Glass

Chapter Twelve

The Glass

Tim Penn and Summer Courts

Hammond's excavations in Area II and the sifting of dumps during the Temple of the Winged Lions CRM Project recovered considerable quantities of glass objects. However, relatively few glass objects were recorded in the AEP Finds Registers, and even fewer were mentioned in Hammond's publications about the site (e.g., Hammond 1996, 125–134).[1] The purpose of this chapter is therefore to present an overview of the vessel glass and other glass objects; glass items of personal adornment, such as beads, are dealt with by Green (Chapter 16). As with much of the material presented in this book, limited contextual information is available, and it needs to be reiterated that the glass from the dumps cannot be tied to a stratigraphic context. Indeed, it is likely that some of this material, particularly from Dumps 1 and 2, comes from the domestic units excavated in Area I as Hammond recovered and documented large quantities of well-preserved vessel glass from this area; the Area I material will be studied and presented at a later date.

Despite these challenges around context, the glass objects from the Temple of the Winged Lions and its environs provide a significant sample of glass in circulation in the center of Petra in antiquity and therefore merit publication as an addition to the existing corpus of finds from the city. In what follows, we first characterize the overall assemblages originating in each of the dumps. We then summarize the overall color profile of the glass fabrics used, before non-exhaustively outlining the key vessel forms and decoration types represented. Our discussion is followed by a catalog of selected finds in the holdings of the American Center of Research; this comprises 85 items that illustrate the most common or informative types of glass objects present (cat. nos. 1–85). This is followed by a catalog of glass objects recorded in the Temple of the Winged Lions finds registers (cat. nos. 86–99), but which have not yet been located and which we have therefore not viewed firsthand. We have attempted to discuss as many of this second group of objects as possible in what follows, but in some instances, the details and/or graphic records available are too scant to do more than present them in the catalog.

Overall, the picture that emerges is that most of the glass found at the Temple of the Winged Lions and its surrounding area is consistent in style with the range of forms found in other parts of Petra in antiquity. The majority of these forms are free-blown, and many of these are likely to be regional productions, perhaps made at Petra itself, but they are supplemented by a smaller proportion of vessels, particularly mold-blown ones, that could conceivably have been produced farther afield. Throughout this chapter, we restrict ourselves (with exceptions)

[1] A few stray pieces were published in other venues; we mention some below.

to drawing on selected comparanda from Petra and the wider Southern Levant, because of the need for expeditious publication. Future work may further our understanding by undertaking further contextual analysis; studying this glass within the wider backdrop of glass from across the Eastern Mediterranean and/or compositional analysis of the assemblage may be desirable in the future but is beyond the scope of the current study.

Overview of the Assemblage(s)

In total, 2,170 glass sherds, weighing c. 2.767 kg, were held in the ACOR stores—these vessel sherds relate to a minimum number of individuals (MNI) of 305.[2] The excavation and finds history of the glass presented here means that it needs to be considered part of an overlapping series of groups rather than as a single unitary assemblage. The findspots of the glass can be summarized as follows:

1. Glass found from stratigraphically excavated contexts that Hammond uncovered in Area II, that is, the Temple of the Winged Lions and the adjacent workshops and other rooms, as well as glass recovered from the "SW Quadrant."
2. Glass found in Dumps 1, 2, 3, 4, and 6, which were entirely without stratigraphic context. As can be seen in Fig. 1.15, Dumps 3 and 4 are located to the west of the Area II, and Dump 6 is immediately to the east, which suggests that finds recovered when these dumps were sifted were probably originally from this area of Hammond's excavations. In contrast, Dumps 1 and 2 were located farther to the east of Area II, between it and the domestic units in Area I. This location means that artifacts recovered from these dumps could conceivably have come from Area II (i.e., the Temple of the Winged Lions and its environs) or from Area I (the residential complex).
3. Glass found in the area to the south of Area II known as "the Hole."

Glass was not evenly distributed across these different find locations. Most of the glass (97) was found in Dumps 1 (MNI of 205, 1,500 sherds, weighing c. 1842 g) and 2 (MNI of 20, 151 sherds, weighing c. 213 g); this may be because they originated closer to Area I, where Hammond's team recorded considerable quantities of well-preserved glass objects. Smaller quantities of glass were recovered from the Dumps closer to the Temple of the Winged Lions—Dump 3 (MNI of 2, 11 sherds, weighing 28 g); Dump 4 (MNI of 52, 297 sherds, weighing 494 g); and Dump 6 (MNI of 15, 100 sherds, weighing 97 g). Very little glass was recorded in Area II[3] itself—a little more than 43 sherds—presumably reflecting a lack of interest in vitreous materials on the part of Hammond and his excavation team; we could not locate these finds for further study by the present authors; we have already seen that only small quantities of glass made it into the AEP Finds Registers (cat. nos. 86–99). Similarly small quantities of glass (MNI of 3, 32 sherds, weighing c. 38 g) were recovered from "The Hole." Taken together, these figures suggest that relatively little glass may have been used in the Temple of the Winged Lions and its adjacent workshops, although we cannot be entirely sure about this due to the ambiguous origins of the materials in Dumps 1 and 2.

While we cannot be certain about the origins of the material from the dumps, we can nevertheless make a few observations about the overall composition of the material in terms of vessel shapes and uses. Most of the identified vessels presented here comprise open forms—bowls, beakers, and cups (MNI of 158). Closed forms—bottles, flasks, and jars—were apparently much rarer (MNI of 29). There were also a small number of fragments (MNI of 2) that probably relate to windows. These figures must be treated with caution because the glass, especially that from the dump contexts, is now in an extremely fragmentary state. This probably

[2] In addition to the 13 glass objects recorded in the AEP Finds Registers. Note that some bags within the AEP archive are not associated with a find place, so some of the figures here should be treated as approximate.

[3] This figure includes the glass from the so-called SW quadrant. Eight bags could not be located, so this count must be an underestimate.

reflects the fact that much of it was already in a fragmentary state when excavated during Hammond's original fieldwork on the Temple of the Winged Lions and was probably further fragmented by being buried and re-excavated during the TWLCRM project. As a result, a considerable number of rim sherds were too fragmentary to assign a form type (MNI of 117). By far the bulk of the diagnostic sherds come from Dump 1 (MNI of 205, or 67.2%), but the uncertain origins of the finds from the dumps mean that any further spatial analysis is unlikely to highlight meaningful patterns. Overall, most of the assemblage comprises to tablewares, particularly ones used for drinking, in line with Keller's (2006) argument that most glass in Petra was used for these purposes; where vessels likely served other purposes, we make this explicit in our discussion below.

Color

Soil conditions in Petra are often unkind to glass: much of the glass from the Temple of the Winged Lions and its environs is weathered to an opaque gunmetal gray or opaque white (accounting for 1,071 sherds or 49.35% of the total, and by weight 1,245 g or 40.09%).[4] Moreover, analyzing glass fabric colors is notoriously subjective and challenging, and we have therefore adopted the widest macro-descriptive groups in order to avoid painting an artificially detailed picture. Nevertheless, small glimpses of original color can often be seen, and it is possible to characterize the overall color profile of the finds as follows:

- Decolorized fragments were the most common fabric, often with pale blue or green tints (684 sherds or c. 31.5% of the total, and by weight 782 g or 28.32%).
- This was followed by pale blue fabrics (285 sherds or 13.13% of the total and by weight 465 g or 16.85%)—the "natural" color of ancient glass without other additives. There were also a much smaller number (five sherds) in mid-blue fabrics that may simply reflect a deeper shade of blue in thicker fragments.
- Greens, including bluish green (45 sherds, 2.07%, or 112 g, 4.06%) and yellowish green—sometimes called "olive green" in the scholarship—were both relatively uncommon (64 sherds, 2.95%, or 112 g, 4.06%).
- There were also trace quantities of other colors—various shades of greenish blue (six sherds), yellow (three sherds), aubergine (three sherds), red (one sherd), cobalt blue (one sherd), yellowish brown/amber (one sherd), and yellowish brown (one sherd).

The figures provided here encompass all the glass from the Temple of the Winged Lions taken together, and a more detailed breakdown by dump cannot reliably add to our overall characterization of the glass from this area because we do not always know where the finds came from. These figures are somewhat divergent from the color profiles for other published assemblages from Petra. Keller's synthesis of glass from Petra showed that decolorized and "natural" pale blue glass was most common in Nabataean (2nd to 1st centuries BCE) and Early Roman (early 2nd to mid-3rd centuries CE) assemblages, but decolorized glass became less common in the Late Roman period (mid-4th and early 5th centuries CE) (Keller 2006, 50, Tab 12, and Abb. 14 [Nabatean], 54, Tab. 15, 55, Abb. 17 [Early Roman], 69, Tab. 16, Abb. 30 [Late Roman]). On a sector-by-sector basis, the glass recovered from the Great Temple contained far less pale blue glass and a higher proportion of light green glass fabrics (30%), although when separated out by period, decolorized glass was more common among Roman-period wares than the Byzantine ones (Karz 1998, 229–230). In the later period, the green glass fabrics made up a greater proportion of the overall assemblage from this part of Petra. Only the colors of window glass from the Petra Church excavations were published, but here, blue/green glass predominated, although there were also some other colors—most notably olive-

[4] In a small number of instances (8 bags out of 389), glass from Hammond's excavations could not be located and so are not included in figures here, which should therefore only be viewed as giving an indicative overview of the glass colors represented.

green glass—but little to no decolorized glass (O'Hea 2001, 372, especially fig. 1). Greiff's analysis of glass from Jabal Hārūn, while brief, notes that colors in the blue to green range predominate for the pre-7th-century Byzantine glass assemblage, whereas darker greens, blues and yellowish greens begin to appear more commonly in the Umayyad period (Greiff 2016, 319). There was no commentary on the frequency of decolorized glass within the Jabal Hārūn assemblage, which may suggest that decolorized glass was relatively infrequent, although Greiff's analysis focused only on those samples submitted for chemical analysis, not the assemblage as a whole, and the apparent lack of decolorized glass may simply reflect sampling bias (Greiff 2016, 319). At present, and especially without a clear context for much of the glass presented here, it is unclear whether these differences in color prevalences mean that a greater proportion of the glass from the Temple of the Winged Lions and its environs belongs to the Early Roman period, as Late Antique forms are well represented, as we show below. Moreover, given that a large proportion of the glass presented here was so weathered that the color could not be determined, colors linked to glass mixes which do not weather as readily may be over-represented.

Vessel Forms

Mold-Blown and Other Notable Decorated Glass (Figs. 12.01–12.02)

Mold-blown glass makes up only a small minority of the overall assemblage—just 13 sherds in total. The small proportion of mold-blown glass objects is consistent with most assemblages from Petra, where Keller's survey shows that in general only a small proportion of both forms and of overall glass assemblages are mold-blown (Keller 2006), and in settlements across the ancient world—for example, at the *canabae* at Nijmegen, there were only about 30 mold-blown fragments compared with over 2,000 free-blown tableware fragments (Isings 1980). There were also a small number of notable decorated wares: vessels with wheel-ground decoration and with applied cobalt-blue decoration. The mold-blown vessels and other decorated glass from the Temple of the Winged Lions and its environs largely belong to the 1st–4th centuries CE, although some fragments might be later, reaching into the Byzantine period or beyond. Notable finds included:

Pillar-Molded Bowl
Cat. No. 1

A single fragment of ribbed glass (cat. no. 1, 2012.3688), which probably comes from a pillar-molded bowl, was recovered from Dump 2. This object belongs to a broader type well-known across the Mediterranean region and beyond. Vessels with molded ribs or pillars come in various forms, including straight-sided, hemispherical, and even globular shapes. Bowls of this type first appear in the Late Hellenistic period, during which time they have very robust ribs—and it may be that this example, with its partially preserved, thick, blocky pillar, belongs to these earlier types, but it is highly fragmentary and it cannot be excluded that the specimen belongs to one of a large number of different types that are attested in later periods, too. At Petra, these bowls have been found in the houses at Ez Zantur (Keller 2006, 188–190, Typ II.5a–c), in the North Ridge (Bikai 2020, 356, fig. 7.3.47), and the Petra Church excavations (O'Hea 2001, 371, no. 33, 374, fig. 6.33). The size and shape of the pillars or ribs also vary significantly. There is now a growing consensus that pillar-molded bowls were made by sagging a blank over a ceramic mold (Cummings 1980, 26–30; Grose 1989, 245–246). The ribs were likely formed by striking the heated bowl with a metal rod. Pillar-molded bowls are particularly common finds from the second quarter of the 1st century BCE until the late 1st century or early 2nd century CE (depending on the precise form) throughout the Mediterranean region and beyond (Lierke 1999, 51–55; Stern and Schlick-Nolte 1994, 72–79; Nenna 1993, 18–19; Nenna 1999, 103–10; Weinberg and Stern 2009, 33–36 provide a useful overview of chronology). This widespread distribution indicates that they were mass-produced items, which may

have been more costly than similar vessels but should not be considered luxury products.

