

REMAINS FROM THE HELLENISTIC THROUGH THE BYZANTINE PERIODS AT THE ‘THIRD MILE ESTATE’, ASHQELON*

YIGAL ISRAEL AND TALİ ERICKSON-GINI

INTRODUCTION

In the spring of 1991, a salvage excavation was conducted east of the Barnea‘ neighborhood in Ashqelon (map ref. NIG 16055–88/62135–65; OIG 11055–88/12135–65; Fig. 1; Israel 1995a; 1995b).¹ The site is located along the eastern foot of the inner *kurkar* ridge and west of the Migdal Valley, approximately 2.3 km from the modern coastline. The archaeological remains were discovered following the removal of 5 m of dune sand, totaling over 1.5 million cu m, intended for use in the construction of the Migdal neighborhood. The heavy mechanical equipment damaged, and in some places completely destroyed, the architectural remains. Large scale removal of building stones and bricks had already taken place in antiquity, most probably during the Mamluk period when the neighboring town of Majdal was established.²

The excavation was conducted in seven areas (A–F and F1; 3.3 dunams in total; Fig. 1), opened only where the tractors exposed archaeological remains. Vast parts of the site, which extends over c. 400 dunams, remain unexamined. The excavation revealed fragmentary evidence of occupation from the Iron Age through the Early

Roman period (Area E); a complex of five early Gaza-jar kilns from the first–third centuries CE (Area F1); the remains of a well-built installation complex that included a bathhouse, pools, an oil press, two winepresses, several warehouses and a pottery kiln, belonging to a large Byzantine-period (late fourth or early fifth to early seventh centuries CE) agricultural estate that spanned the northeastern corner of the site (Areas A–C, E); and several Byzantine-period graves and a tomb (Areas A, D), most probably dating to the same timespan. The site was dubbed ‘Third Mile Estate’ following the discovery of an inscribed Roman milestone, which marked the third mile from the center of the Roman city of Ashqelon (see Roll, this volume).

Adjoining the ‘Third Mile Estate’ to its southeast is the Byzantine-period site Ḥammama Conduit (Fig. 1; Fabian, Nahshoni and Ein Gedy 1995³). The close proximity of the two sites, as well as similarities in their numismatic assemblages (see Ariel, this volume), seem to indicate that they are part of the same estate.

The site also included remains of an Intermediate Bronze Age settlement, located in part under the southern and southwestern parts of the Byzantine estate (Areas B, C, E, F), and a Middle Bronze Age IIB pit-grave cemetery (Subareas D3 and D4, and Area F1). For these early finds, see Erickson-Gini and Israel, this volume. This article discusses the finds from the Iron Age through the Byzantine period.

* The article is dedicated to the memory of the late Ori Neder, IAA Ashqelon district inspector, who died at a young age.

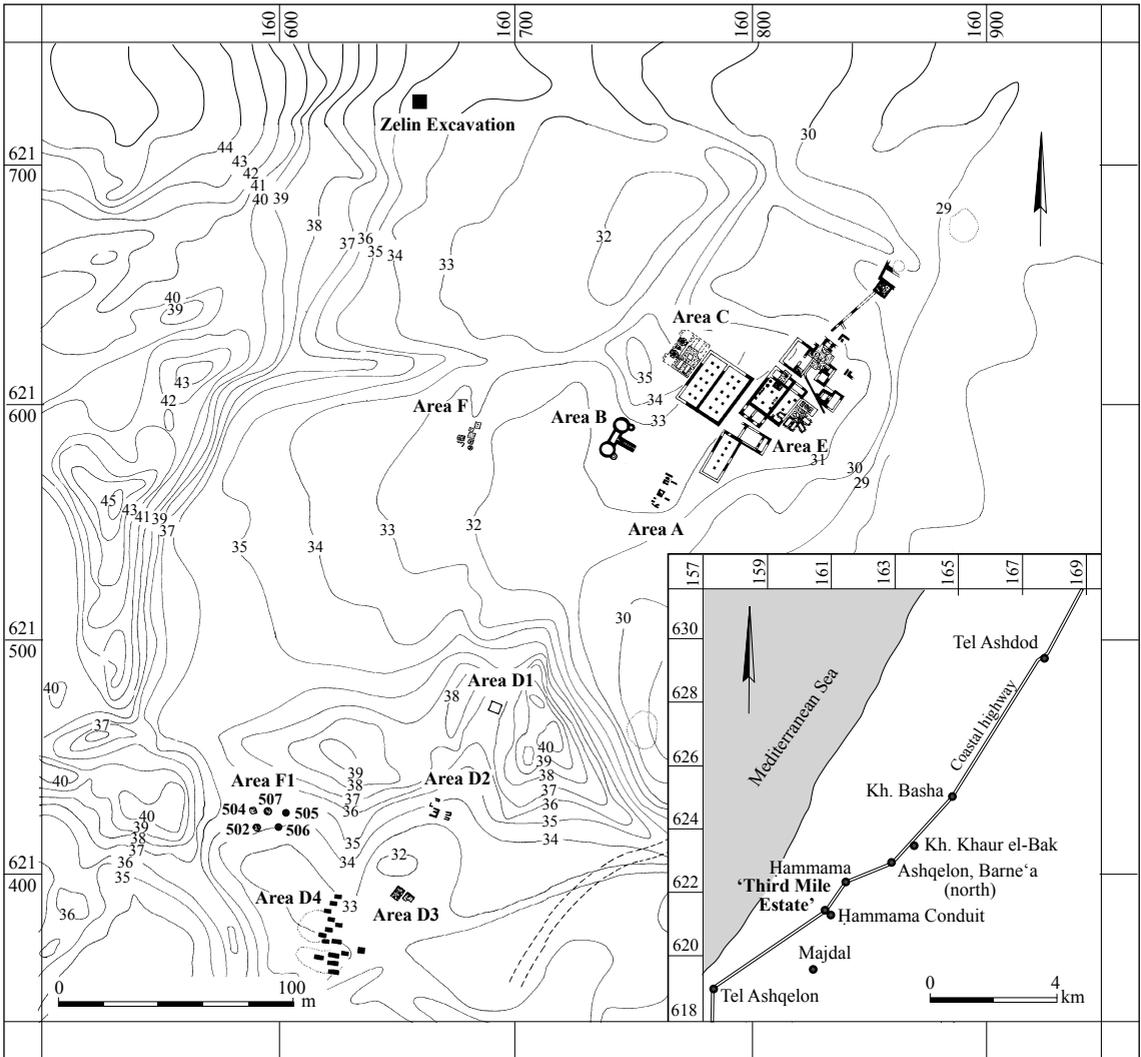


Fig. 1. Location map and site map.



Fig. 2. Iron Age and Persian pottery.

No.	Type	Basket	Area/Locus	Description
1	Juglet	132	C/206	Ware: red 2.5YR5/6; numerous tiny white and dark gray inclusions Surface: red 2.5YR4/8 burnish, vertically applied
2	Bowl	272	E/438	Ware: reddish yellow 5YR7/6; numerous tiny dark gray and white inclusions Surface: self slip

THE IRON AGE AND PERSIAN PERIOD

Although no architectural remains were found dating to the Iron Age or the Persian period, a small amount of pottery from both periods was found in later accumulations in Areas C, E and F. The finds included an Iron Age juglet (Fig. 2:1) and a mortarium base (Fig. 2:2) from the Persian period.⁴

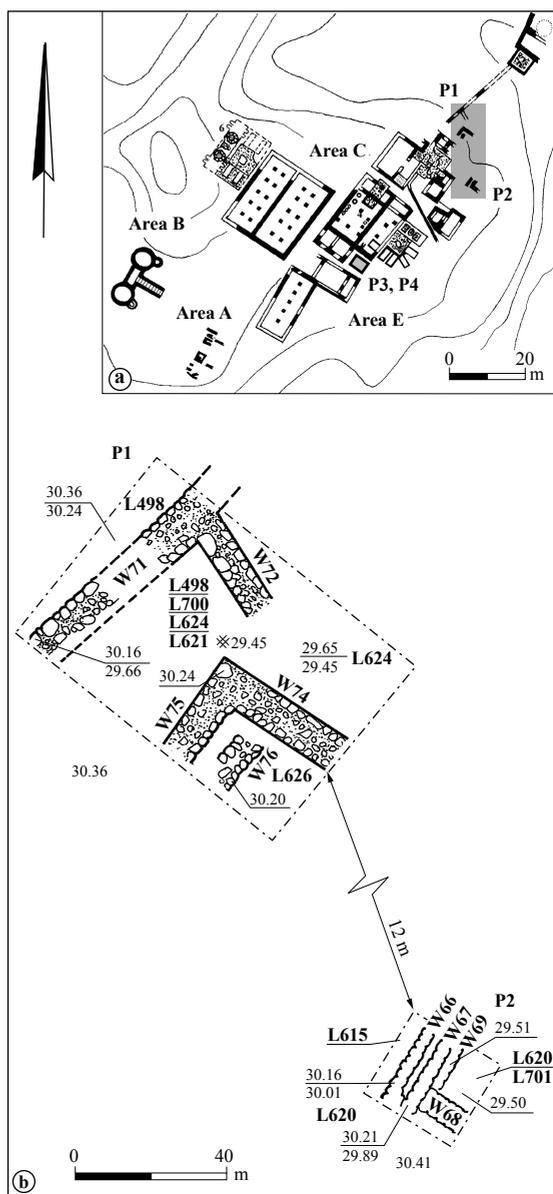
THE HELLENISTIC AND EARLY ROMAN PERIODS

The Probes

Four probes in Area E (Plan 1) yielded fragmentary architectural remains, possibly from the Hellenistic period, as well as pottery of this period mixed with finds from the Early Roman (small quantities) and the Byzantine periods. Two probes were opened in the northeastern part of the area (P1, P2) and two, farther south (P3, P4).

Probe P1 (6.0 × 8.5 m) revealed a beaten earth floor (L621) with an overlying occupation layer of ash (L624; 0.15–0.20 m) covered by sand and *hamra* soil (L700). The layer of ash contained a small amount of Hellenistic-period potsherds, including bowls (Fig. 3:2, 6), a casserole (Fig. 3:11), an intact juglet (Fig. 3:12) and storage jars (Fig. 3:15, 16), and several sherds dating to the Byzantine period (see Fig. 34:3). Two fourth-century CE coins were also found (see Ariel, this volume: Cat. Nos. 14, 29). The foundations of several walls (W71 [see below], W72, W74–W76), built of one course of small *kurkar* fieldstones, were set into Fill 700, c. 0.5 m above the level of Floor 621. The fill covering the remains of the walls (L498) included a mixed assortment of potsherds from the Hellenistic (Fig. 3:1, 7), Early Roman (Fig. 4:3) and Byzantine (see Figs. 34:1; 36:1) periods; the walls most probably date to the latter period.

Probe P2 (2.5 × 2.5 m) was dug down to what seemed to be a layer of ash (L701) at a similar level as L624 in Probe P1. Although left unexcavated, it may indicate a conflagration, possibly during the Hellenistic period. Two



Plan 1. Area E probes with Hellenistic and Early Roman finds: (a) location of probes; (b) Plan of Probes P1 and P2.

walls (W68, W69), of which only the tops were exposed, were set into Ash Layer 701; their date could not be determined. They were built of irregular *kurkar* fieldstones. The walls and the layer of ash were covered by a fill (L620), above which two parallel walls (W66, W67), of similar construction, were built. These walls,

preserved up to two courses high, may date from the Byzantine period.

Probes P3 and P4 were opened to the south of the Byzantine-period oil press complex (L465, L484; 3 × 4 m each; see Plan 5). Probe P3 yielded Early Roman-period potsherds and a stone vessel (L472; Fig. 4:1, 4, 5); another Early Roman stone-vessel fragment was recovered in a locus to the south of the probe (L607; see Plan 7). In adjacent Probe P4, a layer of ash, (L496) with few late Hellenistic body sherds (not drawn), was uncovered. An intact jug (Fig. 3:13), which dates from the Hellenistic period, was found in the debris removed by mechanical equipment to the north of the Byzantine northern pool complex (see below, Plan 2:1), where mixed loci included, among other finds, Hellenistic-period sherds (not drawn).

The Finds

Hellenistic and Early Roman pottery, dating from the third through the first centuries BCE, as well as five Hellenistic coins (see Ariel, this volume: Cat. Nos. 1–5) and stone vessels from the Early Roman period, were found in the probes in Area E, in mixed fills within the Byzantine-period structures and on the surface in various areas of the site.⁵ The ceramic assemblages from these periods included a variety of bowls, kraters, cooking wares, fine- and plain-ware jugs, storage jars, amphorae and unguentaria; the Early Roman period was represented by only a small number of specimens. Most of the pottery dating to these periods was markedly weathered.

Hellenistic Pottery (Fig. 3)

Bowls.— Several bowl types appear in this assemblage. Bowls with inverted rims bearing traces of brown burnish (Fig. 3:1, 2) are large and deep, with rather thin walls. The bowl in Fig. 3:1 has a rouletted pattern on its interior near the base. At Dor, bowls of this type were found in all Hellenistic phases up to the end of the second century BCE, and were extremely

rare in first-century BCE assemblages (Guz-Zilberstein 1995:290).

A variety of Eastern Terra Sigillata (ETS) bowls were found. The earliest of this group is a ‘bell-shaped,’ base-ringed bowl (ETS-I; Fig. 3:3). Gunneweg, Perlman and Yellin (1983:96) described it as one of the ETS bowl types that was longest in use, appearing at c. 180 BCE or earlier, and as late as 70 CE. Other early ETS bowl types include a bowl with a flaring profile and an everted, bowed rim (Fig. 3:4), which was dated at Dor to the second century BCE (Guz-Zilberstein 1995:291), and a bowl with an incurved rim and a low, wide ring base (Fig. 3:5, 6), dated by Hayes to the beginning of the first century BCE (Hayes 1985: Tav. 1:9, 10).

Two fish plates (Fig. 3:7, 8) are similar in shape, but have different wares and slips. Plate No. 7 belongs to a type dated at Dor to the second century BCE (Guz-Zilberstein 1995:291). Plate No. 8 has a very worn red burnish, but is probably an early form of ETS (Hayes’ Form 1), dating from the second half of the second century CE (Hayes 1985: Tav. I:1).

A bowl fragment bearing a Megarian-style molded decoration (Fig. 3:9) is dated to 150–50 BCE (Gunneweg, Perlman and Yellin 1983:98; Rosenthal-Heginbottom 1995:369).

Krater and Casserole.— The krater is thin-walled with a delicately grooved horizontal rim (Fig. 3:10). The casserole has a carinated shape and a thin ledge rim, probably made to support a lid (Fig. 3:11). This type of casserole was, according to Kenyon (1957:230), quite common in Samaria during the Hellenistic period. Our example is also similar to casseroles with slightly upturned rims from Dor, which were particularly common in second-century BCE contexts (Guz-Zilberstein 1995:299).

Juglet and Jug.— The bag-shaped juglet (Fig. 3:12) has a flat, narrow base and a thick, rounded rim. It is similar to a type found at Maresha (Kloner and Hess 1985: Fig. 3:12). An intact, medium-sized table jug (Fig. 3:13) made of plain light ware has parallels dated to

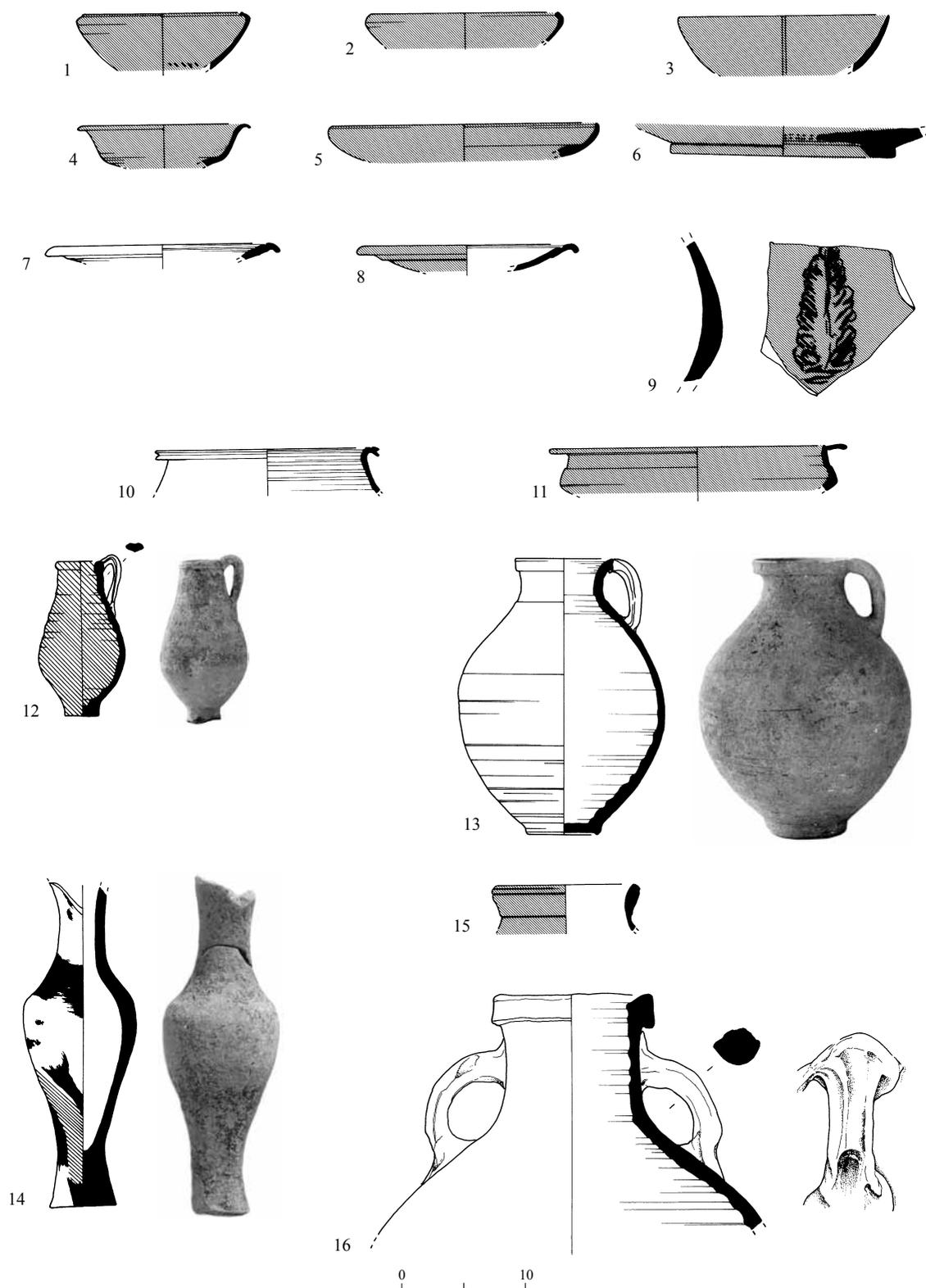


Fig. 3. Hellenistic pottery.

◀ Fig. 3

No.	Type	Basket	Area/Locus	Description
1	Bowl	373	E/498	Ware: pink 7.5YR7/4 Surface: brown 7.5YR4/2 burnish; very worn
2	Bowl	378	E/624	Ware: pink 7.5YR7/4 Surface: brown 7.5YR3/3 burnish
3	Bowl	306	E/451	Ware: reddish yellow 5YR6/6; light gray core; minute white inclusions Surface: yellowish red 5YR4/6 burnish; very worn
4	Bowl	334	E/493	Ware: reddish yellow 7.5YR8/6 Surface: red 2.5YR4/8 burnish
5	Bowl	337	E/480	Ware: pink 7.5YR8/4 Surface: yellowish red 5YR5/6 burnish
6	Bowl	380	E/624	Ware: pink 7.5YR8/4 Surface: yellowish red 5YR5/8 burnish; very worn
7	Fish plate	353	E/498	Ware: light red 2.5YR6/6 Surface: black 10YR2/1 burnish; very worn
8	Fish plate	334	E/493	Ware: reddish yellow 5YR7/6 Surface: red 2.5YR4/8 slip; very worn
9	Molded bowl	363	E/615	Ware: light red 2.5YR7/6 Surface: red 2.5YR4/6 burnish
10	Krater	363	E/615 E/615	Ware: light red 2.5YR7/6 Surface: red 2.5YR5/6 burnish
11	Casserole	378	E/624	Ware: yellowish red 5YR5/6; occasional small white and gray inclusions
12	Juglet	380	E/624	Ware: light reddish brown 5YR6/4; numerous tiny white inclusions and occasional dark gray inclusions Surface: red 2.5YR5/8 slip
13	Jug		Surface	Ware: reddish yellow 5YR6/6; occasional large white and light gray inclusions Surface: self slip
14	Unguentarium	361	E/619	Ware: reddish yellow 5YR7/6 Surface: black 5YR2.5/1 burnish; very worn
15	Storage jar	380	E/624	Ware: light brown 7.5YR6/4; grayish core; numerous tiny reddish brown inclusions
16	Storage jar	381	E/624	Ware: yellowish red 5YR5/8; numerous tiny white inclusions Surface: pink 7.5YR7/3 slip

the mid-first century BCE at nearby Ashdod (Dothan 1971: Fig. 17:1, 5).

Unguentaria.— Two fusiform unguentaria were found at the site, one of which (Fig. 3:14) bears traces of dark burnish.

Jars.— One thickened rim, belonging to a baggy storage jar (Fig. 3:15), has a low, slightly everted neck. Parallels dated to the later part of the second century BCE were found at Ashdod (Dothan 1971:60). The upper half of an imported storage jar (Fig. 3:16)

may date to the late Hellenistic period. This jar has sloping shoulders, a high vertical neck, a thick square rim and handles that extend from below the rim to the upper shoulder. No parallels were found.

