

THE GLASS VESSELS FROM GANE TAL

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A large quantity of glass vessels was retrieved from the salvage excavation at the site of Gane Tal (see Arbel and 'Ad, this volume).¹ The excavations mainly revealed two circular installations of the Early Roman period, industrial winepresses and architectural remains—storage facilities and dwellings—of the Byzantine period, and several burials of the Roman–Byzantine periods.

The glass assemblage consists of 2708 fragments. It comprises small non-diagnostic body fragments (n = 2127, 78%) and glass production debris (n = 275, 10%). The glass repertoire exhibits a wide range of types, including bowls, a single beaker, a wineglass, bottles, cosmetic vessels and bowl-shaped oil lamps. All these vessel types are well-known from habitation and funerary contexts of the Roman and Byzantine periods in the region. The vessels are made of colorless, blue or green glass, and are often covered with silvery weathering and shiny iridescence; in some cases, there is severe pitting. Some of the vessels are decorated with blue trails, and a single small fragment exhibits the remains of a mold-blown decoration. Most of the fragments belong to free-blown vessels. This assemblage dates mainly from the Late Roman and early Byzantine periods (fourth–fifth centuries CE), corresponding to the dates of the coins found within the same contexts (see Ariel, this volume). A few vessels date to the Early Roman period; a few rare and non-diagnostic glass fragments from the Mamluk stratum are not presented here.

Twenty-seven specimens of 581 registered glass fragments were selected for presentation below, organized in chronological order.

THE EARLY ROMAN PERIOD (Fig. 1)

A number of glass fragments from this period were recovered from a fill and soil accumulations inside the circular installation in Area D1 (L1040, L1057, L1067), Stratum

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IV. Their date, from the Early Roman period, corresponds with the dates of the pottery and coins from that context (see Vincenz, this volume; Ariel, this volume).

Bowl Rim (Fig. 1:1).— This simple rim could belong to a small deep bowl or beaker, with a wide mouth. It is characterized by its delicate workmanship and the quality of the glass, and belongs to a group of vessels common during the Early Roman period throughout the Eastern and Western Provinces of the Roman Empire. An example of an almost complete vessel was found in a cave in the Judean Desert (Gorin-Rosen 2002a:143, Fig. 1:2, and see further references therein).

1. Bowl/beaker. L1067, B10639. Rim fragment, mended. Light bluish glass. Silver weathering and iridescence. Highly bubbly. Flared, thickened rounded rim. Very thin wall. Rim D 9 cm.

Bowl Rim Decorated with Two Crimped Trails (Fig. 1:2).— These bowls have a hollow ring base and a flared rounded rim, which is decorated with crimped trails. Similar bowls were

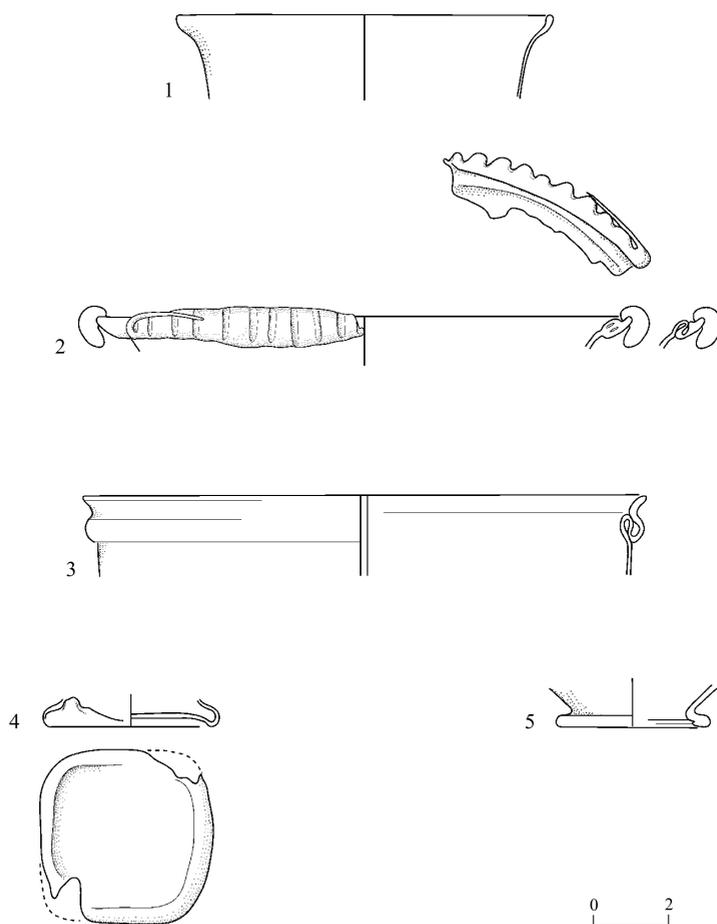


Fig. 1. Early Roman-period vessels.

widespread throughout the Eastern and Western Provinces of the Roman Empire. In Israel, these vessels appeared in the late first century, not before 70 CE, and disappeared after the Bar-Kokhba Revolt of 132–135 CE (Winter 2006:77–79, Fig. 1:14–16, and see discussion therein).