Mold-Blown Vessel with Tongued Decoration
Cat. No. 2

There were also four small fragments of mold-blown glass (of which two were joining) with vertical tonguing that probably (as exemplified by cat. no. 2, 2013.2156) pertain to mold-blown skyphoi, although other vessels forms (including bowls and amphoriskoi) are possible (skyphoi: Isings 1957, 55–56, form 39). All these fragments come from Dump 1, but they were not found together, so it possible, although not certain, that they were once part of the same vessel. A similar fragment, albeit larger and still bearing an inscription attributing it to the Ennion workshop, widely considered among the most prominent and accomplished glassworkers of the early empire, was found at Ez Zantur in Petra and can be assigned on a combination of stylistic grounds and the stratigraphic contexts of similar finds elsewhere to the second quarter of the 1st century CE (Keller 2006, 195, Typ III.4 with earlier references). O'Hea (2016, 260–261, cat. TS60) has published another fragment from an uncertain vessel type from the Great Temple. More broadly, the Ennion workshop and other Sidonian competitors such as the Aristeas workshop, which produced distinct wares but with overlapping stylistic traits, were active in the first half of the 1st century CE (see Lightfoot and Wight 2014). Initially based in Sidon on the Phoenician coast, the workshop (or its molds) also appears to have moved to Aquileia in northern Italy. The skyphoi fragments from the Temple of the Winged Lions are too fragmentary to tell whether they belong to the Ennion workshop or one of its competitors, but in either instance we are clearly dealing with a high-end, and probably imported, product.

Unidentified Curved Ribbed Wall Fragments
Cat. Nos. 3–5

Three mold-blown ribbed wall sherds were also identified (cat. nos. 3–5). All of these fragments were small, and, in our view, it would therefore be imprudent to assign these to a specific class of artifact; they could conceivably relate to bowls or bottles, spanning a range of dates from the Nabataean period through to Late Antiquity; we have not been able to date them more closely.

Mold-Blown Base of Sidonian Bottle?
Cat. No. 6

A very fragmentary mold-blown base with faceted sides in a pale blue fabric (cat. no. 6, 2012.4821) was recovered from Dump 4. Due to its poor state of preservation, it is not possible to attribute this to a specific vessel form, although it is probable that it once belonged to a small prismatic vessel, such as the various mold-blown figural series dating to the 1st and early 2nd century CE (for a discussion of a range of such bottles, see Stern 1995, 113–148), or bulbous mold-blown amphoriskoi, some of which have been dated to the later 1st century CE at Petra (Keller 2006, 196, Typ III.6). Since we have insufficient grounds to relate this base to a specific series, however, we suggest that the piece should be tentatively dated to the 1st or 2nd century CE.

Grape Flasks or Amphoriskoi
Cat. Nos. 7, 89

There was also one extremely small fragment of a mold-blown vessel in the shape of a bunch of grapes, made of an aubergine fabric (cat. no. 7, 2015.5068), and a much better-preserved example is recorded in the Finds Register for 1985 (cat. no. 89, 1985.47).[5] Both small flasks and larger amphoriskoi with this kind of decoration are well known from the large number of well-preserved examples found in museum collections (Isings 1957, 94, form 78e, 108, forms 91a–b; see also Whitehouse 1997, 125–126, cat. nos. 630–631; Antonaras 2012, 80–81, cat. nos. 86–87; Stern 1995, 190–195, cat. nos. 119–128), but even when extremely fragmentary, as in this case, their distinctive texture makes them easily recognizable, although we cannot be sure whether we are dealing here with a flask or an amphoriskos. At Petra, vessels bearing

[5] Since it has not been possible to examine this second example firsthand, an alternative possibility is the hair of a head flask.

this form of decoration are typically dated to between the 1st and 4th centuries CE (Keller 2006, 195–196, Typ III.5). The smaller ones were presumably used for storing precious liquids such as cosmetics or perfumes, but the larger ones would have been perhaps best suited to containing the wine evoked by their decoration. More broadly, Berg (2023, 95) has also suggested that the use of grapes symbolizes abundance or plenty.

Prismatic Bottles
Cat. Nos. 8, 87

Prismatic bottles are represented by two fragments: a complete square base recorded in the Finds Register for 1981 (cat. no. 87, 2013.1981) and a base or body corner fragment of a probable four-sided bottle (cat. no. 8, 2012.3688) that comes from Dump 4. Vessels of this type, which are typically mold-blown, are well known across the Roman world and its neighbors (Isings 1957, 63–67, form 50; Charlesworth 1966). These vessels are usually blown into a box mold made of stone, terracotta, or possibly wood, comprising four (or more) smooth-sided walls, which slotted into a base or die piece that formed the bottom panel of the mold. The whole mold of five (or more) pieces was then held or clamped together during use (Cool 2024, 7–10). The neck and rim are formed by tooling, after the partially formed vessel has been removed from the mold and the handle is applied, by heating it and sticking it to the neck and wall of the bottle (Stern 1999, 468; Stern 2021, 1296; Cool 2024, 7–10). More than 25 prismatic four-sided bottles have been found at Petra and its environs, usually in contexts dating between the 1st and the 3rd centuries CE (Keller 2006, 198–199, Typ IV.3; O'Hea 2016, 272, TS 101 and 67 with 270, fig. 14.10). While there is considerable variation in the capacity of such bottles—the same mold could be used to make shorter and taller versions of the same broad vessel type (Swift 2017, 216–224)—their overall size and often small rim diameters mean they are probably best suited to the storing, decanting, and/or short-distance transport of commodities used or consumed in relatively large quantities, such as oil and wine.

Beaker with Mold-Blown Spiral Ribs?
Cat. No. 9

A single beaker with possible mold-blown decoration was also recovered (cat. no. 9, 2013.5050). This vessel features a cracked-off and slightly out-flexed rim; slight traces of spiral ribs are preserved on the exterior. The fragmentary nature of this vessel has hindered the identification of close comparanda, but this may once have been an optical-blown vessel, made by blowing the gather into a mold and then removing it and inflating and/or further manipulating the vessel to achieve the desired body shape. The surviving parts of the form, particularly the rim type, is consistent with other beakers from Petra, discussed below (cat. nos. 19–23). A base fragment with similar decoration was recovered at the Finnish Jabal Harun Project site in Petra in a Late Antique context (Keller and Lindblom 2016. 274, fig. 6.10, 303, no. 103).

Mold-Blown Cup with Honeycomb Pattern
Cat. No. 10

A single wall sherd bearing a raised mold-blown honeycomb design (cat. no. 10, 2012.2077) from Dump 1 probably belongs to a type of open-form vessel, sometimes called a Wabenbecher, which is made by blowing the gather into a mold and then removing it from the mold before inflating it, as with 2013.5050 (cat. no. 9), discussed above (Isings 1957, 133, form 107a; Haberey 1966; Hayes 1975, 147, no. 643). This method of production can result in vessels (and honeycomb patterns) of differing size, and the fragment from the Temple of the Winged Lions is probably an example on the larger end of the scale; the cells of the honeycomb on other published examples are often smaller. The vessels are typically dated to the 4th century CE and are found in both the Western Roman Empire, in the East, and beyond (e.g., from Rome: Fremersdorf 1975, 70, no. 679, pl. 30l from Cologne: Fremersdorf 1961, 57–58, Taf. 113–115; from "Syria"/"Between Tyre and Sidon": Eisen 1927, 319, pl. 72a–b). As many as 11 fragments have been identified at Petra (Keller 2006, 195, Typ III.3). This sherd should be interpreted as coming from a high-end tableware. We do not

currently have enough information about the place where these vessels were produced to be sure, but it is possible that it was an import rather than a local production.

Ribbed Flask
Cat. No. 11

Later finds are represented by a wall sherd of a fine mold-blown vessel, probably a bottle, with horizontally blown ribs (cat. no. 11, 2014.274): similar finds are known, for example, from 4th–6th-century CE contexts at Jerash (Blanke et al. 2024, 12, fig. 7.14; Barfod et al. 2018, 625, fig. 3, no. 10), although comparable ribbed vessels are also known from later (Umayyad) contexts at Jerusalem (Winter 2019, 65).

Etched Cone Beaker
Cat. No. 94

Hammond's excavations recovered a blue conical beaker with etched or wheel-ground decoration on the exterior (cat. no. 94, 1990.37), published but not discussed in Hammond and Johnson 1994 (335, fig. 5). The etched decoration is described in the AEP Finds Register as "geometric and floral decorations ground," and we might add that it comprises at least five horizontal registers of decoration, one atop the other; since the available section drawing shows only some of the decoration, further interpretation of this iconography remains a task for future research. The AEP Finds Register relates that the beaker was found in Area II.7 in a (collapse?) layer associated with the earthquake of 363 CE. The form is consistent with a type of thick-walled conical beaker well known both across the Roman world in general and in Petra in particular—Keller identified more than 50 examples in his survey of the city's glass (Keller 2006, 197, Typ IV.1b). He dates them to the 4th century CE in general, and they have been identified to the middle of that century in Petra. The etched/wheel-ground decoration is clearly high-end work; this vessel should be viewed as a luxury tableware.

Plate Lamp
Cat. No. 12

Cat. no. 12 (2014.1798) is a wall sherd with a raised omphalos-like design enclosed on four sides by a raised square border. A similar wall sherd was recovered during the Petra North Ridge excavations, where it was suggested that this might once been part of an "open plate lamp meant to be hung from the ceiling and which, sometimes, has engravings designed to be seen from below" (Bikai 2020, 351 with 375, fig. 7.3.58; on engraved lamps see also O'Hea 2012, 296–298). During the preliminary research underpinning this report, it has not been possible to identify further comparanda for this piece; consequently, we have not been able to assign a manufacture date of this object, although this may be arrived at by stratigraphic analysis in the future (it comes from SW Quadrant, Test Trench 1B, Loc. 5, Pail #13) (on these types see: Grose 1989, 245–246; Nenna 1999, 103–110; Weinberg and Stern 2009, 33–36).

Vessels with Wheel-Ground Facets
Cat. Nos. 13–14

A single wall sherd bearing a combination of probable oval-shaped wheel-ground facets and horizontal linear decoration was recovered from Dump 1 (cat. no. 13, 2013.2054). Vessels with similar facets have been attributed to both the Eastern and the Western Roman Empire by Whitehouse, with dates varying between the 3rd and 5th centuries, depending on form (e.g., Whitehouse 1997, 258–259, nos. 441–442, 254–255, nos. 452–453). Comparable decoration also appears in archaeological contexts in the Eastern Mediterranean, for example, at Thessaloniki (3rd–5th centuries CE; Antonaras 2017, 20–21, 199, cat. no, 63, 322, pl. 2.63) and at Dura Europos (Clairmont 1963, 74, no. 275). It is very likely that this fragment is therefore part of a vessel that belongs to the Late Roman or Early Byzantine periods, although earlier dates are possible. While the full vessel form of this fragment cannot be determined, most of the examples just cited are open forms (bowls and beakers); the straight sides of this piece may suggest that it too was a beaker, and we should

therefore tentatively identify this fragment as an open form; it was perhaps a piece of high-quality tableware.

Another wheel-ground sherd has proven more difficult to identify because of its now-fragmentary and heavily weathered state: the piece (cat. no. 14, 2015.4817), from Dump 4, appears to feature up to four shallow sub-square facets. The preservation is so poor that it is unclear whether they were once more rounded in shape—and, indeed, vessels with circular facets are attested in 4th-century CE contexts at Petra, although they may have been produced earlier, in the 3rd century, too (e.g., Keller 2006, 212–213, Typ VII.23A–E). While we have not been able to find close comparanda in the time available, Late Antique vessels with uneven facets are known, for example, from elsewhere in the Near East—an unguentarium with uneven facets now in the British Museum (BM 91519), dating to the 4th–5th century was unearthed in Kuyunjik (Nineveh), Iraq. It is therefore likely that 2015.4817 is also of Late Antique or Early Byzantine date, especially as much of the wheel-ground glass from Petra dates to this period. Facet cutting was a relatively luxurious means of glass decoration as it requires both considerable skill and time to undertake; moreover, mistakes can lead to breakage and loss of the entire object. These items are therefore high-end goods, perhaps imports.