Early Roman Pottery (Fig. 4:1–4)

Fine-Ware Vessels.— Two fine-ware vessels were found: a krater with a wide mouth and a slight, horizontal and grooved rim (Fig. 4:1), and an ETS jug dated from the second half of the first century BCE to early in the first century CE (Fig. 4:2; Hayes 1985: Tav. IX:4).

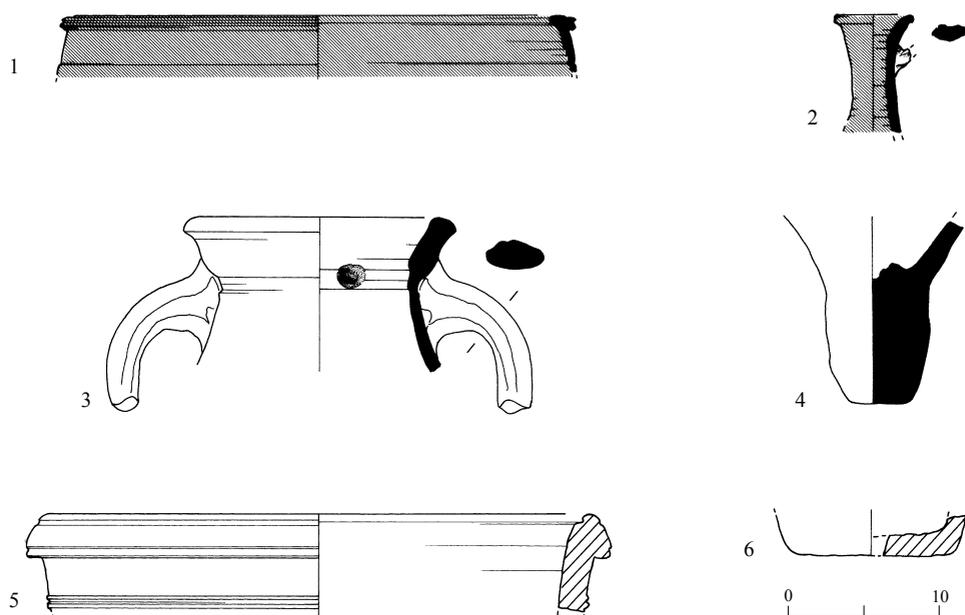


Fig. 4. Early Roman pottery and stone vessels.

No.	Type	Basket	Area/Locus	Description
1	Krater	319	E/472	Ware: light red 2.5YR6/6 Surface: red 2.5YR4/6 burnish
2	Jug	365	E/499	Ware: pink 5YR7/4 Surface: red 2.5YR5/8 burnish
3	Amphora	353	E/498	Ware: reddish yellow 7.5YR7/6; numerous tiny reddish brown inclusions Surface: very pale brown 10YR8/3 slip
4	Amphora	323	E/472	Ware: red 2.5YR4/8; micaceous Surface: reddish yellow 5YR6/8 slip
5	Stone basin	323	E/472	Limestone
6	Stone vessel	349	E/607	Limestone

Amphorae.— Fragments of two imported amphorae were found. The amphora in Fig. 4:3 has a thick, rounded and everted rim with handles extending downward from the seam between the rim and the neck. It corresponds to Peacock and Williams' Class 37b, which was probably manufactured in Tripolitania and exported during the second century and into the second half of the third century CE (Peacock and Williams 1986:169, 170). The elongated and flattened base in Fig. 4:4 probably belonged to an imported amphora from the Early or Late Roman period.

Early Roman Stone Vessels (Fig. 4:5, 6)

Fragments of two limestone vessels dating to the Early Roman period were found. The vessel in Fig. 4:5 is a deep carinated basin; that in Fig. 4:6 is a barrel-shaped cup or bowl. Both have parallels in the Jerusalem area (Cahill 1992: Figs. 16:19; 20:8), specifically from the Hizma production site (Magen 2002: Figs. 2.6:6; 2.31:1; 2.33; 2.34).

THE ROMAN PERIOD

The Milestone

A Roman milestone, which marked the third mile north of the center of the Roman city of Ashqelon (see Roll, this volume), was found 50 m to the northwest of Area C in a pile of debris, indicating it was removed—possibly only slightly—from where it originally lay. The milestone stood along the coastal highway. Although the precise route of the road in this area is unclear, it must have passed either on the western or eastern outskirts of the site; a route further to the west would have been impossible because of the extensive sand dunes that sprawled all the way to the seashore (see Fig. 1). A route on the eastern outskirts of the site, which followed a course similar to the Ottoman road from Majdal to Hammama (only slightly west of modern-day Road 4), seems more likely. The Byzantine-period tomb and graves in Areas A and D (see below), set along a general north–south axis, may have been situated along the ancient road.

The Pottery Kilns

Five pottery kilns were discovered in Area F1 (see Fig. 1) over an area of c. 300 sq m. Only the lower part of the kilns' firing (combustion) boxes survived. Two kilns were fully excavated (L502, L507) and one was partially unearthed (L504); two kilns were left unexcavated (L505, L506). The close proximity of Kilns 505 and

507, only c. 5 m apart, may suggest that they belonged to a double kiln structure, similar to the Byzantine-period kiln structure uncovered in Area B (see below).

The kilns seem to have had a similar plan: They were round brick structures of the updraft type, measuring c. 3 m in diameter. Traces of arch springs constructed of bricks were found in Kiln 504, suggesting that the kilns had arches (sometimes referred to as 'ribs') that supported the floors of the firing (ware) chambers. The remains of Kilns 502 and 507 contained a collapse (1 m high) of bricks mixed with jar fragments and wasters (Fig. 5), covering a layer of ash at the bottom of the firing boxes. This suggests that much of the kiln structure had collapsed inward in antiquity. Two types of bricks could be discerned: large and thin (0.4 × 0.8 m, 5 cm thick), which were apparently used in the construction of the firing chamber floor, on which the pottery vessels were stacked and fired; and small and thick (0.4 × 0.5 m, 0.1 m thick), which collapsed from the supporting arches.

The kilns contained a large amount of jar fragments. Since all the jars recovered from the kilns belonged to only one type—an early subtype of the Gaza wine jar (Majcherek's Form 1; Fig. 6), dated to the first–third centuries CE (Majcherek 1995: Pl. 3:1)—the kilns appear to have been used solely in the production of this type of vessel.

Only few Late Roman-period kilns have been excavated to date in the southern coastal plain. At least one of them, excavated 4 km to the southwest, seems to have also served in the production of this type of Gaza wine jar (Feder and Erickson-Gini 2012). Similar kilns, although possibly with spokes, either instead of or in addition to arches supporting the floor of the firing chamber, were excavated at Tel Ashdod (Varga 2005; Kogan-Zehavi 2006). Round kilns of the updraft type with supporting arches continued to be built in the southern coastal plain during the Byzantine period, as evident at the site (see below) and in other excavations (e.g., Israel 1999; Baumgarten

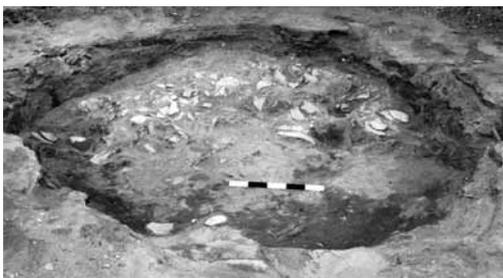


Fig. 5. Area F: Kiln 504, looking northwest.

2001; Gadot and Tepper 2003). Thus, as the jars that were found in the kilns are the sole diagnostic evidence we have to date them, a date as late as the mid-third century CE seems plausible. Three coins from the third century CE, found in mixed fills within the Byzantine-period structures (see Ariel, this volume: Cat. Nos. 6–8), attest to the site’s occupation during this period.

Gaza Wine Jars (Fig. 6)

The Gaza wine jar is large, having a capacity of c. 32 liters. It has a thickened, upright rim and a short neck with a pronounced groove at its base, separating it from the wide shoulders. Two thick loop handles extend from the shoulder to the upper body. The upper and lower sections of the jar, including the base, are ribbed. Some of the jars have red-painted thick lines, applied

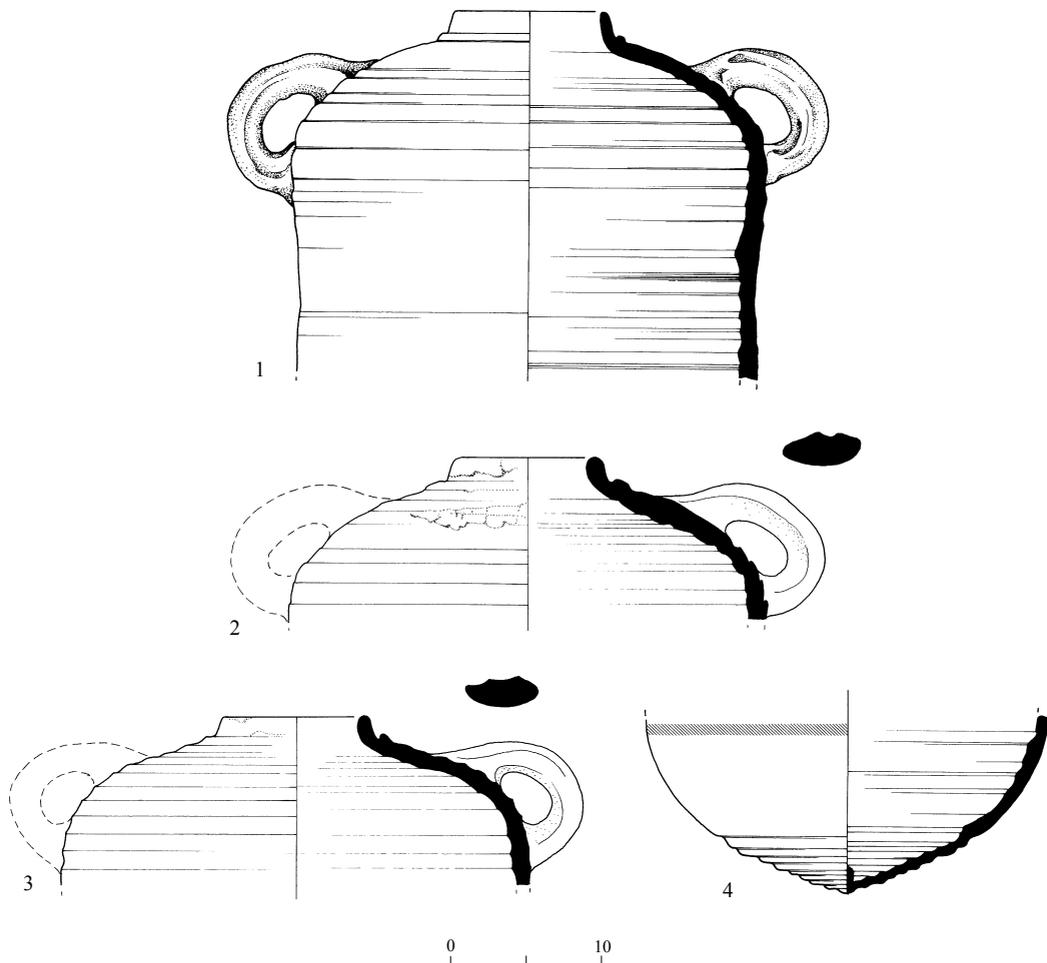


Fig. 6. Gaza jars from Kiln 504.

No.	Basket	Description
1	114	Ware: reddish yellow 5YR6/6; numerous tiny gray inclusions and occasional large white inclusions; width at mid body: 0.3 m
2	224	Ware: yellowish red 5YR5/6; occasional large white inclusions
3	370	Ware: yellowish red 5YR5/6; occasional large white inclusions
4	224	Ware: yellowish red 5YR5/6; occasional large white inclusions

between the ribbed areas. The base ends in a slight knob (for a discussion of this jar type, see Oked 2001).

This type of jar was discovered in Early Roman contexts at nearby Ashdod (Dothan 1971: Fig. 21:2). At 'Avedat, Mamshit and Ḥorbat Ḥazzaza in the central Negev, the Gaza wine jar was a common storage-jar form from the first through the early third centuries CE (Erickson-Gini 1999: Figs. 9.1.14; 9.2.2, 3). These parallels provide a firm date for the jars, as this jar type was not found in fourth-century CE contexts at these sites, having been replaced by a later type (Form 2; Majcherek 1995: Pl. 3:2).

THE BYZANTINE PERIOD

The Byzantine-period estate is located in the northeastern corner of the site (Areas A–C and E; Plan 2). It comprises a complex of installations that includes the remains of pools (Plan 2:1); a bathhouse (Plan 2:2); a nearby pool complex, possibly used for fish farming (Plan 2:3); an oil press (Plan 2:4); two winepresses (Plan 2:5, 6); several large warehouses (Plan 2:7, 8); and a large pottery kiln complex (Plan 2:9). Graves and a built tomb from this period, most likely belonging to the estate, were discovered in the southwestern periphery of the estate (Plan 2:10) and to its southwest (Area D; see Fig. 1). The layout of the burial grounds, as well as of the public buildings and large installations—along a general northeast–southwest axis—exhibits a well-planned estate, whose orientation may have been dictated by the ancient coastal highway that passed along the outskirts of the site. No private dwellings were uncovered; these may have been located beyond the perimeters of the investigated areas. Building remains excavated at the adjacent site of Ḥammama Conduit (Fabian, Nahshoni and Ein Gedy 1995:110) may have been such dwellings.

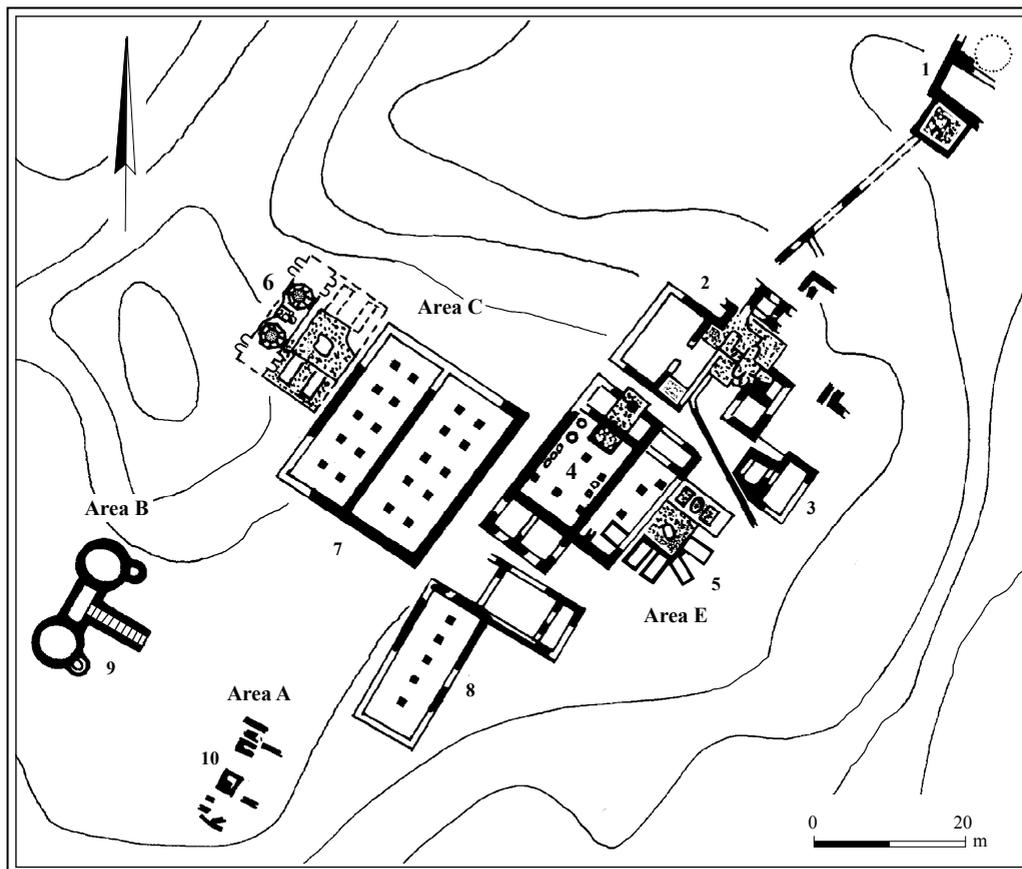
The estate buildings were constructed of a combination of well-hewn *kurkar* building stones and a cast concrete-like lime-based

mixture, which was made at times with whole and ground seashells. A *debesh*-type construction, made of *kurkar* fieldstones and rubble set into concrete, was also evident. Concrete was also laid as a foundation for floors in the bathhouse and winepresses. Most of the architectural remains survived only two courses high, although a tiny section of the bathhouse and the subterranean kiln in Area B fared better. Damage caused by extensive looting of building materials and by the heavy mechanical equipment made it almost impossible to identify construction phases within the buildings. Nevertheless, ceramic and numismatic finds indicate that the estate was in use from the fourth through the late sixth or early seventh centuries CE.

The Architecture

Northern Pool Complex (Plans 2:1; 3)

A large pool (L440) and two vats (L633, L441) were uncovered in the extreme northeastern corner of the site. Pool 440, of which only the floor and wall stumps remained intact, was round (diam. 5.5 m), set within a double-walled square structure (c. 6 × 6 m). The walls were constructed of cast concrete, mixed with small irregular *kurkar* fieldstones and large quantities of whole and ground seashells. The pool's floor and inner walls were coated with white hydraulic plaster. A similar layer of plaster separated the two walls and could be identified as diagonal seams near the northern, western and eastern corners of the inner pool frame; faint remains of a rectangular, plastered element (vat? c. 0.45 × 1.00 m) could be discerned near the southern corner. The exterior walls of the pool structure were also plastered, as was evidenced in two probes (L455, L456; 0.7 m deep), excavated along the western and northern walls. Although the probes did not reach the walls' foundation levels, it is possible that the walls were fully plastered to avoid water seepage, which would have undermined the pool structure.

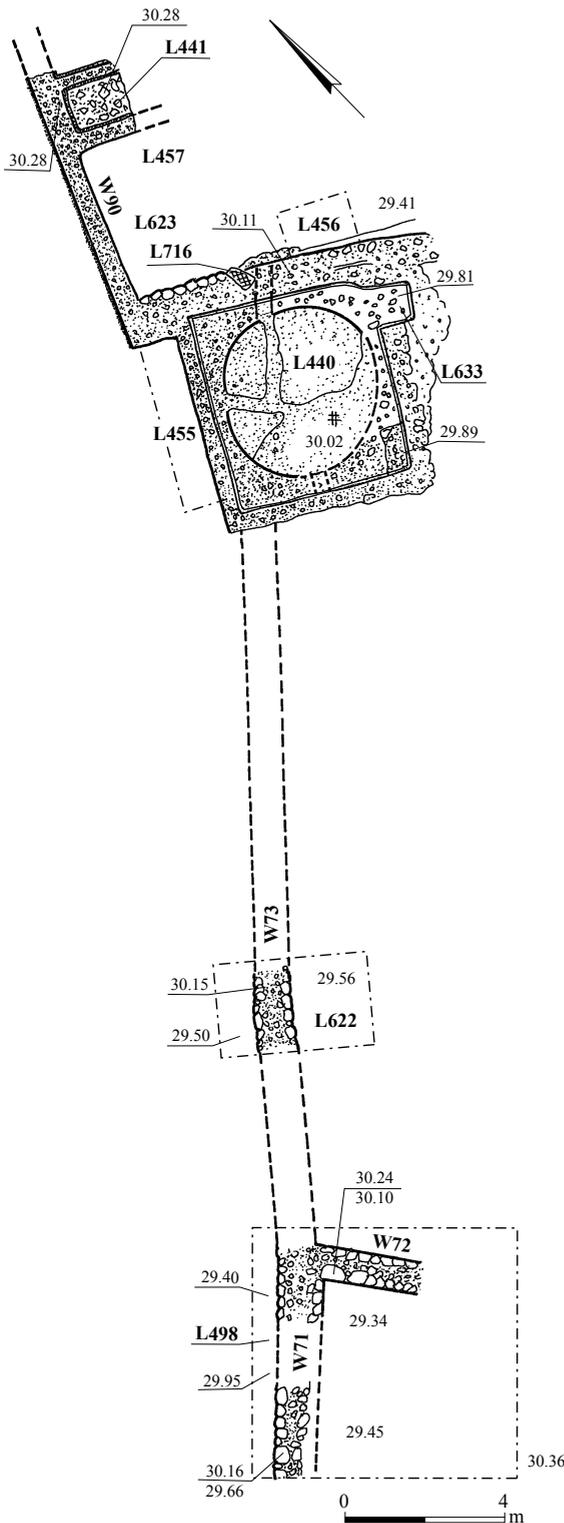


Plan 2. Byzantine-period installation complex.

Two lead pipes (diam. 0.1 m) were set in the northern and southern walls of the pool, just above floor level; it is unclear where these pipes led. Above the northern pipe, the broken lower part of a ceramic pipe was embedded in the concrete (L716). A small, plastered, square vat (L633; 1 × 1 m) was set into the outer frame wall in the eastern corner of the pool structure. This vat may have served to collect excess water, possibly before channeling it either back into the pool or onward.

A cast concrete wall (W90) extended northward from Pool 440 and enclosed an additional, rectangular vat (L441; 1.1 m wide, at least 1.4 m long) to its west. Eight coins, four

of them dating to the fourth and fifth centuries CE (see Ariel, this volume: Cat. Nos. 15, 22, 25, 41), and the rest unidentifiable, were found in the fill covering the remains of the vat. The vat may have served as a collecting vat for another round(?) pool. All that remained were large chunks of concrete, which had been damaged and removed by the heavy mechanical equipment. It is most likely that the water source for these pools was a nearby well. Although no well was found, possibly due to the small area excavated in this part of the site, a plausible location for it could be between Pool 440 and Vat 441 (L457), where only a shallow probe was excavated.



Plan 3. Area E: northern pool complex.

