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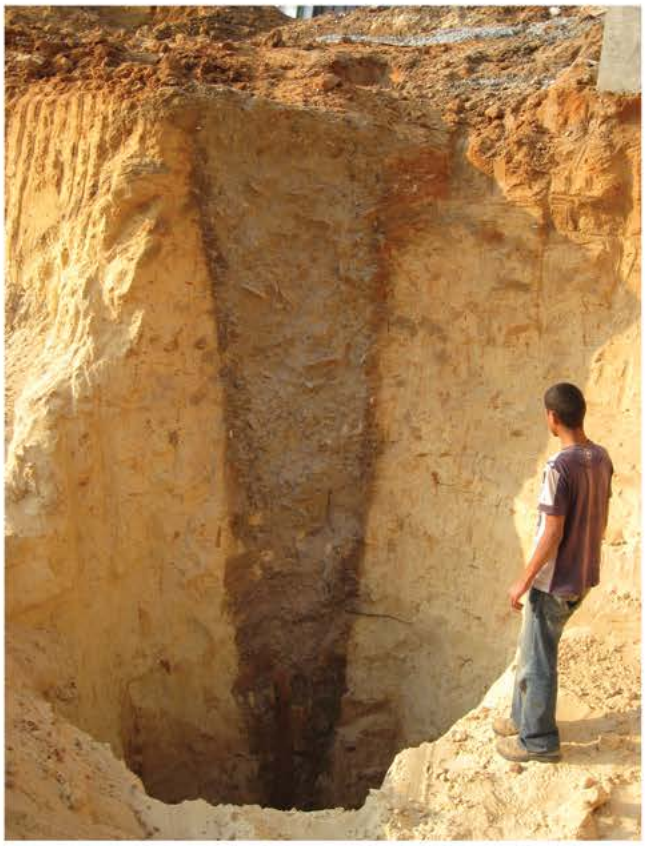
Volume 3 - 2015



The Nelson Glueck School of Biblical Archaeology
Hebrew Union College - Jewish Institute of Religion

Y.G. Contract Archaeology Ltd.

Archaeological Seminars Institute Ltd.

NGSBA ARCHAEOLOGY

Volume 3 – 2015

The Nelson Glueck School of Biblical Archaeology
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Cover Illustrations:
English cover: Chalcolithic Shaft 18 at Yehud (see p. 22).
Hebrew cover: Bronze statue of Heracles from Maresha (see p. 169).

Letter from the Editor

As with previous volumes in the *NGSBA Archaeology* series, this third installment largely comprises reports of rescue archaeology projects conducted by Y.G. Contract Archaeology Ltd., under the academic auspices of the Nelson Glueck School of Biblical Archaeology (NGSBA). These reports are from excavations at Yehud, Ein Mazruk, Hafetz Haim and Nurit. But the present volume also includes reports from two other archaeology projects.

The Mamilla excavation in Jerusalem's Independence Park was carried out by students of the Experimental School in Jerusalem, under the direction of Gideon Suleimany and Yonatan Mizrahi, with the welcome support of the Friends of the Earth organization.

The Maresha Subterranean Complex 90 report presents work carried out by the thousands of volunteers who sign up with the Archaeological Seminars Institute program, which provides a one-day taste of how field archaeology works. The Archaeological Seminars Institute has been a pioneer in engaging the lay public in the physical process of archaeological excavation, providing a unique learning experience and many fond memories for thousands of tourists, students and local communities.

By definition, the community projects which we sponsor are also research endeavors. The sites excavated have been selected with neophytes in mind, so that data can be retrieved and the learning process fostered without damaging the site. But the intention has always been to fully process the archaeological data and artifacts with the final goal of full-fledged scientific dissemination. Future volumes will publish the results of our other community projects, at Lod and Horvat Sher in particular.

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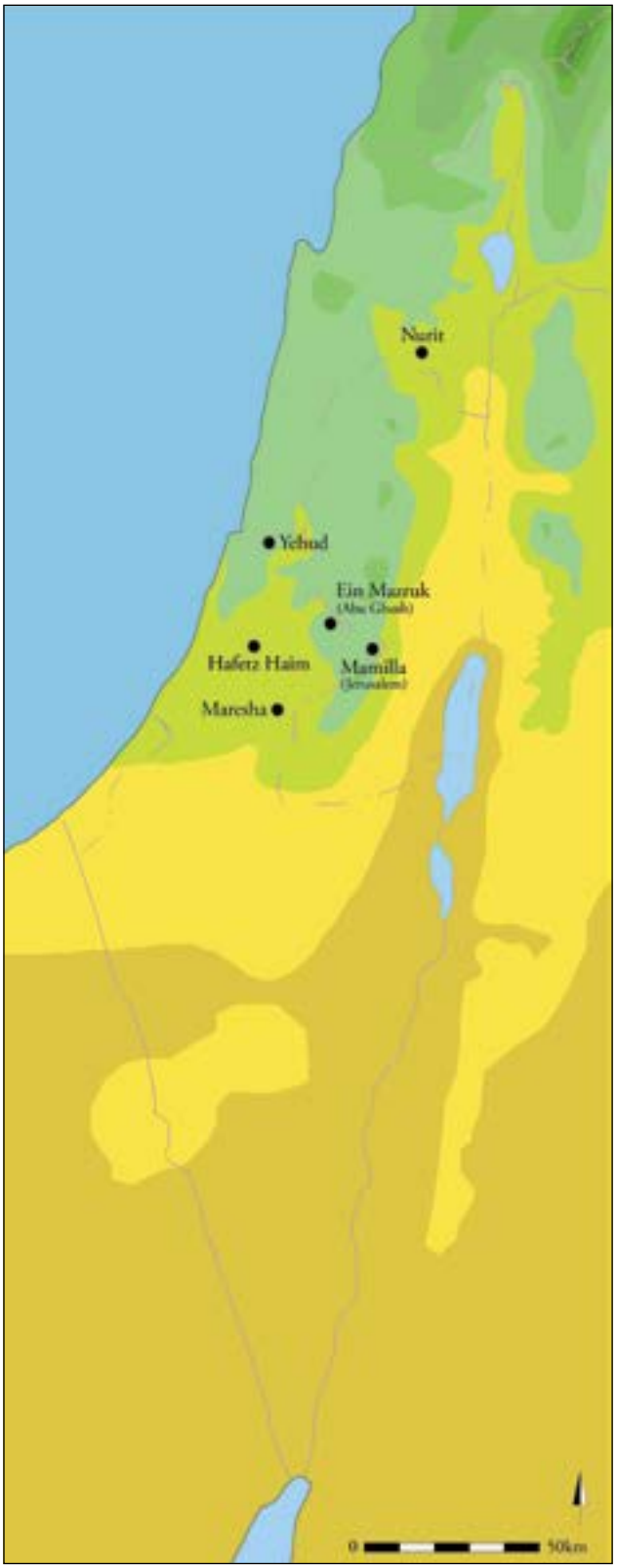

Map of reported sites.

Excavations at Yehud

The 2008-2009 Seasons

Yehuda Govrin

INTRODUCTION

The 2008 Season

This site is located on the southwestern fringes of Tel Yehud (NIG 189449-659730; Fig. 1), and over the years has yielded significant archaeological riches. During test excavations conducted by Israel Korenfeld and Rachel Bar-Nathan of the Israel Antiquities Authority (IAA), a complex of wine presses and structures from the Byzantine period were exposed (Korenfeld and Bar-Nathan 2014). Further test pits were machine-dug and archaeologists monitored all building works. During the excavation of a deep pit for the underground parking lot that was to serve the compound's two northern buildings, eight additional archaeological features were found 3-4m below surface level (Fig. 2). In three locations a salvage excavation of 75m^2 was required by the IAA. This was conducted by Y.G. Contract Archaeology Ltd. (Permit B-327/2008), for Aura Israel Ltd.

The features were located at the base of the parking lot's excavation, within a heavy black clayey layer. Stratigraphically, a 3-4m-thick sediment layer lies above earlier archaeological features dating to the Chalcolithic period (ca. 4500-3700 BCE) and the Middle Bronze I-II period (ca. 1900-1700 BCE),

Figure 1. The location of the site.

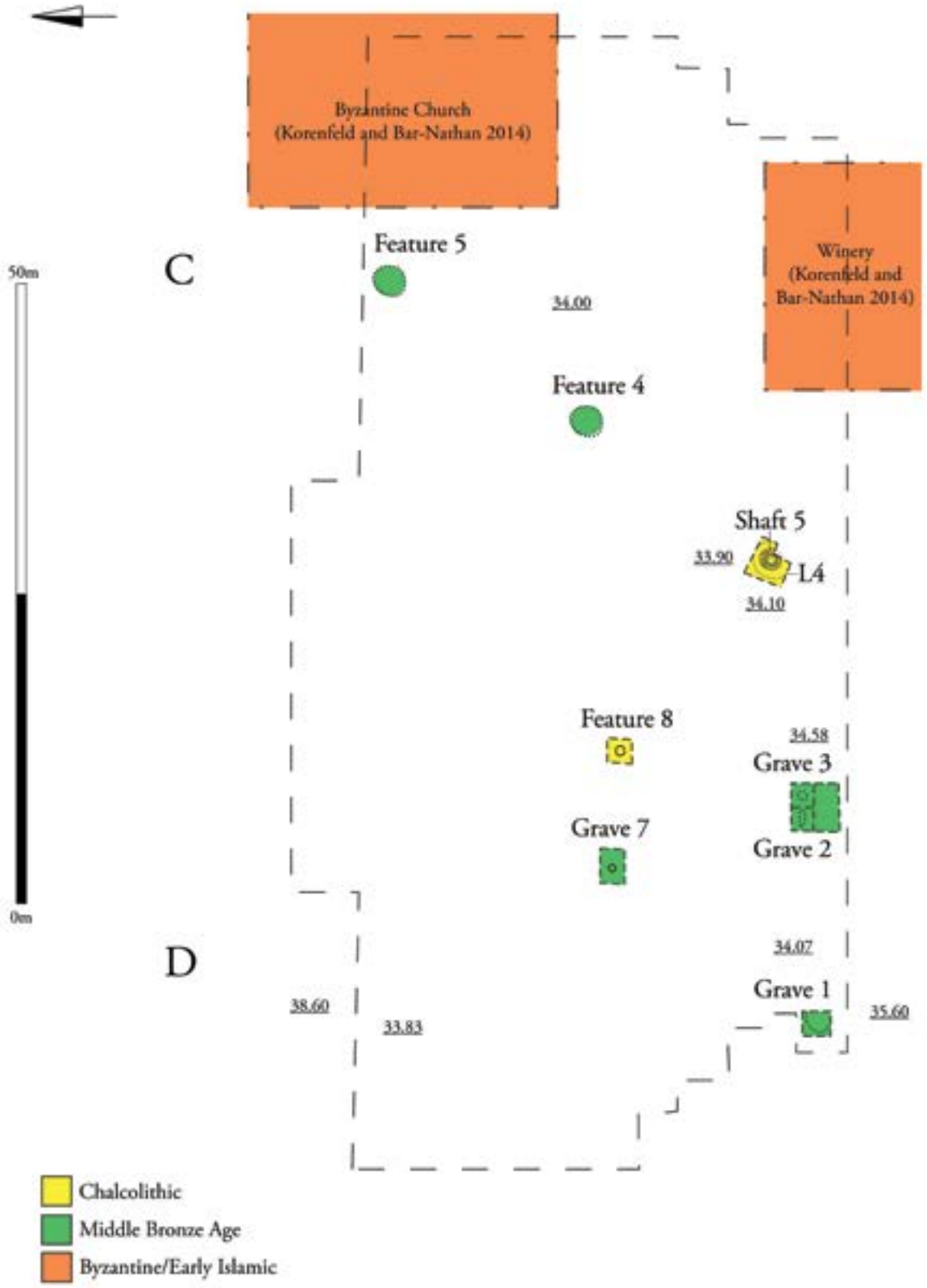

Figure 2. Areas C and D (excavated in 2008).

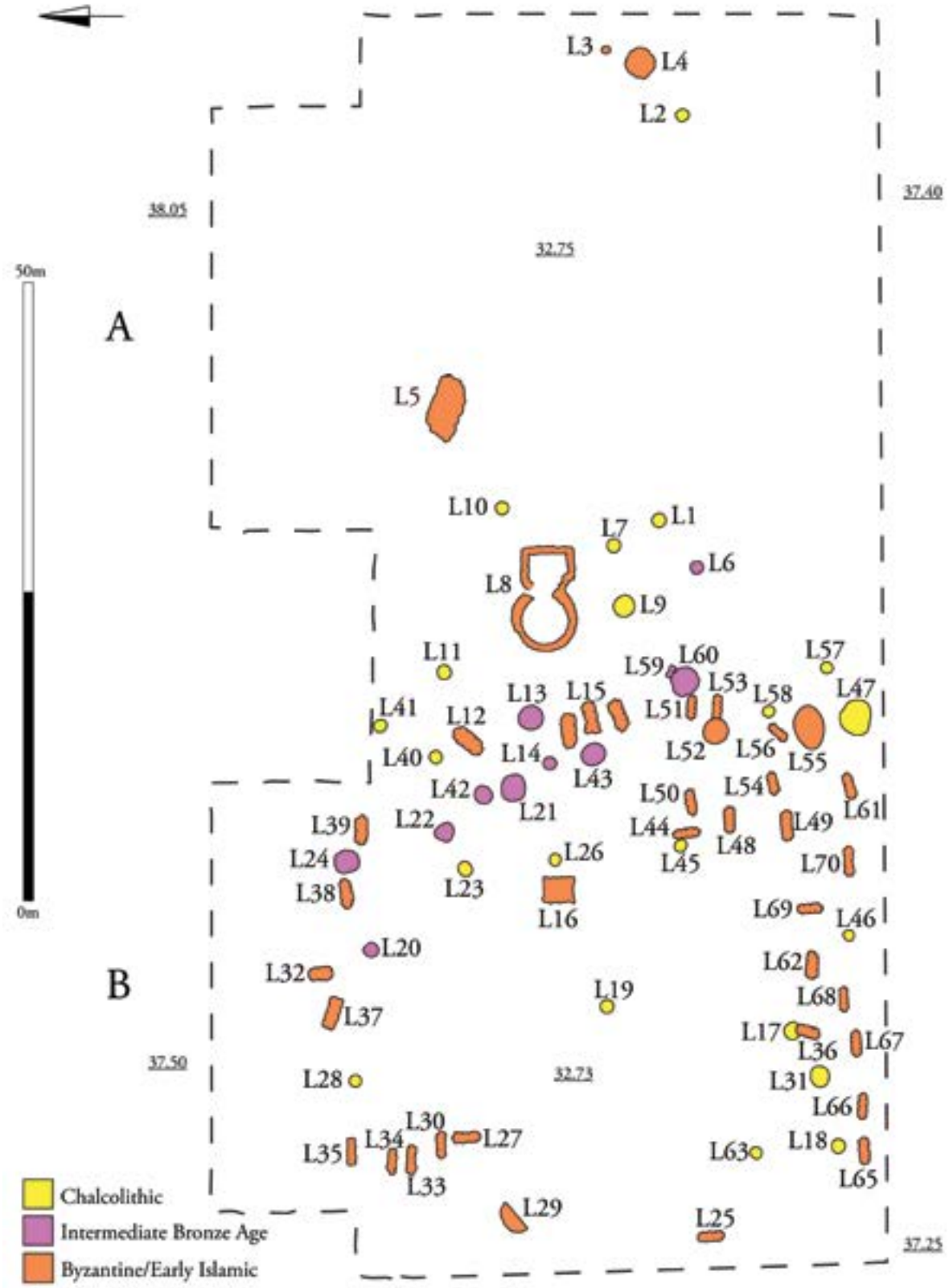

Figure 3. Areas A and B (excavated in 2009).

and below finds from the Byzantine and Early Islamic periods which lay near the surface.

The 2009 Season

Following the rescue excavation carried out in 2008, Y.G. Contract Archaeology Ltd. was asked by the developer (Aura Israel Ltd.) to carry out further excavations (Permit B-337/2009) at the site of the underground parking lots for two further towers to the south (Towers 10A and 10B [Areas A and B here]). Following a test excavation by heavy machinery, the IAA had released this area for development, while maintaining archaeological supervision. In the course of digging the underground parking lots, work was stopped by the IAA inspectors due to the discovery of archaeological remains. The parking lot area of Tower 10B – the western of the two planned buildings (Area B here) – had been excavated almost in its entirety (down to 33m above sea level [ASL]). In this area the topsoil typically consisted of a deep layer of dark clay; it is possible that archaeological remains within this layer had been damaged before foundation work was stopped.

The first stage of archaeological excavation focused on the locations where inspection had identified potential archaeological remains, designated by the IAA as requiring rescue excavation (Fig. 3). Subsequently, once the nature and density of the findings became clear, we initiated a second stage of archaeological investigation, consisting of systematic toothless-backhoe clearance to locate additional remains. In the northern half of Area A we discovered the disturbed remains of a large refuse pit which had cut the top from the entire surface layer, with the result that there were no archaeological findings here. Furthermore, the surface of central Area A had been severely damaged by earthworks. Thus, in this portion of the area no features or *in situ* artifacts were found.

The following staff participated in the excavation: Conn Herriott (fieldwork, drafting), Esther Deutsch and Dr. Vered Eshed (osteology), Dr. Moshe Sade (zooarchaeology), Dr. Oren Akerman (geomorphology consulting), Anna Dodin and Avshalom Karasik (ceramics illustration, partly by computer simulation at the Hebrew University) and Vladimir Naikhin (artifact photography). Researchers from various fields took part in finds processing.

In Areas A and B we discovered remains dating to the following periods:

- The Chalcolithic period: deep shafts filled with "rubbish" and ash
- Intermediate Bronze Age: a cemetery characterized by shaft tombs
- The Late Roman-Byzantine period: artisan's workshop, concentrations of pottery waste material, stone-lined cist graves
- Early Islamic period: cist graves

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GEOGRAPHICAL AND ENVIRONMENTAL BACKGROUND

Yehuda Govrin & Nathan Ben-Ari

Tel Yehud (Tell el-Yehudia) is situated on the northeastern side of the Ono valley, known from biblical sources as *Biq'at Ono* (Nehemia 6: 2), in the eastern part of the central coastal plain of Israel, ca. 12km east of the Mediterranean Sea. Today, due to modern activity most of the ancient mound is barely visible.

In geographical terms the Ono valley is part of the western Ayalon basin which stretches over ca. 815km^2 (Fig. 4). This basin is comprised of five geomorphological units (Dan 1970: Fig. 6/1; Marton 1970: 11-13):

1) The Ono valley (the flood plain).
2) The western hills (in the northwest and southwest)
3) The eastern hills (in the northeast and east)
4) The Lod valley (southeast of Nahal Ayalon)
5) Gezer (south)

The Ono valley is nearly flat and functioned as a flood plain of Nahal Ayalon. Its borders are the western and eastern hills to the north, the western hills and Lod to the south and southeast (respectively), the Shephelah hills to the east, and the area that lies between Azor and Jaffa to the west.

The western Ayalon basin is characterized by sand and brown-red sandy soils (*hamra*), sometimes mixed with lime. An additional soil type is the deep and heavy alluvial soil with clay sediments which characterizes the riverbeds (Grover 1970: 32). The typical soil type in the area of Tel Yehud is of the degraded brown-red sandy soil type with alluvial clay sediments (Dan 1970: 64; Rabikovitch 1992). This type of soil is common in areas that are characterized by annual rainfall of 400-600mm (Rabikovitch 1992: 136), which fits the annual rainfall for this area – 500-540mm (Rosen and Markowitz 1970: 52). The degraded brown-red sandy soils are not well suited for agriculture. But in some cases with proper fertilizing they are fit for field crops. In contrast, the alluvial soil in the riverbeds of Nahal Yehud, Nahal Ayalon and Nahal Beit-Arif is well suited for agriculture.

Figure 4. The Ayalon River basin in a map made by the Palestine Exploration Fund (1880).

The area of Tel Yehud has a high water table and presumably it was so in the Chalcolithic period as well. These high levels allowed the inhabitants to dig wells. In the vicinity of the tel there are two small watercourses: Nahal Yehud (south and southeast of the tel) and Nahal Ono (west and southwest of the tel). Both are tributaries of Nahal Ayalon. In addition, Nahal Beit-Arif flows south of the tel and in close proximity. This is one of the main drainages of the basin and mainly drains its northeastern part (Grover 1970: 33, Fig. 3/1).

Thousands of years of agriculture, herding, grazing and modernization have destroyed most of the ancient vegetation of the western Ayalon basin, and only a few patches have survived. These remnants help us reconstruct of the ancient vegetation of the basin. It was characterized by three different climax groups of vegetation (groves and forests):

1) Carob (*Ceratonia siliqua*) and Lentisk (*Pistacia lentiscus*)
2) Oak (*Quercus Ithaburensis*)
3) Christ's thorn jujube (*Ziziphus Spina-Christi*)

In addition we can find in the area other species – in much smaller numbers – which were either planted or part of the oak forests (Flitman 1970: 56-63):

the Mt. Atlas mastic tree (*Pistacia atlantica*) and the olive (*Olea europaea*). The typical vegetation of the Tel Yehud area was characterized by Christ's thorn jujube and weeds which are often common in alluvial soils typical to flood plains and dry land farming systems (Flitman 1970: Fig. 5). These species are found at three nearby Chalcolithic sites in the western Samaria, Lod Valley and western Shephelah areas (Nahal Qana Cave, Giv'at Ha-Oranim and Shoham North), with additional evidence for the existence of Kermes oak (*Quercus calliprinos*) and terebinth (*Pistacia palestina*; Liphschitz 2000, 2004, 2005a, 2005b).

We can only speculate about the ancient roads that ran near the ancient mound. We might hypothesize that they ran along the watercourse (*wadi*) beds or banks. According to Dorsey (1991: 57-61, 169-170; Maps 1 and 11) at least two roads passed through the Ono valley from the Middle Bronze Age and after. One was the famous longitudinal road that passed through the coast of Canaan and connected Egypt with the Northern Levant and Mesopotamia (the 'Way of the Sea'). The name Ono occurs before Aphek in the list of Thutmose III (Aharoni 1979: 152-166; Dorsey 1991: 61). The other was a lateral road: the Khirbet Banat Bar – Rantis – Joppa road which combines with the Khirbet Za'tara – Nahal Shiloh (*Wadi Seilun*) – Aphek road. While the evidence for these roads is dated much later than the Chalcolithic period, they presumably follow the courses of more ancient roads. It is probable that during the Chalcolithic period Nahal Ayalon, which flows down the middle of the valley, was the course of the main road that connected the Shephelah in the east, and Samaria in the northeast, with the coastal plain to the west.

The excavation field reported here rests on three layers of sediment, from top to bottom (e.g. see Figs. 33, 37, 43):

a) *Gray/black clay layer*: this sediment covers the surface. It contains fine-grained alluvial clay, mixed with large amounts of organic material and freshwater gastropods. This heavy soil was formed in a low, sheltered and poorly drained depression, and most likely originated in alluvial deposits from repeated flooding of the nearby Ayalon River, as well as wind-borne dust. The clay surface sediment formed an impermeable layer which prevented rainwater and seasonal river floods from being absorbed into the ground. As a result, a swamp developed replete with pools and densely-packed vegetation. The clayey soil gathered in topographic depressions and gradually was absorbed into the surface. For this reason the clay depth in the area varies. In the eastern part of the excavation area it reaches an estimated depth of 7m. By contrast, at the western end of the dig area the clayey layer is only 2-4m deep.

b) *Hamra layer*: The *hamra* soil layer underlies the clay surface. It was found mainly in the west and central parts of the excavation area. Its depth varies from 3-5m. This layer contains a large proportion of large-grained sand as well as chalk concentrations. It is red/brown in colour, getting lighter with depth. This "red sand" (the meaning of *hamra* in Arabic) soil forms in Mediterranean environments from wind-borne material mixed with chalk fragments carried by rainwater run-off. The reddish color of the *hamra* is most likely due to iron oxidizing through contact with water-based solutions deriving from the roots of oak trees, which were widespread in this region during the damper phases of the Quaternary. *Hamra* is permeable and may serve as a natural filter for rainwater as it is absorbed into the subsurface.

c) *Sand layer*: Under the red *hamra* layer in the western part of the site we came across a layer of dune sand, the color of which varied from red to yellow/white. This sterile sand layer was very deep and it most likely held groundwater at some point in the past. This sterile sand layer is not uniform; its top suggests an undulating sand dune formed from wind-borne sediment (eroded from elsewhere), over which formed the layer of red *hamra* sediment. The main component in the sand is quartz, the grains being large and rounded.

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HISTORY OF EXCAVATION

Yehuda Govrin

Many rescue excavations have taken place over the years within the town limits of Yehud. These digs uncovered occupation layers dating from the Chalcolithic through Ottoman periods. The following is a brief summary, by order of publication:

- Occupation layers from the Chalcolithic and Early Islamic periods were uncovered adjacent to the municipality buildings (Shemueli 1995);
- The remains of a Middle Bronze Age II settlement and Late Byzantine features were identified during the construction of the Yehud bypass (van den Brink and Shemueli 1997);
- In a rescue excavation comprising two excavation areas an activity surface or storage area for a Byzantine ceramic roof-tile production workshop was uncovered, as were several complete Middle Bronze II ceramic vessels and a variety of Early Bronze Age IV (Intermediate Bronze Age) potsherds, the forms of which are associated with mortuary contexts (Yannai 2004);
- In central Yehud rescue excavations uncovered Chalcolithic settlement remains (the main findings), potsherds which most likely derived from Intermediate Bronze Age tombs, and built tombs containing broken storage jar body sherds dating to the 5th and 6th centuries CE (the Roman-Byzantine period; Milevski 2008);
- Rescue excavations carried out over three seasons in the northeast part of the soccer field uncovered a large structure (apparently a patrician house) which incorporated a Byzantine mosaic, an Early Islamic cemetery and a large Byzantine winery complex (Korenfeld and Bar-Nathan 2014);
- Large test and rescue excavations have been carried out in central Yehud, in preparation for the "Lugano" residential construction project; these digs uncovered findings from two separate periods: a Middle Bronze II cemetery and extensive structural remains of a late Byzantine-Early Islamic settlement (Arbel 2013);
- A large number of test and rescue excavations in the central Yehud Ashkenazi Market uncovered two Chalcolithic shafts, pottery dating to the Late Bronze Age, Iron Age, Persian and Hellenistic periods, Roman-period structures and pottery kilns, the remains of structures from the Byzantine period, and Ottoman-period structural remains and installations (Jakoel 2014).

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THE CHALCOLITHIC REMAINS

ARCHAEOLOGICAL FEATURES

Yehuda Govrin

Shaft 5: Chalcolithic Well

A large concentration of ash and Chalcolithic sherds was discovered in the southwest section of Area C. A 4 x 4m square was excavated adjacent to this concentration. Prior to the excavation large amounts of Chalcolithic pottery were collected from the surface of the square, most of it weathered and not *in situ*.

After excavating ca. 0.3m below the current surface (ca. 34m ASL) the outline of a circular pit 4m in diameter was discovered (L4), cut down into the red *hamra* soil which underlay the dark clayey topsoil. At the center of this pit was a constructed shaft (Shaft 5, Figs. 5-8), the walls of which were built of fieldstones – two rows wide. The L4 pit went down ca. 1.5m into the *hamra*, and was rich in potsherds, ash, dark clayey soil and *hamra*. Stone-lined Shaft 5 was constructed symmetrically and with high precision. Its interior maintained a 1m diameter, while its external face was more irregular with frequent protruding stones. The fill of the shaft also contained ash and sherds, but of less density than L4.

These features were identified as a well (Shaft 5) and its construction pit (L4). The well was excavated to a depth of ca. 3m below the current surface. At the lowest level of excavation many large stones were encountered, which presumably collapsed into the well. The excavation was discontinued due to the danger of further collapse and the narrowing internal diameter of the descending well.

Feature 8

A circular feature revealed in scraping was approached by digging a 2 x 2m square to a depth of about 0.4m below the current surface (33.8m ASL). At the center of the square the contours of a pit were elucidated, dug into the clayey soil, the fill of which contained a concentration of potsherds and bones (Fig. 9). The pit's diameter was about 0.8m and extended 0.6m deeper than the excavated square. The sherds – most in a poor

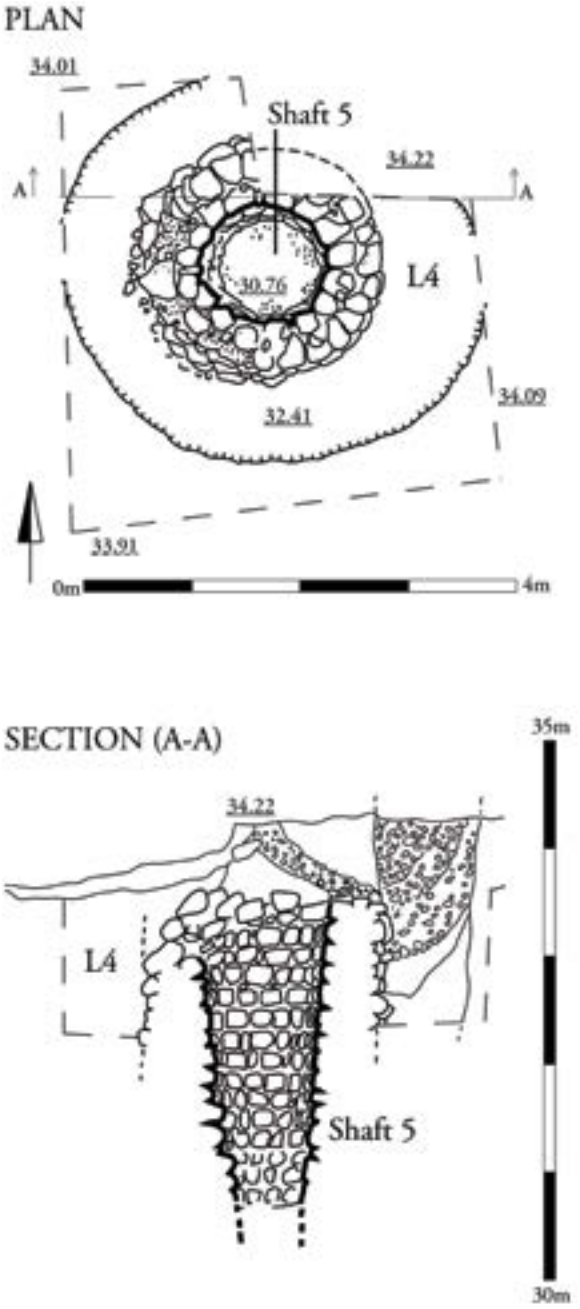

Figure 5. Plan and section drawing of Shaft 5 and L4.

Figure 6. General view of the well (Shaft 5), and its foundation pit dug into the *hamra* soil (L4, facing northeast).

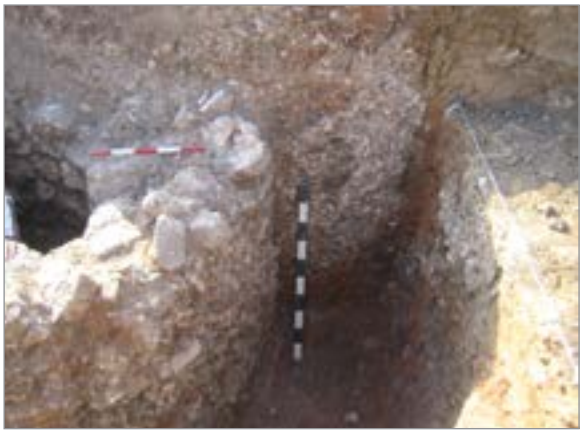

Figure 7. Right: the L4 foundation pit cut into the *hamra*. Center: the pit's dense fill, mixed with broken potsherds. Left: the wall of the Shaft 5 well. (Facing north.)

Figure 8. Excavation in the well (Shaft 5).

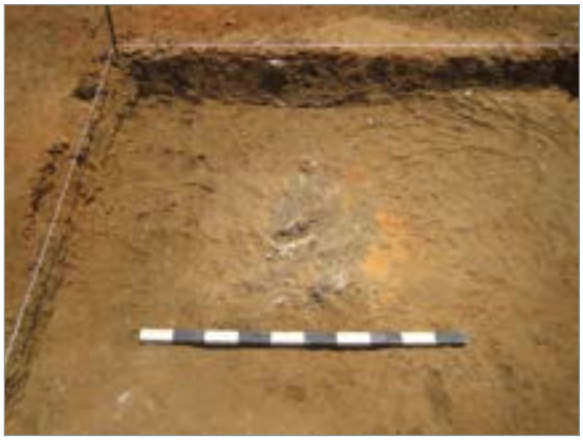

Figure 9. A general view of Feature 8 before excavation (facing north).

Figure 10. Feature 8 after excavation (facing south).

state of preservation – were dated to the Chalcolithic period. The pit was excavated down to the *hamra* and sand (Fig. 10). It appears that this feature was a small rubbish pit of the Chalcolithic period.

Shaft 1

This feature was discovered in the west side of Area A, at an elevation of 33.3m ASL (the excavation surface being 4m below present ground level). The location had been designated by the IAA as requiring excavation, and included an ash concentration in which were found Chalcolithic potsherds. In order to trace the extent of the ash concentration, a 3 x 3m excavation square was dug here (Fig. 11).

After digging 0.2m into the red *hamra* sediment, we located a circular concentration of ash (1m in dimater). This concentration turned out to be a shaft 3.5m deep. The fill was rich in Chalcolithic ceramics, bones, charred wood, flint débitage and ash. At a depth of 1.5m from the existing top we discovered a complete basalt chalice decorated with diagonal striations (Fig. 12; see also p. 86 and Figs. 90, 95:15).

Inside the shaft were found alternating layers of ash and Chalcolithic waste, as well as thin lenses of *hamra* soil. The manual excavation in the shaft continued down to a depth of 29.56m ASL (ca. 3.5m down from the surface of the excavation area).

Figure 11. Locating the Shaft 1, which dated to the Chalcolithic period (facing southeast).

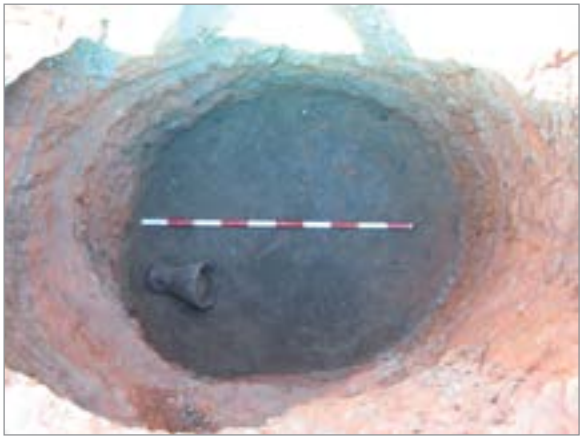

Figure 12. Complete basalt chalice *in situ* within the Chalcolithic waste which filled Shaft 1.

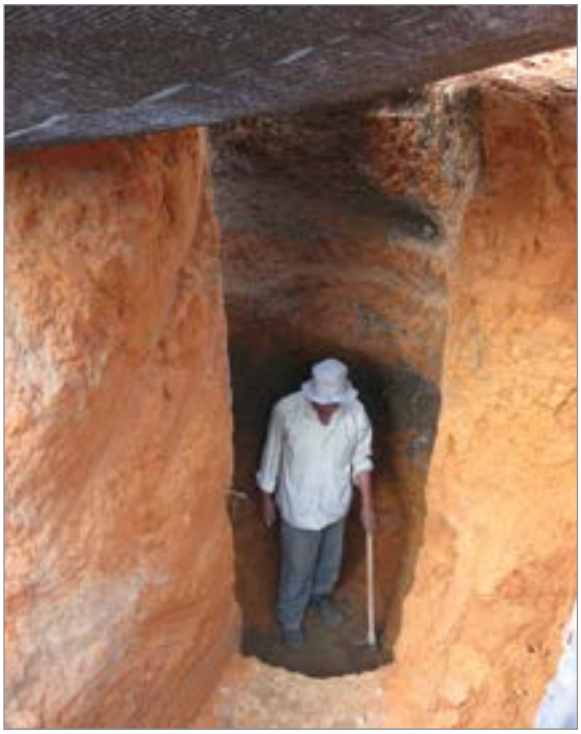

Figure 13. The result of digging through the wall of Shaft 1 by machine (facing south). Note the layers of ash and *hamra*.

Figure 14. Potsherds and a fenestrated stand in the fill of Shaft 2, which itself cut into the clay layer (facing east).

For safety reasons, further excavation was carried out with the help of a mechanized shovel which cut away the northern side of the pit (see Fig. 13).

The excavation was further deepened by a larger mechanical excavator which reached a depth of 6m below the surface of the parking lot excavation. At this depth the sediment comprised virgin white sand in which no further archaeological remains were found.

The shaft had been dug straight down from the original surface – since removed by the modern parking lot excavation – to a depth of 9-10m. It appeared as though after the shaft was abandoned it was re-used, still in the Chalcolithic period, as a rubbish pit. The layers of Chalcolithic waste inside the shaft were covered with *hamra* soil, a pattern most likely due to the periodic collapse of the shaft walls.

Shaft 2

This shaft feature was uncovered in the southeast part of Area A, at a depth of 2-2.5m below street level (35.80m ASL). The shaft was cut into the layer of black clay. Our excavation here was carried out by first cleaning the surface and then digging test sections in order to locate the center of the shaft (Fig. 14). After this was achieved, we made a long section and dug out one side from top to bottom until we identified in full the dimensions of the shaft opening (Fig. 15). From this shaft we recovered fourteen buckets of sherds dating to the Chalcolithic period (Fig. 16), animal bones and charred wood.[1] Among the ceramic fragments it was possible to identify many belonging to fenestrated stands, some of which were restorable. We excavated the shaft by hand down to a depth of 5m, removing its west wall as we progressed (for reasons of safety and ease of access; Figs. 17-18). The digging of this shaft was particularly difficult due to its clay-rich fill (mixed with ash), and its depth. This shaft differs from others in that it was cut entirely into the heavy gray clay layer.

1 The organic material will be submitted for radiocarbon dating and published together with the material from our 2012-2013 excavations at Yehud.

Shaft 7

This feature was discovered during cleaning in the southwest part of Area A, at a height of 35m ASL (2m below street level). This area had been marked out by the IAA as requiring closer archaeological investigation, after IAA trial trenches came upon a concentration of ash at this point. We opened an excavation square measuring 2.5 x 2.5m. Focusing on the circular ash concentration, we uncovered a vertical shaft (1m in diameter) cut into the *hamra* sediment. The ash fill was mixed with potsherds of the Chalcolithic period. This continued down for 1m, after which the fill changed to clean and archaeologically sterile yellow sand. Excavation in this sand fill continued within the shaft to a depth of 5m below the existing surface level (Fig. 19). At this point, due to safety concerns it was decided to open by backhoe the east wall of the shaft (Fig. 20). At a depth of 5m below the current surface, excavation was discontinued as almost no finds had been recovered from the sand layer (apart from two isolated Chalcolithic potsherds). Between the *hamra* walls and sandy fill of the shaft was found a vertical lens of greenish gray clay against the shaft wall, which facilitated the identification of the shaft outline when

Figure 15. Excavating the extant top of Shaft 2, located within the clay layer (facing east).

Figure 17. Section view of Shaft 2 (facing east).

Figure 16. The entire collection of Chalcolithic ceramics recovered from Shaft 2.

Figure 18. View of Shaft 2, looking down from its extant top.

Figure 19. Shaft 7 after excavation and sand removal to a depth of 5m.

Figure 20. Excavating Shaft 7 at a depth of 6m below the surface, after removing the eastern side (facing southwest).

the fill changed from yellow sand to red *hamra*. At 29.10m ASL we found an isolated Chalcolithic potsherd within the yellow sand. In order to ascertain the depth of the shaft, we employed a large mechanical excavator with which it was possible to follow the shaft down to a depth of some 6m.

Figure 21. Skeleton of a cow found in articulation within a layer of ash in the Shaft 9 shaft/refuse pit.

Shaft 9

We identified another Chalcolithic shaft some 3m south of the Byzantine kiln (see below) and 3m west of Shaft 7. The extant opening of the shaft was located at 32.70m ASL (the same as Shaft 7). This shaft was cut into the red *hamra* sediment, against which the gray fill stood out. Within the shaft we found many Chalcolithic sherds, as well as much ash, bone and burnt wood. After digging down 2.3m from the extant top of the shaft, we removed the surface layer down to the level of the surrounding parking lot excavation (33.10m ASL). Against the shaft walls we found substantial alternating slumping lenses of ash and layers of *hamra*. This suggests that occasionally the *hamra* walls collapsed slightly, and over this Chalcolithic household waste accumulated. In one thick layer of ash mixed with Chalcolithic potsherds we exposed the complete skeleton of a cow (Fig. 21). This find was removed and studied by our archaeozoologist (Fig. 22 and see this volume, p. 154). It appears that the cow had fallen into the narrow shaft; the animal's large body was pressed against the side while a layer of Chalcolithic waste was thrown in. The cow met her death in the deep shaft, her large body pressed tightly against the walls of the circular shaft; she had no means of escape, either alone or with assistance.

Figure 22. The removal of the cow remains, pressed against the shaft side within a layer of ash.

Figure 23. The jaw of the goat/sheep in its find spot.

Figure 24. Excavation of Shaft 10, at a depth of 2m below the excavation area surface.

Figure 25. General view of the Shaft 10 opening before excavation. Note the complete bowl and the jaw fragment.

Figure 26. Close-up of the V-shaped bowl; in it are ash, broken bone and burnt wood fragments.

Figure 27. Excavation of Shaft 10, at a depth of 3m below the excavation area surface.

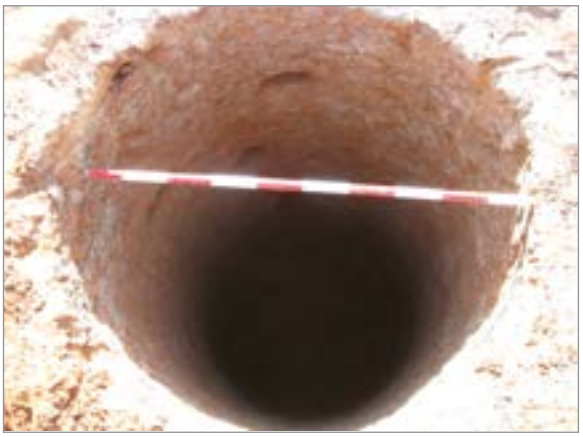

Figure 28. General view of Shaft 10 after hand-digging to a depth of 3.5m below the excavation surface.

Figure 30. General view of Shaft 11 in the early stages of digging.

Figure 29. Human skull remains in their findspot within the fill of Shaft 11.

Figure 31. The removal of the human skull from Shaft 11, after cutting away the southern side of the shaft (facing northwest).

Shaft 10

During clearance of the area with a mechanical excavator, another Chalcolithic shaft was exposed in the west side of Area A. The shaft's extant top was visible at the base of the parking lot, at a depth of 33.40m ASL. In the upper part of the shaft, near its highest extant level, a complete, small V-shaped bowl containing organic material was found, burnt wood fragments and the jaw of a goat/sheep (Figs. 23, 25-26). The shaft was excavated by hand down to a depth of 30.90m ASL (3.5m) and was found to be full of refuse remains dating to the Chalcolithic period (Figs. 24, 26). The shaft was very regular in form, its diameter being 1m throughout and it was cut down vertically (Figs. 27-28). From the shaft were recovered large amounts of potsherds, the most common vessels being small V-shaped bowls. A number of bowls were also found intact.

Shaft 11

While clearing the surface with a mechanical excavator, we discovered a Chalcolithic shaft between Areas A and B. The shaft's diameter was 1m; this was very consistent throughout its depth (Fig. 30).

Figure 32. General view of the Shaft 18 section (facing south).

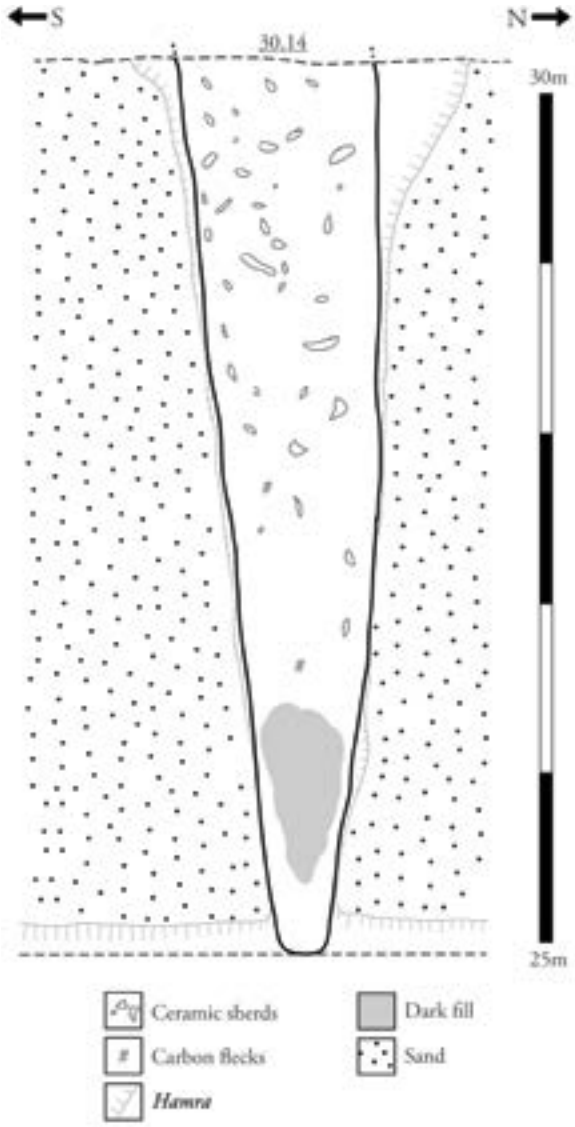

Figure 33. Section drawing of Shaft 18.