Hemispherical Bowls with Linear Wheel-Ground Decoration
Cat. Nos. 15–16, 93, 96

A fragment of a deep hemispherical vessel, probably a bowl, with horizontal linear wheel-ground grooves on the exterior, was recovered from Dump 2 (cat. no. 15, 2012.3722). Another wall sherd with similar wall decoration may belong to the same vessel or another like it (cat. no. 16, 2013.1979). The vessel's rim is missing, which makes it hard to assign to a precise type, but it was probably once a thick-walled deep bowl; similar examples with out-turned, cracked-off rims are typically dated to the 4th century CE in Petra (Keller 2006, 205, Typ VII.9d; Frösen and Fiema 2002, 245, cat. no. 61; O'Hea 2016, 281, TS 39, with 278, fig. 14.16). At least two such bowls were recovered during Hammond's excavations of the Temple of the Winged Lions and included in the inventory lists (see cat. nos. 93 and 96). The second of these, 2001.17, is decorated on the exterior with a large *eta*, perhaps part of dedication or a mark of ownership; it is too fragmentary for us to ever know more. In Hammond's finds registers, the first was attributed to (before) 363 CE and the second is described as "Late Roman." Several more of these bowls were also found in the domestic residences in Area I of Hammond's excavations but remain unpublished. These bowls are best interpreted as tablewares.

Applied Cobalt Decoration
Cat. Nos. 17–18

Dumps 1, 2, and 4 also contained least 13 sherds of vessels in decolorized or yellowish-green fabrics decorated with cobalt-blue blobs or prunts (cat. no. 17, 2013.2112). This kind of decoration is attested elsewhere at Petra: for example, in the domestic complexes at in Ez Zantur (Keller 1996, 300–301, nos. 19–20, Abb. 897; Keller 2006, 197, Typ IV.1c, nos. 201–202) and in the Petra Church (O'Hea 2001, 375). Blobbed or prunted decoration is well known across the wider empire and is typically dated to the Late Roman period, and particularly the 4th century CE (Erdmann 1977, 109). These body sherds are difficult to assign to specific forms, although the curvature of some suggests that they were beakers; however, this is not strong evidence, and other forms cannot be excluded. In other instances, the applied pattern comprises gently meandering trails (cat. no. 18, 2014.4859); similar examples are known from Late Antique contexts at Jerash (Blanke et al. 2024, 13, fig. 8). None of this decoration has any strict functional use, and these sherds are therefore best viewed as representing a form of "fineware" or tableware, although not of the highest order.

Free-Blown Glass

Most of the rest of the assemblage is characterized as free-blown glass. As we have already mentioned, beakers were the most common free-blown vessels, but there were

also bowls. The high numbers of beakers in particular suggest that these vessels were used primarily for drinking and to a far lesser degree, serving (although some of the Late Antique forms could also have been used for lighting, as we highlight below). Closed forms, although not entirely absent, made up a smaller proportion of the assemblage; these came in a variety of sizes, and probably related to the storage and/or serving of relatively precious liquids.

Open Forms: Beakers
Cat. Nos. 19–35, 93
(Fig. 12.03)

Beakers with Cracked-off Rims and Straight or Conical Sides
Cat. Nos. 19–23, 93

One of the most common open forms is a broad family of beakers with cracked-off up-curving rims and conical sides (cat nos. 19–23). At least 67 examples were identified in the assemblage and a vessel with a conical base and body, probably also from a beaker, is listed in the Finds Register for 1990 (cat. no. 93, 1990.28). In the southern Levant more generally, these vessels are most commonly dated to the 3rd and 4th centuries CE, although other examples have been identified in the 1st and 2nd centuries and later, that is, into the Byzantine period.[6] The versions with out-splayed rims are dated to between the 1st and the 5th century CE at Petra, depending on details of decoration and body shape, most of which cannot be established in relation to the material under discussion due to its highly fragmentary state (Keller 2006, 213–215, Typ VII.25). These vessels were likely used in drinking, although it also cannot be excluded that some of them were used as floating-wick lamps.

Beakers with Fire-Rounded Rims and Straight or Conical Sides
Cat. Nos. 24–30

Another common group of beakers, attested at the Temple of the Winged Lions by at least 51 examples, comprises beakers with fire-rounded rims (e.g., cat. nos. 24–30, fragments from 2013.2178). In some cases, these vessels are decorated with thick horizontal trails on the exterior (e.g., cat. nos. 29 and 30, 2015.4870 and 2013.2134). It should also be noted that these rims can be associated with a variety of different forms with radically different types of foot or base—including pointed "feet" for lamps, stemmed goblet bases akin to those of modern wineglasses, pushed-in ring feet, or even or simple bases without further adornment (for a review in Petra see, e.g., Bikai 2020, 345). Moreover, the walls of these beakers can be either conical or straight sided, although in practice it is often very difficult to differentiate between the two when only the very uppermost portion of the vessels are preserved, for which reason these vessels are presented together here. Lamp feet and goblet bases are highly distinctive vessel forms, and yet only two possible lamp feet (see below) and no goblet bases were identified in the assemblages from the temple; we are therefore probably dealing with vessels with either conical bases or pushed-in ring feet. Fragments of straight-sided vessels with fire-rounded rims have been found, for example, in the Petra Church excavations (O'Hea 2001, 371, no. 35, 374, fig. 6.35) and on Petra's North Ridge (O'Hea 2001, 371, no. 35, 374, fig. 6.35). At Petra, examples of conical beakers have been identified at Ez Zantur in 4th- and early 5th-century contexts (Keller 2006, 197–198, Typ IV), but across the Eastern Mediterranean region, conical beakers are typically considered to belong to the 4th–8th centuries CE (Jackson-Tal 2021, 16–17, with further bibliography). Despite vessels of these kinds commonly being called "beakers"—a term that implies a connection with drinking—it should be acknowledged that they could also potentially be used as floating wick lamps (see, e.g., Olcay 2001).

[6] Gamla (early contexts): Jackson-Tal 2016, 20–21, fig. 8.19.108, 111. For Late Roman and Byzantine contexts see, Jerash: Jackson-Tal 2021, 15, 28, cat. no. 19 with 27 fig. 2.19; Meyer 1988, 189 and 191, fig. 6.F. Scythopolis: Katsnelson 2014, 24 and 27–28, fig. 2.3–5; Winter 2015, 210, fig. 5.1.8. Neapolis: Sarig 2009, 26–27, pl. 7.6. Capitolias: Burdajewicz 2017, 671, fig. 6.3. Sî: Dussart 1998, 80, pl. 13.7–14.

Beakers with Folded Rims
Cat. Nos. 31, 32

Also present were several beakers with rims that had been rolled or folded inward/outward, sometimes creating a slight lip on the interior/exterior (MNI of 4, e.g., cat. nos. 31–32, two sherds from 2013.2178). As with bowls with out-rolled rims, these vessels have an extremely broad chronology and are typically dated to the 1st–7th centuries CE in the Eastern Mediterranean (Jackson-Tal 2021, 15 with earlier references; for, an example see Jackson-Tal 2021, 28, no. 13 with 27, fig. 2.13).

Beakers with Cracked-off Rims and Bulbous Bodies
Cat. Nos. 33–35

Another class of beakers is made up of thick-walled vessels with straight, cracked-off rims and bulbous bodies (MNI of 4; see, for example, cat. nos. 33–35). These vessels belong to a broader class of similar beakers of the Late Roman period (mid-3rd to 5th centuries); the fragmentary state of the examples from the Temple of the Winged Lions means they cannot easily be assigned to a known subtype (Keller 2006, 214–215, Typ VII.27a–d).

Open Forms: Bowls
Cat. Nos. 36–41
(Fig. 12.04)

Bowls with Out-Rolled, Folded Rims
Cat. Nos. 36, 37

Larger-diameter open form vessels are uncommon, and most of these belonged to vessels with outward-rolled tubular rims (MNI of 9; see, e.g., cat nos. 36 and 37, 2014.1800 and 2013.2070). In some instances, these rims have been flattened. Bowls with rims of these type have an extremely long life in the ancient world—spanning broadly the 1st through 7th centuries CE—and on the basis of the small sample here, it is therefore especially challenging to assign them to a specific chronology (Jackson-Tal 2021, 15). Comparable rims are common finds in other parts of Petra, although again the longevity of the rim type and the great range which it encompasses means that it is difficult to narrow down the date of these objects.[7] The use to which these vessels were put is also ambiguous, especially when they are in such a fragmentary state. In some instances, they may have served as tablewares, but in other instances, particularly when fitted with handles for suspension, they probably served as floating-wick lamps (e.g., Keller 2006, 224–225, Typ VII.49; O'Hea 2001, 371, no. 8 with 374). In one instance from Dump 1, a handle was attached to the rim (2013.2070), and several other handles (a sample of which were discussed below) were found among the assemblage; together, these may indicate that some of these rims come from lamps.

Bowls with Outward-Folded "Figure-of-Eight" Rims
Cat. No. 38

A more intricate form of outward-folded rim occurs on a bowl with a larger (MNI of 1), double-folded rim that in profile resembles a "figure-of-eight" (cat. no. 38, 2014.1795). Just like other bowls with rolled rims just discussed, this type is typically dated to the first seven centuries CE.[8]

Bowl with Tubular Folds in Body
Cat. No. 39

Another, less common form of a bowl (MNI of 5) was represented by a single example of a bowl with a single tubular fold below the rim (cat no. 39, 2014.4838), made after blowing by turning the edge inside out and then folding it back from the top, before working the rim. Across the Southern Levant, bowls are most sometimes dated to the 1st–2nd centuries CE, but they also appear in Late Roman contexts.[9] At Petra, similar

[7] For example, Ez Zantur: Keller 2006, 209, Typ VII.18 (4th-century contexts), 224–225, Typ VII.49 (5th- to 8th-century contexts). Petra Church: O'Hea 2001, 371, no. 8 with 374, fig. 6.8. North Ridge: Bikai 2021, 345, Rim Type 2, with 352, figs. 7.3.9, 7.3.10, 7.3.JJ.

[8] Jackson-Tal 2021, 15 with earlier references. For example, at Jerash: Jackson-Tal 2021, 28, nos. 15 and 16 with 27, figs. 2.15–16. Tel Zira'a: Hoss and Keller 2017, 125, pl. 2.15.4. Philadelphia: Dussart 1998, 76, pl. 11.12, 16.

[9] Early Roman contexts, see e.g., Jerash: Jackson-Tal 2021, 14, 26, cat. nos. 5–7, with 25–26, figs. 5–7. Late

vessel bodies are attested in 4th- and early 5th-century contexts, and Keller suggests they are a production of the 4th century.[10] In the material record at Petra, vessels of this kind range in size and include smaller (diameters of c. 10–15 cm) and larger bowls (over 20 cm); they should be interpreted as inexpensive tablewares.

Thick-Walled Hemispherical Bowl with Cracked-off Rim
Cat. No. 40

Among the other bowls was a thick-walled hemispherical bowl with a cracked-off and polished rim (attested in as many as three examples, e.g., cat. no. 40, 2013.2093). This vessel is smaller (diam c. 12.2 cm) than some other examples from Petra, which are typically around c. 15 cm in diameter, although they can be as large as 20 cm or even bigger. Keller has identified these vessels in mid-4th-century contexts, and they are generally considered 4th-century productions (Keller 2006, Typ VII.5b).

Stemmed Lamps
Cat. No. 41

A small (diameter c. 1.6 cm) base in a pale greenish-blue fabric was recovered from Dump 4 (cat. no. 41, 2013.4864); another similar example (2013.2195, not illustrated) was recovered from Dump 1. It is possible that these bases come from a stem for a bowl-lamp. Typically dated to the 4th–8th centuries CE across the Mediterranean (Jackson-Tal 2021, 20 with further bibliography), lamps of this kind have been found at Ez Zantur (Keller 2006, 225, Typ VII.51a–b), the Petra Church (O'Hea 2001, 370, no 4 with 374, fig. 6.4), and the North Ridge in Petra (Bikai 2020, 345, Base Type 2 with 352, figs. 7.3.5, 7.3.7, 7.3.8). These lamps were filled with oil and placed by the foot into a polycandelon (candelabra) or other holder; a wick, sometimes supported by a lead wick-holder, was floated on the surface and lit in order to provide light. They are most commonly associated with church contexts (Duncan-Jones 2017), so this may be a residual find from elsewhere, although it cannot be excluded that such lamps were sometimes also used in other public or private contexts.

Closed Forms
(Fig. 12.05)

As mentioned above, an MNI of 29 closed forms vessels were identified in total. We do not attempt to quantify the individual vessel types below due to the extremely fragmentary nature of the assemblage and instead present a selection of the better-preserved types.