2. Bowl with crimped trails. L1057, B10424/1. Rim fragment. Greenish glass. Silver weathering and iridescence. Rim folded inward, then upward and again downward. Heavy tooled trail, tapering at the end, applied to rim. Rim D 13.5 cm.

Bowl with Double Fold Below Rim (Fig. 1:3).— Bowls with a double fold below the rim are known in many varieties and have been found in relatively large numbers in archaeological excavations of the Early Roman period. They are known, for example, from the sites of Wâdi ed-Dâliyeh (Weinberg and Barag 1974: Pl. 39:9, 10) and Khirbat Badd ‘Isa–Qiryat Sefer (Magen, Tzionit and Sirkis 2004:215, Fig. 9:9), where this type of vessel occurs up to the early fifth century CE. Different variants of this bowl, from both the Late Roman and early Byzantine periods, are known from Khirbat el-Ni‘ana, where this bowl represents one of the most common types of locally produced vessels (Gorin-Rosen and Katsnelson 2007:81, Fig. 3). Although the specimen from Gane Ṭal lacks diagnostic features, which would allow a precise determination of chronology, it probably belongs to an earlier group of these bowls, judging by its context.

3. Bowl. L1040, B10403. Rim fragment. Greenish glass. Silver weathering and iridescence. Almost upright, rounded rim with double fold 5 mm below rim. Rim D 1.4 cm.

Indented Beaker Base (Fig. 1:4).— This base belongs to a type of beaker with indentations along its sides, known from the first and second centuries CE. A similar base, retrieved from the Jewish Quarter of the Old City of Jerusalem, was dated to the first century–first half of the second century CE (Gorin-Rosen 2006:254, Pl. 10.5: G65, and see therein additional examples and a discussion of this vessel type). A complete indented beaker with a base similar to the one shown here—curated in the collections of the British Museum—is an early example of this type, probably of the mid-first–second centuries CE, said to have come from Bet Guvrin (Barag 1985:103, Pl. 18:1).

4. Indented beaker. L1057, B10438; L1067, B10461. Complete base. Mended from two fragments from two loci. Very light greenish glass. Silver weathering and iridescence. Small bubbles. Slightly concave base, irregular shape. No pontil mark. Base D 4.0–4.5 cm.

Beaker or Bowl Base (Fig. 1:5).— This fragment of a tooled-out base belongs to a small bowl or beaker of the first century CE. A similar base is known from Khirbat Burnaṭ (Winter 2012:143, Fig. 2:6).

5. Beaker or bowl. L1057, B10424/2. Incomplete base. Very light greenish glass. Silver weathering and iridescence. Small bubbles. Beginning of wall. Thickness of wall 0.25 cm, base D 2 cm.

LATE ROMAN AND EARLY BYZANTINE PERIODS (Figs. 2–4)

The glass fragments dated to the Late Roman and early Byzantine periods, Stratum III, were found in different areas of the excavation, principally in contexts of soil accumulations.

Bowls

Bowls with Rounded Rim (Fig. 2:6–8).— Numbers 6–8 belong to large open vessels, dishes or shallow bowls, with a rounded rim, straight or slightly slanted walls and a base which can be generally ascribed to the pushed-in ring type. Rim diameters in the present three examples range between 17 and 26 cm. Polishing marks occur on the exterior of the vessels, below the rim. Bowls of this type are common in sites of the Late Roman and early Byzantine periods, and were found for example in a burial complex in the western Galilee, dated to the third–fourth centuries CE (Gorin-Rosen 1997:62, Fig. 1:1), and at Khirbat el-Ni'ana, in contexts dated to the fourth–early fifth centuries CE (Gorin-Rosen and Katsnelson 2007:76–78, Fig. 1:1–5, and see further references therein).

6. Bowl. L1021, B10225/2. Rim fragment. Light greenish glass. Silver weathering, iridescence and sand deposits. Severe pitting. Upright rim. Thin wall. Polishing marks on exterior, below rim. Rim D 26 cm.

