsnelson N. 2007. Local Glass Production in the Late Roman–Early Byzantine Periods in Light of the Glass Finds from Khirbat el-Ni'ana. *'Atiqot* 57:73–154.
- Hadad S. 2005. *Islamic Glass Vessels from the Hebrew University Excavations at Bet Shean* (Qedem Reports 8). Jerusalem.
- Hasson R. 1983. Islamic Glass from Excavations in Jerusalem. *JGS* 25:109–113.
- Irwin R. 1998. A Note on Textual Sources for the History of Glass. In R. Ward ed. *Gilded and Enamelled Glass from the Middle East*. London. Pp. 24–26.
- Jackson-Tal R.E. and Tal O. 2013. Crusader Glass in Context: The Destruction of Arsuf (Apollonia-Arsuf, Israel), April 1265. *JGS* 55:85–100.

- Jenkins M. 1986. *Islamic Glass: A Brief History* (The Metropolitan Museum of Art Bulletin 44/2). New York.
- Jennings S. 2006. *Vessel Glass from Beirut, Bey 006, 007, and 045* (Berytus 48–49). Beirut.
- Katsnelson N. 2009. Glass. In R. Avner. Jerusalem, The Jewish Quarter. *HA-ESI* 121 (August 31). http://www.hadashot-esi.org.il/report_detail_eng.aspx?id=1206&mag_id=115 (accessed 20.4.2010).
- Katsnelson N. 2012. The Glass Finds. In S. Talis. Revadim, Quarry. *HA-ESI* 124 (July 19). http://www.hadashot-esi.org.il/Report_Detail_Eng.aspx?id=1998&mag_id=119 (accessed 28.05.2018).
- Katsnelson N. 2014a. Glass Finds from the al-Wata Quarter, Safed (Zefat). *'Atiqot* 78:153–157.
- Katsnelson N. 2014b. The Glass Finds from Bet She'an (Youth Hostel). *'Atiqot* 77:23*–57*.
- Katsnelson N. 2017. An Outstanding Glass Assemblage from the Medieval Castle at Safed (Zefat). *Annales du 20^e Congrès de l'AIHV (Fribourg/Romont 7–11 septembre 2015)*. Romont. Pp. 313–318.
- Kool R. and Berman A. This volume. The Coins from the al-Waṭṭa Quarter, Safed (Zefat).
- Lamm C.J. 1929–1930. *Mittelalterliche Gläser und Steinschunittarbeiten aus dem Nahen Osten* (Forschungen zur Islamischen Kunst 5) (2 vols.). Berlin.
- Lester A. 1996. The Glass from Yoqne'am: The Early Islamic, Crusader, and Mamluk Periods. In A. Ben-Tor, M. Avissar and Y. Portugali. *Yoqne'am I: The Late Periods* (Qedem Reports 3). Jerusalem. Pp. 202–217.
- Lester A. 1997. Islamic Glass Finds. In Y. Hirschfeld. *The Roman Baths of Hammat Gader*. Jerusalem. Pp. 432–441.
- Meyer C. 1992. *Glass from Quseir el-Qadim and the Indian Ocean Trade* (SAOC 53). Chicago.
- Newby M.S. 1998. The Cavour Vase and Gilt and Enamelled Mamluk Coloured Glass. In R. Ward ed. *Gilded and Enamelled Glass from the Middle East*. London. Pp. 35–40.
- Ouahnouna B. 2014. The Glass Vessels from Jaffa's Gate Excavations (A-5815/2010). *LA* 64:535–545.
- Pollak R. 2000. Glass Vessels of a Fatimid Hoard from Caesarea Maritima. In *Annales du 14^e Congrès de l'AIHV (Italia 1998)*. Lochem. Pp. 238–242.
- Pollak R. 2007. Excavations in Marcus Street, Ramla: The Glass Vessels. *Contract Archaeology Reports* II:100–133.
- Riis P.J. 1957. Les verreries. In P.J. Riis and V. Poulsen. *Hama; Fouilles et recherches 1931–1938* IV, 2: *Les verreries et poteries médiévales* (Nationalmuseets Skrifter. Større Beretninger III). Copenhagen. Pp. 30–116.
- Scanlon G.T. and Pinder-Wilson R. 2001. *Fustat Glass of the Early Islamic Period: Finds Excavated by the American Research Center in Egypt 1964–1980*. London.
- Shindo Y. 1992. Glass. In K. Sakurai and M. Kawatoko eds. *Egypt Islamic City: al-Fustat Excavation Report 1978–1985*. Tokyo. Pp. 304–335 (Japanese).
- Shindo Y. 1993. Islamic Marvered Glass from al-Tur, South Sinai. In *Annales du 12^e Congrès de l'AIHV*. Amsterdam. Pp. 297–305.

- Shindo Y. 2000. The Early Islamic glass from al-Fustat in Egypt. In *Annales du 14^e Congrès de l'AIHV (Venezia–Milano 1998)*. Lochem. Pp. 233–237.
- Shindo Y. 2002. *Islamic Glass: Finds from Fustat, and Collections of Idemitsu and the Middle Eastern Culture Center in Japan*. Tokyo.
- Spaer M. 1992. The Islamic Glass Bracelets of Palestine: Preliminary Findings. *JGS* 34:44–62.
- Spaer M. 2001. *Ancient Glass in the Israel Museum: Beads and Other Small Objects* (Israel Museum Catalogue 447). Jerusalem.
- Stern E.M. 1977. *Ancient Glass at the Fondation Custodia (Collection Frits Lugt), Paris* (Archaeologica Traiectina XII). Utrecht.
- Syon D. and Tatcher A. 2000. ‘Akko Ha-Abirim Parking Lot. *ESI* 20:11*–16*.
- Ward R. 1998. ed. *Gilded and Enamelled Glass from the Middle East*. London.
- Weksler-Bdolah S., Onn A., Ouahnouna B. and Kisilevitz S. 2009. Jerusalem, The Western Wall Plaza Excavations, 2005–2009: Preliminary Report. *HA–ESI* 121 (September 23). http://www.hadashot-esi.org.il/report_detail_eng.aspx?id=1219&mag_id=115 (accessed 28.5.2018).
- Whitehouse D. 2005. Glass from the Crusader Castle at Montfort. In *Annales du 16^e Congrès de l'AIHV (London 2003)*. Nottingham. Pp. 191–193.
- Winter T. 2012. Glass Vessels from Excavations at the Church of the Holy Sepulchre in Jerusalem. In *Annales du 18^e Congrès de l'AIHV (Thessaloniki 2009)*. Thessaloniki. Pp. 333–340.