Bottles/Flasks with Fire-Rounded Funnel-Shaped Rims
Cat. Nos. 42–44

Prominent among the closed forms were bottles or flasks with funnel-shaped rims (cat. nos. 42–44). The examples from the Temple of the Winged Lions have fire-rounded rims and are decorated with thick applied horizontal trails. It should be emphasized that this is a particularly ambiguous type of vessel, because in instances where part of a profile is preserved but too little of the rim survives to estimate the diameter, a vessel identified as a flask could equally be a beaker/bowl/lamp, as Jackson-Tal (2021, 17) has noted. Bottles/flasks with funnel-shaped rims are typically dated to the Late Roman, Byzantine, and Early Islamic periods (4th–8th centuries CE) across the Southern Levant.[11] At Petra, the chronology appears to be slightly earlier in some cases: Keller has identified a variety of similar flasks with and without applied trails; these can be dated to the 3rd through 5th centuries CE, depending on details of their overall form, although some have also been found in later

Roman contexts: Scythopolis: Katsnelson 2014, 24*, fig. 1.5–6; Gadara: El-Khouri 2014, 95, fig. 5.14. Capitolias: Burdajewicz 2017, 665, fig. 2.1. Neapolis: Sarig 2009, 24, pl. 15.12. Samaria: Crowfoot 1957, 414–415, fig. 96.4. Jalame: Weinberg and Goldstein 1988, 53–54, fig. 4-15.109, 111–12.

[10] Keller 2006, 206, Typ. VII.10c (4th century), 206–207, Typ VII.11d (4th century), 207–208, Typ VII.13d (4th century, with some finds in the early 5th century).

[11] E.g., at Jerash: Jackson-Tal 2021, 17, 32, cat. 42-44. Gadara: Dussart 1998, 68, pl. 7.15–16; Keller 2015, 214, fig. XVI.3.62. Scythopolis: Katsnelson 2014, 30*–31*, fig. 4.2; Winter 2015, 211–12, fig. 5.2.16–18. Neapolis; Sarig 2009, 28–29, pl. 18.5. Philadelphia: Dussart 1998, 68–69 and 74, pls 7.12, 18 and 10.13–15.

contexts (Keller 2006, 227–229, Typ VII.56 and Typ VII.57). The presumably rather generous size of such flasks may suggest they were used for storage and pouring of more copious liquids, such as oil or wine.

Bottle/Flask with Funnel-Shaped Tubular Rim
Cat. No. 45

A single bottle or flask with a funnel-shaped tubular, folded rim with an applied horizontal trail was also recovered from Dump 1 (cat. no. 45, 2013.2214). As with the bottles/flasks with fire-rounded funnel-shaped rims discussed in the previous sector, these vessels should probably be attributed to the late Roman through Early Islamic periods (4th–8th centuries CE) across the Southern Levant (Jackson-Tal 2021, 17, 32, no. 41). Broadly comparable rims also appear in 4th- through 7th-century contexts at Petra, albeit sometimes without applied trails (Keller 2006, 230, Typ VII.61a).

Bottles/Flasks with Sloping Rims
Cat. Nos. 46, 47

Another type of bottle/flask is differentiated from the previous by the presence of a sloping rim that merged into the funnel mouth before progressing to a cylindrical neck; examples from the Temple of the Winged Lions include cracked-off rims (e.g., cat. no. 46, 2014.4858) and fire-rounded up-turned rims (e.g., cat. no. 47, 2012.1925). At Petra, these similar forms, albeit typically with fire-rounded rims, can typically be dated to the 4th through 7th centuries CE (Keller 2006, 228, Typ VII.57a).

Unguentaria and Bottle/Flask Forms with In-Turned Rims
Cat. Nos. 48–50

Closed forms with in-turned rims in a variety of sizes are also attested in the material from the Temple of the Winged Lions (cat. nos. 48–50). Some of these vessels are likely to have elongated necks (such as cat. no. 50, 2012.2164). Especially when little of the rest of the vessels is preserved, these vessels can be notoriously difficult to date—such rim types are produced through much of antiquity and beyond, although sometimes scholars suggest that finer examples (such as cat. no. 49, 2013.2214) perhaps date to the 1st–3rd centuries CE (Jackson-Tal 2021, 17, 31, no. 38), but this cannot be ascertained in the case of our vessel due to the lack of context. At Petra, Keller has identified in-turned rims of finer vessels in contexts dating to the late 1st century BCE/early 1st century CE, as well as the mid-4th century CE (Keller 2006, 233, Typ VII.74). Larger diameter in-turned rims, sometimes large enough to produce a tubular rim, have been identified in contexts dating between the 3rd through 6th centuries CE (e.g., Keller 2006, 231–232, Typ VII.66a). In either case, wider date ranges certainly cannot be excluded, especially as the items presented here are extremely fragmentary. In general, these vessels are often quite small and therefore we should envisage that they contained relatively precious liquids or powdered solids such as perfumes, unguents, or medicines.

Bottles with Out-Turned Rims
Cat. No. 51

Another small-diameter closed form vessel, probably a small bottle or unguentarium, features a fire-rounded, out-turned rim and cylindrical neck (cat. no. 51, 2013.2214). A single, slightly smaller, vessel (diam. 2.5 cm) has been identified elsewhere at Petra but was not dated, and it was not possible to find further comparanda (Keller 2006, 233, Typ VII.71). It is hoped that the chronology of this type of vessel can be established by future research. Another possible closed-form type is represented with a flask(?) with a coil-stacked base. This type may be mirrored by a vessel from the Petra Church, possibly a flask, although O'Hea (2001, 371, fig. 6.38) notes it may also have been a base.

Large Jar with In-Folded Rim(?)
Cat. No. 53

A possible large vessel is represented by a robust, in-folded rim with a rounded edge on the interior and a flaring shoulder (cat. no. 53, (-).1971). This find is somewhat ambiguous, and it cannot be excluded that it belongs to

a vessel base,[12] but the rounded edge of the glass suggests that this interpretation is less likely. It has not been possible to find close comparanda for this vessel, so we have not been able to date it.

Large Jar with Squat, Constricted Neck
Cat. No. 54

The other notable large closed-form vessels included the rim of a large jar with a straight fire-rounded rim, constricted neck, and flaring body (attested by a single example, cat. no. 54, 2013.3685). Jars with rims of this kind are not common finds at Petra, but a single example with mold-blown ribs on the body has been recovered from a mid 4th-century CE context (Keller 2006, 200, Typ IV). As the specimen comes from Dump 4, we cannot be sure whether this rim also once belonged to a jar with similar mold-blown decoration or whether the rim belonged to a free-blown vessel. This vessel is likely a storage jar.

Vessel Bases
(Fig. 12.06)

Among the assemblage were a considerable number of base fragments (c. 163 in total), made using a huge variety of different techniques. Often, the generic nature of base-manufacturing techniques means that they cannot be assigned to specific forms, especially when one is working with highly fragmentary, largely contextless remains under significant time constraints, as we were when studying the glass from the Temple of the Winged Lions. We have already discussed a small number of these above, particularly in relation to lamps, but the others also deserve to be presented here briefly, for the reference of future researchers. Base types included the following:

1. *Simple bases* (cat. nos. 55–61), whether flat or with a slight concave "kick" in the bottom. As the simplest forms of glass vessel base known from the ancient world, these are widely attested at Petra.[13]
2. *Pushed-in bases and/or folded tubular bases* (cat. nos. 62–68), formed by the pushing in of the base while the glass is still hot; this often creates a fold or tubular rim at the meeting point of the base and the body of the vessel. Examples of this broad type of base are well known at Petra and given the variation in the shape of base thus created, these can belong to a wide range of forms.[14]
3. *Applied ring bases* (cat. nos. 69–72), created by adding a ring-shaped trail to the bottom of the vessel. While sometimes hollow in examples from elsewhere, the ring bases published here were solid. Comparable bases are similarly common at Petra.[15] They are sometimes ornamented with the addition of trails (cat. no. 72).
4. *Stacked or coiled bases* (cat. nos. 73–74), which, like the applied ring bases just discussed, are formed by applying ring-shaped trails, but in this instance, several of these trails, which are usually thicker than on applied ring bases, are built up to create a larger base; these may in fact be one continuous trail, although this cannot be assessed due to the fragmentary state of these finds. Examples of this type of base can be placed in the Late Antique period in Petra.[16]
5. *Pad bases* (cat. no. 75), formed by addition of a cone of glass to the bottom of vessel; these can be challenging to differentiate from, e.g., necks or funnel-shaped mouths when in a fragmentary

[12] Cf. Bikai 2020, 357, fig. 7.3.52, although this rim is outward folded in contrast to our in-folded rim.

[13] For illustrative examples, see Petra North Ridge: Bikai 2020, 345, Base Types 1 and 3, with 354, figs. 7 .3.21 and 7.3.24). Numerous similar finds are attested in other parts of the city.

[14] E.g., Petra Great Temple: O'Hea 2016, 277, TS 68 and TS 153, with 276, fig. 14.15; Petra North Ridge: Bikai 2020, 355, Fig. 7.3.28.

[15] E.g., Petra North Ridge: Bikai 2020, 357, fig 7.3.51; Petra Church: O'Hea 2001, 370–371, cat no. 15 with 374, fig. 5, no. 15.

[16] E.g., Great Temple: O'Hea 2016, 277, TS 23 with 276, fig. 14.15. Note that sometimes similar fragments have also been identified as rims; see O'Hea 2001, 371, cat no. 38 with 374, fig. 6, no. 38.

state, as in the case of the example published here. Some are decorated with tooling and others, such as cat. no. 75, with trails. Various sub-types of pad bases are known from Petra[17] and Jerash.[18]

6. *Tooled bases* (cat. no. 76), which have been given horizontal or diagonal tooling at the edges to create slightly pulled-out feet. Only one extremely fragmentary example was identified in the glass published here but some broadly comparable bases have been found elsewhere at Petra.[19]

Vessel Handles (Fig. 12.06)

A total of 22 vessel handles were also recovered from all the assemblages. These could belong to open and closed forms (e.g., the possible lamp handle mentioned above, i.e., cat. no. 37, and juglet, cat. no. 95). A representative selection is presented in the catalog (cat. nos. 77–80) but not analyzed further here due their fragmentary state; these likely relate to a range of different vessel types and it also cannot be excluded that some of them were actually once part of glass bangles.

Other Objects (Fig. 12.06)

Window Glass

It is also likely that some of the glass recovered from the Temple of the Winged Lions comes from windows—66 potential window fragments were identified across Dumps 1, 2, 4, and 6, although these were all very small (the largest weighed just 13 g), and it is therefore possible that some of these small, flat fragments relate to plates or dishes. These appear to have been made using a variety of techniques: four fragments from Dump 1 appear to have been made by being poured and stretched, which sees hot glass poured out and then stretched out using tools, a technique common in the mid-1st to 4th centuries CE (Allen 2023, 41). A larger quantity also appears to have been made using the cylinder-blown method, in which a gather of glass is blown into a cylinder, cut, and then bent into flat window panes: this is largely a Late Antique innovation, with most identified fragments being dated to the 5th century CE or later, although some 4th-century CE fragments are also noted (Foy and Souen Fontaine 2008, 431–433, figs. 20–23). Moreover, a flattened tubular rim connecting to a flattened body was found in Dump 4 (cat. no. 81); this may relate to either a plate or perhaps a piece of crown window glass—a type of window glass made by gathering glass on a blow-pipe and then spinning; the resulting centrifugal forces leads to the formation of a circular glass window pane; this technique is also often considered of Late Antique date (Foy and Souen Fontaine 2008, 407), but some potential early finds from Israel (Max 2020, 37–39) and Britain (Charlesworth 1977, 182; Charlesworth 1979, 229, fig. 71, no. 42) could suggest a substantially earlier date between the 1st century BCE and the 1st century CE. However, these dates should be taken with extreme caution, as the advent of crown window glass cannot reasonably be interpreted as pre-dating the widespread use of the pontil rod, the tool upon which the glass is blown, which rose to prominence in the final quarter of the 1st century CE (Allen, 2023, 54; for the rise of the pontil rod, see Whitehouse 2015, 59). The edges are sometimes folded, presumably to avoid sharp edges and help fit it into a frame. We are dealing here only with small quantities of window glass—when compared with larger assemblages—and it is unclear whether these finds relate to the glazing of the Temple of the Winged Lions or other buildings. The variety of techniques could indicate that these pieces of window glass were made at different times in the history of this part of Petra. Glazing was clearly not uncommon in Petra: considerable quantities of window glass made using a variety of the techniques described above to produce in both orthogonal and round panes have been identified at other sites in Petra, most notably the pre-363 CE phase of the mansion at Ez Zantur (Keller 2006, 117), the Great Temple

[17] E.g., Petra North Ridge: Bikai 2020, 357, fig 7.3.48.
[18] Jackson-Tal 2021, 21, 30–31, cat. nos. 34–35, figs. 2.34–2.35.
[19] Petra North Ridge: Bikai 2020, 357, fig. 7.3.49. Petra Great Temple: O'Hea 2016, 284, TS 93 with fig. 14.19.

and the adjacent Byzantine bathhouse to the west (O'Hea 2016, 273, 285 ff.), Petra Church (O'Hea 2001, 371–372), and the churches on the North Ridge (Bikai 2020, 358). As a result of the lack of contextual evidence for the window glass from the Temple of the Winged Lions—which may be residual or relocated from elsewhere after breakage, we cannot use this as evidence to argue for glazing in the Temple of the Winged Lions and its environs.