7. Bowl. L1021, B10225/3. Rim fragment. Light bluish glass. Silver weathering and iridescence. Thickened rounded rim. Thin wall. Polishing marks on exterior, below rim. Rim D 22 cm.

8. Bowl. L1000, B10015/1. Rim fragment. Light bluish glass. Silver weathering, iridescence and sand deposits. Small bubbles. Upright thickened rim. Some polishing marks on exterior. Rim D 17 cm.

Bowl with Out-folded Rim (Fig. 2:9).— Bowls with an out-folded rim, made of a variety of fabrics and qualities of workmanship, were very common from the Early Roman to the Umayyad periods. These vessels were long-lived and hence are often of a limited diagnostic value in terms of chronology; their date is determined based on their context. Number 9 is the upper part of a rather small, deep bowl with a slanting and outfolded rim. Variants of such bowls were found, for example, at Jalame, in the refuse dump of a glass production workshop of the second half of the fourth century CE (Weinberg and Goldstein 1988:41–43, Fig. 4-3:14–19).

9. Bowl. L1000, B10015/2. Rim fragment. Greenish glass. Silver weathering and iridescence. Out-folded rim. Rim D 9 cm.

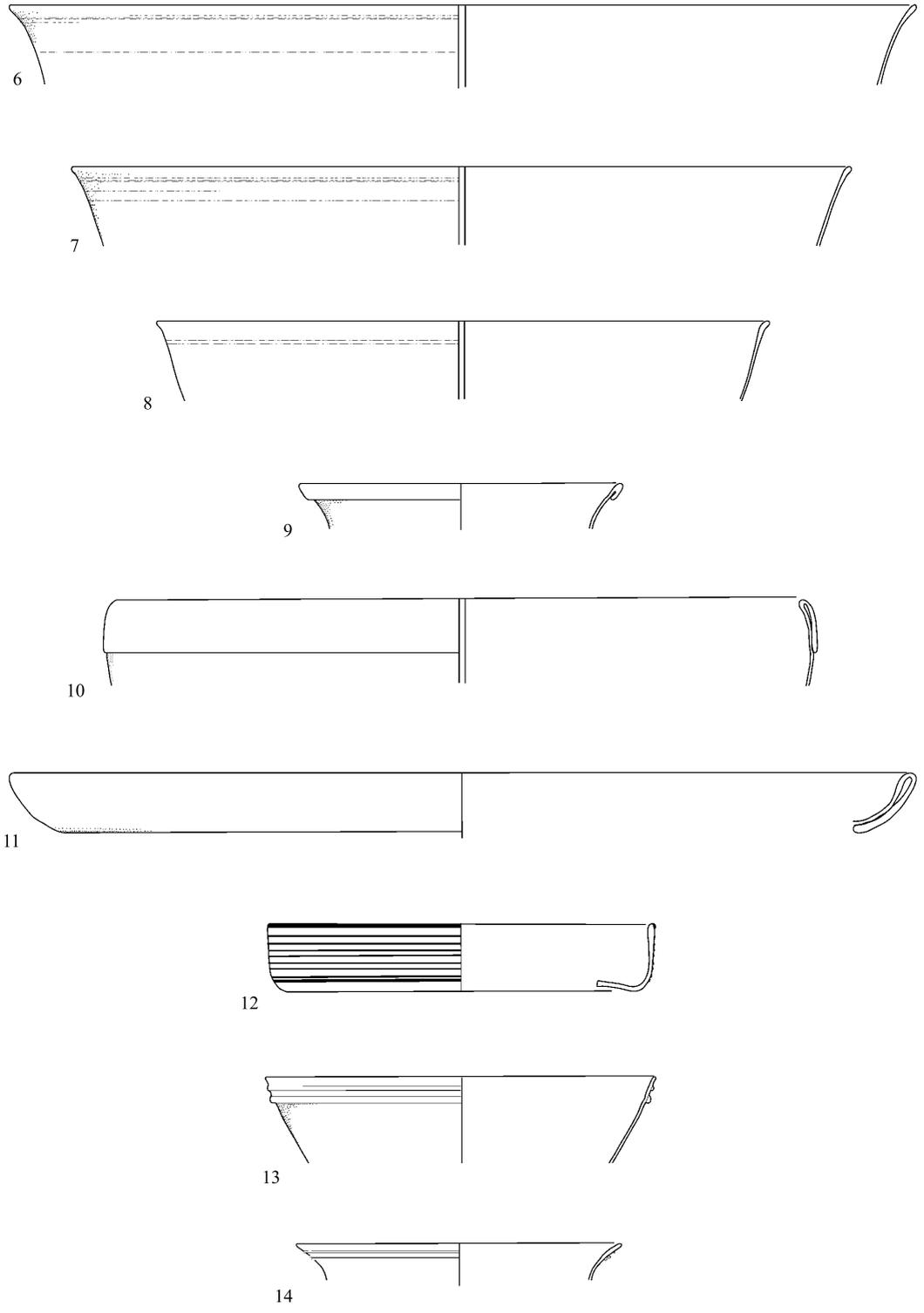


Fig. 2. Late Roman and early Byzantine periods: bowls.

