

GLASS VESSELS AND GLASS-PRODUCTION REMAINS FROM THE “GANOR COMPOUND” IN YAFO (JAFFA)

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A typical group of Crusader glass vessels was found in Area E3 in the “Ganor Compound” in Yafo (see Jakob, this volume),¹ as well as a single, diagnostic vessel of the late tenth and early eleventh centuries CE. In addition, a few fragments of Byzantine glass vessels (not illustrated) and remains of glass production were collected.

THE GLASS VESSELS

Islamic Period

Bottle with Flared Shelf-Like Rim and Wheel-Cut Decoration on the Neck (Fig. 1).— This type of bottle, characterized by a wide, flared shelf-like rim, was very common during the tenth and eleventh centuries CE (Gorin-Rosen 2010:238, Pl. 10.6:17, 18, and see references therein to Ramla, Caesarea, Tiberias and Bet She'an). The decoration is also very typical of that period, and many versions are known from other sites. Bottles of this type with various wheel-cut patterns on the neck were found at Fustat, dated to the ninth–tenth and eleventh centuries CE (Scanlon and Pinder-Wilson 2001:86–90, Fig. 41:i–o; Pl. 41:i–o). The largest group of similar bottles was retrieved from the shipwreck at Serçe Limani and dated to the first quarter of the eleventh century CE (Van Doorninck 2009:3). These vessels were called “Disk-Rim Bottles”, and among them is a group termed “Pinched-Waist Bottles with Unbanded Friezes” (Cullen and Lledó 2009:193–195, Type IB1, Fig. 16-2:DR35–DR38, and see further discussion and references therein), which is similar to the one presented

in Fig. 1. They are described as pinched-waist bottles with a straight, tapering neck, a flat, disk-shaped rim and a curving body. Their shoulder slopes at an angle of around 120°. The bottoms are concave, having shallow kicks in the center with a pontil mark, which has been smoothed slightly. Cut/engraved designs often decorate the neck of the vessels in the form of short vertical facets, ovals, and rhomboids, with wheel-cut horizontal grooves on necks, shoulders and waists (Cullen and Lledó 2009:191–192).

Our bottle, dated to the tenth–eleventh centuries CE, was common and widely distributed in Israel, in most of the cities and settlements occupied during the Abbasid and Fatimid periods. It is possible that this type,

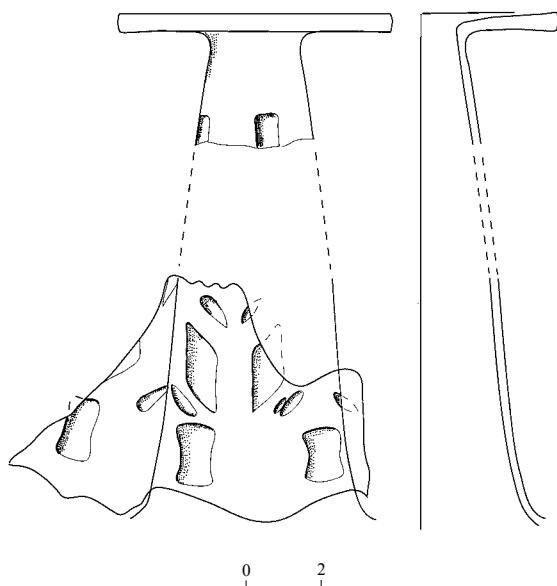


Fig. 1. Islamic-period glass.

although yet unpublished, was made in one of the local centers, for example Ramla, Caesarea or Tiberias.

1. Bottle (E3, L6762, B63876). Four separate fragments of the rim and neck of the same bottle. Colorless glass with a yellowish green tinge. The exterior is covered with black and silver weathering, iridescence, sand deposits and severe pitting. The rim is flared, thick and wide shelf-like, with a rounded edge. The neck widens toward the body and the thick walls are decorated with wheel-cut pattern. The pattern starts, on both sides, with spaced oblongs below the rim and above the shoulders, and continues with facing rhomboids with a small cross-shaped pattern on both sides of the rhomboids. Rim diam. 7 cm.

