ʿAtiqot 113, 2023

A First-Century BCE Chalk-Vessel Assemblage from Har Ḥoma, Jerusalem, and the Beginning of the Chalk-Vessel Industry

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A unique assemblage of chalk vessels was unearthed in excavations at Har Ḥoma, five kilometers south of the Old City of Jerusalem. The assemblage, distinguished by the peculiar typology of its vessels, was found in a distinct and stratified fill containing pottery dating to the second half of the first century BCE, and it may be one of the earliest chalk-vessel assemblages uncovered to date. This paper presents a catalogue of the Har Ḥoma assemblage, followed by a brief overview of comparative early assemblages from sites in Jerusalem and Jericho, and a discussion of the archaeological and historical significance of the Har Ḥoma assemblage for the history and development of chalk vessels in the late Second Temple period.

Keywords: Chalk vessels, chalk-quarry workshops, Jewish ritual purity, late Second Temple period, Har Ḥoma, Jerusalem

Introduction

A unique assemblage of chalk vessels dated to the first century BCE was retrieved during archaeological excavations carried out in 2010 and 2012–2013, on a hill in the eastern part of the Har Ḥoma neighborhood of modern Jerusalem (Fig. 1). The chalk-vessel fragments were found in a fill layer near a ritual bath (*miqweh*), a water cistern and some caves (Kisilevitz 2015; Area B); further excavation of the caves in 2017 revealed some evidence of a chalk quarry-workshop from about the same period (Avner, forthcoming; Areas F16 and F17).[2]

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[2] Two excavation seasons (Permit Nos. A-5854, A-6512) carried out in 2010 and 2012–2013, were directed by Shua Kisilevitz on behalf of the Israel Antiquities Authority (Kisilevitz 2015). Another excavation (Permit No. A-7970), carried out in 2017, was directed by Rina Avner, on behalf of the Israel Antiquities Authority and funded by the Jerusalem Municipality prior to the construction of a community center.

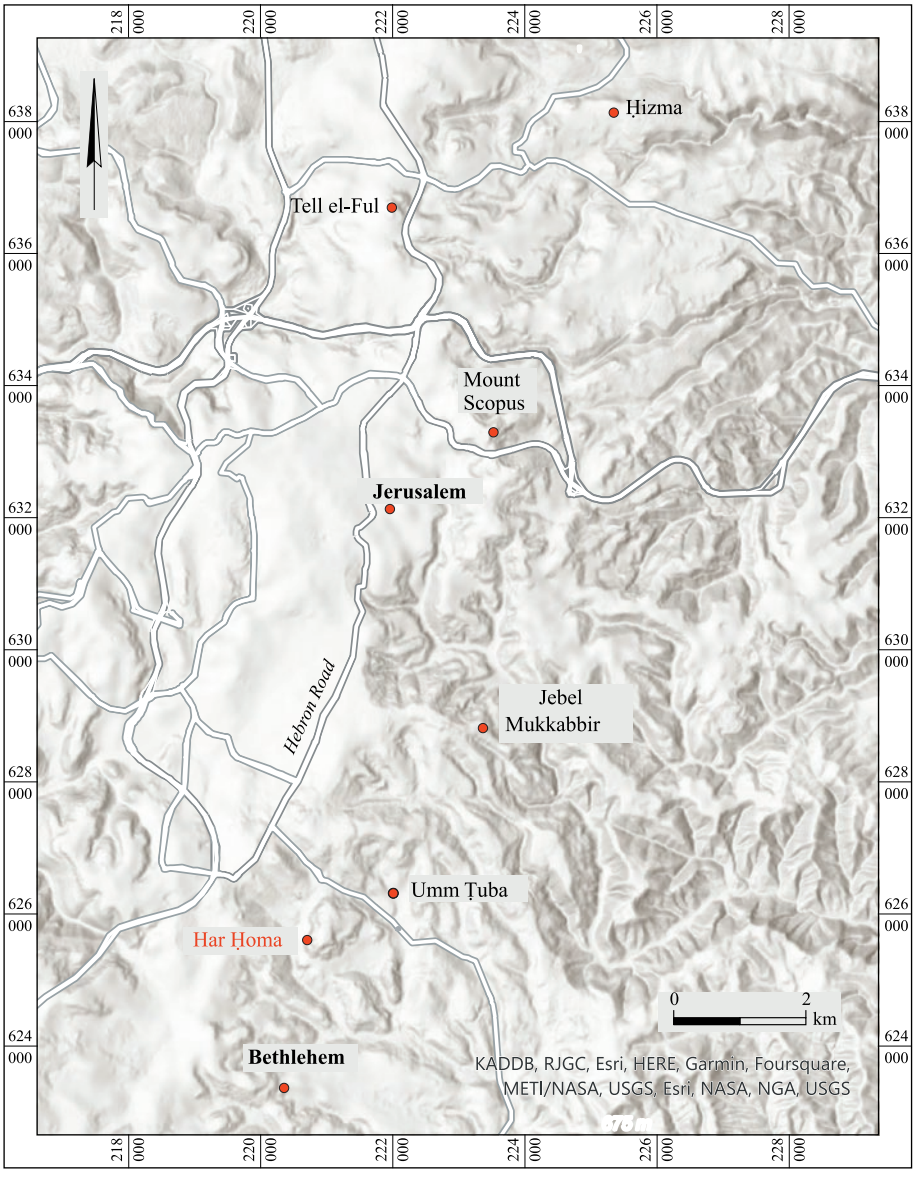

Fig. 1. Location map of Har Ḥoma and other chalk-vessel quarry-workshops in the vicinity of Jerusalem (drafting: A. Fadida).

Whilst Jewish chalk vessels are a well-known and extensively studied phenomenon (see, for example, Cahill 1992; Deines 1993; Magen 2002; Gibson 2003; 2022; Amit 2010; Adler 2019), the corpus from Har Ḥoma displays distinctive features, and it may be among the earliest chalk-vessel assemblages uncovered to date. The assemblage is presented here in detail,[3] with the aim of contributing to the scholarly discussion on chalk vessels by shedding

[3] The chalk-vessel assemblage was briefly mentioned in the final publication of the Har Ḥoma excavations; however, it was not thoroughly discussed and only a few vessels were illustrated (Kisilevitz 2015: Fig. 22). The present paper constitutes a comprehensive study of these finds.

new light on their typological development and on the historical and cultural milieu within which they first appeared. The paper provides an overview of the site and the archaeological context of the chalk-vessel assemblage and presents a catalogue of the vessels, followed by a summary of comparative early assemblages from the Jewish Quarter excavations in the Old City of Jerusalem and from Jericho, and a discussion of the archaeological and historical significance of the Har Ḥoma assemblage.

The Site

Har Ḥoma lies between Jerusalem and Bethlehem, on the western edge of the Judean Desert and overlooking Herodium (Fig. 1). The hill (summit c. 670 m asl) is a rock outcrop of the Menuḥa Formation (Mount Scopus Group), consisting of white and yellow/brown chalk and dating to the Late Cretaceous (Santonian–Early Campanian; Sneh et al. 1998; see also Avni 1993; Retzler, Wilson and Avni 2013:81–82). A wide fertile valley extends between Har Ḥoma and the village of Umm Ṭuba, whose villagers cultivated the valley and the eastern slopes of the hill, as is evident from the agricultural terraces that descend into the valley, the upkept ancient water cisterns and the secondary use of caves on the slope. In the mid-twentieth century, the hill served as an outpost for the Jordanian Arab Legion, who set up a system of earthen barricades connected by a communication trench encompassing the eastern side of the hill.

The archaeological remains uncovered on the hill consisted mainly of rock cuttings, caves and rock-hewn installations, partly exposed on the surface and partly just beneath the topsoil (Fig. 2). Although some of the rock-hewn elements cannot be dated, the finds attest to activity at the site during Iron Age II, the Roman to Byzantine periods, and the twentieth century. The most substantial presence dates between the second century BCE and the second century CE, and comprises several agricultural installations, a *miqweh*, water cisterns, caves and scanty remains of a retaining wall and a floor bedding preserved in crevices in the bedrock (Kisilevitz 2015); a winepress dated to the Hasmonean–Herodian period was also exposed at the southeastern foot of the hill (Finkielsztejn 2010).

Later activity and stone robbing, as well as natural erosion, resulted in the poor preservation of the architectural remains, precluding a reconstruction of the size and nature of the site, although the rock-cut installations suggest that this area was probably part of the agricultural and industrial hinterland of an adjacent settlement or farmstead. Many elements surveyed and excavated on the western outskirts of Umm Ṭuba, on the opposite side of the valley, attest to occupation in the Iron Age and the Hellenistic through the Byzantine periods. The building remains and a pottery workshop exposed there date to the mid-first century BCE, and the various rock-cut installations, including water cisterns, caves, quarries, columbaria, and burial caves, support the understanding that there was a settlement or farmstead around Umm Ṭuba (‘Adawi 2020; ‘Adawi and Eirikh-Rose 2018, and further references therein)[4] that possibly owned the agricultural and industrial installations at Har Ḥoma.

[4] The structural remains, pottery workshop and other installations were excavated by Zubair ‘Adawi in December 2008–February 2009, on behalf of the Israel Antiquities Authority (Permit No. A-5529). We are grateful to him and to Alon De Groot for allowing us to present here data from a preliminary draft of the report.