Bowls with Out-folded Collar Rim (Fig. 2:10, 11).— Number 10 is a deep bowl with an upright rim which is folded outward and then back toward the wall of the vessel, in a manner forming a heavy collar. A similar specimen was found at Khirbat el-Ni‘ana (Gorin-Rosen and Katsnelson 2007:80, Fig. 2:5). Number 11 is a shallow bowl with a curving wall, resembling an example found at Jalame (Weinberg and Goldstein 1988:49, Fig. 4-8:80).

10. Bowl. L1608, B15406/2. Rim fragment. Greenish glass. Silver weathering, iridescence and sand deposits. Wide, almost upright, out-folded rim, thickened at edge with beginning of wall. Rim D 20 cm.

11. Bowl. L1024, B10473. Rim fragment. Colorless glass. Silver weathering, iridescence and sand deposits. Severe pitting. Out-folded rim. Curving wall. Rim D 25 cm.

Bowl with Rounded Rim and Multiple Trails Wound on and below Rim and Flat Base (Fig. 2:12–14).— Bowls with a trail decoration occur mainly in southern Israel, where they are widely distributed. Number 12 presents a complete profile of such a bowl, displaying one blue trail, extending over and below the rim, and seven additional trails extending around the circumference of the bowl’s straight wall; the trail nearest the base is thicker than the others. Examples of this type of bowl are known from Khirbat el-Ni‘ana (Gorin-Rosen and Katsnelson 2007:84–85, Fig. 5:4) and Ḥorbat Raqit, Mount Carmel (Lehrer-Jacobson 2003:233, Fig. 1:1).

Bowl No. 13 has a rounded rim and a curving rather than straight wall. The bowl exhibits two applied trails of the same color as the body of the vessel, a thin one just below the rim and a thicker one below it, extending around the curving wall.

Number 14 belongs to a group of decorated thin-walled bowls, which usually have flaring rounded rims and slanting walls. These bowls are typically decorated with one or several horizontally wound, blue trails applied over the rim or below it. This bowl type is widely distributed in sites of the Late Roman–early Byzantine period. Similar bowls were found at Ashqelon (Katsnelson and Jackson-Tal 2004:100–102, Fig. 1:5, 6) and Khirbat el-Ni‘ana (Gorin-Rosen and Katsnelson 2007:84, Fig. 5:1–3), in contexts dated to the fourth–fifth centuries CE. Other examples of the same date were found at ‘En Boqeq fortress (Phases I–II of the early Byzantine period; Gichon 1993:435, Fig. 60:21) and ‘Ein ez-Zâra, Transjordan (Dussart 1997:98, Pl. 24:6). Similar bowls, dated to the end of the fourth century CE, were found at Mezad Tamar (Erdmann 1977:107, Pls. 5:515, 523; 6:581, 659), Petra (Keller 2006:206–207, Pl. 9:g, 1) and Ḥorbat Karkur ‘Illit, northern Negev, in the Byzantine cemetery church (Katsnelson 2004:266–267, Fig. 58:6–9).

12. Bowl. L1608, B15363. Complete profile. Light greenish glass. Milky silver weathering, iridescence and sand deposits. Upright rim. Blue trail on and below the rim; seven trails on the straight wall, the nearest to the base is thicker. Beginning of flattened base. Rim D 11 cm.

13. Bowl. L1068, B10528. Rim fragment. Light bluish glass. Milky silver weathering and iridescence. Rounded rim. Two applied trails below rim. Thin wall. Rim D 11 cm.

14. Bowl. L1510, B15039. Rim fragment. Colorless glass with blue trails. Weathering, iridescence and severe pitting. Flared rounded rim with three densely-set horizontal blue trails below rim. Thin wall. Rim D 9 cm.

Bowls with Trail-Wound Base (Fig. 3:15–17).— This type of bowl was found in large quantities at Khirbat el-Ni‘ana (Gorin-Rosen and Katsnelson 2007:88–90, Fig. 7). Such bowls were also found at Khirbat el-Faṭuna (Jackson-Tal 2007: Fig. 3:6) and Ashqelon (Katsnelson 1999:69*, Fig. 2:3). It is likely that several types of vessels with a trail-wound base were produced in local glass workshops in the region during the Late Roman–Byzantine periods.