Crusader Period

The small group of Crusader glass includes about 40 diagnostic pieces, 11 of which are presented here (Fig. 2). This group mainly includes beakers and bottles of common types. The dominance of drinking and pouring vessels, such as beakers and bottles, within medieval glass tableware was already noted with regard to the glass assemblage from the Courthouse Site in 'Akko (Gorin-Rosen 1997:75, see further references therein), and more recently, in assemblages from Apollonia-Arsuf (Jackson-Tal and Tal 2013:89) and Zefat (Safed; Gorin-Rosen 2015:88*). The finds from our excavation are of the same types as those found in larger quantities at the police compound (the Qishle) in Yafo (Gorin-Rosen, forthcoming).

Beakers (Fig. 2:1–3)

Although only bases were preserved, they provide evidence for the most common type of conical beakers, with a flared rounded rim and a base, either pushed-in and tubular (Fig. 2:1, 2), or with an applied wound trail (Fig. 2:3).

Beakers with Pushed-in Tubular Base (Fig. 2:1, 2).—The distinction between pushed-in tubular

bases of beakers, bowls and jugs is based mainly on their size, proportions and the angle of the wall. In some cases, the same shape of base may belong to more than one type. Bases 1 and 2 were probably from beakers rather than jugs, as indicated by their height, high kick in the center and small diameter.

Similar bases were found in Crusader assemblages dated to the twelfth–thirteenth centuries CE, e.g., in the Crusader tower in 'Akko (Gorin-Rosen 1997:81–82, Fig. 2:14–17, see further references therein), in Zefat (Gorin-Rosen 2015:87*, Fig. 1:4–6) and at Emmaus (el-Qubeibeh; Bagatti 1947:148–150, Fig. 35:1, 2, 7). Additional vessels of this type were discovered in Apollonia, dated to the last days of the castle in 1265 (Jackson-Tal and Tal 2013: Fig. 9:7). Similar bases assigned to the medieval period were also unearthed at the Souks excavations in Beirut (Jennings 2006:229–231, Fig. 10.10:4–5, 12–14).

1. Beaker (E7, L6766, B63802/1). Base and lower part of body. Light, bluish green glass, covered with black and silver weathering, iridescence and severe pitting. Thin wall. Pushed-in base with a pointed kick off-center. Tooled hollow tubular base ring. Crude pontil scar preserving traces of the pontil (diam. 1.5 cm). Base diam. c. 4 cm.

2. Beaker (E7, L6766, B63802/2). Base fragment and lower part of body. Colorless glass with a greenish tinge, covered with black and silver weathering, iridescence and severe pitting. Low quality fabric. Thin wall. High pushed-in base with a pointed kick off-center. Tooled hollow tubular base ring. Crude pontil scar preserving traces of the pontil (diam. 1.4–1.5 cm). Base diam. 5.4 cm.

Beaker with Applied Wound-Trail Base (Fig. 2:3).—The applied thin-trail base characterizes a few beaker types of the medieval period. The trail could be of the same color as the vessel (Fig. 2:3), or of a darker hue. The body of the beaker could be plain or adorned in various ways, for example, with applied trails or with prunts. The good quality of the fabric and