The shaft's extant top was found at 34.90m ASL, appearing as a concentration of ash and pottery, and it was dug in its entirety in the red *hamra* sediment. In the shaft fill were found a large number of potsherds, animal bones, charred wood, and one human skull which was found lying against the western side of the shaft, at a depth of 3m from the opening (Fig. 29). The skull fragments were not found in articulation with other human bones. Most likely this skeleton was thrown into the shaft, as though the shaft was used as a Chalcolithic garbage pit. For safety reasons we opened the southern half of the shaft by machine, in order to continue digging (Fig. 31).

Shaft 18

This shaft was dug in such a way as to leave its entire length showing in section. It was near the southwest corner of Area B. The top extant point in the shaft was 32.25m ASL, at the interface between the *hamra* and the sand. Its depth was 5.5m below street level. The upper diameter was 1.5m; near the base this narrowed to 0.5m. The shaft was excavated by hand, to a depth of 3m; at this level we used a mechanical digger, down to a depth of 5.5m. The shaft was cut into the sandy soil in its entirety. Covering the walls was a 0.1m-thick layer of red clay. The fill included large quantities of ash mixed with Chalcolithic pottery. At the bottom of the shaft was a layer of natural *hamra,* probably the shaft base.

Shaft 19

Remains of this shaft were exposed in the center of Area B, within the sand layer (top elevation 32.73m

Figure 34. General view of the sand layer in which excavation of Shaft 19 was discontinued.

Figure 35. General view of Shaft 23.

ASL). It seems that the upper part of the shaft did not survive and only the lower part dug into the sandy sediment was discovered during inspection. The diameter of the shaft was 1m. The fill contained ash, charcoal, pottery and bones. The fill soil was gray-black and stood out clearly against the yellow-white sand into which the shaft was cut. The excavation was carried out to a depth of 1.3m below the excavation area surface and was discontinued due to the collapse of the sand walls. The shaft was not excavated to its base and continues under the level of the parking lot.

Figure 36. Shaft 26 adjacent to and below Byzantine-Early Islamic Double Grave 16 (facing west).

Shaft 23

This shaft, 1m in diameter, was found in the east side of Area B. It was first exposed during inspection, at 32.84m ASL, and was excavated a further 2.5m down. At this point we discontinued work here, due to the danger that the shaft might collapse. The shaft form was regular throughout, with the diameter not changing from its highest to its lowest extant levels. The shaft fill was rich in ash, potsherds and animal bones.

Shaft 26

This shaft was exposed in the east side of Area B, while removing the eastern section of a block of red *hamra* sediment upon which rested a double grave (Grave 16; see below, p. 140). The shaft was about 1m in diameter throughout its entire depth. The shaft's top extant level was at 35.25m ASL and a thin layer of Roman-Byzantine ceramics was found sealing the top of the shaft and immediately underlying the double grave above. We dug 2.5m of the shaft by hand. Manual excavation was discontinued at this depth due to the danger of collapse. All the shaft contents were removed and processed for further examination. The main findings were ceramics and animal bones.

Shaft 28

In the northwest quarter of Area B, beneath the clay and *hamra* layers and within the lower sand layer, a mechanical excavator's bucket uncovered a compact, grey-black clayey patch. Further investigation here

Figure 37. General section view of Shaft 28 (facing northwest).

Figure 38. General view of Shaft 40 after excavation and the removal of the shaft's east wall by mechanical excavator (facing north).

yielded no archaeological finds. It appears that this sediment was all that remained of a Chalcolithic shaft which was not used and abandoned. After falling into disuse, the shaft would have been filled by natural means with heavy dark sediment from the upper surface, brought into the shaft by runoff. The black clayey soil accumulated at the bottom of the shaft, and over time the black clayey sediment became fixed in the shaft's form. The excavator shovel's teeth scraped the side of this clay-filled shaft (Fig. 37).

Shaft 40

This shaft was cut entirely in the *hamra* sediment, its extant top at 35m ASL. It had a consistent diameter of 1m and was completely vertical. The maximum depth we could reach by manual excavation was 3m. The rest of the work, a further 2.5m, was carried out by mechanical excavator, which meant that we dug this shaft to a total depth of 5.5m from its extant top. It should be noted that we did not reach the bottom of the shaft; the excavation had to be discontinued because we had reached the mechanical excavator's dig limitations. Findings from the shaft included much ash, mixed into the dark clayey soil, which yielded pottery and animal bones. Worthy of mention is the broken end of a pestle.

Shaft 41

This shaft was located some 4m northeast of Shaft 40. The extant top of this shaft cut into the dark clayey soil at a height of 36.55m ASL. Presumably, a large part of this clay layer was cleared prior to the excavation of the tower complex's foundations, leaving only a 0.5m-deep layer overlaying the *hamra*. Like most other shafts here, Shaft 41 had a diameter of 1m and was cut absolutely vertically to its bottom. The manual excavation of this shaft continued to a depth of 3m; subsequently, after the collapse of the shaft sides, the rest of the digging was carried out by a mechanical excavator, to a depth of 5.5m from the extant top of the shaft. The cessation of the digging at this depth was due to technical limitations of the excavator.

Figure 39. Shaft 41 after excavation and the removal of its east wall by mechanical excavator (facing north).

Figure 40. Shaft 46 after discovery and before excavation.

Figure 41. General view of Shaft 57 after excavation.

Shaft 46

This shaft was discovered during clearing of the surface. We exposed a gray clayey patch in which were identified Chalcolithic potsherds. The shaft had been cut into the red *hamra* soil. The diameter of the shaft at this highest extant level was 0.9m, and the fill consisted of alternating layers of *hamra*, clay and sand. These layers reflect the natural collapse of the shaft sides, as well as the anthropogenic filling of the shaft with Chalcolithic refuse and ash. Because of the collapse of the sides, the central part of the shaft took on a bell shape. At the bottom of the shaft, at a depth of 2m from the extant top, the diameter returned to its original size of 0.9m. At the bottom of the shaft we found a black, heavy, clay sediment which did not yield any ceramic finds. This black clay that accumulated at the bottom of the shaft was very noticeable against the surrounding yellow sand (Fig. 40). This shaft fell into disuse because of the collapse of its sides. It contained a relatively small amount of Chalcolithic refuse, mainly ceramics.

Shaft 57

This shaft was exposed in the *hamra* soil while clearing the area by machine, at a level of 35.25m ASL. The shaft's diameter was 0.9m and it contained clay sediment mixed with ash and a very limited amount of broken pottery dating to the Chalcolithic period. The shaft was dug by hand down to its base, at a depth of 2m from the area surface, until the sand layer (Fig. 41).

Shaft 58

The extant mouth of the shaft was found at 35.08m ASL, cut into the black clay. The diameter of the shaft was 0.9m. In the upper fill we found a large concentration of coarse ceramics, among them the base of an open bowl (Figs. 42-43). We excavated the shaft by hand, down to a depth of 2.0m. It had been cut through both the *hamra* and sand layers. At a depth of 5.5m below the excavation surface it reached the lowest *hamra* layer. Throughout its length the shaft was full of black ash and pottery. Due to the danger of collapse we could not investigate the feature's base, except by means of a mechanical excavator which made a wide cut through the shaft (Fig. 43).

Figure 42. The base of a large clay bowl among the ceramics and ash in the upper fill of Shaft 58.

Figure 43. General view of Shaft 58 in section (facing southwest), cut to a depth of 5.5m below the parking lot excavation area.

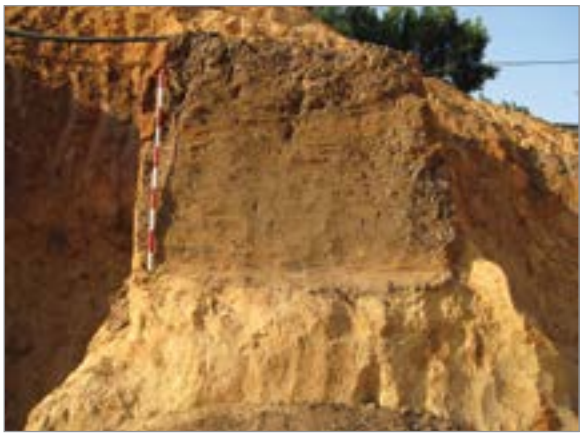

Figure 44. General view of Pit 17 in section (facing south).

Figure 45. General view of the L45 refuse pit (facing east). Note the skeletal remains in the east corner of the pit.

Pit 17

On the south side of Area B, at 35.60m ASL, we discovered the extant top of a Chalcolithic pit. The diameter of the pit was 1.5m and its depth was 1.2m. The pit was bell-shaped and its fill consisted in ash mixed with sand, ceramics and occasional animal bones (Fig. 44). The shaft was cut in its entirety from a *hamra* layer down into the sand.

Pit 31

This bell-shaped pit was discovered 3m southwest of Pit 17, on the south side of Area B. The top extant elevation of the pit was 35.91m ASL and its base was at 32.9m ASL. It was cut into the sand layer, while its mouth, a shaft, was dug into the overlying *hamra*. In

Figure 46. General view of Pit 31 during excavation (facing south).

the pit fill we found coarse pottery sherds with many pebble inclusions. At the base of the pit there was a layer of black and compact ash; above this we found ash mixed with sand. It is possible that the diggers' intention was to dig a deep, vertical shaft, but when they reached the high sand layer so close to the surface they changed their plan and cut this bell-shaped pit in the sand layer instead.

Pit 45

This pit, with a diameter of 1m and a depth of 0.8m, was discovered cut into the *hamra* soil 35.33m ASL. The pit was filled with black clay sediment, ash, broken pottery and animal bones. At the base of the pit we found preserved a very rich layer of findings which formed a sort of compact floor (Fig. 45). A fragment of human skull was found in the east side of the pit. We believe this skull originated in Cist Grave 44, dating to the Byzantine-Early Islamic period, located above the Chalcolithic pit's east side.

Pit 47

This pit was oval-shaped in plan, and was found in the southeastern corner of Area B. This feature's diameter was 2.5-3m and its depth was 1.5m. The highest surviving side of the pit was at 35.25m ASL and its lowest point was at 33.75m ASL. The pit fill was rich in coarse broken pottery mixed with ash and heavy black clay sediment. We excavated the pit in its entirety.

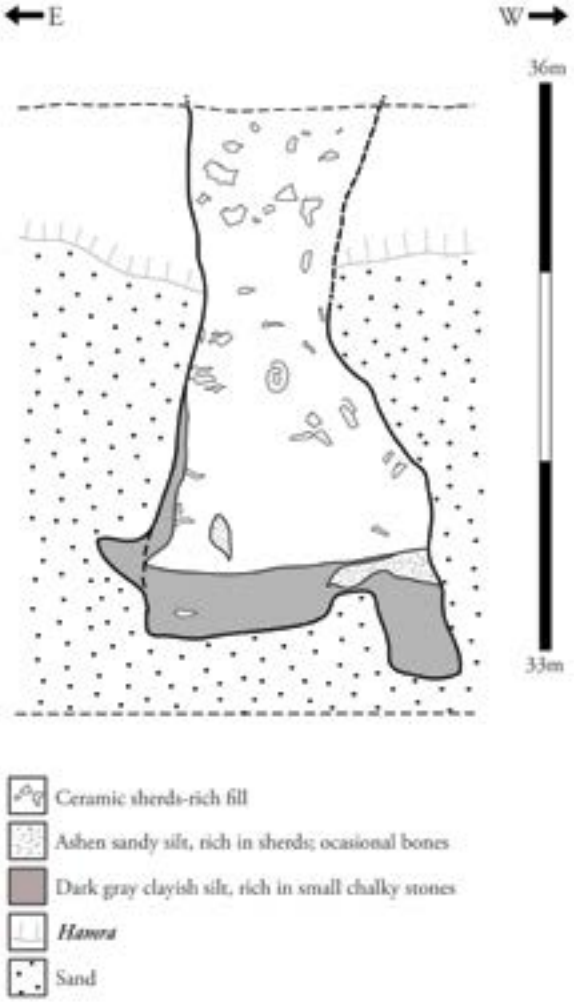

Figure 47. Section drawing of Pit 31.

THE CERAMIC ASSEMBLAGE

Nathan Ben-Ari & David Ilan

Until two decades ago little was known about the non-mortuary Chalcolithic assemblages of the coastal plain. Most of our knowledge was based on material from burial sites. In recent years, however, work at sites such as Tel Lod, Shoham, and Giv'at Ha-Oranim, has clarifed the ceramic typology. In this section we present the rich Chalcolithic ceramic assemblage recovered in the 2008 and 2009 excavation seasons at Yehud.

METHODOLOGY AND QUANTITATIVE ANALYSIS

The pottery processing included the collection and initial sorting of all sherds in the field. All diagnostic sherds were retained. Non-diagnostic body sherds were generally discarded. After tagging and bagging pottery baskets were taken to the restoration lab, where restoration and typological analysis was carried out followed by illustration and photography. Pottery was registered using the conventional system of basket numbers and additional sequential numbers for each diagnostic sherd or complete vessel. Our typology follows the nomenclature used in publications such as Tel Esur (Yannai 2006), Yehud (van den Brink *et al.* 2001), Giv'at Ha-Oranim (Scheftelowitz and Oren 2004), Shoham (van den Brink and Gophna 2005; van den Brink 2009,) and Gerar (Gilead and Goren 1995).

At this point, the minimum numbers of individual vessels (henceforth MNI) were calculated for each type and each context. For small V-shaped bowls and fenestrated bowls we counted complete bases. For medium-sized and large bowls, kraters, jars and bottles the rims were counted. The reasons for counting bases of small V-shaped and fenestrated bowls were (a) that it was difficult to differentiate the rims of individual vessels and (b) that bases were more individualized (in the case of fenestrated bowls) or more intact (in the case of V-shaped bowls). Estimating the MNI of churns presented a different problem. Churn necks and rims often look like the necks of large bow-rim jars and pithoi. For this reason the MNI was based mainly on handle and neck fragments. No complete churns were recovered.

The vessels presented in this chapter came from two main archaeological features: the stone-lined Shaft 4/5 and the unlined shafts (Govrin, above). The plates are organized by these contexts, due to substantial differences in their typological composition (see below), but the typological discussion has been combined, since the material culture includes the same forms, all and dating to the late Chalcolithic (Ghassulian) period.

Bowls (Figs. 48, 52-56)

In general bowls were the most common type of vessel in the ceramic assemblage of Tel Yehud (Table 1).

V-shaped bowls: The V-shaped bowl, a fossil-director of the Chalcolithic period, is the dominant type in the assemblage of the unlined shafts (ca. 54%), but almost completely absent from the stone-lined shaft (ca. 2%). These are subdivided into three subtypes: (1) Small V-shaped bowls with diameter ranging up to 14 cm. (2) Medium-sized V-shaped bowls with ranging diameter of 15-25 cm. (3) Large V-shaped bowls with diameter greater than 25 cm.

Small V-shaped bowls (Fig. 53:3-15): The walls are straight, slightly convex or slightly concave, ending with sharp or simple rims. The bases were flat and removed from the potter's board in a careless manner, without any smoothing, which in many cases left excess clay. On the other hand, it appears that the potters pressed the base from the interior of the vessels, which stabilized the base. Only one bowl has a string-cut base.

Some of the bowls were delicate and made of well levigated clay, either without any inclusions or with only very small grits. Other bowls were made of a coarser ware and were badly fired. The concentric striations on most of the small bowls show that they were shaped on a wheel of some sort. This is also evident

by the low morphological variability (for a similar conclusion see Gilead 1995). A few of the bowls were decorated with a painted red band on both the exterior and interior of the rim.

These appear in most of the unlined shafts, while completely absent in the stone-lined shaft (Shaft 5).

Medium to large V-shaped bowls (Figs. 48, 52, 54-56): There is more variability in the form of larger V-shaped bowls. The walls of the medium-sized bowls were usually straight, while the walls of the large bowls were either straight or slightly everted, giving them a more open profile. The rims are usually simple; some are decorated with thumbed impressions. The bases of the medium-sized bowls are flat and smoothed or removed from the potter's board in a careless manner, without any treatment or smoothing, which left in many cases the excess clay on the base. The bases of the large bowls are always flat and smooth. Though some of the medium-sized and large bowls are well levigated, most of them were quite course. The inclusions were usually small and barely visible.

These subtypes appear in most of the unlined shafts, while only a few were found in the stone-lined shaft. The large bowl is the dominant type of bowl in the unlined shaft assemblage (ca. 45%) and the only type found in the stone-lined shaft. The medium-sized bowls are far less frequent (ca. 14%). It should be noted that a number of rim sherds assigned to the medium to large V-shaped bowl category probably belong to bowls on fenestrated stands.

V-shaped bowls are commonly decorated with a red painted band on the exterior and interior sides of the rim. Some of them, usually the large ones, were decorated with an additional red painted band on the exterior side at mid body (e.g. Fig. 55:3). Other decoration noted is a white wash on the exterior. In addition some of the large bowls were decorated with ridges and grooves on their exterior (e.g. Fig. 55:9). One vessel from Shaft 31 was decorated with oblique incised lines (not illustrated). Fig. 48 is a bowl fragment with a mending perforation.

Small shallow bowl (Fig. 53:1): This type is represented only by one vessel, found only in an unlined shaft. The bowl was handmade of a coarse ware. It has an extremely low wall ending with simple straight rim. The base is flat and thick. Similar bowls were found in the site of Giv'at Ha-Oranim (Scheftelowitz and Oren 2004: Fig. 3.2: 21).

Small hemispherical bowl (Fig. 54:4): This type is represented only by one rim.

Inner lug bowl (Fig. 56:7)*:* This type is represented by only two rims, with simple squared profiles. They were made of a course ware with few small inclusions. Bowls of this type are typical to the late Chalcolithic period (Garfinkel 1999: Fig. 128:4-6). Similar bowls were found in Shoham (northeast) and Giv'at Ha-Oranim (van den Brink 2009: Fig. 6: 3).

Figure 48. A large bowl with a mending perforation.

Figure 49. A large fenestrated base from Shaft 10.

Fenestrated pedestal bowls (Figs. 49, 52:5; 57-58)

This type consists of a V-shaped bowl attached to a high fenestrated pedestal. Their characteristics are similar to those of the V-shaped bowls (see above). They appear in almost all shafts (including the stone-lined shaft). The fenestrated pedestals usually had three rectangular windows. The pedestal bases splay out at the bottom and the bottom rims can be rounded flattened or bevelled. They were generally made of a course ware. Some bore soot stains, both in the bowl and on the vessel exteriors. Usually the bowls are not decorated but some have a red to brown painted band on the exterior. Some of the bases' exterior sides were decorated with red to brown painted bands on the medial or lowest sections (sometimes both parts were decorated). In one case the bowl and the base were applied with a white wash on the exterior (Fig. 57:16; also on the interior in another case [Fig. 57:1]).

Basins (Fig. 52:6-9; Fig. 59)

Basins are large, open vessels with a base as broad as the rim, made of course ware with thick walls and rims that are considerably thicker than the walls. In general, two subtypes were distinguished: (1) shallow basins with a depth ranging from nine to 13cm, and, (2) deep basins. No complete profile of this subtype was found. It seems that in its complete form this type is over 15 cm deep. The minimum diameter of the two subtypes is 36 cm. This is the most common type of vessel in the stone-lined shaft (~37%).

Shallow basins: This is an open vessel, with a thickened, flattened rim (Fig. 59:2). Some had ledge handles (e.g. Fig. 52:6). They were made of a coarse paste, which in most cases contained small inclusions.

Deep basins: This subtype is a massive coarse vessel with a slightly more closed profile than that of the shallow basins. The rim is thickened and flattened. Some of these vessels had lug, ledge or strap handles (e.g. Fig. 59:3). The deep basins were made with less coarse paste than the shallow ones and in most cases had small inclusion. They were also were better fired. Some have finger or tool impressed plastic decorations on the body, such as thumb-impressed rims and rope decorations. In a few cases the handles were also decorated in this manner (Fig. 59:3).

Kraters (Figs. 60-63)

The kraters are large vessels with a rim diameter greater than 30 cm. There are two main krater forms: open and closed. The closed krater type is very common in both the unlined shafts and the stone-lined shaft (Table 1).

Open kraters (Fig. 61): This subtype is infrequent (n=10) and appears only in the unlined shafts. Three rim types could be differentiated: flat thickened, flat thickened hammer, and flat oblique. Neither complete vessels nor bases were found. The ware resembles that of the large V-shaped bowls. Some of them are decorated with a red or dark red band on the rim, usually placed on the upper part. One krater from Shaft 11 had a spout attached (Fig. 61:1).

Closed kraters (Figs. 60, 62, 63): This is the dominant type of krater in the pottery assemblage. It can be further divided into two main subtypes:

(1) narrow flat rim. This type of vessel had a closed somewhat holemouth profile and, usually, thin walls. The rim is flat and narrow with a squared profile. A number of vessels have a hammer-shaped rim and a few of them were grooved on top of the rim or beneath the rim's exterior side. Several kraters were spouted. Some of the vessels were plain, while others were decorated with a red band beneath the exterior side of the rim and on top of it.

(2) wide, thick, flat rim. This type also had a closed, somewhat holemouth profile and, usually, thin walls. The rim is wide, flat and thick, with a squared or triangle profile, usually inwardly tapered. In some cases the upper surface of the rim was flattened and the rim was folded out (in some of them the excess clay was neither smoothened nor removed). It was made of coarser ware than Type 1. Vessels of this type are not decorated.

A number of the kraters of both types had calcite inclusions and bore soot stains, suggesting that they might have functioned as cooking vessels (several others were made of the same ware but did not have any signs of soot).

Two massive, coarse vessels (Fig. 60:7-8) that were found in the stone-lined shaft are noteworthy. They had thick squared rims with flat tops. At least one of

them was decorated with two rows of thumb impressions beneath the rim. A parallel was found at Wadi Raba, dated to the late Chalcolithic period (Kaplan 1958a: Fig. 5:1). We have called these vessels kraters, though one could classify them as open pithoi.

Holemouth vessels (Fig. 64)

A small group of closed and globular vessels without necks, these were handmade, usually of a coarse ware without any decoration. Some had horizontal striations, suggesting that they may have been finished on a wheel. These vessels had a simple rims (Fig. 64:1-6).

One body sherd with a strainer spout (Fig. 64:7) is most likely part of a holemouth vessel (Garfinkel 1999: Fig. 145). It's made of finer ware with small grits, and was decorated with a red band beneath the spout.

Some of the holemouths were made with calcite inclusions and bore soot stains, suggesting that they may have functioned as cooking vessels. Like the kraters, several other holemouths were made of the same ware but without calcite inclusions, and without soot.

Jars (Figs. 65-68)

This is a large group of closed vessels that was dominant both in the unlined shafts and the stone-lined shaft assemblages. Four types of jars were distinguished, as follows:

Low-necked jars (Fig. 65:1, 3, 5-8; Fig. 66:1-16, 18; Fig. 67:1-9; Fig. 68:3-7): The dominant type of jar in the assemblage, these were divided into three subtypes (according to size): (1) small jars with a diameter of up to 11 cm, (2) medium-sized jars 11-20 cm in diameter, and (3) large jars with a diameter greater than 21 cm.

The rims are in most cases everted in varying degrees and in varying lengths and heights. Some of the rims are very short and some of them have long everted rims which give them a flaring profile (one has an extremely flaring rim, Fig. 68:3). Two jars from the stone-lined shaft had slightly different rims. One has a long everted rim which gives it a flaring profile (Fig. 65:4). The other has an inverted hammer-shaped profile (Fig. 65:3). The low-necked jars were made of coarse ware; some were decorated with a red band beneath the exterior side of the rim. Two medium-sized jars were externally slipped; of them one also bore white wash. One small low-necked jar was made of coarse ware with large white calcite inclusions and bore soot stains; it was decorated with a thick orange band beneath the exterior side of the rim (Fig. 66:7).

High-necked jars (Fig. 65:2; Fig. 66:17): These are rare. They are made of a coarse ware and undecorated. Their rims are slightly everted.

*Multi-handled carinated jars (*Fig. 68:1, 2)*:* This type is rare as well; only two body sherds were identified, both from the unlined shafts (clearly, some of the rims will belong to these body sherds, but it is difficult to know which ones). These sherds represent vessels that had a squat body with a small pierced handle (or more) attached to it (cf. Garfinkel 1999:Fig. 142). The sherds were made of a coarse ware and were not decorated.

Pithoi (Fig. 65:5-8; Fig. 68:4-6): These massive jars can be subdivided into two types: (1) pithoi with thick everted rims (occasionally with flat top). One pithos was extremely large (Fig. 68:6). These vessels were made of a very coarse ware; (2) open pithoi (Figs. 65:6, 68:4) – a small group of large open vessels which are rare in both assemblages, made of coarse ware. They had everted rims, which at least in one case was thumb-impressed (Fig. 68:4)

Churns (Figs. 69, 70)

This is a barrel shaped vessel with a bowed neck. No complete churns were found, nor were any rims unequivocally associated with churns, though some of the jar rims must belong to churns. This group was comprised mostly of handles, body sherds and one complete, bowed neck. They comprise 22% of the assemblage of the stone-lined shaft. The churns can be divided to two main types: (1) small churns, and (2) medium–to–large churns. Both types have the same traits: loop handles are attached at either end, while one end is flat and the other rounded. The small churns were more delicate and made of a levigated ware without inclusions. Some of them bore traces of red painted bands, white wash, or both. Strainers are a feature only of small churns, an indication that

they were used in a somewhat different fashion from the large churns. The medium-to-large churns were of coarse ware, some with numerous inclusions while others almost without any. Many of them were decorated with red to brown bands (sometimes quite wide). A few had white wash or a red slip. One body sherd (not illustrated) might belong to a churn with a gigantic neck (Garfinkel 1999: Fig. 159). It was made of well levigated clay with few inclusions and the coil marks are quite apparent. The exterior surface was smoothened and decorated with a wide reddish-brown band.

Cornets (Fig. 71)

This type is represented by a small group of cigar-shaped fragments, which are cornet bases. Some of the rims attributed to small V-shaped bowls belong to cornets (which probably requires reducing the frequency of the V-shaped bowls somewhat). Some are made of a fine ware and some of a coarser ware; in most cases they were well levigated without any inclusions. A few of them bore traces of painted red bands.

Ossuaries (Fig. 74)

Two fragments, apparently of rectangular clay "box" ossuaries, were found in Shafts 10 and 17. This was something of a surprise to us since they are found primarily in mortuary contexts. Similar fragments in ostensibly non-mortuary contexts were found in previous excavations at Yehud (van den Brink *et al.* 2001: 27-28, Fig. 6).

Spindle whorl and loom weights (Fig. 86)

The spindle whorl (Fig. 86:1) is biconical. Similar examples have been found at Giv'at Ha-Oranim and Grar (Scheftelowitz and Oren 2004: 85, Fig. 6.2: 1-3; Gilead 1995: 344-345, Fig. 8.4: 7, 9 respectively). The two loom weights (Figs. 86:2) are spherical in shape. Similar types were found at Grar (Gilead 1995: Fig. 8.3: 2, 5), and Gilat (unpublished, Y. Rowan pers. comm.).

Some remarks on typological variability in different shaft assemblages

The assemblage retrieved from stone-lined Shaft 5 is statistically different from the inventories of the unlined shafts. The former is characterized by a more

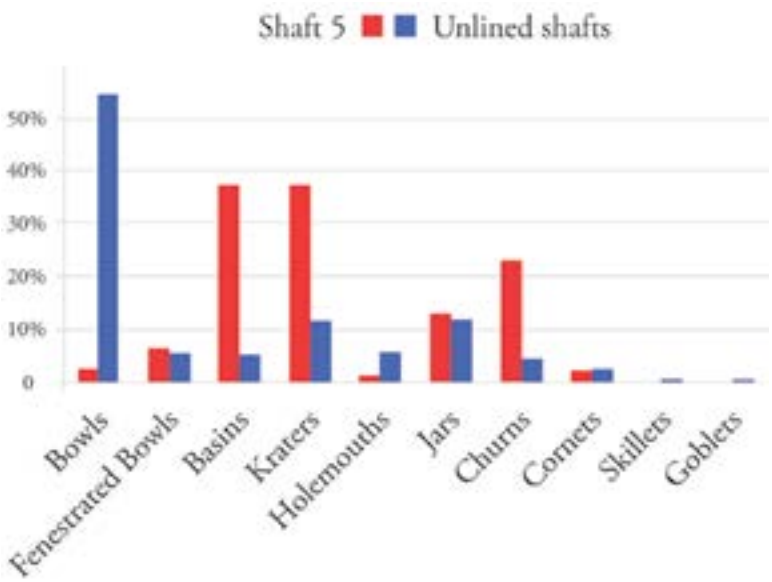

Figure 50. Relative vessel type frequencies from Shaft 5 and the unlined shafts.

limited range of vessel types – mostly of the larger, perhaps more utilitarian types. Most prominent were basins, jars, churns and kraters, with only a few large bowls (Table 1).

In the unlined shafts, the V-shaped bowl was the prominent type, though we must remember that some of the larger bowls probably belong to bowls on fenestrated stands. Basins and the kraters comprise only 5% and 11% (respectively) of the pottery assemblage. Churns comprise only 4% of the assemblage.

Finally, the storage jars, which make up a large group in the stone-lined shaft (20%), comprise ca. 12% of the assemblage of the unlined shafts. The jar subtypes' distribution is also noteworthy. The unlined shafts contained mainly low-necked jars of various sizes, with a few low-necked jars, multi-handled, carinated shoulder jars, and pithoi. The jar assemblage in the stone-lined shaft shows a different picture, less varied. As in the unlined shafts the low-necked jar was almost the exclusive type, with some closed and opened pithoi.

Figure 51. A body sherd of a jar from Shaft 10 (reg. no. 32), bearing incised herring-bone decoration.

SUMMARY

The 2008-2009 seasons of excavation at Yehud revealed a pottery assemblage typical to the late Chalcolithic period, namely the Ghassulian culture. Similar assemblages have been retrieved in previous excavations at Tel Yehud and its surroundings (above, p. 13). Though the pottery types described above have been found in many other Chalcolithic sites in the southern Levant, the Yehud assemblage shows particularly close affinities with the facies of the "Beer Sheba basin culture" (for a similar conclusion see van den Brink *et al.* 2001). Nonetheless some sherds may date earlier. One (Fig. 51) bore an incised herring-bone pattern of the type that is common in the late Neolithic and early Chalcolithic periods but rare in the Late Chalcolithic (e.g. Garfinkel 1999: 143-145, 273-275; Gopher and Tsuk 1996; Kaplan 1958a, 1958b; Yannai 2006). Another sherd bore crescent-shaped fingernail impressions and incised lines (Fig. 72:2). This kind of decoration is more common in the Wadi-Rabah culture (there is a debate among researchers as to whether this culture is a late Neolithic or an early Chalcolithic entity, e.g. Gophna and Gopher 1993, Rowan and Golden 2009). Similar decorated sherds, without the incised lines, were found at sites such as Neve Yam, En el Jarba and Wadi Rabah (Garfinkel 1999: Photo 78; Kaplan 1958a: Fig. 4:8; 1969: Fig. 8: 13; Prausnitz 1977: Fig. 2:7).

The noteworthy differences between the pottery assemblages of the unlined shafts and the stone-lined shaft seem to suggest that the two types of shaft had somewhat different functions. The exact function of the shafts remains unclear. In few cases we were able to restore vessels from sherds that originated in more than one shaft. Breakage may have occurred in single events and subsequent deposition, in phases. Conversely, vessels may have been broken intentionally and placed in different shafts in a single deposition event. In any case, we would suggest that the shaft deposits were more than mere refuse pits. The fact that cornets, pedestal bowls on fenestrated stands are prominent, and that at least two ossuaries are present suggests a ritual function, possibly to do with mortuary rites. One would expect that some of the jars and kraters were ossuaries as well.

Table 1. Inventory of Chalcolithic ceramic types (MNI), by shaft.*

Shaft	B V sm	B V md	B V lg	B hem	B int lug	G	FS	Basin	K cl	K hm	HM-CP	K o	P	J hi n sm	J hi n med-lg	J car sh	J lo n sm	J lo n med-lg	J br sm	J br lg	CH lg	CH sm	Cornet	Spouts/ strainers	Oss	Lm wght	Totals
2	76	17	68	1	0	0	19	6	25	0	4	3	2	0	0	2	12	14	0	0	3	2	2	1	0	1	**258**
4	0	0	3	0	0	0	12	32	9	1	1	0	7	0	0	0	0	8	1	1	13	0	3	0	0	0	**91**
5	0	0	4	0	0	0	6	41	13	1	0	0	2	0	0	0	0	9	0	1	20	2	2	0	0	0	**101**
4,5	0	0	0	0	0	0	0	38	20	0	3	0	4	0	0	0	0	5	0	0	10	1	1	0	0	0	**82**
9	27	17	32	0	0	0	5	2	18	10	5	0	1	0	1	0	0	7	0	0	3	1	3	0	0	0	**132**
10	103	7	85	0	0	1	14	10	32	4	11	5	2	0	0	0	0	16	0	0	11	4	4	0	0	1	**311**
11	21	8	31	0	0	0	4	4	7	1	6	0	0	0	1	0	0	16	0	0	1	2	2	0	1	0	**105**
18	2	0	2	0	1	0	0	4	3	0	1	0	2	0	0	0	0	4	0	0	0	0	0	0	0	0	**19**
19	6	7	17	0	0	0	4	11	3	4	0	0	0	0	0	0	0	13	0	0	1	2	0	0	0	0	**68**
21	8	3	14	0	0	0	4	0	7	1	3	0	0	0	0	0	0	4	0	0	2	0	1	0	0	0	**47**
23	2	4	7	0	1	0	2	0	4	3	1	1	0	0	0	0	0	10	0	0	1	0	3	0	0	0	**39**
26	0	17	5	0	1	0	0	0	1	2	0	1	1	0	0	0	0	7	0	0	2	0	4	0	0	0	**41**
31	1	0	2	0	0	0	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**7**
36	2	1	5	0	0	0	3	8	5	1	0	0	0	0	0	0	1	4	0	0	4	0	0	0	0	0	**34**
41	4	3	8	0	0	0	3	0	6	0	1	0	0	0	0	0	0	5	0	0	2	2	0	0	1	0	**36**
45	0	0	1	0	0	0	1	3	1	1	1	0	1	0	0	0	0	4	0	0	2	0	6	0	0	0	**21**
57	0	1	4	0	0	0	0	6	1	1	0	0	0	0	0	0	0	2	0	0	2	0	1	0	0	0	**18**
Totals	**252**	**85**	**288**	**1**	**3**	**1**	**78**	**166**	**155**	**31**	**38**	**10**	**22**	**0**	**2**	**2**	**13**	**128**	**1**	**2**	**77**	**16**	**32**	**1**	**2**	**2**	**1410**

B V sm = small V-shaped bowls
B V md = medium V-shaped bowls
B V lg = large V-shaped bowls
B hem = hemispherical bowls
B int lug = lug bowls
G = goblets
FS = fenestrated stands
K cl = closed kraters
K hm = holemouth kraters
HM-CP = holemouth cooking pots
K o = open kraters
P = pithoi
J hi n, med-lg = medium-large high-necked jars
J car sh = shoulder-carinated jars
J lo n sm = small low-necked jars
J lo n med-large = medium-large low-necked jars
J br sm = small bow-rimmed jar
J br lg = large bow-rimmed jar
CH lg = large churn
CH sm = small churn
Oss = ossuaries
Lm wght = loom weights

* Due to factors of contamination and misplacement the following contexts were not included in this inventory: Pits 17 and 47, and Shafts 1, 7, 40 and 46.

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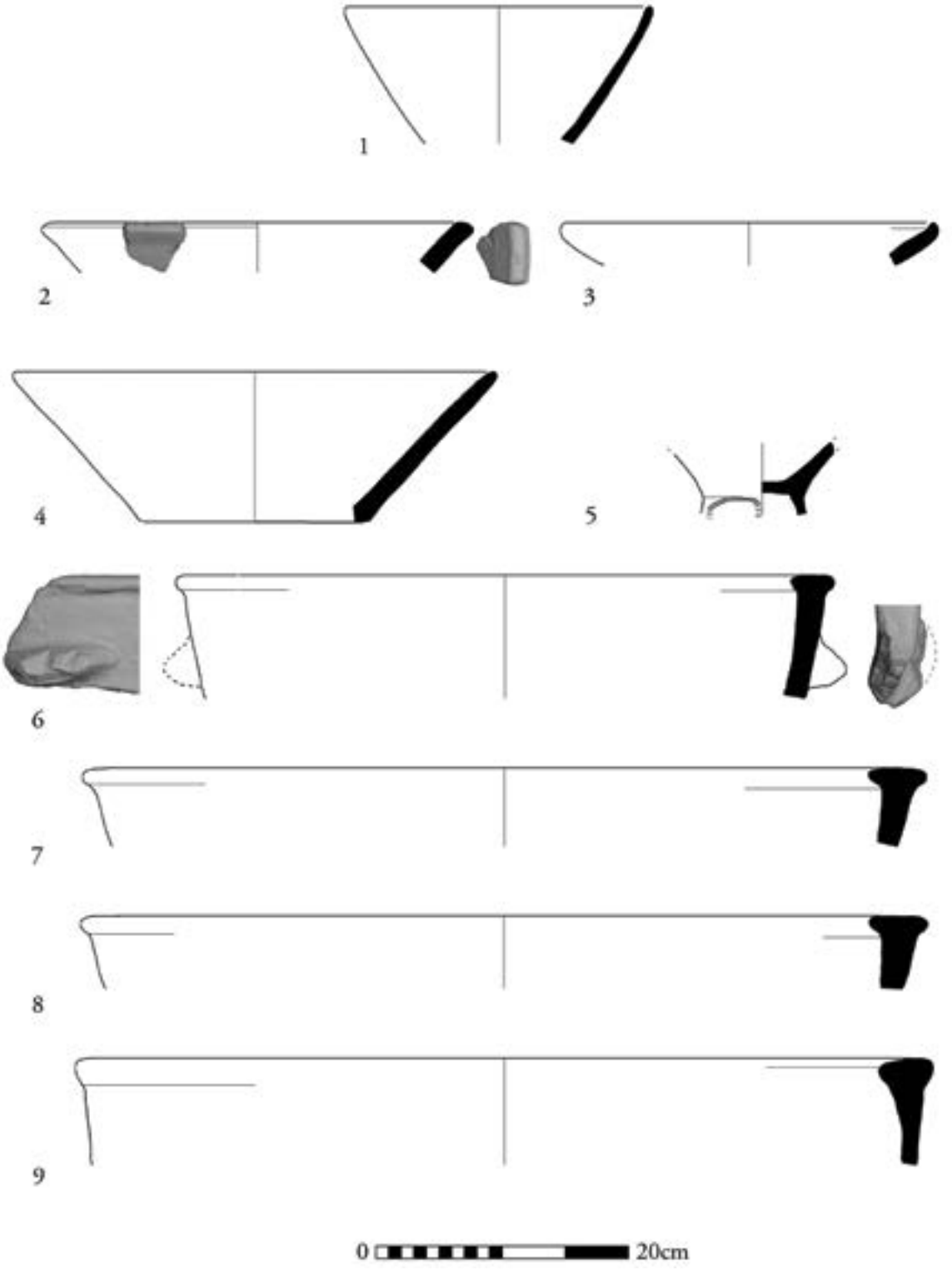

Figure 52. Bowls and basins from Shaft 5 (including L4).

Figure 52.

No.	Object	Reg. no.	Locus	Comments
1	Bowl	4/30	4	
2	Bowl	4/1	4	
3	Bowl	11/1	5	
4	Bowl	11/30	5	
5	Fenestrated pedestal bowl	4/31	4	
6	Basin	4/2	4	
7	Basin	11/3	5	
8	Basin	11/16	5	
9	Basin	11/5	5	

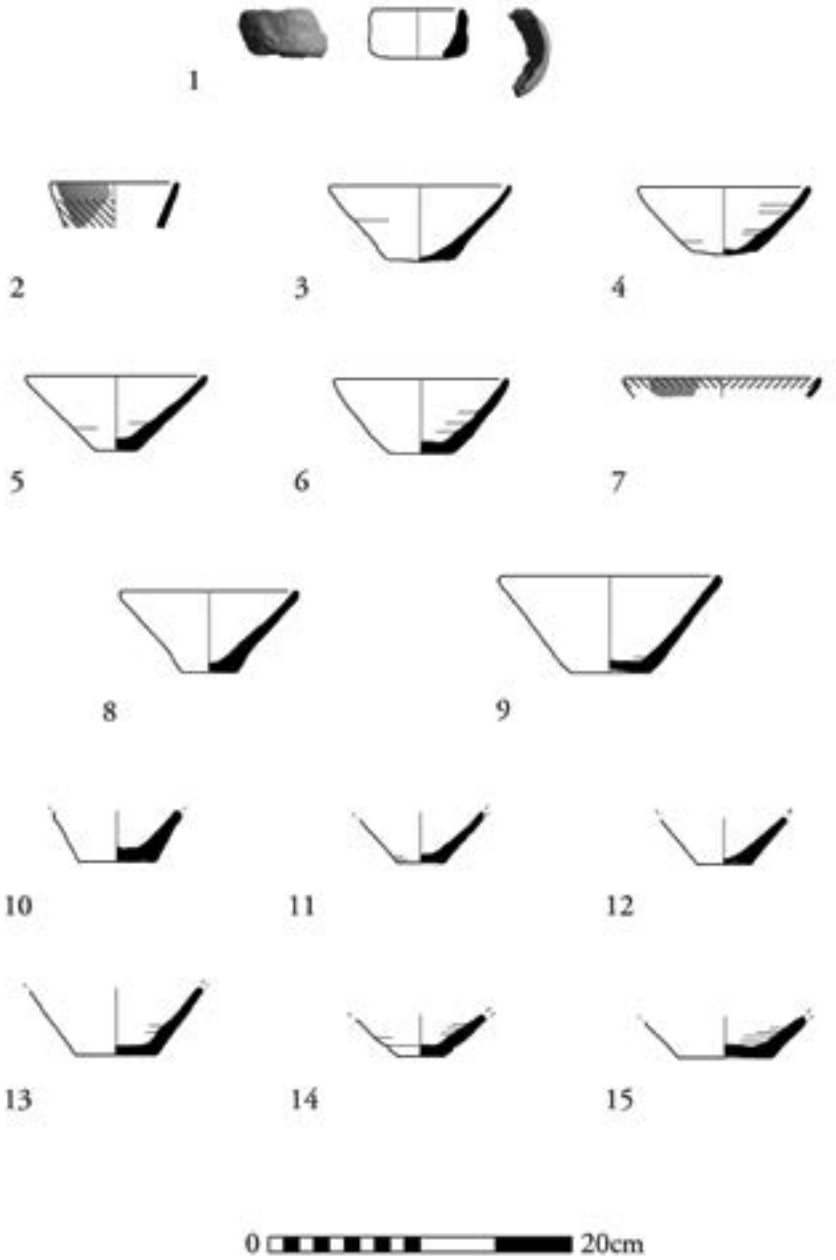

Figure 53. Small bowls from the unlined shafts.

Figure 53.