The pool complex served primarily to supply water to the bathhouse, located 30 m to its southwest, by raising the level of the water and facilitating its flow in that direction, apparently by means of a pipe. A low wall (W71, W73, and possibly W91, near the bathhouse [see below]; 0.5 m high), of which two or three sections were unearthed, probably carried such a pipe from the pool area up to the northern wing of the bathhouse, where remains of a pipe were unearthed (see below).

The Bathhouse (Plans 2:2; 4)

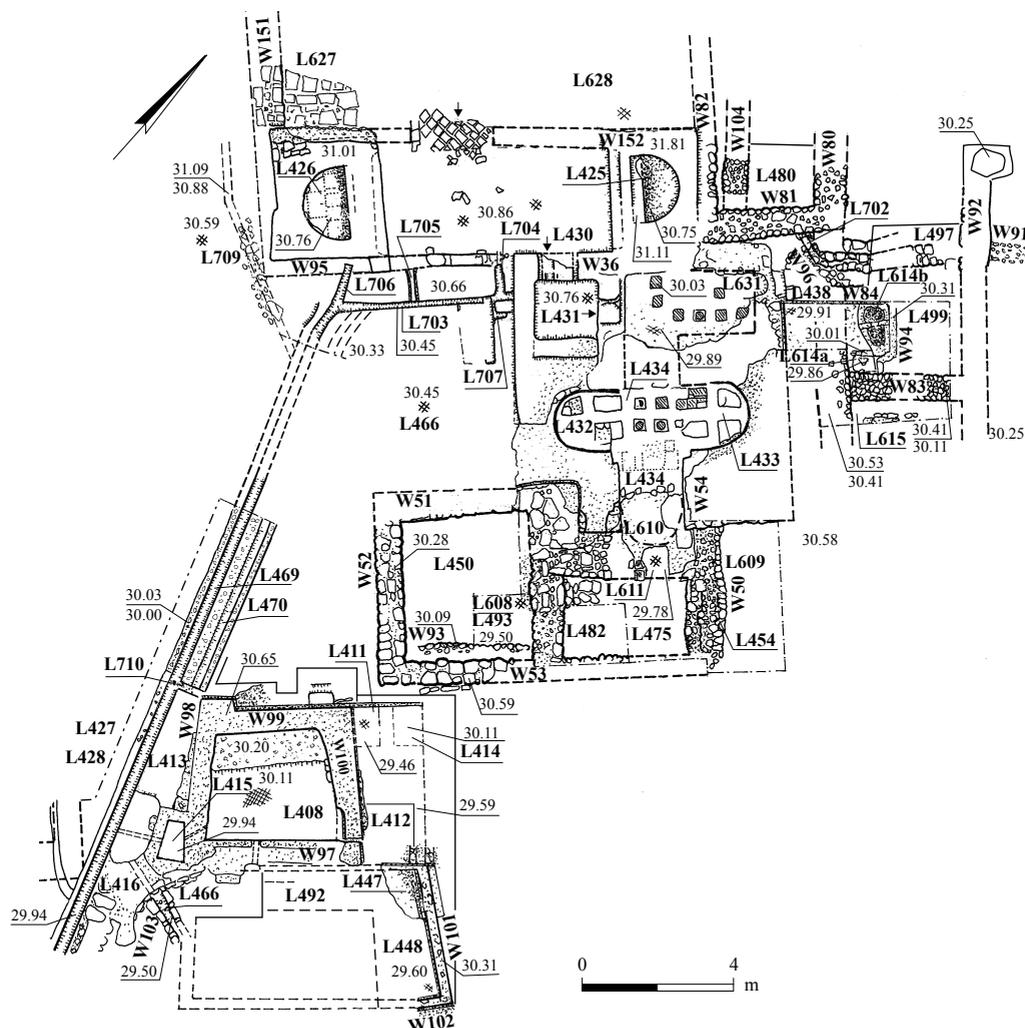
The bathhouse (14 × 21 m; Figs. 7, 8), belonging to the 'Negbite' type (Gichon 1978:51), was oriented along a northwest–southeast axis. It consisted of a western wing, which probably contained an entrance or 'changing' room (*apodyterium*) and housed the cold room (*frigidarium*); a main section, which included the warm room (*tepidarium*), a sweat bath (*sudatorium*) and the hot room (*caldarium*); an eastern wing, which housed the furnace room (*prae-furnium*) and two adjacent rooms; and a northeastern wing, where a lavatory and a water reservoir were uncovered.

Because of looting and modern damages, most of the walls were preserved only slightly above floor level; the northwestern part of the western wing was completely demolished. The remaining wall stubs and foundations were built of *kurkar* ashlar and fieldstones and of cast concrete, which contained charcoal, chalk and small *kurkar* stones. Concrete was also laid as a foundation for the floors.

The severely damaged northwestern part of the western wing contained the *apodyterium*; a fragment of a marble flagstone floor, set into plaster that covered the concrete foundation, was found in what remains of its southern corner (L627). Remains of an *opus sectile* pavement mark the doorway that led into the *frigidarium*, which was an elongated room (L430; 3 × 10 m; Fig. 9) with a marble floor. Two semicircular baths (L425, L426) were located at opposite ends of the room. Bath 425, set within an apsidal structure (W152; 1.06 m

high), survived intact, with a step or bench along its entrance; it was entirely lined with hydraulic plaster. Bath 426 was most probably set within a similar apse. Remains of marble lining slabs were found along its wall stumps. Eleven coins, one of Septimius Severus (193–211 CE) and seven dating to the fourth through the mid-sixth centuries CE, were found in the *frigidarium* and in Bath 426 (see Ariel, this volume: Cat. Nos. 6, 13, 26, 28, 42–46); two were unidentifiable.

An entrance (1 m wide) set in the southeastern wall of the *frigidarium* (W36) led into a small chamber (L431; 1.5 × 1.5 m), the *tepidarium*. The doorposts, as well as the chamber's floor and walls, were covered with hydraulic plaster. An entrance (0.6 m wide), with plastered doorposts set in the chamber's northeastern wall, opened onto what may have been the *sudatorium* (L631; 1.8 × 3.5 m), separated by a short hallway (1.0 × 1.5 m) from the *caldarium*. Most of the square and round



Plan 4. Area E: bathhouse and southern pool complex.



Fig. 7. The bathhouse and southern pool complex, looking north.

brick hypocaust *pilae* (pillars; 0.3×0.3 m, 0.4 m high) that supported the *suspensura* (floor) in the *sudatorium* and *caldarium* were robbed in antiquity, after the floor in these rooms was removed. In the *caldarium*, (L434; 5.0×5.5 m), two opposing apses (L432, L433; 1.5×1.8 – 2.0 m) oriented northeast–southwest could be discerned. A slight curvature in the remains of the southeastern walls may indicate that the room included a third apse, which was located right above the opening of the *praefurnium* (L610). Imprints of *tubuli* (hollow bricks) were discerned along the wall stubs of the *sudatorium* and *caldarium*.

The eastern wing of the bathhouse contained the *praefurnium* (L611; 2.0×3.3 m) and adjacent rooms. The looting of building material extended into the *praefurnium*, entirely destroying its opening onto the *caldarium*

hypocausts and much of its enclosing walls. Only a thick layer (0.12 m) of ash covering the hard-packed dirt floor, which was c. 0.1 m lower than that of the hypocaust, indicated the location of the furnace. The furnace was stoked from a back room (L475) that had a hard-packed dirt floor; its entrance must have been located in the southeastern wall, which did not survive. An adjacent room (L450; 3.0×3.5 m), with a packed dirt floor (L608) and walls constructed of partially hewn *kurkar* blocks, may have been used to store the wood for heating the furnace (cf. Gichon 1978:38). The fill in this room contained three coins from the fourth century CE (see Ariel, this volume: Cat. Nos. 10, 12, 16). A low wall or bench (W93), constructed of small *kurkar* fieldstones that protruded into the room under its southeastern wall (W53), may be the remains of an earlier



Fig. 8. The bathhouse, looking northwest.



Fig. 9. The bathhouse: the western wing and the drainage channels, looking northwest.

phase of construction. Floor 608 abutted W93, but a probe under the floor revealed several Hellenistic-period potsherds (see Fig. 3:4, 8) and a coin of Alexander the Great (see Ariel, this volume: Cat. No. 1). No other earlier architectural elements could be discerned.

The northeastern wing of the bathhouse, only partially unearthed, included a lavatory (L613) and a water reservoir (L480). The wing may have extended southeastward, but was not excavated beyond W83. The northeastern enclosing wall (W92) was pillaged almost entirely. A wall (W91; 0.5 m wide), protruding to the northeast from W92 and built of small, irregular *kurkar* fieldstones, continued beyond the excavated area. These may be the remains of the southernmost segment of the wall, which led from the northern pool complex to the bathhouse (W71, W73; see above) and most probably carried a pipe. However, two large, almost square, hewn *kurkar* blocks found to its northwest may indicate that this narrow wall

was part of a warehouse (for other warehouses at the site, see below).

The floor in Lavatory 613 and its northwestern and northeastern walls (W84, W94) were lined with a thick layer of white plaster; Wall 94 was plastered on its northeastern face as well. One plastered bathroom stall, built along W83 (L614a; 0.5 × 0.8 m; Fig. 10), was excavated. The opening of a ceramic drainage pipe, set in a pit in the center of the stall, could be discerned; as the stall was excavated down to floor level only, it is unclear as to where the pipe led. An irregular, oval-shaped, partially closed water container (L614b; 0.5 × 1.0 m, 0.4 m deep; Fig. 11), made of mortar mixed with small fieldstones and lined with white hydraulic plaster, was set beside W94 and W84. The container—most probably a wash basin—had a round opening (diam. c. 0.4 m) on its northwestern end; most of the roof of the northeastern side had collapsed inward. A similar, semicircular wash basin ('sink'), albeit rock-cut, was found in the



Fig. 10. The bathhouse: Bathroom Stall 614a, looking southeast.



Fig. 11. The bathhouse: Wash Basin 614b, looking southeast.

lavatory of a Roman–Byzantine bathhouse in Petra (Joukowsky 2006: Fig. 22). The basin was most probably supplied with water through a ceramic pipe that was set into W84.

Several poorly preserved segments of ceramic pipes, laid in concrete (L438, L497; diam. 7.6 cm; Fig. 40:2) and set on a low wall of partially hewn *kurkar* fieldstones, were found to the northwest of W84. Running in a northeast–southwest direction, they could be traced beginning at W92, at a point that lines up with W91. After c. 3.5 m, the pipe seems to have branched into two. One branch, indicated only by the low wall that carried it (W96), seems to have carried water through W84 and toward Wash Basin 614b in the lavatory. The other branch, which survived almost intact (L702), led southwest into what seems most likely to have been a reservoir (L480; 2 m wide); remains of a ceramic pipe could be discerned, set into its southeastern wall (W81).

Reservoir 480, only partially uncovered, had thick enclosing walls (0.9–1.0 m wide, 0.5 m preserved height) built of *kurkar* fieldstones partially mixed with mortar. Its southeastern and southwestern walls (W81, W82) are integrated into the bathhouse walls; remains of a similar wall, running parallel to W82 (W104) that may have served to buttress it, could be discerned,

but were not examined. Although no traces of hydraulic plaster were discerned in the pool, its thick walls, the remains of a pipe leading into it, the absence of any other reservoir, and its location adjacent to both the *frigidarium* and the *sudatorium*—a layout similar to that of the bathhouse reservoir at Ḥazeva (Cohen and Israel 1996)—all suggest that this structure stored water for the baths.

Remains of a drainage system serving the *frigidarium* and *tepidarium* were uncovered. No evidence of a drainage system that served the heated rooms was found; the water from these rooms may have been drawn manually. Fragments of ceramic pipes found in the *frigidarium* suggest that pipes ran under the room’s floor through the eastern wall (W95) and into three well-plastered channels that led southeastward, which were dug into the ground (L704–L706; c. 0.8 m long, c. 0.2 m wide). At least one additional channel (L707) drained the *tepidarium*. All four channels fed a longer channel (L703) that led into at least one major drainage channel (L469; c. 0.3 m wide); a parallel channel (L470; 0.2 m wide) was only partially uncovered and its full length is unknown.

Channels 469 and 470 (up to 0.2 m preserved height) were built of carefully plastered, cast white lime-based concrete mixed with fieldstones. The flow of water was assured by the gentle descent in the original terrain toward the southeast. Channel 469, unearthed along 13.5 m, carried the waste water from the bathhouse southward, alongside the pool complex that lay to the southeast of the baths and beyond the investigated area, possibly irrigating fields or gardens. This major drainage channel was also fed by a poorly-preserved built channel (L709) that ran along the alley that separated the bathhouse from the oil press to its south (see Plan 2:4).

This ‘Negbite’ bathhouse has parallels at ‘Avedat, Mamshit and Reḥovot-in-the-Negev (Gichon 1978:50–53). Another particularly striking parallel is the well-preserved bathhouse-turned-farmhouse at Qaṣr ‘Amra,

Jordan (Musil 1907/1920). The general east–west layout, the apsidal-shaped baths and the round pool that supplied water to the bathhouse, all indicate a close resemblance between the two structures.⁶

Southern Pool Complex (Plans 2:3; 4)

To the southeast of the bathhouse lay the remains of a pool complex (L408, L415, L492; 72 sq m; Figs. 9, 12). It comprised two large, adjacent pools (L408, L492) and a third, small pool (L415). Separating the three pools were stone and concrete walls coated with hydraulic plaster. It is not fully clear how these pools were supplied with water, although the water almost certainly came from the bathhouse. The level of Channels 469 and 470, which seem to have been open, was too low to serve this function,

at least not directly. It seems most probable that water was siphoned into Pool 408, but the poor state of preservation in the area between Channel 469 and the pool walls does not allow the reconstruction of the mechanism by which this was done. A series of tightly-fitted Gaza-jar fragments (L710), which served as a gutter running a few centimeters above, and perpendicular to, Channels 469 and 470, seem to have conducted the overflow water from Pool 408 into Channel 469.

Pool 408 (4.5 × 5.0 m, 0.65 m preserved depth) is a trapezoidal structure with thick cast concrete walls (W97–W100; 0.6 m wide), supported on the northwest by two protruding buttresses. Adjacent to the northern corner of the pool, a plaster floor (L411), and the scant remains of a plaster wall-lining that continued



Fig. 12. The drainage channels and the southern pool complex, looking north.

the outer plaster coating of the northern wall (W99), were identified in a probe; their function is not clear, although they most probably did not belong to an additional pool. A white mosaic floor, composed of large tesserae set into hydraulic concrete, covered the southeastern two-thirds of the pool. Along the northwestern third of the pool no floor was laid and remains of cast concrete were found, indicating some type of built feature (shelf?) in this part of the pool.

Although part of the southeastern wall (W97) was robbed, the ceramic pipe (diam. c. 0.2 m) set in that wall, which conveyed water into Pool 492, could be clearly identified. A lead pipe (diam. 4 cm) connected Pool 408 with Pool 415 (0.5 × 1.0 m, 0.7 m preserved depth), a small and trapezoidal pool, which probably served to filter the water that drained out of Pool 408. A partially preserved ceramic pipe (diam. c. 0.12 m) seems to have connected this pool with Channel 469, which conveyed the drained water southeastward.

Pool 492 (4 × 7 m), constructed in a pit dug into the ground at a level 0.4 m lower than that of Pool 408, was also trapezoidal. Enclosing it on the northeast and southeast were thin concrete walls (W101, W102; c. 0.4 m thick), which were sunk into the ground; the southeastern wall was partially robbed. The southwestern wall, which did not survive, was reinforced with a rounded built wall (W103) and a thick concrete buttress (L416), which extended up to Channel 469. The pool was paved with a mosaic of small white tesserae, of which scant remains could be discerned in the probes along W101 (L447, L448). Remains of a step were found in the northwestern corner of the pool. A built channel (L466) leading out of the pool toward the northwest, most probably leading to Channel 469, may have drained it, although the connection between them was not preserved.

The pool complex may have been used for fish farming. Similar pools, dating from the Roman and Byzantine periods and identified as fish pools, have been found in Israel: at Caesarea Maritima (Flinder 1976), Ḥorbat Sabiya

(Ayalon 1979), Saṭaf (Gibson and Kloner 1990) and Ḥof Shiqma, Site No. 128 (Berman, Stark and Barda 2004:47*–48*). At Ḥof Shiqma, two pools were similarly located in proximity to a bathhouse, one constructed above ground level and buttressed with piers, the other sunk into the ground with thin, plastered walls. Although no distinct feature common to fish pools, such as fish-hatching jars or pipes embedded in the walls (Ayalon 1979), has been found, this may be due to the pools’ poor state of preservation. The shelf or other concrete construction that did not survive along the northwestern perimeter of Pool 408 may have carried fish-hatching jars or pipes. Alternatively, such jars or pipes may have been unnecessary if mature fish were brought into the pool from an outside source.

The Oil Press (Plans 2:4; 5)

The large building (330 sq m; Fig. 13) that housed the oil press was uncovered southwest of the bathhouse area. It comprised a large hall (L458; 8.0 × 13.4 m), where the oil press apparatus was located; a storeroom (L464; 5.2 × 13.8 m) with an adjacent room (L437) to its northeast; and two sets of auxiliary rooms: three rooms flanking the hall on the northeast (L459, L460, L461), and two—on the southwest (L490, L600). The walls, preserved up to 0.4 m high, were constructed of dressed *kurkar* blocks laid on foundations of small fieldstones and plastered white on both their interior and exterior.

At the northeastern end of Hall 458 stood a rectangular vat (L443; 1.9 × 2.8 m, at least 0.25 m deep), built of cast concrete and plastered white. The vat may have served for collecting the *mohal* (mixture of virgin oil and watery lees) that drained out of the olive mash set into piles of frails waiting for removal to the press. Inside the vat lay a round crushing basin (diam. 2.2 m) of the ‘projecting sleeve’ type and a circular crushing stone (diam. 1.5 m), both made of very hard pink limestone and bearing wear marks (Fig. 14). The crushing installation seems to have been stored in the vat while not in use; when in use it was mounted,



Fig. 13. The oil press, looking northeast.



Fig. 14. The oil press: a crushing basin and a crushing stone in Collecting Vat 443, looking southwest.

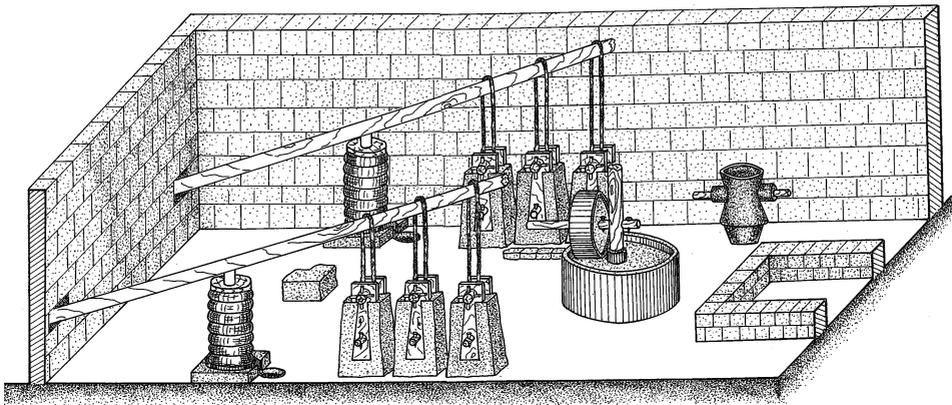


Fig. 15. Isometric reconstruction of the oil press, looking northwest.

most probably, on the low platform of *kurkar* stones c. 1 m south of the vat (L451; Fig. 15).

The southwestern two-thirds of the hall contained two simple lever-and-beam press installations. Two square, stone press-beds (L452, L453), on which the frails were piled, were found *in situ*. Each had a circular groove and spout, through which the mixture of oil and watery lees flowed into a jar that served as a collecting vat (Plan 5: Section 1–1). The jars, buried up to their mouth in the packed-earth floor, were of the round and bag-shaped type that was common in the Byzantine period (Frankel 1986:32). Two pairs of three stone weights were found lying along the northeastern and southwestern walls, aligned with the press-beds. The weights (estimated at 900 kg each) are of a type found in the southern coastal plain, but known only from unpublished collections, such as those at Kibbutz Beror Ḥayyil and Kibbutz Erez; according to Frankel (1986:32), this type has parallels in North Africa. The weights either pulled the beam down or were pulled up to it, with the aid of a wooden winch fastened by two wooden plates set into elongated grooves along the length of the weights, and held in place by a perpendicular wooden rod set into

a hole in the middle of the weight (Figs. 15, 16). Although the room was not excavated below floor level, the remains of a narrow wall built of small, partially hewn *kurkar* stones that lined the southwestern weight trench could be discerned (W109). The distance of the weights, obviously *in situ*, from the southwestern wall (W60) indicates that the beams used in the press were c. 10 m long. A square pedestal of cast concrete mixed with fieldstones (L717) was set between the two press-beds. It may have carried a post that supported the roof, like the small rectangular pier that abuts W60.

To the north of the southwestern set of weights were found the upper and lower parts of a basalt, hourglass-shaped ‘donkey’ flour mill (Fig. 16). Their perfect condition indicates that they had barely been used before the building was abandoned. Although no other example of a flour mill in an oil press is known, it is most probable—as both parts of the mill were found, and both were in perfect shape—that the mill served, or was intended to serve, for grinding during most of the year, when the oil press was not in use. Nevertheless, it also seems possible that while the oil press was in operation during the fall months, the basalt mill



Fig. 16. The oil press: basalt millstones and grooved limestone weights, looking southwest.

components were used as additional weights or for some operation that required anchoring a leverage in a heavy weight; an unusual hole near the pointed end of the lower component may indicate such use.