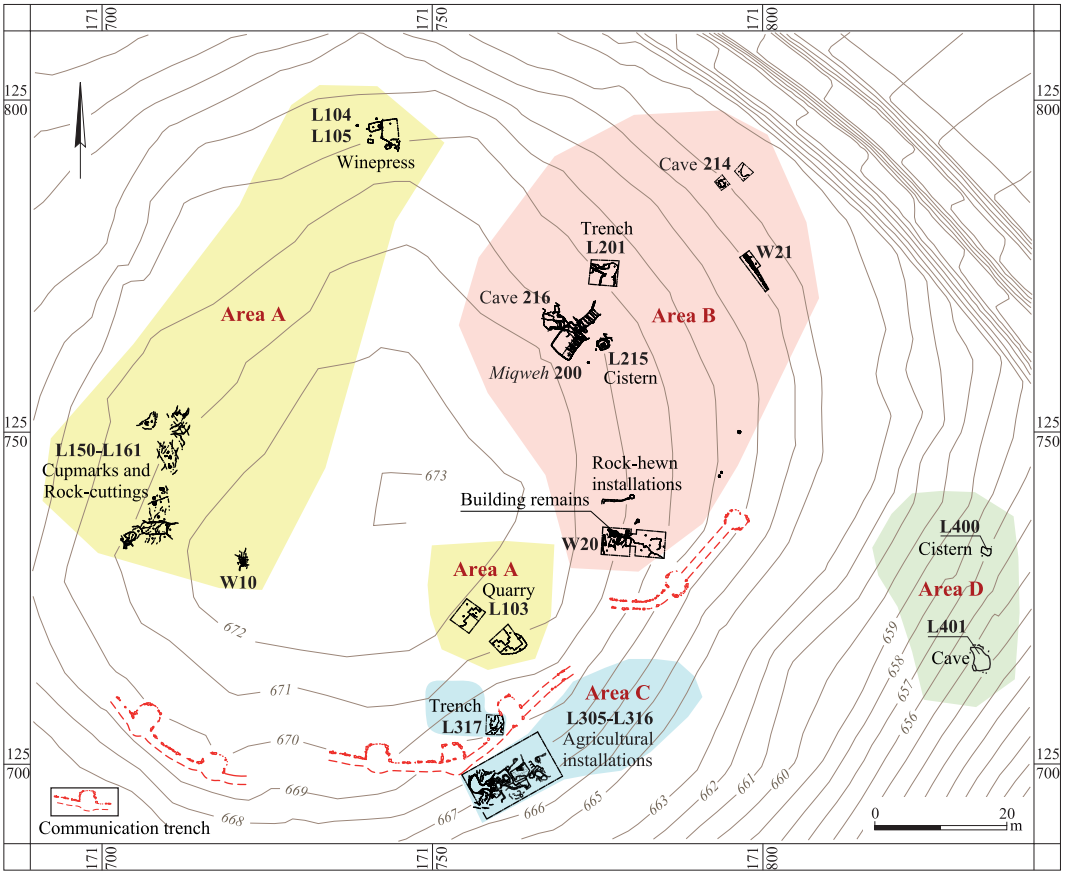

Fig. 2. Har Ḥoma site, general plan (see Kisilevitz 2015).

The Archaeological Context of the Har Ḥoma Chalk-Vessel Assemblage

Two caves excavated in Area B—Cave 216 (4.4 × 3.9 m, c. 3 m deep; Fig. 3), located next to *Miqweh* 200, and Cave 214 (7.5 m diam., 1.3 m deep; Fig. 4), located lower down the slope to the northeast (Fig. 2)—provided evidence for some chalk-vessel quarrying and a workshop, in the form of imprints of large, rectangular chalk blocks quarried in the floors and walls, and three coarse, unfinished chalk vessels—two bowls and a lid—found on the bedrock floor of Cave 214 (Fig. 5).[5] At a later stage, the two caves were converted into

[5] The discovery of a large number of chalk-vessel fragments retrieved in the 2010 and 2012–2013 excavations first raised the possibility of the presence of a nearby chalk-vessel workshop (Kisilevitz 2015), subsequently confirmed in the 2017 excavations, when the fills in Caves 214 and 216 were fully excavated (L152, L153, L157, L170, L171 in Area F17; L133 in Area F16, respectively; Avner, forthcoming). We acknowledge the invaluable contribution of the late David Amit, who first noted the significance of the chalk-vessel assemblage and suggested the existence of a workshop on the hill; his knowledge, guidance and enthusiasm are profoundly valued and sorely missed.

Fig. 3. Cave 216, rock-hewn niches and chalk-block impressions, looking northeast (photography: A. Peretz).

Fig. 4. Cave 214, rock-hewn niches and chalk-block impressions, looking south (photography: A. Peretz).

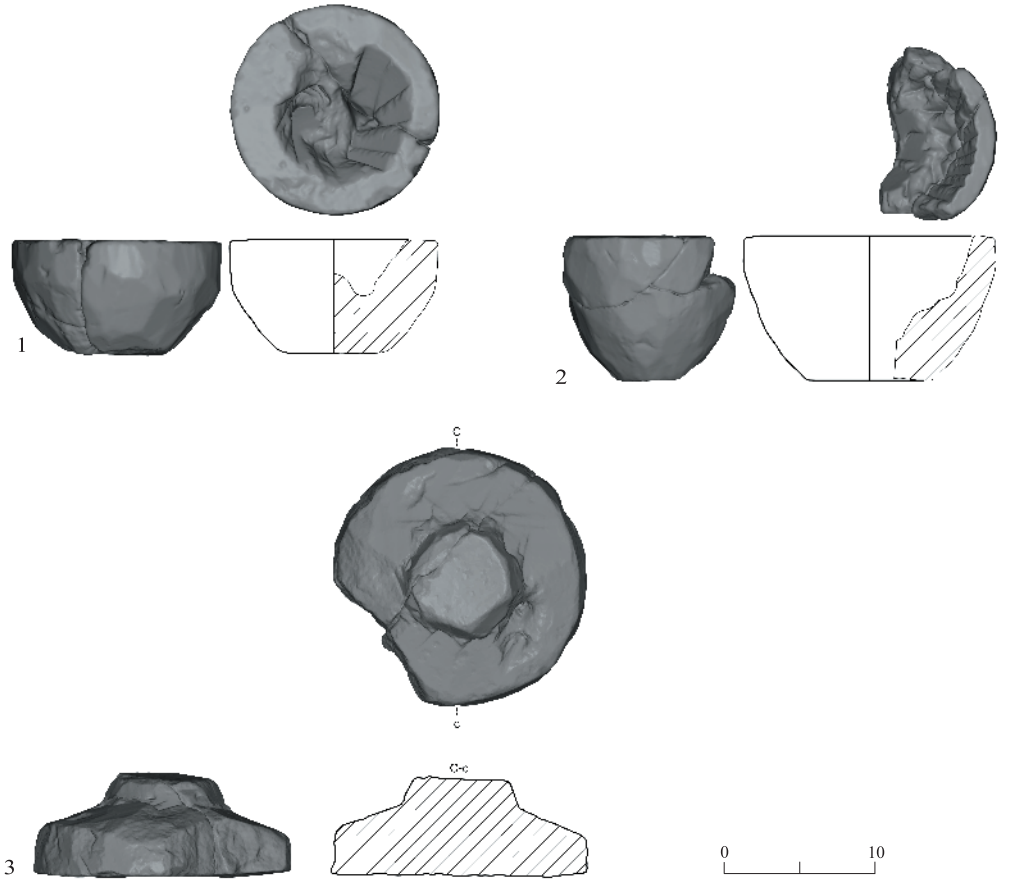

Fig. 5. Cave 214, unfinished chalk vessels (digital illustration: A. German-Levanon; see Avner, forthcoming: Area F17).

columbaria, as evidenced by the small triangular or semicircular niches hewn into their walls. Cave 214 was full of soil that contained pottery sherds dating from the second–first centuries BCE and from the first century BCE–first century CE (Avner, forthcoming). This soil apparently accumulated when the cave was functioning as a columbarium and after it went out of use, and thus the chalk-vessel production can be attributed to an earlier phase, dated generally to the first century BCE.

At the southern end of Area B, scanty building remains were exposed in a crevice in the bedrock (Fig. 6). These comprise a short section of a wall (W20) with an associated floor bedding (L220) and leveling fill (L212). Wall 20 was built of small and medium-sized fieldstones (1.0 m long, 0.5 m wide, c. 0.35 m high with one to two extant courses). On its western side, a fill of soil and small stones (L212) filled the rest of the crevice, creating a surface that was level with the higher bedrock surface a meter further west, where a floor bedding layer of small fieldstones bonded with hard mortar (L220) was preserved (Figs. 7, 8). Fill 212 was consequently a levelling fill overlain by Floor Bedding 220 that must have originally continued up to W20 but was no longer extant here. The remains of W20, Fill

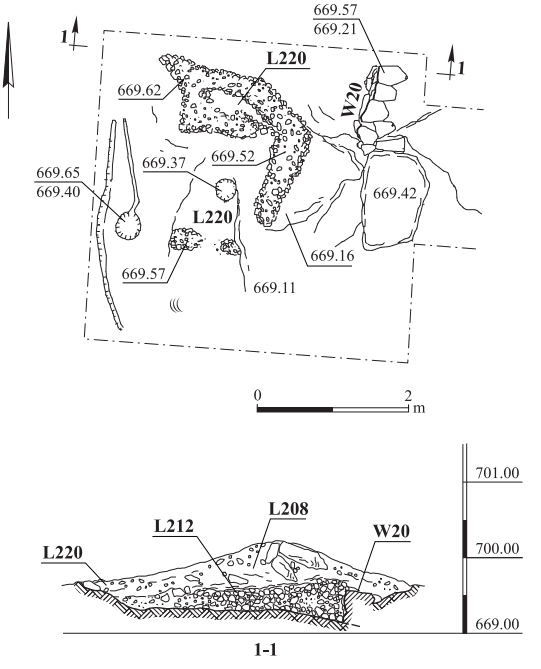

Fig. 6. Plan of building remains
(drafting: N. Zak and D. Weinblatt).

Fig. 7. Area B, building remains, looking east (photography: A. Peretz).

Fig. 8. Area B, building remains, with Umm Ṭuba in background, looking north (photography: S. Kisilevitz).

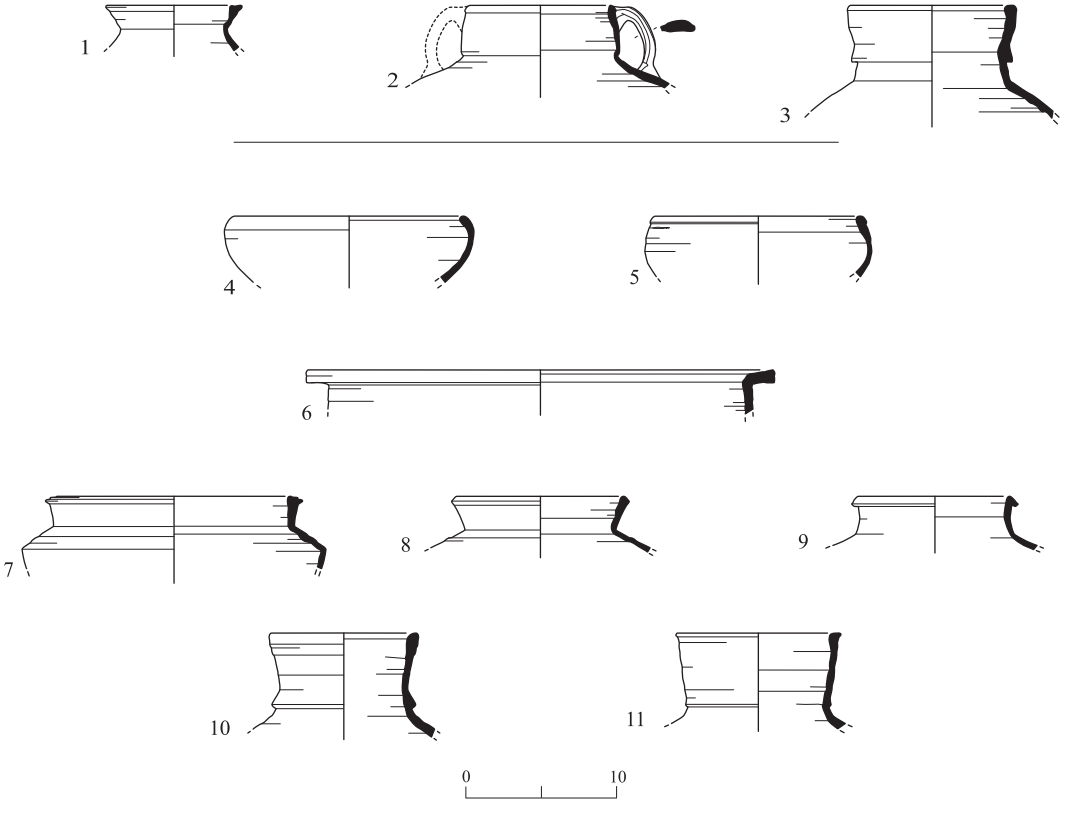

Fig. 9. Pottery from Fill 212 (illustration: M. Shuiskaya).