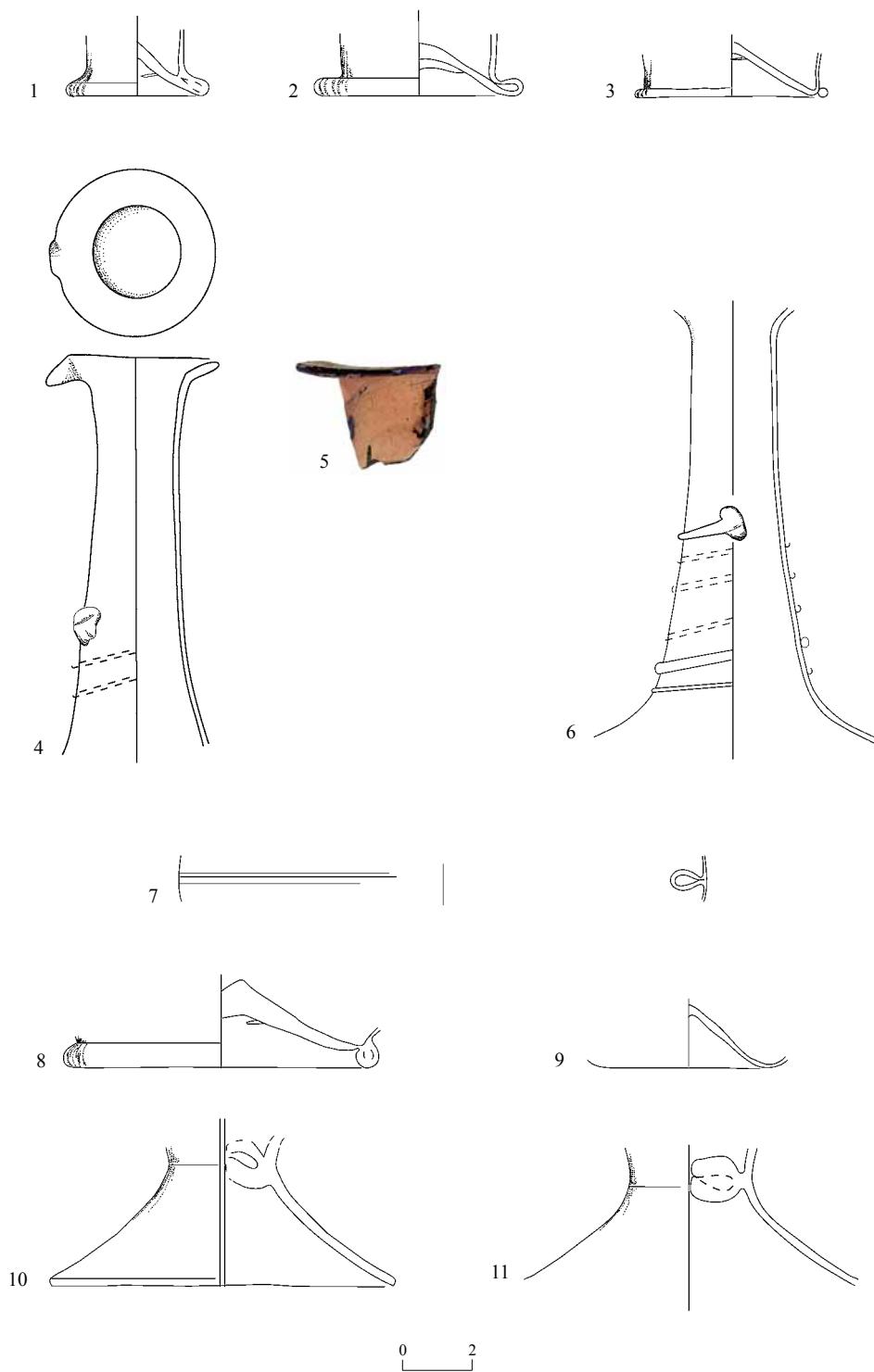


Fig. 2. Crusader-period glass.

the delicate workmanship of the thin trail probably attest that it was a prunted beaker (for further discussion, see Gorin-Rosen 1997:82; 2013:109–110; 2015:87*–88*).

Prunted beakers with a trail-wound base were discovered at the Courthouse Site in ‘Akko (Gorin-Rosen 1997:82, Fig. 2:20b, 23) and are dated there to the thirteenth century CE. Similar bases from the Souks excavations in Beirut were dated to the twelfth–thirteenth centuries CE (Jennings 2006:229–231, Fig. 10.10:15, 16).

3. Beaker (E3, L6816, B63955). Almost complete base and wall fragment. Colorless glass with yellowish tinge, covered with black crust (removed), iridescence and pitting. Good quality fabric. A delicate, uneven wound trail, of the same color as the vessel, is applied around the base, which has a pushed-in bottom. Crude pontil scar with protruding remains of glass (diam. 1.2 cm). Base diam. 5.2 cm.

Bottles and Jugs

Bottles with Pinched Rim (Fig. 2:4–6).—This type is characterized by an out-splayed rim, pinched for pouring, and a long, wide, cylindrical neck, usually decorated with applied trails. Only No. 4 has all these characteristics. Numbers 5 and 6, although fragmentary, probably belong to the same type.

Bottles with a pinched rim are very common in the Crusader assemblages from Yafo and ‘Akko. They are usually made of inferior quality fabric and are probably of local production, supplying the drinking needs of the European Crusaders. Based on the glass finds from ‘Akko, Yafo and other sites mentioned below, as well as from wall paintings and written sources, we may suggest that this type of vessel was the Crusader’s standard carafe—a container without handles used for serving wine and other drinks.