The central room (L460) to the northeast of the main hall contained a round and concave pedestal (L444; diam. 1 m), set into the floor and built of cast concrete with *kurkar* stones. It possibly held a large storage vessel (for oil storage?), which seems to have been torn out of its place. In the adjacent room (L461), a plastered rectangular shelf(?) was set in the northwestern corner (L713).

The ceramic assemblage from Room 600 and adjacent Room 490, to the southwest of the hall, included three almost complete juglets (see Fig. 36:2, 4, 5), of which at least one can be classified as Byzantine Fine Ware; an almost complete jug (see Fig. 36:6); a sandal lamp (see Fig. 39:2); and a lantern (see Fig. 39:3). It is

not clear, however, if these finds belonged to these rooms, or to an upper floor that collapsed. The floor in Room 600, was covered by the collapse of an upper story, which contained sections of a mosaic; similar mosaic fragments were found in the southern part of the main hall as well (L718; see Fig. 13, near the yardstick). These fragments belonged to a mosaic floor with colorful geometric designs comprising rosettes, guilloche patterns and circles set against a white background. The tesserae were fairly large (c. 30 stones per sq dm) and were made of a variety of stones: white limestone, soft yellow limestone, pink sandstone, white and gray imported marble, as well as gray and black burnt limestone; broken pottery was used to produce red and brown tesserae. The upper floor seems to have spanned only the southern rooms; there are no indications for a second floor in neither the main hall nor the northern rooms. Even with a small upper floor area, these finds are surprising, as two-floor structures that housed oil presses are unknown.

Storeroom 464, like the other warehouses at the site (see below), is an elongated hall with a row of three pedestals built of mortar-bound *kurkar* building blocks that were set along the hall's central axis; a fourth pedestal was found near W62. The pedestals most probably carried pillars that supported the roof. The remains of two walls, one course high (W105, W106; wall and pavement?), abut the southwestern wall (W107) and may have been part of an installation that did not survive. The room was built above the remains of a cast cement rectangular compartment (L463) and channel, which belonged to the adjacent winepress (Plan 2:5; see below); both were dismantled down to floor level prior to the construction of Storeroom 464.

The Winepresses (Plans 2:5, 6; 5; 6)

Two large, industrial, complex winepresses, exhibiting high quality workmanship, were uncovered, one adjacent to the oil press (Area E; Plans 2:5; 5) and the other, on the northwestern edge of the estate (Area C; Plans 2:6; 6).

The winepress in Area E (c. 130 sq m; Plan 5; Fig. 17) is located to the southeast of the oil press. Although the winepress was obviously constructed before Storeroom 464 was added to the oil press, the two structures seem to have comprised a single building complex at their final phase, as the northeastern wall of the storeroom (W40) extended to enclose the winepress as well.

The winepress had a marble-paved treading floor (L421; 5.5×5.8 m); only several marble slabs remained along its northwestern perimeter, but the exposed concrete surface of the rest of the floor carried imprints of the pillaged slabs. The floor slanted lightly toward the northeast. At its center, where the stone base of a screw press was most probably located, only an uneven depression (L629) remained. The treading floor

was flanked to its southwest and southeast by five rectangular compartments (L420, L422–424, L436; 1.5×3.5 m); a sixth, somewhat smaller rectangular compartment (L463; 1.1×2.3 m), which was eventually demolished (see above), was oddly set to the west of the treading floor at a distance from it that required a connecting channel. A probe opened between Compartments 422 and 423 uncovered a beaten earth floor (L483), on which a sandal lamp (see Fig. 39:1) and a fifth-century CE coin (see Ariel, this volume: Cat. No. 33) were found. Eleven additional coins were uncovered in adjacent Compartment 422: three were unidentifiable, one dated to the third century CE and the rest spanned the fourth through the mid- or late-fifth centuries CE (see Ariel, this volume: Cat. Nos. 7, 9, 17, 18, 23, 31, 32, 36).



Fig. 17. Aerial view of the Area E winepress, looking northwest.

The walls of the five compartments abutting the treading floor were built of cast concrete (0.30–0.45 m thick), which was preserved c. 0.6 m high. The wall separating each compartment from the treading floor was most probably not much higher, leaving an opening above it. These walls were torn down at their center, most probably so as to pillage the lead pipes that connected the compartments with the treading floor, like the three pipes preserved *in situ* in the Area C winepress (see below); such pipes allowed the liquids to run from the compartments onto the treading floor. Separating the compartments from each other were massive *debesh* foundations (0.8–1.0 m wide) built with *kurkar* rubble. These seem to have supported thick barrel-vaulted ceilings over the compartments that may have carried, in turn, upper-level treading floors. Chunks of collapsed rubble-rich concrete were found in Compartment 420 and, to a lesser extent, in Compartment 436 as well. Better-preserved winepresses with similar plans, such as the one at Ḥorbat Shelah (west; Sede Moshe; Haiman 2009), suggest that this is the correct reconstruction (see discussion below).

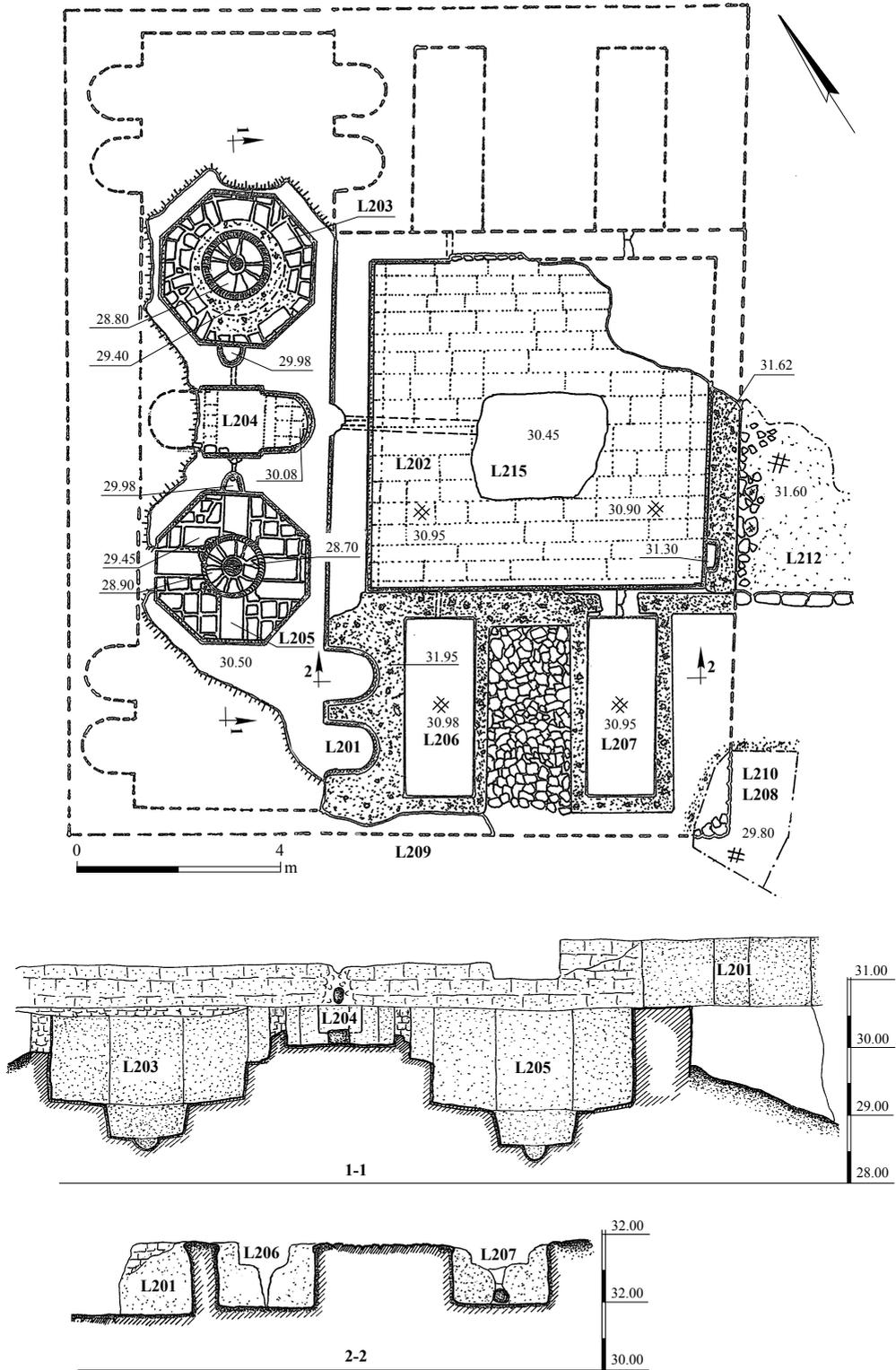
To its northeast, the treading floor was flanked by two almost square collecting vats (L427, L429; 2.4 × 2.5 m, c. 2 m deep) with a rectangular settling vat (L428; 1.2 × 2.5 m, c. 1 m deep) between them. The floor in Collecting Vat 427—of which only the western half was exposed—was paved with limestone slabs, and included a two-tiered sump in its center (Plan 5: Section 2–2) to ensure the settling of debris. The settling vat was similarly paved with limestone slabs and had a central, shallow sump. The wall separating it from the treading floor was partially torn out, most probably to expose the lead pipe that led from the floor into the vat. Directly under the pipe ran a built and plastered channel that was partially preserved under the concrete foundation of the floor; it drained the fluids from the screw press into the settling vat.

The winepress in Area C (220 sq m; Plan 6; Fig. 18) was partially damaged by modern

mechanical equipment; chunks of rubble-filled concrete that were torn off of the winepress structure were found to its north. The press, founded on sterile soil that had accumulated over earlier MB II remains, resembled the press in Area E in plan and construction technique. It had a marble-paved treading floor (L202; 6.5 × 6.5 m) set into a concrete foundation—bearing the imprints of the pillaged slabs—and a central depression (L215), where the stone base of the screw press apparently stood. In the depression, the opening of a channel, which ran under the treading floor and connected the screw press with the settling vat, could be discerned. A step set into the surrounding wall near the southern corner led up to a plastered surface (L212) that extended to the southeast, up to the adjacent warehouse (L213; see below). The treading floor was flanked on the southwest by two rectangular compartments (L206, L207; 1.4 × 3.5 m); two additional compartments probably flanked the floor to its northeast. The compartments’ walls and floors were coated with hydraulic plaster. A massive *debesh* foundation separated the two surviving compartments. An oval-shaped settling vat (L204), with a shallow sump and two octagonal collecting vats with two-tiered sumps (L203, L205; Fig. 19), were constructed to the northwest of the floor; the three vats were lined with limestone slabs.

The drainage system in this press paralleled that in the Area E press. Three partially-intact lead pipes (diam. 0.1 m) that connected Compartments 206, 207 and the missing northeastern compartment with the treading floor remained *in situ*. The remains of a fourth pipe (diam. 0.3 m) were found *in situ* in the wall separating the treading floor and the settling vat; it was set right above the opening of the channel that led from the screw press (see Fig. 18).

Unlike the winepress in Area E, this press included a plaster-lined work area with two, or possibly four, apsidal niches flanking at least one of the collecting vats, if not both; each niche most probably held a large vessel (wine jar?). This working area, where the wine was drawn from the collecting vats into storage



Plan 6. Area C: winepress, plan and sections.



Fig. 18. The Area C winepress, looking southeast.



Fig. 19. The Area C winepress: Collecting Vat 203.

vessels, may have been roofed, as evidenced by the rather thick walls into which the niches were set.

Both winepresses are of a type characteristic of Byzantine sites in the southern coastal plain

(Avshalom-Gorni, Frankel and Getzov 2008: Fig. 8:5, 6, 9, 10, 17; Haiman 2009; Paran 2009; Varga 2010; ‘Ad 2011; Peretz 2011; and an unpublished winepress excavated near Negba⁷), as well as in more northern sites, such as Khirbat Mulabbis (Petaḥ Tiqwa; Gudovitch 2009); of these, the winepresses uncovered at Hafez Ḥayyim (‘Ad 2011) and near Negba most closely resemble the Area C winepress. They comprise a central treading floor, surrounded by vaulted compartments or cells, separated from each other by massive *debesh* foundations, and usually, two collecting vats with a central settling vat. As is evident in two well-preserved winepresses of this type, at Ḥorbat Shelah (west; Haiman 2009) and at Khirbat Mulabbis (Gudovitch 2009), the vaulted cells carried upper-level treading floors. Two unique features found in two of these winepresses

hold the key to understanding the function of the upper floors and the cells beneath them: at Khirbat Mulabbis, a narrow shaft (diam. c. 0.15 m) cut into the center of an upper treading floor opened onto a cell constructed right below the floor; and at the winepress near Negba, a large limestone slab was set in the center of each of the mosaic-paved cell floors, apparently right beneath the location of the shaft. Thus, we suggest that the upper treading floors were used for the production of red wine, by allowing the liquid and must of the crushed grapes to drop into the cells, where fermentation could take place. Treading on the central treading floor, on the other hand, seems to have served in the production of white wine, in which case the must was separated from the free-running wine, most probably by using a strainer set at the head of the pipe leading to the settling vat,

and was then pressed; fermentation thus took place in a collecting vat, which contained the clear liquid.

It has been recently suggested to name this type of winepress, comprising upper-level treading floors in addition to the main, central treading floor, *bet ha-gittot* (בית הגתות), a term mentioned in the *Mishna* (Hadas 2007:124–130; but cf. Avshalom-Gorni, Frankel and Getzov 2008:55). Although some elements in this type of winepress bear resemblance to the complex winepresses of the same period with auxiliary floors (e.g., Avshalom-Gorni, Frankel and Getzov 2008: Fig. 8:1–4, 13, 15, 16, 18, 19), it nevertheless comprised a distinct type.

The Warehouses (Plans 2:7, 8; 7)

Four warehouses were uncovered within the estate (Fig. 20): two in Area C, between the



Fig. 20. Aerial view of the warehouses, looking northeast.

tiles and a stone basin fragment (see Fig. 40:4) were found along its southeastern wall (W10; L402). Four coins, two from the third century CE and the other two from the fourth–fifth centuries CE (see Ariel, this volume: Cat. Nos. 2, 8, 20, 40), were found in this warehouse. To its north were unearthed the partial remains of an additional building, comprising a series of adjacent rooms built along a northwest–southeast axis. Its general orientation fits well that of the warehouse and the oil press to its north. A complete amphora, dated to the first half of the fifth century CE (see Fig. 37:3), was retrieved from the southeasternmost room (L605), which might indicate that these rooms served as additional storing space.

The double warehouse (L213—9 × 23 m; L214—11 × 23 m) was built alongside the winepress in Area C. Each hall contained two rows of pillar bases constructed of dressed stones (preserved up to one course high) that rested on a base of cast concrete mixed with stones. A water channel (L714) with a drain (L211), both built of cast concrete and plastered, ran along the northwestern wall of Warehouse 213.

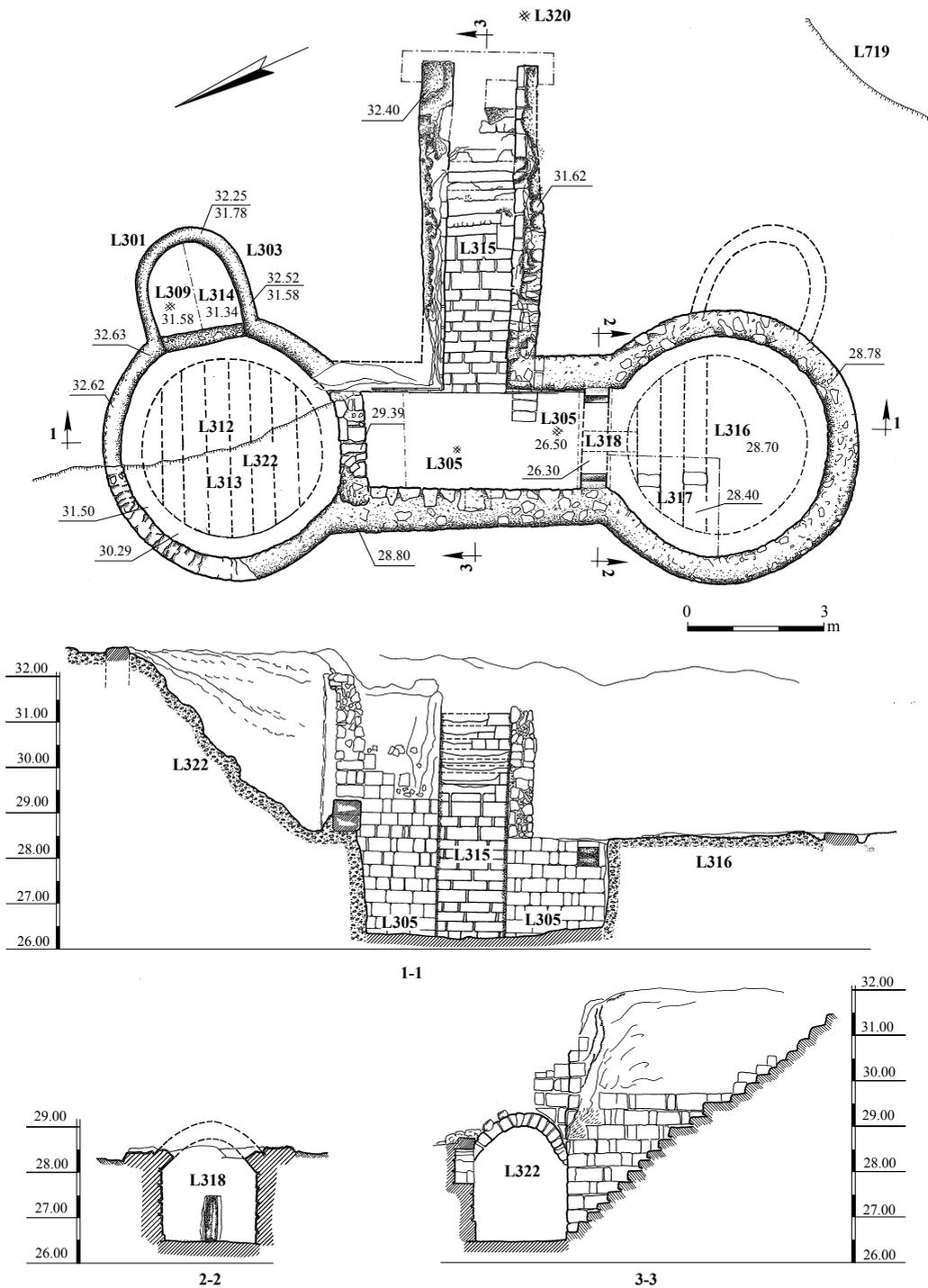
The Pottery Kiln Complex (Plans 2:9; 8)

A double kiln structure (Figs. 21, 22) was unearthed in Area B, at the western edge of the estate. The kiln complex was relatively well-preserved, although mechanical equipment razed much of the southern kiln and damaged the northern kiln. The structure was constructed in a pit c. 6.5 m deep that cut through Intermediate Bronze Age layers (Erickson-Gini and Israel, this volume) and into virgin soil. The kiln complex comprised two round kilns of the updraft type (L316, L322; interior diam. at base 3.9 m) separated by a rectangular, subterranean corridor (L305; 2 × 5 m), with a narrow, steep stone staircase (L315; 1.4 × 6.0 m), leading up to ground level.

The kiln complex was framed within a thick layer (0.5 m) of cast concrete mixed with small fieldstones, which prevented moisture from seeping in from the surrounding earth. The staircase, comprising 24 stairs, was flanked by walls of dressed *kurkar* stones that were joined with a lime mortar mixture of crushed seashells and *kurkar*; it was set into the concrete frame (Fig. 23). Although the staircase walls were preserved only up to 1 m high, it seems likely



Fig. 21. Area B pottery kiln, looking southeast.



Plan 8. Area B: kiln complex, plan and sections.

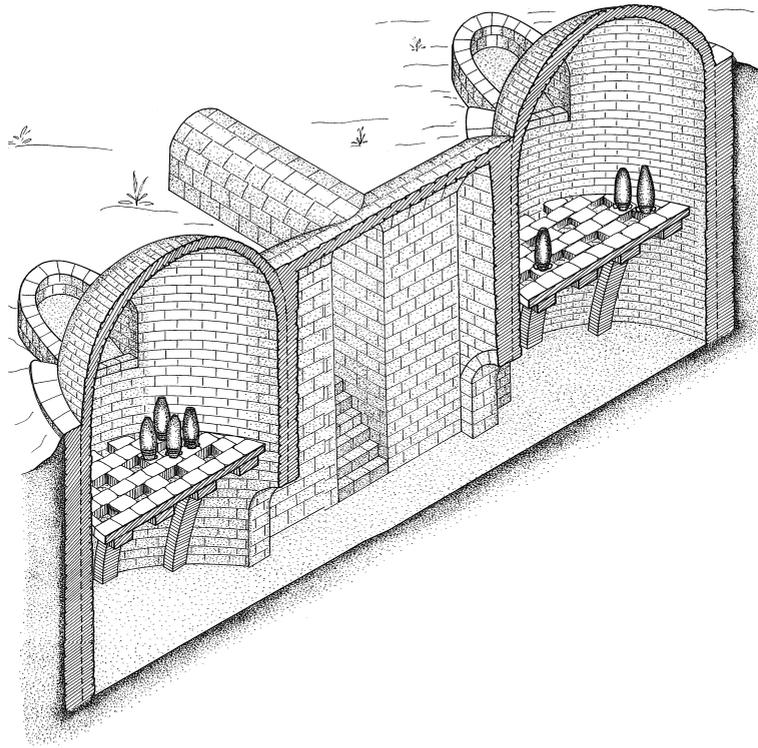


Fig. 22. Isometric reconstruction of Area B pottery kiln.