212 and Bedding 220 were covered by an accumulated soil layer (L208) containing pottery dated to the first century CE (see, for example, Kisilevitz 2015: Fig. 32:3, 6, 7).

Fill 212 contained many pottery sherds and chalk-vessel fragments. Several sherds were of pottery vessels dating from the first half of the first century BCE,[6] including cooking pots with a short neck and a groove in the interior (Fig. 9:1), or with a long vertical neck and a simple, slightly thickened rim (Fig. 9:2), and storage jars with folded rims down to mid-neck or just below (Fig. 9:3). Most of the sherds were of vessels dating between the latter half of the first century BCE and the beginning of the first century CE,[7] including hemispherical bowls (Fig. 9:4, 5), plates with a shelf rim (Fig. 9:6), casseroles with carinated shoulders and a grooved rim (Fig. 9:7), cooking pots with a thickened, triangular rim (Fig. 9:8, 9), and storage jars with folded rims ending at the base of the neck (Fig. 9:10, 11). These folded jar rims predate the later ridged-necked jars, the ridge at the base of the neck becoming the prominent feature of jars from the first century CE and later. Whilst some of these vessel forms continue to appear in the first century CE, the typical first-century CE forms—namely, cooking pots with triangular rims lacking grooving or offset, and jars without folded rims ending at the base of the neck (see, for example, Geva and Hershkovitz 2014:138–139, Pls. 3.5:7, 8; 3.6:10–12)—were not found in Fill 212. Based on the later forms, Fill 212 was probably deposited sometime between the mid-first century BCE and the very beginning of the first century CE, thus providing a general *terminus ante quem* for the chalk vessels retrieved in the fill.

Har Ḥoma Chalk-Vessel Catalogue

The catalogue lists 27 chalk-vessel fragments found in Fill 212, including all the diagnostic fragments and a few body fragments (Cat. Nos. 1–27); all the fragments are illustrated (Fig. 10). The vessels are almost all hand-carved bowls, including rims, bases, handles, a spout and an unfinished vessel (Cat. Nos. 1–25), as well as two fragments of probably a single hand-carved krater (Cat. Nos. 26, 27). Chalk-vessel fragments from other loci, notably a base fragment found in the uppermost accumulation layer L208 (Fig. 11; see below), and from other areas of the excavation, namely the vessels found in Cave 214 (see Fig. 5; Avner, forthcoming), are not included in the catalogue.

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[6] Contemporary pottery assemblages were found in various areas in Jerusalem, for example, in the Giv‘ati Parking Lot (Sandhaus 2013; Shalev et al. 2021), the Jewish Quarter (Geva 2003), and the City of David (Berlin 2012), as well as in the Jericho royal palaces (Bar-Nathan 2002); see also the Hellenistic-period pottery catalogue published by Berlin (2015).

[7] Comparable assemblages were found in Jerusalem, for example, in the Jewish Quarter (Geva and Rosenthal-Heginbottom 2003; Geva and Hershkovitz 2006; Geva 2010; Geva and Hershkovitz 2014), at the pottery workshop at Binyene Ha-Umma (Berlin 2005a; Hershkovitz 2005; Rosenthal-Heginbottom 2005; https://www.levantineceramics.org/kilns/34-jerusalem-international-convention-center-jicc, as well as at Masada (Bar-Nathan 2006). The most recent research on Early Roman pottery in Jerusalem is by Terem (2016).

Bowls (Cat. Nos. 1–25)

The many bowls have a flat base; thick, curved or slightly curved walls (1–2 cm); and an incurved, flat rim. Most of the vessels are shallow (max. c. 10 cm high), the external rim diameter (11–20 cm) being wider than the base. Some vessel fragments have a large, vertical handle with a curved or slightly curved profile, perforated with a central hole (Cat. Nos. 18–22); one fragment has a spout (Cat. No. 24). Given the partial state of the vessel fragments, additional vessels may have originally had handles and/or a spout, although the most complete (probably unfinished) bowl (Cat. No. 25) has no handle or spout, unless one was located in the small missing part. Accordingly, only extant or partially extant handles are illustrated on the vessels, without assuming a second handle on the opposite side.

The bowls have a chiseled exterior, mostly characterized by vertical or diagonal faceting, in many cases irregular and uneven. The faceting on some of the vessels is smoothed below the rim. A few vessels have a coarsely finished exterior marked by irregular, rough faceting; one vessel shows traces of dressing with a fine comb chisel. The bowl interiors are usually smoothed, leaving only faint traces of chiseling, although a few vessels have sporadic chisel marks that may have been too deep to completely remove. A few fragments may have broken and may have been discarded in the production process, but only one vessel can be clearly identified as unfinished (Cat. No. 25).

The vessels are classified as bowls, typologically distinct from the mug forms that predominate the chalk-vessel repertoire later in the Early Roman period. The mugs have an elongated cylindrical or quasi-cylindrical shape, with vertical, almost vertical, slightly everted or slightly curved walls with a convex profile. Only one fragment (Cat. No. 17) may possibly be the base of a mug, but it is too fragmentary to determine. A definite base fragment of a mug was retrieved in the later overlying soil layer (L208; Fig. 11; see below), thus not forming part of the assemblage from Fill 212. Some fragments, particularly the handled vessels, could be designated as cups rather than bowls, but these vessel categories are rather subjective, particularly when classifying fragments; their classification here as bowls is mainly intended to distinguish them from the later cylindrical mug forms. It is possible that the bowls from Har Ḥoma and their parallels were a prototype for the later mugs (see below).

Krater (Cat. Nos. 26, 27)

The assemblage includes two body fragments that probably belonged to a single large hand-carved krater (estimated diam. c. 50 cm). The fragments have thick walls (c. 5 cm) and traces of rough, vertical faceting with a large chisel on the exterior, and the interior is fairly smooth with faint traces of vertical chisel marks; one fragment has a large trapezoidal ledge handle. The smoothed interior and the handle indicate that the krater was not intended to be subsequently lathe-turned. A roughly contemporary, hand-carved krater was found in Area J in the Jerusalem Jewish Quarter (see below).

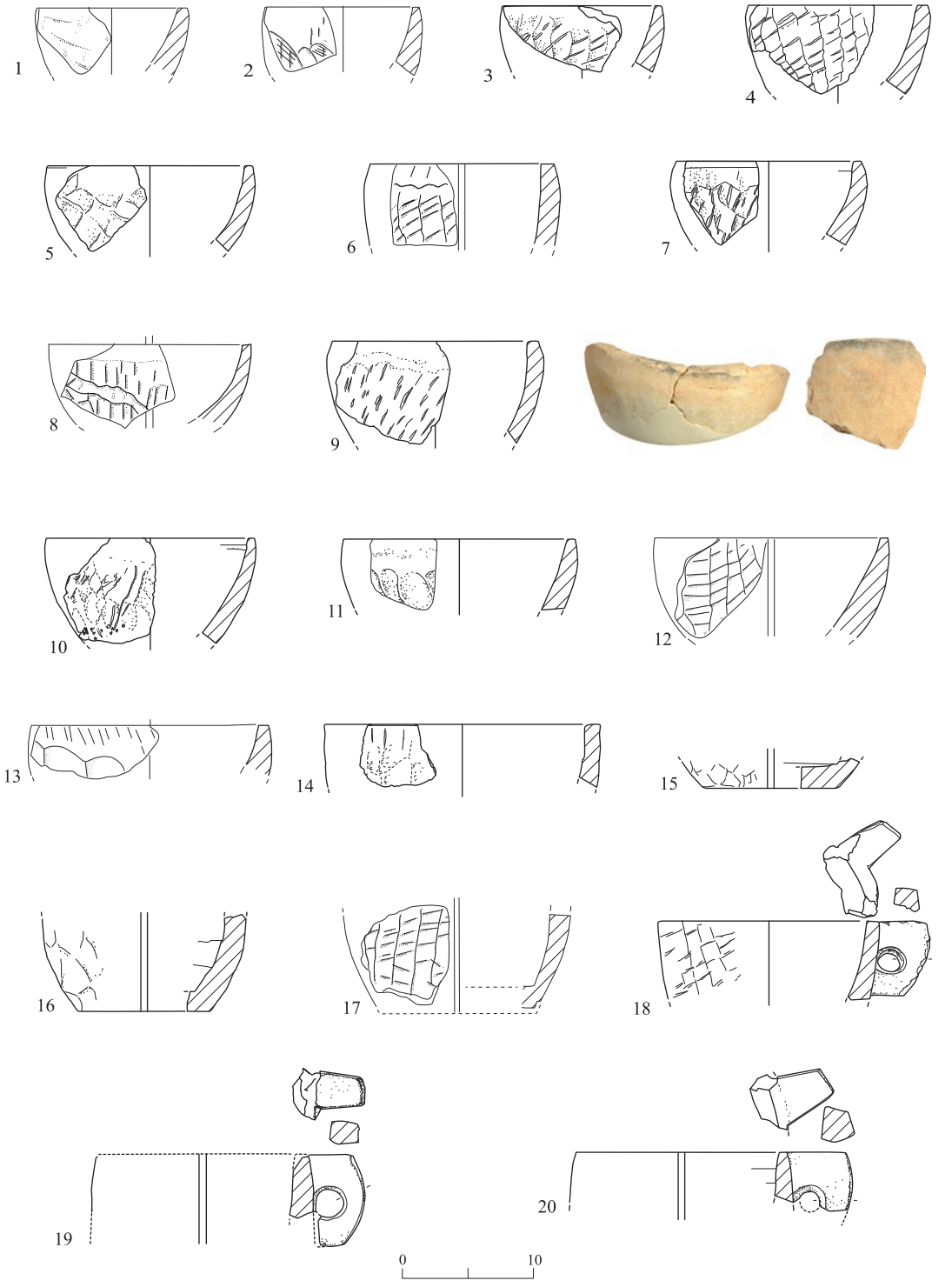

Fig. 10. Chalk vessels from Fill 212 (drawning: C. Hersch; photography: C. Amit; plate preparation: D. Weinblatt).