Tesserae

A single small glass tessera was recovered from Dump 2 and a second was recovered from Dump 4 (cat. nos. 82–83). Tesserae are almost indestructible and given the negligible quantities involved it is unlikely that these reflect the presence of mosaics in the areas excavated by Hammond; it is far more likely that they reflect residual finds from elsewhere in the site; perhaps they once decorated a locale further upslope such as the Petra Church or other as-yet unexcavated buildings.

Counters

A plano-convex counter in a blue glass fabric was recovered from Dump 4 (cat. no. 84). Similar glass counters have been found in the Great Temple (Karz 1998, 335, fig. 6.131; O'Hea 2016, 258 TS73, with 259, fig. 14.1, no. 1) and the Petra Church (Bikai 2001, 417, no. 362). Another counter is recorded in the finds registers as coming from Area VI (cat. no. 98); it is described as "coinoid" in shape, but this could not be verified from the available graphic materials. Counters, especially plano-convex ones, have traditionally been interpreted as gaming counters, although in fact a range of other uses are possible—including as account tokens and as inlays for furniture or architectural settings. In recent scholarship, several new approaches have been proposed in order to disambiguate similar glass objects and their potential uses, although it is worth noting that this scholarship has focused on the Western Roman Empire to the exclusion of the East. Hilary Cool (2016) collated evidence for plano-convex glass counters accompanied by dice in funerary contexts and found that most counters within this category are consistent in diameter (c. 1.3–2.2 cm, and mostly between c. 1.6–1.8 cm). Cool used this diameter range to identify what she considers to be potential gaming counters at Pompeii. The counter from Dump 4—with a diameter of 1.6 cm—falls neatly within this range. However, Alessandro Pace (2022) has now suggested that this approach is unsatisfactory because it does not account for the fact that counters of this size and shape could still be used for non-gaming purposes. Pace prefers instead to identify counters as having been used for gaming only if they were found with dice or other objects with a clear ludic function. Based on this criterion, the fact that this counter was found in a dump means we have lost any reliable contextual data and have no way of saying whether this object was used for gaming or for other purposes. Nevertheless, we know based on other evidence that Petra had a lively culture of gaming at least in some parts of its history (de Voogt et al. 2017), and indeed several finds discussed by Courts in Chapter 14—a die and some counters—may also have been used for play.

Inlays

A possible inlay with a trapezoidal section was recovered from Dump 2 (cat. no. 85). The object appears to be intact as there were no clear signs of breaks and its smooth, flat front and back would make it suitable for insertion in a piece of furniture, an architectural setting or similar. Another possible inlay, this time apparently in the shape of an eye, is listed in the Finds Register for 1977 (cat. no. 97). It is likely that this inlay was inserted into a marble votive block or similar object; one example of such an object was recovered by Hammond in his excavations of Area I.[20] Hammond's team attributed this object to the Nabataean period.

[20] AEP Finds Register 1976.24: "Votive block. White marble. Flat rectangular slab; slotted note cutting; round inset glass bead eyes, blue and yellow; slots cut on rear for affixing; edges battered; note inset missing. H- 8.5 x base W – 8.4 cm." Indeed, while the other inlay (cat. no. 85) discussed above would be too wide to act as the nose inlay for this particular piece, it would be the right shape for a larger votive block.

Glassworking Remains

A single piece of glass recorded in the 1993 Finds Register is recorded as "Glassworker's specimen" (cat. no. 99). The further descriptive information records that the piece is a "[f]ragment of glass showing tool work marks" and attributes it to "AD 363," i.e., layers relating to destruction caused by the earthquake of that year. The available photographs are in black and white and are too low resolution for this identification to be verified, but future work may seek to clarify whether this was a piece of glassworking debris or a waster. It is important to note that in the absence of further evidence for glassworking—a furnace, crucibles, etc.—this piece does not provide sufficient evidence to suggest that glassworking was taking place in the Temple of the Winged Lions or its environs in the 4th century or earlier.

Discussion

The glass found by Hammond in the Temple of the Winged Lions along with the glass recovered by the Temple of the Winged Lions Cultural Resource Management Project is highly fragmentary and largely without detailed contextual information. Notwithstanding these challenges, the analysis and presented above allows us to make the following observations:

1. Substantial quantities of glass were in circulation in this neighborhood in antiquity; glass vessels and other artefacts are an important component of the material culture of Petra.
2. Most of the glass forms attested at the Temple of the Winged and its environs are paralleled in other parts of Petra where glass assemblages have already been published. Indeed, many of the open form vessels presented here are part of a local tradition of glass blowing which focuses on Southern Jordan and Judea. The small number of imported forms of glass further supports this interpretation, as has previously been noted in relation to the Ez Zantur assemblage (Keller 2006, 183–184).
3. Most of the glass vessels from the Temple of the Winged Lions are free blown, with only a small number of mold-blown and cast glass sherds having been recovered. This pattern of production methods is consistent with assemblages from other ancient sites, where most vessels from the 1st century CE onward are free blown. It is likely, although hard to prove, that many of these were locally worked, although some of the mold-blown glass is likely to be imported.
4. Most of the *identifiable* vessel forms relate to open-form vessels—many of these are likely to have been tablewares used for drinking or perhaps for serving, although it cannot be excluded that some of these, particularly in Late Antiquity, were also used as lamps. A much smaller proportion of vessels are closed forms, suitable for the storage of liquids and/or foodstuffs.
5. While large proportions of the assemblage were heavily weathered, rendering the original glass color unclear, it is evident that much of the assemblage was intentionally decolorized, and blue fabrics were also common; a range of other colors were also present and may originally have been more common.
6. Stylistic dating of the finds suggests that they cover an extended period running from at least the early 1st century CE through to as late as the 8th century CE. This suggests that we are looking at finds which relate to the heyday of the Temple of the Winged Lions and the adjacent workshops—and perhaps also the nearby residential complex in Area I, given that the bulk of the identifiable finds come from Dump 1, which lies between the Temple and this residential complex. However, the late dating of some of the finds may reflect sporadic activity in either area after both complexes had fallen out of use.

This chapter has aimed to present a preliminary view of the glass from this sector of Petra. The conclusions set out herein are intended to provide a first word on a set of

material which is very much deserving of further study. Desirable future steps include more detailed spatial and stratigraphic analysis for the limited finds which Hammond and his team recorded from Area II, as well as publication of the glass from the residential complex in Area I, much more of which can be tied to specific stratigraphic layers and/or rooms. It would also be desirable to undertake compositional analysis of the glass published herein in order to explore questions around glass manufacturing, circulation, and recycling.

Catalog of Selected Glass Pieces

The glass objects listed in this section of the catalog represent a selection of the finds currently held in the American Center of Research in Amman and were examined first-hand by the authors during two short study seasons in 2024.

Mold-blown and Other Decorated Wares (Figs. 12.01–2)

Pillar-molded bowl

1. 2012.3688. Dump 2. Pillar-molded bowl; upper part of partially preserved pillar. Pale blue. H. 1.2 cm; W. 2.4 cm.

Mold-blown vessel with tongued decoration

2. 2013.2156. Dump 1. Wall sherd with preserved horizontal tonguing; indistinct register above or below. Color uncertain. H. c. 3.4 cm; W. c. 2. cm.

Unidentified ribbed wall fragments

3. (-).2171. Dump 1. Wall sherd with mold-blown curving ribs or ridges. Decolorized. Measurements not available. Not illustrated.
4. 2013.2071. Dump 1. Wall sherd with mold-blown curving ribs or ridges. Pale greenish blue. H. c. 2.2 cm; W. c. 2.3 cm.
5. 2013.4677. Dump 4. Wall sherd with mold-blown curving ribs or ridges. Decolorized. Measurements not available. Not illustrated.

Mold-blown base of Sidonian bottle?

6. 2012.4821. Dump 4. Mold-blown vessel base with faceted sides. Pale blue. H. c. 0.7 cm; Diam. c. 2.5 cm.

Grape flask or amphoriskos

7. 2015.5068. Dump 4. Wall sherd of mold-blown vessel with "grape" decoration comprising contiguous small, hollow convex hemispheres meant to invoke a bunch of grapes. Aubergine. H. 1.1 cm; W. 1.6 cm.

Prismatic bottle

8. 2012.3688. Dump 2. Prismatic bottle base fragment, with part of straight-sided body preserved. Mid-yellowish green. H. 1.3 cm; W. uncertain, but more than 2.4 cm.

Beaker

9. 2013.5050. Dump 4. Beaker with out-turned, cracked-off, and polished rim; straight body with slight traces of diagonal ribbing(?). Decolorized. H. c. 1.9 cm; Diam. 10 cm.

Mold-blown cup with honeycomb pattern

10. 2012.2077. Dump 1. Body sherd with mold-blown honeycomb relief decoration. Decolorized. H. 2.7 cm; W. 1.4 cm.

Ribbed flask

11. 2014.274. SW Quadrant. Test Trench 16, Loc. 5, Pail #13. Wall sherd of flask with straight, vertical mold-blown ribs. Color uncertain. H. 3.5 cm; W. c. 2.6 cm.

Plate lamp

12. 2014.1798. Dump 6. Plate lamp(?) wall sherd with mold-blown dot-in-square motif. Color uncertain. H. 2.2 cm; W. 2.7 cm.

Open-form vessel with oval wheel-ground decoration

13. 2013.2054. Dump 1. Wall sherd with linear wheel-ground groove and oval(?)-shaped ground facets. Pale yellowish green. H. 2.6 cm; W. c. 3.6 cm.

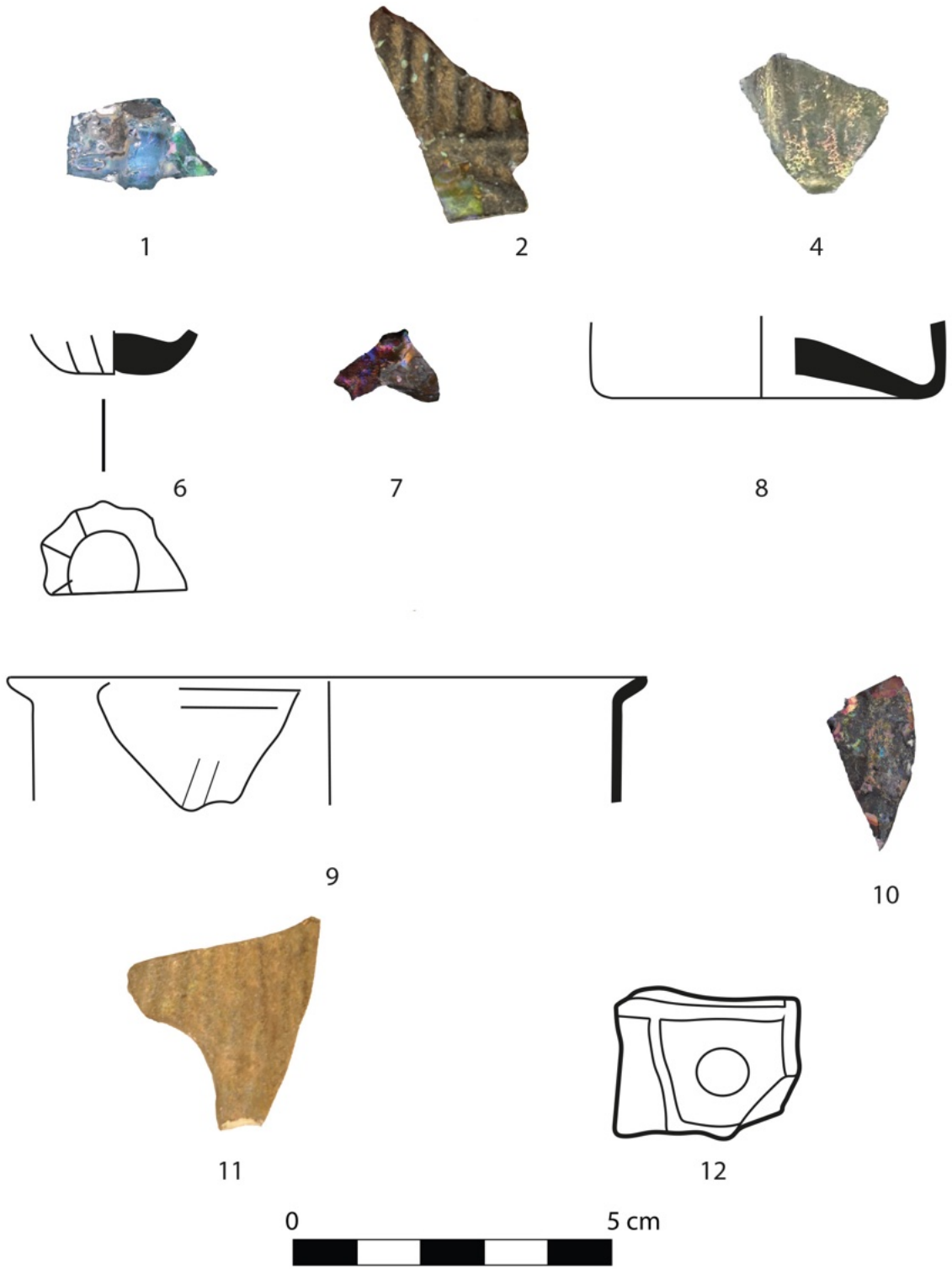

Figure 12.01. Selected decorated glass discussed in the text; numbers refer to the catalog numbers used here. (Drawings and photos: Tim Penn and Summer Courts.)