Fig. 23. Area B pottery kiln: Staircase 315, looking southeast.

that they supported a barrel vault that covered this largely subterranean staircase. The corridor must have been roofed as well; its white plastered floor was c. 6 m below surface level. Its walls (2.5–6.0 m preserved height; Plan 8: Section 1–1; see Fig. 26) were built in a similar manner as those of the staircase. A small, arched niche (0.4 × 0.5 m, height 1 m; Fig. 24) was set in the southwestern wall opposite the stairway.

The kilns were lined with lightly-fired mud bricks, which comprised an inner wall set against the outer concrete frame (Fig. 25:a). The double walls were preserved in the northern kiln up to a height of 5.75 m; it is estimated that this was nearly the full height of the walls, which probably carried a brick-built dome with an outlet flue at its center (see Fig. 22; for a discussion and ethnographic examples of sealing techniques in pottery kilns, see Israel 2006). Two stone-built arched doorways connected the corridor with the firing boxes (Plan 8: Section 3–3; Fig. 26). Both



Fig. 24. Area B pottery kiln: Corridor 305, looking northwest.



Fig. 26. Area B pottery kiln: arched doorway leading from Corridor 305 into the firing box of Kiln 322, looking northeast.

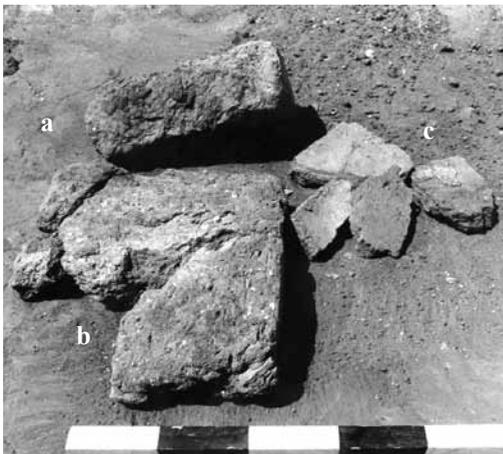


Fig. 25. Bricks from Kiln 322: (a) from the inner kiln wall; (b) from the firing chamber floor; (c) from the arches.

were blocked by brick construction, with only a narrow and elongated upright stoke-hole left in the middle of the doorway (Plan 8: Section

2–2; Fig. 27). It seems most plausible that the doorways were reopened between firing sessions so as to fill the firing box with firing material; hence, it is concluded that the kiln was abandoned with no intention to reuse it. Four brick supporting arches could be identified in the firing box in Kiln 322, and two out of four arches—in Kiln 316 (brick dimensions: $3 \times 40 \times 50$ cm; Figs. 25:c; 28). The arches supported the brick floors of the firing chambers at a level of 2.5–3.0 m above the firing-box floor. Remains of the arches and floor fragments were found in the collapsed debris within both kilns; the brick-floor fragments still preserved the small inlet flues (0.3×0.4 m; see Fig. 25:b) that allowed the heat to rise from the firing box into the firing chamber.

Each firing chamber was accessed through a small opening (1.00×1.25 m) under an arched entranceway, only one of which was preserved (L309/314). The entranceway floor



Fig. 27. Area B pottery kiln: blocked doorway leading from Corridor 305 into the firing box of Kiln 316, looking southwest.



Fig. 28. Area B pottery kiln: collapsed arches in the firing box of Kiln 316 (L317), looking east.

led at a 30°-angled slope from a level c. 0.6 m below the Byzantine ground level outside the kiln down toward an entrance set in the firing chamber's wall, most probably located c. 1.5 m above the firing chamber floor.

The northern kiln, which was partially excavated, was filled with chunks of mud, wasters and a large quantity of broken pottery, most of which were the latest subtype of the torpedo-shaped Gaza jar (cf. Fig. 37:1, 2), defined by Majcherek as Form 4, and dated by him to the late sixth and early seventh centuries CE (Majcherek 1995:169). These remains apparently slid into the collapsed kiln from a nearby heap of pottery-kiln debris. Most of the debris heaps near the kiln were removed prior to the excavation. However, remains of heaps covered with soil survived intact (up to 5 m high) to the southeast of Kiln 316 (L719; Fig. 21).

Sherds of the same jar type were found on the floor of Corridor 305 (see Figs. 22; 37:2). These finds seem to indicate that the kilns were

used in the manufacture of only this type of jar, which served as the standard storage vessel for wine and other products of the estate, as was the case at other estates in the southern coastal plain (Gadot and Tepper 2003). The immense quantity of debris near the kilns suggests that additional kilns, yet uncovered, operated nearby.

No remains of a pottery workshop that presumably stood near the kiln were found, possibly due to the extensive damage caused by heavy mechanical equipment in this part of the site. However, remains of a plaster floor (L320) noted 2 m east of the stairway may indicate the location of a workshop. Two parts of a potter’s wheel (Fig. 40:5, 6), one found on the western stone press-bed (L453), the other, in the building north of Warehouse 401, belonged to such a workshop.

Similar kilns have been found at several sites in the southern coastal plain, such as Khirbat Irza (Israel 1999) and Barqa (Gan Yavne; Gadot and Tepper 2003; and see there a discussion of the kilns and the importance of the Gaza jars for the Byzantine economy of this region).

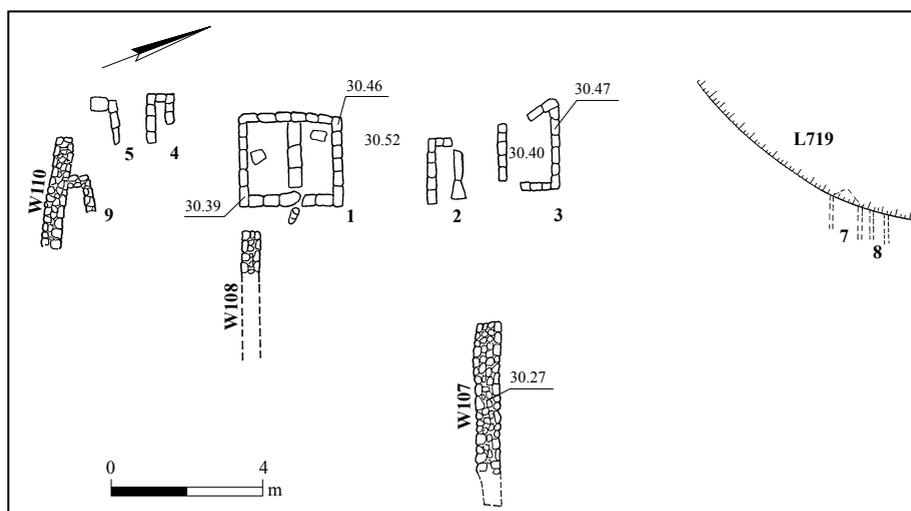
Graves and a Tomb

Five burial clusters dating to the Byzantine period were exposed following the removal of

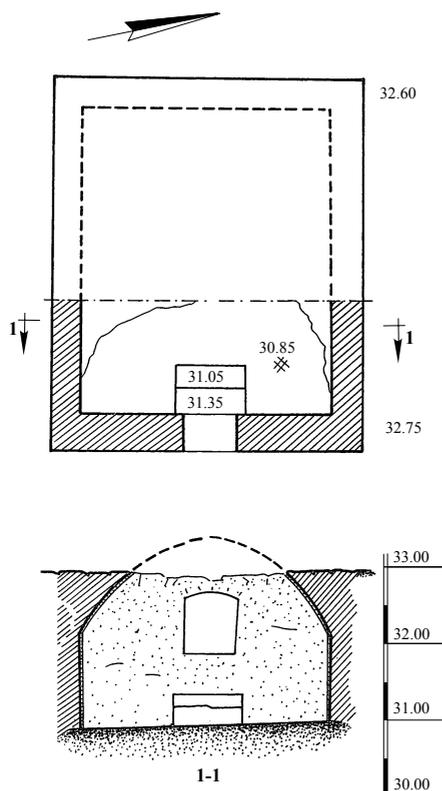
sand by mechanical equipment: one in Area A, on the southwestern outskirts of the estate, and four in Area D (D1–D4), up to 300 m to the southwest of the estate. Located along a long and narrow strip running southwest from the estate, it is probable that they mark the route of the ancient road leading to Ashqelon (see Fig. 1). Four different burial types, all typical of the Byzantine period, were identified: pit graves; single cist graves; double cist graves; and a built family tomb.

The burial cluster in Area A (Plan 9), which was partially covered by the southeastern edge of the pottery-kiln debris heap (L719), consisted of one double cist grave (Grave 1) and seven single cist graves (Graves 2–5, 7–9). All the graves, and particularly Graves 7 and 8, were damaged by the mechanical equipment and were found after the covering stones had been removed; none were excavated. Several thick walls (W107, W108, W110) were exposed as well; their purpose is unclear.

In Burial Cluster D1, the most northern cluster in Area D, three built family tombs could be discerned, but only one (Tomb 100) was excavated. Tomb 100, a rectangular (4 × 5 m; Plan 10) subterranean structure with a barrel-vault roof (2 m high; Fig. 29), was preserved to almost full height. Its walls (0.5 m thick)



Plan 9. Area A: graves.



Plan 10. Tomb 100, plan and section.

were built of cast concrete made with a mixture of sea shells and crushed *kurkar*, and its floor was built of *debesh* made of small fieldstones. The interior of the tomb was plastered white. A small doorway (0.7×0.8 m; Fig. 30) set in the eastern wall opened about 1 m above the floor level; two steps were constructed below it. The doorway was blocked by a marble slab ($5 \times 60 \times 85$ cm). A small, round opening (diam. 0.15 m) was left above the entrance; the wall above it and part of the barrel-vault roof were removed by a tractor prior to the excavation. This type of a one-hall, vaulted built tomb is known at additional sites in the Gaza-Ashqelon region from the Roman and Byzantine periods (Huster and Sion 2006).

Human skeletal remains and sand filled the tomb up to c. 1.5 m (see Fig. 29), indicating a long period of use. In the excavated eastern third of the tomb, a total of eleven burials were found. Children and adults were buried with their heads pointing eastward, while babies were interred in Gaza jars (see Fig. 30). The jars were all of the Gaza-jar type manufactured in the Area B kilns. Other pottery objects



Fig. 29. Tomb 100, looking west.



Fig. 30. Tomb 100: infant jar burials, looking south.

Fig. 31 ▶

No.	Type	Basket	Description
1	Bowl	205	Ware: light red 2.5YR6/6; tiny light gray and white inclusions Surface: red 2.5YR4/8 slip; very worn
2	Bowl	120	Ware: yellowish red 5YR5/6; tiny light gray inclusions; cooking ware; dark gray core Surface: self slip
3	Juglet	93	Ware: light brownish gray 2.5Y6 /2; numerous medium and large white inclusions Surface: pale yellow 2.5Y7/3; body slightly deformed
4	Jug	121	Ware: reddish yellow 5YR6/6; tiny white inclusions; brown core Surface: light reddish brown 5YR6/3
5	Gaza jar handle	210	Ware: reddish yellow 5YR6/8; occasional tiny white inclusions Surface: self slip
6	Cooking pot	120	Ware: yellowish red 5YR5/6; tiny light gray inclusions; cooking ware; dark gray core
7	Sandal lamp	84	Ware: light red 2.5YR6/8; numerous tiny gray inclusions and occasional medium white inclusions Surface treatment: pale brown slip 10YR6/3

found in the tomb include bowls (Fig. 31:1, 2), an intact, decorated jug (Fig. 31:3), a Gaza-jar sherd with incised decoration or symbols (Fig. 31:4), a cooking-pot fragment (Fig. 31:5) and a sandal lamp (Fig. 31:6). This assemblage was dated to the late Byzantine period (mid-fifth through seventh centuries CE); several

non-diagnostic glass fragments were found as well.

Burial Cluster D2 (Plan 11), located 50 m south of D1, included the remains of single and double cist graves (Graves 101–103, 105–108) constructed of soft limestone blocks. Burial Cluster D3, 40 m south of D2, was not

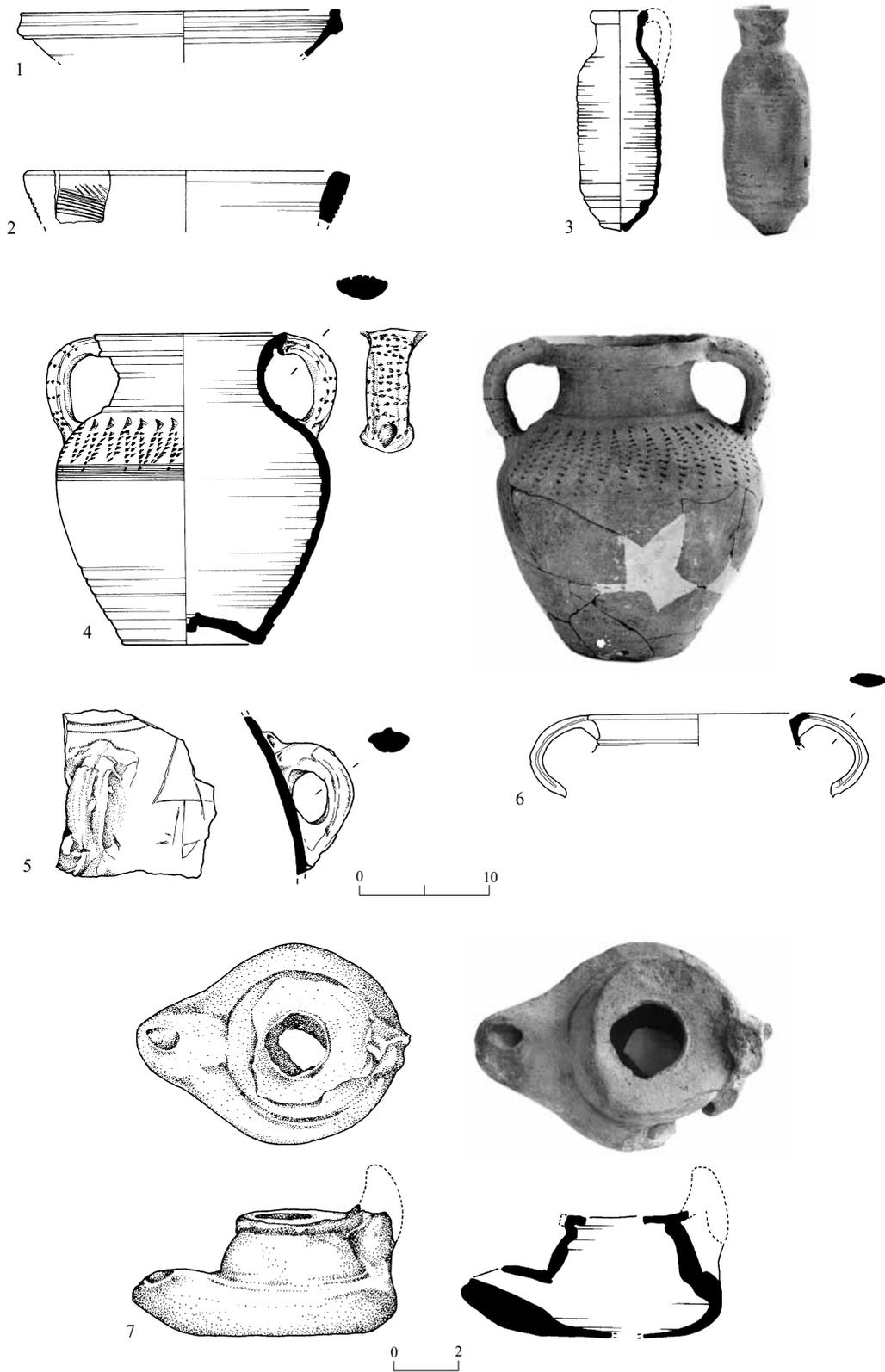
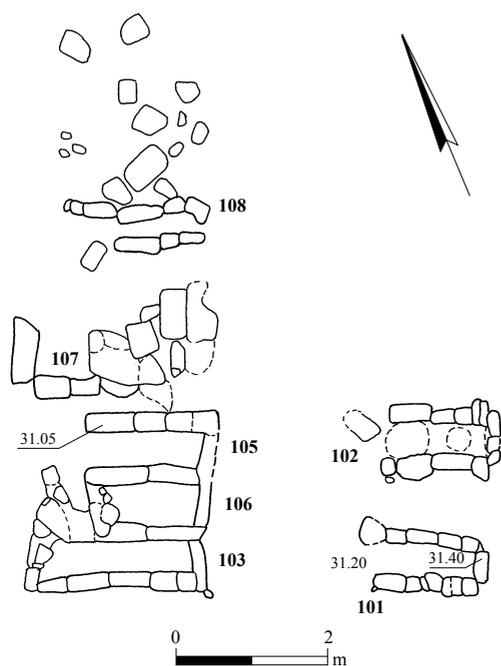
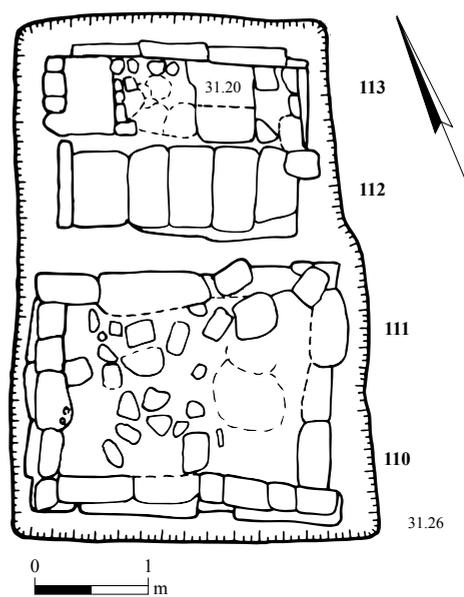


Fig. 31. Pottery from Tomb 100.



Plan 11. Burial Cluster D2.



Plan 12. Burial Cluster D3.



Fig. 32. Grave 112/113, looking northeast.

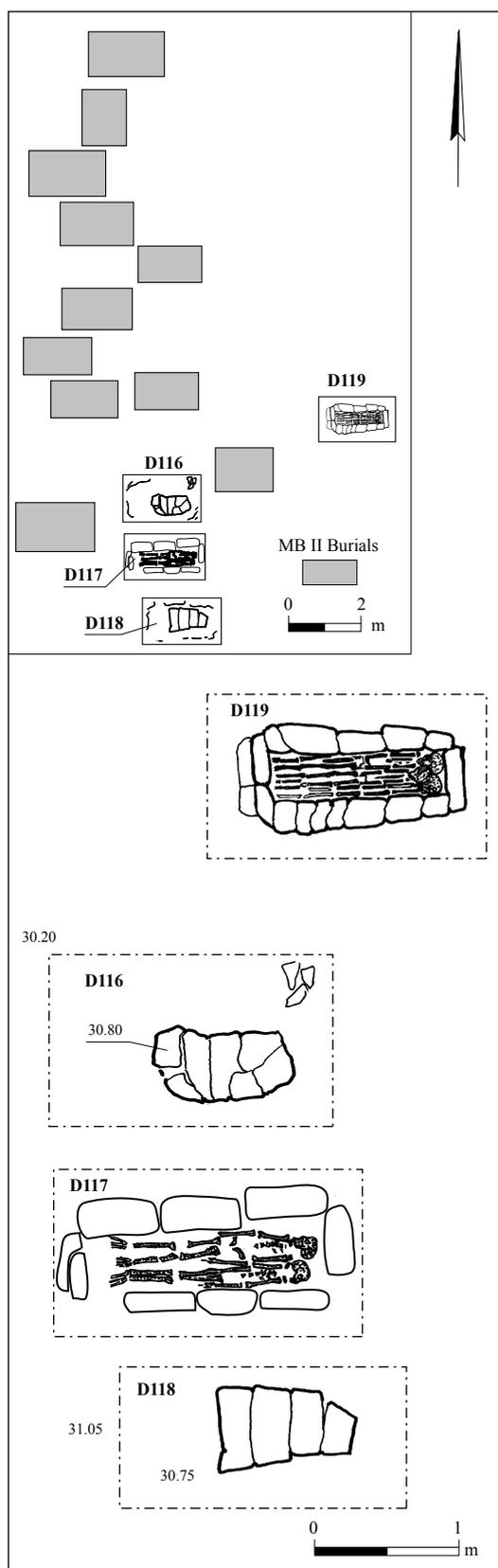


Fig. 33. Grave 117, looking south.

excavated. Two double cist graves (Graves 110/111, 112/113; Plan 12) were identified and documented. In Grave 112/113 (1.60 × 2.25 m; Fig. 32), which was better preserved, a partition wall divided the grave in two and served to carry the stone covering slabs.

The southernmost burial cluster (D4; Graves 116–119; Plan 13) is located approximately 30 m southwest of Cluster D3, in an area containing MB II burials (Erickson-Gini and Israel, this volume); the four Byzantine-period graves, like the MB II graves, were oriented

along an east–west axis. Two graves (116, 118), found with covering stones intact, were not excavated; these are most probably simple pit graves partially covered with stones. The other two (117, 119) were cist graves. Grave 117 (Fig. 33) was found without any covering stones, possibly due to their removal by mechanical equipment. It contained the skeletal remains of two adults of unidentified sex (1.74 m and 1.65 m tall), interred beside each other with their heads at the eastern end of the grave. A coin found in one of the skulls dates to the fourth



Plan 13. Burial Cluster D4.

century CE (see Ariel, this volume: Cat. No. 37). Grave 119 was covered with stone slabs placed with a slight gap between them. The grave contained the remains of five individuals: four adults—two males and two females—and one 16-year old of undetermined sex.⁸

POTTERY

Early and late Byzantine pottery, dating from the fourth through the early seventh centuries CE, was collected during the excavation of the estate and surrounding area and from Grave 17 (Figs. 34–39; 40:1, 2), as well as from Tomb 100 (see Fig. 31).⁹ Except for the large amount of jar fragments uncovered in and near the Area B kilns, the site yielded a relatively small ceramic assemblage, and almost all finds derived from fills within the structures and in their vicinity. The assemblage included bowls, basins, jugs, juglets, jars, cooking ware, lamps, a lantern and ceramic pipes.