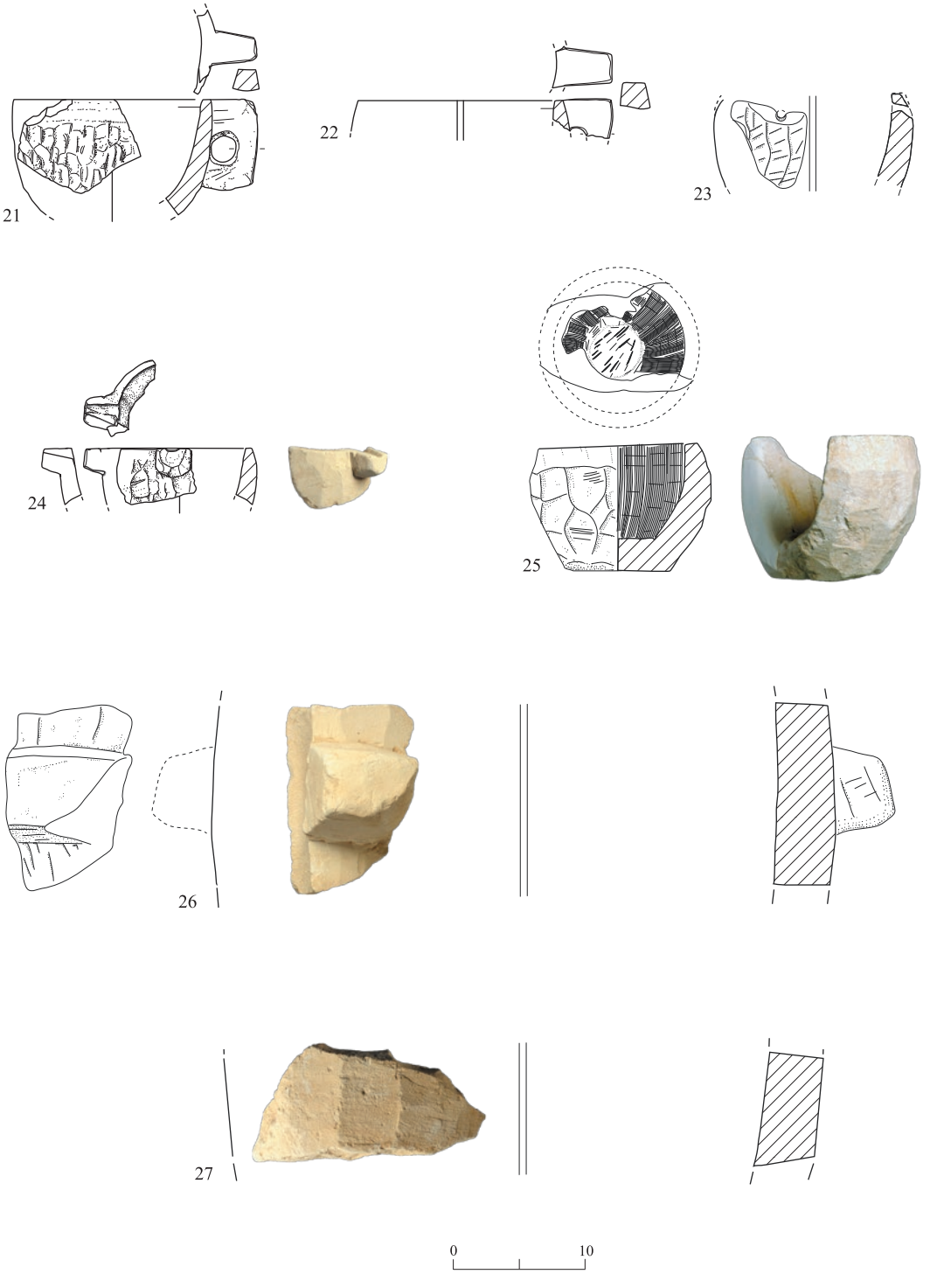

Fig. 10. (cont.).

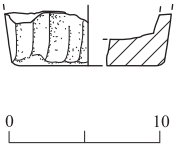

Fig. 11. Chalk mug from the late soil layer L208
(illustration: C. Hersch).

Comparative Assemblages

Whilst large quantities of chalk vessels have been retrieved from many sites throughout the country, chalk-vessel assemblages from contexts securely dated to the second half of the first century BCE are rare. The most similar vessels to the Har Ḥoma assemblage come from the roughly contemporary assemblages from Areas E and J in the Jerusalem Jewish Quarter excavations on the 'Western Hill' (Geva 2006b; 2014b). This corpus is discussed here, followed by a discussion of the chalk vessels found in the royal palaces at Jericho (Bar-Nathan and Gärtner 2013).

Jerusalem Western Hill: Jewish Quarter Excavations Areas E and J

In Area E, a small assemblage of chalk vessels was found in Strata 4 and 3, where superimposed remains of buildings dated to the second half of the first century BCE were uncovered. The associated ceramic material suggests a low chronological horizon between the abandonment of the Stratum 4 structures and the construction of the Stratum 3 buildings. Based on the numismatic and ceramic evidence, the *terminus post quem* for the construction of the Stratum 3 buildings was determined as c. 20 BCE, and the buildings were abandoned a few years later, c. 15–12 BCE, when a monumental stone pavement was constructed (Geva 2006c:15–69; Geva and Hershkovitz 2006:99–103; Ariel 2006; Rosenthal-Heginbottom 2006:159). The chalk-vessel assemblage comprises fragments of hand-carved vessels and lathe-turned kraters, though the latter were found only in Stratum 3 (Geva 2006b:221–223, Pls. 9.1:10–17; 9.2:1–9). The small size of the fragments suggests that they came from construction fills deposited in the abandoned Strata 4 and 3 buildings rather than *in situ* vessels; consequently, they should be dated earlier than the respective ends of the two strata.

The hand-carved vessels include bowls with and without handles (Geva 2006b: Pl. 9.1:10–13, 16),[8] mugs with slightly convex or everted walls (Geva 2006b: Pl. 9.1:14, 15), and the base of a stemmed goblet (Geva 2006b: Pl. 9.1:17). The bowls illustrated in Pl. 9.1:10–13 are similar to the Har Ḥoma bowls. Plate 9.1:10—whether a handled mug or a bowl—has a slightly curved or convex wall and a large, vertical, perforated handle with a curved profile similar to three-handled Har Ḥoma bowls (Cat. Nos. 19, 20, 22), but the handle is positioned

[8] Geva classifies Pl. 9.1:10–13 as mugs, whilst we refer to them as bowls, aligning with the typology defined for the Har Ḥoma vessels; Pl. 9.1:10 could be a mug or a bowl.

slightly below the rim, a feature not attested at Har Ḥoma that becomes quite common in later mugs. By contrast, Pl. 9.1:11, 12 have large vertical handles with a central perforation and a curved profile that is flush with the rim, as the Har Ḥoma handles, although the bowls differ in shape and exterior finishing: Pl. 9.1:11 has a curved, almost hemispherical profile, with fine, regular vertical faceting and a smoothed strip below the rim, whilst Pl. 9.1:12 is larger with a slightly everted wall and an incurved rim, and a more roughly finished exterior with irregular, diagonal faceting. Pl. 9.1:16 is a shallow, hemispherical bowl with a round rim and rough, irregular faceting on the exterior; this shape is not attested at Har Ḥoma, but the coarse finishing recalls the finishing on some of the vessels. The slightly everted profile of Pl. 9.1:14 and the convex walls of Pl. 9.1:15 are more similar to mugs. The former, which has a relatively thin wall, is not paralleled at Har Ḥoma, whereas the latter may be similar to a Har Ḥoma base fragment (Cat. No. 17). These two mugs have regular vertical faceting on the exterior, and the mug in Fig. 9.1:14 has a narrow, smoothed strip below the rim, although the smoothed strip is narrower than that on the mugs in Pl. 9.1:11, 12, and that on the Har Ḥoma vessels.

The Stratum 3 residential quarter and the overlying monumental stone pavement were also exposed in Area J. A few hand-carved and lathe-turned vessel fragments were found in fills deposited in abandoned buildings that went out of use in c. 15–12 BCE, analogous to the stratigraphic sequence in Area E. A *miqweh* (*Miqweh* 1364), whose connection to the buildings is unclear, was probably abandoned sometime between the mid-first century and 37 BCE (Geva 2014c:21–67; Geva and Hershkovitz 2014:139–145; Ariel 2014:244).

The fill in this *miqweh* yielded fragments of a large, hand-carved spouted mug, a small mug, and a deep bowl (Geva 2014b:275, Pl. 10.1:13, 14, 16). The large spouted mug (>10 cm high) has a slightly curved wall and a large, perforated handle with a somewhat curved profile that is flush with the rim; it has rough, irregular vertical faceting, fairly similar to that on a bowl from Area E (Geva 2006b: Fig. 9.1:12). The small mug (7.5 cm high) has a straight, everted wall and a large, perforated handle with a curved profile that is flush with the rim; its exterior has fine, regular vertical faceting and a smoothed strip below the rim, a finish similar to a bowl from Area E (Geva 2006b: Fig. 9.1:11). Whilst these two mugs share features with the Har Ḥoma handled bowls, their basic form is different. The deep bowl has a slightly curved wall narrowing down to an (unpreserved) base whose diameter is substantially smaller than that of the rim, and the exterior is dressed with a series of narrow, diagonal striations made by a comb chisel. In general, this bowl is a close parallel to a Har Ḥoma bowl (Cat. No. 9). Two other hand-carved fragments—a shallow bowl with a curved wall and a bowl on a ring base, the latter a type not attest at Har Ḥoma—were retrieved from Building 1307 (Geva 2014b:275–276, Pl. 10.1:15, 19), which was abandoned in c. 15–12 BCE.

An almost complete hand-carved, barrel-shaped krater with two trapezoidal ledge handles was discovered in Building 1313 (Geva 2014b:276, Pl. 10.2:1). Although the krater came from part of the building that was not sealed by the monumental stone pavement but remained in use during the first century CE, it was found in a locus that went out of use and was sealed off when the residential quarter was abandoned. Thus, the krater can also be dated to the late first century BCE as well. The vessel is similar in form to the Har Ḥoma krater (Cat. Nos. 26, 27), although the surface treatment is different.