No.	Object	Reg. no.	Locus	Comments
1	Bowl	74/90	23	
2	Bowl	/51	31	Red paint on exterior
3	Bowl	32/134	10	
4	Bowl	36/129	10	
5	Bowl	23+30/121	9	
6	Bowl	42/131	11	
7	Bowl	29/18	2	Red paint on interior and exterior
8	Bowl	37/120	2	
9	Bowl	36/2	10	
10	Bowl	X/118	10	
11	Bowl	37/112	2	
12	Bowl	51/116	10	
13	Bowl	X/125	10	
14	Bowl	37/111	2	
15	Bowl	42/110	11	

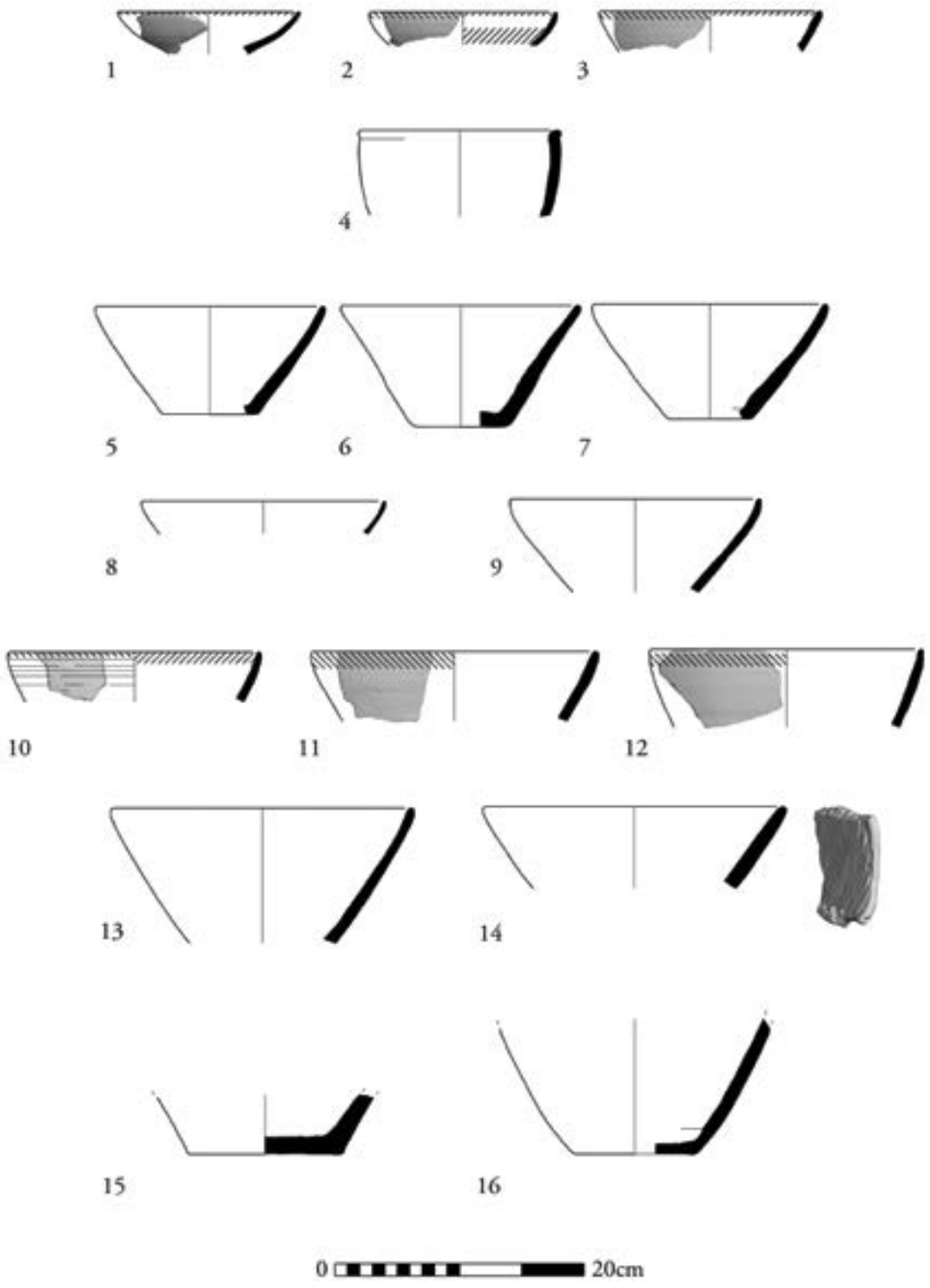

Figure 54. Medium bowls from the unlined shafts.

Figure 54.

No.	Object	Reg. no.	Locus	Comments
1	Bowl	74/42	23	Red paint on interior and exterior
2	Bowl	74/49	23	Red paint on interior and exterior
3	Bowl	42/39	11	Red paint on interior and exterior
4	Bowl (hemispherical)	85/128	37	
5	Bowl	23+30/4	9	
6	Bowl	37/41	2	
7	Bowl	32/44	10	
8	Bowl	74/38	23	
9	Bowl	23+30/55	9	
10	Bowl	69+77/46	19	External wheelmark striations; red paint on interior and exterior
11	Bowl	23+30/36	9	White wash across exterior, under red band
12	Bowl	42/33	11	Red paint on exterior
13	Bowl	29/60	2	
14	Bowl	/72	31	
15	Bowl	32/135	10	
16	Bowl	51/159	10	

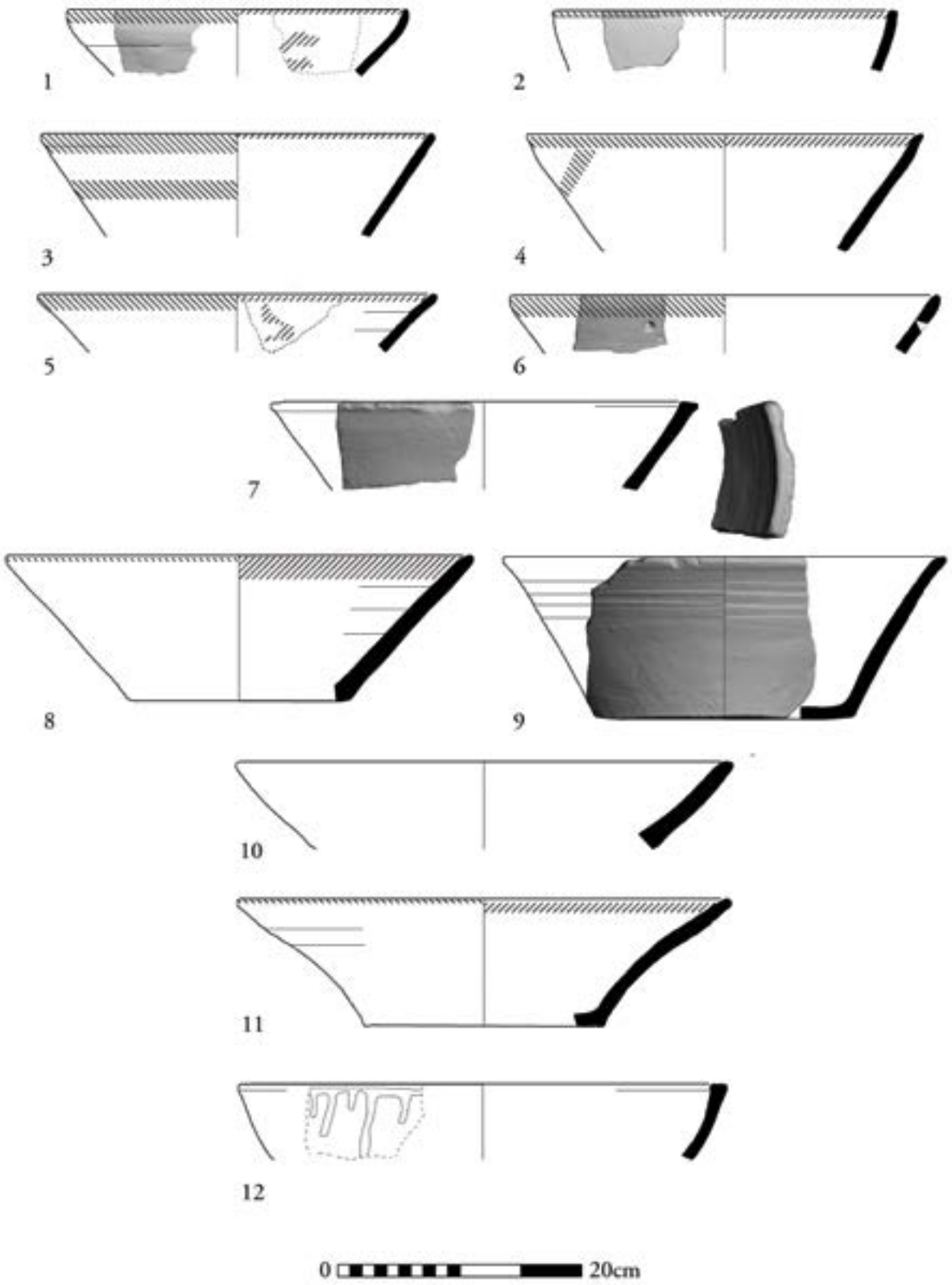

Figure 55. Large bowls from the unlined shafts.

Figure 55.

No.	Object	Reg. no.	Locus	Comments
1	Bowl	74/40	23	Red paint on interior and exterior
2	Bowl	69/54	19	Red paint on interior and exterior
3	Bowl	23+30/45	9	Red paint on interior and exterior
4	Bowl	32/48	10	Red paint on interior and exterior
5	Bowl	51/59	10	Red paint on interior and exterior
6	Bowl	X/57	10	Red paint on exterior; repairing hole
7	Bowl	37/47	2	
8	Bowl	37/63	2	Red paint on interior and exterior
9	Bowl	12/61	2	White wash throughout exterior
10	Bowl	74/34	23	
11	Bowl	36/52	10	Red paint on interior and exterior
12	Bowl (hemispherical)	29/167	2	White wash drips on exterior

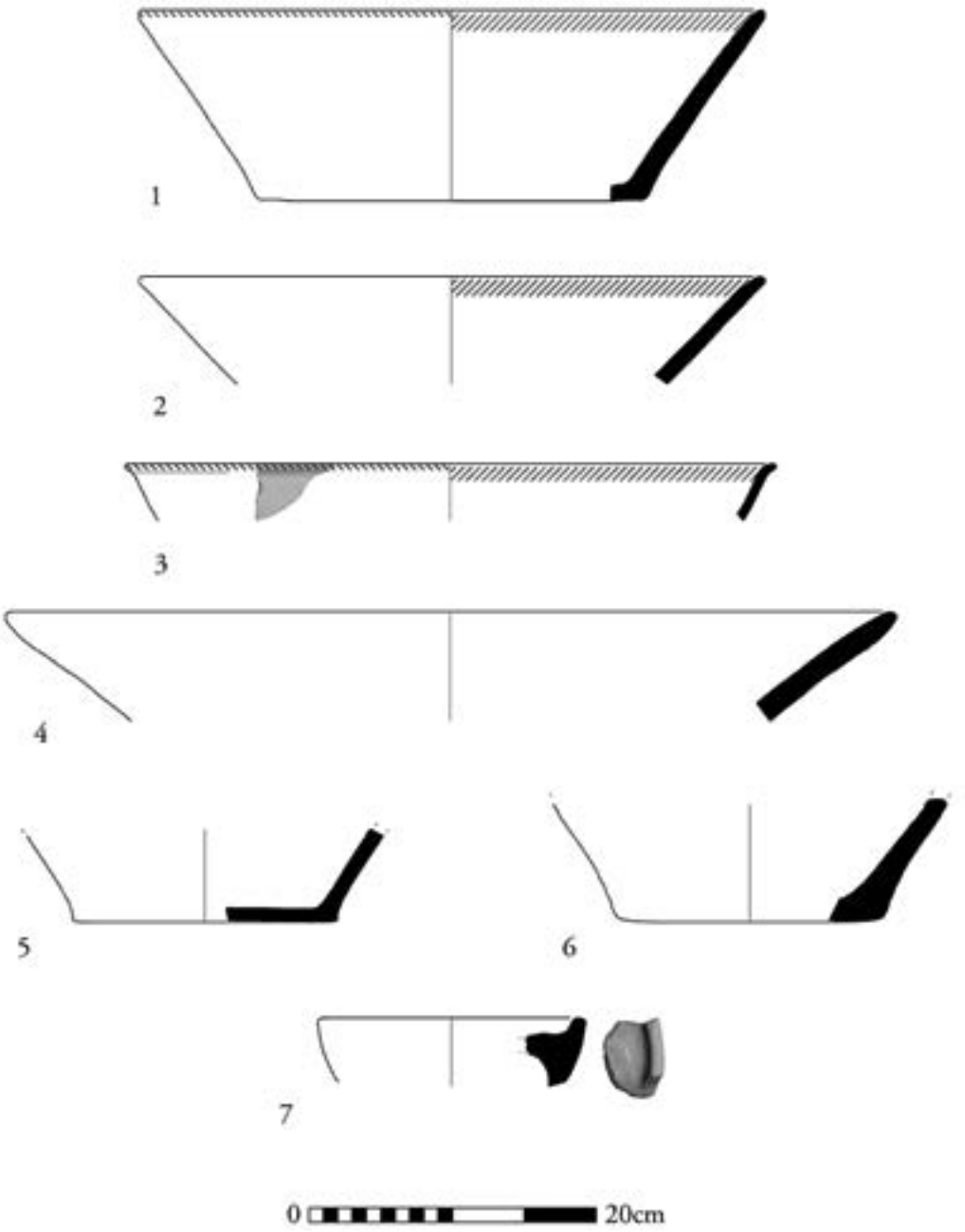

Figure 56. Large bowls from the unlined shafts.

Figure 56.

No.	Object	Reg. no.	Locus	Comments
1	Bowl	29/62	2	Red paint on interior and exterior
2	Bowl	37/43	2	Red paint on interior
3	Bowl	77/53	19	Red paint on interior and exterior
4	Bowl	85/123	37	
5	Bowl	51/103	10	
6	Bowl	85/133	41	
7	Bowl	71/56	26	Inner lug handle

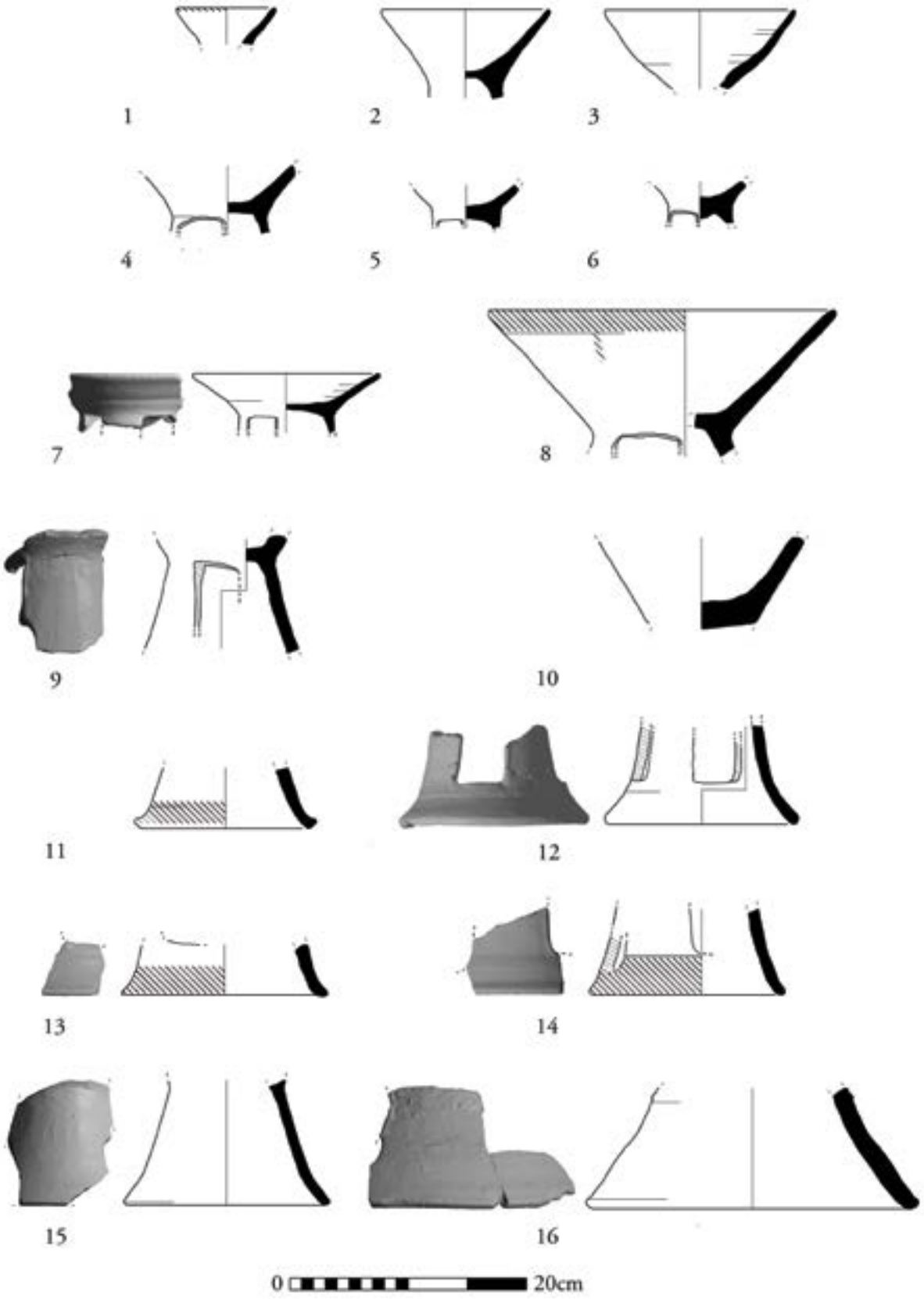

Figure 57. Fenestrated pedestal bowls from the unlined shafts.

Figure 57.

No.	Object	Reg. no.	Locus	Comments
1	Pedestal bowl (fenestrated?)	23+30/114	9	White wash throughout interior
2	Pedestal bowl (fenestrated?)	42/138	11	
3	Fenestrated pedestal bowl	29/32	2	
4	Pedestal bowl (fenestrated?)	XX/137	10	
5	Fenestrated pedestal bowl	23+30/117	9	
6	Pedestal bowl (fenestrated?)	32/122	10	
7	Fenestrated pedestal bowl	37/126	2	
8	Fenestrated pedestal bowl	37/132	2	Red paint on exterior
9	Fenestrated pedestal bowl	29/136	2	
10	Fenestrated pedestal bowl	42/128	11	
11	Fenestrated pedestal bowl	32/108	10	Red paint on exterior
12	Fenestrated pedestal bowl	32/115	10	
13	Fenestrated pedestal bowl	37/105	2	Red paint on exterior
14	Fenestrated pedestal bowl	23+30/103	9	Red paint on exterior
15	Fenestrated pedestal bowl	29/106	2	
16	Fenestrated pedestal bowl	29/119	2	White wash throughout exterior; white wash drips on interior

Figure 58. Large fenestrated pedestal bowl from Shaft 37 (reg. no. 85/123).

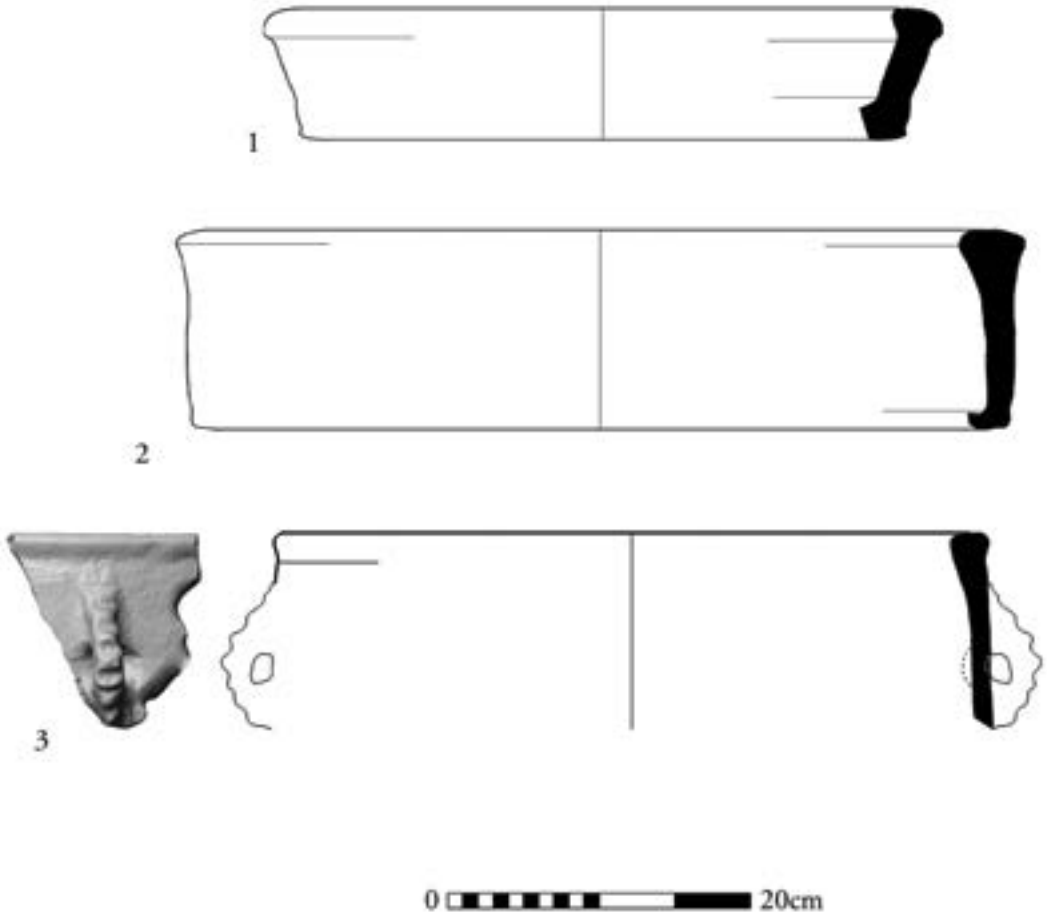

Figure 59. Basins from the unlined shafts.

Figure 59.

No.	Object	Reg. no.	Locus	Comments
1	Shallow basin	32/93	10	
2	Shallow basin	77/92	19	
3	Deep basin	99/87	45	

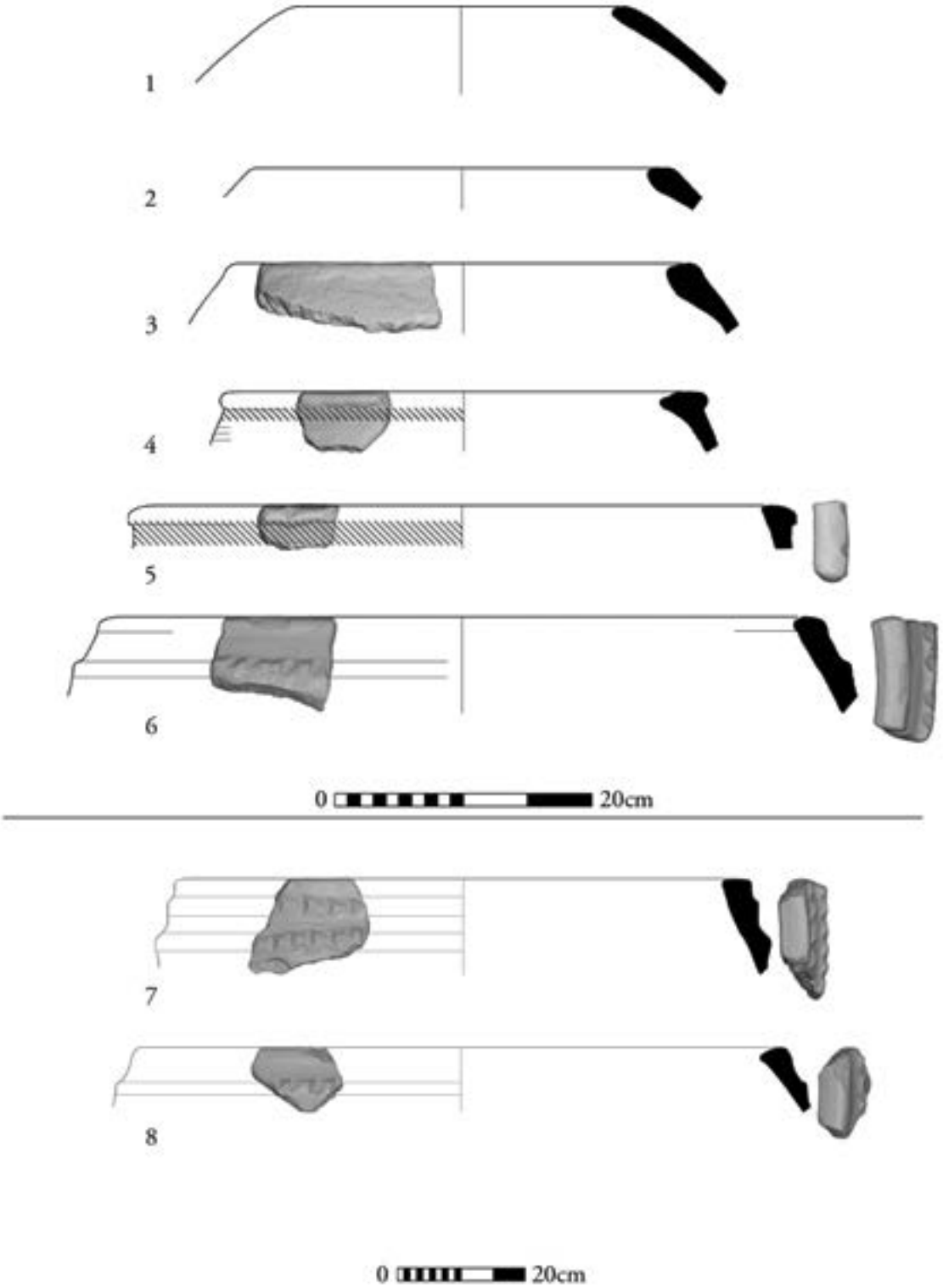

Figure 60. Kraters from Shaft 5 (including L4).

Figure 60.

No.	Object	Reg. no.	Locus	Comments
1	Holemouth vessel	11/31	5	Cooking vessel
2	Krater	11/6	5	Cooking vessel
3	Krater	4/12	4	
4	Krater	4/10	4	Red paint on exterior
5	Krater	4/11	4	Red paint on exterior
6	Krater	4/7	4	
7	Krater/open pithos	4/3	4	
8	Krater/open pithos	4/4	4	

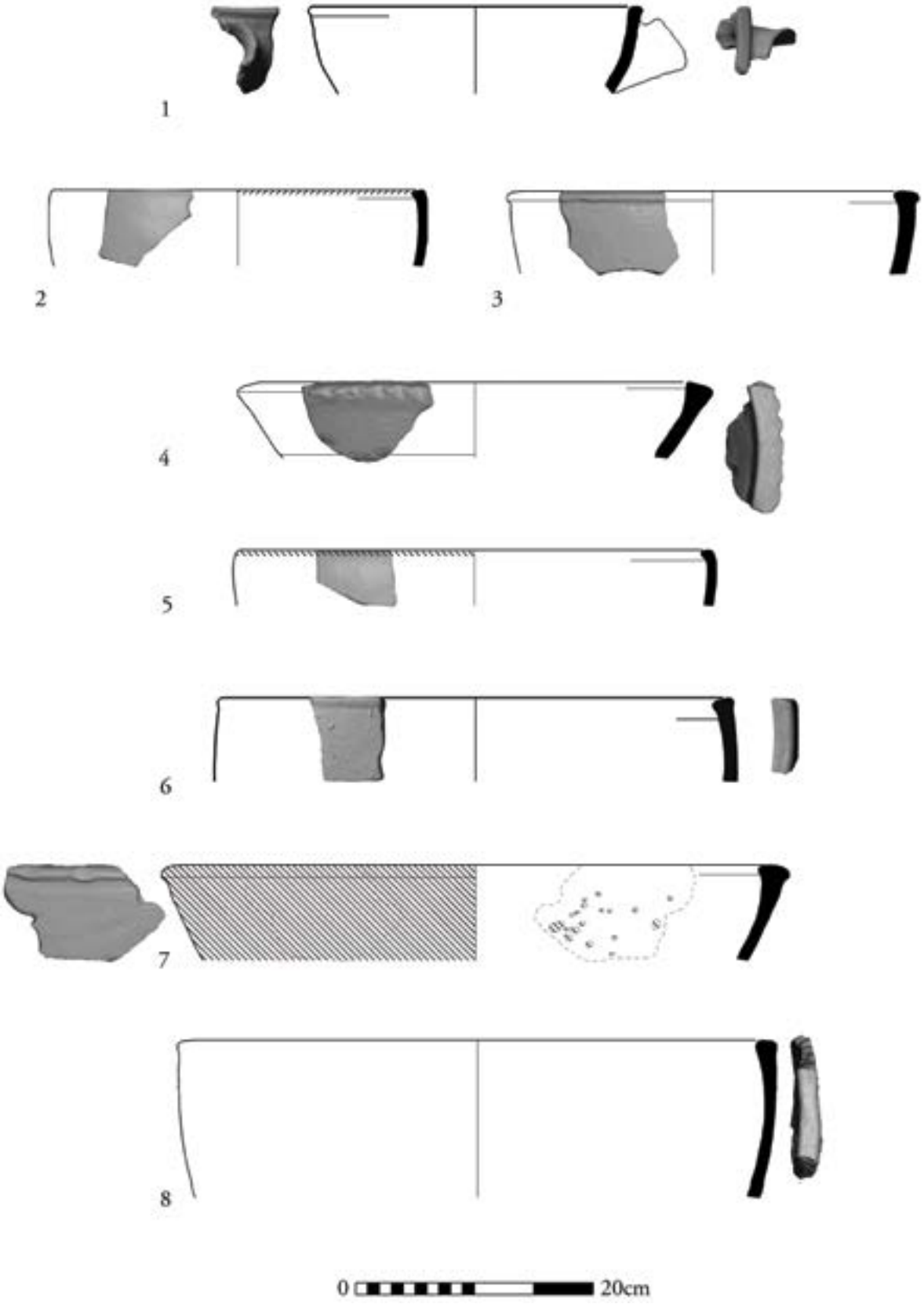

Figure 61. Open kraters from the unlined shafts.

Figure 61.

No.	Object	Reg. no.	Locus	Comments
1	Spouted krater	42/183	11	
2	Open krater	32/173	10	Red paint on interior
3	Open krater	37/188	2	
4	Open krater	29/85	2	
5	Open krater	42/181	11	Red paint on exterior
6	Open krater	32/177	10	
7	Open krater	30/176	26	Red paint throughout exterior, and in splashes on interior
8	Krater	67/155	18	Cooking vessel

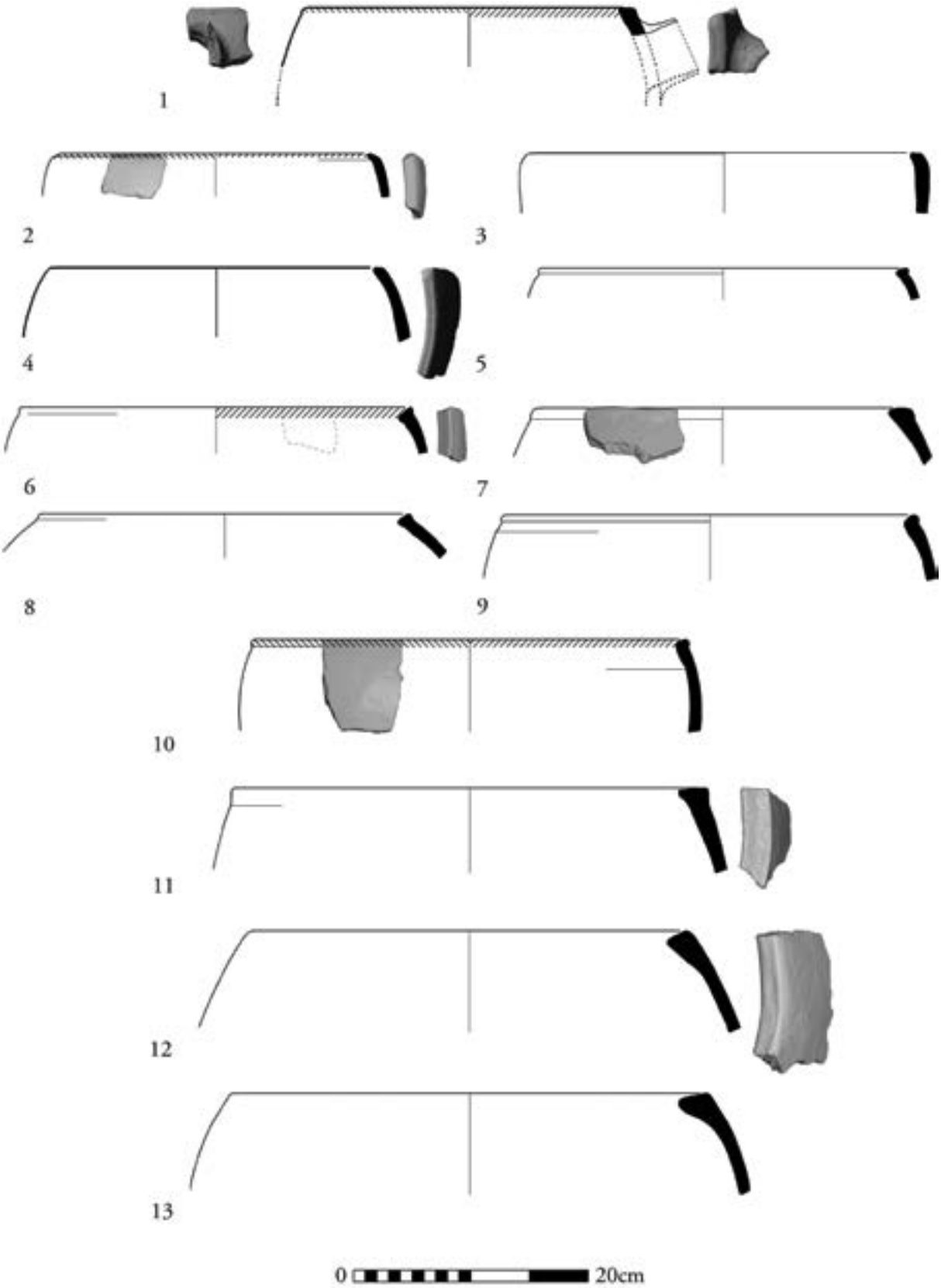

Figure 62. Closed kraters from the unlined shafts.

Figure 62.

No.	Object	Reg. no.	Locus	Comments
1	Spouted krater	84/170	36	Red paint on interior and exterior
2	Closed krater	23+30/74	9	Red paint on interior and exterior
3	Closed krater	29/71	2	
4	Closed krater	23+30/69	9	
5	Closed krater	84/165	36	
6	Closed krater	X/162	10	Red paint on interior
7	Closed krater	32/182	10	
8	Closed krater	32/157	10	
9	Closed krater	29/171	2	
10	Closed krater	42/184	11	Red paint on interior and exterior
11	Closed krater	36/178	10	
12	Closed krater	36/186	10	
13	Closed krater	23+30/172	9	

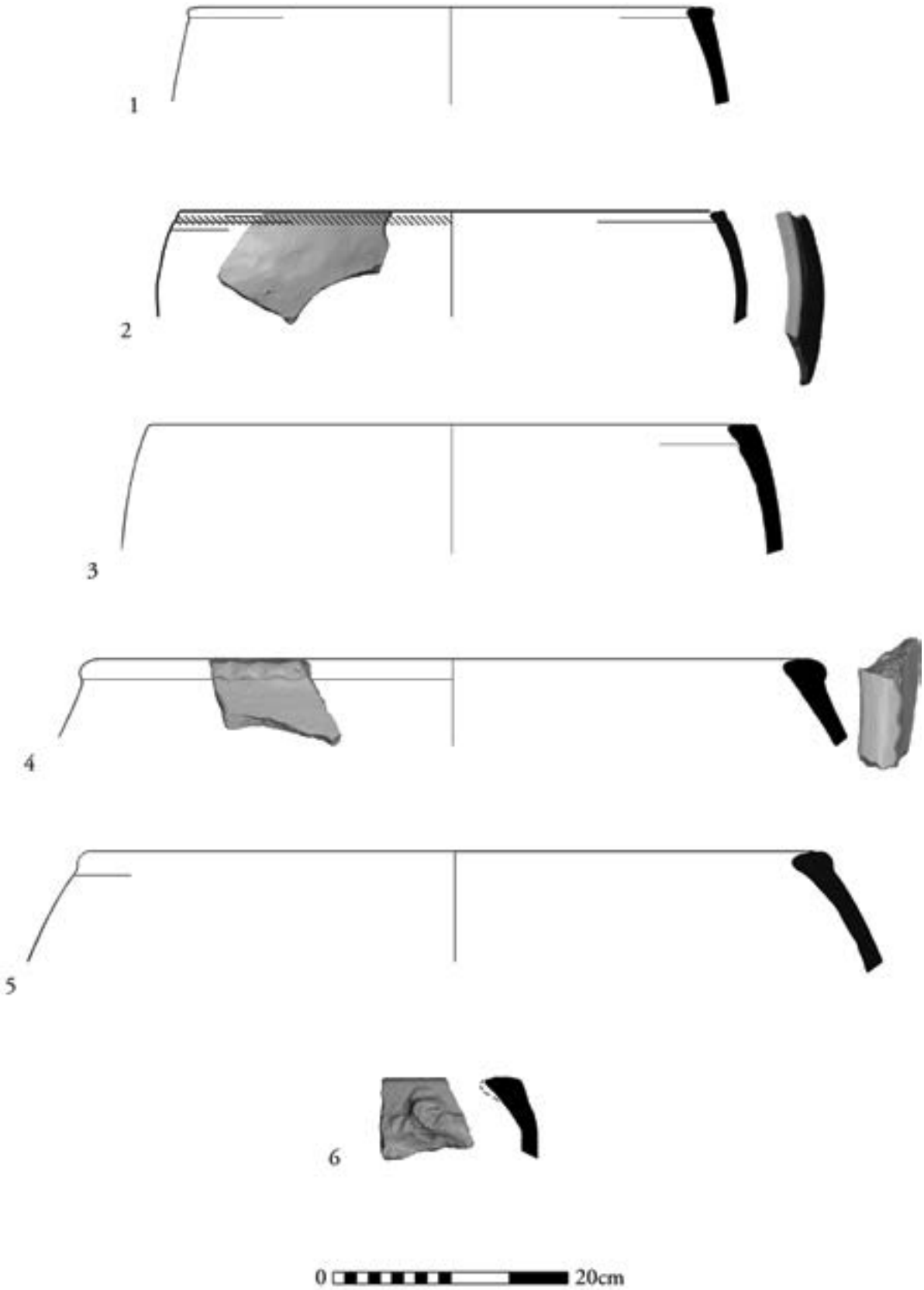

Figure 63. Closed kraters from the unlined shafts.

Figure 63.

No.	Object	Reg. no.	Locus	Comments
1	Closed krater	42/187	11	
2	Closed krater	69+76/189	19	Red paint within rim's upper groove
3	Krater	85/164	41	Cooking vessel
4	Closed krater	51/79	10	
5	Closed krater	69+77/180	19	
6	Closed krater	29/84	2	

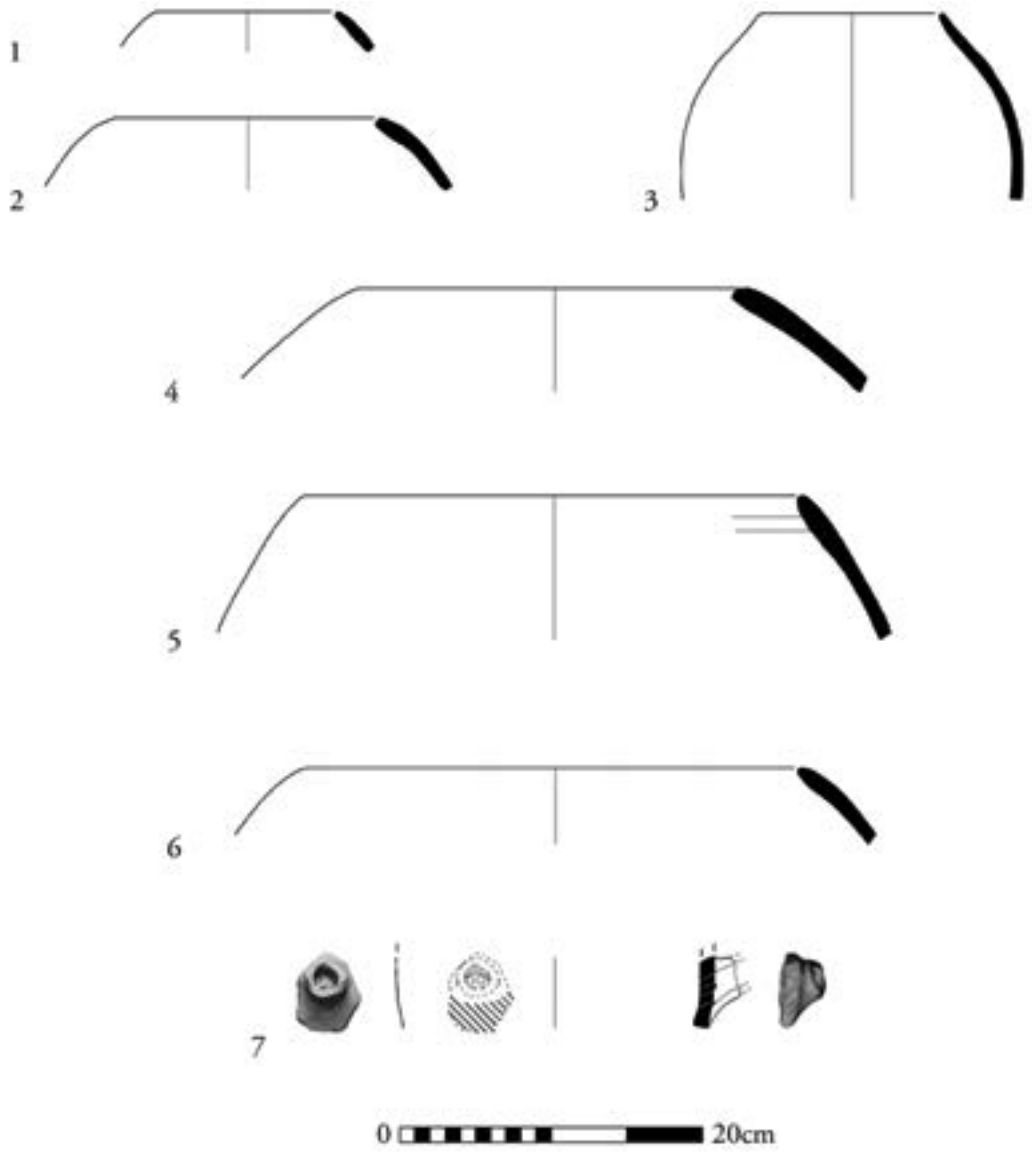

Figure 64. Holemouth vessels from the unlined shafts.

No.	Object	Reg. no.	Locus	Comments
1	Holemouth vessel	51/77	10	
2	Holemouth vessel	32/75	10	
3	Holemouth cooking vessel	29/64	2	
4	Holemouth cooking vessel	XX/76	10	
5	Holemouth vessel	X/70	10	
6	Holemouth cooking vessel	32/80	10	
7	Spout	23+30/101	8	Red paint on exterior

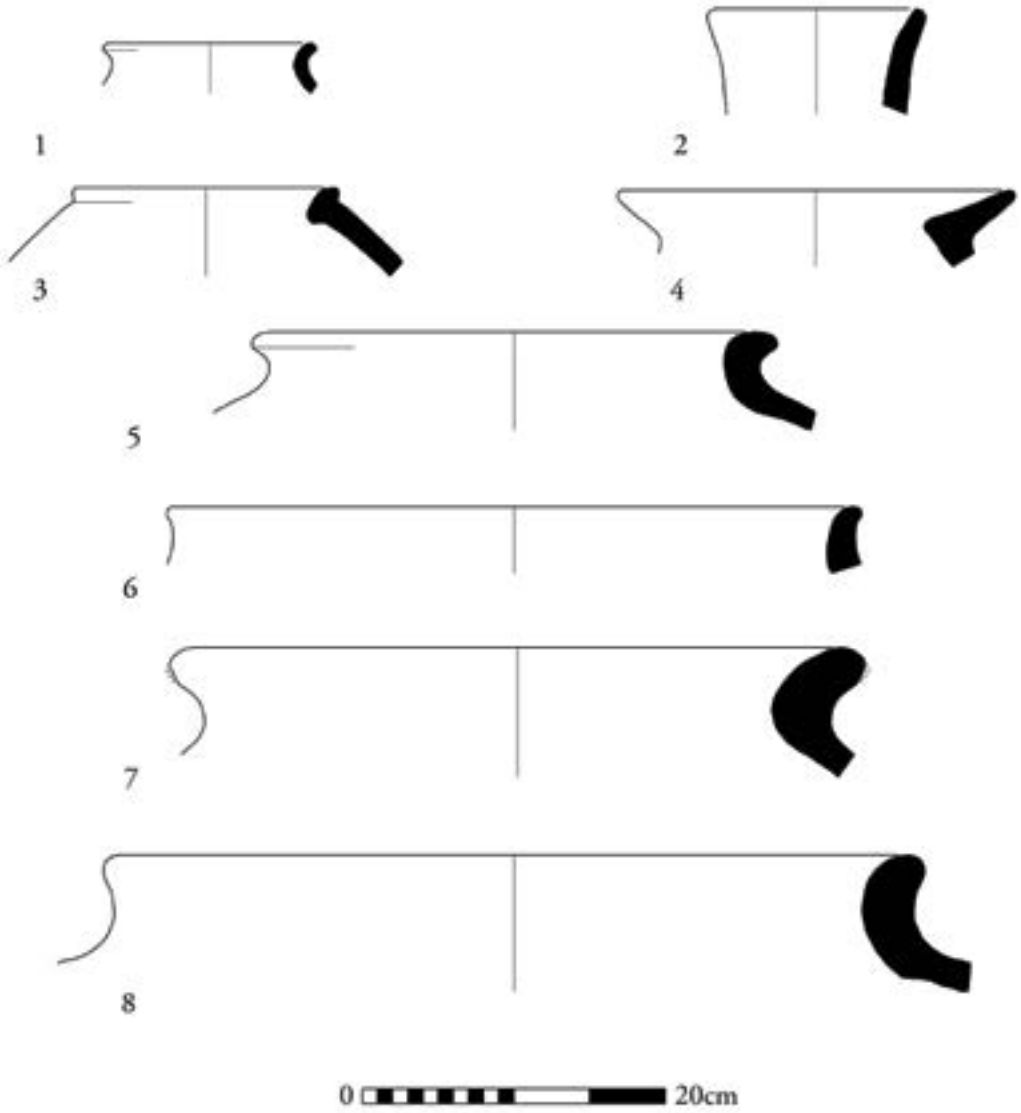

Figure 65. Jars from Shaft 5 (including L4).