15. Bowl. L1097, B10672. Complete base. Greenish glass. Silver weathering and iridescence. Very bubbly glass. Flat thickened floor; three uneven coil winds; pontil scar D 1.2 cm. Base D 5.5–5.7 cm.

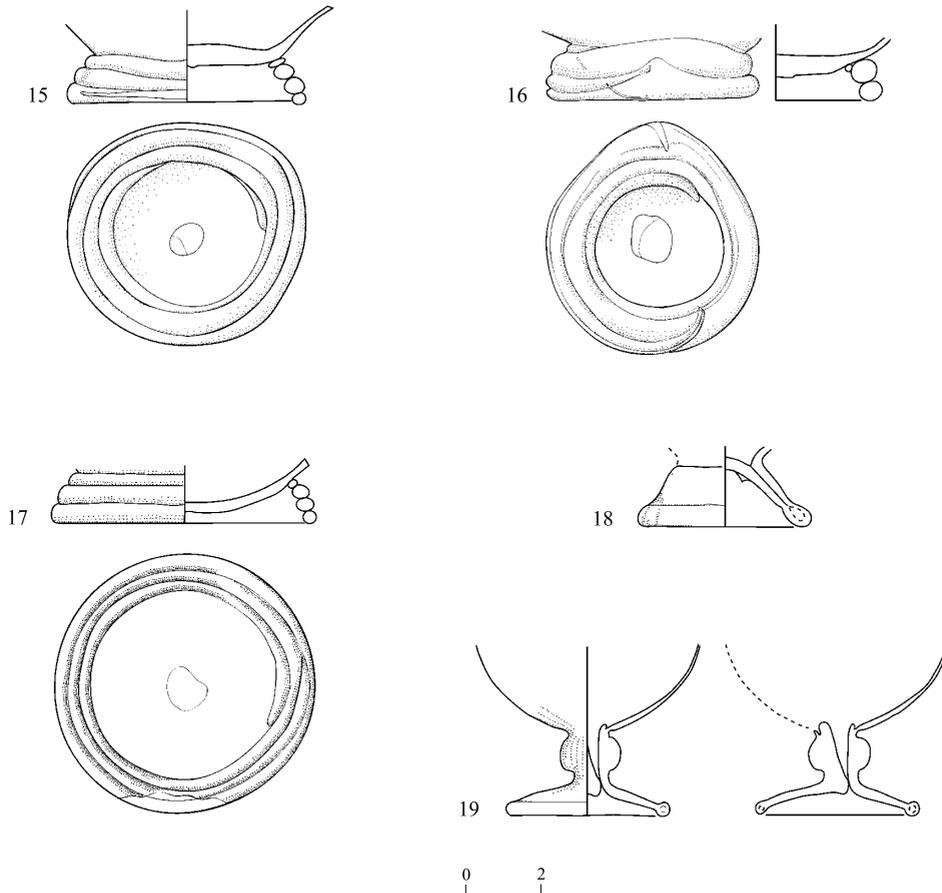


Fig. 3. Late Roman and early Byzantine periods: bowls (15–17), beaker (18) and wineglass (19).

16. Bowl. L1097, B10664. Complete base. Olive-green glass. Silver weathering, iridescence and sand crust. Flat thickened floor; two uneven coil winds and one more wind over half of the base diameter. Pontil scar (D 1.2 cm). Careless workmanship. Irregular D, between 5.2 and 5.7 cm.

17. Bowl base. L1024, B10473. Incomplete base, mended. Greenish glass. Silver weathering, iridescence. Very bubbly glass. Convex floor; three coil winds; pontil scar D 1.1 cm. Low quality fabric. Base D 6.3 cm.

Beaker/Jug

Beaker with Pushed-In Base (Fig. 3:18).— Pushed-in bases of beakers or jugs with hollow rings are a common type of the Late Roman vessel repertoire (Magen 2005: Pl. 18:16–21). Beakers with this type of base were found, for example, at Khirbat el-Ni‘ana (Gorin-Rosen and Katsnelson 2007:93, Fig. 8:11–15) and at Jalame (Weinberg and Goldstein 1988:62–63, Fig. 4-24:187–192), in both sites in contexts of the fourth and fifth centuries CE.

18. Beaker. L1021, B10225/1. Complete pushed-in base and beginning of wall. Olive-green glass. Silver weathering, iridescence and sand deposits. Bubbly glass. Slightly deformed around stem; small pontil scar. Base D 4.2 cm.