Applied trails are the most common decoration on glass vessels from the early stages of glass blowing. The color of the trail usually differs from the color of the vessel (Fig. 2:6), or is

made of the same color (Fig. 2:4). The neck of these bottles has thick walls and the trails are thick, uneven, and usually carelessly applied. In some cases (Fig. 2:4, 6), the trails no longer survive and only their negative is preserved.

A vessel with a similar rim and applied trails on the neck was found in the Crusader Tower in ‘Akko, dated to the thirteenth century CE (Gorin-Rosen 1997:76–77, Fig. 1:1, see further references therein). A similar bottle was unearthed in Apollonia (Jackson-Tal and Tal 2013: Fig. 10:3). Bottles of this type were also uncovered in the Souks excavations in Beirut, alongside thirteenth-century CE pottery (Jennings 2006:231–232, Figs. 10.11:1, 2; 10.12).

4. Bottle (E3, L6773, B63805). Rim, neck and beginning of shoulder (mended from four fragments). Colorless glass with a purple tinge, covered with black weathering, iridescence and severe pitting. Low quality fabric with medium and large, oval and round bubbles. Out-splayed rounded rim, unevenly pinched on one side to create a funnel. Cylindrical neck tapered downward, decorated with an applied trail, of which three winds are partly preserved. Careless workmanship. Rim diam. 4.6 cm.

5. Bottle (E2, L6770, B63883). Fragment of rim and beginning of neck. The purplish glass is covered with black and silver weathering (removed), iridescence and pitting. Bubbly glass with black impurities and blowing spirals. Flared rounded rim and cylindrical neck. Rim diam. ~5 cm.

6. Bottle (E7, L6793, B63903/1). Neck and beginning of shoulder. Greenish blue glass decorated with a blue trail, covered with black and brown patches of weathering, iridescence and severe pitting. Low quality fabric, severely corroded. Cylindrical neck widening downward, decorated with an applied trail, six winds, of which three are partly preserved. Careless workmanship.

Bottle or Jug with Horizontal Tooled-in Tube (Fig. 2:7).—In medieval times, this technique was used mainly on large bottles and jugs,

probably in order to strengthen the vessel's walls or for shaking liquids. It appeared already in the late Byzantine and Umayyad periods on small- and medium-sized vessels, such as cups and oil lamps, e.g., in Ashdod (Barag 1967:36–37, Fig. 16:14) and in Ramla, where one Umayyad example was found, as well as an Abbasid–Fatimid vessel (Gorin-Rosen 2010:219–220, 240, Pls. 10.2:3a; 10.6:23, see further references therein).

During the Crusader period, the horizontal tooled-in tube on the middle of jugs was very common, and it continued during the Mamluk period. A similar fragment was uncovered in the Crusader tower in ‘Akko (Gorin-Rosen 1997:80–81, Fig. 2:9, see further discussion and references therein). Similar body fragments with internal folds were found in Apollonia (Jackson-Tal and Tal 2013: Fig. 13:2, 3) and in medieval contexts in Beirut (Jennings 2006:237–238, Figs. 10.22:1, 2). Based on the glass assemblages from the Qishle in Yafo and from ‘Akko, we may assign the tooled-in tube to the above-mentioned standard carafe with a pinched rim.

Other vessels types, with internal horizontal tubes, were also dated to the tenth–thirteenth centuries, such as a simple bottle from the Dobkin Collection in the Israel Museum, characterized by a simple funnel mouth, a wide piriform body and a concave base (Brosh 2003:346, Cat. No. 455). Four, additional, complete vessels of different forms exhibit this feature in the widest part of their bodies; they were assigned an Iranian origin and dated to the twelfth century (Carboni 2001a:182–183, 194, Cat. Nos. 46a–c, 3.28). It should be noted that Carboni defined the tooled-in tube as a decoration technique to create a darker-hued horizontal line, dividing the body into two sections (Carboni 2001a:182).

7. Bottle or jug (E7, L6766, B63802/3). Two body fragments. Colorless glass covered with black and silver weathering, iridescence and severe pitting. Thin wall, with tooled, hollow tube on the inside. Diam. 16 cm.

Pushed-in Tubular Base (Fig. 2:8).— This tubular ring-base has a pushed-in concave bottom. It probably belongs to a bottle, jug or bowl. A few bases of this type were found in the Crusader tower in ‘Akko (Gorin-Rosen 1997:81, Fig. 2:12–15, see further discussion therein). Many similar bases were uncovered in the Qishle (Gorin-Rosen, forthcoming).