Bowls (Figs. 31:1, 2; 34).— Two sherds of African Red Slip bowls were found. One belongs to Hayes' Form 50A/B (Fig. 34:1; Hayes 1972: Fig. 12:55), dating to 300–360 CE; the other belongs to Form 67 (Fig. 34:2; Hayes 1972: Fig. 19:28), with a date in the mid-fifth century CE. Other fine ware bowls include Late Roman C ware (Figs. 31:1; 34:3–5), which is dated to the sixth century CE.

A large, rouletted Byzantine Fine Ware bowl or basin (Fig. 34:6) corresponds to Hayes' Cypriot Red Slip Ware Form 7 (Hayes 1972:378–379), dated to the second half of the sixth and early seventh centuries CE. A large, plain ware bowl has flaring sides and combed decoration (Fig. 34:7). A similar but smaller bowl was found in Tomb 100 (Fig. 31:2). No exact parallels were found for these bowls.

Basins (Fig. 35).— Basins, or large bowls, appear in a variety of forms, several of which have no exact parallels. These vessels have heavy rims, which are generally inverted, and usually have thick rounded sides (Fig.

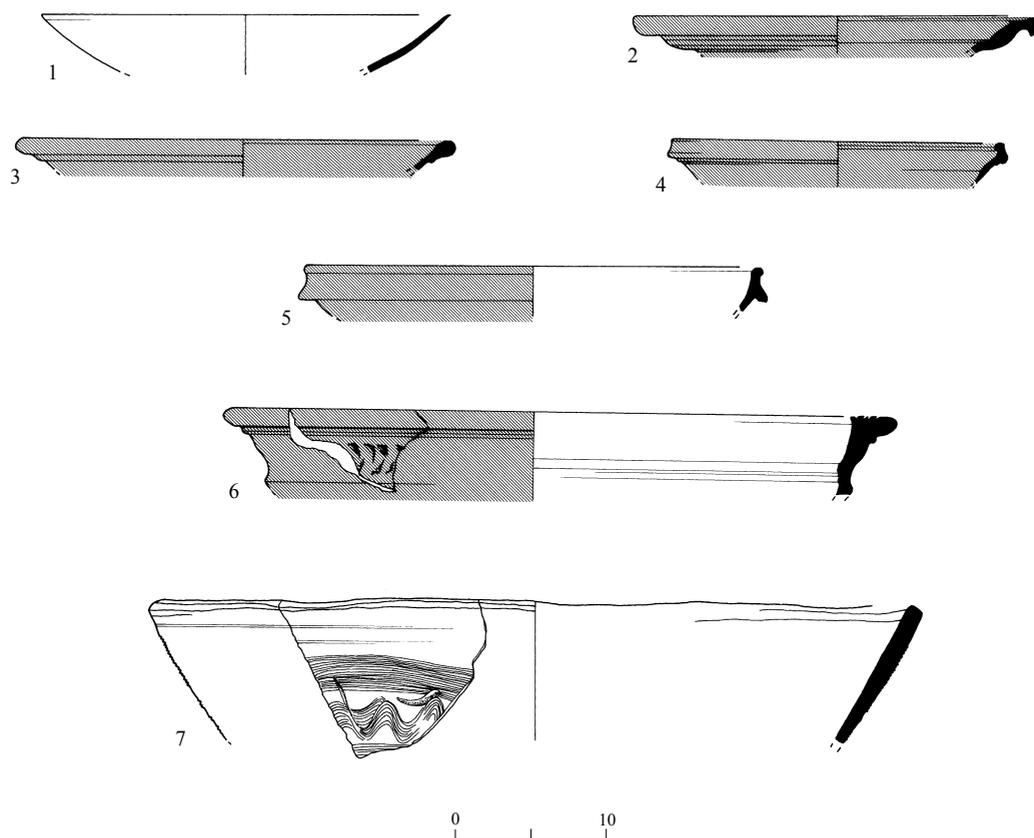


Fig. 34. Byzantine pottery: bowls.

No.	Basket	Area/Locus	Description
1	353	E/498	Ware: red 2.5YR5/8 Surface: red 2.5YR5/8 burnish
2	319	E/478	Ware: light red 2.5YR6/8; occasional large light gray inclusions Surface: red 2.5YR5/8 burnish; very worn
3	379	E/624	Ware: light red 2.5YR6/8; numerous tiny white inclusions Surface: completely worn off
4	325	E/482	Ware: light red 2.5YR6/6; numerous tiny white inclusions Surface: very pale brown 10YR8/4 slip on ext. rim; very worn red 2.5YR4/8 slip on ext. body
5	325	E/482	Ware: light red 2.5YR6/6 Surface: very worn brown 10YR5/3 burnish
6	22	E/402	Ware: reddish yellow 5YR6/6; occasional tiny gray inclusions Surface: very worn red 2.5YR5/8; burnish on ext. rim and body; very worn reddish brown 5YR4/4 slip on int.
7	44	E/402	Ware: reddish yellow 5YR6/6; numerous tiny gray inclusions Surface: self slip

35:1, 3–6); at least one basin (Fig. 35:2) has flaring sides. Some (Fig. 35:4–6) bear combed decoration. The basin in Fig. 35:5 has parallels with deep bowls or basins found in other Western Negev sites, such as Ma'on-Nirim

(Magness 1987: Fig. 2:7). This is a variation of Magness' arched-rim basin, found at sites such as Ashqelon and Ramot Nof, near Be'er Sheva' (Magness 1993:160). At both these sites, dated to the late Byzantine period, parallels are

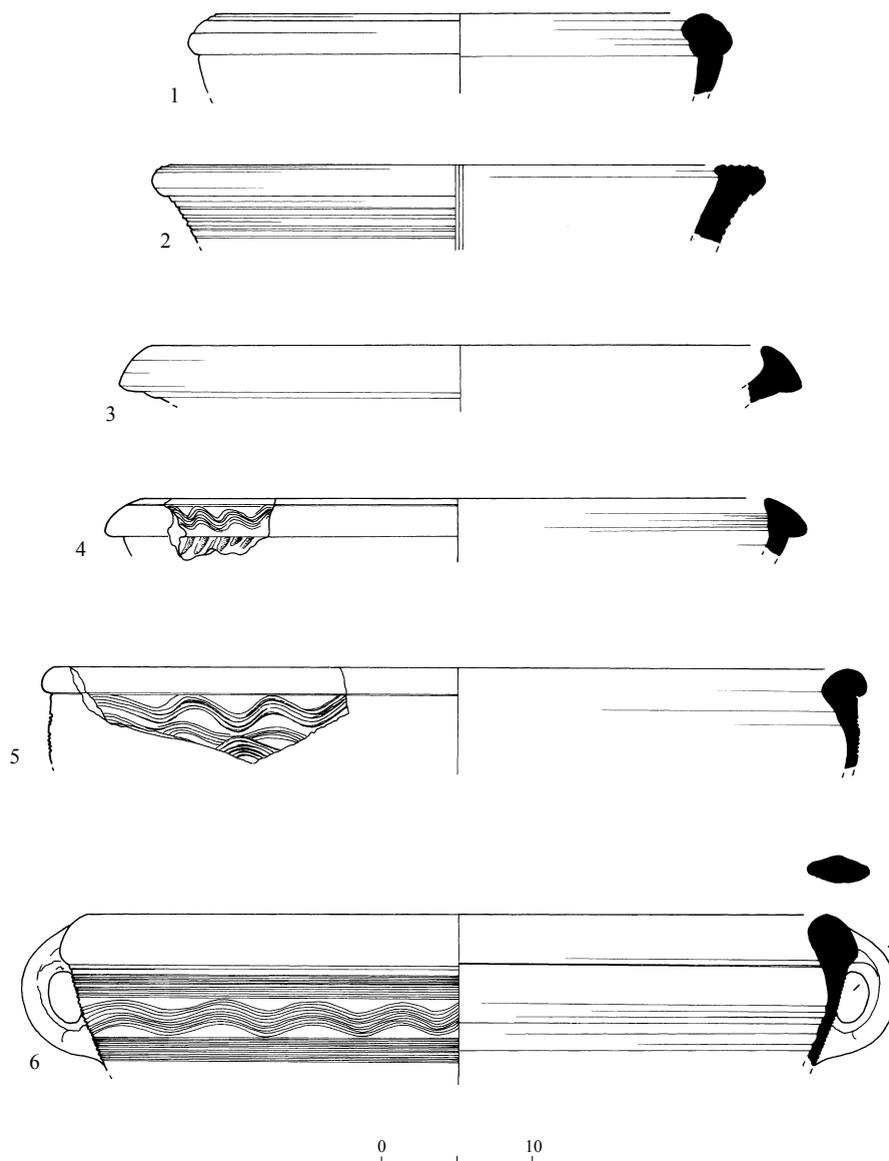


Fig. 35. Byzantine pottery: basins.

No.	Basket	Area/ Locus	Description
1	482	E/461	Ware: yellowish red 5YR5/8; numerous tiny light gray and occasional tiny white inclusions Surface: self slip
2	32	E/402	Ware: reddish yellow 5YR6/6; occasional large light gray inclusions; coarse, cracked ware
3	45	E/408	Ware: very pale brown 10YR7/4; numerous tiny reddish brown inclusions; sandy texture Surface: self slip
4	176	D/117	Ware: reddish yellow 7.5YR6/6; tiny reddish brown inclusions Surface: self slip
5	383	E/499	Ware: reddish yellow 5YR6/8; numerous tiny reddish brown inclusions Surface: self slip
6	306	E/451	Ware: yellowish red 5YR5/6; numerous tiny gray inclusions Surface: very pale brown 10YR7/3 slip

found for the large basin with heavy combed decoration and heavy lug handles in Fig. 35:6 (Ustinova and Nahshoni 1994: Fig. 3:5; Nahshoni 1999: Fig. 5:9).

Juglets (Figs. 31:3; 36:1–5).— The upper part of a juglet with a cylindrical neck and slightly inturned rim (Fig. 36:1) has no exact parallels. Two juglets (Fig. 36:2, 3) are small, squat and globular with a flat disc base. Their rim is stepped and the handle stretches from the rim to the shoulder. They correspond to Magness’ Fine Byzantine Ware juglet Form 2A (Magness 1993:240), with good parallels from Byzantine sites in the southern coastal plain, as well as other parts of Israel. The juglet in Fig. 36:3 has incised gashes as decoration on the upper body (for a discussion of this type of decoration on Fine Byzantine Ware closed vessels, see Magness 1993:167–170). The juglet in Fig. 36:4 appears to be a coarser variation of the Form 2A type, but is made of coarse ware with a brittle texture, and lacks the small, thick disc base. All three juglets date to the late Byzantine period.

Two other types of juglets (Figs. 31:3; 36:5) are made from light wares and do not have exact parallels. The juglet in Fig. 36:5 has a rounded body and a flaring ribbed neck that ended with

a pinched spout, an omphalos base and a loop handle that extends from the rim to mid-body. It is similar in shape, but not in ware, to Magness’ Form 5 type of cooking jugs, found in the Jerusalem area (Magness 1993:245). The juglet in Fig. 31:3 has a tubular shape, a rounded and everted rim, and a very low, disc-shaped base. A handle appears to have extended from the rim to the shoulder. This appears to be a late Byzantine variation of the bag-shaped juglet found throughout southern Israel in the Roman and Byzantine periods.

Jugs (Figs. 31:4; 36:6).— The intact decorated jug (Fig. 31:4) found in Tomb 100 is globular with a high omphalos base. The neck is short and flared, ending in an everted triangular rim. Two handles extend from the rim to the shoulders. It appears to be a Fine Byzantine Ware jar with incised decoration: a zigzag pattern on the upper body and dots, creating a similar pattern, on the handles. This type of jar corresponds with Magness’ Fine Byzantine Ware Jug Form B, dated to the mid-sixth through eighth centuries CE (Magness 1993:236–238). A similar jar was found in Bethany (Saller 1957: Fig. 59:2705).

The jug in Fig. 36:6 has a slight and everted rim, a rounded body with close ribbing and a flattened base. The slightly flaring neck bears

Fig. 36 ▶

No.	Type	Basket	Area/ Locus	Description
1	Juglet	353	E/498	Ware: yellowish red 5YR5/8; occasional medium to large gray inclusions Surface: light gray 10YR7/2 slip
2	Juglet	830	E/490	Ware: light red 2.5YR7/8; numerous small and medium-sized white inclusions Surface: peeling light reddish brown 5YR6/4 slip
3	Juglet	321	E/479	Ware: light red 2.5YR7/8; numerous small and medium-sized white inclusions Surface: self slip
4	Juglet	340	E/600	Ware: red 2.5YR6/8; gray core; numerous tiny gray inclusions and occasional small white inclusions Surface: peeling light reddish brown 5YR6/4 slip
5	Juglet	340	E/600	Ware: pale yellow 2.5Y7/4; minute dark gray inclusions Surface: self slip
6	Jug	399	E/600	Ware: red 2.5YR5/8; numerous tiny gray inclusions and occasional large white inclusions Surface: very worn red 2.5YR5/8 slip; white discolorations or accretions

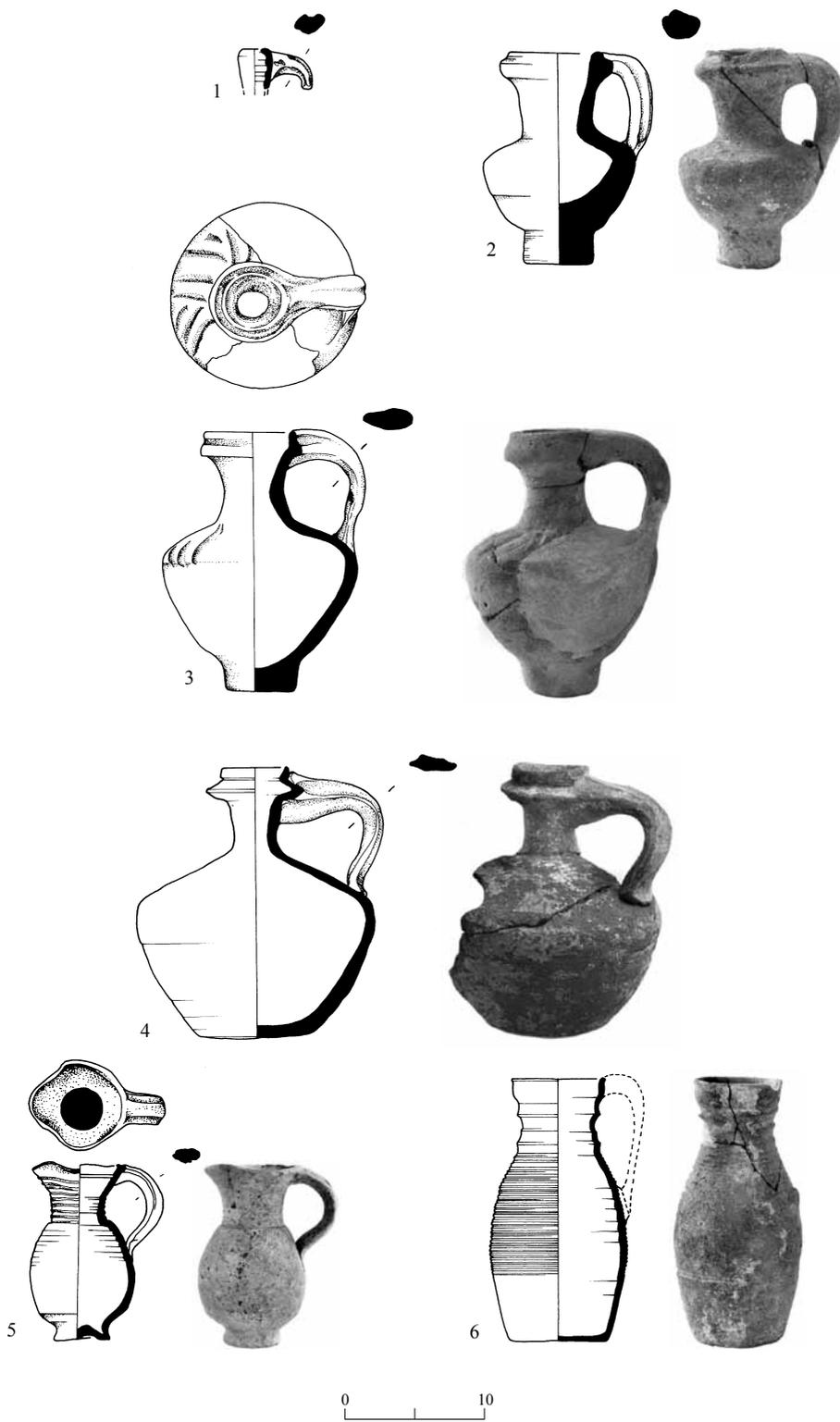


Fig. 36. Byzantine pottery: juglets (1–5) and jug (6).

a series of ridges. A handle appears to have extended from the rim and upper neck to mid-body. A similar jug was found in Byzantine contexts in the Be’er Sheva’ region (Ustinova and Nahshoni 1994: Fig. 6:28).

Storage Jars (Figs. 31:5; 37:1, 2).— The most common storage jars are the Gaza jars, which were locally manufactured and used for the storage and transportation of wine and oil produced at the site. It has a sloping profile,

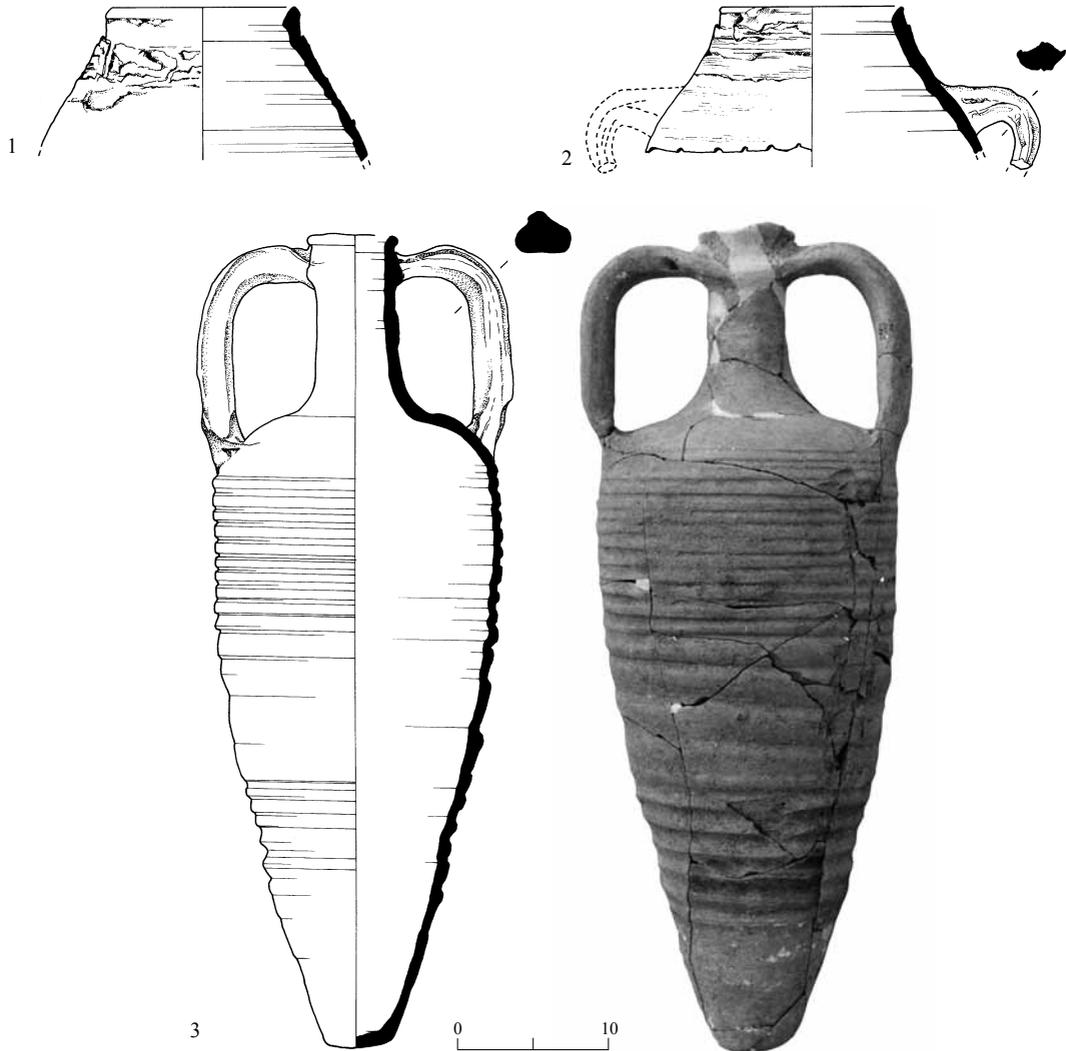


Fig. 37. Byzantine pottery: storage jars (1, 2) and amphora (3).

No.	Basket	Area/Locus	Description
1	294	E/458	Ware: reddish yellow 5YR6/8; tiny gray and occasional tiny white inclusions Surface: self slip
2	250	B/305	Ware: yellowish red 5YR5/6; tiny gray and occasional tiny white inclusions Surface: light brown 7.5YR6/4 slip
3	360	E/605	Ware: pink 7.5YR7/3 to pale yellow 2.5Y8/2 (near surface); numerous medium to large dark gray inclusions Surface: light gray 10YR7/2

lacking the defined shoulder of the earlier forms of this jar, and a slightly everted rim. Some of these jars have loop handles that protrude from the upper shoulder (Fig. 37:2); the sherd in Fig. 31:5 bears an unintelligible incision near the handle. This type of Gaza jar corresponds to Majcherek's Form 4, which dates to the late sixth and seventh centuries CE (Majcherek 1995:169) and to Riley's Late Roman 4 (Riley 1979:117; Kingsley 2001: Fig. 3.3:2). A depiction of this jar type, surrounded with clusters of grapes, appears as a motif in a late Byzantine mosaic floor discovered in the church at Be'er Shema' in the western Negev (Gazit and Lender 1992). A petrographic examination of sherds of this jar type, carried out by Yuval Goren, indicated that such jars were prepared from loess soils collected from deposits found mainly in the northern Negev and southern Shephelah regions (Fabian and Goren 2002:148–149)—a profile that fits well the available raw materials for pottery-making in the vicinity of the site.