No.	Object	Reg. no.	Locus	Comments
1	Jar	11/11	5	
2	Jar	4/16	4	
3	Jar	11/7	5	
4	Jar	4/13	4	
5	Pithos	11/8	5	
6	Pithos/open krater	11/9	5	
7	Pithos	4/14	4	
8	Pithos	4/15	4	

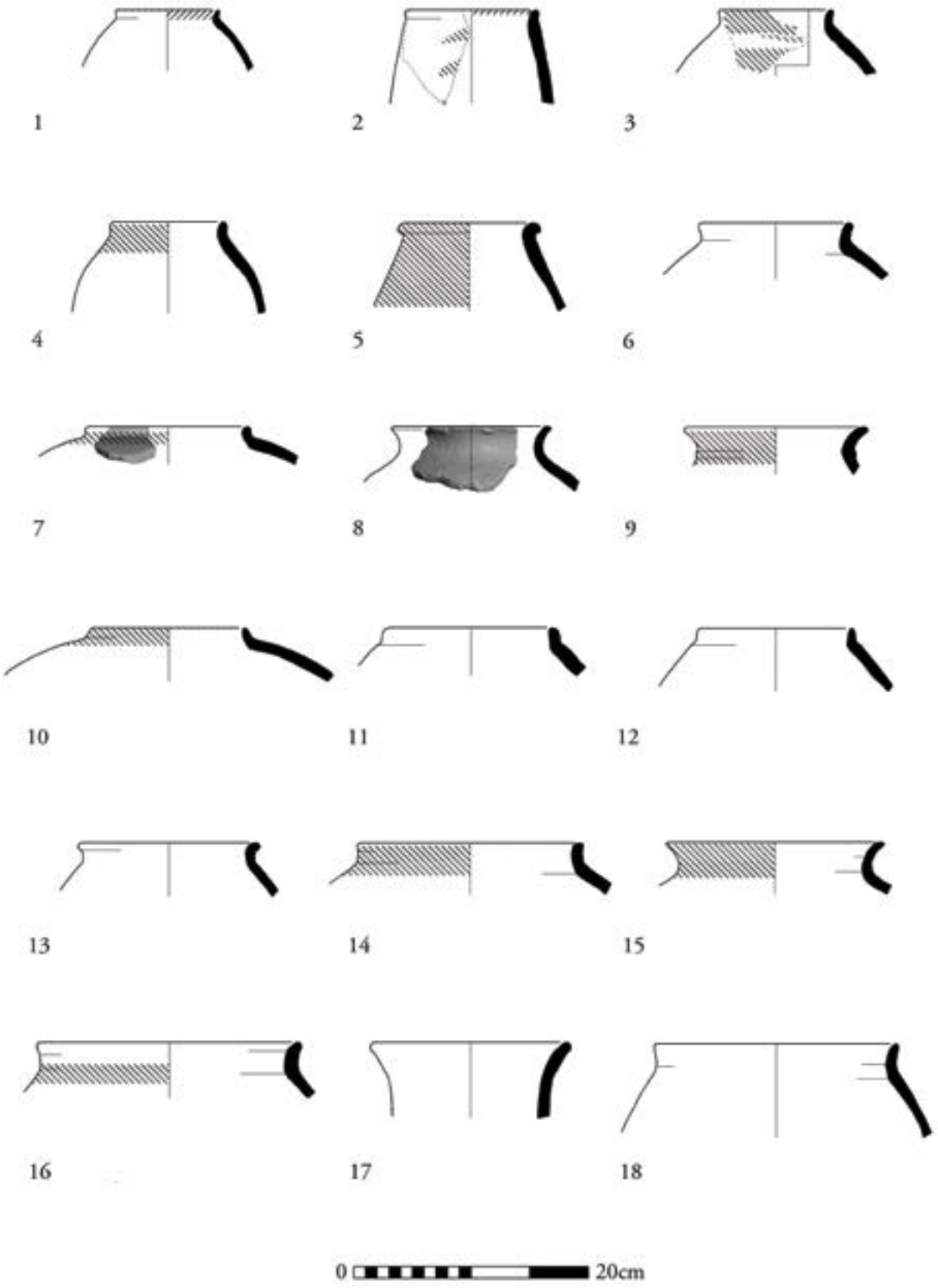

Figure 66. Jars from the unlined shafts.

Figure 66.

No.	Object	Reg. no.	Locus	Comments
1	Jar	71/73	26	Red paint on interior
2	Jar	74/67	23	Red paint on interior and exterior
3	Jar	84/18	36	Red paint on exterior
4	Jar	29/9	2	Small jar; red paint on exterior
5	Jar	71/1	26	Low-necked jar; red paint on exterior
6	Jar	90/12	21	Low-necked jar
7	Jar	29/4	2	Low-necked jar; red paint on exterior
8	Jar	67/23	18	Medium-sized jar
9	Jar	51/5	10	Medium-sized low-necked jar; red paint on exterior
10	Jar	51/66	10	Red paint on exterior
11	Jar	XX/78	10	
12	Jar	32/55	10	Burning on exterior
13	Jar	90/11	21	Low-necked jar
14	Jar	29/6	2	Low-necked jar; paint in poor preservation state, so band limit not clear
15	Jar	36/14	10	Large low-necked jar; red paint on exterior
16	Jar	100/17	57	Large low-necked jar; red paint on exterior
17	Jar	23+30/22	9	Medium-to-high necked jar
18	Jar	XX/13	10	Large low-necked jar

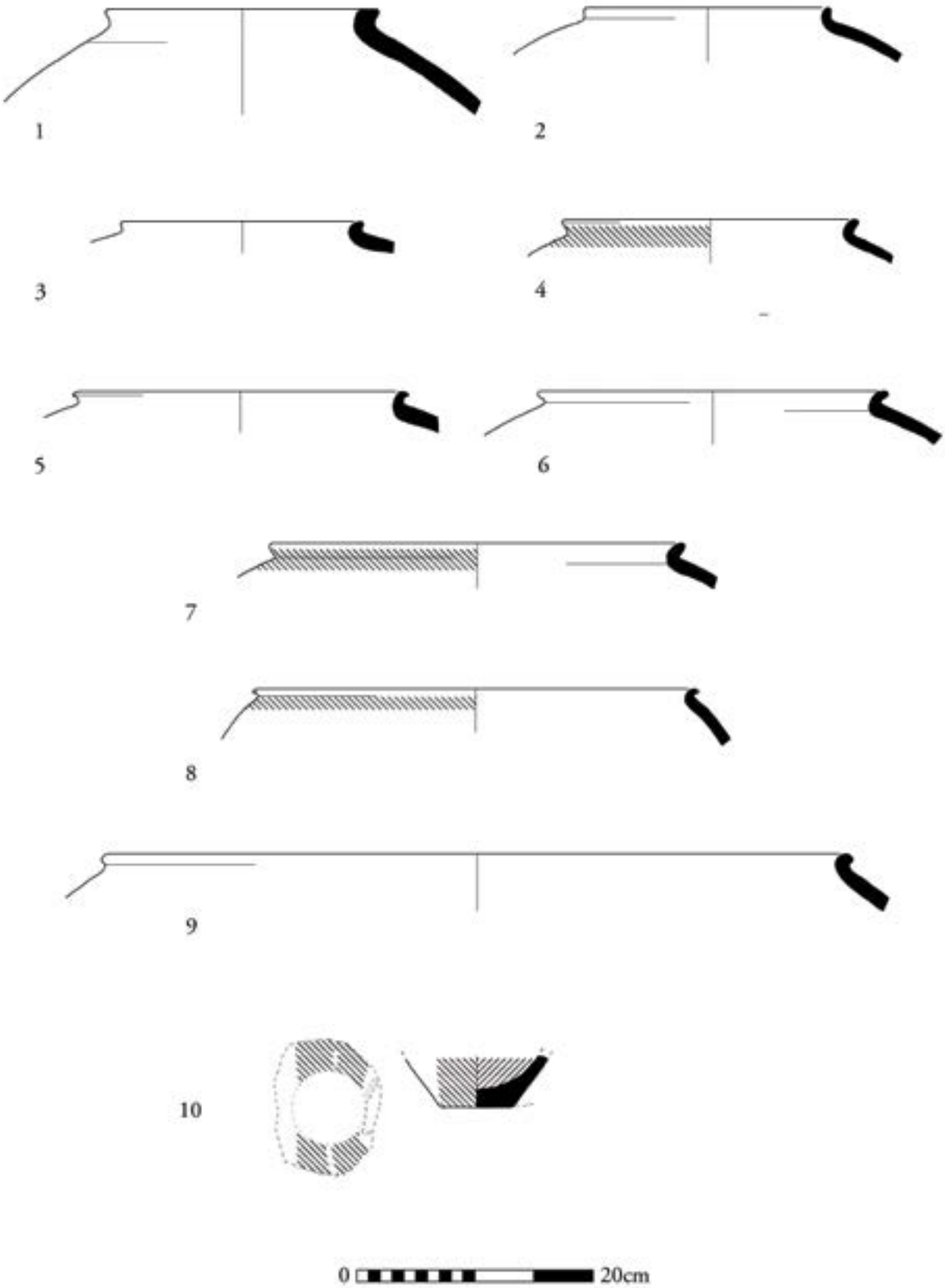

Figure 67. Jars from the unlined shafts.

Figure 67.

No.	Object	Reg. no.	Locus	Comments
1	Jar	29/30	2	Low-necked jar
2	Jar	29/19	2	Low-necked jar
3	Jar	29/2	2	Low-necked jar
4	Jar	29/3	2	Low-necked jar; white wash on exterior under red band
5	Jar	29/15	2	Low-necked jar
6	Jar	99/20	45	Low-necked jar
7	Jar	32/21	10	Large low-necked jar; red paint on exterior
8	Jar	29/16	2	Low-necked jar; red paint on exterior; rim broken
9	Jar	29/24	2	Low-necked jar; white wash throughout exterior
10	Painted jar base with possible handle	71/124	26	Red paint on interior and exterior

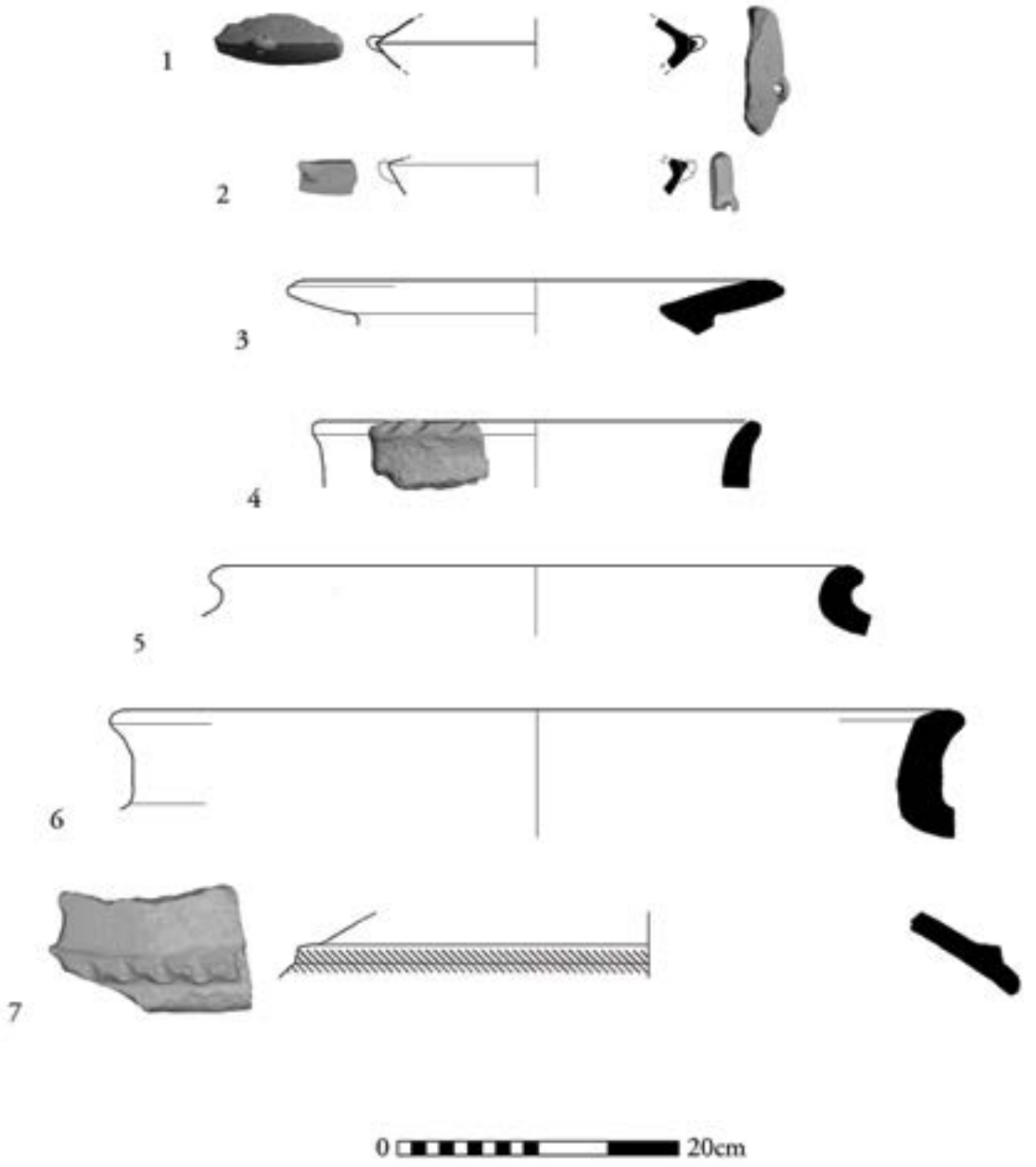

Figure 68. Carinated jars and pithoi from the unlined shafts.

Figure 68.

No.	Object	Reg. no.	Locus	Comments
1	Jar	12/7	2	Carinated jar
2	Jar	12/10	2	Carinated jar
3	Pithos	29/113	2	Possible parallel: Garfinkel 1999: 287, Fig. 179:5
4	Pithos	99/26	45	Open pithos
5	Pithos	36/27	10	Pithos
6	Pithos	67/31	18	Pithos
7	Jar/pithos	29/169	2	White wash throughout exterior; red band on exterior

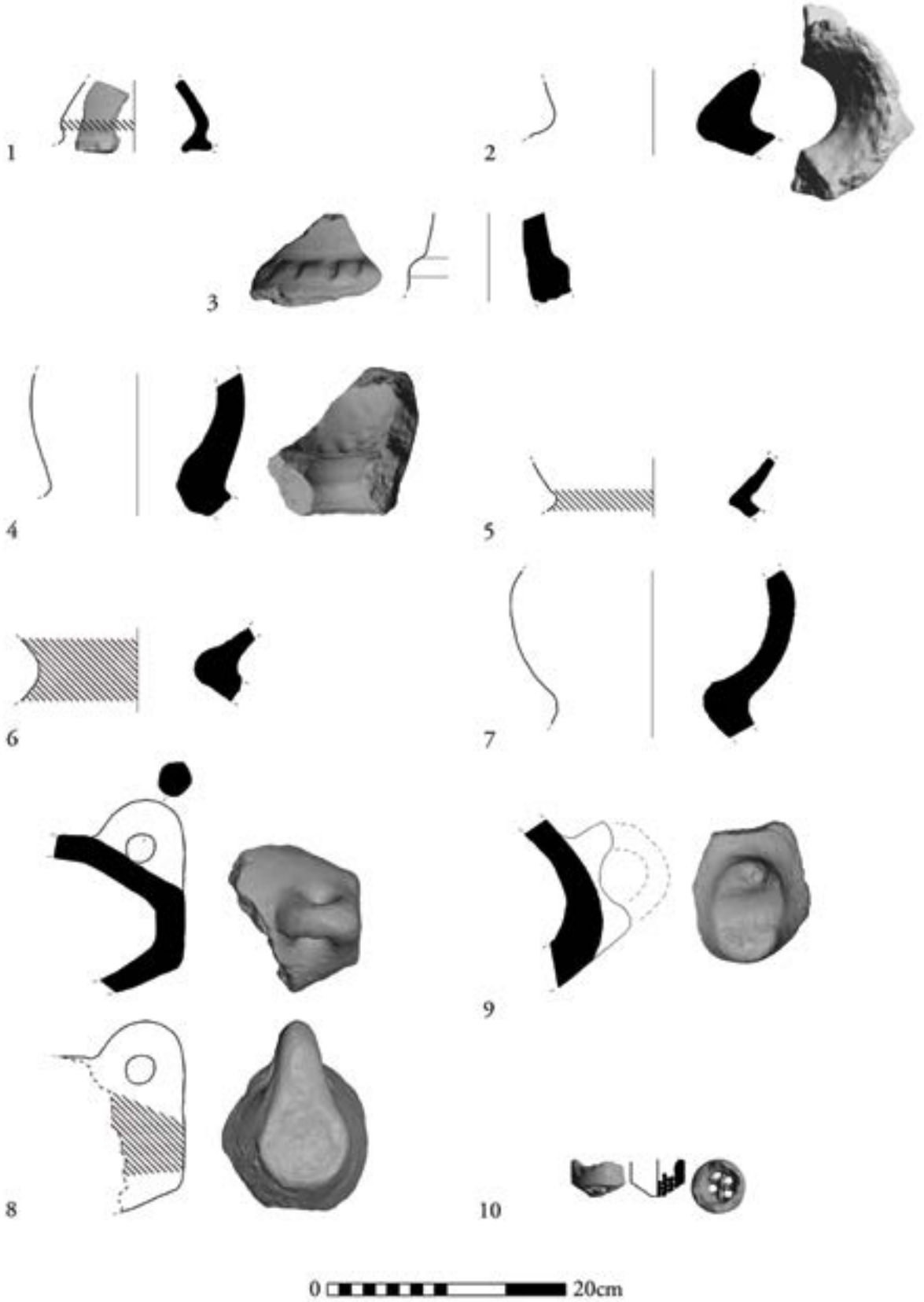

Figure 69. Churns from Shaft 5 (including L4).

Figure 69.

No.	Object	Reg. no.	Locus	Comments
1	Churn neck fragment	/9	4+5	White wash below red on exterior
2	Churn neck fragment	11/13	5	Interior thumb impressions
3	Churn neck fragment?	4/9	4	Possible alternatives include: necked jar (Beth Shean Ware: Garfinkel 1999: Fig. 109:7 – though the neck of our item is too narrow); or footed chalice or goblet (e.g. Garfinkel 1999: Fig. 176: 4-6 [Golan Ware]; 224, Photo 118), But in these latter there is a division between the stand and the upper vessel
4	Churn neck fragment	11/12	5	Interior thumb impressions
5	Churn neck fragment	11/10	5	Red paint on exterior
6	Churn neck fragment	4/19	4	Interior thumb impressions; red paint on exterior
7	Churn neck fragment	4/18	4	
8	Churn handle	/7	4+5	Red paint on exterior
9	Churn handle	/6	4+5	
10	Churn strainer	/8	4+5	

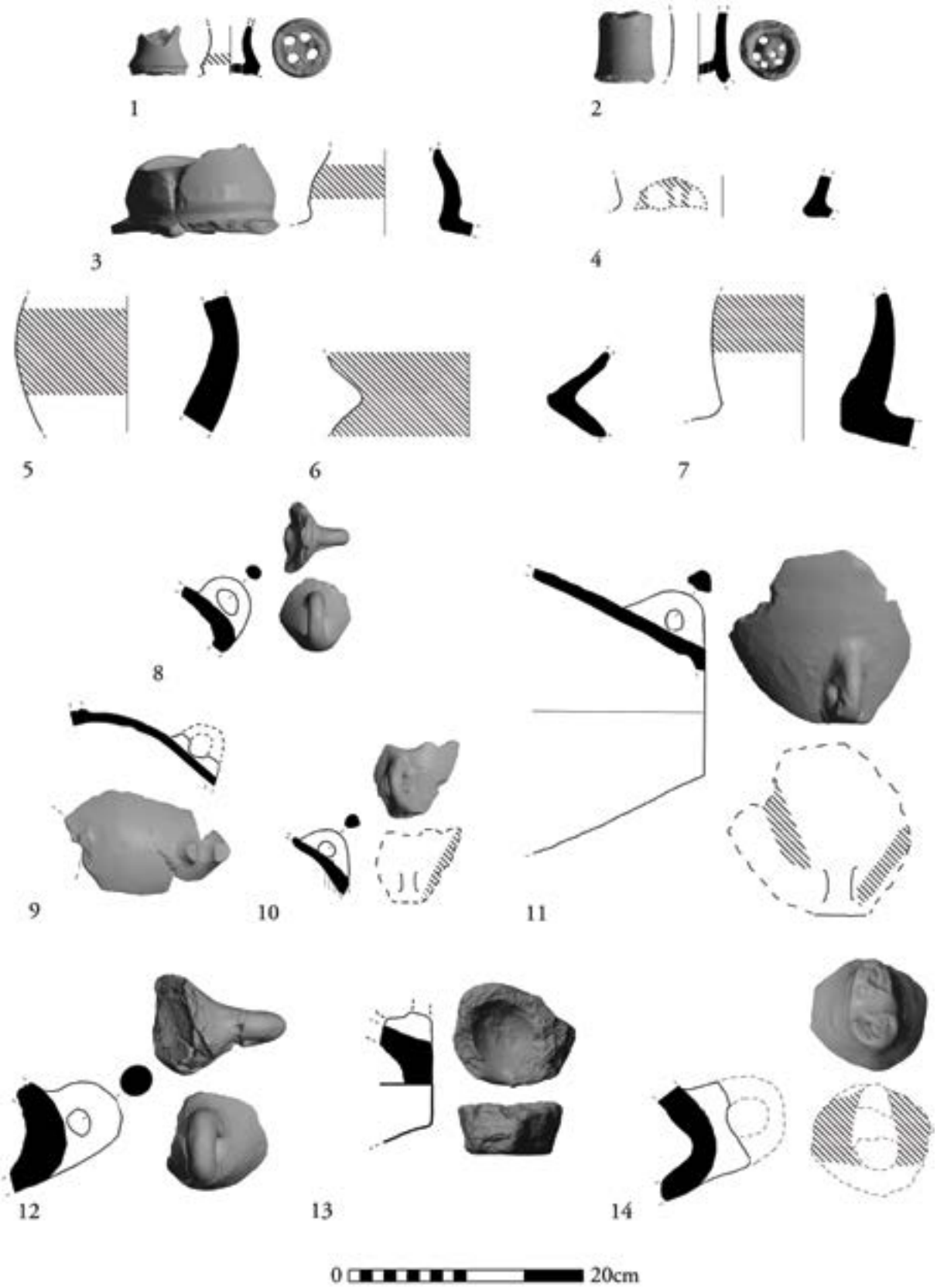

Figure 70. Churns from the unlined shafts.

Figure 70.

No.	Object	Reg. no.	Locus	Comments
1	Churn	23+30/174	9	Churn spout and strainer; white wash throughout exterior, as well as red band
2	Churn	77/161	19	Churn spout and strainer
3	Churn	12/163	2	Churn neck; white pain above and below red on exterior
4	Churn	42/91	11	Churn neck; red paint on exterior
5	Churn	84/192	36	Churn neck; red paint on exterior
6	Churn	71/29	26	Churn neck; red paint on exterior
7	Churn	32/185	10	Churn neck; red paint on exterior
8	Churn	XX/156	10	Churn handle
9	Churn	12/131	2	Churn handle
10	Churn	36/160	10	Churn handle; red paint on exterior
11	Churn	12/193	2	Churn handle; red paint on exterior
12	Churn	29/168	2	Churn handle
13	Churn	23+30/154	9	Churn handle
14	Churn	XX/199	10	Churn handle; red paint on exterior

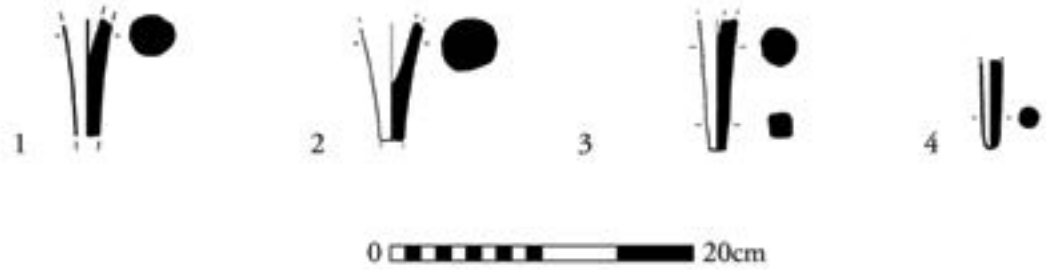

Figure 71. Cornets from the unlined shafts.

No.	Object	Reg. no.	Locus	Comments
1	Cornet	/99	31	
2	Cornet	99/100	45	
3	Cornet	90/97	21	
4	Cornet	100/98	108	Upper end worn from re-use

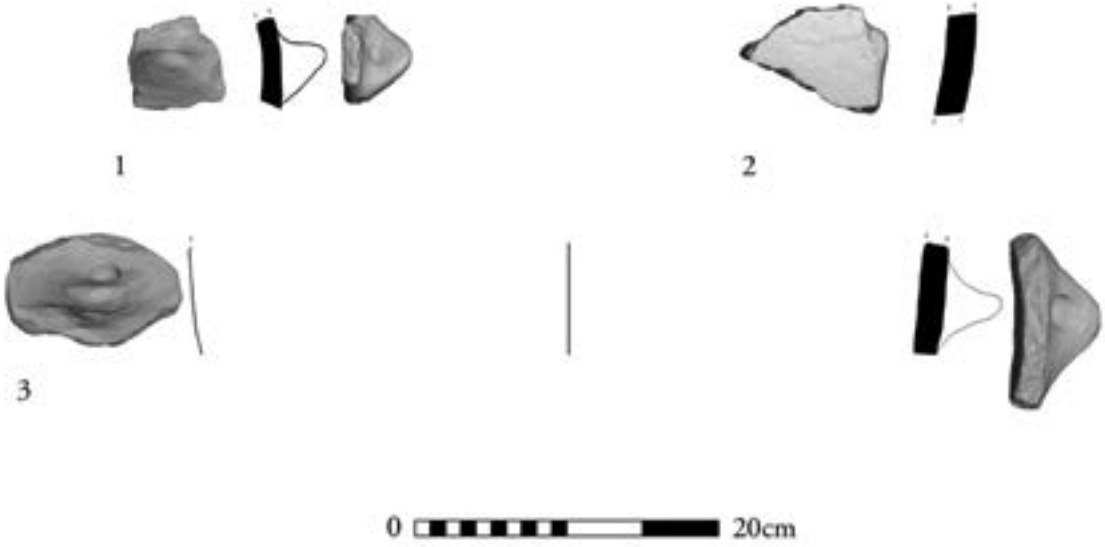

Figure 72. Varia from Shaft 5 (including L4).

No.	Object	Reg. no.	Locus	Comments
1	Knob handle	11/14	5	Thumb impression
2	Decorated sherd	/10	4+5	Incised crescents in linear patterns
3	Knob handle	11/15	5	Thumb impression

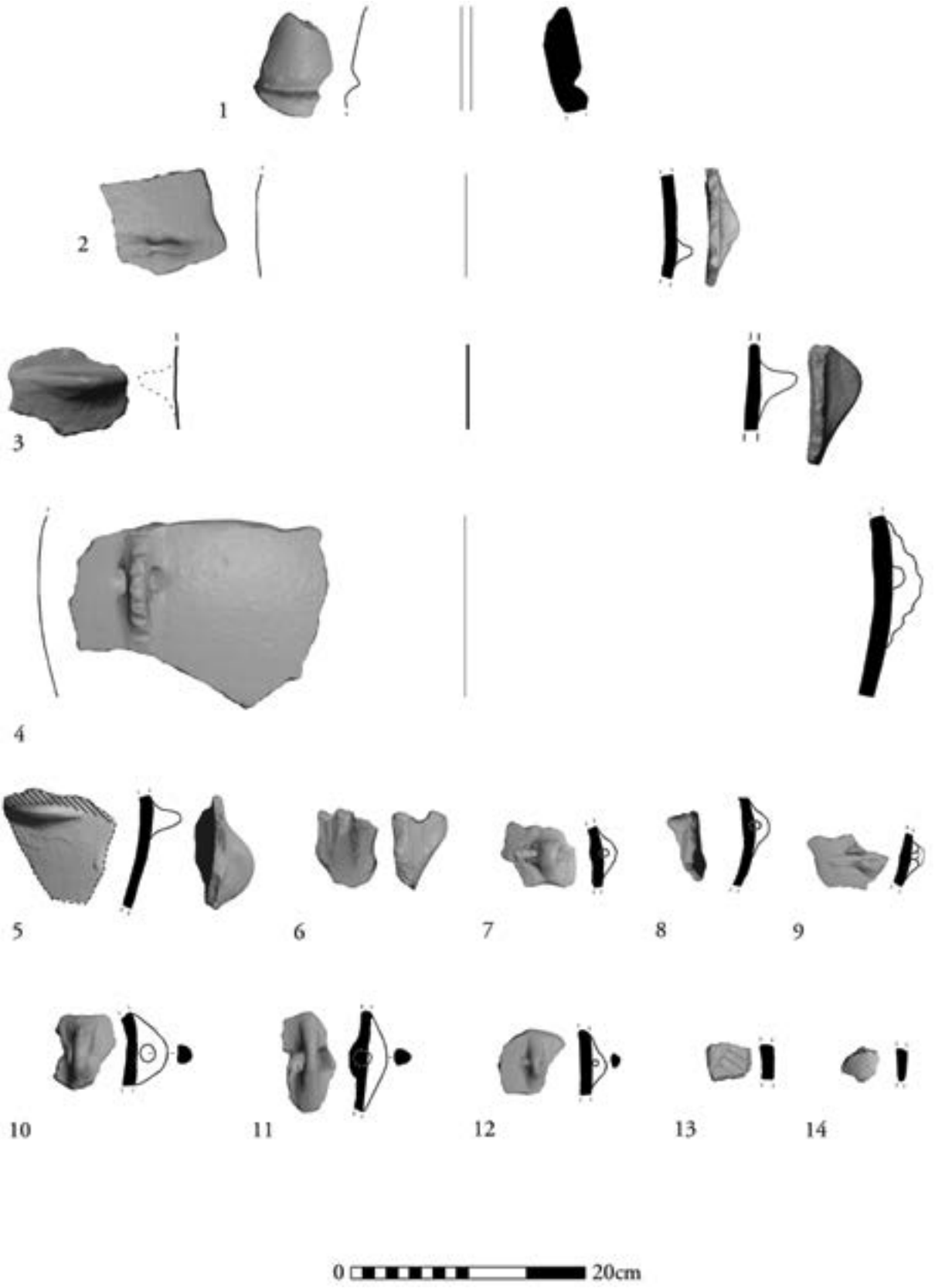

Figure 73. Varia from the unlined shafts.

Figure 73.

No.	Object	Reg. no.	Locus	Comments
1	Churn neck?	71/94	26	Possibly similar to Garfinkel 1999: 247, Photo 138
2	Knob handle	67/148	18	Thumb impression
3	Ledge handle	69+77/145	19	
4	Closed krater	29/82	2	
5	Ledge handle	90/127	21	Red paint on exterior
6	Handle	32/153	10	Punctured decoration
7	Lug handle	42/147	11	
8	Lug handle	42/151	11	
9	Lug handle	42/152	11	
10	Lug handle	29/140	2	
11	Lug handle	36/141	10	
12	Lug handle	29/144	2	
13	Decorated sherd	32/1	10	
14	Decorated sherd	32/2	10	

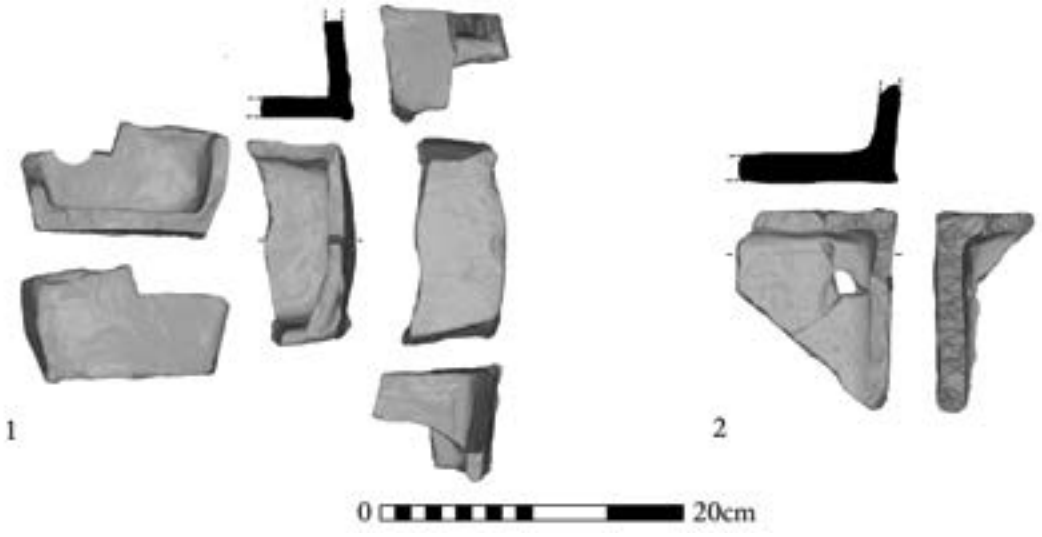

Figure 74. Ossuaries.

No.	Object	Reg. no.	Locus	Comments
1	Ossuary fragment	42/102	11	Red paint and white wash patches
2	Ossuary fragment	85/96	41	

Figure 75. Bowl and fenestrated pedestal bowl sherds from Shaft 2.

Figure 76. Large bowl and closed vessel sherds from Shaft 2.

Figure 77. Assortment of ceramic sherds from Shaft 5 (including L4).

Figure 78. Assortment of ceramic sherds from Shaft 5 (including L4) (cont.).

Figure 79. Assortment of ceramic sherds from Shaft 10.

Figure 80. Bowls from Shaft 10.

Figure 81. Holemouth vessel sherds from Shaft 10.

Figure 82. Assortment of ceramic vessel sherds from Shaft 11.

Figure 83. Ceramic sherds from Shaft 19.

Figure 84. Ceramic sherds from Shaft 21.

Figure 85. Ceramic sherds from Shaft 45.

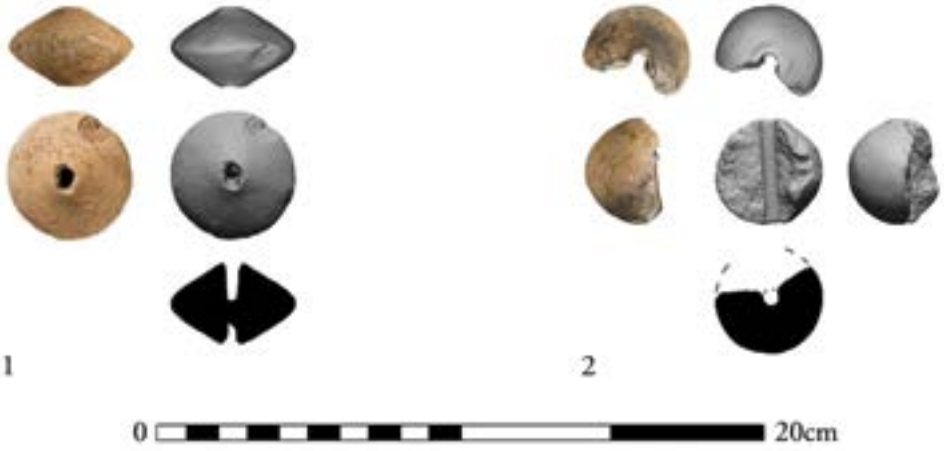

Figure 86. Spindle whorl (Shaft 10, reg. no. 1/71) and loom weight (Shaft 2, reg. no. 29/17).

THE GROUND STONE ASSEMBLAGE

David Ilan, Nathan Ben-Ari & Dov Levitte

A total of 48 ground stone artifacts were recorded at the Yehud excavations reported here (Figs. 87-96). Of these the number of stone utensils typically associated with domestic occupations – grinding stones, handstones, mortars, etc. – is small. The majority of the recovered artifacts were stone vessels.

In the past two decades or so a number of studies on protohistoric ground stone assemblages from the southern Levant have been published. Rowan has published comprehensive accounts of the stone utensils from Ashqelon-Afridar (2004), Gilat (Rowan *et al.* 2006), and Shoham (2005). Other studies include: Hovers' (1996) useful treatment of stone objects from the City of David; Rosenberg's (2011) thorough research of the stone industries of early ceramic bearing cultures, and Wright's (1992) classification of ground stone tools from the prehistoric Levant. The above-mentioned analyses use similar strategies

Figure 87. Ground stone bowl rim fragments.

in morphological description and measurement and the criteria used here follow what is now normative procedure.

The choice of stone type is largely determined by an object's intended utilization (see the object descriptions for Figs. 95-96). Of the ground stone assemblage, the stone vessels are predominantly made of basalt, with one limestone exception (Fig. 95:6). Most of the grinding stones, the mortar and two of the pounders were fashioned of limestone. One of the grinding stones (Fig. 96:3) was made of vesicular basalt, and one of the pounders was made of flint (not illustrated; Shaft 36, no. 84/3). Of the small finds, the palettes, the mace head and the spindle whorl were made of limestone.[2]

Vessels (N=39, 68%)

The rims and bases of bowls and fenestrated pedestal bowls are first discussed together since the upper, bowl portion could belong to either form. Together they comprise the majority of the ground stone assemblage: 69% of the total. The assemblage is comprised of fragments, except for one complete fenestrated pedestal bowl (Fig. 90; Fig. 95:15). All except Fig. 95:6 were made of basalt. The geological examination showed that most of the basalt vessels were made from almost identical raw material, which may have been quarried from the same exposure.

Rims (Fig. 95:1-8): Of the 13 rims, seven were retrieved from the unlined shafts and six from stone-lined Shaft 5. These rims were part of either V-shaped bowls or fenestrated pedestal bowls. The rims comprise 33% of the stone vessel assemblage and 23% of the total ground stone assemblage. The rims were made of basalt with one exception which was made of a limestone (Fig. 95:6).

All the rim fragments were straight; no flaring rims were encountered. The interior side of all the basalt fragments was smoothened. Two of the rim fragments (Fig. 95:3, 5) were quite thin and delicately crafted. Another rim fragment (Figs. 88 and 95:8)

Figure 88. Ground stone bowl rim fragment with incised decoration and grooves and perforations for repair.

was decorated with oblique incised lines on the upper interior side. This rim fragment had three perforations and straight grooves between them. These were probably repairing holes, the grooves holding the twine which bound the broken pieces. Several rim fragments (Figs. 87:c-g; 95:1,3,7,9) were decorated with incised triangles or chevrons on their interiors. Similar incised decorations were found on basalt vessels at Givat Ha-Oranim (Scheftelowitz and Oren 2004: Fig 4.3), Yehud (van den Brink *et al.* 2001: Fig. 4), Shoham North (Rowan 2005: Figs. 9.7: 5, 9.8, 9.9, 9.18: 2), and Grar (Gilead 1995: Fig. 7.1: 4, 6).

The thicker bowls (Fig. 95: 2,4,6,15) could have been mortars.

Bases: A total of nine basalt bowl base fragments were recorded, five retrieved from the unlined shafts and four from the stone-lined shaft. They comprise 23% of the total stone vessel assemblage and 16% of the total ground stone assemblage. All of them had at least one smoothed flat side and some had both sides flattened and smoothed. One base fragment (Fig. 95:10) was very thick and its bottom smoothed while

2 The ground stone objects were examined by author Dov Levitte (a geologist) who identified their mineral composition by visual examination, together with acid tests.

Figure 89. Fragments of ground stone bowls on fenestrated stands.

its upper, inner side wasn't. Another small base fragment (Fig. 95:11) was thin and delicately crafted with both sides smoothened and decorated with gentle ridges and grooves on its exterior.

Fenestrated vessels and fenestrated pedestal bowls

One complete vessel (Figs. 90 and 95:15) and nine additional vessel fragments were recorded (Figs. 89 and 95:12-14). They make up 25.5% of the stone vessel assemblage and 17.5% of the total ground stone assemblage. The complete fenestrated pedestal bowl is made of fine-grained basalt with small vesicles filled with small calcite crystals. The rim and walls are quite thick; the fenestrated part includes three legs, three fenestrations and a ring base. The lower part of the bowl, just above the fenestrated stand, is decorated crudely with ridges and grooves. Similar vessels were found at Giv'at Ha-Oranim (Scheftelowitz and Oren 2004: Fig 4.4:2) and Gilat (Rowan *et al.* 2006: Fig. 12.33:1).

Other fragments composed of three leg/base rings and four legs. One of the leg fragments (found in the stone-lined shaft) is incised with chevrons (Figs. 91 and 95:14). These fragments were probably part of fenestrated vessels, similar to the ones that were recovered previously at Yehud and Ono (van den Brink *et al.* 2001: Fig. 4; Gorzalczany 2000: Fig. 75, respectively; and see van den Brink *et al.* 1999).

Mortar (N=1, 2%, not illustrated)

One rim fragment is of a coarse, shallow mortar retrieved from stone-lined Shaft 5. It was made of fine grained limestone. As noted above, some of the stone bowls could have functioned as mortars.

Figure 90. Complete ground stone bowl on a fenestrated stand.

Figure 91. Ground stone fenestrated vessel leg fragment with scored decoration.

Grinding stones (N=5, 8%, Fig. 96: 1-3)

Five grinding stone fragments were recorded, three from the unlined shafts and two from Shaft 5. Four of them (including the three in Fig. 96:1-3) were upper grinding stones. Of these, three were made of siliceous limestone (e.g. Fig. 96:1), and one was made of very fine-grained siliceous limestone (Fig. 96:2). The fifth grinding stone was made of fine-grained vesicular basalt (Fig. 96:3).

Pounders/hammerstones (N=3, 5%, Fig. 96:4-5)

In their original form these would be spheroid in shape, but the two examples illustrated here are fragmentary, i.e. they were broken as a result of use. The pounder illustrated in Fig. 96:5 was retrieved from the stone-lined shaft and made of fine-grained dark gray limestone. Two were retrieved from the unlined shafts. One was made of limestone (Fig. 96:4) and the other, a complete pounder, was of flint (not illustrated). Though quite battered it had one flat, smooth side, which implies that it was used for combined work of pounding and grinding (for a similar observation see Rowan *et al.* 2006: 214).

Palettes (N=2, 4%, Figs. 92 and 96: 6-7)

Two palette fragments were recorded. They are thin and flat in profile. The larger fragment (Fig. 96:6) is of white limestone and too small to know its original shape (25-31 x 50 x 11-15mm). Fig. 96:7 is of a red color and roughly trapezoidal in shape (measuring 32-52 x 80 x 7mm). It, too, was made of fine-grained tabular limestone.

Figure 92. Palette (=Fig. 96:6).

Figure 93. Macehead (=Fig. 96:8).

Macehead (N=1, 2%, Figs. 93 and 96:8)

Only one piriform-shaped macehead was found – a broken half. Its outer surface was smoothed. The perforation was drilled from both sides. It was made of fine-grained, dark limestone.

Digging stick weight (?, N=1, Figs. 96:9)

Coming from stone-lined Shaft 5, this is a fragment of a basalt ring with two flat and smooth sides. It was probably a product of secondary use, perhaps made from the base of a basalt bowl or a grinding stone. For a reconstruction of this object's use, see Amiran and Ilan 1992: Fig. 25.

Spindle Whorl (Figs. 94 and 96:10)

This is a rounded flat stone with a symmetrical, well centered perforation, drilled from both sides. It was made of limestone. This implement probably functioned as a spindle whorl. Similar perforated stones were found at Gilat (Rowan *et al.* 2006: 592-594, Fig. 12.30).

Figure 94. Limestone spindle whorl.

SUMMARY

Ground stone artifacts such as the grinding stones, hammerstones, a mortar, loom weights and spindle whorls would be commonplace in a domestic assemblage of the Chalcolithic period. But such quotidian objects are quite infrequent in the shafts. The dominant ground stone artifacts are, by far, the bowls and stands. This composition is more characteristic of Chalcolithic burial and ritual assemblages (Rowan 2005: 113).