8. Base and beginning of wall (E7, L6793, B63903/2). Colorless glass with a purple tinge, covered with black and silver weathering (removed), iridescence and severe pitting. Low quality fabric. Uneven, hollow tubular base-ring. Pushed-in concave bottom off-center. Crude pontil scar preserving traces of glass and metal of the pontil (diam. 2 cm). Base diam. 9.2 cm.

Pushed-in Concave Base (Fig. 2:9).— This simple base probably belongs to a bottle. Similar bases were found in the Crusader tower in ‘Akko (Gorin-Rosen 1997:76–78, 81, Figs. 1:2b; 2:10, see further references therein).

9. Bottle (E7, L6766, B63802/4). Base and beginning of wall. Colorless glass, covered with black and silver weathering (removed), iridescence and severe pitting. Low quality fabric. Pushed-in concave bottom. Small pontil scar. Base diam. c. 5 cm.

Vessels on High Foot, Made from a Second Glass Blob (Fig. 2:10, 11).— These poorly preserved fragments represent typical bases of “Mosque lamps.” The common types are usually larger and are mainly decorated with enamel painting, although small versions are also known (see below). Complete examples from collections are dated to the mid-thirteenth–fourteenth centuries (Carboni 2001b:226–227, Cat. Nos. 113, 116–118).

A similar base appears on a decanter with a long neck, usually richly decorated with enamel. A similar bottle from the Metropolitan Museum is dated by an inscription to the first half of the fourteenth century (Jenkins 1986:44–45, 56, No. 49), and a decanter from the al-Sabah Collection is dated to the mid-

fourteenth century (Carboni 2001a:366–367, Cat. No. 101, see further discussion and references therein).

Similar bases, uncovered at Yoqne‘am and dated to the Crusader period, were named “Biconical Goblets” (Lester 1996:214, Fig. XVII.16:2). Lester noted that their general shape seems to be foreign to Islamic glass. She found twelfth–thirteenth-centuries CE parallels from southern France, suggesting that the goblets were carried by the Crusaders on their way to the Holy Land.

A fragment of such a base was retrieved from Khirbat ‘Adasa, dated to the Mamluk period (Gorin-Rosen 2008:131, Fig. 4:1, see further references therein). Such bases, uncovered in Beirut and defined as “folded pedestal bases,” were dated to the medieval period (Jennings 2006:235–236, Figs. 10.18:1, 10.19). A very similar base of a mosque-lamp with a fine hole in its center is present in the al-Sabah Collection (Carboni 2001a:362, 364–365, Cat. 100a, No. 257n).

Base No. 10 was found within a stone-collapse covering the Crusader level (see Jakoel, this volume). Base No. 11 was unearthed alongside vessels dated to the thirteenth century CE (see Bouchenino and Jakoel, this volume). During the Crusader and Mamluk periods, this type of base was used in local glass production of various types, such as oil lamps, known as “mosque lamps”, footed bowls and goblets.

10. Base/foot (E2, L6770, B63790). Colorless glass, covered with black and silver weathering, iridescence and severe pitting. Double-blob bottom, with a broken scar in the middle. High tapered base, broken on its lower edge. Very careless workmanship.

11. Base/foot (E1, L6810, B63941). Colorless glass, covered with black and silver weathering, iridescence and severe pitting. Double-blob bottom, broken at its center. High tapered base with rounded edge. Very careless workmanship. Base diam. 9.2 cm.

GLASS PRODUCTION

Remains of glass production (Fig. 3) were found in 6 out of 34 baskets in Sq E2, E6 and E8. They raise two main questions: (1) is there enough evidence to identify primary (glassmaking—raw glass) or secondary (glass working—vessels and objects) (see Gorin-Rosen 2000) production? and (2) what is the date of these finds?²

Within the debris are small chunks of raw glass (Fig. 3:1–3), a small glass drop (Fig. 3:4) and small fragments of mixed debris, including raw glass with remains of bricks, walls or floors of the furnaces (Fig. 3:5, 6).

All these fragments could belong to both production stages. However, the limited amount of material cannot support the possibility of mass production of raw glass at the site, and there is no evidence for glass blowing, e.g., moils, “glass buttons” or other over blows.