Wineglass

Wineglass Foot (Fig. 3:19).— This base belongs to a type of wineglass with a beaded foot and a rounded rim, which is often trailed. Such vessels, which were probably locally produced, were common in Israel and the Jordan Valley in the fifth–sixth centuries CE, especially during the later century (Barag 1970:146–148, Pl. 33:1–5). Similar vessels were found at Ashqelon (Katsnelson 1999: Fig. 2:12; Katsnelson and Jackson-Tal 2004:103, Fig. 1:14) and Khirbat el-Ni‘ana (Gorin-Rosen and Katsnelson 2007:94, Fig. 8:16, 17). At Giv‘at Ha-Maṭos, Jerusalem, such vessels were found in contexts dated to the sixth–seventh centuries CE (Gorin-Rosen 2000b:84*–86*, Fig. 2:14).

19. Wineglass. L1093, B10661. Incomplete base with beginning of wall, mended. Greenish glass. Silver weathering and iridescence. Small bubbles. Small concavity on floor, beaded stem and uneven hollow ring base. Thin wall. Low quality workmanship. Base D 4 cm.

Bottles (Fig. 4:20–22)

Bottle with an Upright and Slightly Flaring Rounded Rim (Fig 4:20).— The small fragment shown in Fig 4:20 seems to belong to a type of bottle with an upright and slightly flaring rounded rim. This type of bottle usually displays a mold-blown decoration, made from a closely twisted ribbing, widely distributed in both the eastern and western provinces of the Roman Empire in the fourth–fifth centuries CE. Parallels for this type include an example from Ḥorbat Karkur ‘Illit (Katsnelson 2004:281–282, Fig. 63:8, and see further references therein).

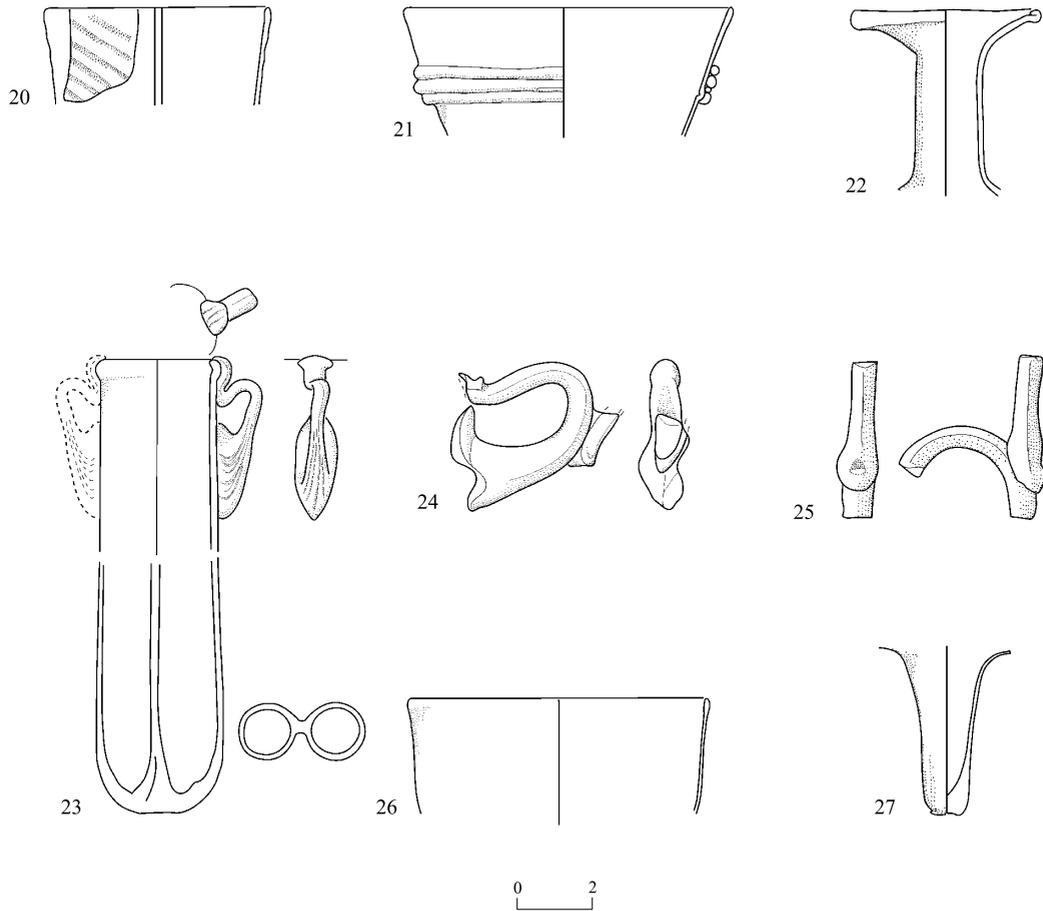


Fig. 4. Late Roman and early Byzantine periods: bottles (20–22), cosmetic vessels (23–25) and oil lamps (26, 27).