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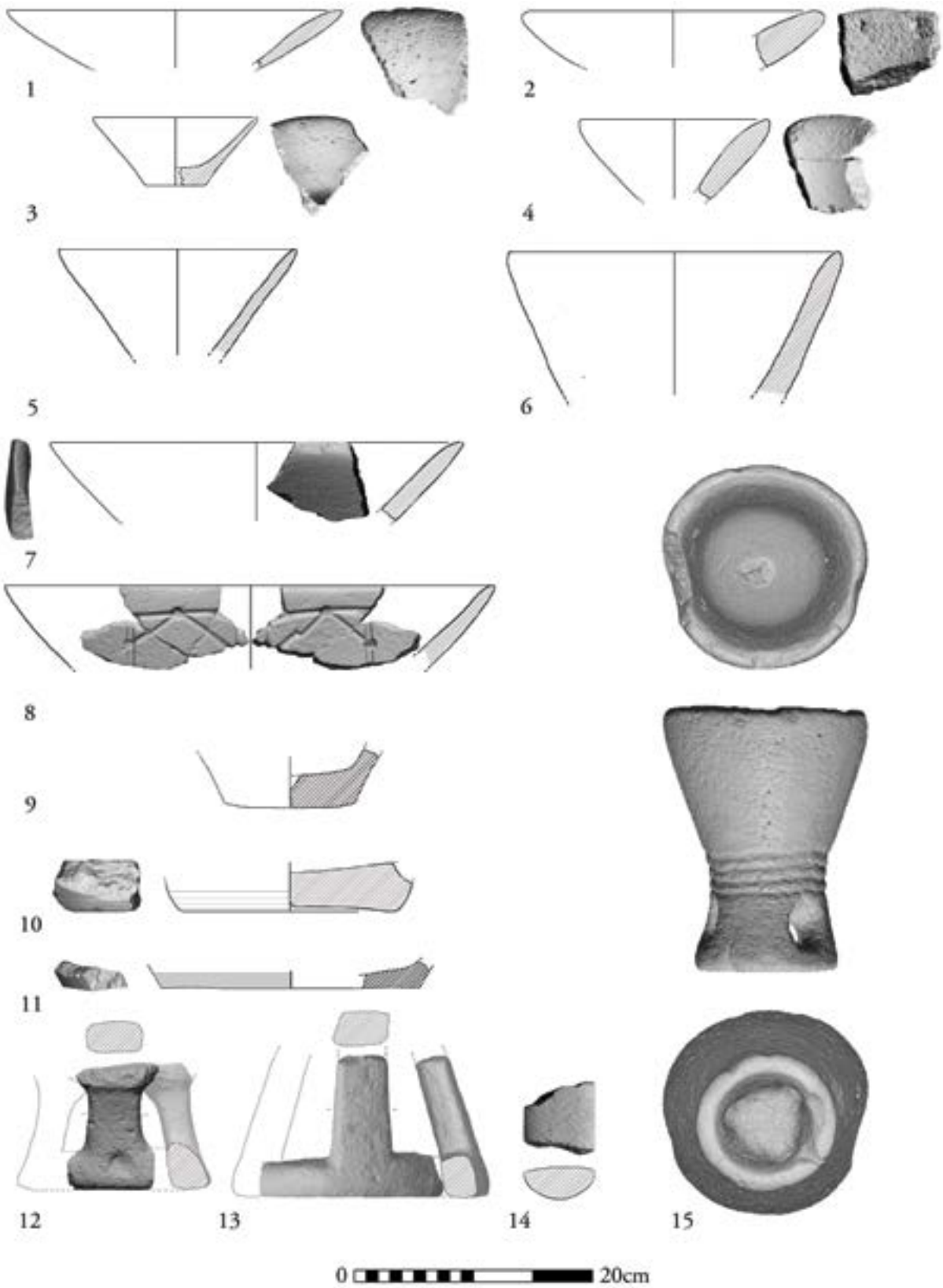

Figure 95. Ground stone vessels.

Figure 95.

No.	Object	Reg. no.	Locus	Comments
1	Bowl	--	4	Basalt; interior rim decorated with incised hatched chevrons (= Fig. 87:g)
2	Bowl	--	4	Basalt
3	Bowl	--	4	Basalt
4	Bowl	--	4	Basalt; interior rim decorated with incised hatched chevrons (= Fig. 87:c)
5	Bowl	67/1	18	Basalt
6	Bowl	67/2	18	Limestone
7	Bowl	84/1	36	Basalt; interior rim decorated with incised hatched chevrons (= Fig. 87:f)
8	Bowl	32/3	10	Basalt
9	Bowl	31	31	Basalt (= Fig. 88)
10	Bowl	--	4	Basalt
11	Bowl	74/1	23	Basalt; grooved decoration around exterior of base
12	Fenestrated pedestal bowl	23+30/2	9	Basalt
13	Fenestrated pedestal bowl	32/1	10	Basalt
14	Fenestrated pedestal bowl	4	4	Basalt; incised decoration
15	Fenestrated pedestal bowl	34	1	Basalt

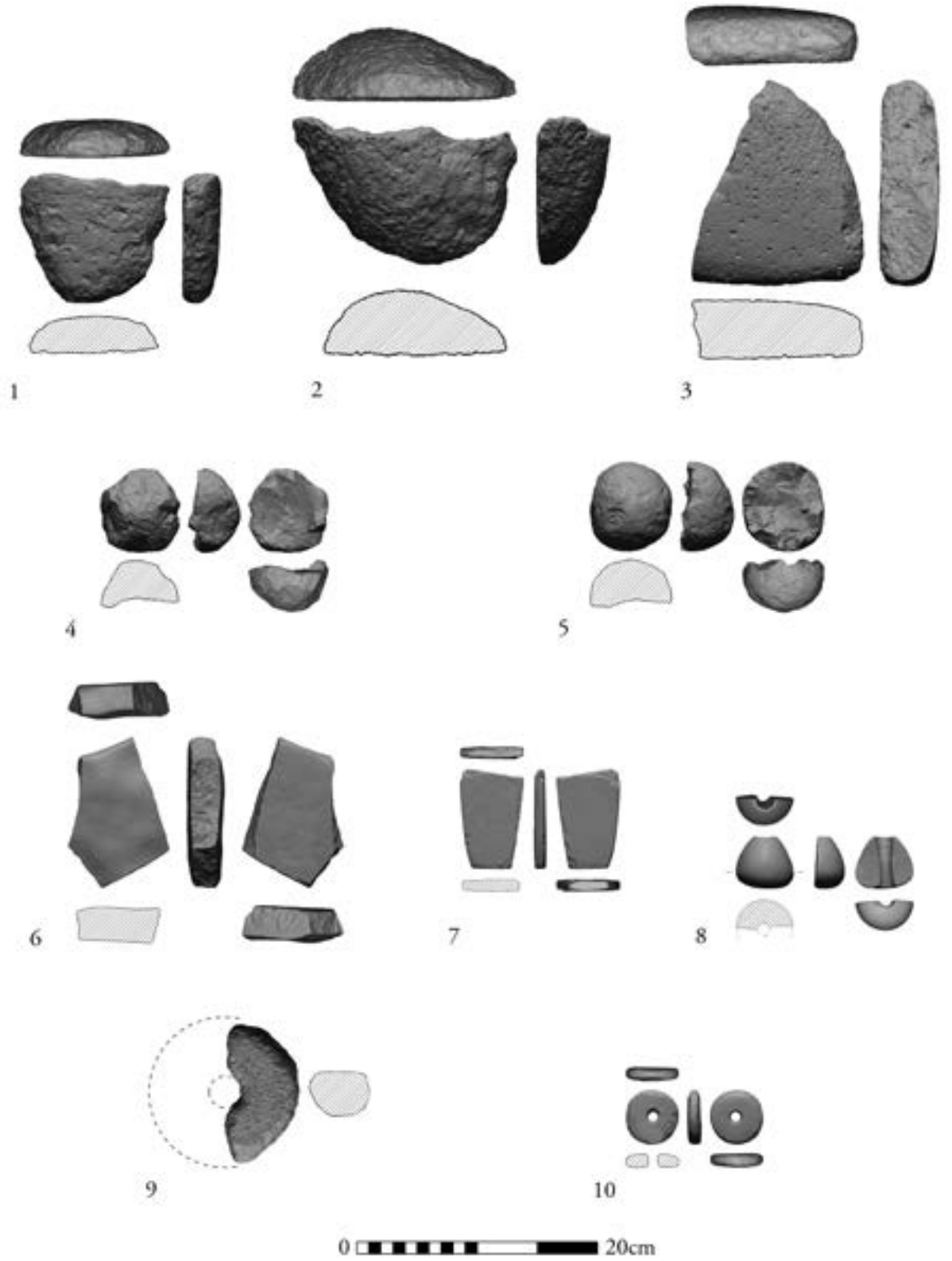

Figure 96. Ground stone objects.

Figure 96.

No.	Object	Reg. no.	Locus	Comments
1	Upper grinding stone	69	19	Limestone
2	Upper grinding stone	99/1	45	Limestone
3	Upper grinding stone	--	4	Basalt
4	Pounder/hammerstone	99/3	45	Limestone
5	Pounder/hammerstone	--	4	Limestone
6	Palette	51	10	Limestone
7	Palette	32	10	Limestone
8	Macehead	84	36	Limestone
9	Ring	--	4	Limestone; digging stick weight?
10	Spindle whorl	2	10	Limestone

CHIPPED STONE ARTIFACTS FROM THE CHALCOLITHIC SHAFTS

Conn Herriott

The chipped stone finds from Yehud may help shed light on the function of this curious site. Tables 2-9 below (p. 102-104) present the technical details of the chipped stone artefacts, and Figure 96 their relative quantities. The finds are discussed by type, following which some consideration will be given to the significance of the assemblage as a whole, and to how these finds might help us understand the site. There is one oft-mentioned and important caveat about typological identification in lithics: it is not definitive. Many objects in this assemblage were clearly tools, and a few even served an obvious purpose, according to a specific technical tradition. That said, the majority of scrapers may in fact have functioned as blades, while many of the blades may simply have been flakes, and many of the flakes could have been *ad hoc* tools, and so on. That is why lithics analysts often group non-retouched tools with débitage (e.g. Khalaily 2003, Marder 2005) – an approach not adopted here, where form is favoured over retouch. But it is worth remembering that in lithic assemblages of the Chalcolithic, typologies are loosely defined by necessity. We are forced to identify objects by means of a holistic gauging of features and inter-assemblage comparison. The knappers at Yehud were clearly content to follow very rough design templates (if any); unsurprisingly, they were often functionalists.

Débitage (Fig. 98)

This first artefact category follows neatly from the above-mentioned caveat. Two thirds of the entire Yehud chipped stone assemblage was composed of

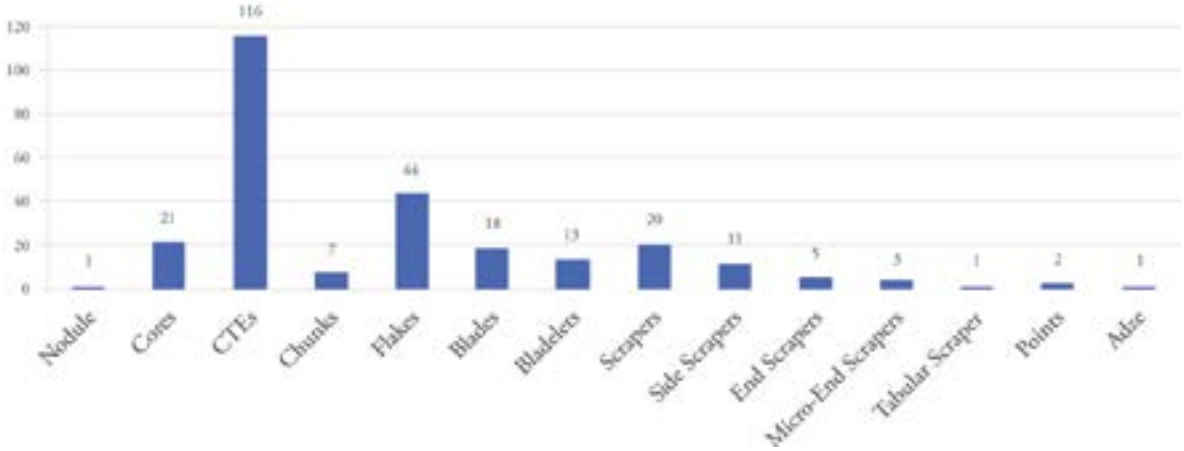

Figure 97. Quantitative summary of chipped stone artifacts.

Figure 98.

No.	Reg. no.	Locus	Description
1	6	10	Bladelet core on flake; single-platform; lustrous dark gray
2	7	10	Bladelet core; single-platform; lustrous dark gray
3	23+30/1	9	Multi-platform; mid-gray
4	36/3	10	Multi-platform; marbled mid-gray, cortex
5	32/1	10	Single-platform; marbled mid-gray

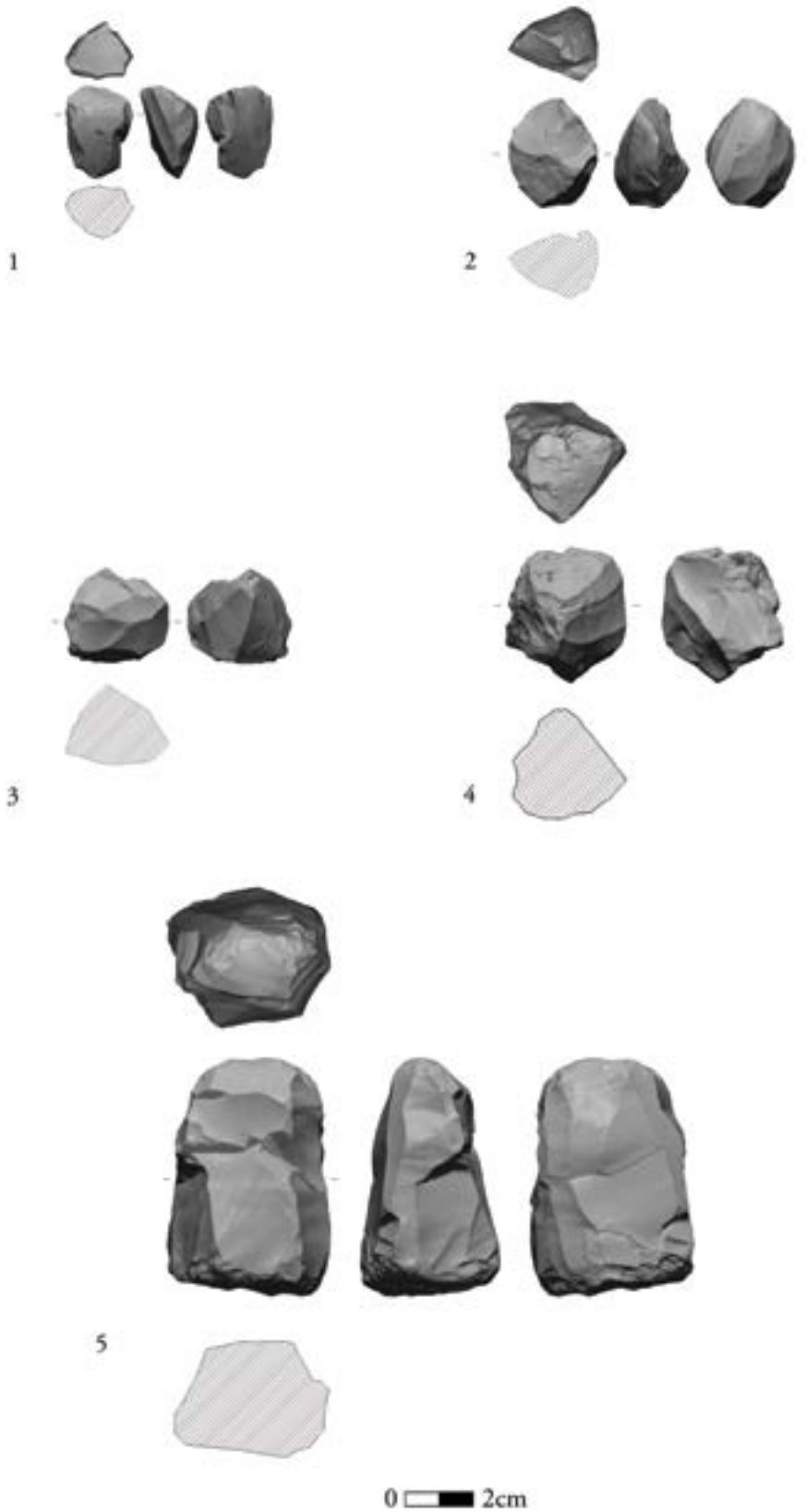

Figure 98. Cores.

core trimming elements and flakes. Only use-wear analysis by microscope could discern how many of these waste pieces were used as *ad hoc* tools (and how many of the tools were not waste pieces!). The vast majority of flakes and core-trimming elements came from Shaft 10.

Twenty-one cores were found, of bladelet (N=12), single-platform (N=6) and multi-platform types (N=3). The cores were evenly distributed over the site, except for a significant concentration of bladelet cores from Shaft 10.

Blades (Fig. 99:1-3)

Eighteen blades were found at Yehud. All are virtually without any retouch (Fig. 99:1, 2), apart from one larger 'ridge blade' (Shaft 10, B32), a prismatic blade (Shaft 9, B23+30) and another possible point (Fig. 99:3). Such is their roughness of appearance that the 16 non-retouched blades might be classified as flakes. They are interpreted as blades on grounds of form (following Noy 1998: 272). The ridge blade has minimal retouch on one side. This form resembles a piece from contemporaneous 'En Esur/'Ein Asawir (Milevski *et al*. 2006: 181, Fig. 5.4.3). The prismatic blade was retouched on one side. This may be a local version of the 'proto-Canaanean' blade (Rowan and Levy 1994). By far the largest concentration of blades comes from Shaft 10, including the ridge blade (see Fig. 101).

Bladelets (Fig. 99:4-9)

Within the assemblage of 14 retrieved bladelets, three subtypes of this microlith were identified. The first (Fig. 99:4-7) was technically similar to the majority of the blades: simple and with minimal retouch. At nine pieces this was the most widely found bladelet subtype at the site. The second group (Fig. 99:8) received longitudinal retouch only; just one of this subtype was found. The third group (Fig. 99:9) were backed and retouched, in some cases with noteworthy skill and precision; four of this subtype were found. Most of the bladelets were simple and with minimal retouch (subtype 1) and this subtype was found evenly across the site. But subtypes 2 and 3 were not equally shared between loci, with almost half found in Shaft 26 – a concentration which included three of the four more delicate, backed and retouched tools (subtype 3) and the single example of subtype 2. In fact, Shaft 26 supplied almost half of all bladelets from the site. The three very finely-worked subtype 3 bladelets from Shaft 26 have no sheen on them but with respect to form are very close to sickle segments, and could conceivably be identified as side scrapers also.

Figure 99.

No.	Reg. no.	Locus	Description
1	11	10	Non-retouched blade; mid-gray
2	67/1	18	Non-retouched blade; mid-gray
3	84/3	36	Non-retouched blade; possible point; mid-gray
4	37/3	2	Bladelet; minimal retouch; lustrous dark gray, cortex
5	2	10	Bladelet; non-retouched; lustrous gray-brown
6	42/2	11	Bladelet; non-retouched; lustrous gray-brown
7	71/3	26	Bladelet; minimal retouch; marbled
8	71/2	26	Bladelet; longitudinal retouch; lustrous dark gray
9	51/1	10	Bladelet; backed and retouched; marbled

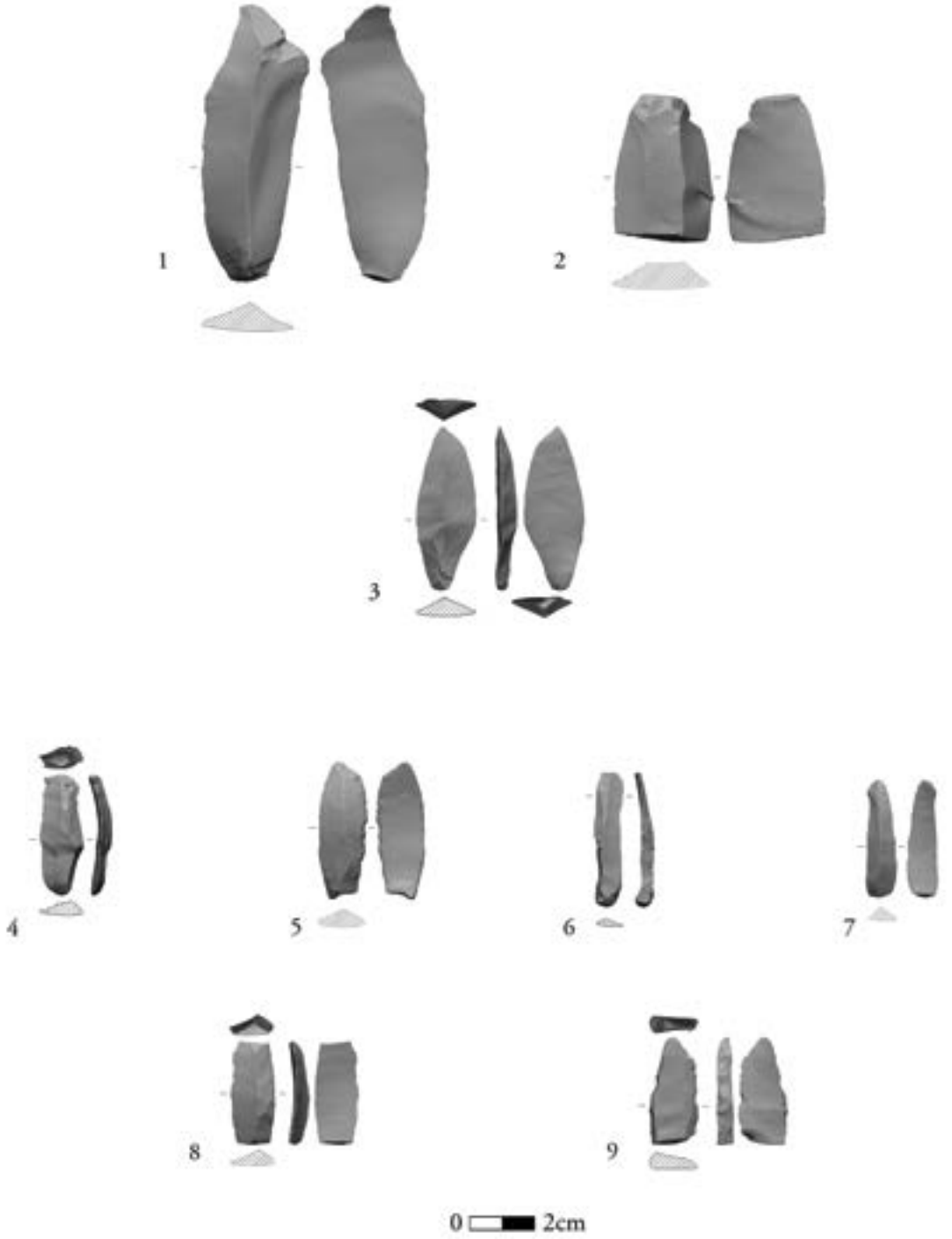

Figure 99. Blades and bladelets.

Scrapers (Fig. 101:1-10)

Of the 11 side scrapers and four end scrapers recovered, several shared types were identified: five lightly retouched/chipped side scrapers and one end scraper (Fig. 101:1, 2); seven backed/retouched/denticulate scrapers (five side, two end) (Fig. 101:3-4, 7-8); and one end scraper which was notably steep-sided (Shaft 10, B36). In two cases (Fig. 101:5-6) the focus of retouch indicated that both the sides and ends served as the tools' working edges. From this we may speculate that it was more acceptable that side scrapers be left non-retouched, but less so end scrapers. What also stands out statistically is a preference for either side or end scrapers rather than tools which were a combination of both. Three micro-end scrapers were found (Fig. 101:9), all with minimal retouch. One tabular scraper was found (Fig. 101:10), retouched at both its proximal and distal ends but not on its sides. As with the blades, a significant majority of the scrapers were found in Shaft 10.

Points (Fig. 101:11)

Two points were confidently identified, with another two candidates between the blade and bladelet groups (Fig. 99:3). The two definite points are not known Chalcolithic types. One is clearly Neolithic (Yarmukian; Fig. 101:11) and the other incorporates a distinctive hinge fracture (Shaft 26, B71). There is no clear pattern in the spatial distribution of the points and potential points.

Adze (Fig. 100, 101:12)

This object is of classic Chalcolithic form (see Barkai 2004: 99, Fig. 78.1) except that its ventral face is almost smooth, which suggests that it was originally a scraper.

Figure 100. Adze from Shaft 18 (B/67/2; see also Fig. 101:12).

Figure 101.

No.	Reg. no.	Locus	Description
1	1	10	Side scraper; non-retouched, notched from use; mid-gray
2	37/2	2	Side scraper; non-retouched, impact scars on ventral face; mid-gray
3	12	10	Side scraper; retouched, notched from use; mid-gray
4	32/3	10	Side scraper; retouched; marbled
5	100/1	57	Side scraper; retouched (sides and end), steep; marbled
6	2/1	31	Side scraper; retouched (sides and end), steep; brown-gray
7	X	4	End scraper; retouched; brown Eocene flint
8	36	10	End scraper; steep; dark gray
9	X	10	Tabular scraper; retouched at distal and proximal ends; brown Eocene flint; cortex on dorsal face
10	99	45	Point; Yarmukian type; retouched; mid-gray
11	71	26	Point; non-retouched; hinge fracture; mid-gray
12	67/2	18	Adze; retouched; brown Eocene flint, cortex (see also Fig. 100)

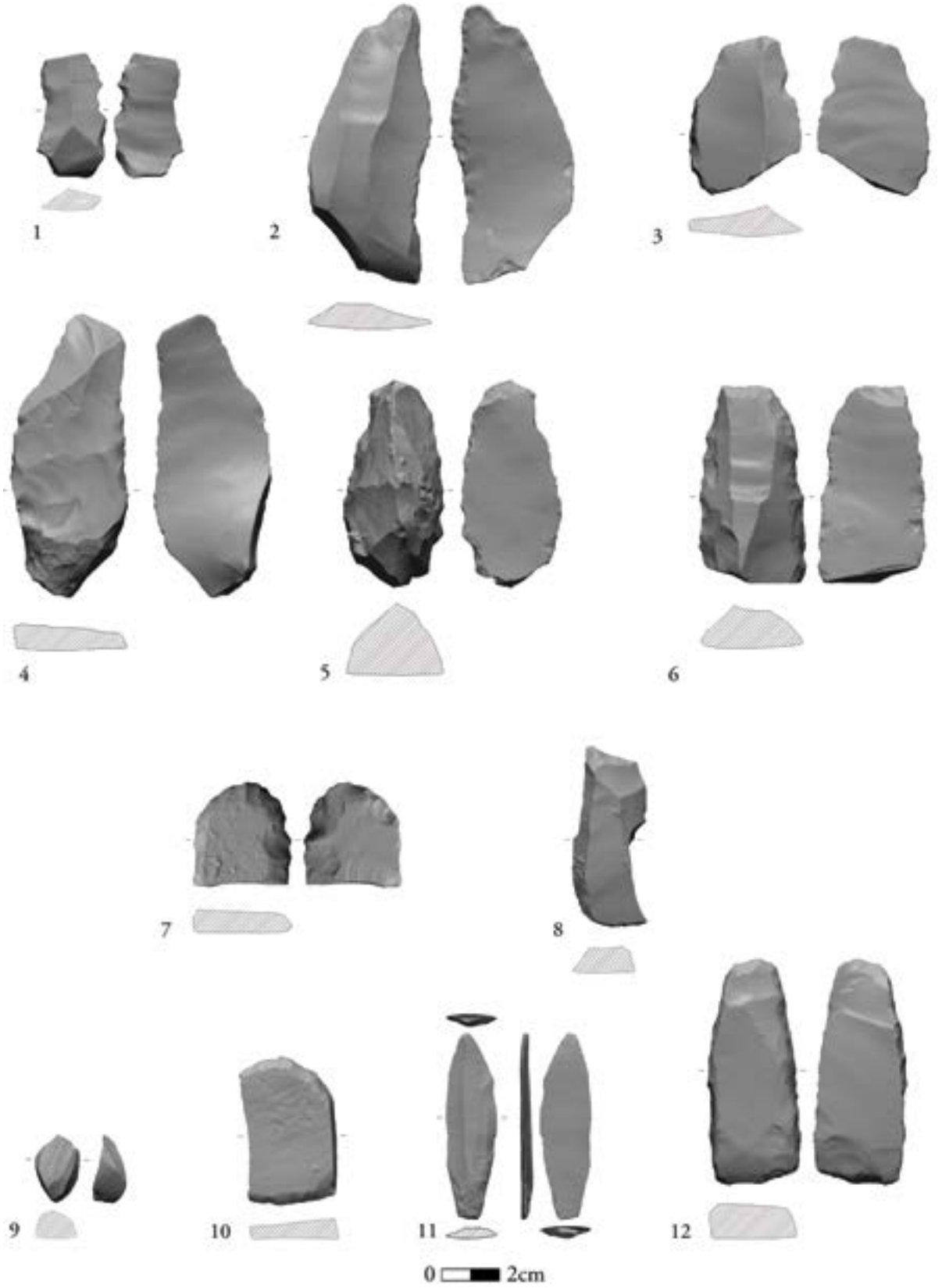

Figure 101. Scrapers, points and adze.

Spatial Distribution

Where the chipped stone artifacts were found around the site is important (Fig. 102). But before engaging with the statistics, it is worth remembering that this was a rescue excavation and different shafts were dug with different degrees of precision, according to circumstances in the field.

With this in mind, a very significant proportion (64.6%) of the tools and débitage came from one shaft alone – Shaft 10 – and Shaft 26 yielded more bladelets than any other shaft, including three of the four that exhibited the highest-quality workmanship. Other less-dramatic patterns are shown below (Fig. 102). How much these mean and how much they should be considered the product of chance in the deposition process is a question that is part of the central hermeneutical issue of the site: were these shafts filled randomly by waste material or were the depositions and shafts imbued with a symbolic significance?

Flint sources

This is only a preliminary assessment of the flint sources and it must be taken with some degree of caution for the reasons discussed above. Furthermore, we have not yet identified the flint sources in the landscape, but for now it is worth noting that the degree of homogeneity in flint composition may in itself reflect procurement patterns (which in turn might contribute something to our picture of what territorial access and links the Chalcolithic population here availed of).

The stone types and their relative quantities are shown below (Fig. 104). Looking at the distribution of flint types in the shafts, we can see that the vast majority of tools found in Shaft 2, Shaft 10 and Shaft 26 were made from marbled and mid-gray flint. Even within Shaft 10 there are concentrations, with all tools from Basket 32 being marbled and all from Basket 36 dark gray.[3] Setting aside the large concentrations from Shafts 10 and 26, the pattern still comes out as showing a preference for a range of gray flint across all loci. The natural assumption is that this range

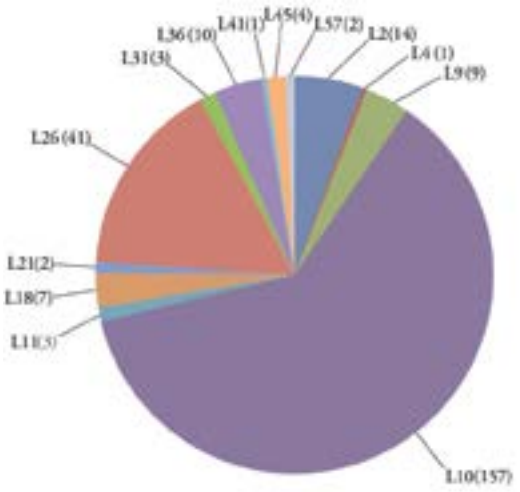

Figure 102. Distribution of lithics by locus (number in brackets refers to artifact count in each locus).

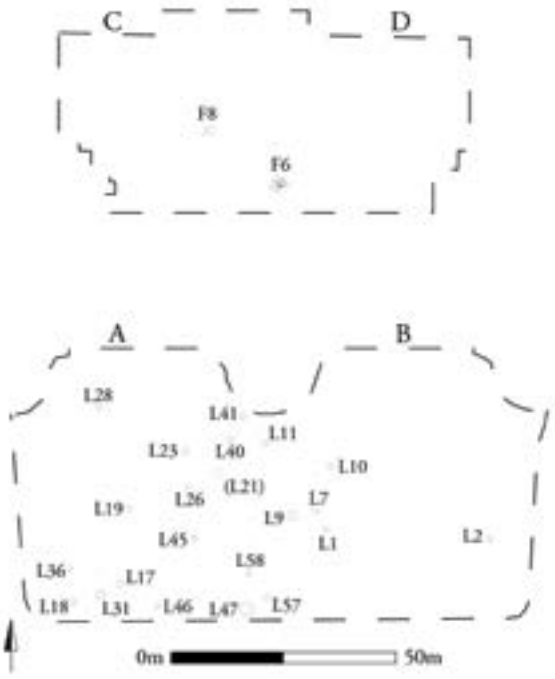

Figure 103. Site plan showing the locations of the Chalcolithic features.

represents the most common workable material in the site's vicinity or at the knappers' preferred source. The 'En Zetim and Meshash Formations (Senonian Age) are likely source candidates from this region (Khalaily 2003: 59; Marder 2005: 141).

3 How much this reflects a depositional concentration or is the result of artefact-sorting methods cannot be known.

When we look at the tool-oriented patterns, we see that blades, bladelets and cores were mostly made from these marbled gray and gray variations – although bladelets also were often made from a shinier dark gray that appears to have facilitated a sharper working edge. Cores are most often dark gray also. The large numbers of cores from this most common general stone type is logical, of course, given that most tools at the site are made from the same stone types and probably from such cores. Core trimming elements – and to a lesser degree flakes – also tend to be from marbled and gray stone.

The points found are exclusively made from a solid mid-gray stone, slightly different to the most common types and therefore perhaps form a different source. These points are thought to be Neolithic. A different source for their material speaks of changing procurement patterns.

Brown Eocene flint was chosen to make the rarest tools found at the site: the tabular scraper and adze. Perhaps this stone was hard to come by (Quintero and Wilke 1988; Quintero *et al.* 2002; Muller-Neuhof 2006), and in fact the nearest source appears to have been ca. 33km away in the southern Shephelah (Piccard and Golani 1992). As no cores of this stone type were found, it is likely that these tools were imported rather than shaped on site.

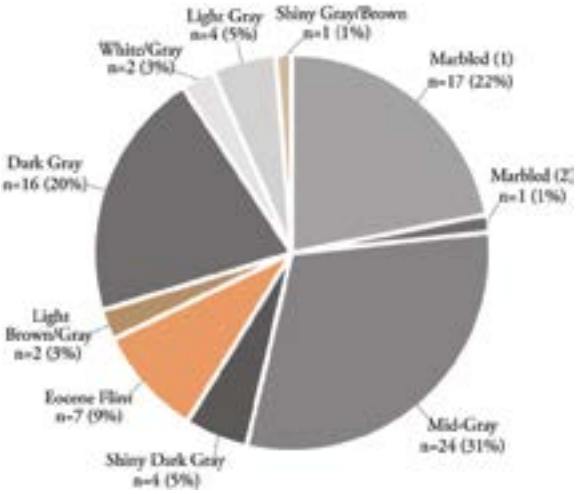

Figure 104. The relative quantities of flint type in the assemblage.

CONCLUSIONS

This assemblage is quite prosaic in nature. Had there been more non-functional and especially well-worked tools made from rare or otherwise significant stone, this would have supported the interpretation of the puzzling shafts at this site as features imbued with some symbolic value – as expressed by the deposition in the shafts of high-quality chipped stone objects, the many ceramic finds and ground stone objects discussed above, and probably organic material that did not survive. But whatever abot these other artifact groups, the flint tools are quite common; only a few Neolithic and other objects that could plausibly be considered otherwise. In themselves, therefore, the chipped stone artifacts suggest that the shafts were merely filled with domestic waste.

This impression remains when we consider the chipped stone assemblage from Yehud within the context of the entire site, its features, artifact assemblage, landscape and wider cultural milieu. If we compare this assemblage to that from a Chalcolithic cave site at Horbat Hani (West) some 4km to the east (Khailaily 2003), we see a similar array of sickle blades, bladelets, scrapers and varia; likewise at nearby Shoham (Marder 2005). This comparative view reinforces the impression that the Yehud flint assemblage is neither high-status nor imbued with symbolism.

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Table 2. Blades.

No.	Locus	Reg. no.	Description	Stone type	Length (cm)	Width	Thick-ness
1	2	37	Subtype 1: minimal retouch; could be flake but counted as blade on grounds of form (following Noy 1998: 272)	Mid-gray	3.3	2.3	0.3
2	9	23,30	Prismatic; retouched on one side; proto-Canaanean? (Rowan and Levy 1994)	Marbled	6.8	2.8	0.6
3	10	32	Ridge blade; parallel from 'En Esur (Milevski *et al.* 2006: 181; Fig.5.4)		11.8	4.2	2.5
4			Subtype 1: non-retouched		4.5	2.8	0.6
5		51			10.4	2.5	1.1
6		X		White/gray	5.7	2.5	1
7				Mid-gray	8.5	2.9	1
8				White/gray	7	1.8	0.5
9				Marbled	7.3	2.7	1
10				Mid-gray	6.5	2.1	0.4
11				Light gray	4.8	2.4	0.3
12				Dark gray	7.9	2.6	0.9
13	18	67		Mid-gray	4.4	3	0.7
14	26	71	Subtype 1: minimal retouch (fragment)		1.7	2.3	0.3
15			Subtype 1: minimal retouch		5.7	1.9	0.4
16					7.1	2.5	0.9
17	36	84			4.7	2.5	0.4
18			Subtype 1: minimal retouch (possible point)	Marbled	5	1.9	0.4

Table 3. Bladelets.

No.	Locus	Reg. no.	Description	Stone type	Length (cm)	Width	Thickness
1	2	37	Subtype 1: minimal retouch (cortex)	Shiny dark gray	3.7	0.9	0.3
2	10	51	Subtype 3: backed, retouched	Marbled	3.3	1.4	0.4
3		X	Subtype 1: minimal retouch (possible point?)		5	1.6	0.5
4			Subtype 1: minimal retouch	Light gray	3.5	1	0.3
5	11	42		Shiny gray/ brown	4.2	0.6	0.3
6	18	67	Subtype 3: semi-translucent chalcedony, as is common in non-Mediterranean traditions (Rosen 1997: 65)	Mid-gray	4.4	3	0.7
7	26	71	Subtype 3: backed, retouched		3.9	1.2	0.3
8					4.9	2.1	0.6
9					3.1	1.2	0.6
10			Subtype 1: minimal retouch		3.6	1	0.2
11				Marbled	3.6	0.9	0.3
12			Subtype 2: longitudinal retouch	Shiny dark gray	3.2	1.2	0.2
13	36	84	Subtype 1: simple; possible denticulation – but might be non-intentional use-wear pressure flaking	Dark gray	3.8	1.2	0.2

Table 4. Side Scrapers.

No.	Locus	Reg. no.	Description	Stone type	Length (cm)	Width	Thickness
1	2	37	Subtype 1: minimal retouch (impact scars on ventral face)	Mid-gray	9.6	4	0.8
2	9	23,30	Subtype 2: backed	Marbled	5.6	3.4	1
3			Subtype 1: minimal retouch	Light brown/gray	6.8	3.6	0.5
4	10	32	Subtype 2: retouched	Marbled	9.8	3.9	1.5
5		51	Subtype 2: retouched	Marbled	7.8	2.7	1.2
6		X	Subtype 1: minimal retouch (notched from use)	Mid-grey	4.5	2.6	0.9
7			Subtype 2: retouched (notched from use)	Mid-gray	5.6	3.9	0.6
8	31	X	Subtype 4: side/end (retouched)	Brown/gray	6.8	3.7	1.8
9	36	84	Subtype 1: minimal retouch	Dark gray	3.8	2.9	1.2
10	45	99	Subtype 2: retouched (different)	Light gray	7.9	6.8	1.5
11	57	100	Subtype 4: side/end (retouched, steep)	Marbled	7.1	3.5	2.3

Table 5. End Scrapers.

No.	Locus	Reg. no.	Description	Stone type	Length (cm)	Width	Thickness
1	4	X	Subtype 2: retouched	Brown (Eocene flint)	3.4	3.3	0.6
2	10	36	Subtype 3: steep	Dark gray	6.6	4.8	2
3		X	Subtype 1: minimal retouch	Marbled	4.7	3.5	1.1
4	11	42	Subtype 2: retouched	Dark gray	4.2	3.3	1
5	18	67		Light gray	6.1	2.2	0.9

Table 6. Micro-end scrapers.

No.	Locus	Reg. no.	Description	Stone type	Length (cm)	Width	Thickness
1	9	23,30	Retouched	Light brown/ gray	4.9	2.3	0.3
2	10	32		Marbled	3.8	1.5	0.3
3		X	Retouched (cortex)	Shiny dark gray	3.5	1.5	0.4

Table 7. Tabular scrapers.

Locus	Reg. no.	Description	Stone type	Length (cm)	Width	Thickness
10	X	Retouched at distal and proximal ends; cortex dorsal face	Brown Eocene flint	5	2.9	0.7

Table 8. Points.

No.	Locus	Reg. no.	Description	Stone type	Length (cm)	Width	Thickness
1	26	71	hinge fracture	mid-grey	5.9	3	1.1
2	45	99	Yarmukian; retouched		6.6	1.9	0.2

Table 9. Adze.

Locus	Reg. no.	Description	Stone type	Length (cm)	Width	Thickness
18	67	converted from axe; cortex	brown Eocene flint	7.7	3	1.1

The Intermediate Bronze Age Remains

ARCHAEOLOGICAL FEATURES

Yehuda Govrin

Eleven shaft tombs dating to this period were found in Areas A and B. Most of these were found in the margin between the two areas. It should be noted that in this section of the excavation much damage was done by heavy mechanical tools; it is probable that these damaged or even erased other tombs. Below is a description of the shaft tombs.

Tomb 6

During the course of its excavation, a space measuring 4 x 3m was dug ca. 0.2m deep (beginning some 4m below street level). In the setting up of this excavation square we identified an elliptical gray/green ashy patch 2m in length and 1m wide. No pottery was found among the ash. Alternating ash and sand lenses, measuring a few millimeters, sloped from the tomb entrance toward the southeast. At the entrance three stone slabs were found *in situ* (Fig. 105). Beyond this, the floor sloped down to a circular chamber hollowed out in the *hamra* sediment; the diameter of this space was 2m and its height was 1.5m. In the chamber there had accumulated alternating layers of green/gray clayey material, and between them, thin lenses of yellow sand. Against the western side two pottery vessels were found *in situ* standing next to each other (Fig. 106). These stood beside the skull of one of the two human interments found in the tomb. After removing a layer of sand on which the pottery vessels sat, we uncovered the scant but fully articulated remains of a skeleton lying on its side in an extended position (Fig. 107). It must be noted that development work which had already been underway in this parking lot excavation area prior to our investigation had damaged the vertical shaft which seems to have been cut from the contemporaneous surface ca. 4m above, down to the entrance of the the chamber.

Figure 106. Tomb 6 burial offering vessels *in situ* (facing southeast).

Figure 105. The stone slabs which were placed at the entrance to the Tomb 6 chamber (facing southeast).

Figure 107. The Tomb 6 chamber (facing southeast), and on its surface the remains of one of the interred individuals lying on its side in a flexed position.

Figure 108. General view of the Tomb 13 vessel assemblage.

Figure 110. The vessels *in situ* in Tomb 14.

Figure 109. The Tomb 13 interment lying on its side in a flexed position, where it was found *in situ* under the burial offering assemblage.

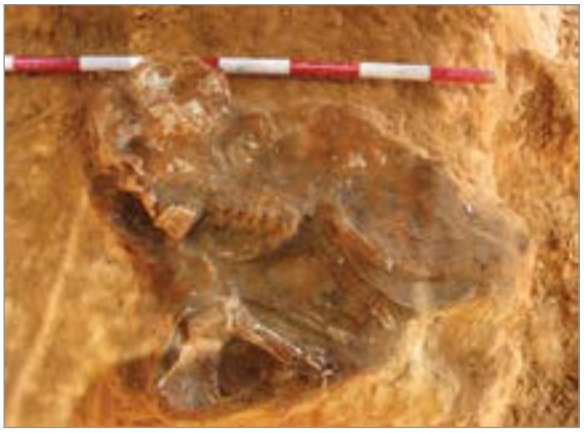


Figure 111. The remains of the interment from the damaged Tomb 20 tomb.

Tomb 13

During clearance of the area surface in the center of the excavation area, a mechanical excavator exposed an ash concentration at 33.94m ASL. Upon manual excavation of this, five ceramic vessels were found *in situ*, including: two complete storage jars (damaged during area clearance), a cup, a bowl and a pinched-spout lamp (Fig. 108). These vessels had been placed along the side of a tomb chamber, in ascending order according to size. Under these vessels was discovered the *in situ* interment of an adult woman lying on her side in a flexed position (Fig. 109).

Tomb 14

This feature consisted of the remains of a shaft tomb, found 3m west of Tomb 13. It had been completely destroyed by site development works; the tomb was only traceable by the remains of a gray ashen stain from which were recovered just two ceramic vessels *in situ*: a small carinated and a small open bowl (Fig. 110). No human remains were found.

Tomb 20

The remains of this shaft tomb were exposed at the northern edge of Area A, with the tomb's base at 33.58m ASL. The remains of the tomb shaft were discernible in the section to the north of the tomb chamber. Fragments of an amphoriskos and of other vessels (not illustrated) were discovered beside the tomb, which was severely damaged during construction works. Above the layer of sand and below the clay-mixed *hamra* sediment there was found the

Figure 112. General view of the vessels in Tomb 21 (facing east). Note the copper awl (right center).

Figure 114. Neck detail of the female interment found at the east end of Tomb 21. Note the multiple strands of dentalium beads around the neck.