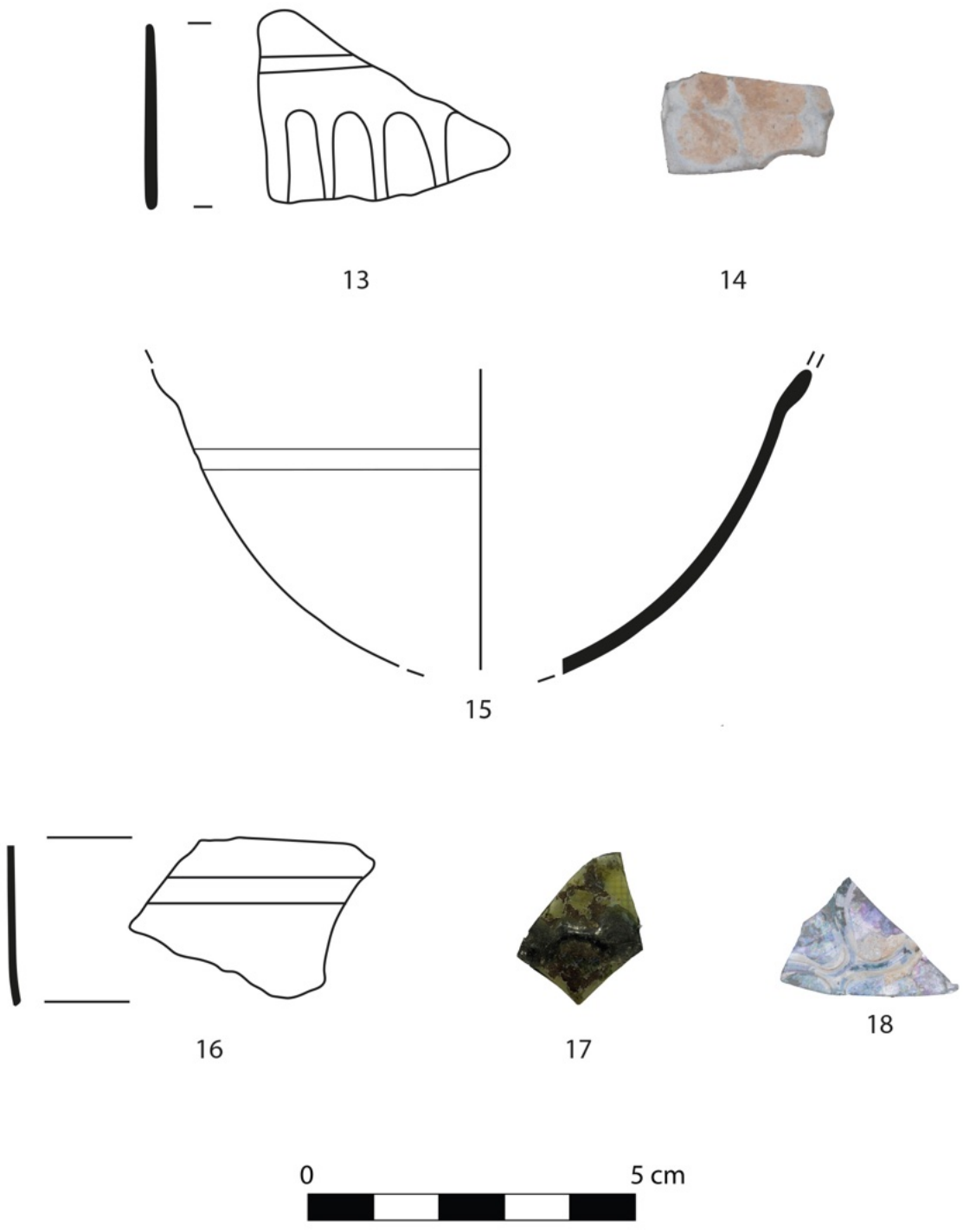

Figure 12.02. Selected decorated glass discussed in the text; numbers refer to the catalog numbers used here. (Drawings and photos: Tim Penn and Summer Courts.)

14. 2015.4817. Dump 4. Wall sherd of mold-blown(?) vessel with sub-square faceted decoration. Color uncertain, weathered white. H. c. 1.5 cm; W. 2.6 cm.

Bowl with linear wheel-ground decoration

15. 2012.3722. Dump 2. Deep hemispherical bowl with wheel-ground linear grooves on the exterior; rim not preserved. Color uncertain. H. c. 4.8 cm; Diam. uncertain.
16. 2013.1979. Dump 1. Wall sherd with shallow wheel-ground linear groove above facets, probably originally ovals. Decolorized. H. 2.8 cm; W. 3.8 cm.

Applied cobalt decoration

17. 2013.2112. Dump 1. Wall sherd with applied blue, pinched "stitch"-like decoration. Pale yellowish green. H. 2.4 cm; W. c. 2 cm.
18. 2014.4859. Dump 4; glass; wall sherd; wall sherd of vessel with thick blue trailed decoration. Core decolorized, trail pale blue. H. c. 1.8 cm; W. c. 2.5 cm.

Beakers
(Fig. 12.03)

Beakers with cracked-off rims and straight or conical sides

19. 2014.5049. Dump 4. Beaker with cracked-off and polished rim and slight ridge on the interior; straight-sided body. Decolorized. H. 1.3 cm; Diam. c. 7.0 cm.
20. 2012.1957. Dump 1. Beaker with cracked-off and polished rim; straight -sided body. Color uncertain. H. 2.4; Diam. uncertain.
21. 2014.1996. Dump 1. Beaker with slightly out-turned, cracked-off and polished rim curving inwards to a straight-sided body. Pale yellowish green. H. 2.4 cm; Diam. uncertain.
22. (-).3640. Dump 2. Beaker with out-turned, cracked-off, and polished rim curving inwards to a straight-sided body. Yellowish green. H. 1.5 cm; Diam. 8.0 cm.
23. 2014.1803. Dump 6. Beaker with out-turned, cracked-off rim and slightly conical body. Color uncertain. H. 1.7 cm; Diam. uncertain.

Beakers with fire-rounded rims and straight or conical sides

24. 2013.2178. Beaker with straight, fire-rounded rim and straight-sided body. Color uncertain. H. 2.1 cm; Diam. uncertain.
25. 2013.2178. Dump 1. Beaker with out-turned, fire-rounded rim. Color uncertain. H. 1.0 cm; Diam. 5.6 cm.
26. 2013.2178. Dump 1. Beaker with out-turned, fire-rounded rim and straight-sided body. Color uncertain. H. 1.3 cm; Diam. 6.2 cm.
27. 2014.1803. Dump 6. Beaker with out-turned, fire-rounded rim. Green. H. 0.8 cm; Diam. uncertain.
28. (-).2114. Dump 1. Beaker with very slightly out-turned, fire-rounded and thickened rim. Color uncertain. H. 1.0 cm; Diam. uncertain.
29. 2015.4870. Dump 4. Beaker with out-turned, fire-rounded rim and applied horizontal trail in a yellowish-green fabric. Decolorized core. H. 2.7 cm; Diam. 9.0 cm.
30. 2013.2134. Dump 1. Beaker with out-turned fire-rounded rim and applied horizontal trail. Color uncertain. H. 1.2 cm; Diam. 5.4 cm.

Beakers with in-rolled rims

31. 2013.2178. Dump 1. Beaker with in-rolled rim. Color uncertain. H. 1.0 cm; Diam. uncertain.
32. 2013.2178. Dump 1. Beaker with in-rolled, tubular rim. Color uncertain. H. 0.8 cm; Diam. 5.6 cm.

Beakers with cracked-off rims and bulbous bodies

33. 2014.5055. Dump 4. Beaker with straight, cracked-off, and polished rim and bulbous body. Decolorized. H. 1.5 cm; Diam. 7 cm.
34. 2012.1931. "The Hole." Beaker with straight, cracked-off and polished rim and globular body. Color uncertain. H. 2.7 cm; Diam. c. 10 cm.

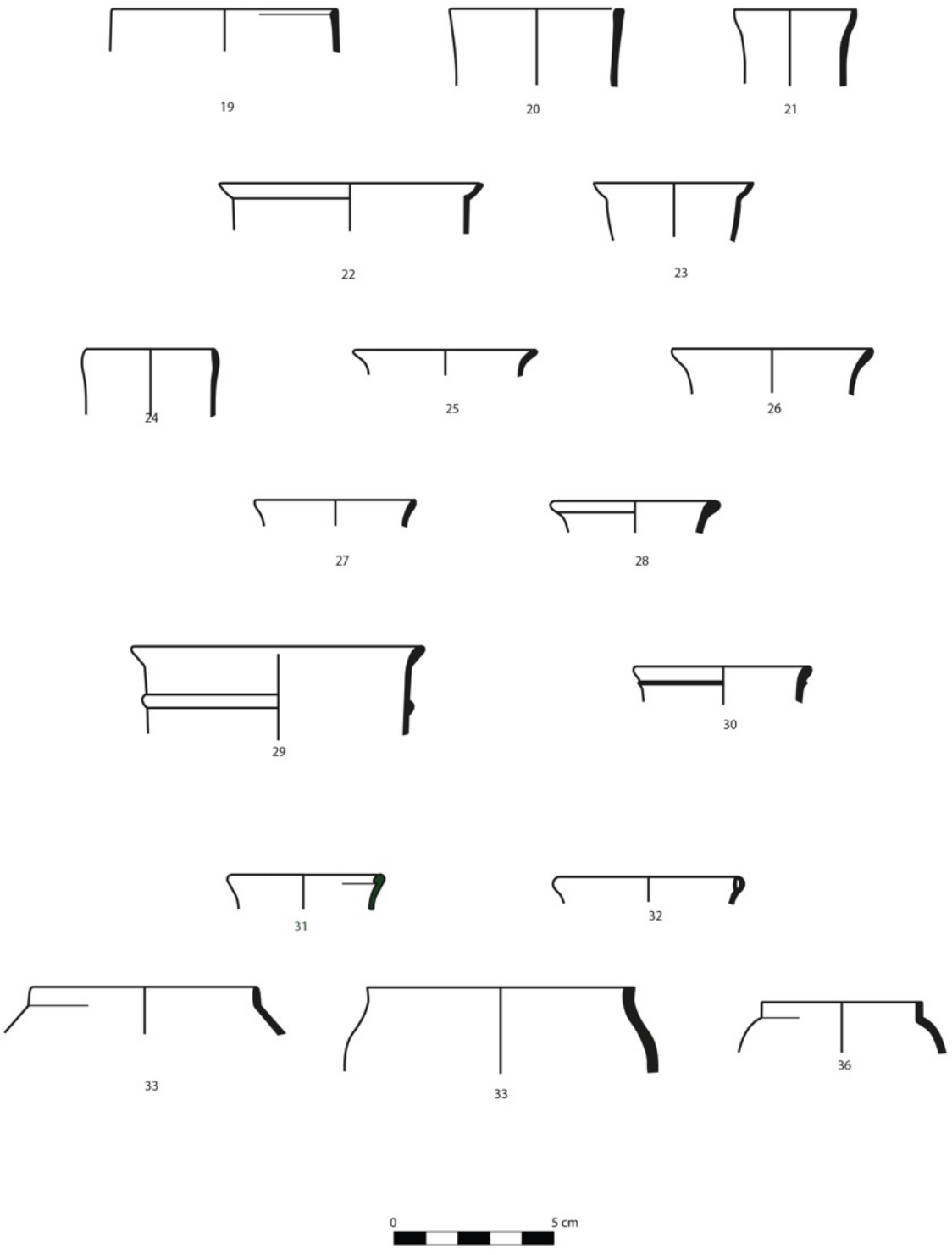

Figure 12.03. Selected beakers discussed in the text; numbers refer to the catalog numbers used here. (Drawings: Tim Penn and Summer Courts.)