Amphora (Fig. 37:3).— This amphora has an elongated, angular body that is heavily ridged, ending in a concave base. The neck of the vessel is tall and narrow, and carinated under the rim. The rim is thick and everted. Handles extend from below the rim to the shoulders of the vessel. A similar amphora was found in the Ashqelon area (Kogan-Zehavi 1999: Fig. 24:3). Several complete storage jars of this type were found at Ḥorbat 'Aqav (Ramat Ha-Nadiv) where they were classified as Byzantine Amphora Type 2 (Calderon 2000:133–135, Pl. XX). The production site of this type of jar is as yet unknown. However, considering the large quantity (c. 135) of Gaza jars found at Ḥorbat 'Aqav, it appears that a steady trade between the Gaza-Ashqelon region and the central coastal region may account for the presence of this amphora in Ashqelon. This amphora type was discovered at Corinth, where it was described by the excavators as 'Palestinian', in contexts

dated to the first half of the fifth century CE (Slane and Sanders 2005:253, Nos. 1–24).

Cooking Wares (Figs. 31:6; 38).— The cooking wares include cooking pots (Figs. 31:6; 38:1), casseroles (Fig. 38:2–4) and a bell-shaped lid (Fig. 38:5) with heavy, closely spaced ridges.

The cooking pot in Fig. 38:1 has an upright neck, ending in a slightly grooved rim, and two loop handles extending from the upper neck and rim to the shoulders. This type of cooking pot has been found in contexts dating to the second half of the fourth century at Mampsis in the northeastern Negev (Erickson-Gini 1999: Fig. 21.2.1–3). It corresponds to Magness' Form 1A, dated to the third–fourth centuries CE (Magness 1993:216). The cooking pot in Fig. 31:6 has a short neck, which flares toward the top, ending in an everted rim, and large loop handles extending from the neck. This vessel corresponds to Magness' Form 4C, dated from the fifth to the early eighth centuries CE (Magness 1993:219–220).

Two casseroles and a casserole handle were found (Fig. 38:2–4). The casserole in Fig. 38:2 has rounded sides, upturned handles and an inverted rim fitted for a lid. The body bears wide-ridged bands. The casserole in Fig. 38:3 has flaring sides, ending in an inverted triangular rim, and a single, wishbone-shaped handle. The body bears close ridging. A similar handle was found; both are solid where attached to the vessel, but become hollow and open on the far end. Casseroles appeared sometime in the third century CE and, according to Magness, continued to be manufactured as late as the eighth or ninth centuries CE (Magness 1993:211–221). However, casseroles quite similar to those found at the site, which were uncovered elsewhere in Ashqelon (Nahshoni 1999: Fig. 5:13) and near Be'er Sheva' (Ustinova and Nahshoni 1994: Fig. 6:27), correspond to Magness' Casserole Form 2 from Jerusalem, dated to the sixth and seventh centuries CE (Magness 1993:213).

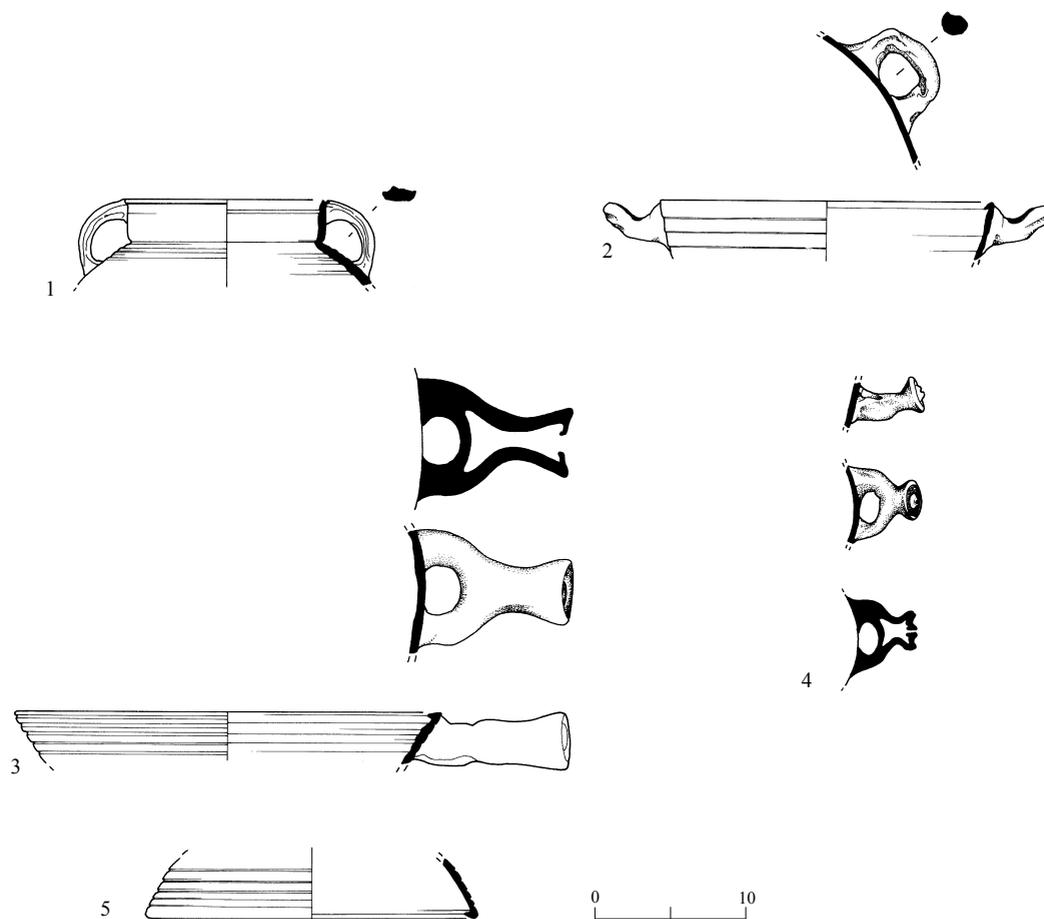


Fig. 38. Byzantine pottery: cooking wares.

No.	Type	Basket	Area/ Locus	Description
1	Cooking pot		Surface	Ware: yellowish red 5YR5/8; tiny gray inclusions Surface: yellowish red 5YR4/6
2	Casseroles	327	E/484	Ware: yellowish red 5YR5/8; numerous tiny gray inclusions; grayish core Surface: yellowish red 5YR5/6 slip; burnish marks on ext.
3	Casseroles		Surface	Ware: yellowish red 5YR5/6; numerous tiny light gray and occasional tiny white inclusions Surface: yellowish red slip 5YR4/6; very worn
4	Casseroles handle	327	E/484	Ware: yellowish red 5YR5/8; occasional medium and tiny white inclusions Surface treatment: yellowish red slip 5YR4/6; very worn
5	Cooking- ware lid	349	E/607	Ware: yellowish red 5YR5/6; numerous tiny gray and white inclusions Surface: self slip; burn marks

Lamps and Lantern (Figs. 31:7; 39).— Three sandal lamps, common in southern Israel in the late Byzantine period (Rosenthal and Sivan 1978: Nos. 508, 509), were found. Two (Figs. 31:7; 39:1) correspond to Rosenthal and Sivan's

Variant B sandal lamp, uncovered at Mampsis (Rosenthal and Sivan 1978:122). The lamp in Fig. 31:7 has a handle that protrudes above the lamp in a crescent shape instead of the usual loop-ring handle. The lamp in Fig. 39:2 is made

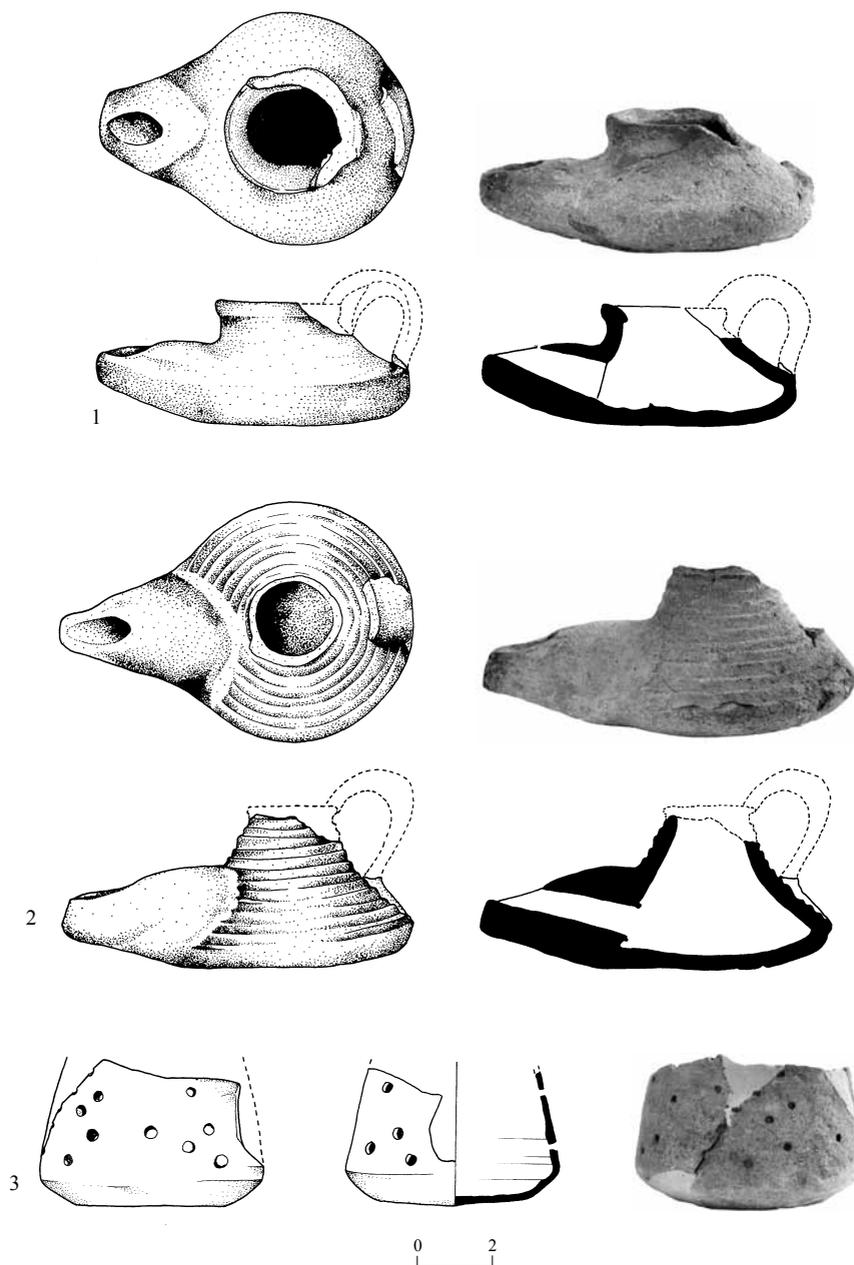


Fig. 39. Byzantine pottery: lamps (1, 2) and lantern (3).

No.	Type	Basket	Area/Locus	Description
1	Sandal lamp	338	E/483	Ware: light reddish brown 2.5YR7/4 Surface: light brown 7.5YR6/4; burnish marks
2	Sandal lamp	393	E/600	Ware: red 2.5YR4/6; numerous tiny gray inclusions and occasional tiny white inclusions Surface: light reddish brown 5YR6/4 slip; burnish marks
3	Lantern	399	E/600	Ware: yellowish red 5YR5/8; numerous tiny gray inclusions Surface: pink 5YR7/3 slip

from a brittle, cooking-ware fabric, and its body is heavily ridged. It corresponds to Rosenthal and Sivan’s Variant A (Rosenthal and Sivan 1978: Nos. 506, 507), which was very common in southern Israel during the Byzantine period (Rosenthal and Sivan 1978:122), as indicated by its widespread appearance at Nizzana (Nessana; Baly 1962: Pl. XXVIII:23), Rehovot-in-the-Negev (Rosenthal-Heginbottom 1988: Pl. 1:21) and Ma‘on-Nirim (Levy 1960: Fig. 5:9), to name only a few sites. This lamp type was also discovered under the pavement of the Nea Church in Jerusalem, providing a mid-sixth century *terminus ante quem*, which confirms Rosenthal and Sivan’s proposed date of the sixth to seventh centuries CE (Magness 1993:129).

The lantern (Fig. 39:3) has thin, perforated walls. Its lower half is bell-shaped with a flattened base. Like the lamp in Fig. 39:2, similar lanterns have been found under the pavement of the Nea Church in Jerusalem, thus dating them from the sixth to the seventh centuries CE (Magness 1993:129).

Miscellaneous (Fig. 40:1–3).— Ceramic pipe sections (Fig. 40:1, 2) were found in the water-conveying installations: in the northern pool complex, in the bathhouse and in the fish pools.

An unidentified ceramic object (spout? funnel?) was also found (Fig. 40:3).

GLASS FINDS¹⁰

Only 13 identifiable glass fragments were recovered from the site (not drawn). Twelve fragments dated to the Byzantine period (fifth–sixth centuries CE). These include bowls with wide, hollow, out-folded rims, and one high, hollow base-ring; two oil lamps, one with a hollow conical stem, the other with a delicate handle—probably one of three that were originally attached to the rim; two bottle rims, one infolded and the other decorated with an applied trail below the rim; and one wide strap handle belonging to a jug. One bowl fragment, with an applied, multiple-trail-wound base, may be dated to the Late Roman or early Byzantine period; this bowl type was very common during the fourth and early fifth centuries CE.

SMALL FINDS

Stone Objects.— These include a shallow marble basin with a ledge rim (Fig. 40:4) and two heavy conical objects made of hard stone (marble?) that were used for turning a potter’s wheel (Fig. 40:5, 6). Objects of this type have

Fig. 40 ▶

No.	Type	Basket	Area/Locus	Description
1	Water pipe	128	E/419	Ware: yellowish red 5YR5/8; numerous tiny gray and occasional small white inclusions Surface: light gray 10YR7/2 slip
2	Water pipe		E/497	Ware: light brown 7.5YR6/4; numerous tiny gray and occasional large white inclusions Surface: very pale brown 10YR7/4 slip
3	Spout or funnel	374	E/605	Ware: yellowish red 5YR5/8; numerous tiny gray and occasional medium to large white inclusions Surface: light brown 7.5YR6/4 slip
4	Stone basin	32	E/402	Marble
5	Potter’s wheel	309	E/453	Hard limestone
6	Potter’s wheel	395	E/479	Hard limestone

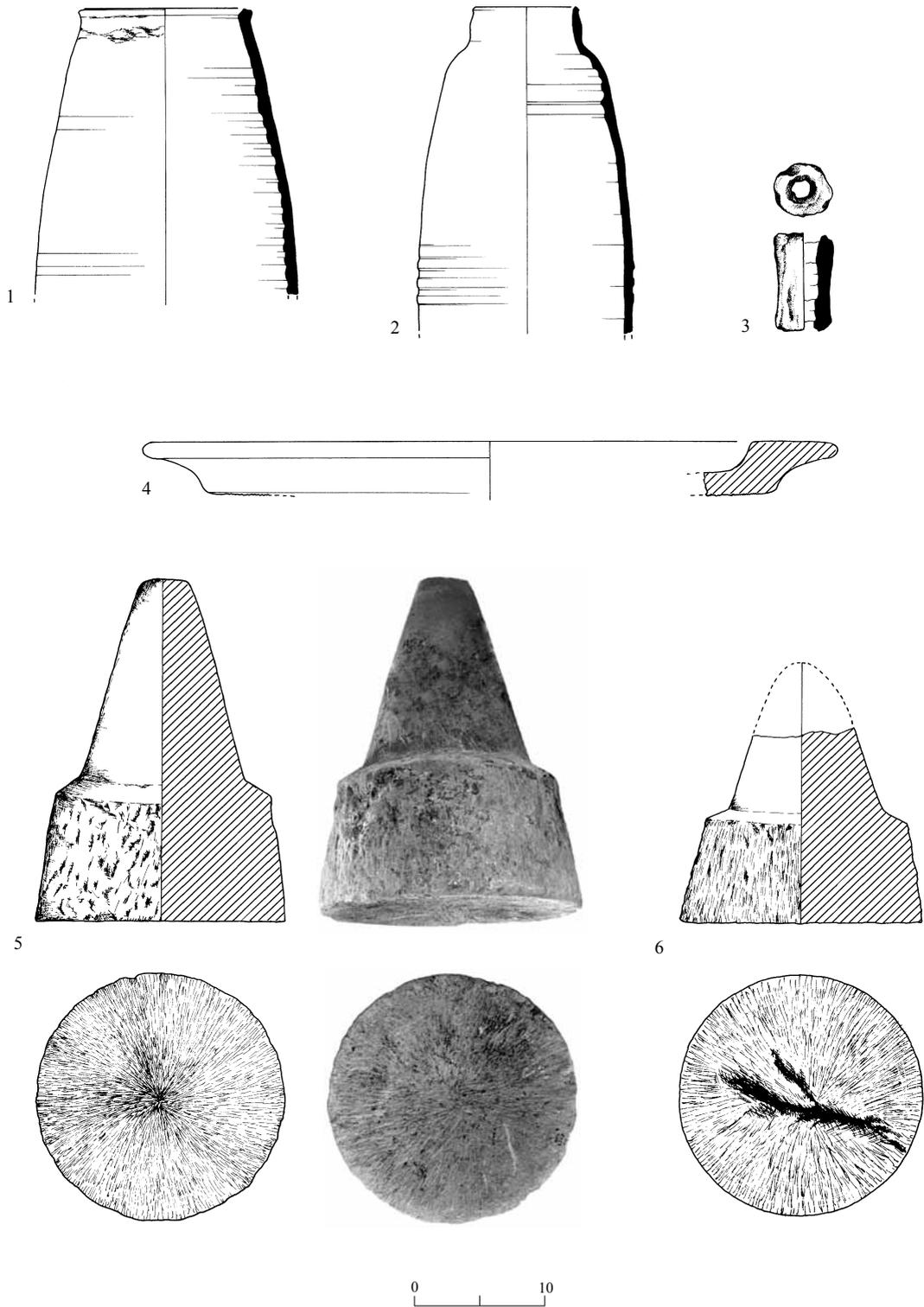


Fig. 40. Miscellaneous Byzantine pottery (1–3) and stone objects (4–6).

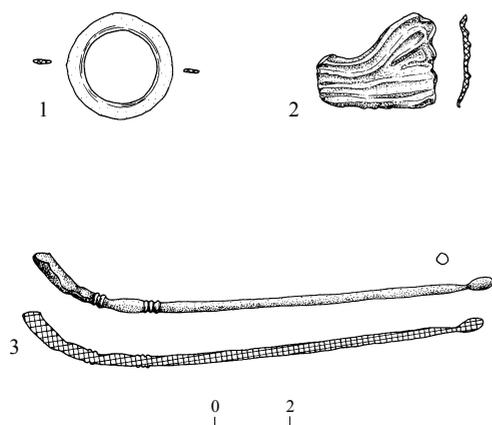


Fig. 41. Bronze objects from the Byzantine period.

No.	Artifact	Basket	Area/Locus
1	Ring	168	C/202
2	Fragment	287	E/422
3	Spatula	343	E/499

been found in Byzantine contexts at Bet She’an (Amiran 1956: Fig. 4).

Bronze Objects (Fig. 41).— These include a flattened ring (Fig. 41:1), a fragment from a molded object (Fig. 41:2) and a spatula (Fig. 41:3).

DISCUSSION

Following the abandonment of the Intermediate Bronze Age and MB IIB settlements (Erickson-Gini and Israel, this volume), the ‘Third Mile Estate’ site in Ashqelon was resettled during the Hellenistic period or possibly earlier, as indicated by scattered finds from the Iron Age and the Persian period. This settlement continued to exist through the Byzantine period. The remains from the Hellenistic and Early Roman periods are too meager to provide any information on the settlement during these periods. At least five kilns for the production of the early (Majcherek’s Form 1) Gaza jar were active at the site sometime between the first and the early third centuries CE. These mark the

beginning of the industrial production of jars at the site, which continued into the Byzantine period.

During the Byzantine period, most probably in the late fourth or early fifth century CE, an estate, comprising large and well-built installations, was established at the site. The installations included three industrial winepresses—those in Areas C and E, and a third winepress, which was unearthed at the Hammama Conduit site, c. 150 m southeast of Area E (Fabian, Nahshoni and Ein Gedy 1995); an oil press (Area E); several warehouses (Areas C, E); a pottery kiln complex (Area B); as well as a bathhouse with adjacent (fish?) pools (Area E) and scattered burial grounds (Areas A, D). Although some architectural changes could be discerned—as in the case of the oil-press storeroom (L464) that was built over an obsolete winepress compartment (L463)—no clear building phases were evident and most installations seem to have been abandoned without any major rebuilding.