Recent excavations on Mount Zion, next to the western city wall (designated the 'First Wall'), have exposed similar chalk bowls, also in a late first century BCE context. These bowls have two large, perforated handles with a curved profile that are flush with the rim (Gibson 2022:26, Fig. 8:1, 2).[9]

Jericho Royal Estate

Hand-carved and lathe-turned vessels, mostly fragments, were retrieved from various contexts in the royal estate at Jericho dating to the Hasmonean Period—phase HS2 (87/75–31 BCE)—and the early Herodian Period—phases HR1 (31–15 BCE) and HR2 (15 BCE–6 CE). The earliest vessel is a hand-carved mug found in a secure context in the kitchen in the Eastern Mansion of the Twin Palaces (Bar-Nathan and Gärtner 2013:210, Pl. 9.1:1), which was destroyed by an earthquake, probably that of 31 BCE (Netzer 2001:147–174). The mug has an elongated, cylindrical shape, a slightly convex wall and a pointed rim, and both the interior and exterior surfaces are highly polished, leaving only faint traces of the tool marks. Whilst generally attributed to the HS2 phase (85/75–31 BCE), the mug is best dated to the latest occupation phase in the Twin Palaces, at the end of the chronological spectrum (but see Zilberstein 2022:279–283). Regarding the other vessels attributed to the HS2, HR1 or HR2 phases, many of the assigned dates are questionable.

Three hand-carved mug fragments attributed tentatively to phase HS2 and two others broadly assigned to the Hasmonean–Herodian periods were found in poorly stratified or disturbed contexts (Bar-Nathan and Gärtner 2013:210, 212, Pl. 9.1:2–5, 21). A large, hand-carved hemispherical bowl with two lug handles and irregular faceting on the exterior, found in Building FB2 in the Industrial Area, is dated to phase HR1 (Bar-Nathan and Gärtner 2013:212–213, Pl. 9.2:27). Whilst the building probably went out of use during this phase, pottery dating from the end of the first century BCE and the beginning of the first century CE was found in the courtyard (Netzer and Laureys-Chachy 2004:87–91), supporting an HR1–HR2 date for the bowl. A hand-carved bowl found in the *laconicum* in Herod's Third Palace is assigned an HR2 date (Bar-Nathan and Gärtner 2013:213, Pl. 9.2:28), but since activity in the Third Palace continued into the first century CE, and there is evidence of later activity in the *laconicum* (Netzer 2001:258–260), this fragment may date to the later first century CE. The same holds true for a lathe-turned, hemispherical bowl found in Room B88 in the palace (Bar-Nathan and Gärtner 2013:214, Pl. 9.4:39). Another lathe-turned, hemispherical bowl and krater fragment found in the courtyard and in a room of Building FB1 in the Industrial Area are also assigned an HR2 date (Bar-Nathan and Gärtner 2013:214, 219, Pls. 9.4:37; 9.5:74), but this building appears to have continued in use, with material finds dating down to the post-Herodian period (Netzer and Laureys-Chachy 2004:90). Two hand-carved mugs and a small, lathe-turned bottle—

[9] Gibson (2022:27, Fig. 8) describes the vessels as mugs, but we refer to them as bowls, in accordance to the typology defined for the Har Ḥoma material.

possibly an inkwell—were found in a fill deposited in a *miqweh* and adjacent pool in Building AH6 (Bar-Nathan and Gärtner 2013:210–211, 217, Pls. 9.1:6, 7; 9.4:65), together with a ceramic assemblage dated to the HR2 phase, but since the fill also contained coins of Alexander Jannaeus, Herod, Archelaus, and one coin minted under the procuratorship of Valerius Gratus (Netzer and Laureys-Chachy 2004:149–150), the fill could have been deposited as late as 15–26 CE, or even later. Other chalk-vessel fragments attributed to the HR2 phase, including a few lathe-turned kraters (Bar-Nathan and Gärtner 2013:211, 217–219, Pls. 9.1:9–11; 9.4:62; 9.5:68–69, 74), were found in the Industrial Area in fills deposited in installations after they went out of use at the beginning of the first century CE at the earliest (Netzer and Laureys-Chachy 2004:39–144).

Notwithstanding the equivocal dating, as a whole, the Jericho assemblage of hand-carved chalk vessels attributed to the HS2, HR1 and HR2 phases is quite different from the assemblages found in Jerusalem Areas E and J and at Har Ḥoma. The Jericho repertoire lacks hand-carved bowls with curved or slightly curved walls (with or without handles), two possible exceptions being a bowl with a slightly curved wall (Bar-Nathan and Gärtner 2013: Pl. 9.1:2) that is fairly similar to a bowl from Jerusalem Area E (Geva 2006b: Fig. 9.1:12) and a bowl from Har Ḥoma (Cat. No. 6); and a disc base fragment of a vessel with curved walls, though its profile is hardly preserved (Bar-Nathan and Gärtner 2013: Pl. 9.2:28). The other hand-carved bowls from Jericho are different: one bowl dated tentatively to the HS2 phase, for example, has a profile more similar to the mugs, with a straight, slightly everted wall and two ledge handles flush with the rim, and regular vertical faceting on the exterior (Bar-Nathan and Gärtner 2013:212; Pl. 9.1:21). Another large bowl, dated broadly to the HR1–HR2 phase, has a curved wall and two ledge handles (Bar-Nathan and Gärtner 2013:212, Pl. 9.2:27), but it is larger than the bowls from Har Ḥoma and Jerusalem. The other hand-carved vessels from the HS2, HR1 and HR2 phases are mugs with straight, everted, or slightly curved walls (Bar-Nathan and Gärtner 2013: Pl. 9.1:1–11). All these vessels display regular, vertical or diagonal faceting on the exterior, apart from Pl. 9.1:1, whose exterior is polished. In addition, the few extant handles have a rectangular profile rather than the curved profile characteristic of the Jerusalem and Har Ḥoma handles, and none are flush with the rim.

Dating the Har Ḥoma Assemblage

The comparison of the chalk vessels from the three sites demonstrates that the Har Ḥoma assemblage is similar, but not identical, to the chalk-vessel assemblage from Jerusalem Jewish Quarter Areas E and J, whilst it has virtually no parallels in the material from the Jericho royal estate. Moreover, whilst there are some similarities in the vessel types in the Jerusalem and Jericho assemblages, there are also significant differences. Regional factors may be at play here, but it cannot be excluded that the Jericho assemblage includes some slightly later types, a conclusion that is also borne out by the stratigraphic context of the finds.

The pottery sherds retrieved in Fill 212 at Har Ḥoma indicate that the fill was deposited sometime between the mid-first century BCE and the very beginning of the first century CE (see above). The similarities of the chalk vessels in this fill to the well-dated material from Jerusalem Areas E and J permits pinpointing them to the second half of the first century BCE. Moreover, the later soil layer (L208) that overlay and post-dated W20, Fill 212 and Floor bedding 220 contained first-century CE pottery and a base fragment of a chalk mug with straight, slightly everted walls and an angular profile (Fig. 11), similar to the later mugs. Although only a single fragment, it differs significantly from the chalk-vessel types in Fill 212, providing additional support for dating the assemblage to the second half of the first-century BCE, rather than to the first century CE. The discovery and publication of additional first century BCE assemblages may enable further refining of these tentative typological and chronological observations.

The Historical and Archaeological Context of the Har Ḥoma Chalk-Vessel Assemblage

Notwithstanding its fragmentary nature, the Har Ḥoma chalk-vessel assemblage affords valuable insights on the history and typological development of chalk vessels. Most scholars date the beginning of the chalk-vessel industry within the second half of the first century BCE (see, for example, Magen 2002; Gibson 2003:301–304; 2022:24–25; Geva 2006a; 2006b:221–222; Adler 2014:76–80; 2022b:83–84).[10] Some scholars consider that it developed as a by-product of the Herodian building projects that led to the availability of excess raw material from the new quarries and the rise of a trained class of stonemasons, who also manufactured stone vessels, ossuaries, tables and other artifacts (see, for example, Fine 2000; Miller 2015:153–183; Schwartz 2014:84; Wassén 2019:55–56; Gibson 2022:25).

In a recent summary of the evidence, Gibson (2022:25) goes a step further, stating more precisely: "This industry most likely began in the aftermath of the consolidation of Herod's rule over the city, which saw the construction of the Jewish temple in c. 23/22 BCE and the regal palace in the Upper City in c. 25 BCE." He considers that the chalk vessels only became widespread in the first century CE, the industry "reaching its zenith by the time of the completion of the Temple Mount building operations in c. 64 CE" (Gibson 2022:26). Gibson bases this understanding mainly on the dearth of well-dated first-century BCE assemblages compared to the many chalk vessels found in destruction levels dated to the First Jewish Revolt (Gibson 2003:301; 2016:78–79; 2022:24–28), also speculating that in the early stages, chalk vessels were produced to meet the limited demands of wealthy households in Jerusalem and to supply Herod's properties, such as the royal estate in Jericho.

[10] Early in the history of research, Cahill (1992:225–232) considered that chalk vessels first appeared in the first century CE, but the subsequent full publication of the material from Area E of the Jewish Quarter furnished an earlier date.

The material from Har Ḥoma, together with that from Jerusalem, and to a lesser extent from Jericho, nuances this scenario. The few chalk vessels from contexts dating to the second half of the first century BCE and the early first century CE is probably due to a lack of destruction layers and sealed contexts dating to these periods, whilst the many sites destroyed during the First Jewish Revolt create a bias in the archaeological record. In the light of the poorly preserved remains at Har Ḥoma, due to later activity and erosion, it may be considered sheer luck that a sealed fill containing an assemblage from the second half of the first century BCE was preserved. Its discovery provides important new material from this early stage of the chalk-vessel industry, also substantiating Geva's observations on the vessels from Jerusalem Area E, namely that the early chalk vessels were typologically distinct from the later types (Geva 2006a; 2006b:222). Consequently, vessels found in mixed fills and other non-securely dated contexts can now be dated typologically with more certainty. The future discovery and publication of similar early vessels or assemblages may also affect the distribution map, showing that chalk vessels may have circulated more widely in the second half of the first century BCE. The Har Ḥoma material thus suggests that early chalk vessels may have been more common than understood by Gibson. Moreover, the evidence from Har Ḥoma may indicate that even rural communities, not just the elite in Jerusalem, used chalk vessels—at least in the immediate environs of Jerusalem, if not in wider Judea—although one must bear in mind that Har Ḥoma was a production site, and so the local inhabitants would probably also have used the vessels they produced for their elite clientele in Jerusalem.