35. 2014.5049. Dump 4. Beaker with straight, cracked-off, and polished rim, short straight neck, and bulbous body. Decolorized. H. 1.5 cm; Diam. 5.0 cm.

Bowls
(Fig. 12.04)

Bowls with out-rolled, tubular rims

36. 2014.1800. Dump 6. Bowl with outward-folded tubular rim. Color uncertain. H. 1.0 cm; Diam. 14 cm.
37. 2013.2070. Dump 1. Bowl lamp with outward-folded, flattened tubular rim and applied handle; extremely fragmentary. Color uncertain. H. c. 1.6 cm; W. 1.8 cm.

Bowls with outward-folded "figure-of-eight" rims

38. 2014.1795. Dump 6. Large bowl with outward-folded rim, pinched in the center to form a "figure-of-eight." Decolorized. H. 1.5 cm; Diam. 17 cm.

Bowl with tubular folds in body

39. 2014.4838. Dump 4. Bowl with out-turned fire rounded rim and tubular fold in body. Color uncertain. H. 0.9 cm; Diam. 11 cm.

Thick-walled hemispherical bowl with cracked-off rim

40. 2013.2093. Dump 1. Thick-walled bowl with cracked-off rim and hemispherical body. Color uncertain. H. 1.9 cm; Diam. 12.2 cm.

Stemmed lamps

41. 2013.4864. Dump 4. Stemmed lamp foot with hollow stem. Pale greenish blue. H. 2.4 cm; Diam. 1.6 cm.

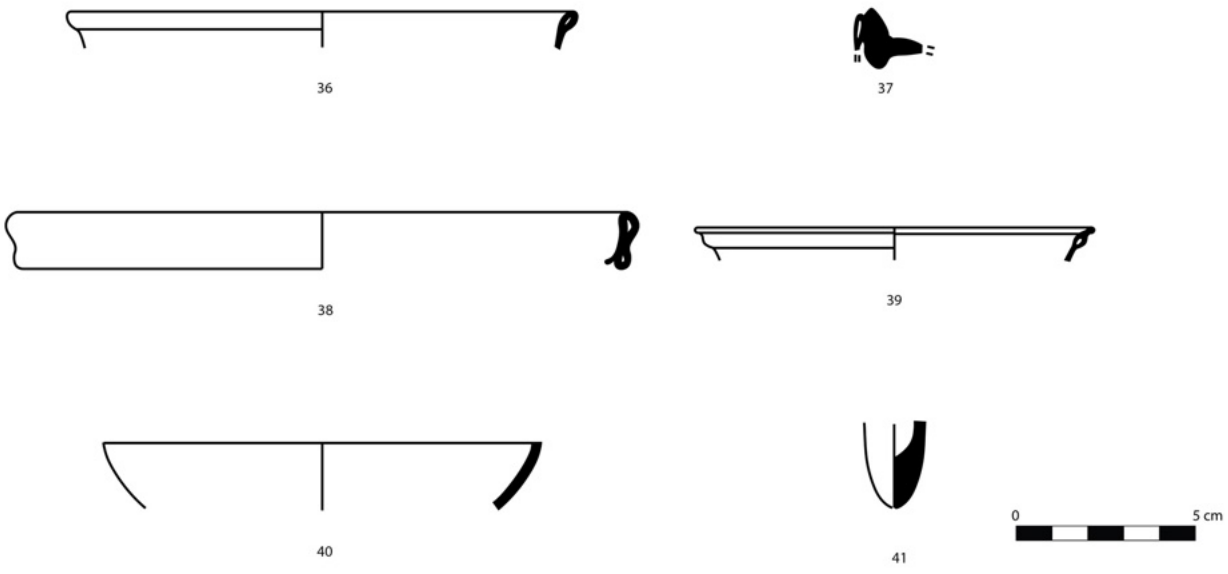

Figure 12.04. Selected bowls discussed in the text; numbers refer to the catalog numbers used here. (Drawings: Tim Penn and Summer Courts.)

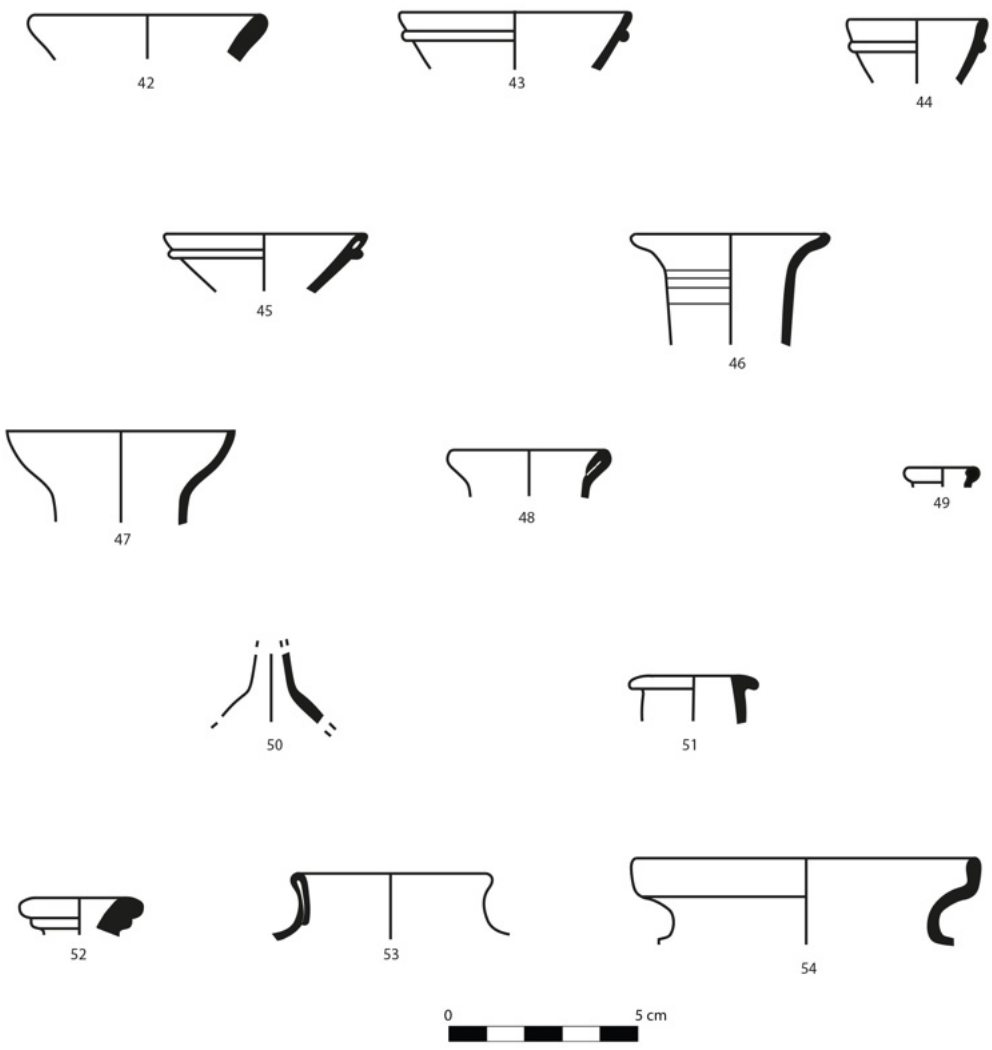

Figure 12.05. Selected closed-form vessels discussed in the text; numbers refer to the catalog numbers used here. (Drawings: Tim Penn and Summer Courts.)

Closed Forms
(Fig. 12.05)

Bottles/flasks with fire-rounded funnel-shaped rims

42. 2014.5065. Dump 4. Flask with funnel-shaped, fire-rounded rim; thick walled. Color uncertain. H. 1.2 cm; Diam. 6.0 cm.
43. 2013.3659. Dump 2. Flask with fire-rounded, funnel-shaped rim; thick horizontal trail on the exterior. Decolorized. H. 1.6 cm; Diam. 6 cm.
44. 2014.1799. Dump 4. Flask with fire-rounded, funnel-shaped rim; thick horizontal trail on the exterior. Decolorized. H. 1.8 cm; Diam. uncertain.

Bottle/flask with funnel-shaped tubular rim

45. 2013.2214. Dump 1. Flask with funnel-shaped in-folded tubular rim; thick applied mid-blue horizontal trail on exterior. Pale blue. H. 1.5 cm; Diam. 5.2 cm.

Bottles/flasks with sloping rims

46. 2014.4858. Dump 4. Flask with fire-rounded, out-splayed rim, and straight neck; fine incised lines on the exterior. Decolorized. H. 3.0 cm; Diam. 5.0 cm.
47. 2012.1925. "The Hole." Flask with cracked-off, sloping rim, and straight neck. Decolorized. H. 2.4 cm; Diam. 6.0 cm.

Unguentaria and bottles/flasks forms with in-turned rims

48. 2013.3679. Dump 2. Flask with in-folded rim and constricted, straight(?) neck. Pale blue. H. 1.2 cm; Diam. 4.0 cm.
49. 2013.2214. Dump 1. Unguentarium with in-folded rim. Color uncertain. H. 1.2 cm; Diam. 3.4 cm.
50. 2012.2164. Dump 1. Close formed vessel with flaring neck and sloping shoulder. Decolorized. H. 1.9 cm; Diam. uncertain.

Unguentarium with out-folded rim

51. 2013.2214. Dump 1. Unguentarium with out-splayed rim. Color uncertain. H. 1.2 cm; Diam. 3.4 cm.

Flask(?) with coil-stacked rim

52. Undated.1971. Dump 1. Flask with coil-stacked rim. Color uncertain. H. 1.1 cm; Diam. uncertain.

Large jar with in-folded rim(?)

53. 2013.3685. Dump 2. Large jar with large in-folded rim. Decolorized. H. 1.7 cm; Diam. 5.0 cm.

Large jar with squat, constricted neck

54. 2014.5049. Dump 4. Large jar with straight, fire-rounded rim and constricted neck. Decolorized. H. 2.1 cm; Diam. 9 cm.

Bases
(Fig. 12.06)

Simple bases

55. 2013.2211. Dump 1. Simple base with low kick. Decolorized. H. 0.8 cm; Diam. uncertain.
56. 2013.1810. Dump 3. Simple base with slight kick. Decolorized. H. 0.7 cm; Diam. 5.3 cm.
57. 2012.2187. Dump 1. Simple base with very slight kick. Color uncertain. H. 1.0 cm; Diam. uncertain.
58. 2013.2054. Dump 1. Simple, thick base with no kick. Pale blue. H. 1.4 cm; Diam. uncertain.
59. 2013.2054. Dump 1. Unidentified vessel with cylindrical body and slight kick in base. Pale yellowish green. H. 2.5 cm; Diam. uncertain.
60. 2012.2196. Dump 1. Unidentified vessel (possibly a bottle?) with lightly flaring body and slight kick in base. Color uncertain. H. 2.4 cm; Diam. 1.8 cm.
61. 2013.2181. Dump 1. Simple base; traces of possible tooling on edges of base(?). Color uncertain. H. 0.9 cm; Diam. 2 cm.

Pushed-in bases and/or folded tubular bases

62. 2013.2054. Dump 1. Base that has been pushed in to form a tubular foot-ring. Pale blue. H. 0.6 cm; Diam. 4.8 cm.
63. 2015.4823. Dump 4. Base which has been pushed in to form a slight slightly flaring, folded foot. Pale blue. H. 0.7 cm; Diam. 4.5 cm.
64. 2016.4862. Dump 4. Base that has been pushed in to form a tubular foot-ring. Decolorized. H. 0.9 cm; Diam. 5.2 cm.
65. 2016.1994. Dump 1. Base that has been pushed in to form a slightly flaring, folded foot. Decolorized. H. 0.6 cm; Diam. 3.8 cm
66. 2012.3671. Dump 2. Large base that has been pushed in to form a slightly flaring, folded foot. Color uncertain. H. c. 2.0 cm; Diam. 8 cm.
67. 2013.2212. Dump 1. Thick base that has been pushed in to form a high, tubular foot. Color uncertain. H. 1.7 cm; Diam. uncertain.