Figure 113. General view of the interred remains on the west side of Tomb 21 (facing south).

upper half of a woman's skeleton in flexed position (Fig. 111). No finds were preserved from the tomb chamber itself.

Tomb 21

Only the lower part of this large shaft tomb's chamber survived. The tomb was found between Areas A and B, at 33.19m ASL, and was cut into the transition between the *hamra* and sand layers. The shaft was most likely located on the northeast side of the chamber, at the entrance to which was placed a large limestone slab (disturbed during site construction works). The chamber was elliptical in form (ca. 2 x 1.5m). At the east end of the tomb, beside the entrance, we found the following vessels: a large storage jar, a goblet, a small bowl, a carinated bowl, a four-spouted lamp and a copper awl (Figs. 112, 130:12, 131:7, 133). In the west side of the tomb we found a layer of gray sediment. This yielded Chalcolithic potsherds, and therefore most likely originated in a nearby shaft, the fill of which was reused in the Intermediate Bronze

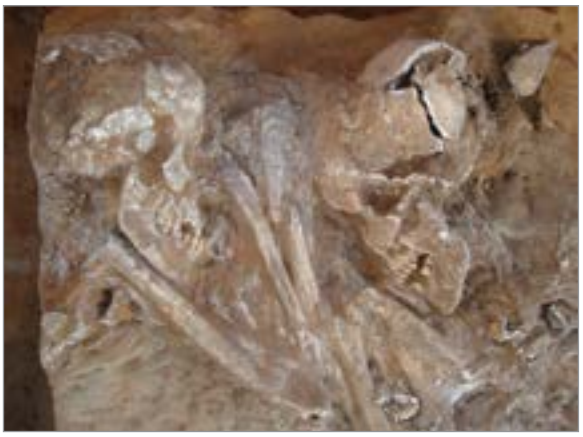


Figure 115. General view of the Tomb 21 interments' head positions. Note the strands of dentalium beads around the neck and wrist of the eastern (left) interment.

Figure 116. Foot detail of the female interment found at the east end of the Tomb 21 tomb. Note the strands of many dentalium beads around the feet and also the remains of the animal which had been placd on the body.

Age. Under this gray sediment in the tomb were found two interments, lying on their sides facing each other (Fig. 113). These bodies were oriented north-south, with the heads on the south side. On the east interment – identified as female – were found a large number of dentalium beads, on the neck (Fig. 114), wrist (Fig. 115), and around the feet (Fig. 116). On the legs of this interment, next to the carinated bowl we found the bones of a sheep. Osteological details for these remains were recorded and the bones removed (Fig. 117).

Tomb 22

The remains of this shaft tomb were found in the western part of the field, at 34.58m ASL (tomb base). The feature had been completely destroyed by the site development works which preceded our excavation. The tomb chamber, dug into the *hamra* sediment, was 2m in diameter and was found to be full of mixed clay and *hamra* soil. The remains of a large storage jar, of which only a number of body sherds survived (not illustrated), were found in the tomb section (Fig. 118). No other artifacts were recovered.

Tomb 24

This sealed shaft tomb was found beside the northern limit of Area A, and was the only such tomb found almost entirely intact. The remains of the shaft extending down to the tomb were traceable in the *hamra* sediment and clay which overlay the tomb

Figure 117. The process of dismantling the osteological remains from Tomb 21.

Figure 118. The Tomb 22 section (facing east).

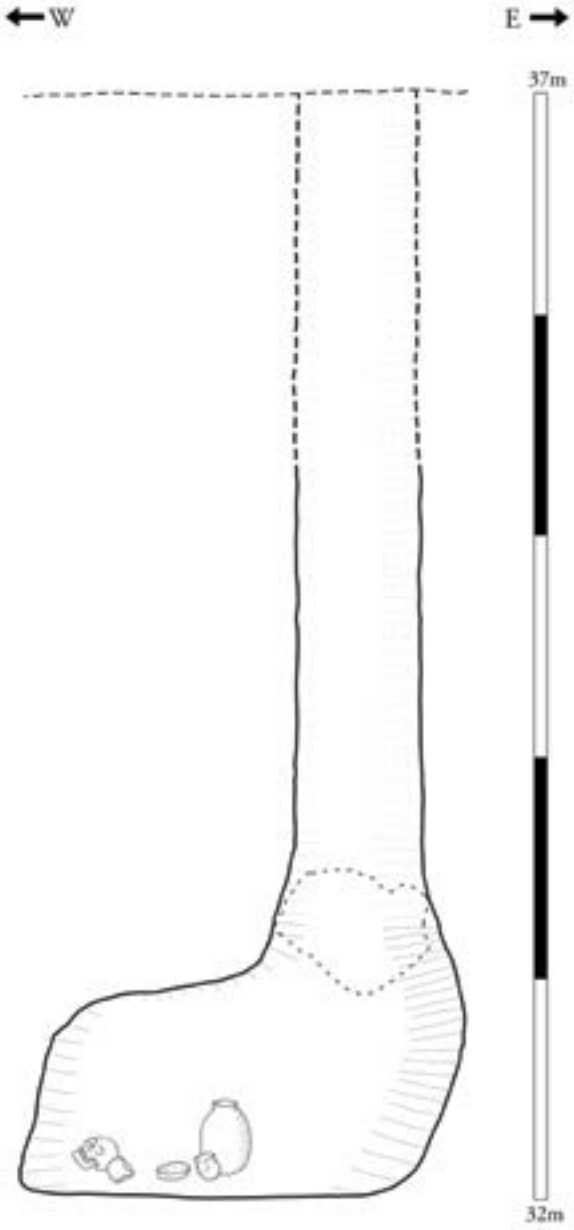


Figure 119. Section of Tomb 24 shaft and chamber (sealing stone marked).

Figure 120. General view of Tomb 24, before excavation, in the north section of the site (facing north).

Figure 121. Detail of the Tomb 24 sealing stone which blocked the entrance (before excavation). Note the vertical shaft filled with clayey sediment (to the right of the stone).

chamber (Figs. 119). The tomb chamber entrance was blocked by a large flat stone slab which stood on its end (Figs. 120, 121, 123).

The tomb chamber was hollowed out in the *hamra* sediment; its base reached the underlying sand layer. The chamber was elliptical in plan and dome-shaped in section, measuring 1.7m in diameter and 1.2m in height. The sediment within the tomb chamber consisted in thin alternating layers of *hamra* and clay which appear to have entered the chamber through the shaft. In the north side of the chamber was discovered a large intact jar *in situ* (i.e. standing upright). Immediately south of this jar, we found, also *in situ*, and set in order of size, a goblet, a small bowl and a lamp, which had been placed on the knees of the deceased (Fig. 122). The latter was undisturbed and was laid in the west side of the tomb – an adult

Figure 122. General view of the offering vessels *in situ* in Tomb 24, at the feet of the deceased.

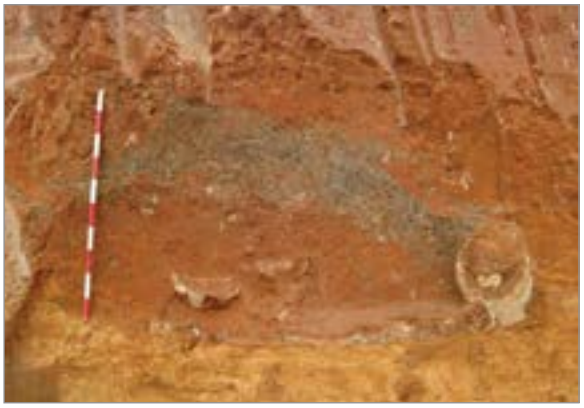


Figure 124. General view of the Tomb 43 section (facing west). Note the jar fragments at the south end of the tomb.

Figure 123. General view of Tomb 24 after excavation. Note the flexed position of the skeleton.

Figure 125. General view of the *in situ* vessels on the Tomb 43 floor.

female on her side in a flexed position, with hands clasped (Fig. 123).

Tomb 42

The approximate location of this tomb was revealed by an ash stain and potsherds north of Tomb 21. The tomb was damaged during site works which preceded our excavation. This location also yielded fragments of a jar and an intact goblet (B-86/1). The general level of this tomb was 33.10m ASL.

Tomb 43

This shaft tomb was exposed in the western section of the *hamra* outcrop on which were located three Byzantine, stone-lined cist graves (Tomb 15, below). A section cut made in the tomb chamber revealed the latter as measuring 1m in height and 2m in length. At the south end of the chamber we discovered fragments of a jar standing upright (Fig. 124). Sherds belonging to another large jar were found in the center of the tomb, resting on a *hamra* layer. The tomb chamber was cut into this sediment and reached the sand layer. The human remains had been placed on the sand floor of the chamber and covered with *hamra* soil. Over this we found a layer of gray clayey sediment which filled the rest of the tomb chamber. During the excavation of the latter, working east from our section, we found several *in situ* pottery vessels (Fig. 125). A single-spouted open lamp was exposed next to the standing jar, and we also uncovered a complete goblet beside the crushed jar. After the removal of the chamber ceiling, another open lamp, carinated bowl and crushed goblet were discovered on the eastern side of the tomb. At the north end of the chamber a large, flat, *in situ* fieldstone was found standing upright, which had blocked the tomb entrance.

Figure 126. General view of Tomb 60 with all surviving burial offerings fully exposed (facing east).

Figure 127. Detail of the Tomb 60 burial offerings *in situ*.

Tomb 59

At this location we found the remains of an isolated tomb dug in the soil which had been badly damaged by an IAA test trench. The tomb chamber was completely destroyed by site preparation works; all that remained were many potsherds and imprints of ceramic vessels, resting on the tomb floor (33.00m ASL). Beneath the potsherds were visible fragments of limb bones belonging to an adult male which had been laid in a north-south orientation. Among the ceramic vessels it was possible to identify the base of a large jar, four open bowls and three small juglets. These vessels were poor in quality, and broke into small fragments while being removed.

Tomb 60

This shaft tomb was discovered beneath the remains of another Intermediate Bronze Age interment (Tomb 59), near the center of the excavation area. The tomb chamber was circular in plan, with a diameter of 2.5m, and was dug in the *hamra* sediment, reaching into the underlying sand. The tomb chamber was full of black clayey soil which stood out against the surounding *hamra*. In the tomb was found a cluster of ceramic vessels: two jars which were laid horizontally, one on top of the other, and beside them two open bowls, a single-spouted lamp and a goblet (Figs. 126-127). After removing the overlying 15cm-thick soil layer we exposed the remains of a human interment, *in situ* and fully articulated in a flexed position on its left side. The general orientation of the interment was northeast-southwest, with the head in the east and facing south (this individual was probably an adult female, 1.6m tall; see Eshed and Deutsch, below). On the east side of the tomb we found two groups of food offerings, of which animal bone fragments survived (Fig. 128).

Figure 128. The Tomb 60 tomb after exposure of the interment (left) and the concentration of animal bones (right). Note the erect stone slab which presumably sealed the tomb chamber entrance (facing northeast).

A large stone slab (0.8 x 0.6 x 0.05m) was found set on the north side of the tomb. This slab appears to have functioned as a sealing stone for the tomb entrance, which would have been reached by a shaft which did not survive.

ARTIFACTS FROM THE INTERMEDIATE BRONZE AGE TOMBS

Conn Herriott

As laid out in the previous section, we excavated a roughly linear cluster of eleven Intermediate Bronze Age (IB) shaft tombs in Areas A and B. These tombs yielded a fairly standard IB burial kit (Table 10), the surviving elements of which usually include bowls, cups, jars and lamps, as well as other somewhat less common items such as flint, shells, and animal bones.

The pottery ware varies slightly from light orange to red or brown, with occasional white inclusions. Bowls and goblets were wheelmade, lamps handmade and jars a combination of handmade body and wheelmade neck (Amiran 1969: 80).

Bowls (Fig. 130:1-5)

These have varying degrees of carination, from none to sharp, with straight or everted rims, except one which is inverted (Fig. 130:1).

Goblets and mug (Figs. 129, 130:6-12)

These drinking and pouring vessels have simple rims and varying combed and incised decoration (Fig. 129). The single mug has a slightly more flaring rim than the goblets, and a handle connecting body and neck (Fig. 130:12).

Jars (Fig. 131)

These vessels have the rounded barrel form which is typical of the southern group (Amiran 1969: 79, 80, 84). Bases are flat and rims are simple, tapered, rounded, everted or triangular. Small loop handles have been added in some cases, mostly between neck and shoulder. The exception is Fig. 131:7, which has a lug handle further down the shoulder. This vessel stands out as being larger than the others and in having been decorated (diagonal incisions where neck meets shoulder[4]).

Figure 129. Detail of the combed decoration on a goblet from Tomb 60 (B104/5).

Lamps (Fig. 132)

These include simple single- and four-wick lamps. One of the single-wick lamps (L60, B104/4 [not illustrated]) incorporates incisions on the side of the wick-spout rim – a feature which to date is only known in the Ayalon basin (Yannai 2008; see also Amiran 1969: 81, Photo 82).

Copper awl (Fig. 133)

This square-profile, elongated object appears to be an awl (see Ilan and Sebbane 1989), although Yannai (2007: 24, Fig. 15:83) classified a similar find as a pin. Comparable items have been found in a number of IB tombs (Greenhut 1995: 32 and references therein). Like all metal finds, they are more common the closer a tomb is to the urban centres of Syria (Greenhut 1995: 31; Horowitz and Masarwa 1999: 3*, Fig. 1:6). A second, unidentifiable metal object was found inside a bowl.

Other objects

Flint débitage, mollusk shell (mother-of-pearl [*Pinctada margaritifera/Aspatharia rubens/Unio terminalis*], and dentalium) and animal bones[5] were recovered from several tombs, inside vessels in certain cases. It is worth noting that these non-ceramic objects were found together, in the same tombs (Table 10), which reflects either differential contemporaneous treatment of the dead, changing practice over time, or varying preservation/retrieval quality.

4 This location choice for decorating perhaps served to disguise the join between the wheelmade rim and neck and handmade body (Amiran 1969: 80).

5 Sheep and goat were most common in IB tombs, reflecting a pastoral society (Greenhut 1995: 29-30).

Figure 130. Bowls, goblets and mug.

Figure 130.

No.	Object	Reg. no.	Locus
1	Bowl	44/2	13
2	Bowl	96/5	43
3	Bowl	61/1	14
4	Bowl	61/2	14
5	Bowl	83/2	24
6	Goblet	86/1	42
7	Goblet	96/1	43
8	Goblet	83/1	24
9	Goblet	24/1	6
10	Goblet	96/2	43
11	Goblet	44/1	13
12	Mug	66/2	21

Figure 131.

No.	Object	Reg. no.	Locus
1	Jar	104/6	60
2	Jar	24/2	6
3	Jar	104/5	60
4	Jar	44/4	13
5	Jar	44/5	13
6	Jar	83/6	24
7	Jar	66/6	21
8	Jar	96/6	43

Figure 131. Jars.

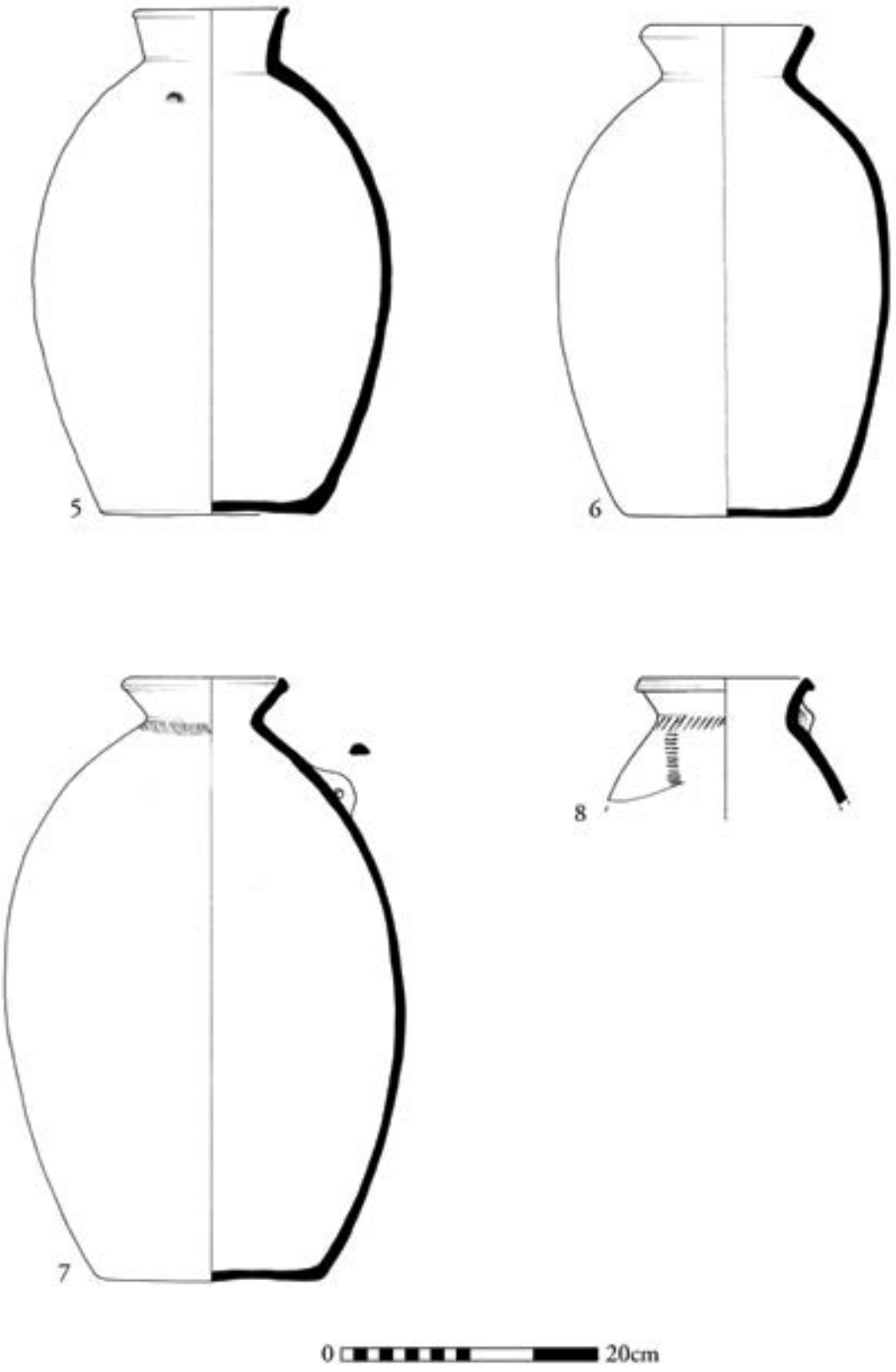


Figure 131. Jars.

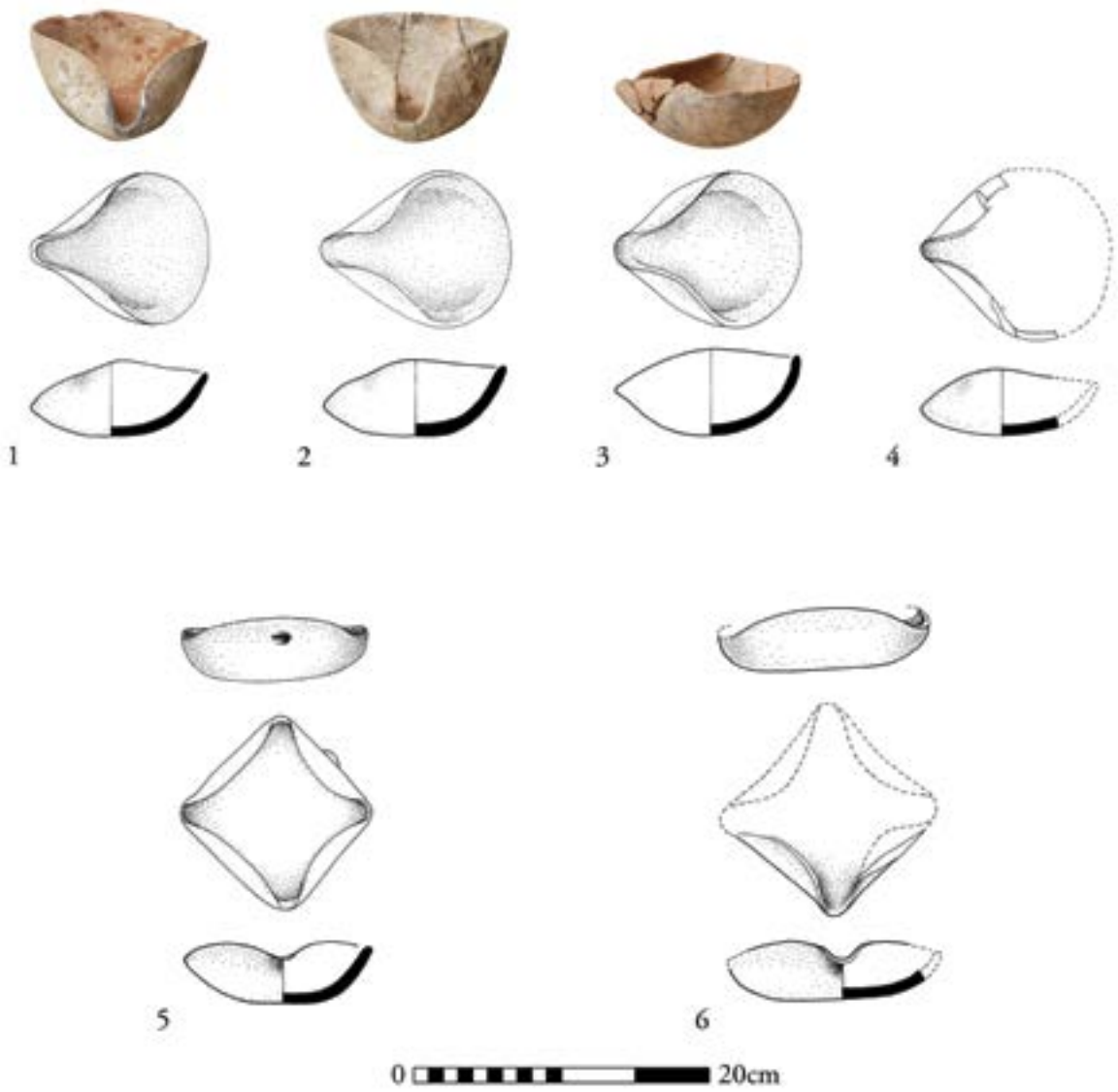
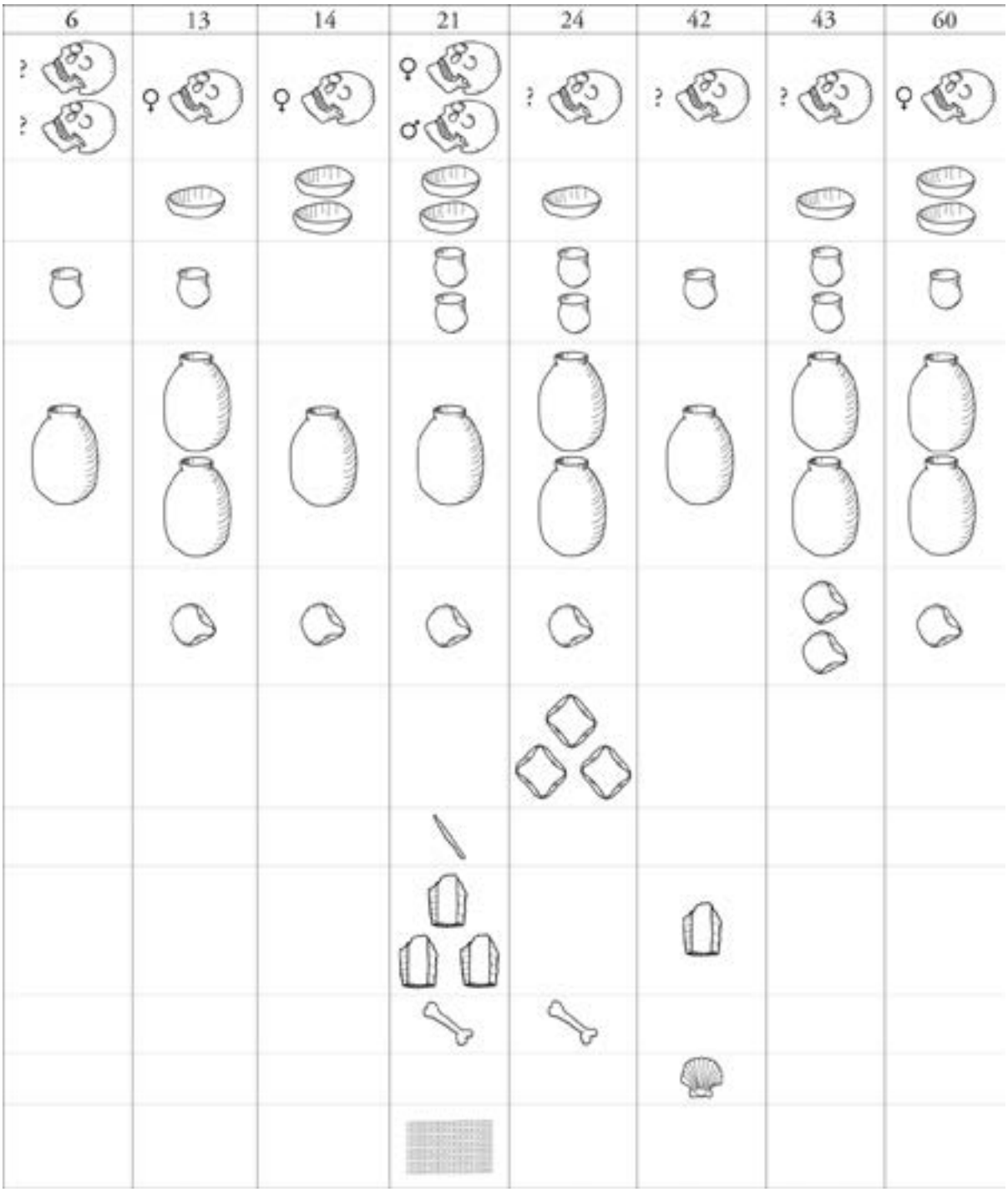


Figure 132. Lamps.

No.	Object	Reg. no.	Locus
1	Lamp	96/3	43
2	Lamp	96/4	43
3	Lamp	44/3	13
4	Lamp	83/4	24
5	Lamp	83/3	24
6	Lamp	83/5	24

Table 10. Graphic inventory of IB tomb assemblages from Yehud.



DISCUSSION

In general the pottery falls neatly into Amiran's (1969: 79, 80, 84, Plate 22) southern IB group, found most frequently in the coastal plain and hill country south of the Jezreel Valley. Very similar assemblages have been found in coeval shaft tombs elsewhere at Yehud (Milevski 2008), Bet Dagan (Yannai 2008), Horshim (Gilboa and Yannai 1992), Azor (Yannai 2007), Benaya (Permit No. A-16/1962), Holon (Permit No. A-566) and elsewhere, as well as tombs and non-mortuary sites further afield in the southern and central coastal plain and hill country (e.g. Seligman 1995; Gonen 2001: 21-33; Shurkin 2004: Fig. 3; Yannai 2004a: Fig. 1:4; Solimany and Barzel 2008; Billig 2009; Avner 2011).

By contrast, coeval mortuary sites further north – e.g. Tel 'Amal (Feig 1991), Esh-Sheikh Dawud (Getzov 2008) and El-Fureidis (Horowitz and Masarwa 1999) – have yielded overlapping but distinctive pottery assemblages. This regionality may reflect somewhat distinct cultural *koine* or partly independent trade networks.

The patterning we see in material culture correlates well with IB tomb type distribution across Palestine (Greenhut 1995: 4). The south shows a preference for single-chamber shaft tombs, while the north sees more multi-chambered, niched, constructed shaft and corridor tombs. Of course, the record indicates a more complex spatial and diachronic patterning than this simple binary, but nevertheless there is an irrefutable and important distinction between north and south in terms of tomb and pottery types.

This is also to be seen in the human remains. Despite many exceptions to the rule, we can say that northern tombs are generally characterized by multiple and secondary burials, while the coast and other regions show a preference for single/couple burials and primary interments.[6]

This is not to say that extra-regional parallels and overlaps are lacking. Simple shaft tombs and primary single and couple burials are far from rare in the north and elsewhere. Ceramic assemblages that are at least partially similar to that from the current site have been found at Ibtin (Yannai 2004b: 11*, Fig. 1), Shelomit (Getzov 2005: 2*, Fig. 4), Haifa (Horowitz and Sa'id 2007: Fig. 2:4) and other sites in Galilee.

Figure 133. Copper awl from Tomb 21 (B66/7).

No petrography was carried out on the current assemblage but given evidence from elsewhere suggesting that local production was the IB norm (e.g. see Goren 1991), the orange/red clay is most likely attributable to the *hamra* of the region's Rehovot Formation (Cohen-Weiniger 2006). The color may also indicate a local continuation of EB firing methods (Amiran 1969: 80).

This potential evidence for some faint perseverance of EB culture is also seen at the other end of the diachronic spectrum, with the current site's pottery bearing some similarity to Middle Bronze I types (such as those found at Ilaniyya, Galilee [Alexandre 2004: 3*, Fig. 4:4-9; 4*, Fig. 5:4,5]).

In any event, a good case has been made for the IB goblets reflecting the ritual consumption of alcohol, initially as a Syrian morpheme (Bunimovitz and Greenberg 2004), but in this case as part of funerary rites.

It is surprising that no daggers were found in these Yehud tombs. After ceramics, they are the most common IB tomb find, although more usually further to the north (Greenhut 1995: 30).

6 Palumbo (1987: 45) suggested that secondary burial reflects a low social rank, flexed burial being higher and extended burial reserved for the upper echelons of the social hierarchy. But how can this be if the patterning is regional rather than spread evenly? He refers only to Jericho. Within that region such a schema is possible, but spatial variation suggests different attitudes elsewhere.

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BEADS FROM INTERMEDIATE BRONZE AGE TOMB 21 AT YEHUD: A PRELIMINARY REPORT

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INTRODUCTION

Four beads were given to me for identification from the large assemblage discovered in the burials of a male and female in Tomb 21 at the site of Yehud. All were identified as made of glazed enstatite, by comparison with microscopic observations of similar beads from other sites (Bar-Yosef Mayer *et al.* 2004; Bar-Yosef Mayer and Porat 2010, 2013; Bar-Yosef Mayer *et al.* 2014). The beads from Peqi'in Cave and the Cave of the Treasure at Nahal Mishmar were identified as made of this material using chemical analysis (SEM-EDS and XRD), whereas now I only used visual comparison, and I assume it is the same material. Enstatite is sometimes misidentified as faience, despite the fact that its basic raw material is steatite (talc), whereas faience is made of quartz. Enstatite has been found in a number of Chalcolithic and Early Bronze Age sites (Bar-Yosef Mayer and Dan, in press; Yannai and Bar-Yosef Mayer, in press).

DESCRIPTION AND DISCUSSION

The beads measure 3-3.8mm in diameter, and 2.4-3.6mm in length. This makes them standard beads in Beck's (1928) terminology, i.e., beads whose length and diameter are more or less equal. The perforations of these beads are particularly small – under 1mm. While the diameter and length of the Yehud beads are slightly larger than the ones from Chalcolithic Peqi'in, the measurements of the aperture diameters are similar. Their whitish appearance and their texture as it appears under the microscope make them very similar to the beads from Peqi'in, which were carefully examined.

While studying the beads of Peqi'in we proposed that a paste was prepared from powdered talc, water and perhaps an organic binding material and/or a flux containing alkalis (to lower the temperature of sintering) as well as copper powder for glazing. The paste was then shaped into long rolls, probably along a thin core (possibly of straw). The tube was sliced to form beads and then fired at a high temperature. This firing hardened the paste and transformed the talc into enstatite and cristobalite.

While examining the Yehud beads under the microscope, we noticed that, unlike those of Peqi'in, which are fairly round and smooth, the beads from Yehud have a texture not seen before. One bead (No. 1) had lines across its transverse sections, which suggest that the beads were cut from the roll with a serrated blade.

The texture of lines and crossing lines may shed light on the manufacturing process. The exterior pattern visible on the beads from Yehud suggests that the roll was possibly made in a fine mat or textile. In addition, one of the beads has two straight sides, i.e.,

Figure 134a.

Figure 134b.

Figure 135a.

Figure 135b.

Figure 134c.

Figure 135c.

Figure 134. Support for the use of a paste: Fig. 134a. An air bubble on the exterior profile lends credence to the notion that this bead was made of a heated paste, which is better known from glass beads (Stern 1995: 43); Fig. 134b. Cracks in the material are probably the result of water evaporation, i.e., drying of the paste as a result of heating. Note that a part of the "roll" has been flattened; Fig. 134c. Dark and shiny spots on the surface could be the remains of a glaze.

Figure 135. Evidence for rolling a sheet of paste: Fig. 135a. Curved lines show the rolling motion while forming the roll; Fig. 135b. A crack along a bead may indicate the two ends of the original sheet of paste before rolling; Fig. 135c. The perforation is off-center.

it is not completely round. Another has a "tail", indicating that the cutting of the bead from the roll was done carelessly. Figures 134-137 with their captions provide a description of these phenomena.

Because these beads were found covering one of the Tomb 21 skeletons – and many were organized in a pattern over this interment (Fig. 138) – it seems likly that the beads were sewn onto a cloth (or shroud?) draped across the body. Since this would require considerable labor, it may indicate a high social status on the part of the deceased, although such an interpretation may seem to be contradicted by the imperfect shaping of the beads.

One other artifact known to be made of glazed enstatite beads is a "purse", superficially published by Aharoni (1961: 15, Pl. 7: A-D). Because this was used in a different way from the "shroud" of Yehud, and its age seems to be earlier than that of the burials reported here, it is premature to make any further comparisons between these items. However, a more profound study of glazed enstatite beads is certainly in order – particularly experiments that might reconstruct the manufacturing process (not successful to date).

CONCLUSIONS

The beads reported here are unusual in an Intermediate Bronze Age context; no other example is known from this period. The glazed enstatite beads from Yehud differ slightly from those found at a number of

Figure 136a.

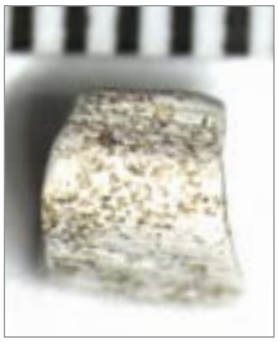

Figure 136b.

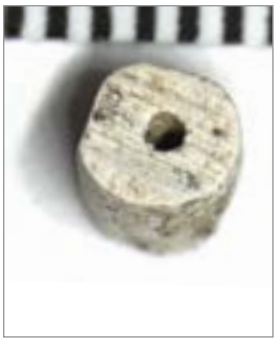

Figure 137a.

Figure 137b.

Figure 136c.

Figure 137c.

Figure 136. The sheet of paste was rolled in a thin mat or cloth while still soft, before heating: Figs. 136a and 136b. The exterior profile (perpendicular to the "end") has lines, suggesting that it was wrapped in a mat or cloth; Fig. 136c. Sets of stripes appear to be perpendicular to each other.

Figure 137. Cutting of the roll: Fig. 137a. A serrated blade may have been used to cut the bead from the roll; Figs. 137b and 137c. A "tail" shows that, while it was also cut with a serrated blade, the incision was not perfect.

Figure 138. General view of Tomb 21 with beads visible *in situ*, in the right foreground.

Chalcolithic sites. While their dimensions are slightly larger, they do corroborate our previous observation that such beads are found in association with burials (Bar-Yosef Mayer *et al.* 2004). These beads may have played a special role in wrapping the dead, and they enable a glimpse into the technology involved in their manufacture. However, further research is undoubtedly called for.

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The Middle Bronze Age Remains

ARCHAEOLOGICAL FEATURES

Yehuda Govrin

Grave 1 (L6-7)

As part of the excavation of Areas C and D, ca. 3m of topsoil was removed by digging machines under Israel Antiquities Authority (IAA) supervision. At the southwestern corner of the excavation, a bulldozer severely damaged a number of archaeological remains, exposing potsherds, human and animal bones, small pieces of copper, a small three-legged basalt mortar and a basalt pestle. These artifacts were photographed by the IAA's inspector during their discovery and are published here (Fig. 149:3-4 [L7, B17]). A 1.5 x 2.3m rectangle was excavated at this feature, the entire eastern half of which had been truncated by the digging machine (Fig. 139). A thin lime plaster layer of ca. 1.5m diameter and ca. 0.05m thickness sealed the top of the context. Remains of an interred skeleton were located on the south side of the grave, and nearby lay the pieces of copper or bronze and the basalt mortar (L6). On the north side of the grave, directly under the plaster sealing, were found the base of a storejar lying on its side, a ceramic three-legged open bowl, and a large open bowl with a ring base (L7). In and under these bowls were remains of animal bones, especially ribs, which were probably caprovine. At a depth of 0.4m below the plastered sealing, on the floor were three open bowls filled with remains of animal bones, found *in situ* (Figs. 140-141). The bones were scattered between and under the bowls.

Figure 139. A general view of Grave 1(facing west). Notice the plaster sealing the grave. The entire eastern half of the grave was destroyed by the digging machine, whose teeth marks can be seen in the section. The imprint of a number of the pottery vessels can be seen in the north (right) side of the section.

Figure 140. Grave 1: three bowls which were placed in the north side of the grave's floor. Note the imprint of a fourth three-legged ceramic bowl.

Figure 141. Grave 1: a view of the grave's floor with the imprints of four bowls (facing northwest).

The skeletal remains were those of a single individual, the lower part of an adult woman lying supine on her back (Figs. 142-143; and see below p. 153). The body was oriented east-west, with the head to the east. The remains included the lower limbs, the pelvis, the right radius, ulna and carpals. The fragmentary state of the remains prevented further analysis.

Burial goods – mainly ceramic bowls filled with meat from which the bones were preserved – were placed close to the north side of the body. It was possible to reconstruct the grave as follows: an underground chamber with a diameter of 2.5m and a depth of ca. 1m, covered with soil and sealed by a layer of plaster 5 cm thick. Based on the pottery, we can date this grave to the Middle Bronze Age I-II (MBIIA-IIB, 1900-1700 BCE).

Graves 2 and 3

A 4 x 4m square was excavated, within which were two archaeological features. These had been severely damaged by a bulldozer (Fig. 144), whose teeth cut into the clayey soil and exposed two *in situ* skeletons and above them a concentration of potsherds. The fragmented sherds were most likely part of the burial assemblage.

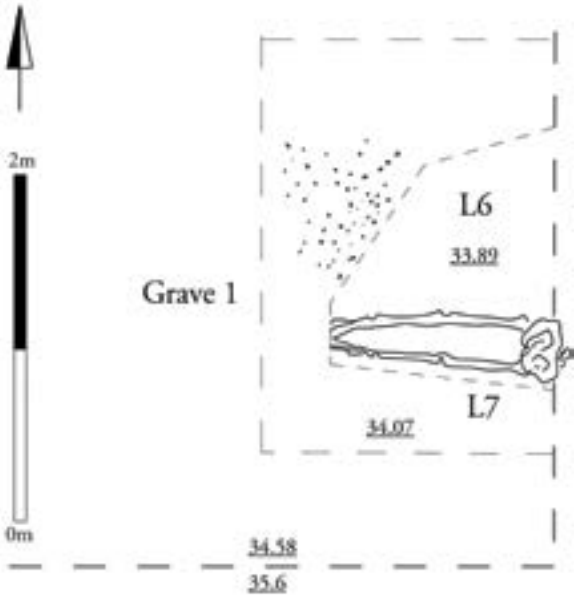

Figure 142. Grave 1: plan of the extant human remains *in situ*.

Figure 143. Grave 1: the pelvis and lower limbs of the interred woman (facing south).

Figure 145. A general view of Grave 7 before excavation.

Figure 144. A general view of Graves 2 and 3 before excavation (facing southeast). The bulldozer teeth severely damaged the Graves 2 and 3.

Figure 146. A general view of Grave 7 after excavation (facing east).

Grave 2 consisted of a skeleton placed on its right side in a foetal position. The body faced north and was oriented east-west (skull on the east side). Half of the skull was cut by the machine so that only its outline was extant.

Grave 3 was a concentration of human bones of which mainly the rib cage was preserved. Close to these bones were imprints of a number of pottery vessels.

These graves were dug into a clayey layer, while their bases reached a lower *hamra* soil level. The graves' outlines were not preserved due to the severe damage caused by the bulldozer. All that survived were the grave floors, crumbled bones and pottery within the grave fills.

Grave 7

This feature was detected during test excavations (Section 15) conducted using a tractor, which located but damaged two pottery concentrations (this and Grave 8).

At Feature 7, the western of the two, a 2.8 x 2m square was excavated (B) to a depth of 0.35m below the current surface (33.73m OD). At the center of the excavated area were two ceramic vessels (both damaged by the machine): the fragments of a store jar facing upwards, and within this an inverted dipper juglet. The vessels had been placed in a pit dug into the clayey soil to a depth of about 0.7m from the surface. During the cleaning and removal of the jar's fragments crumbled bones were found in it. From a preliminary analysis it appears that this was an infant-burial jar from the Middle Bronze Age.

Features 4 and 5

These were concentrations of pottery. However, there were no surviving structural remains or features, and the pottery consisted of non-diagnostic sherds only.

ARTIFACTS FROM THE MIDDLE BRONZE AGE TOMBS

Conn Herriott

Inventory

It must be remembered that all of the graves were damaged by heavy machinery; none of the assemblages are complete.[7]

Table 11. Inventory of the Middle Bronze Age tombs.

Grave	Human remains	Artifacts
1	Adult female	7 platter bowls, 1 three-legged bowl, storejar (only lower section preserved), 1 basalt mortar, 1 pestle, 1 bronze dagger
2	Adult	Non-diagnostic sherds only
3	Adult	4 platter bowls
7	Infant	1 jar and 1 dipper juglet

Dating

These finds date to the MB I-II (MB IIA-B) period, based on comparison with extensive and closely studied assemblage found 9km away at Tel Aphek (Beck 2000a-c; Yadin 2009), and other findings in Yehud (Yannai 2004; Segal and Eshed 2011; Arbel 2013) as well as further afield from Galilee to the southern Shephelah (Loud 1948; Kochavi *et al.* 1981; Kempinski 1989; Damati and Stepansky 1996; Seligman 1995; Ilan 1996; Garfinkel 1997; Covello-Paran 2001; Gudovitch 2003; Ben-Arieh *et al.* 2004; Gophna and Blockman 2004; Greenhut 2004; Peilstöcker 2004; Singer-Avitz 2004a, b; Yannai 2004; Dagot 2005; Gal and Zori 2005; Gershuny and Eisenberg 2005; Golani 2011).

Similar finds were also found in the IB central hill country (e.g. Seligman 1995 and references therein). Some of the bowls do seem to show at least as much continuity from local IB types as they match those which have been assigned to MB I (Yannai 2004: Fig. 1).

Pottery (Figs. 147-148)

The regional associations of these artefact types are difficult to trace; many are found throughout the southern Levant. That said, there are some indications that the Yehud area fell within a shared material culture sphere with Aphek (Yadin 2009: 166). The platter bowl types found at Yehud broadly fit with the assemblage from that site (e.g. Beck 2000b; Yadin 2009: 138-141, Fig. 7.13) and a coeval settlement at nearby Khirbat Sha'ira (Peilstöcker 2004: 68, Fig. 4). Also similar are vessels found in other mortuary contexts in Yehud (Arbel 2013: Fig. 14:1-4). However, many platter bowls with similar rim forms were found in a MB I rock-cut tomb and graves at Tel Sasa in Upper Galilee (Ben-Arieh *et al.* 2004), with MB I/II interments in the western Judean hills (Greenhut 2004: 19*, Fig. 4), a MB I built tomb at Khirbat el-Bureij in the Sharon Plain (Golani 2011), and a MB I Shephelah site (Dagot 2005: 7*, Fig. 2). Fig. 148:5 has parallels from MB I Galilean sites (Ben-Arieh *et al.* 2004: Fig. 19:1; Ilan 1996: Fig. 4.104:2, 3). Generally there are relatively few parallels from MB I-II Lachish (both in the settlement [Singer-Avitz 2004a] and the extramural tombs [Singer-Avitz 2004b]). However, overlaps do appear. For example, Fig. 147:4 shares its rim form with a type found at MB II Lachish (Singer-Avitz 2004a: 938, Fig. 16.22:1).

The flat base of the single dipper juglet (Fig. 148:8) from this site appears to be a late MB I development at Aphek (Beck 2000b: 221, Fig. 10.23:10; Yadin 2009: 153, Fig. 7.13) and Megiddo (Kempinski 1989: 52). This type has also been found in a MB I-II tomb at Tur'an in lower Galilee (Gershuny and Eisenberg 2005: 8-9, Fig. 8:7). Broadly similar forms – albeit with rounded bases rather than flat, and straight

7 A much larger group of MB tombs was excavated in the 2012 and 2013 seasons, which avoided the damage that took place in the 2008 season. These contain much more in the way of undisturbed, intact material and will be reported in a future publication.