As a production site, Har Ḥoma joins a small number of quarry-workshops identified in the hinterland of Jerusalem (Fig. 1), the largest of which is located at Ḥizma, c. 8 km to the northeast. Here, four caves, characterized by a dense concentration of chalk-block impressions, yielded thousands of chalk-vessel cores and other production waste belonging to a wide range of hand-carved and lathe-turned vessels (Magen 2002:5–62; see Gibson 1983); based on the ceramic evidence, this workshop was probably active from the late first century BCE onwards with production likely terminating in the early second century CE (Adler 2021; *pace* Magen 2002:52–61). Another major workshop, comprising two large deep caves, was excavated on Mount Scopus, located 3 km to the northeast to the old city of Jerusalem, the production debris here comprising thousands of chalk-vessel cores and wasters from different types of hand-carved and lathe-turned vessels, as well as fragments of broken ossuary boxes and lids. This quarry-workshop is dated by the associated ceramic and numismatic finds to the first century CE, up to c. 70 CE (Amit, Seligman and Zilberbod 2008; Seligman, Amit Zilberbod, this volume). Two smaller quarry-workshops were unearthed at Tell el-Ful, 5 km north of Jerusalem, and at Jebel Mukkabbir, c. 2.5 km southeast of Jerusalem. At Tell el-Ful, a small cave with traces of chalk-block impressions, yielded debitage of mugs, bowls, platters, basins and a stopper in various stages of production, within a thick layer of stone chips; discarded cores extracted from lathe-turned vessels were found further away on the eastern slope of the site (Gibson 1996:18*; 2003:289, Fig. 3; 2022:13–15, Fig. 4, although the latter publication does not mention the cores from lathe-turned vessels). The quarry-workshop at Jebel Mukkabbir was also a single cave, which

yielded production waste from hand-carved and lathe-turned vessels as well as ossuaries (*HA* 1969; 1978:107; Magen 2002:2; Gibson 2003:290).[11]

The workshop at Har Ḥoma aligns with the category of small quarry-workshops. However, unlike the small workshops at Tell el-Ful and Jebel Mukkabbir, and unlike the much larger workshops at Ḥizma and Mount Scopus, only hand-carved vessels were manufactured at Har Ḥoma, and the vessel forms produced at the site may indicate that the Har Ḥoma workshop is the earliest chalk-vessel workshop identified to date. The small-scale nature of the enterprise suggests that the manufacture of chalk vessels may have been a secondary industry supplementing a primarily agricultural economy. Since the agricultural cycle in the Mediterranean basin was marked by various periods of inactivity, farmers often engaged in other work or industry to sustain or increase income (see, for example, Erdkamp 1999). Therefore, the workshop at Har Ḥoma may suggest that the chalk-vessel industry started out as an attempt to boost the local economy by harnessing a new raw material, most likely fueled by a new demand for vessels that were considered insusceptible to ritual impurity.[12] Over time, the popularity of the vessels led to the establishment of much larger and specialized workshops to meet increasing popular demand.

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[11] In an article on ossuaries, Rahmani (1994:197) mentions a production site at Abu Dis, located c. 2 km northeast of Jebel Mukkabbir; this is probably the same workshop at Jebel Mukkabbir that he mentions in an earlier publication (Rahmani 1978; see also *HA* 1969; Magen 1994:244; Gibson 2003:306 [n. 31]).
In addition to the quarry-workshops in the Jerusalem area, two quarry-workshops have also been identified and investigated in the Galilee, one at Reina near Nazareth, and the other, one kilometer away at ʻEnot Amitai (Gal 1991; Amit 2010; Adler 2019:9–12; Adler and Mizzi 2022). Moreover, the discovery of chalk-vessel cores and wasters in other towns and villages attests to the presence of workshops away from quarries. These workshops probably acquired vessels in a semi-finished state and processed them to completion (Gibson 2003:291). The purported production site identified at Bethlehem in Galilee (Magen 2002:160) is one such workshop, rather than a quarry-workshop (Adler and Mizzi 2022:128–129, n. 4).

[12] There is a general scholarly consensus that chalk vessels were used in connection with ritual-purity activities, their use predicated on the notion that, unlike clay, wood, or metals, for example, stone was considered to be insusceptible to impurity, since it is not listed in the Torah with the raw materials that can contract impurity (cf. Leviticus 11:32–33; 15:12; Numbers 31:19–23). The argument mainly draws its strength from later rabbinic writings, which consider stone, dung and earthen vessels to protect against impurity (see, for example, Mishnah, *Kelim* 10:1, *Oholot* 5:5), as well as from the reference to the "six stone water jars for the Jewish rites of purification" mentioned in the New Testament (John 2:6 [NRSV]; see especially Magen 1994:252–255; 2002:138–147, followed by many others; see also Adler 2022a, who tries to make a case without recourse to the later rabbinic literature). Despite the general consensus, this interpretation has not gone unchallenged, some scholars cautioning against using later rabbinic writings to elucidate a much earlier phenomenon, or resisting a monolithic understanding of it. Without necessarily outrightly rejecting the possibility that some chalk vessels may have been used in connection with ritual purity, they place more emphasis on their potential utilitarian functions, proposing that fashion, market economics, and notions of status or identity may have been among the factors at play behind the chalk vessels' popularity (see, for example, Gibson 2003:302–303; Miller 2003; 2015:153–183; Berlin 2005b:429–434; Zangenberg 2013:545–554; Schwartz 2014:84; Wassén 2019:55–56). The existence of a plurality of views among first-century Jews can also not be discounted, and thus, while chalk vessels may have been considered ritually advantageous among certain social circles, they may have held little to no benefit for other groups espousing stricter *halakhic* approaches (see, for example, Miller 2003; 2010:234–235; 2015:153–183; for a discussion of competing interpretations concerning the ritual-purity status of other types of raw materials, see Mizzi 2017; 2019).

The recent publication of an assemblage of chalk vessels from the Giv‘ati Parking Lot excavations in Jerusalem, found in contexts dated to the late second century BCE (Stratum VIII), permits placing the Har Ḥoma assemblage and workshop within a broader chronological context. This assemblage consists of hand-carved bowls that are quite different from the later chiseled vessels, both in form and in the high-quality finishing (Zilberstein 2022; and see Ben-Ami and Eshel 2016 for an identical bowl found in Stratum VII at the same site). A different shallow chalk bowl published from the Jerusalem Jewish Quarter Area Z, dates roughly to the same period (Geva 2014a:369–370, Pl. 21.1:6; 2014d:350–351). This early material raises important questions regarding the origins of the chalk-vessel industry, particularly concerning the relationship between the earlier vessels with polished surfaces and the later chalk vessels with chiseled exteriors that became widespread from the second half of the first century BCE onwards, the earliest specimens coming from Har Ḥoma and Jerusalem Jewish Quarter Areas E and J (for discussion, see Zilberstein 2022:280–284). A definitive correlation between the two phenomena has yet to be established, and the Giv‘ati Parking Lot vessels may possibly have originated from an earlier distinct industry bearing no relation to the chalk-vessel industry that emerged later in the first century BCE. Nonetheless, a more intrinsic connection between the two phenomena cannot be discounted, and the Givʿati Parking Lot material may possibly reflect the original concept of utilizing stone, especially chalk, to mitigate the transmission of ritual impurity. If this is the case, we are missing a connecting link—namely, transitional vessels that exhibit features of both the early and later types. Zilberstein (2022:279–283) suggests that the mug from the Twin Palaces at Jericho may be one such missing link, but it is also possible that the development of the industry was not linear and that the Giv‘ati Parking Lot vessels and those from Har Ḥoma and Areas E and J of the Jewish Quarter represent different, if related, attempts at harnessing chalk to produce vessels. At this stage, it is difficult to determine whether the craftsmen, such as those at Har Ḥoma, were influenced or inspired by the finer, earlier vessels, like those discovered in the Giv‘ati Parking Lot excavations. It is clear, however, that the origins of the chalk-vessel industry may be more complex than hitherto thought, and the processes behind its emergence may go as far back to the late second century BCE, even if the industry only peaked much later in the first century BCE and the first century CE. If so, there would be no reason to attribute the origins of the industry to the availability of a new class of skilled craftsmen employed in Herod’s building projects.[13]

The evidence from the Giv‘ati Parking Lot and Area Z, supported by the material in the Har Ḥoma corpus, moreover, suggests that the earliest vessel forms were bowls, whilst there may have been attempts to produce lids or stoppers. The ubiquitous mugs with vertical

[13] Indeed, this argument is problematic on other grounds: first, the masonry used in the various Herodian buildings was a different, harder limestone than the soft chalk employed in chalk-vessel production (see also Adler 2022a:49); second, the evidence from Area J of the Jewish Quarter contradicts this claim, since some chalk vessels were found in domiciles that went out of use in the mid-first century or sometime before 37 BCE (see above).

walls emerged later, presumably as a natural development, the craftsmen preferring the angular features of the mugs to the curved features of the bowls, as they were easier to produce. The original inspiration for chalk vessels may have come from common ceramic, glass and wooden bowls (see also Zilberstein 2022:281–283), whereas the later mugs with vertical walls probably developed naturally from the earlier chalk prototypes, rather than imitating vessel forms in other media.

Conclusion

The Har Ḥoma corpus is a welcome addition to the limited body of chalk-vessel assemblages securely dated to the second half of the first century BCE. The relatively large size of the assemblage allocates it an important role in the future study of chalk vessels. We contend that the Har Ḥoma chalk-vessel assemblage and quarry-workshop are among the earliest documented to date, the evidence permitting a refinement of the typological classification of chalk vessels and a reconsideration of the origins of the chalk-vessel industry. Above all, we hope that the publication of this material will lead to the identification of additional early assemblages, enabling us to reach more definitive conclusions about the early history of the chalk-vessel industry.

Catalogue: Hand-Carved Chalk Vessels from Fill 212 at Har Ḥoma

Cat. No.	Vessel Type	Reg. No.	Description
1	Small bowl	B2031/36	Thin flat rim; diam. 11 cm; curved wall; smooth ext. with very faint traces of diagonal faceting; smoothed int.
2	Small bowl	B2031/35	Thin flat rim; diam. 12 cm; curved wall; faint traces of irregular faceting; smoothed int.
3	Small bowl	B2031/55	Thin flat rim; diam. 12 cm; curved wall; irregular faceting on ext., smoothed below rim; smoothed int.
4	Small bowl	B2031/29	Thick flat rim; diam. 12.5 cm; curved wall; irregular faceting on ext.; smoothed int.
5	Small bowl	B2031/30	Thin flat rim; diam. 12.5 cm; curved wall; irregular faceting on ext., smoothed below rim; smoothed int.
6	Medium-sized bowl	B2031/2	Thick flat rim; diam. 14 cm; slightly curved wall with inward-turned lip; vertical faceting on ext., smoothed below rim; smoothed int.
7	Medium-sized bowl	B2031/4	Thin flat rim; diam. 14.5 cm; curved wall with inward-turned lip; irregular diagonal faceting on ext., smoothed below rim; smoothed int.
8	Medium-sized bowl	B2031/33	Thin flat rim; diam. 15 cm; curved wall; irregular small chisel marks on ext., smoothed below rim; smoothed int.
9	Medium-sized bowl	B2031/27, 28, 60, 61	Thick flat rim; diam. 15 cm; slightly curved wall; irregular diagonal faceting on ext. with traces of comb dressing, smoothed below rim; smoothed int.; traces of burning on int. and ext. rim

Catalogue (cont.)