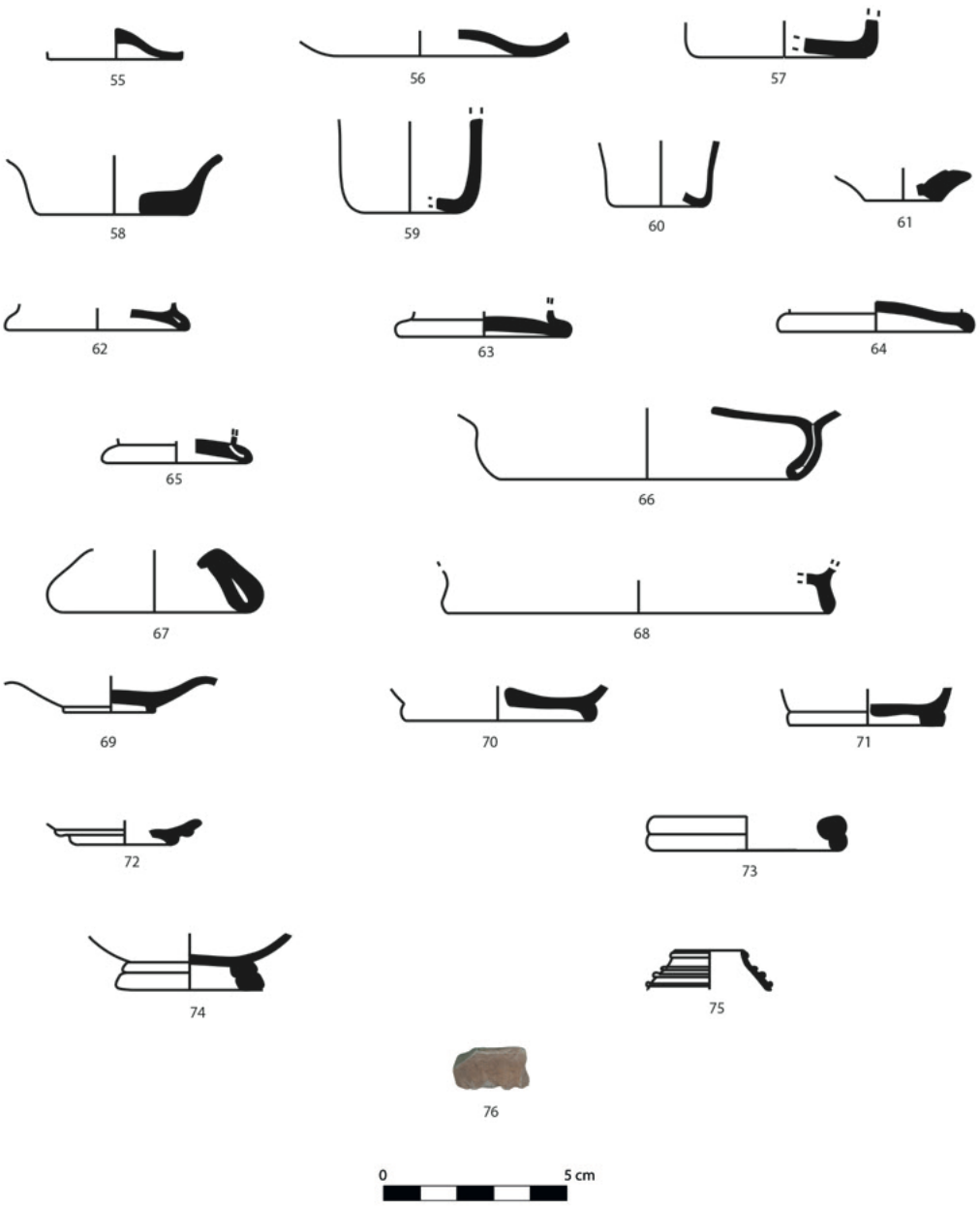

Figure 12.06. Selected bases discussed in the text; numbers refer to the catalog numbers used here. (Drawings and photo: Tim Penn and Summer Courts.)

68. 2013.2054. Dump 1. Large base that has been pushed in to form a tight, folded base ring. Pale yellowish green. H. 0.9 cm; Diam. 10.4 cm.

Applied ring base

69. 2013.1811. Dump 3. Applied solid ring base. Pale blue. H. 1.0 cm; Diam. 2.4 cm.
70. 2013.3693. Dump 2. Applied solid ring base. Decolorized. H. 1.0 cm; Diam. 5 cm.
71. 2012.2196. Dump 1. Applied solid ring base. Color uncertain. H. 1.0 cm; Diam. 4.2 cm.
72. 2012.2086. Dump 1. Applied solid ring base, applied trail on body. Pale yellowish green. H. 0.6 cm; Diam. uncertain.

Stacked or coiled bases

73. 2016.1994. Dump 6. Stacked or coiled base formed by the application of two applied trails, one over the other; the lowermost coil is notably finer. Decolorized. H. 0.8 cm; Diam. c. 5 cm.
74. 2013.3680. Dump 2. Stacked or coiled base formed by the application of two applied trails of approximately the same size, one over the other. Decolorized. H. 1.5 cm; Diam. 4.0 cm.

Pad bases

75. (-).1949. Dump 1. Pad base(?); funnel shaped with at least four applied horizontal trails winding around it. Color uncertain. H. 1.1 cm; Diam. uncertain.

Tooled bases

76. 2012.1984. Dump 1. Solid base with tooling at the edges; highly fragmentary. Mid-yellowish green. H. c. 1 cm; Diam. uncertain.

Miscellaneous Handles
(Fig. 12.07)

77. 2013.4852. Dump 4. Curved handle fragment or bracelet with D-shaped section. Color uncertain. W. 2.9 cm; D. 0.4 cm; L. 0.6 cm.
78. 2013.2160. Dump 1. Applied handle with sub-ovoid section. Cobalt blue. H. 0.4 cm; L. 3.5 cm; W. 0. 6 cm.
79. 2013.1983. Dump 1. Unidentified vessel wall sherd and applied handle with sub-ovoid section. Pale blueish green. H. 2.1 cm; W. 1.2 cm.
80. 2013.1981. Dump 1. Vessel wall sherd and applied handle with sub-ovoid section. Color uncertain. H. 1.6 cm; W. 0.9 cm.

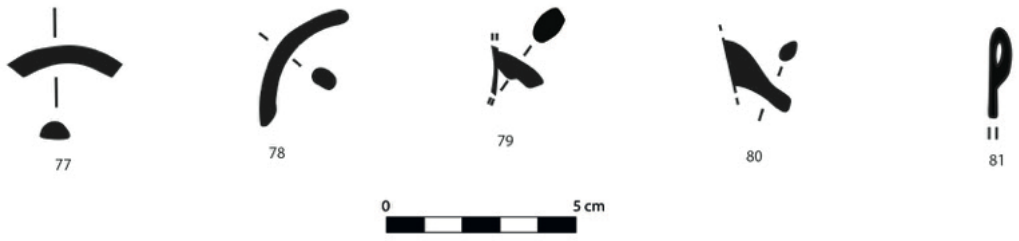

Figure 12.07. Selected handles discussed in the text; numbers refer to the catalog numbers used here. (Drawings: Tim Penn and Summer Courts.)

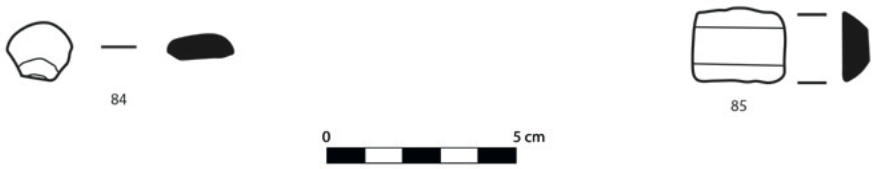

Figure 12.08. Selected other items discussed in the text; numbers refer to the catalog numbers used here. (Drawings: Tim Penn and Summer Courts.)

Other Items
(Figs. 12.07, 12.08)

Window glass

81. 2015.2132. Dump 1. Crown-glass window with folded tubular rim. Color uncertain. H. 0.6 cm; Diam. uncertain.

Tesserae

82. 2013.3681. Dump 2. Small cubic tessera. Color uncertain. Measurements not available. Not illustrated.
83. 2015.4867. Dump 4. Cubic tessera. Color uncertain. Measurements not available. Not illustrated.

Counter

84. 2014.5052. Dump 4. Plano-convex counter. Pale blue. H. 0.6 cm; Diam. 1.6 cm.

Inlay

85. 2012.3673. Dump 2. Inlay(?) with trapezoidal section. Mid-blue. H. 1.8 cm; W. 2.4 cm; D. 0.6 cm.

Glass Mentioned in AEP Registers
(Fig. 12.07)

The objects listed in this section of the catalog are recorded in the AEP Finds Registers but could not be located and were not examined firsthand by the authors. The descriptions are drawn from the Finds Registers; they have been lightly edited for clarity based on the limited available graphic records. Dates provided here are taken directly from the AEP registers. Items marked with an asterisk (*) are not further discussed in the text, as we were unable to identify them based on the records available.

Vessels

86. *1976.162. II.2 W, Locus 15. Fragment of glass vessel with single remaining support, slightly bent, but probably multi-legged, supports formed by pulling during forming? [Description as per AEP Finds Register.] Green glass. Date: “Byzantine?”
87. 1981.27. III.8 W, Locus 302. Prismatic bottle(?) base with unspecified raised design; square with rounded corners. Color unspecified. Base 6.95 cm x 6.67 cm. Not illustrated. Date: “Post AD 551.”
88. *1983.147. II.4 W, Locus 22. Juglet? With rim broken off, with a conic body decorated with longitudinal ribbing, one preserved rounded applied handle and three partially preserved tooled feet. Measurements not available. Not illustrated. Date: “Byzantine?”
89. 1985.47. IV.6, Locus 1, sherd of mold-blown vessel with “grape” decoration comprising contiguous small, hollow convex hemispheres meant to invoke a

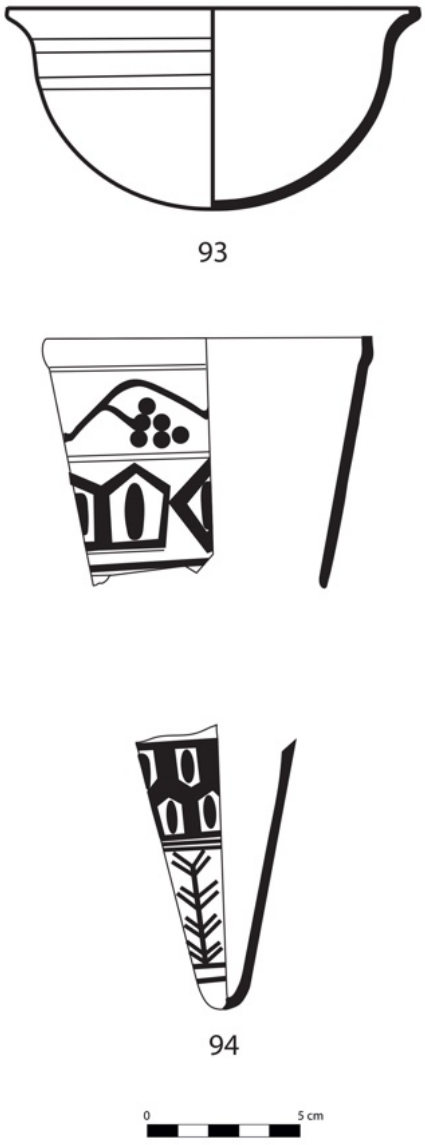

Figure 12.09. Selected glass objects mentioned in AEP Registers discussed in the text; numbers refer to the catalog numbers used here. (Drawings: Tim Penn and Summer Courts.)

bunch of grapes. Measurements not available. Not illustrated. Date: "Islamic?"

90. *1988.75. V.9, Locus 3. Vessel glass sherd with multicolored decoration. Measurements not available. Not illustrated. Date: "Islamic?"
91. *1988.103. IV.9, Locus 67. Base with tooled decoration along lowermost external surface, possibly similar to cat. no. 76. Measurements not available. Not illustrated. Not dated.
92. 1989.62. IV.3, Locus 113. Base and partial wall of cone beaker/lamp, with a small, rounded foot. Measurements not available. Not illustrated. Date: "AD 363."
93. 1990.28. II.7, Locus 31. Hemispherical bowl with everted rim, wheel-ground linear decoration below the rim, and a simple round base. Restored. Color not specified. Rim D. 13.65 x H. 6.95 x Body D. 11.25 cm. Date: "AD 363."
94. 1990.37. II.7, Locus 31. Cone beaker/lamp, slightly everted rounded rim, geometric and floral decorations ground on exterior. Blue glass. Diameter: 11.00 cm. Date: "AD 363."
95. 1993.15. IV.3, Locus 132. Juglet with wide flat rim, rounded edges, and handle of twisted glass, applied to collar under rim. "Mottled glass." Not dated.
96. 2001.17, II.11, Locus 11. Fragment of glass bowl, slight carination, two raised ridges, rim missing, and '"H"' (i.e., an *eta*) inscribed on body. Date: "Late Roman."

Other glass objects

97. 1977.13. II.2 W, Locus 25. Green glass around white glass with black iris. Date: "Nabataean?"
98. 1989.88. IV.3, Locus 114. Conoid, flat-based counter. D. 1.9 x T 1.33 cm. Date: "AD 363."
99. 1993.25. II.4, Locus 107. Fragment of glass showing tool work marks. Date: "AD 363?"

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