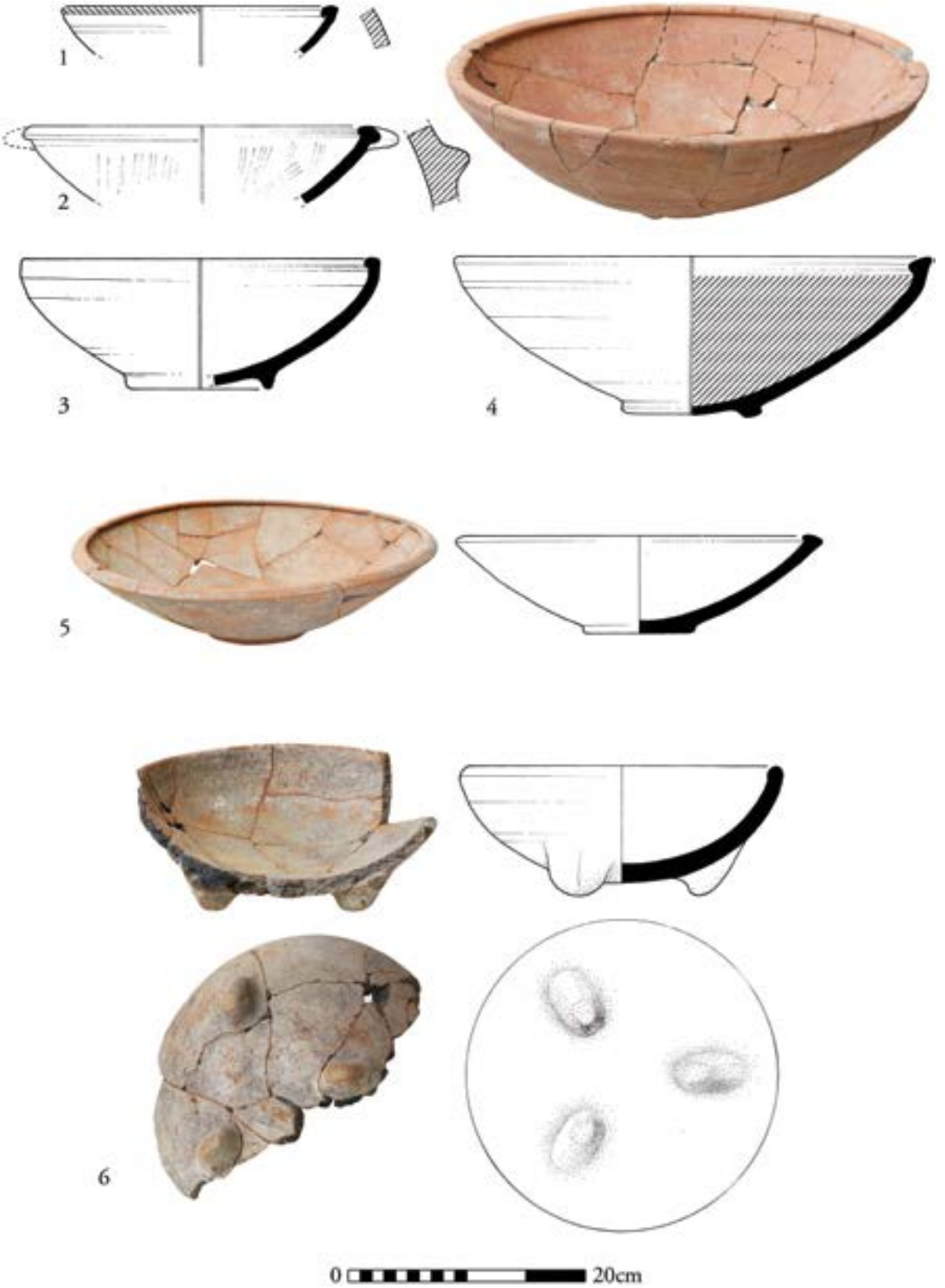

Figure 147. Middle Bronze Age pottery: bowls.

rather than rounded sides – have been found in the MB II Bet She'an (Gal and Zori 2005: 25, Fig. 8:1-3) and Jezreel Valleys (Loud 1948: Pl. 26:2-6), and in Upper Galilee (Ilan 1996: Fig. 4.105:1,10,11). No very close parallels from Lachish have been published (Singer-Avitz 2004a, 2004b).

No parallel was found for the Fig. 147:6 three-legged bowl, but this looks like a ceramic imitation of a basalt mortar.

Clay type and provenance. By comparison with other assemblages (e.g. Tell Qasile [Cohen-Weiniger 2006]), the clay used here appears coastal in origin – the reddish *hamra* soil of the Rehovot Formation and the 'Evron Member, with quartzitic inclusions. A number of studies have indicated that most MB pottery was produced locally, where – as was the case at Yehud – clay and temper sources were ample (Miron 1988: 23-29; Goren 1989: 36-38; Kempinski 1989 31-35; Cohen-Weiniger 2011: 102-103; Goren 1991 also found that locally-produced IB pottery was deposited in tombs).

Dagger (Fig. 149:1)

This dagger was recovered during site inspection; its original context had been severely damaged and could not be ascertained. The dagger (Fig. 149:1) was made of bronze, copper or copper alloy. It was broken above the bottom of the blade, so we could not see the length of the tang or if rivets were used. Such objects are occasionally found in tombs and graves of this region (see discussion below). For example, similar types were found near Tell Qasile, in coeval mortuary contexts with strongly overlapping finds assemblages. Both at that site and elsehwhere (e.g. Meitlis 2010: 18*-19*) a MB II date is favored for such types (Kletter 2006: 78, following Philip 1989: 113-114, 414), and indeed the dagger from Yehud seems to accord with the relatively short and non-tapering blades that characterize MB daggers.

Spearhead (Fig. 149:2)

The details of this socketed spearhead's provenance are also unknown; it was recovered from a badly damaged grave. Although less common than daggers, spearheads have been found in MB mortuary contexts throughout the region (e.g. Philip 1989; Gershuny and Aviam 2010: 34, Fig. 13:3, 4). The Yehud spearhead fits Philip's Type 7 (1989: 94), which is generally found in southern Canaan across the MB I-II period (see discussion and references in Gershuny and Aviam 2010: 35).

Ground stone (Fig. 149:3-4)

Regarding the basalt mortar and pestle (Fig. 149:3-4), such objects have been found in MB I and I-II mortuary contexts at sites ranging from Galilee (Covello-Paran 2001: Fig. 3:4-5; Garfinkel 1997: Fig. III.21:26) to the Bet She'an Valley (Gal and Zori 2005: 26, Fig. 9:15) and the southern Shephelah (Gudovitch 2003: Fig. 1:19), but not at Aphek.

Figure 147.

No.	Object	Reg. no.	Grave
1	Bowl (platter)	1/1	3
2	Bowl (platter)	1/2	3
3	Bowl (platter)	14/2	1
4	Bowl (platter)	16/3	1
5	Bowl (platter)	16/1	1
6	Bowl (legged)	14/1	1

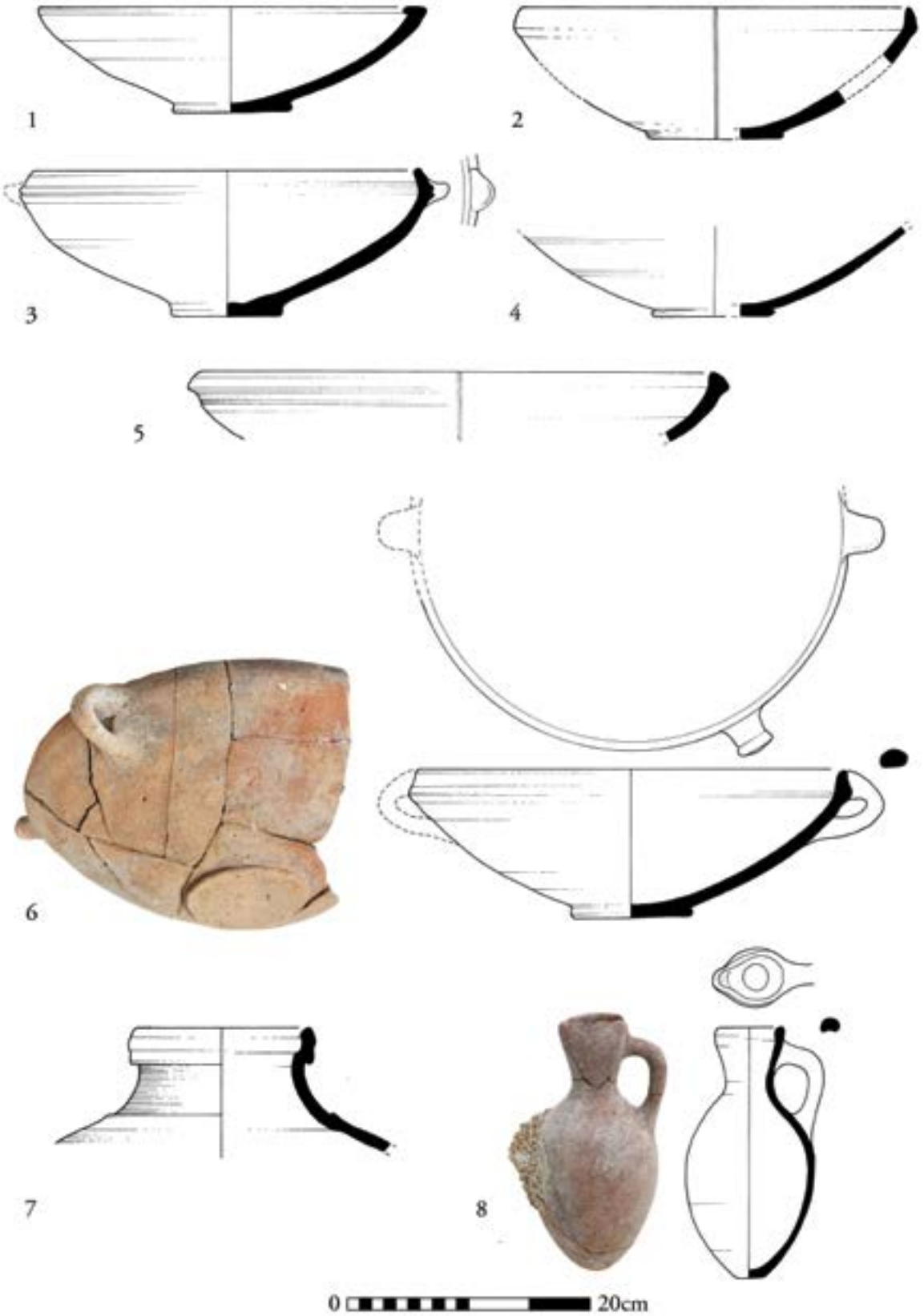

Figure 148. Middle Bronze Age pottery: bowls (1-6), jar (7) and juglet (8).

Figure 148.

No.	Object	Reg. no.	Grave
1	Bowl (platter)	16/2	1
2	Bowl (platter)	14/3	1
3	Bowl (platter)	14/4	1
4	Bowl (platter)	1/3	3
5	Bowl (platter)	1/4	3
6	Bowl (platter)	14/5	1
7	Jar	2/2	7
8	Juglet	2/1	7

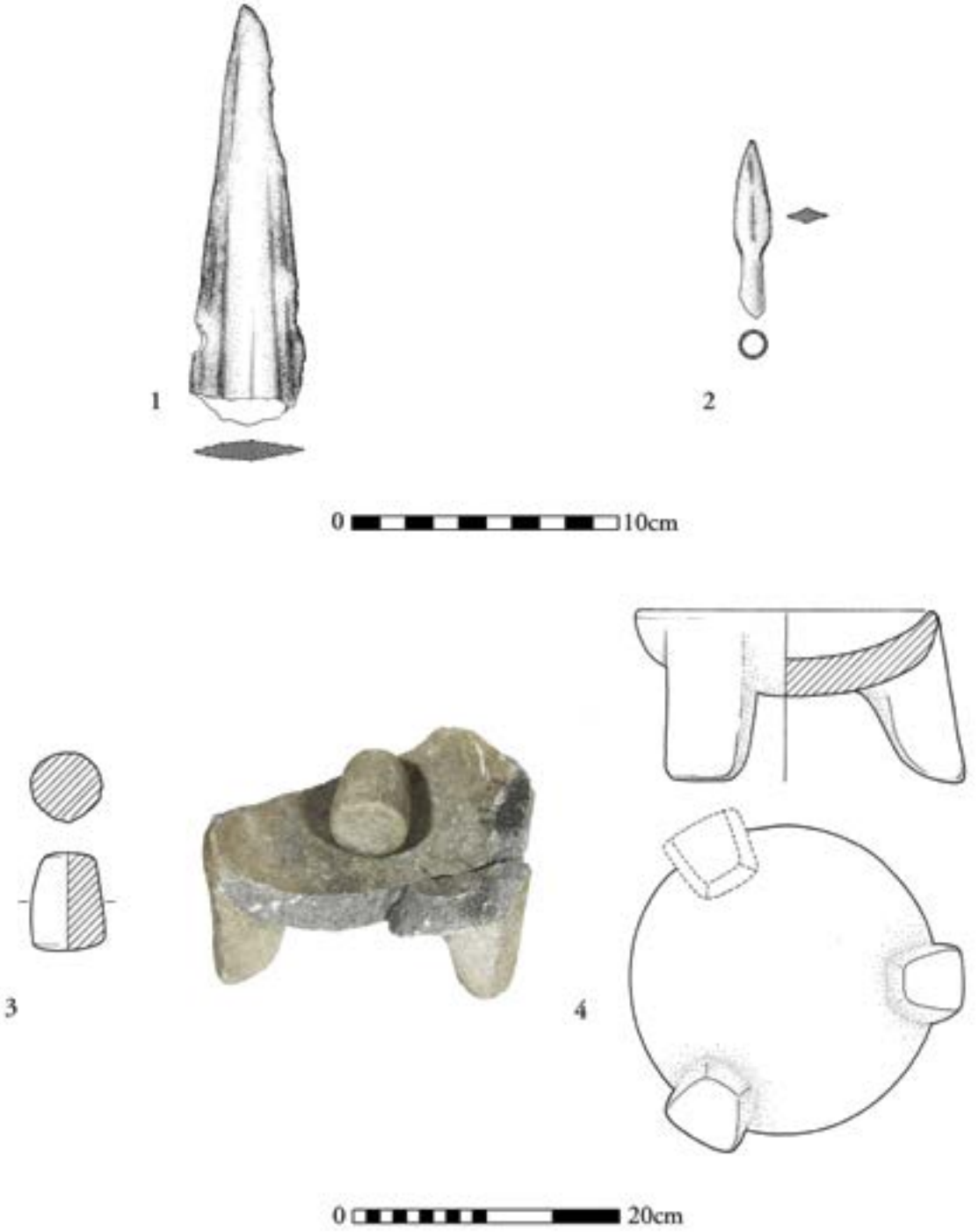

Figure 149. Middle Bronze Age metal (1-2) and ground stone (3-4) finds.

DISCUSSION

These artifact types generally fall within the MB I-II (MB IIA-B) range, and are common in mortuary and non-mortuary contexts across much of the southern Levant. No two MB assemblages correspond precisely; rather, we see varying artifact type combinations from interment to interment and site to site, and between settlement and mortuary contexts. However, it is beyond the scope of this report to trace any general patterns, correlations or potential significance in this variability. Suffice it to note here a few brief observations.

The common MB burial kit usually included one to five items, chosen from a range of (mostly everyday) domestic vessels such as platter and other bowls, kraters, juglets, jars, lamps, scarabs, toggle pins, and beads (Singer-Avitz 2004b: 1005). Food – of which animal bones survive – was placed in vessels or beside the deceased. The Yehud findings generally fit the general pattern, and do not stand out from coeval tombs at larger centers such as Aphek (e.g. Beck 2000b).

The dagger and spearhead reflect what was most likely an affinity with or admiration of warrior status, however indirect or symbolic. However, beyond this we are on grounds of raw speculation. A range of subtle, overlapping and unexpected meanings may underlie burial gifts (see Ucko 1969), and we cannot know what combination of intents is reflected here: whether these items were left with the deceased as a means of showing respect or according prestige to the latter (and perhaps also to the giver), were seen as utilitarian items needed for the afterlife, and so on.

Grave 1 is distinctive in its quantitative richness (11 items) and somewhat unusual array of burial gifts, suggesting that this woman may have been a person of some status. Also, some irregularities and absences are worthy of note. None of the graves yielded carinated, hemispherical or globular bowls, or chalices or lamps. Also, we did not find scarabs, beads or 'painted Levantine ware' and other ceramic types which bespeak wider regional contacts with the northern Levant, etc. (Beck 2000c: 240-242). Finally, one generally would expect to find an axe together with daggers such as No. 16 (Philip 1995a: 67) – although weapons are in fact fairly rare in MB mortuary contexts (Philip 1995b: 144). Other relatively unusual grave goods here are the three-legged ceramic bowl – for which no parallel could be found – and the basalt mortar and pestle, which must have been brought from beyond the central coastal plain region. All in all, this assemblage suggests a locally focused community of moderate status and, in the case of Grave 1, perhaps an individual who stood out somewhat from the norm.

Figure 149.

No.	Object	Reg. no.	Grave
1	Dagger	?	?
2	Spear head	?	?
3	Pestle (basalt)	17/2	1
4	Bowl/mortar (basalt)	17/1	1

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The Byzantine – Early Islamic Period Remains

ARCHAEOLOGICAL FEATURES

Yehuda Govrin

REFUSE PITS FROM A BYZANTINE POTTERY WORKSHOP

L3 (ceramic waste pit)

At a depth of 1.5m under the excavation surface (36.50m ASL) at the eastern limit of Area A, a concentration of Byzantine pottery was found during Israel Antiquities Authority (IAA) inspection work. Test sections (2.5 x 0.5m) cut at this location revealed a large concentration of Byzantine potsherds. Most were of comb-decorated jars which may have been indended for use to store wine, as evinced by the wine press found a few dozen meters north of the current excavation (Korenfeld and Bar-Nathan 2014).

L4 (ceramic waste pit)

This concentration of many Byzantine potsherds was found very close to the excavation surface (35.74m ASL), at the east end of Area A. The pit was spread over an area of 3 x 2m and reached a depth of 0.5m. Most of the potsherds belonged to jars with combed decoration.

L5 (ceramic waste pit)

This feature was located in the northwest quadrant of Area A. It had been identified provisionally by the IAA as a pottery kiln ('Site 3') requiring rescue excavation. In order to investigate this feature, we dug a trapzoidal area measuring 10 x 8m (80m^2). At a depth of 1.5m under the opening excavation level (36.15m ASL), within the black clay layer, we exposed a very rich spread of fragmented Byzantine pottery vessels. This ancient surface level was near the excavation area surface which had been shaved by mechanical tools. We cut a 3 x 1.5m section (north-south) through the center of the feature to a depth of 0.4m, reaching the underlying black soil which did not yield pottery (Fig. 150). This Byzantine ceramic debris was probably associated with the pottery workshop (L8) exposed ca. 15m east. The dominant ceramic vessel type represented at L5 was the comb-decorated jar.

L8 (pottery workshop)

Here we opened a 8 x 6m dig square and found a large concentration of broken pottery overlying a black clay layer. Some of these potsherds were deformed or even

Figure 150. The section cut through the L5 ceramic waste pit (facing west).

Figure 151. General view of the west side of the L8 structure (facing southeast).

melted against other sherds. This constituted industrial waste from a workshop (Figs. 172-173).

Below this layer of potsherds we exposed a workshop structure (a pottery kiln) built from ashlar blocks in secondary use. The kiln was round in plan and had an inner diameter of 3.7m. The interior façade was lined with large ashlar blocks, while the exterior was built from small fieldstones (Figs. 151-152). Our dig commenced on the southern side of the structure and we made a section through its middle. After removing the collapsed superstructure, east of the kiln we found a complete arch built from high-quality ashlars. This arch had fallen over intact (Figs. 148-149). Among the collapse we recovered coarse plaster to which were attached rough white stone *tesserae* of a sort usually associated with the mosaic surfaces of courtyards or

Figure 154. The pier of the L8 arch (facing south).

Figure 152. General view of the east side of L8 (facing south).

Figure 153. Collapsed arch at the L8 workshop (facing southeast).

Figure 155. The floor of the L8 pottery kiln and within it the flue which controlled air flow to the kiln fire (facing east).

industrial complexes. Immediately east of the kiln we found a large amount of ceramic waste – workshop refuse (Figs. 172-173). It may be that the majority of the pottery found next to L3, L4 and L5 was also waste from this workshop. Inside the circular structure (almost certainly a kiln) we found a channel (flue) which controlled air flow and therefore the temperature of the kiln fire. This flue was cut into the *hamra* soil underlying the kiln structure (Fig. 155). The flue sides were hardened and gray in colour, most likely as a result of exposure to the heat of the fire. The walls of the kiln were preserved to a height of 2.5m and were built of large ashlar blocks interposed with courses of small stones (Fig. 155).

BYZANTINE-EARLY ISLAMIC GRAVES

In the south part of the excavation area we found ten graves of relatively late date, some of which are datable to the Late Byzantine/Early Islamic era according to datable parallel assemblages in the region (Tsfania-Zias and Golding-Meir 2013: *20-*24). Most are cist graves, dug through the clay, down to the *hamra*. The graves were covered with black clayey soil which stood out against the surrounding red *hamra* sediment. Most of the graves are some 2m long and 0.6m wide, with an east-west orientation. The dead were interred in an extended position on their backs and the head at the west end. Only one grave (Grave 62)

Figure 156. General view of the L8 workshop (facing west).

Figure 157. The surviving western half of the double Grave 12 (facing southwest).

Figure 158. Double Grave 12 (facing northwest).

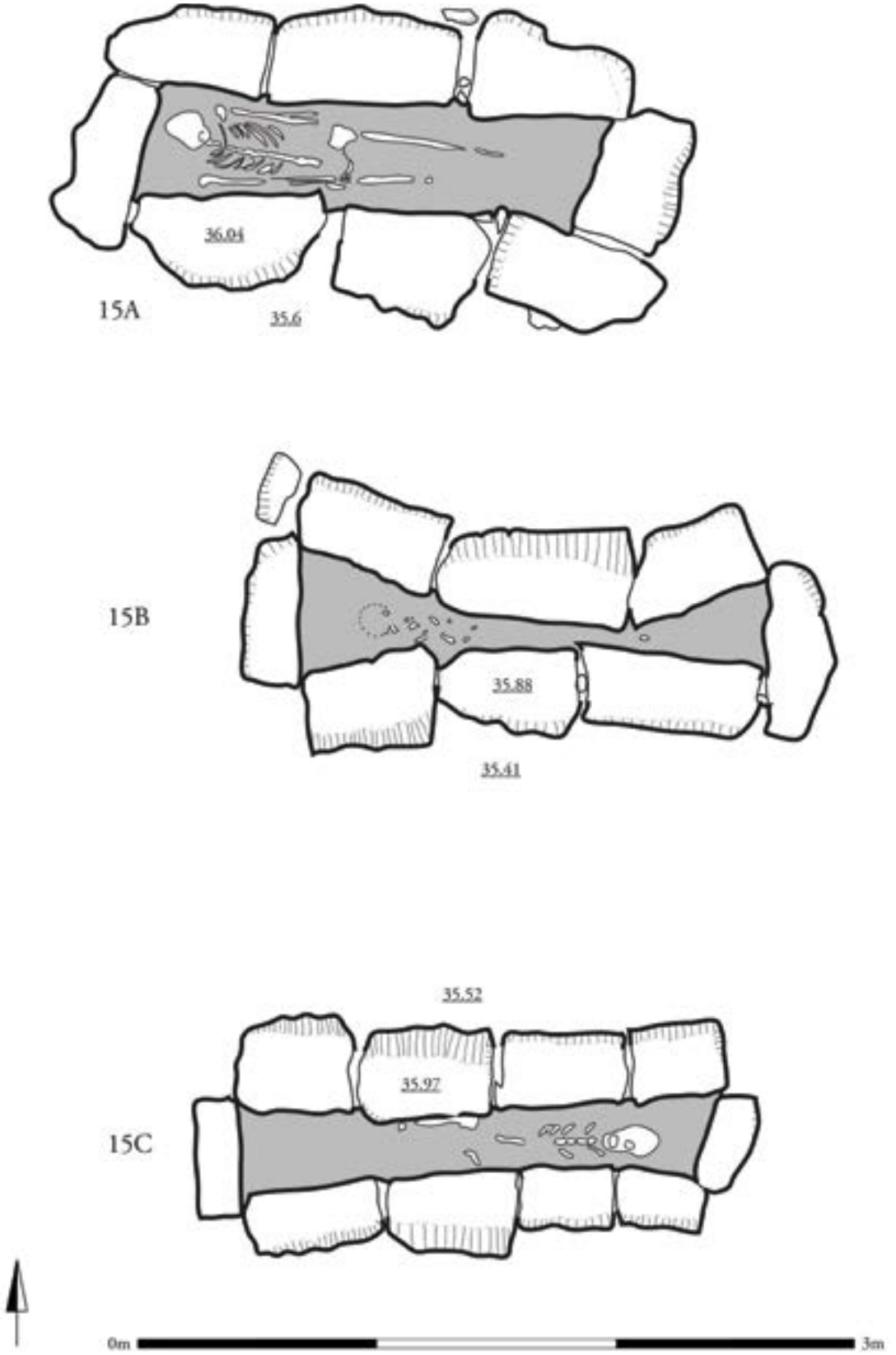

Figure 159. Grave 15 (A-C) after excavation.

was lined with small and medium fieldstones. The capstone slabs of this grave were missing, suggesting that it had been robbed in antiquity – an act which also caused damage to the skeletal remains, found *in situ* but not articulated.

Stone-lined cist graves

We uncovered seven stone-lined graves. Of these, five were found in the center of the excavation area, one at the northeast dig limit, and another at the southeast limit. The excavation of these graves was delayed in the first phase of the project as a result of Ultra-Orthodox Jewish opposition. As a result, the built graves were left perched in place while their surroundings were dug down. Subsequently, the stone-lined graves were excavated fully.

Grave 12

This was a double grave, only the west side of which survived (Figs. 157-158). The graves were lined with large, re-used ashlar blocks, reinforced by interposing fieldstones. The capstones were not preserved. However, the two graves did survive (sharing a wall between them), and in them we discovered human remains oriented east-west. The bones lay on the grave floor, which was composed of a paste of small stones and pottery fragments.

Grave 15

Here we found three large stone-lined cist graves constructed one beside another, with a distance of ca. 1m between (Figs. 159-161). The graves were found lined and sealed by stone slabs, and were dug in the black clay layer at 36.40m ASL. Each grave measured ca. 2 x 1m. The grave lining consisted in 3-4 large and long ashlar blocks which were placed in a single course (0.4-0.5m high) within the sides of the grave once this was excavated. Grave 15A (the northern grave) was the largest and highest. The grave space was lined by eight large ashlar blocks, three on each of the long sides and one at either end. In Grave 15B (the central grave) a layer of plaster covered the blocks of the western side. At Grave 15C (the southernmost grave), the capstones did not survive. All the graves were oriented east-west. The heads of the interred in

Figure 160. General view of the Grave 15 stone-lined group (facing west).

Figure 161. The central grave (Grave 15B, facing south).

Graves 15A and 15B were on the west side, while in Grave 15C the deceased was interred with the head at the east end.

Grave 16

This double grave was constructed with roughly dressed blocks and fieldstones (Figs. 162-163), and was exposed at 35.95m ASL (with the base at 35.38m). Sealing this double grave we found two rows of capstones of various sizes (four or five capstones over each interment space). The grave was cut into and built within the black clay layer, while the base was founded on the red *hamra* soil (Fig. 164). After removing the capstones, we found two burial spaces sharing a wall between them. The graves were lined by roughly dressed blocks and small fieldstones, built to a

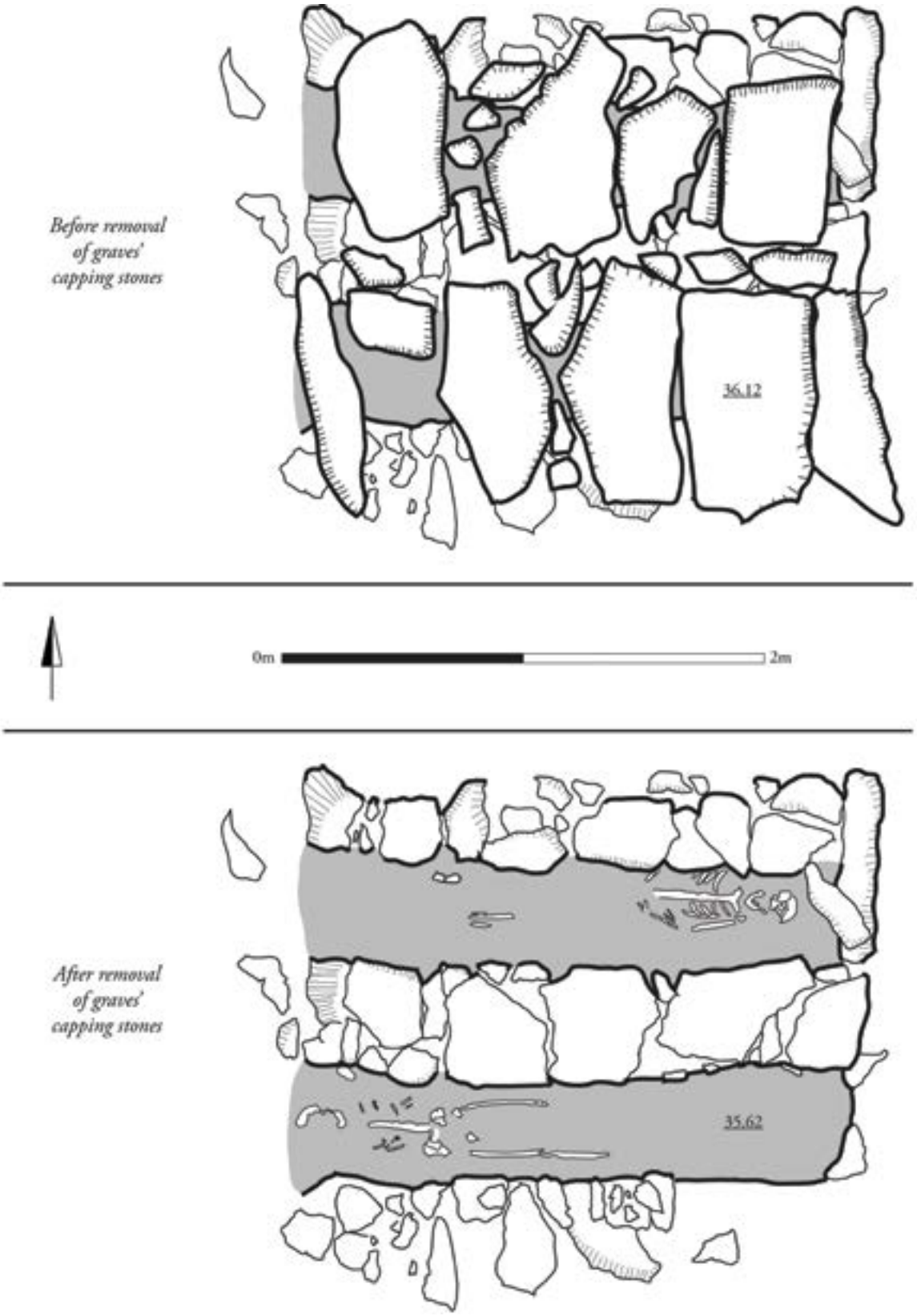

Figure 162. Grave 16 before and after excavation.

Figure 163. General view of the capstones covering the double Grave 16 (facing south).

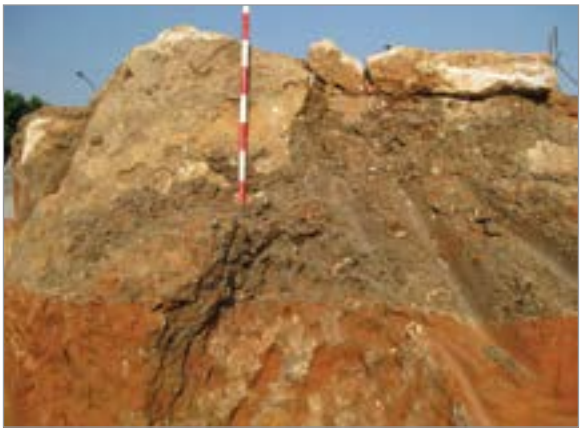

Figure 164. Section view of Grave 16 (facing east). Note that the double grave sealed Chalcolithic Shaft 26.

height of 0.6m. The graves were oriented east-west. In the southern burial space we found the *in situ* remains of a skeleton. The interment was laid with the head in the west. In the northern burial space another skeleton was found, in this case with the head toward the east. In the base of both burial spaces were surfaces of small flat stones resting on a layer of potsherds (mostly cooking vessel fragments). The base of this grave sealed the opening of Chalcolithic Shaft 26.

Grave 37

This stone-lined grave (Figs. 165-167), constructed with large, re-used ashlar blocks, was exposed in the north part of Area B. The grave was cut and built within the black clay layer. The grave capstones rested at a height of 36.12m ASL, and the base of the grave was at 35.62m ASL. The stone lining of the grave was founded in the clay sediment and the walls were built of re-used ashlar blocks (Fig. 167). The grave was oriented southeast-northwest. After the removal of the capstones we found the skeletal remains of an interred individual, the head at the west end. Adjacent to the human remains were recovered potsherds which mostly consisted of cooking vessels.

Grave 62

This fieldstone-lined grave was found adjacent to the southern limit of Area B. The grave was oriented east-west, lacked capstones, and stood at 35.70m ASL (Fig. 168). Within the grave were found *in situ* skeletal remains, head on the east. We did not recover any artifacts from the grave.

UNLINED CIST GRAVES

We found 25 simple cist/pit graves dug into the heavy black clay sediment. These graves were mostly concentrated in Area B. The ground surface in the center of this area had been severely damaged by a large recent refuse pit, and as a result of other modern digging works immediately south of this pit. One has the impression that prior to this damage the surface of the whole of Area B was taken up by a densely-packed cist grave cemetery dating to the Early Islamic period. Most of these graves were dug through the clay layer and into the underlying *hamra* soil. Some of the graves, dug into the red *hamra*, were filled by black clayey soil. Most were oriented east-west, with some aligned north-south. In general these graves do not share any consistent orientation. Most did not yield burial gifts; in several graves we recovered non-diagnostic potsherds. In Grave 44 we found a kohl stick (Fig. 169). The preservation of the human remains was bad; in most cases all that could be seen was a crushed paste of bones or only a few crumbling bones. It should be noted that the preservation in the black clay layer was better than that in the *hamra* sediment. Among these cist graves Grave 25 is worthy of mention (Fig. 170). This grave was representative of the type found at this site.

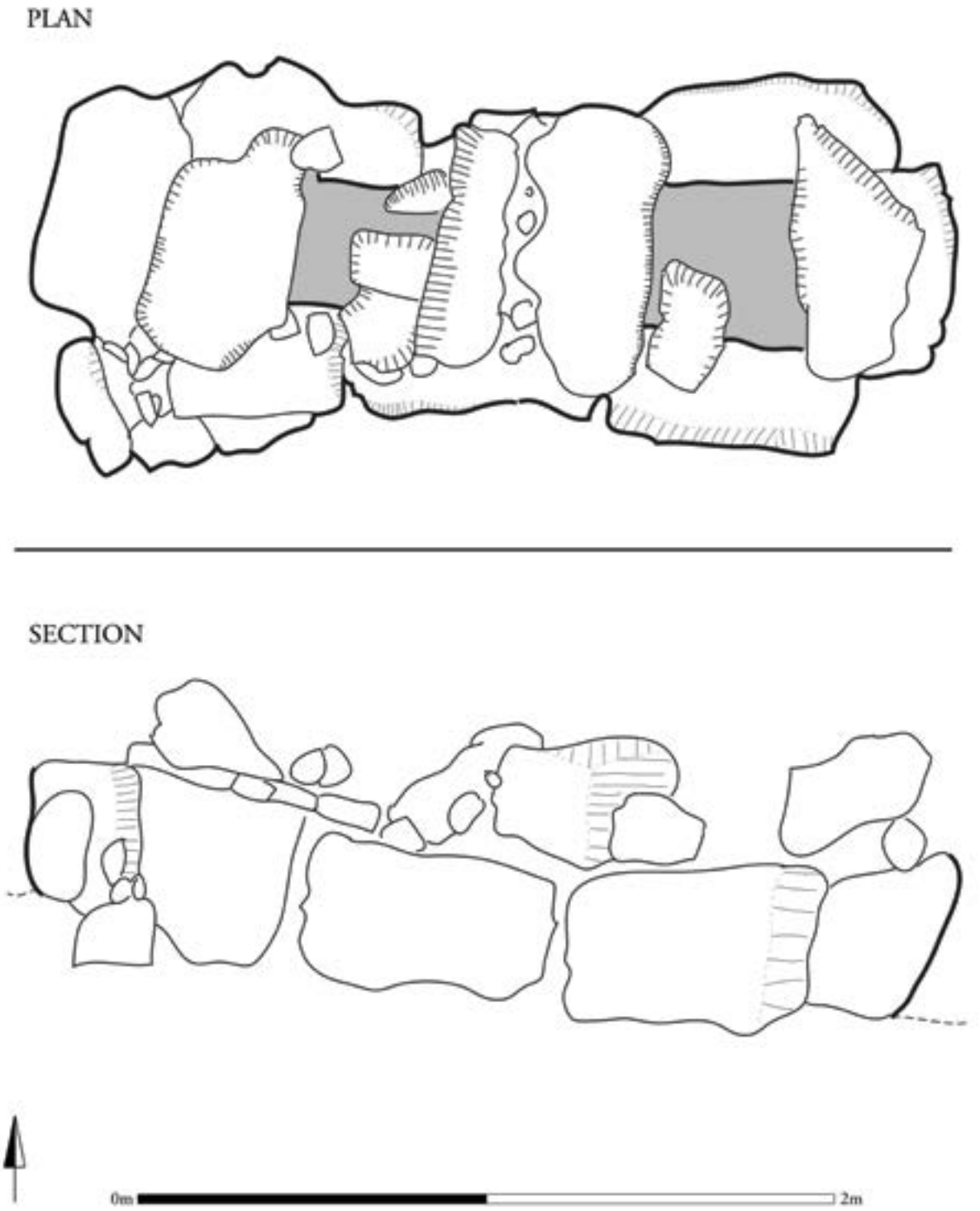

Figure 165. Plan and section of Grave 37.

Figure 166. General view of sealed stone-lined Grave 37 (facing east).

Figure 167. General view of the Grave 37 after excavation (facing east).

Figure 168. General view of stone-lined Grave 62 after excavation (facing east).

Grave 25

This north-south oriented cist-grave was found beside the west limit of the excavation, at 35.59m ASL. At the south end of the grave we recovered cooking vessel sherds (without rim, not illustrated) and beneath these the bones of what was probably a child. This grave consisted in a long trench measuring 2 x 0.8m , excavated to 1m below the original surface. The cadaver was laid on its back, with the head at the south end of the grave. The human remains were covered with ash-mixed soil, and above this was a thin layer of *hamra*.

Graves 52 and 56 (concentrations of bones and lime)

In the center of the cist grave concentration on the south side of Area B, we came across two separate concentrations of bones in large numbers, filling shallow pits which also contained substantial quantities of limestone/lime. One of these pits (Grave 52) was 1.5m in diameter and 0.4m deep. A number of non-diagnostic potsherds were found in this bone pit. The majority of the bones were broken/crushed and were mixed with limestone/lime.

Figure 169. Kohl stick from Grave 44.

Figure 170. Section view of the cist Grave 25 (facing north), cut into the *hamra* layer (under a modern foundation).

Figure 171. The Grave 52 limestone/lime surface after removal of the bone layer (facing east).

The second concentration of human bones, mostly crushed, was located ca. 10m south of the Grave 52 pit. Upon excavation, we found that this second bone concentration was also a pit (Grave 56), 2.5m in diameter and 0.2m deep. The pit was full of bones, mixed into a thick layer of lime. The bone fragments lay on a thin limestone/lime surface, under which was a bedding of flat stones (Fig. 171). It seems that in this relatively late cemetery large numbers of the dead were brought for mass interment as a form of secondary burial. It may be that this practice of concentrated burial was the result of an epidemic or war which forced the local population to inter the remains of their dead in high-density mass graves, and to spread crushed limestone/lime on the remains of the deceased. It is possible that this practice had a sanitary aspect. Aother possibility is that older graves were dismantled and stones reused. Their bones were accorded some sanctity and reburied in a pit.

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THE POTTERY FROM THE BYZANTINE REFUSE PITS

Eli Cohen-Sasson

The Byzantine ceramic assemblage from this Yehud site mainly comprises storage jars, as well as one cooking krater and two imported bowls.

Storage jars (Fig. 172:1-13; Fig. 173:1-3)

In the publication of the pottery from the first season of digging in the Caesarea hippodrome, Riley (1975: 26-27) divided the amphorae assemblage into two types: Type 1 are bag-shaped, while Type 2 have a narrow cylindrical body. All of the storage jars from this Yehud excavation belongs to Type 1, also known as "bag-shaped" or "Southern Palestinian Bag-Shaped" amphorae (Magness 1992: 131) These are characterized by two ring handles on the vessel shoulder, no neck and a vertical rim with a groove underneath. Most of the storage jars from our assemblage (Fig. 172:1-12) can be identified as Type 1b with a lower rim and a less crisp fabric. Riley dates the appearance of this type to the fifth century CE (Riley 1975: 26). One storage jar is exceptional, having a high neck, slanting shoulders and a ridge at the base of the neck (Fig. 172:13). This type was identified by Magness as storage jar Form 6b, which she dates to the late sixth – eighth century CE (Magness 1993: 230).

Figure 172.

No.	Reg. no.	Locus	Object	Parallels
1	60/16	8	Storage jar	Riley 1975: 2 (Amphora Type 1b)
2	60/15	8	Southern Palestinian bag-shaped storage jar	Adan-Bayewitz 1986: 91; Calderon 2000: 127-129; Magness 1992: 131, Fig. 58: 16-19; Riley 1975: 25, 26.
3	60/17	8	Southern Palestinian bag-shaped storage jar	Adan-Bayewitz 1986: 91; Calderon 2000: 127-129; Magness 1992: 131, Fig. 58: 16-19; Riley 1975: 25, 26.
4	60/14	8	Southern Palestinian bag-shaped storage jar	Adan-Bayewitz 1986: 91; Calderon 2000: 127-129; Magness 1992: 131, Fig. 58: 16-19; Riley 1975: 25, 26.
5	15/5	5	Southern Palestinian bag-shaped storage jar	Adan-Bayewitz 1986: 91; Calderon 2000: 127-129; Magness 1992: 131, Fig. 58: 16-19; Riley 1975: 25, 26.
6	15/7	5	Storage jar	Riley 1975: 2 (Amphora Type 1b)
7	15/13	5	Southern Palestinian bag-shaped storage jar	Adan-Bayewitz 1986: 91; Calderon 2000: 127-129; Magness 1992: 131, Fig. 58: 16-19; Riley 1975: 25, 26.
8	15/6	5	Southern Palestinian bag-shaped storage jar	Adan-Bayewitz 1986: 91; Calderon 2000: 127-129; Magness 1992: 131, Fig. 58: 16-19; Riley 1975: 25, 26.
9	15/12	5	Southern Palestinian bag-shaped storage jar	Adan-Bayewitz 1986: 91; Calderon 2000: 127-129; Magness 1992: 131, Fig. 58: 16-19; Riley 1975: 25, 26.
10	15/10	5	Southern Palestinian bag-shaped storage jar	Adan-Bayewitz 1986: 91; Calderon 2000: 127-129; Magness 1992: 131, Fig. 58: 16-19; Riley 1975: 25, 26.
11	15	5	Southern Palestinian bag-shaped storage jar	Adan-Bayewitz 1986: 91; Calderon 2000: 127-129; Magness 1992: 131, Fig. 58: 16-19; Riley 1975: 25, 26.
12	15/11	5	Southern Palestinian bag-shaped storage jar	Adan-Bayewitz 1986: 91; Calderon 2000: 127-129; Magness 1992: 131, Fig. 58: 16-19; Riley 1975: 25, 26.
13	15/9	5	Storage jar	Magness 1993: 230 (Storage Jars Form 6b)

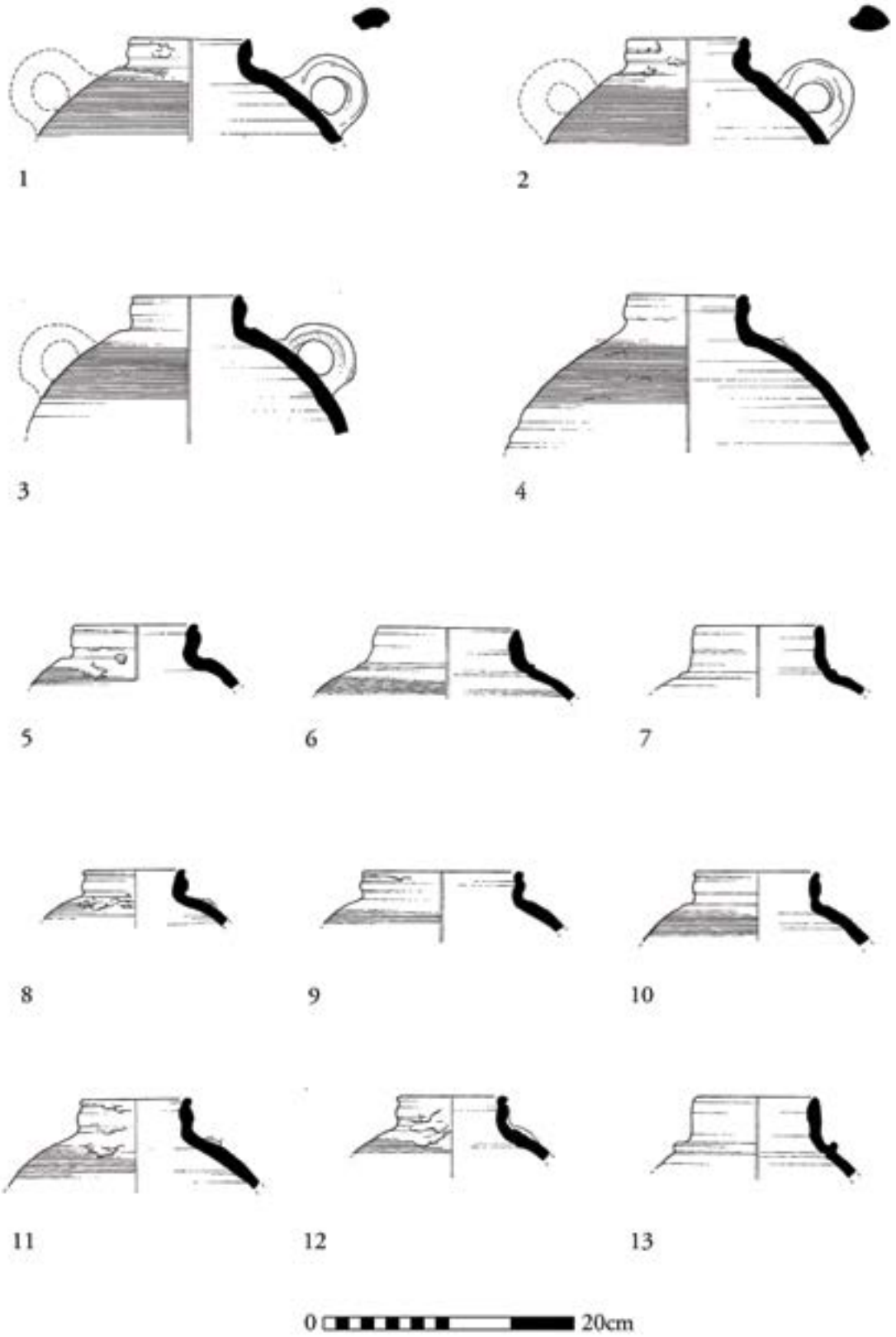

Figure 172. Byzantine storage jars.