Cat. No.	Vessel Type	Reg. No.	Description
10	Medium-sized bowl	B2031/9	Thin flat rim; diam. 15 cm; curved wall; irregular diagonal faceting on ext., smoothed below rim; smoothed int.
11	Large bowl	B2031/56, 19	Thin flat rim; diam. 16 cm; slightly curved wall; irregular diagonal faceting on ext., smoothed below rim; smoothed int.
12	Large bowl	B2031/31	Thick flat rim; diam. 18 cm; curved wall; irregular diagonal faceting on ext., smoothed below rim, with traces of vertical or diagonal chisel marks; smoothed int.
13	Large bowl	B2031/7	Thin flat rim; diam. 16.5 cm; curved wall; irregular vertical faceting on ext.; smoothed int.
14	Large bowl	B2031/3	Thick flat rim; diam. 20 cm; slightly curved wall; traces of irregular vertical diagonal faceting on ext., smoothed below rim; smoothed int. with traces of deep chisel marks
15	Bowl	B2031/14	Flat base; base diam. 7 cm; smoothed ext. and int. base; irregular faceting on ext.
16	Bowl base	B2031/11	Flat base; base diam. 10 cm; smoothened ext. and int. base; curved wall; irregular faceting on ext.; smoothed int. with traces of deep chisel marks
17	Bowl(?) base	B2031/6	Partially preserved base; base diam. 14 cm; slightly curved wall; irregular vertical faceting on ext.; smoothed int.
18	Handled bowl	B2031/8	Thick flat rim; diam. 12 cm; slightly curved wall; diagonal faceting on ext.; smoothed int.; large, slightly curved, perforated vertical handle flush with rim, smoothed surface and deep (post-production?) chisel marks on narrow side
19	Handled bowl	B2031/12, 20	Slightly curved wall with smoothed interior; large curved, perforated vertical handle flush with rim, smoothed surface
20	Handled bowl(?)	B2031/24	Smoothed int.; thin flat rim; large curved, perforated vertical handle flush with rim, smoothed surface
21	Medium-sized handled bowl	B2031/5	Thin flat rim; diam. 15 cm; curved wall with irregular diagonal faceting on ext. and smoothed int.; large, slightly curved, perforated vertical handle flush with rim, smoothed surface
22	Handled bowl(?)	B2031/23	Thin flat rim; smoothed int.; upper part of large, perforated vertical handle flush with rim, smoothed surface
23	Small bowl	B2031/13	Curved wall; irregular faceting on ext.; smoothed int. with small hole (repair?) in upper part of wall
24	Small bowl with spout	B2031/10	Thin flat rim; diam. 11 cm; curved wall; irregular faceting on ext.; smoothed int.; spout flush with rim
25	Small bowl (unfinished)	B2031/15, 16	Thin flat rim; diam. 11 cm; thick curved wall; irregular faceting on ext.; smoothed int.
26	Krater	B2031/25	Body fragment with slightly curved wall and convex profile; estimated diam. c. 50 cm; vertical faceting on ext.; smoothed int.; trapezoid ledge handle
27	Krater	B2031/26	Body fragment with slightly curved wall and convex profile; estimated diam. c. 50 cm, vertical faceting on ext.; smoothed int.

References

‘Adawi Z. 2020. Jerusalem, Umm Ṭuba. *HA–ESI* 132 (October 20). https://www.hadashot-esi.org.il/Report_Detail_Eng.aspx?id=25816&mag_id=128 (accessed November 30, 2023).

‘Adawi Z., and Eirikh-Rose A. 2018. Jerusalem, Khirbat Umm Ṭuba: Columbaria and a Burial Cave. *HA–ESI* 130 (April 26). http://hadashot-esi.org.il/images//J_Umm_Tuba.pdf (Hebrew; English summary, pp. 21–23) (accessed November 30, 2023).

Adler Y. 2014. Tosefat Shabbat 1:14—‘Come and See the Extent to Which Purity Had Spread’: An Archaeological Perspective on the Historical Background to a Late Tannaitic Passage. In S. Fine and A. Koller eds. *Talmuda de-Eretz Israel: Archaeology and the Rabbis in Late Antique Palestine* (Studia Judaica 73). Boston−Berlin. Pp. 63–82.

Adler Y. 2019. New Insights in the Study of Roman Period Jewish Chalk Vessels. *Qadmoniot* 157:2–17 (Hebrew).

Adler Y. 2021. Ritual Purity in Daily Life after 70 CE: The Chalk Vessel Assemblage from Shuʿafat as a Test Case. *JSJ* 52:39–62.

Adler Y. 2022a. Along Ethnic Lines: The Case for Stepped Pools and Chalk Vessels as Markers of Jewish Purity Observance. In K. Hedner Zetterholm, A. Runesson, C. Wassén and M. Zetterholm eds. *Negotiating Identities: Conflict, Conversion, and Consolidation in Early Judaism and Christianity (200 BCE–600 CE).* Lanham, Md. Pp. 401–421.

Adler Y. 2022b. *The Origins of Judaism: An Archaeological-Historical Reappraisal*. New Haven.

Adler Y. and Mizzi D. 2022. A Roman Era Chalk Quarry and Chalk Vessel Workshop at ʿEinot Amitai in Lower Galilee: A Preliminary Report. *IEJ* 72:113–132.

Amit D. 2010. The Manufacture of Stone Vessels in Jerusalem and the Galilee: Technological, Chronological and Typological Aspects. *Michmanim* 22:49–66 (Hebrew; English summary, pp. 35*–36*).

Amit D., Seligman J. and Zilberbod I. 2008. Stone Vessel Production Caves on the Eastern Slope of Mount Scopus, Jerusalem. In Y.M. Rowan and J.R. Ebeling eds. *New Approaches to Old Stones: Recent Studies of Ground Stone Artifacts*. London–Oakville. Pp. 320–342.

Ariel D.T. 2006. Coins. In H. Geva. *Jewish Quarter Excavations in the Old City of Jerusalem Conducted by Nahman Avigad, 1969–1982* III*: Area E and Other Studies; Final Report*. Jerusalem. Pp. 192–217.

Ariel D.T. 2014. Coins from Area J. In H. Geva. *Jewish Quarter Excavations in the Old City of Jerusalem Conducted by Nahman Avigad, 1969–1982* VI: *Areas J, N, Z, and Other Studies; Final Report*. Jerusalem. Pp. 243–257.

Avni Y. 1993. The Structural and Landscape Evolution of the Western Ramon Structure. *IJES* 42:177–188.

Avner R. Forthcoming. Jerusalem, Har Ḥoma. *HA-ESI.*

Bar-Nathan R. 2002. *Hasmonean and Herodian Palaces at Jericho; Final Reports of the 1973–1987 Excavations* III: *The Pottery*. Jerusalem.

Bar-Nathan R. 2006. *Masada* VII*: The Yigael Yadin Excavations 1963–1965; Final Reports: The Pottery of Masada.* Jerusalem.

Bar-Nathan R. and Gärtner J. 2013. The Stone Artifacts from the Hasmonean and Herodian Palaces at Jericho and Cypros. In R. Bar-Nathan and J. Gärtner eds. *Hasmonean and Herodian Palaces at Jericho; Final Reports of the 1973–1987 Excavations* V*: The Finds from Jericho and Cypros*. Jerusalem. Pp. 205–234.

Ben-Ami D. and Eshel E. 2016. Stone Bowl Bearing the Name Hyrcanus from the Givati Excavations at the City of David. *Eretz-Israel* 32:16–20 (Hebrew ; English summary, p. 115*).

Berlin A. 2005a. Pottery and Pottery Production in the Second Temple Period. In B. Arubas and H. Goldfus eds. *Excavations at the Site of the Jerusalem International Convention Center (Binyanei Ha'uma): A Settlement of the Late First to Second Temple Period, the Tenth Legion's Kilnworks, and a Byzantine Monastic Complex; The Pottery and Other Small Finds* (*JRA* Suppl. S. 60). Portsmouth, R.I. Pp. 29–60.

Berlin A.M. 2005b. Jewish Life before the Revolt: The Archaeological Evidence. *JSJ* 36:417–470.

Berlin A.M. 2012. The Pottery of Stratum 8–7 (The Hellenistic Period). In A. De Groot and H. Bernick-Greenberg. *Excavations in the City of David 1978–1985 Directed by Yigal Shiloh* VIIb: *Area E: The Finds* (Qedem 54). Jerusalem. Pp. 5–29.

Berlin A.M. 2015. Hellenistic Period. In S. Gitin ed. *The Ancient Pottery of Israel and Its Neighbors from the Iron Age through the Hellenistic Period* 2. Jerusalem. Pp. 629–671, 744–745.

Cahill J.M. 1992. Chalk Vessel Assemblages of the Persian/Hellenistic and Early Roman Periods. In A. De Groot and D.T. Ariel eds. *Excavations at the City of David 1978–1985 Directed by Yigal Shiloh* III*: Stratigraphical, Environmental, and Other Reports* (Qedem 33). Jerusalem. Pp. 190–274.

Deines R. 1993. *Jüdische Steingefäße und pharisäische Frömmigkeit: Ein archäologisch-historischer Beitrag zum Verständnis von Joh 2,6 und der jüdischen Reinheitshalacha zur Zeit Jesu* (Wissenschaftliche Untersuchungen zum Neuen Testament 2/52). Tübingen.

Erdkamp P. 1999. Agriculture, Underemployment, and the Cost of Rural Labour in the Roman World. *Classical Quarterly* 49:556–572.

Fine S. 2000. A Note on Ossuary Burial and the Resurrection of the Dead in First-Century Jerusalem. *JJS* 51:69–76.

Finkielsztejn J. 2010. Jerusalem, Har Ḥoma. *HA–ESI* 122 (August 8). http://www.hadashot-esi.org.il/Report_Detail_Eng.aspx?id=1441&mag_id=117 (accessed November 30, 2023).

Gal Z. 1991. A Stone-Vessel Manufacturing Site in the Lower Galilee. *'Atiqot* 20:25*–26* (Hebrew; English summary, pp. 179–180).

Geva H. 2003. Hellenistic Pottery from Areas W and X-2. In H. Geva. *Jewish Quarter Excavations in the Old City of Jerusalem Conducted by Nahman Avigad, 1969–1982* II*: The Finds from Areas A, W and X-2; Final Report*. Jerusalem. Pp. 113–175.

Geva H. 2006a. A Proposal for Jerusalemite Stone Vessel Typology of the Second Temple Period. In E. Baruch, Z. Greenhut and A. Faust eds. *New Studies in Jerusalem* 11 *(Proceedings of the Eleventh Conference, March 30th 2006, Bar-Ilan University).* Ramat Gan. Pp. 193–200 (Hebrew; English summary, pp. 41*–42*).

Geva H. 2006b. Stone Artifacts. In H. Geva. *Jewish Quarter Excavations in the Old City of Jerusalem Conducted by Nahman Avigad, 1969–1982* III: *Area E and Other Studies; Final Report*. Jerusalem. Pp. 218–238.