The estate produced mainly wine and oil, as indicated by the industrial winepresses, the oil press and the large warehouses and storerooms adjacent to the installations. It may also have produced fish or fish products, although these most probably were raised for local consumption. The elongated Gaza wine jars (Majcherek’s Form 4) manufactured at the pottery shop that used the kiln complex in Area B—and most probably additional kilns yet uncovered—were the vessels used for storing the produce and marketing it. The widespread consumption of wine produced in Palestine and sold throughout the Empire and beyond it is well-documented (Kingsley 2001:53; and see Gadot and Tepper 2003:148–154). The wine-jar type that was manufactured in the Area B kiln has been found throughout the Mediterranean basin as well as in Britain (Riley 1979:221), Switzerland (Martin-Kilcher 1994:439) and Germany (Riley 1979:221), and as far south as southern Arabia (Sedov 1992: Fig. 2:1, 5). The estate was thus part of the far-reaching economic network that flourished during most

of the Byzantine period, probably from the early fifth until the early seventh centuries CE. Connected to this network were many coastal-plain estates, where wine and other products were produced on an industrial scale, including the manufacture of jars used in exporting these products. Such jars were manufactured in numerous additional pottery workshops, many of them in the western Negev (Israel 1995c). This production network, heavily concentrated in the southern coastal plain and the western Negev, supplied the extensive traffic of exported goods from the port at Ashqelon out to the Byzantine Empire and beyond its borders (Gadot and Tepper 2003; Sidi, Amit and 'Ad 2003:263).

The location of the 'Third Mile Estate' along the coastal highway, its high-quality masonry and the elaborate bathhouse suggest that the hosting of pilgrims or church officials and the sale of wine and possibly other 'Holy-Land' products and souvenirs to these consumers, served as an additional source of income for the estate (Dan 1990:282–284). The small Byzantine juglets defined as Fine Byzantine Ware (Form 2A; Magness 1993:240)—of which two were found in the rooms adjacent to the oil press and a third, in a nearby building (see Fig. 36:2–4)—were most probably used for the sale of such products. Although the production location of these vessels has not been fully determined, several such juglets found in the pottery-kiln debris at Naḥal Bohu, alongside Gaza jars (Israel 1995c: Fig. 113), may suggest that they were locally manufactured.

The estate's wealth, indicated by its substantial size (at least 15 dunams), extensive installations and high-quality architecture, leads one to postulate that it belonged to the church. Several other Byzantine-period estates comprising agricultural or industrial installations that were probably church-owned are known in the southern coastal plain: a complex, c. 2.5 km to the northeast of our site, where a church, winepresses and a khan were uncovered (Varga 2010); Hof Shiqma, Site No. 128, where a church, a bathhouse

and two well-built fish pools decorated with a cross were identified (Berman, Stark and Barda 2004:47*–48*); and Barqa (Gan Yavne), where a church, pottery workshops and a bathhouse were excavated (Avner 2000; Gadot and Tepper 2003; Sion et al. 2010). Such a network of church-owned estates, along or near the ancient coastal highway and other main roads, not only provided accommodation for pilgrims, but also made possible the extensive sale and export of wine, oil and other products. This is clearly suggested by Byzantine-period church mosaic scenes—several at or near sites with industrial winepresses and pottery kilns—depicting wine production and the transport of Gaza jars over land and by sea (e.g., El-Ḥaditha—Avi-Yonah 1972; Kissufim—Cohen 1993; Barqa—Sion et al. 2010: Figs. 8, 10).

The history of the estate during the second half of the sixth century and early seventh century is unclear. The paucity of post-mid-sixth century coins at the site may reflect a decline in economic activity in the wake of the great plague outbreaks that affected southern Palestine and its vicinity in the mid-sixth century (Ariel, this volume). Although modern historians tend to be skeptical of ancient reports regarding the extent of the plague's impact, epigraphical evidence from the western and central Negev may suggest otherwise. Grave epitaphs from this region indicate that the first wave was introduced into southern Palestine via harbors along the coast in the early spring of 541 CE and progressed into the central Negev by autumn, and a second wave struck the eastern Mediterranean in 554/555 CE (Di Segni 1997:911–912, n. 3).

The ceramic evidence, however, suggests that the estate and its installations functioned throughout the sixth century and into the early seventh century CE. Majcherek's Type 4 Gaza jars, in particular, which were manufactured in the kiln complex in Area B, indicate that a thriving ceramic industry, and hence, an accompanying agricultural-produce industry, were active at the site during this time period.¹¹ Nevertheless, while it has been suggested that

at some sites, Byzantine industrial production collapsed only at the beginning of the eighth century CE (Gadot and Tepper 2003:151, n. 3), it is clearly evident that occupation and

industrial activity at the ‘Third Mile Estate’ did not continue after the early seventh century CE.

NOTES

¹ The site was discovered by Shlomo Gudovitch, former Ashqelon District Archaeologist. The excavation (Permit No. A-1780), which took place between May and July 1991, was directed by Yigal Israel on behalf of the Israel Antiquities Authority. The excavation team was based in Kibbutz Gevar‘am and was assisted by the late Ori Neder, the Ashqelon District Inspector, and David Asael. Further assistance was provided by N. Asael (excavation recording), Y. Haimovitz (administration), Nahshon Sneh (field photography), Israel Vatkin, Pavel Gertopsky, Vadim Essman and Natalia Zak (surveying and drafting), Shula Lavi (pottery restoration) and Yocheved Kasabi, Tali Krinkin-Fabian and Anna Dodin (pottery drawing), Joe Zias and Dr. N. Haimson, who studied burial remains, Donald T. Ariel, who studied the coins, and Yael Gorin-Rosen, who studied the glass finds. The final report, including the processing of the pottery and stone finds, was prepared by Tali Erickson-Gini. We are grateful to the late Prof. Israel Roll for studying the milestone inscriptions. A special thanks goes to Prof. Benjamin Isaac for his crucial assistance in finalizing Prof. Roll’s report on the milestone (see Roll, this volume). We would also like to thank Jodi Magness for her thoughtful comments, Sam Wolff for initial editing and Dafnah Strauss-Doron for her extensive editorial work.

² An inscription in the Large Mosque in Majdal indicates that its construction was completed in September 1300; Majdal replaced Ashqelon after the city was destroyed in 1270 CE by the Mamluk sultan Baybars (Yadin 1964:108–109).

³ The site was published as Hammama. It should not be confused with the Arab village by the same name

that is marked on British Mandate maps 2 km north of the site (see Fig. 1).

⁴ The finds were assigned locus and basket numbers only, without item numbers within each basket.

⁵ See n. 4.

⁶ This resemblance may shed light on the disputed date of the Qaṣr ‘Amra structure. Although Qaṣr ‘Amra is commonly identified as Umayyad, based on the frescoes (e.g., Vibert-Guigue 2006–2007), these similarities suggest that it was originally constructed as a roadside bathhouse in the Late Roman or Byzantine periods. We believe it was transformed into a farmhouse during the Umayyad period, when the wall paintings were added. A similar development has been identified in the bathhouse at Ḥaḏeva (Cohen and Israel 1996).

⁷ The IAA archive, excavation files, Giv‘ati Junction and Khirbat ‘Aj’as er-Ras (North), excavated by Dan Meron (Permit Nos. A-539, A-1251).

⁸ We would like to thank Joe Zias of the IAA and Dr. N. Haimson of Barzilai Hospital, who examined the human burial remains.

⁹ See n. 4.

¹⁰ We would like to thank Yael Gorin-Rosen for examining the glass finds.

¹¹ The relative rarity or even absence of post-Justinian coinage alongside clear evidence of occupation during the late sixth and early seventh centuries CE has been revealed at several additional sites, such as ‘En Gedi (Barag 2006:19*) and ‘En Boqeq (Magness 1999). We would like to thank Jodi Magness for calling our attention to these sites.

REFERENCES

- ‘Ad U. 2011. Hafez Hayyim (Southwest). *HA-ESI* 123 (March 6). http://www.hadashot-esi.org.il/report_detail_eng.asp?id=1637&mag_id=118 (accessed November 29, 2011).
- Amiran R. 1956. The Millstones and the Potter’s Wheel. *Eretz-Israel* 4:46–49 (Hebrew).
- Ariel D.T. This volume. The Coins from the ‘Third Mile Estate’, Ashqelon.
- Avi-Yonah M. 1972. The Haditha Mosaic Pavement. *IEJ* 22:118–122.
- Avner R. 2000. Barqa. *HA-ESI* 111:60*–61*.
- Avshalom-Gorni D., Frankel R. and Getzov N. 2008. A Complex Winepress from Mishmar Ha-‘Emeq: Evidence for the Peak in the Development of the Wine Industry in Eretz Israel in Antiquity. *‘Atiqot* 58:49–66 (Hebrew; English summary, pp. 65*–67*).
- Ayalon E. 1979. The Jar Installation of Khirbet Sabiya. *IEJ* 29:175–181.
- Baly T.J.C. 1962. Pottery. In H.D. Colt ed. *Excavations at Nessana (Auja Hafir, Palestine)* 1. London. Pp. 270–311.
- Barag D. 2006. The Synagogue at Ein Gedi. In Y. Hirschfeld ed. *Ein Gedi: “A Very Large Village of Jews”* (Hecht Museum Catalogue 25). Haifa. Pp. 17*–20*.
- Baumgarten Y.Y. 2001. A Pottery Kiln near the Giv’ati Junction. *‘Atiqot* 42:43*–50* (Hebrew; English summary, pp. 323–324).
- Berman A., Stark H. and Barda L. 2004. *Map of Ziqim (91)* (Archaeological Survey of Israel). Jerusalem.
- 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.
- Calderon R. 2000. Roman and Byzantine Pottery. In Y. Hirschfeld. *Ramat Hanadiv Excavations: Final Report of the 1984–1998 Seasons*. Jerusalem–Washington D.C. Pp. 91–165.
- Cohen R. 1993. A Byzantine Church and Its Mosaic Floors at Kissufim. In Y. Tsafir ed. *Ancient Churches Revealed*. Jerusalem. Pp. 277–282.
- Cohen R. and Israel Y. 1996. ‘En Hazeva—1990–1994. *ESI* 15:110–116.
- Dan Y. 1990. The Byzantine Rule (395–640 CE). In M.D. Herr ed. *The History of Eretz Israel 5: The Roman–Byzantine Period: The Mishna and Talmud Period and the Byzantine Rule (70–640)*. Jerusalem. Pp. 231–374 (Hebrew).
- Di Segni L. 1997. *Dated Greek Inscriptions from Palestine from the Roman and Byzantine Periods I: Text*. Ph.D. diss. The Hebrew University. Jerusalem.
- Dothan M. 1971. *Ashdod II–III: The Second and Third Seasons of Excavations, 1963, 1965: Soundings in 1967* (*‘Atiqot [ES]* 9–10). Jerusalem.
- Erickson-Gini T. 1999. *Mampsis: A Nabataean Roman Settlement in the Central Negev Highlands in Light of the Ceramic and Architectural Evidence Found in Archaeological Excavations during 1993–1994*. M.A. thesis. Tel Aviv University. Tel Aviv.
- Erickson-Gini T. and Israel Y. This volume. An Intermediate Bronze Age Settlement and a Middle Bronze Age II Cemetery at the ‘Third Mile Estate’, Ashqelon.
- Fabian P. and Goren Y. 2002. A New Type of Late Roman Storage Jar from the Negev. In J.H. Humphrey ed. *The Roman and Byzantine Near East (JRA Supplementary Series 49)*. Portsmouth, RI. Pp. 145–155.
- Fabian P., Nahshoni P. and Ein Gedy M. 1995. Ashqelon, Hammama. *ESI* 14:110–111.
- Feder O. and Erickson-Gini T. 2012. Ashqelon, Shimshon Neighborhood. *HA-ESI* 124 (August 18). http://www.hadashot-esi.org.il/report_detail_eng.asp?id=2041&mag_id=119 (accessed August 29, 2012).
- Flinder A. 1976. A Piscina at Caesarea: A Preliminary Survey. *IEJ* 26:77–80.
- Frankel R. 1986. *The Ancient Olive Press*. Tel Aviv (Hebrew).
- Gadot Y. and Tepper Y. 2003. A Late Byzantine Pottery Workshop at Khirbet Baraka. *Tel Aviv* 30:130–162.
- Gazit D. and Lender Y. 1993. The Church of St. Stephen at Ḥorbat Be’er Shem’a. In Y. Tsafir ed. *Ancient Churches Revealed*. Jerusalem–Washington D.C. Pp. 273–276.
- Gibson S. and Kloner A. 1990. Sataf—An Archaeological Project of Landscape and Environment in the Judaeon Hills. *Qadmoniot* 91–92:97–103 (Hebrew).
- Gichon M. 1978. Roman Bath-Houses in Eretz-Israel. *Qadmoniot* 42–43:37–53 (Hebrew).
- Gudovitch S. 2009. Wine Presses at Mulabbis (Petah Tiqwa). In E. Ayalon, R. Frankel and A. Kloner eds. *Oil and Wine Presses in Israel from the Hellenistic, Roman and Byzantine Periods* (BAR Int. S. 1972). Oxford. Pp. 203–211.
- Gunneweg J., Perlman I. and Yellin J. 1983. *The Provenience, Typology and Chronology of Eastern Terra Sigillata* (Qedem 17). Jerusalem.

- Guz-Zilberstein B. 1995. The Typology of the Hellenistic Coarse Ware and Selected Loci of the Hellenistic and Roman Periods. In E. Stern. *Excavations at Dor, Final Report I, B: Areas A and C; The Finds* (Qedem Report 2). Jerusalem. Pp. 289–433.
- Hadas A. 2007. *Vine and Wine in the Archaeology of Ancient Israel*. Tel Aviv (Hebrew).
- Haiman M. 2009. Horbat Shelah (west). *HA–ESI* 121 (November 17). http://www.hadashot-esi.org.il/report_detail_eng.asp?id=1251&mag_id=115 (accessed November 29, 2011).
- Hayes J.W. 1972. *Late Roman Pottery*. London.
- Hayes J.W. 1985. Sigillate Orientali. In *Enciclopedia dell’arte antica classica e orientale: Atlante delle forme ceramiche II: Ceramica fine romana nel bacino mediterraneo (tardo ellenismo e primo impero)* (Enciclopedia dell’arte antica classica e orientale). Rome. Pp. 1–96.
- Huster Y. and Sion O. 2006. Late Roman and Byzantine Period Vaulted Tombs in the Southern Coastal Plain. *Jerusalem and Eretz-Israel: A Journal for Land of Israel Studies and Archaeology* 3:49–67 (Hebrew; English summary, p. 7*).
- Israel Y. 1995a. Ashqelon. *ESI* 13:100–105.
- Israel Y. 1995b. The Economy of the Gaza-Ashkelon Region in the Byzantine Period in the Light of the Archaeological Survey and Excavations of the ‘3rd Mile Estate’ near Ashkelon. *Michmanim* 8:119–132 (Hebrew; English summary, pp. 16*–17*).
- Israel Y. 1995c. Survey of Pottery Workshops, Nahal Lakhish–Nahal Besor. *ESI* 13:106–107.
- Israel Y. 1999. Khirbet Irza. *ESI* 19:80*–81*.
- Israel Y. 2006. *The Black Gaza Ware from the Ottoman Period*. Ph.D. diss. Ben Gurion University. Be’er Sheva’ (Hebrew; English summary, pp. IV–XII).
- Joukowsky M.S. 2006. *Exciting Developments: The Brown University 2006 Petra Great Temple Excavations*. http://www.brown.edu/Departments/Joukowsky_Institute/Petra/excavations/2006-adaj.html (accessed September 22, 2011).
- Kenyon K.M. 1957. Pottery: Hellenistic and Later. In J.W. Crowfoot, G.M. Crowfoot and K.M. Kenyon. *Samaria-Sebaste III: The Objects from Samaria*. London. Pp. 217–281.
- Kingsley S.A. 2001. The Economic Impact of the Palestinian Wine Trade in Late Antiquity. In S.[A.] Kingsley and M. Decker eds. *Economy and Exchange in the East Mediterranean during Late Antiquity* (Proceedings of a Conference at Somerville College, Oxford, 29th May, 1999) Oxford. Pp. 44–68.
- Kloner A. and Hess O. 1985. A Columbarium in Complex 21 at Maresha. *Atiqot (ES)* 17:122–133.
- Kogan-Zehavi E. 1999. A Painted Tomb of the Roman Period at Migdal Ashqelon. *Atiqot* 37:181–209 (Hebrew; English summary, pp. 179*–181*).
- Kogan-Zehavi E. 2006. Tel Ashdod. *HA–ESI* 118 (April 26). http://www.hadashot-esi.org.il/report_detail_eng.asp?id=340&mag_id=111 (accessed September 22, 2011).
- Levy S. 1960. The Ancient Synagogue of Ma’on (Nirim): Excavation Report. *Bulletin Louis M. Rabinowitz Fund for the Exploration of Ancient Synagogues* 3:6–13.
- Magen Y. 2002. *The Stone Vessel Industry in the Second Temple Period: Excavations at Hizma and the Jerusalem Temple Mount* (JSP 1). Jerusalem.
- Magness 1987. The Pottery from the 1980 Excavations at Ma’on (Nirim). *Eretz-Israel* 19:216–224 (Hebrew; English summary, p. 79*).
- Magness J. 1993. *Jerusalem Ceramic Chronology: Circa 200–800 CE* (JSOT/ASOR Monograph Series 9). Sheffield.
- Magness J. 1999. Redating the Forts at Ein Boqeq, Upper Zohar, and Other Sites in SE Judaea, and the Implications for the Nature of the *Limes Palaestinae*. In J.H. Humphrey ed. *The Roman and Byzantine Near East 2: Some Recent Archaeological Research* (JRA Supplementary Series 31). Portsmouth, RI. Pp. 189–206.
- Majcherek G. 1995. Gazan Amphorae: Typology Reconsidered. In H. Meyza and J. Młynarczyk eds. *Hellenistic and Roman Pottery in the Eastern Mediterranean—Advances in Scientific Studies* (Acts of the II Nieborów Pottery Workshop). Warsaw. Pp. 163–178.
- Martin-Kilcher S. 1994. *Die römischen Amphoren aus Augst und Kaiseraugst. Ein Beitrag zur römischen Handels- und Kulturgeschichte 2: Die Amphoren für Wein, Fischsauce, Südfrüchte (Gruppen 2–24) und Gesamtauswertung* (Forschungen in Augst 7). Augst.
- Musil A. 1907/1920. *Ḳusejr ‘Amra II: Tafelband*. Wien.
- Nahshoni P. 1999. A Byzantine Site in the Migdal Neighborhood, Ashqelon. *Atiqot* 38:99*–111* (Hebrew; English summary, p. 229).
- Oked S.H. 2001. “Gaza Jar”: A Chronicle, and Economic Overview. In A. Sasson, Z. Safrai and N. Sagiv eds. *Ashkelon: A City on the Seashore*. Ashqelon. Pp. 227–250 (Hebrew; English summary, pp. XIII–XIV).
- Paran N.-S. 2009. Giv’ati Junction. *HA–ESI* 121 (September 1). <http://www.hadashot-esi.org.il/>

- report_detail_eng.asp?id=1204&mag_id=115 (accessed November 29, 2011).
- Peretz I. 2011. Khirbat Basha. *HA-ESI* 123 (December 29). http://www.hadashot-esi.org.il/report_detail_eng.asp?id=1923&mag_id=118 (accessed December 30, 2011).
- Peacock D.P.S. and Williams D.F. 1986. *Amphorae and the Roman Economy: An Introductory Guide*. London–New York.
- Riley J.A. 1979. The Coarse Pottery from Berenice. In J.A. Lloyd ed. *Excavations at Sidi Khrebish, Benghazi (Berenice) II* (Supplements to Libya Antiqua V). Tripoli. Pp. 91–467.
- Roll I. This volume. A Roman Milestone from the ‘Third Mile Estate’, Ashqelon.
- Rosenthal R. and Sivan R. 1978. *Ancient Lamps in the Schloessinger Collection* (Qedem 8). Jerusalem.
- Rosenthal-Heginbottom R. 1988. The Pottery. In Y. Tsafir. *Excavations at Rehovot-in-the-Negev I: The Northern Church* (Qedem 25). Jerusalem. Pp. 78–96.
- Rosenthal-Heginbottom R. 1995. Moldmade Relief Bowls from Tel Dor, Israel: A Preliminary Report. In H. Meyza and J. Młynarczyk eds. *Hellenistic and Roman Pottery in the Eastern Mediterranean—Advances in Scientific Studies* (Acts of the II Nieborów Pottery Workshop). Warsaw. Pp. 365–396.
- Saller S.J. 1957. *Excavations at Bethany (1949–1953)* (Publications of the Studium Biblicum Franciscanum 12). Jerusalem.
- Sedov A.V. 1992. New Archaeological and Epigraphical Material from Qana (South Arabia). *Arabian Archaeology and Epigraphy* 3:110–135.
- Sidi N., Amit D. and ‘Ad U. 2003. Two Winepresses from Kefar Sirkin and Mazor. *‘Atiqot* 44:253–270.
- Sion O., Rapuano Y., Habas L. and Di Segni L. 2010. Barqa. *HA-ESI* 120 (September 5). http://www.hadashot-esi.org.il/report_detail_eng.asp?id=1480&mag_id=117 (accessed September 22, 2011).
- Slane K.W. and Sanders G.D.R. 2005. Corinth: Late Roman Horizons. *Hesperia* 74:243–297.
- Ustinova Y. and Nahshoni P. 1994. Salvage Excavations in Ramot Nof, Be’er Sheva. *‘Atiqot* 25:157–177.
- Varga D. 2005. Tel Ashdod. *HA-ESI* 117 (June 19). http://www.hadashot-esi.org.il/report_detail_eng.asp?id=200&mag_id=110 (accessed September 22, 2011).
- Varga D. 2010. Ashqelon, Barne’a (north). *HA-ESI* 122 (March 15). http://www.hadashot-esi.org.il/report_detail_eng.asp?id=1368&mag_id=117 (accessed October 11, 2011).
- Vibert-Guigue C. 2006–2007. Les Omeyydes et l’art de la peinture murale. *Annales archéologiques arabes syriennes* 49–50:161–175.
- Yadin Y. 1964. Arabic Inscriptions in Palestine. *Eretz-Israel* 7:102–116 (Hebrew; English summary, pp. 172*–173*).