Bottle with a Wide Mouth and Trailed Decoration (Fig. 4:21).— Bottle No. 21 belongs to a wide-mouthed and trailed bottle, known during the Late Roman and Byzantine periods (Barag 1970:193, Type 15:20, Pl. 42:20). Parallels for this type were found at Ashqelon (Katsnelson 1999:74*, Fig. 4:2; Katsnelson and Jackson-Tal 2004:105, Fig. 2:4, 5) and at Khirbat el-Ni'ana, in fourth–fifth century CE tombs (Gorin-Rosen and Katsnelson 2007:100–103, Fig. 13:3–5).

Bottle/Jar with a Cylindrical Neck (Fig. 4:22).— Cylindrical neck No. 22 could belong to either a bottle or a jar with a funnel-shaped mouth, a piriform or cylindrical body and a concave or pushed-in, hollow ring base (Gorin-Rosen and Katsnelson 2007:98, Fig. 11). Such vessels were common in the Late Roman–Byzantine periods and included several subtypes of varying size, rim shape and decoration. Examples were found at Ashqelon (Katsnelson 1999:72*–73*, Fig. 3:6, 7; Katsnelson and Jackson-Tal 2004:98, Fig. 2:1, 2) and Jalame (Weinberg and Goldstein 1988:72, Fig. 4-33:284–288). They were also found

within a fourth-century fill of a settling pool at Ras el-‘Ein, Shekhem (Magen 2005: Pl. 19:12–15).

20. Bottle. L1000, B10015. Rim fragment. Very light greenish glass. Milky silver weathering and iridescence. Upright rounded rim and thin wall. Mold-blown decoration of shallow oblique ribbing on neck. Rim D 5.5 cm.

21. Bottle. L1105, B10705. Rim fragment of large bottle. Light bluish glass. Milky silver weathering, iridescence, sand deposits and pitting. Bubbly glass. Rounded rim with funnel-shaped mouth preserved with three trail winds, the central trail thicker than the others, forming a thick band. Rim D 8 cm.

22. Bottle. L1068, B10478. Complete rim of bottle/jar. Bluish glass. Silver weathering and iridescence. Very severe pitting. Highly bubbly. Infolded rim and short funnel-shaped mouth. Rim D 4.8 cm. Neck length 3.5 cm.

Cosmetic Vessels

The cosmetic tube is one of the few types of ancient glass vessels of which the function is known; in some cases, remnants of kohl and/or a bronze or ivory applicator were found within them. Variants consisting of single, double or multiple tubes, with or without handles, are known. These tubes are a frequent find in burials in Israel, Jordan and Syria between the beginning of the fourth and the fifth–sixth centuries CE. The three specimens shown here belong to double-kohl tubes, which have generally been documented in the Eastern Mediterranean, but not in European assemblages of this period (Gorin-Rosen and Katsnelson 2007:75).

Double-Kohl Tubes (Fig. 4:23–25).— Number 23 was recovered from one of the burials at Gane Ṭal, the loculi tomb (Area C1; see Arbel and ‘Ad, this volume). It is a plain double tube with two handles, of which parallels are known from Khirbat el-Ni‘ana (Gorin-Rosen and Katsnelson 2007:111, Figs. 17:1, 2; 18:1, 2).

Numbers 24 and 25 are fragments of basket handles of double tubes, which extended over the rim of the bottle. A wide range of varieties of such double tubes with elaborate handles were found at Khirbat el-Ni‘ana (Gorin-Rosen and Katsnelson 2007:111–116, Figs. 17; 20; 21).

23. Double tube. L615, B6052. Incomplete, mended. Light greenish glass. Silver weathering, iridescence and sand deposits. Plain double tube with two handles, only one preserved, drawn from the body to the rim. Uneven infolded rim. Bottom thickened, convex and unevenly flattened by the pontil (D 0.6 cm; pontil size 1.3 cm). Total height 11 cm.

24. Double tube handle. L1608, B15406/1. Elaborate handle of double tube, incomplete. Greenish glass. Silver weathering and iridescence.

25. Double tube handle. L162, B15440. Elaborate handle of double tube, incomplete. Brownish glass. Silver weathering and iridescence.