Geva H. 2006c. Stratigraphy and Architecture. In H. Geva. *Jewish Quarter Excavations in the Old City of Jerusalem Conducted by Nahman Avigad 1969–1982* III: *Area E and Other Studies; Final Report*. Jerusalem. Pp. 1–78.

Geva H. 2010. Early Roman Pottery. In H. Geva. *Jewish Quarter Excavations in the Old City of Jerusalem Conducted by Nahman Avigad, 1969–1982* IV: *The Burnt House of Area B and Other Studies; Final Report*. Jerusalem. Pp. 118–153.

Geva H. 2014a. Hellenistic Stone Artifacts from Area Z. In H. Geva. *Jewish Quarter Excavations in the Old City of Jerusalem Conducted by Nahman Avigad, 1969–1982* VI: *Areas J, N, Z and Other Studies; Final Report*. Jerusalem. Pp. 369–372.

Geva H. 2014b. Stone Artifacts from Areas J and N. In H. Geva. *Jewish Quarter Excavations in the Old City of Jerusalem Conducted by Nahman Avigad, 1969–1982* VI: *Areas J, N, Z and Other Studies; Final Report*. Jerusalem. Pp. 272–287.

Geva H. 2014c. Stratigraphy and Architecture of Area J. In H. Geva. *Jewish Quarter Excavations in the Old City of Jerusalem Conducted by Nahman Avigad, 1969–1982* VI: *Areas J, N, Z and Other Studies; Final Report*. Jerusalem. Pp. 1–82.

Geva H. 2014d. Stratigraphy and Architecture of Area Z. In H. Geva. *Jewish Quarter Excavations in the Old City of Jerusalem Conducted by Nahman Avigad, 1969–1982* VI*: Areas J, N, Z and Other Studies; Final Report*. Jerusalem. Pp. 347–352.

Geva H. and Hershkovitz M. 2006. Local Pottery of the Hellenistic and Early Roman Periods. In H. Geva. *Jewish Quarter Excavations in the Old City of Jerusalem Conducted by Nahman Avigad, 1969–1982* III*: Area E and Other Studies; Final Report*. Jerusalem. Pp. 94–143.

Geva H. and Hershkovitz M. 2014. Local Pottery of the Hellenistic and Early Roman Periods from Areas J and N. In H. Geva. *Jewish Quarter Excavations in the Old City of Jerusalem Conducted by Nahman Avigad, 1969–1982* VI: *Areas J, N, Z and Other Studies; Final Report*. Jerusalem. Pp. 134–175.

Geva H. and Rosenthal-Heginbottom R. 2003. Local Pottery from Area A. In H. Geva. *Jewish Quarter Excavations in the Old City of Jerusalem Conducted by Nahman Avigad, 1969–1982* II: *The Finds from Areas A, W and X-2; Final Report*. Jerusalem. Pp. 176–191, 232–255.

Gibson S. 1983. The Stone Vessel Industry at Ḥizma. *IEJ* 33:176–188.

Gibson S. 1996. Tell el Ful and the Results of the North-East Jerusalem Survey. In A. Faust ed. *New Studies on Jerusalem* 2 *(Proceedings of the Second Conference, November 28th 1996, Bar Ilan University).* Ramat Gan. Pp. 9*–23*.

Gibson S. 2003. Stone Vessels of the Early Roman Period from Jerusalem and Palestine: A Reassessment. In G.C. Bottini, L. Di Segni and L.D. Chrupcala eds. *One Land—Many Cultures: Archaeological Studies in Honour of Stanislao Loffreda OFM* (SBF Collectio Maior 41). Jerusalem. Pp. 287–308.

Gibson S. 2016. Soft Limestone Vessels. In D. Syon. *Gamla* III: *The Shmarya Gutmann Excavations, 1976–1989; Finds and Studies, Part 2* (IAA Reports 59). Jerusalem. Pp. 49–81.

Gibson S. 2022. Common and Uncommon Jewish Purity Concerns in City and Village in Early Roman Palestine and the Flourishing of the Stone Vessel Industry: A Summary and Discussion. *JSJ* 53:157–197.

HA 1969. A Workshop from the Second Temple Period in the Vicinity of Jerusalem. *HA* 30:24.

Hershkovitz M. 2005. The Pottery of the Late 1st and 2nd c. A.D. from the 1949 Excavations. In B. Arubas and H. Goldfus eds. *Excavations on the Site of the Jerusalem International Convention Center (Binyanei Ha'uma): A Settlement of the Late First to Second Temple Period, the Tenth Legion's Kilnworks, and a Byzantine Monastic Complex; The Pottery and Other Small Finds* (*JRA* Suppl. S. 60). Portsmouth, R.I. Pp. 283–296.

Kisilevitz S. 2015. Jerusalem, Har Ḥoma. *HA–ESI* 127 (August 27). http://www.hadashot-esi.org.il/Report_Detail_Eng.aspx?id=22787&mag_id=122. (accessed November 30, 2023).

Magen Y. 1994. Jerusalem as a Center of the Stone Vessel Industry during the Second Temple Period. In H. Geva ed. *Ancient Jerusalem Revealed*. Jerusalem, Pp. 244–256.

Magen Y. 2002. *The Stone Vessel Industry in the Second Temple Period: Excavations at Ḥizma and the Jerusalem Temple Mount* (*JSP* 1). Jerusalem.

Miller S.S. 2003. Some Observations on Stone Vessel Finds and Ritual Purity in Light of Talmudic Sources. In S. Alkier and J. Zangenberg eds. *Zeichen aus Text und Stein: Studien auf dem Weg zu einer Archäologie des Neuen Testaments* (Texte und Arbeiten zum neutestamentlichen Zeitalter 42). Tübingen. Pp. 402–419.

Miller S.S. 2010. Stepped Pools, Stone Vessels, and Other Identity Markers of "Complex Common Judaism". *JSJ* 41:214–243.

Miller S.S. 2015. *At the Intersection of Texts and Material Finds: Stepped Pools, Stone Vessels, and Ritual Purity among the Jews of Roman Galilee* (Journal of Ancient Judaism Suppl. 16). Göttingen.

Mizzi D. 2017. Pure Matter: On the Ritual-Purity Status of Glass at Qumran. In D. Mizzi, N.C. Vella and M.R. Zammit ed. *"What Mean These Stones?" (Joshua 4:6, 21): Essays on Texts, Philology, and Archaeology in Honour of Anthony J. Frendo (Ancient Eastern Studies* Suppl. 50). Leuven. Pp. 255–279.

Mizzi D. 2019. Were Scrolls Susceptible to Impurity? The View from Qumran. In J. Jokiranta and M. Zahn eds. *Law, Literature, and Society in Legal Texts from Qumran (Papers from the Ninth Meeting of the International Organization for Qumran Studies, Leuven 2016)* (Studies in the Texts of the Desert of Judah 128). Leiden. Pp. 27–64.

Netzer E. 2001. *Hasmonean and Herodian Palaces at Jericho; Final Reports of the 1973–1987 Excavations* I: *Stratigraphy and Architecture*. Jerusalem.

Netzer E. and Laureys-Chachy R. 2004. Stratigraphy and Architecture. In E. Netzer ed. *Hasmonean and Herodian Palaces at Jericho. Final Reports of the 1973–1987 Excavations* II. Jerusalem. Pp. 1–285.

Rahmani L.Y. 1978. Ossuaries and Bone-Gathering in the Late Second Temple Period. *Qadmoniot* 44:102–112 (Hebrew).

Rahmani L.Y. 1994. Ossuaries and *Ossilegium* (Bone-Gathering) in the Late Second Temple Period. In H. Geva ed. *Ancient Jerusalem Revealed*. Jerusalem. Pp. 191–205.

Retzler A., Wilson M.A. and Avni Y. 2013. Chondrichthyans from the Menuha Formation (Late Cretaceous: Santonian–Early Campanian) of the Makhtesh Ramon Region, Southern Israel. *Cretaceous Research* 40:81–89.

Rosenthal-Heginbottom R. 2005. The 1968 Excavations. In B. Arubas and H. Goldfus eds. *Excavations on the Site of the Jerusalem International Convention Center (Binyanei Ha'uma): A Settlement of the Late First to Second Temple Period, the Tenth Legion's Kilnworks, and a Byzantine Monastic Complex; The Pottery and Other Small Finds* (*JRA* Suppl. S. 60). Portsmouth, R.I. Pp. 229–282.

Rosenthal-Heginbottom R. 2006. Late Hellenistic and Early Roman Lamps and Fine Wares. In H. Geva ed. *Jewish Quarter Excavations in the Old City of Jerusalem Conducted by Nahman Avigad, 1969–1982* III: *Area E and Other Studies; Final Report*. Jerusalem. Pp. 144–167.

Sandhaus D. 2013. The Hellenistic Pottery. In D. Ben-Ami ed. *Jerusalem: Excavations in the Tyropoeon Valley (Giv'ati Parking Lot)* I (IAA Reports 52). Jerusalem. Pp. 83–108.

Schwartz S. 2014. *The Ancient Jews from Alexander to Muhammad*. Cambridge.

Seligman J., Amit D. and Zilberbod I. This volume. Second-Temple Period Chalk Quarry and Vessel-Production Cave Complex on Mount Scopus, Jerusalem.

Shalev Y., Bocher E., Roth H., Sandhaus D., Shalom N. and Gadot Y. 2021. Jerusalem in the Early Hellenistic Period: New Evidence for Its Nature and Location. In A.M. Berlin and P.J. Kosmin eds. *The Middle Maccabees: Archaeology, History and the Rise of the Hasmonean Kingdom* (Archaeology and Biblical Studies 28). Atlanta. Pp. 17–37.

Sneh A., Bartov Y., Weissbrod T. and Rosensaft M. 1998. Geological Map of Israel, 1:200,000. *Israel Geological Survey* (4 sheets).

Terem S.V. 2016. *Jerusalem and Judaea in the First and Early Second Century CE: Continuity and Change in the Ceramic Culture.* Ph.D. diss. Bar Ilan University. Ramat Gan (Hebrew; English summary).

Wassén C. 2019. Stepped Pools and Stone Vessels: Rethinking Jewish Purity Practices in Palestine. *BAR* 45/4–5:52–58.

Zangenberg J.K. 2013. Pure Stone: Archaeological Evidence for Jewish Purity Practices in Late Second Temple Judaism (Miqwa'ot and Stone Vessels). In C. Frevel and C. Nihan eds. *Purity and the Forming of Religious Traditions in the Ancient Mediterranean World and Ancient Judaism* (Dynamics in the History of Religion 3). Leiden. Pp. 537–572.

Zilberstein A. 2022. "From Zion Shall Come Forth the Purity": The Beginning of the Age of Purity in Light of Unique Hasmonean Chalkstone Vessels from Jerusalem. In Y. Gadot, Y. Zelinger, O. Peleg-Barkat, and Y. Shalev eds. *New Studies in the Archaeology of Jerusalem and Its Region. Collected Papers* XV. Jerusalem. Pp. 273–286.