The colors and fabrics are similar to those of the Byzantine and Umayyad periods, not later. The fragments from Sq E6 (Fig. 3:6) were found in a Byzantine context (L6813; Stratum VI; see Jakoel, this volume).

Raw Glass Chunks (Fig. 3:1–3).— These chunks are almost clean of any furnace waste. Usually they show natural sharp breaks. A large quantity of raw glass chunks was unearthed within the remains of a local glass workshop at Khirbat el-Ni‘ana, dated to the fourth and early fifth centuries CE (Gorin-Rosen and Katsnelson 2007:125–127, Fig. 25:9–20, see references therein).

1. Raw glass chunk (E2, L6811, B63961). Greenish blue glass covered with iridescence and sand deposits. Translucent. Triangular section with natural breaks. C. 3.5 × 3.0 × 3.0 cm.

2. Small raw glass chunk (E2, L6791, B63851/1). Greenish blue glass covered with silver weathering, iridescence and sand deposits. Translucent. Uneven pentagonal section with natural breaks, rounded by fire/heating on one side. C. 2.0 × 1.5 × 1.0 cm.



Fig. 3. Remains of glass production.

3. Small raw glass chunk (E2, L6791, B63851/2). Greenish blue glass covered with silver weathering, iridescence and sand deposits. Translucent. Uneven triangular section partly with natural breaks and partly with small remains of the furnace wall or bottom. C. $1.5 \times 1.3 \times 0.5$ cm.

Glass Drop (Fig. 3:4).—Glass drops are usually found among the debris of a glass working furnace. They could be the result of quality testing of the glass before blowing, or cutting-off leftovers during the blowing process. Drops were also discovered within the remains of the local glass workshop at Khirbat el-Ni‘ana (Gorin-Rosen and Katsnelson 2007:125–127, Fig. 25:9–20, see references therein).

4. Small glass drop (E8, L6786, B63867). Broken. Greenish blue glass covered with iridescence, sand deposits and severe pitting. Uneven hemispherical section. Rounded surface, broken on one side. $1.7 \times 1.5 \times 0.5$ cm.

Debris from Glass Furnaces (Fig. 3:5, 6).—Fragments of dismantled glass furnaces were found, consisting of severely heated stone together with raw glass. Such fragments were discovered within the remains of the local glass workshop at Khirbat el-Ni‘ana (Gorin-Rosen and Katsnelson 2007:127, 129, Fig. 25:21, 22).

5. Debris fragments (E6, L6785, B63904). Twenty-eight small fragments, including three large ones (a–c) and small chips, which probably originated from Fragment a.

(5a) Light, greenish blue glass, partly covered with limestone and debris from the furnaces. Very tiny chips. $2.0 \times 1.5 \times 1.0$ cm.

(5b) Similar to 5a, but made of greenish glass. $1.0 \times 1.5 \times 1.0$ cm.

(5c) Small chip of a blue glass rod. 1.3×0.7 cm.

6. Mixed debris (E6, L6813, B63925). Twenty small fragments of mixed debris. Two raw glass chunks (a, b), two fragments of glazed mud bricks (c, d) and mixed fragments.

(6a) Bluish green, covered with silver weathering, iridescence and pitting. Trapezoidal section. $3.0 \times 2.5 \times 1.0$ cm.

The production debris clearly points to the existence of a glass workshop in the vicinity. Its quantity may indicate secondary production, and the colors and fabrics might date it to the Byzantine period, possibly earlier or slightly later.

SUMMARY AND CONCLUSIONS

Most of the vessels found in this excavation belong to common types, known from several sites in Israel, published as well as unpublished. Similar Crusader types were found, e.g., in the Qishle Compound in Yafo (Gorin-Rosen, forthcoming), in ‘Akko (Gorin-Rosen 1997; 2013), Zefat (Gorin-Rosen 2015) and Apollonia-Arsuf (Jackson-Tal and Tal 2013). Most of the vessels, if not all, were probably locally made.

The glass-production remains unearthed in this excavation are most likely from the Byzantine period. However, due to the characteristic features and fabrics of the Crusader glass repertoire, we assume that at least one workshop functioned in Yafo during the Crusader period, to supply the needs of the local community.

NOTE

¹ I wish to thank the excavator, Eriola Jakoel, for inviting me to study this material. The glass was

restored by Olga Shorr, drawn by Carmen Hersch and photographed by Clara Amit.

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