Oil Lamps

Bowl-Shaped Oil Lamps (Fig. 4:26, 27).— These bowl-shaped oil lamps with a hollow stem are typical of the Byzantine period, when they were widespread in private and public contexts throughout the Eastern Mediterranean. Examples of such lamps are known from Ashqelon (Katsnelson 1999:79, Fig. 5:5; Katsnelson and Jackson-Tal 2004:107, Fig. 3:3), Khirbat el-Ni‘ana (Gorin-Rosen and Katsnelson 2007:116–117, Fig. 22:6–8) and Nir Gallim, in a baptistery dated to the fifth–sixth centuries CE (Gorin-Rosen 2002b:122–123, Fig. 2:1–4). In addition, a large group of about 400 oil-lamp stems of this type was retrieved from Caesarea Maritima (Peleg and Reich 1992:155–158, Figs. 19; 20), and an assemblage of 40 such stems is known from the area of the glass workshop at Samaria (Crowfoot 1957:414–415, Figs. 96:2, 6; 98:4).

Number 26 is a rim fragment with a thin wall. A close parallel is a specimen from Khirbat el-Ni‘ana (Gorin-Rosen and Katsnelson 2007: Fig. 22:7). Number 27 is a complete stemmed base.

26. Bowl-shaped oil lamp. L1589, B15321/1. Rim fragment. Colorless glass. Silver weathering, iridescence and sand deposits. Severe pitting. Upright rim. Thin wall. Rim D 7.5 cm.

27. Bowl-shaped oil lamp. L1035, B10276. Complete hollow stem of a bowl-shaped oil lamp. Light green glass. Silver weathering and iridescence. Beginning of wall. Bottom flattened by pontil (D 0.8 cm). Pitting. Stem height 4 cm.

REMAINS OF GLASS PRODUCTION (Fig. 5:28–35; Table 1)

The excavation at Gane Tal yielded 275 fragments related to glass production, including chunks of raw glass and production debris. A representative sample of this material, consisting of 67 fragments from two loci in Areas D1 and D2 (L1066 and L1070, respectively), is described here. Chunks of raw glass were found in L1070—a floor of packed soil and plaster—and within the overlying sediment accumulation. A similar accumulation with abundant chunks of raw glass was uncovered in L1066.

The chunks of raw material are mostly of a greenish blue shade, and some are yellowish green. These chunks are clean of debris and exhibit a fine, clear fabric. They have a triangular or trapezoidal section. Such chunks were found in fairly large quantities in all of the excavation areas. The debris from glass production consists of the typical residue



28



29



30



31



32



33



34



35



Fig. 5. Remains of glass production.

Table 1. Remains of Glass Production, by Locus

Locus	Basket	Raw Glass Chunks			Fig. No.	Debris from the Furnace			Fig. No.
		N	Size (cm)	Color		N	Size (cm)	Color	
1066	10463	11	1.7–3.0	Light blue to green	5:28	29	1.0–4.5	Bluish and greenish	5:30
1066	10637	13	3–7	Light blue, light green, dark green and brown	5:29	10	3–7	Bluish and greenish	5:31
1070	10699					4	4–7	Light and dark greenish	5:32–35

formed at the bottom of glassmaking furnaces—lumps of glass fused to fragments of the furnace floor, known for example at Bet Eli‘ezer (Gorin-Rosen 1995).

Although no remains of an *in situ* glass furnace were found at the site, the amount and composition of the glass waste indicate a primary glass production (Gorin-Rosen 2000a; Gorin-Rosen and Katsnelson 2007:124). Given the absence of evidence for glass blowing at Gane Ṭal, it is possible to suggest that the site merely contained an industry of raw glass, or that such an industry existed in a nearby industrial area and its waste was brought to the site to be used as fill material.

CONCLUSIONS

The glass assemblage from the excavation at Gane Ṭal comprises common vessel types of the Early Roman and Late Roman/beginning of the Byzantine periods in southern Israel, which are also known from the nearby sites of Khirbat el-Ni‘ana, Khirbat el-Faṭuna and Ashqelon.

The large quantity of fragments of glass vessels found at Gane Ṭal, as well as their homogeneous fabric and limited variety of forms, could indicate the existence of a local workshop for the production of glass vessels, as identified in the nearby contemporary sites of Khirbat el-Ni‘ana and Khirbat el-Faṭuna. However, only a handful of glass workshops of the Roman and Byzantine periods, where both primary and secondary production took place, are known in the region. The debris of glass production found at the site, including the remains of furnace floors and the large amount of raw glass chunks, together with the absence of blowing debris, indicate the manufacture of raw glass rather than of the finished products.

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