Cooking Krater (Fig. 173:4)

This cooking krater has a flat rim (triangular cross-section) and two horizontal handles. This type is Magness' (1993: 212) casserole Form 1.

Imported Pottery (Fig. 173:5-6)

Two imported bowls were found during the excavation. One is a 'Late Roman C' bowl with a thickened and slightly inverted rim with two spiral grooves on the outer part (Fig. 173:5). The second import (Fig. 173:6) is a "Cypriot Red Slip Ware" bowl (Hayes 1972: 379-382 [Form 9b]; Gendelman 2012: 38 [Fig. 3:1]).

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Figure 173.

No.	Locus	Reg. no.	Object	Parallels
1	8	60/20	Bag-shaped storage jar	Magness 1993: 221-231
2	8	60/18	Bag-shaped storage jar	Magness 1993: 221-231
3	8	60/19	Bag-shaped storage jar	Magness 1993: 221-231
4	3	13/1	Cooking krater	Magness 1993: 212 (No. 12); Buchennino 2010: Fig. 3: 6-9
5	3	13/4	Late Roman C bowl	Hayes 1972: 335; Tepper & Covello-Paran 2012: Fig 3:4
6	3	13/3	Cypriot Red Slip Ware bowl	Hayes 1972: 379-382 (Form 9b); Gendelman 2012: 38 (Fig. 3:1)
7	3	13/2	Base	Unidentified

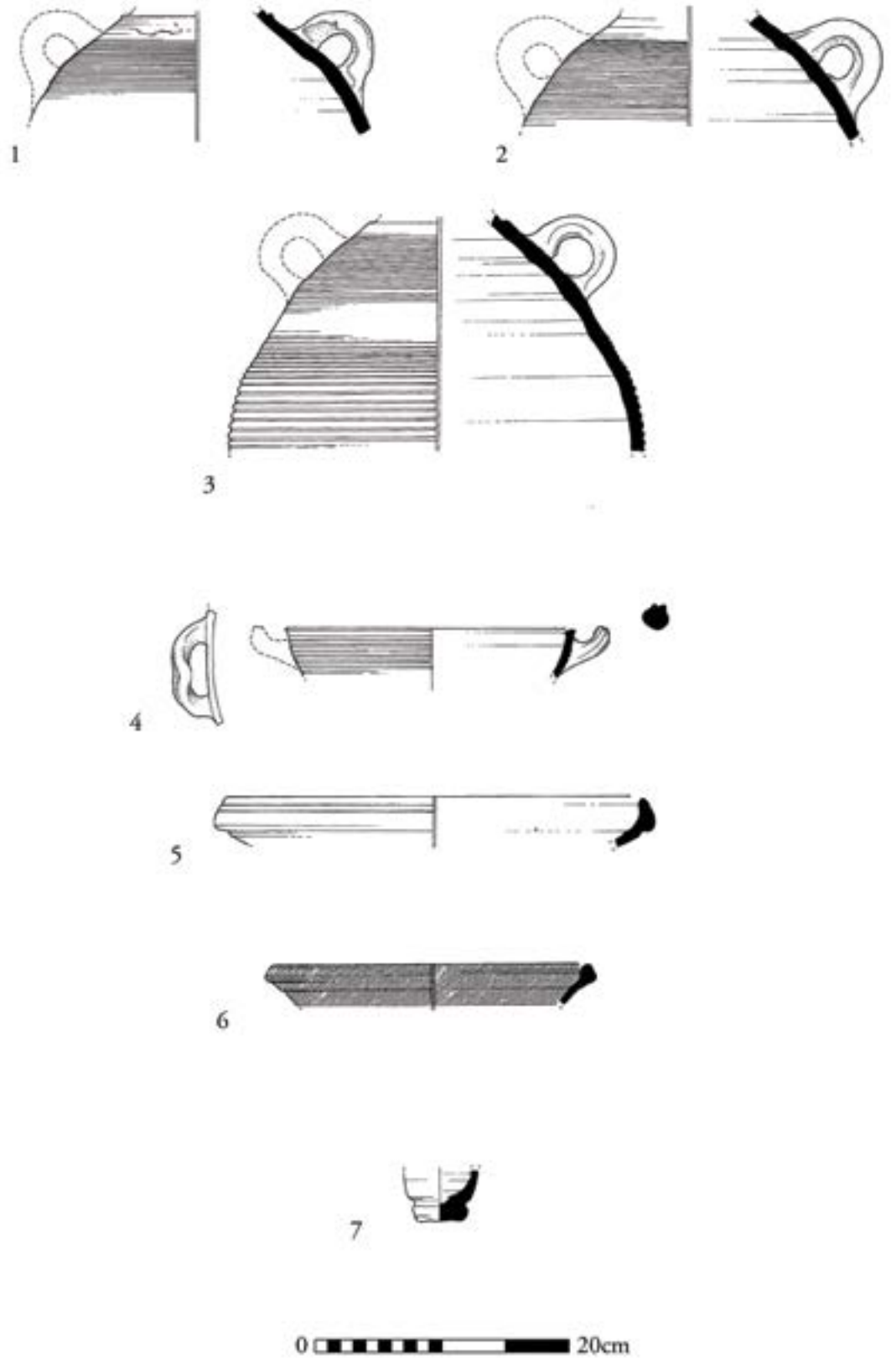

Figure 173. Byzantine jars, krater and bowls.

THE HUMAN REMAINS

Vered Eshed and Esther Deutsch

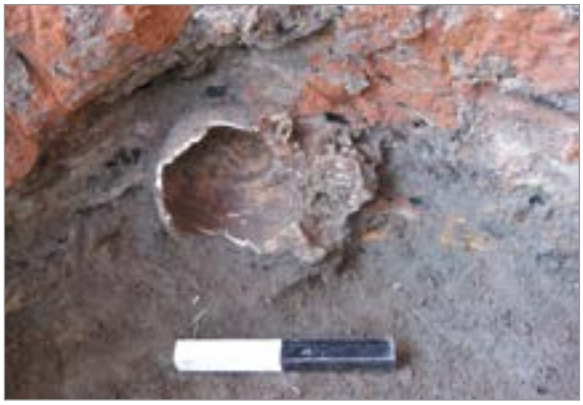

Figure 174. Human cranium remains in Chalcolithic Shaft 10.

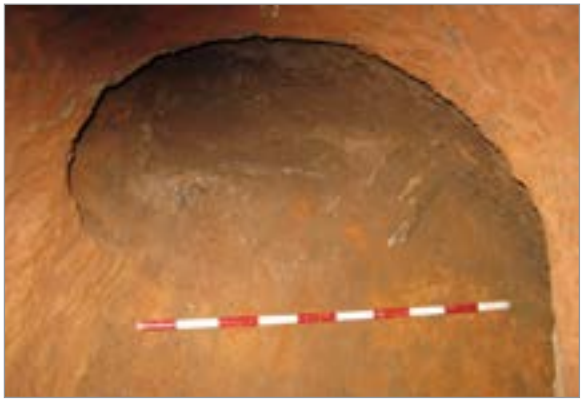

Figure 175. The Tomb 6 chamber (facing southeast) and on its surface the remains of one of the interred individuals, lying on its side in an extended position.

Figure 176. The Tomb 13 interment lying on its side in a flexed position, where it was found in situ under the burial offering assemblage.

The human remains for the first two seasons were identified in the field by Esther Deutsch. Detailed analysis of the remains from Tomb 21 were studied in more depth by Vered Eshed. After examination, all the human bones were taken by officials from the Ministry of Religious Affairs for burial elsewhere, as sanctioned by an agreement with IAA officials. Eshed was able to make a more detailed study of the Tomb 21 skeletal material, which was moved to the anthropology lab of the Hebrew University (below).

CHALCOLITHIC

In Shaft 10 we recovered a large fragment of the back part of the skull (occipital and parietal bones; Fig. 174).

INTERMEDIATE BRONZE AGE

The human remains of Tombs 6, 13, 24, 43, 59 and 60 were only available for brief examination in the field. This was carried out by Esther Deutsch. Unfortunately, the detailed log went missing shortly after the field seasons culminated.

Tomb 6

Two human interments. After removing a layer of sand on which pottery vessels rested, the scant but fully articulated remains of a skeleton were recovered, lying on its side in an extended position (Fig. 175).

Tomb 13

This was the *in situ* interment of an adult woman lying on her side in a flexed position (Fig. 176).

Tomb 20

The upper half of a woman's skeleton in flexed position (Fig. 177).

Tomb 21

Two individuals in a good state of preservation were found in a shaft tomb, dug into the natural soil and sand (Figs. 178-179). Several concentrations of dentalia beads were found in patches above the bones

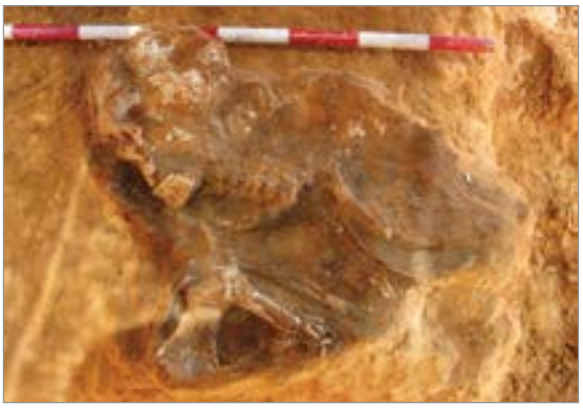

Figure 177. The remains of the interment from the damaged Tomb 20.

Figure 179. Close-up of the Tomb 21 interments.

Figure 178. The two articulated skeletons in Tomb 21. The eastern skeleton is on the left and the western skeleton on the right.

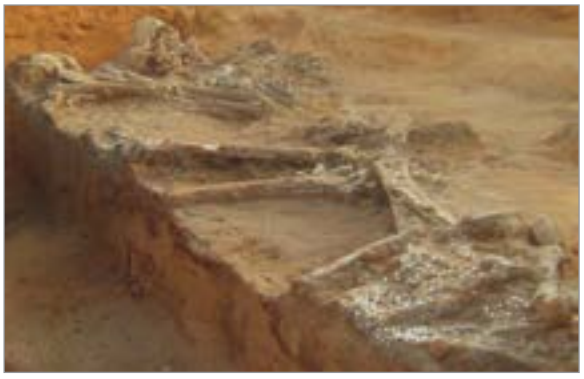

Figure 180. Concentration of beads above the bones, in several significant patches (facing southeast).

(description is below, Fig. 179). The skeletons were excavated and removed *en bloc*, to be later cleaned and studied in the laboratory.

The two skeletons were found in anatomical articulation, the skull and body were anatomically associated, indicating primary burial (Figs. 179-180). Both individuals were lying in a south-north orientation, with the head to the south, facing one another.

Individual No. 1 (the eastern skeleton)

Burial position: The individual was lying on its left side, the head to the south, facing west. The arms were flexed (over 90 degrees) near and below the mandible (Figs. 178-180). The legs were also flexed (to the back, less than 90 degrees).

Age and sex determination: The individual was determined to be a female, based on the morphology

Figure 181. Beads and animal bones were placed over the female's feet (Individual No. 1).

Figure 182. Beads in relation to the female skull base and cervical vertebrae (Individual No. 1).

Figure 183. Male skull (Individual No. 2). Note the broken first upper molar and the high level of attrition.

of the skull and mandible and the vertical diameter of the femoral head (Bass 1987:81-82, 200-206, 218-220). The estimation of age at death was based on tooth eruption, development and attrition stages (Hillson 1993:176–201). The age was determined to be 15-18 years, since the third lower molars were not totally erupted and the crowns were only half exposed over the alveolar line (Fig. 182). The tooth attrition was low and no dentine exposure was apparent. No stature was reconstructed.

Tooth pathology: Linear enamel hyperplasia (LEH) was noted in the central lower teeth, especially in the lower canine (Buikstra and Ubelaker 1994; table 2.15).

Beads: On top of the foot and under it, a "carpet" of beads was found. Animal bones were placed above these (Fig. 181). Beads were also found in association with the skull base and cervical vertebrae (Fig. 182). Perhaps this was a necklace.

Individual No. 2 (the western skeleton)

Burial position: the upper body of the individual was placed on its front, while the head was on its right side facing east, towards the female face (Figs. 178-180). The left arm was flexed (over 90 degrees) near and below the skull, near the female hand; the right hand position in unknown. The lower body (pelvis and legs) were rotated toward the east. The legs were flexed to the east, facing the female legs (Figs. 178, 180).

Age and sex determination: The individual was determined to be a male, based on the morphology of the skull and mandible and the robust morphology of the long bones (Bass 1987:81-82, 200- 206, 218-220). The estimation of age at death was based on tooth attrition stages (Hillson 1993:176–201). The age was determined to be 20-25 years. Tooth attrition was low. Despite the young age of the individual, some teeth showed significant pathology, described below. No stature was reconstructed.

Tooth pathology: The first and second left upper molars were damaged during the individual's lifetime (Figs. 183-184); the first molar probably suffered from caries or was broken, but the tooth continued to be used and to wear accordingly, only half of the crown height was preserved and the center part of the tooth showed dentine exposure; the dentine cup shape was visible. The second molar was damaged obviously by caries, and the lateral half of the crown tooth showed a cup-shaped cavity.

Figure 184. Male jawbone (Individual No. 2). Note the damaged upper first and second molar teeth.

Figure 185. General view of Tomb 24 after excavation. Note the flexed position of the human skeletal remains.

Figure 186. Grave 1. The pelvis and lower limbs of the interred woman (facing south).

Tomb 24

An undisturbed skeleton laid in the west side of the tomb – an adult female on her side in a flexed position, with hands clasped (Fig. 185).

Tomb 43

The human remains had been placed on the chamber's sand floor and covered with *hamra* soil.

Tomb 59

Beneath a deposit of potsherds fragments of limb bones were visible, belonging to an adult male which had been laid in a north-south orientation.

Tomb 60

After removing the overlying 15cm-thick soil layer, a human interment was exposed, *in situ* and fully articulated in a flexed position on its left side. The general orientation of the skeleton was northeast-southwest, with the head in the east and facing south. This individual was probably an adult female, 1.6m tall.

MIDDLE BRONZE AGE

The human remains from Graves 1, 2, 3, and 7 were damaged by heavy machinery prior to commencement of the salvage excavation. Only the bones of Grave 1 were examined by me in the field. The other skeletal material was not made available for analysis, due to its removal by officials of the Ministry of Religious Affairs.

Grave 1

The human remains recovered were of an adult female, who was found in an extended position on an east-west axis, where the head was to the east. The remains included the lower limbs, the pelvis, the right radius, ulna and carpals (Fig. 186). The fragmentary state of the remains prevented further analysis.

Grave 2

This interment consisted in a skeleton placed on its right side in a foetal position. The body faced north and was oriented east-west (skull on the east side). Half of the skull was cut by a heavy excavating machine so that only its outline was extant.

Grave 3

This was a concentration of human bones of which mainly the rib cage was preserved.

Grave 7

This grave contained the crumbled remains of an infant's skeleton.

BYZANTINE AND ISLAMIC PERIOD

This material was also not made available for analysis, due to its removal by officials of the Ministry of Religious Affairs. Field observations are presented in the archaeological description above.

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ARCHAEOZOOLOGICAL FINDINGS FROM THE CHALCOLITHIC AND INTERMEDIATE BRONZE PERIODS AT YEHUD

Moshe Sade

INTRODUCTION

This faunal assemblage derives from two chronological periods: the Chalcolithic period and the Intermediate Bronze Age. The Chalcolithic material was found in nine separate shafts. Domesticated species present are: sheep (*Ovis aries/Capra hircus*), cattle (*Bos Taurus*), pig (*Sus scrofa*), and dog (*Canis familiaris*). Non-domesticated species include a number of unidentifiable fowl bones, a fish vertebra of the grouper species (*Epinephelus*), two fragments of a sponge of the genus *Sigmon ceptrella[Latrunculia] magnifica* and a small number of sea molluscs: six fragments of mother-of-pearl (*Pteria occa [Reeve]*), one shell of a cockle (*Cardium edule[Linne]*) and two valve fragments (*Glycymeris violocescens*).

From the Intermediate Bronze Age, only six sheep bones were found; these are analyzed below.

RESEARCH METHODS

Measurements and evaluation relied in part on the work of von den Driesch (1976) and species identification on that of Schmid (1972). It should be noted that the lower parts of several foreleg metacarpal bones were found. By measuring this bone's condyle it is possible to differentiate between sheep and goat.

THE CHALCOLITHIC FAUNAL ASSEMBLAGE

The analysis results are presented in the following distribution tables for the domesticated animal bones mentioned above.

The remains of a fowl of unidentified species included the upper metacarpal bone of a left wing and the lower part of a thigh bone – the remains of a single animal.

Table 13 indicates that the animals represented are, by count: three sheep, five head of cattle, two domesticated pigs and two domesticated dogs.

CONCLUSIONS

The faunal assemblage suggests the ready availability of water. Both cattle and swine require large quantities of water. The excavator has suggested that at least one of the shafts is a well (Shaft 5, including L4; the faunal remains from this shaft were not included in the present analysis). Other shafts may be wells too. The emphasis on cattle and pig suggests that this was a sedentary society, with a fixed water source as a basis of subsistence. There are also indications of association with the coast, due to the presence of marine molluscs, including mother-of-pearl, a cockle, two *glycymeris* valves, sponge and the vertebra of a grouper.

Table 12. Distribution of domesticated animals from Chalcolithic contexts.

Bone	Sheep	Cattle	Domesticated pig	Domesticated dog	Total
Horn	9	2			11
Skull	11	37			48
Eye socket	1	3			4
Upper mandible	6	3	2		11
Lower mandible	21	32	8		61
Incisor		4	2		6
Tusk			3		3
Pre-molar tooth	28	19	7		54
Molar tooth	55	55	18		128
Hyoid bone		3			3
Shoulder blade	24	29			53
Upper arm (humerus)	7	6	3	2	18
Lower arm (radius)	3	7		3	13
Lower arm (ulna)	2	8	2		12
Foreleg metacarpal	4	2			6
Part of foreleg metacarpal	1	2			3
Pelvis	9	16			25
Kneecap/patella		1			1
Thigh	1	8			9
Shin	7	5			12
Fibula		1			1
Heel	6	4			10
Ankle	3	2	1		6
Hind leg metacarpal	3	1			4
Part of hind leg metacarpal		1			1
Unidentified limb	51	35			86
Part of 1st digit	1	17			18
Part of 2nd digit		13			13
Part of 3rd digit	1	2			3
Vertebra (unidentified)	23	1			24
Vertebra (neck)	4	7			11
Vertebra (2nd)	3	2			5
Vertebra (3rd-7th)	4	35			39
Vertebra (upper back)	3	3			6
Vertebra (lower back)	19	24			43
Vertebra (pelvis-sacrum)		3			3
Rib	57	57			114
Total	367	450	46	5	868
%	42.28	51.84	5.30	0.58	100.0

Table 13. Bones of domesticated animals from Chalcolithic contexts.

Bone	Sheep		Cattle		Domesticated pig		Domesticated dog	
	Right	Left	Right	Left	Right	Left	Right	Left
Humerus (upper)	2	1					1	
Humerus (lower)	3	1	3	3	2	1	1	
Radius (upper)		1	1					2
Radius (lower)	1		3	2			1	
Ulna (upper)	1	1	3		1	1		
Ulna (lower)						1		
Foreleg metacarpal (upper)	1	3	1	1				
Thigh (upper)		1	1	2				
Thigh (upper)			5					
Shin (upper)			1					
Shin (lower)	3	4	2	2				
Heel	1	2		3				
Ankle	3		2		1			
Hind leg metacarpal (upper)	2	1	1					
Hind leg metacarpal (lower)	1							

Table 14. Minimum number of individuals (MNI).

Bones	Sheep	Cattle	Domesticated pig	Domesticated dog	Total
MNI	4	5	2	2	13
%	30.77	38.46	15.385	15.385	100.00

THE INTERMEDIATE BRONZE AGE FAUNAL REMAINS

These were found in an isolated tomb (Tomb 21), and consist of only sheep bones. These included the upper part of a left humerus, two unidentified limb bones, the lower parts of right and left shin bones, and the lower part of a right limb. These remains probably belong to a single animal. In Tomb 60 caprovine bones were also found in a small bowl.

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DISCUSSION AND CONCLUSIONS

Yehuda Govrin

THE CHALCOLITHIC PERIOD

The Chalcolithic finds from the excavations at Yehud reported here consist entirely of subterranean elements – shafts and pits. A total of 16 shafts and five pits were recovered during the 2008 and 2009 seasons. Of the shafts, one was stone lined (Shaft 5); the rest may have been lined with clay. The present writer interprets these shafts as wells. The pits should be viewed as refuse installations.

General description of the shafts

The shafts had very regular circular openings with diameters of 0.8-1.0m. They were excavated to depths of 8-10m below the original surface (the black clay layer). It must be noted that most of the shaft openings were discovered only in the red *hamra* layer, as a result of color differences in the soil. The shafts were completely vertical and their diameter did not change until near their base. The sides of the shafts were mainly cut into the sterile *hamra* layer; most were smoothed and covered with a thin (0.01m), compact coating of clay and yellow sand. However, if my reconstruction of how the shafts were excavated is correct (see below), it may be that this wall lining was created by the abrasion of the shaft drill against the wet sediment. This would have created a thin, doughy crust into which was mixed clay, *hamra* soil and sand. After this crust dried out it sealed and strengthened the sides of the shaft. There were no signs of digging with hand-held tools, in contrast with at contemporaneous Neve Noy in Beersheba, for example (Eldar and Baumgarten 1985).

How the shafts were excavated by the Chalcolithic people

In the author's opinion, the characteristics of these shafts point to their having been dug by mechanical means. This method is completely different to that required for the digging of asymmetrical underground spaces, known in the same period ("subterranean dwellings", e.g. Perrot 1955; Levy et al 1991). The excavation of underground tunnels, chambers and pits was carried out with tools having flint heads. In my assessment the Yehud shafts were made with a wide-bore vertical drill, revolving around a large wooden axle. This vertical drill was most likely anchored to a fixed wooden structure built on the surface. The drill was secured in a vertical position, and was made to rotate by a windlass which was most likely turned by an ox. The knowledge of the mechanical drills is known from the Chalcolithic period in smaller scale industrial contexts, for the drilling of clay, mollusc shells, ivory and beads. Medium-size drills were used to make limestone and basalt weights and vessels. Hence, there is nothing to prevent this mechanical principle from having been used for drilling deep shafts. This was possible, although we are yet to find an actual drill for this function.

Location of the shafts in the excavation area

Almost all the shafts were found in the west and center of the excavation areas; only Shaft 2 was located in the eastern half. Presumably the concentration of shafts in the west was due to the nature of the sediment in this area – the deep, hard clay which is found here. It would seem that the Chalcolithic diggers of the shafts preferred to focus on the central and western parts of the current excavation area, where the clay layer was relatively thin. In places where the clay layer was shallow and fractured, water was able to percolate down through the *hamra* to the sand layer at the bottom, where it was eventually absorbed into the sand layer as groundwater.

The function of the shafts

In this writer's opinion the initial purpose of excavating these shafts was to reach the high water table which was located in the sand layer at depths of 7-10m below the surface. It should be mentioned that this site lies within the northern limits of the Ayalon River flood

plain (the river flowing some 3km to the south). This river drains rainwater from the Judean hills, flowing from east to west in winter and spring. The river could not serve as a permanent water source for the local population and their livestock. In this context it is important to note that the latter included cattle and pigs (among other animals), which required a reliable and high-quality water source (Sade, this volume).

A shaft most probably ceased to be used as a water source once the groundwater dried up or was contaminated by surface in-flow, or collapse. It is possible that the lifespan of an active shaft depended on the availability of groundwater in the sandy layer at the bottom of the shaft. Due to the changing level of the water table, some shafts may have been abandoned, while others may have supplied water aplenty and functioned for several years, perhaps seasonally. It might be that one of the shafts (Shaft 5) was found to be reliable and pure, year-round, and the Chalcolithic population invested effort into shoring it up with stones.[8] It must be assumed that the locating of a fresh shaft location, and the complex drilling operation itself, were carried out by drillers with hydraulic and technical knowledge and know-how.

After the shafts fell into disuse as a means of accessing groundwater, they served to collect the domestic waste of the local residents. Household refuse consisting mainly of ash, broken animal bones, broken stone tools, flint débitage and much broken pottery, was thrown in. Exceptional items included a fragmented human skull (Shaft 19) and a whole skeleton of a cow, which most likely fell into Shaft 9 and there met its demise. In some of the shafts there occurred partial collapse of the *hamra* sides after the shafts were abandoned. As a result, it is possible to identify layers of deposition, interposed with lenses of *hamra*, in the shaft section.

Refuse pits: evidence for ecological perspective in Chalcolithic culture

Domestic waste pits are dug under the floors of houses (Govrin 1988), occupied caves (Govrin 1987), and subterranean settlement complexes (Baumgarten and Eldar 1985) at many Chalcolithic sites. I would suggest that the gathering of domestic waste into shafts and pits indicates both a sanitary rationale an ecological perspective – perhaps a facet of religious belief. The idea may have been to return all manufactured objects back to their natural source – the earth – when they were no longer useful. This may echo the biblical perspective regarding the source of life: 'And out of the ground the LORD God formed every beast of the field, and every fowl of the air' (Genesis 2:19). This is also reflected in the biblical attitude to human lifecycle: 'In the sweat of thy face shalt thou eat bread, till thou return unto the ground; for out of it wast thou taken; for dust thou art, and unto dust shalt thou return' (Genesis 3:19). This ancient biblical perception of the world conceives of the earth as the source of all living things.

Settlement model

Besides the deep shafts and several refuse pits, no other settlement remains were found within the limits of the excavation area. This Chalcolithic population subsisted on livestock herds, mainly cattle, pigs, sheep and goats. The cattle and pigs indicate – together with the considerable quantities and quality of material culture – a sedentary population; it is not likely that people migrated over large distances while carrying large quantities of pottery, leading cattle and pigs.

The habitations of this agro-pastoral society must have been near the wells; the question is: how near? They may have taken the form of tents or wattle-and-daub huts made from organic materials such as textiles, leather, wood and thatch, none of which has survived. Or, the remains of the settlement, possibly constructed of stone and brick, are located somewhere else nearby, perhaps at Tel Yehud, a coeval settlement located several hundred meters east of our dig area (Milevski 2008). The shaft and pit assemblages represent only indirect evidence for this settlement.

THE INTERMEDIATE BRONZE AGE REMAINS

Fragmentary material culture remains of the Intermediate Bronze Age (IB= Early Bronze Age IV or Middle Bronze Age I) have been recovered in a number of test and rescue excavations in the region of Tel Yehud (e.g. Yannai 2004, Milevski 2008). These

8 Stone-lined Shaft 5 was backfilled by us for the benefit of future generations.

potsherds were not found in clear contexts and the excavators' have assumed that they originated in a cemetery. The current excavation's discovery of sealed shaft tombs from this period confirms this hypothesis and, for the first time, sheds light on IB mortuary practices in the Yehud area.

The tombs were all of the same type, incorporating a shaft and and single burial chamber. Interments were mostly individual and primary. In many cases, a robust limestone slab blocked the tomb chamber entrance. One would have reached the tombs by descending a vertical shaft which measured 0.8m in diameter and went down ca. 4-5m from the surface. The deceased would have been lowered through this shaft, to a round or oval-shaped cavity cut in the *hamra* soil. The interment was laid on the tomb floor, which usually consisted of the white sand layer. The fact that the IB tombs were excavated down to the sand layer suggests that, after 1000 years, it was now dry and above the water table. This is consistent with evidence for a climatic shift toward increasing dryness in the late 4th-late 3rd millennia BCE (Thompson *et al*. 2003).

Over time, the tomb chambers were filled in by wind-borne sediment which settled in the shafts, forming alternating layers of clay, sand and *hamra*. Because these layers eventually filled the tomb chambers and the latter were so deep (5-7m below the surface), the tomb contents were preserved very well. Most of the tombs yielded intact, *in situ* assemblages. The deceased were generally laid on their side, in a flexed position. In some cases we found animal bones, left as burial gifts. It must be assumed that these tombs represent only part of a larger Yehud cemetery complex, which, due to its depth, has not been exposed by most archaeological excavations.

The burial of one young couple, laid on their sides facing one another (Tomb 21), is unusual. We must assume unusual circumstances. But for the most part, the homogeneous nature of these tombs and their contents indicates a uniform and established burial tradition practiced by a homogeneous society which held firm beliefs about this life and the next.

Several IB cemeteries have been found in the Yarkon and Ayalon river basins: Bet Dagan (Yannai 2008), Horeshim (Gilboa and Yannai 1992), Azor (Yannai 2006), Shoham (Nagorsky and Milevski 2003) and Ramat HaHayal (Yankelevitz 2005). The characteristics of the pottery assemblages found at Yehud and the surrounding region are similar to those of coeval sites in southern Israel. Vessel decoration is minimalistic and is characterized by linear incisions, plastic decoration and horizontal combing. Decoration tends to focus on the neck-body transition (Herriott, this volume).

THE MIDDLE BRONZE AGE REMAINS

During the earlier part of the Middle Bronze Age I-II (MBIIA-IIB), this area was part of an extramural cemetery, probably of Tel Yahud. Four graves were identified, greatly damaged, due to the work of heavy excavating machinery. Adults were interred in simple shaft tombs dug out of the compact clay and *hamra*, close to the surface. The burial chambers appear to have been elliptical in shape – generally 2-2.5 meters long and a bit less wide. The best preserved grave was that of an adult (female) burial with burial gifts. Poorly preserved remains of an infant were found interred in a jar in a smaller pit. It should be mentioned that after being recorded in the field, the skeletal remains were removed by officials of the Ministry of Religion.

The MB burial kit seems to have included one to five items, mostly common ceramic vessels. The presence of animal bones suggests meat offerings. The Yehud findings generally resemble contemporaneous tombs at Aphek (e.g. Beck 2000b).

BYZANTINE-EARLY ISLAMIC REMAINS

The site saw a settlement hiatus from the Middle Canaanite II (Middle Bronze IIB) through the Late Roman period. Remains of Byzantine and early Islamic occupation – agricultural and residential in nature – have been found in several excavations immediately north and east of the current dig site (Arbel 2013, Korenfeld and Bar-Nathan 2014). The main findings of these periods from our excavation included stone-lined graves dug through the top clay layer and into the underlying *hamra*. There can be little doubt that the dozens of burials discovered here were part of a larger cemetery which served the village

for an extended period of time. Many of these graves have been destroyed by modern work (large refuse pits and other development projects).

Most likely this site was designated as a burial ground from early Byzantine times onward, as it was located at the outskirts of a contemporary settlement. The heavy, clayey soil may have made cultivation difficult. It may be for the same reason that several industrial installations – a pottery workshop, refuse pits and a winery – were located at the northeast edge of the cemetery. Perhaps the large L8 workshop was built here in order to utilize the black clay. The large quantities of broken jars with combed decoration attest to a specialization in storage jars for local wine production (Korenfeld and Bar-Nathan 2014).

The use of this site as a burial ground continued up until recent times; several dozen meters northeast of the current excavation area there is a domed tomb structure, which in local Arab tradition is associated with *Nebi Yehuda* (Judah, son of the patriarch Jacob), after whom the Arab village of *Yehud/Yehudiyya* was named (Vilnai 1986: 2726).

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The Excavations of Maresha

Subterranean Complex 90

Final Report

Ian Stern, Nahum Sagiv & Bernie Alpert

with contributions by Einat Ambar-Armon, Gerald Finkielsztejn & Michael Osband

1. SUBTERRANEAN COMPLEX 90 AT MARESHA: AN INCOMPLETE OLIVE PRESS AND OTHER FEATURES[1]

Ian Stern, Nahum Sagiv & Bernie Alpert

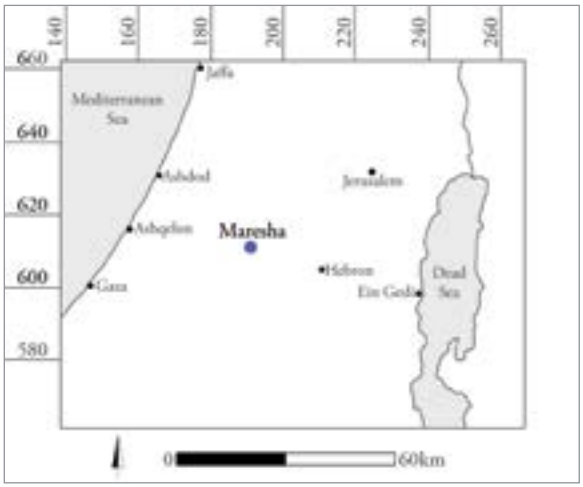

Figure 1.1. Site location.

1 An extensive survey focusing on the olive presses at Maresha was carried out from the mid-1980s onward by N. Sagiv, with assistance from Y. Tsoran (Kloner and Sagiv 1989; 1993). In 1990 Tsoran discovered another olive press on a slope south of Tel Maresha. A year later Sagiv and Tsoran began a partial excavation of that press, under the license held by A. Kloner (Permit No. 46/91) who then headed the excavation at the site.

SC 90 was therefore first studied at the beginning of the 1990s and after a rather long hiatus the excavation in this complex was resumed in 2005 (Permit No. A4361/2005). This later excavation was conducted by Sagiv, B. Alpert, I. Stern and M. Osband (Stern *et al.* 2007). Assisting in the excavation were S. Shaharit and L. Laborsky who were responsible for pottery restoration, registration and organization. Drawings and plans were made by S. Yogev. Field photography was done by A. Stern, N. Sagiv and A. Bruchiel, and photography of finds by C. Amit and A. Stern. Zooarchaeological analysis of the faunal remains was carried out by G. Bar-Oz (in press). The excavation took place under the auspices of the Israel Antiquities Authority with the funds and staff of the Archaeological Seminars Institute and their participants from all around the globe. Thanks to T. Tzuk and the Israel Nature and Parks Authority for their assistance in the excavations.

INTRODUCTION

SC 90 is located ca. 220m southeast of the Maresha tell (NIG 1900680-611086; Figs. 1.1-2). Our excavation focused on two areas within the complex, which contains a total of 18 rooms. The main focus in 2005 was the rooms on the northeastern side of the complex (Figs. 1.3-4), which included the olive press (L107) as well as the adjacent chamber (L105). The other area investigated – on the northwestern side of the complex (L101, L101A, L120, L103) – had already been surveyed in 1991. A large block of clay was partially removed from a rock-cut shelf (L4) in Cistern L101. This revealed an entrance into L105. The corridor (L11) leading eastward from the olive press and its continuation was not excavated.

This article deals with three aspects of the excavation in Subterranean Complex 90 that are of particular importance. Firstly, there is an oil press that was never completed and as a result those parts that were finished give us a clear picture of what the

Figure 1.2. The subterranean complexes of Maresha, with SC 90 marked.

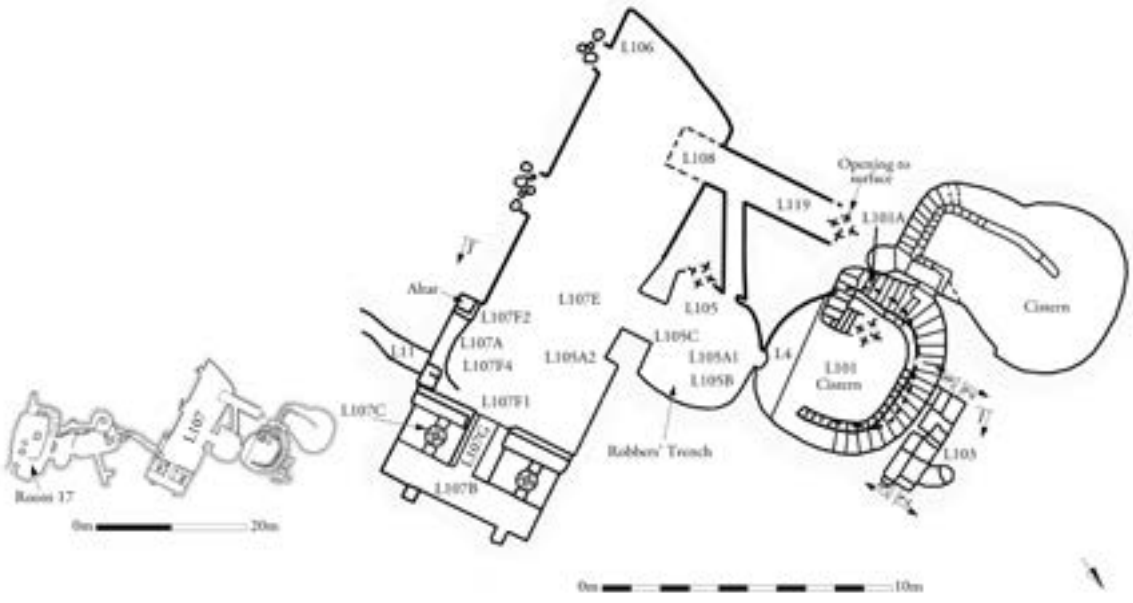

Figure 1.3. SC 90.

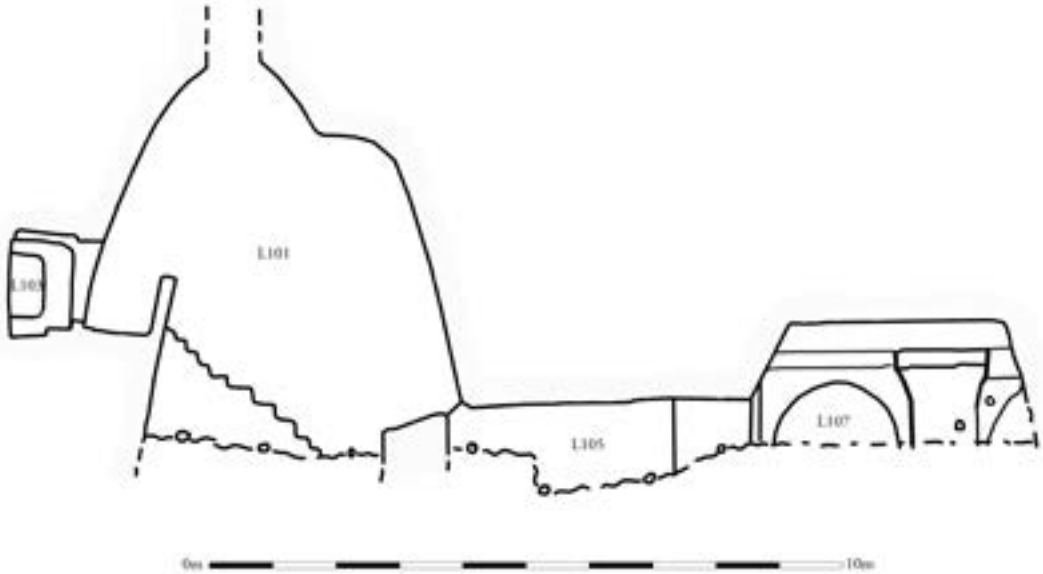

Figure 1.4. Section 1-1.

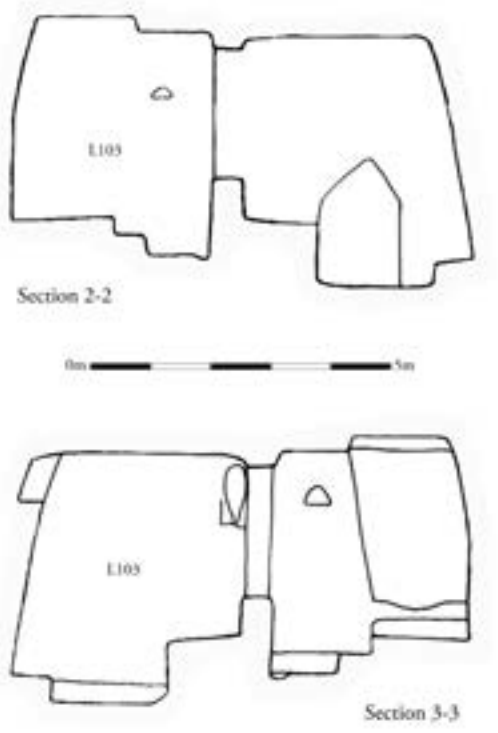

Figure 1.5. Sections 2-2 and 3-3.

presses at Maresha were like without the wear and tear found in other such installations. Secondly, after the plan to build an oil press was abandoned the room served as a cult chamber. Finally, a remarkable number of complete vessels were discovered *in situ* in a small bath adjacent to one of the cisterns in this subterranean system.

On July 11, 2005, the day before our excavation began, we discovered that robbers had dug a trench in L105 and had dumped material both in L105 (L105A1) and into the olive press (L105A2). We recorded this material separately from the undisturbed loci.

THE OLIVE PRESS (L107)

This olive press, like the other 26 presses at Maresha, was discovered inside a subterranean complex (Figs. 1.6-7). The installation is in the form of a large rectangle (18 x 6m). The piers of the pressing system, situated between arches, were discovered in its eastern façade (Figs. 1.3, 1.8). A typical feature of most olive presses in Maresha

Figure 1.6. The olive press (L107) before excavation (facing northeast).

Figure 1.7. The olive press before excavation (facing seast).

is a low passage between the two piers, which functioned as a service channel (L107G). In this case, the channel leads into a larger service areaat at the back of the pressing installation (L107B, Fig. 1.9).

In this case, the channel olive press was designated L107 (it had been registered as L7 in 1991) and is surrounded by a complex of rooms, passages and a bell-shaped cistern (L101) encircled by a spiral staircase (L101A). The original entrance to the olive

Figure 1.8. The olive press after excavation (facing northeast).

Figure 1.9. The L107G service channel (facing northeast).

press was probably from its southern side, and the steps leading to it were most likely along a corridor (L119 and L108, Fig. 1.3). This entrance, however, is currently filled with alluvium and debris along with a massive layer of rock which apparently collapsed from the ceiling of the cave. In addition, there are rectangular stones hewn in the cave which had not been removed in the past.There is also a large amount of alluvium and rubble in the southern part of the olive press chamber, adjacent to L106.

Figure 1.10. Fissure between the arches in the olive press ceiling.

Figure 1.11. The entrance to L11 (facing southeast).

The large number of fissures in the cave's ceiling and walls – discernible by the mud that has penetrated from the surface – are quite remarkable. A gray foreign material is also present, having percolated into the fissures with the mud (Figs. 1.8, 1.10). The multitude of cracks in this cave may explain the aforementioned collapse in the southern wing adjacent to the original entrance.

The olive press can also be reached by crawling through a hole that was breached at some time in the past (L4), leading from the bell-shaped cistern to a small adjacent chamber (L105).

The quarrying of the olive press damaged a carefully designed corridor (L11, Fig. 1.11) which led to a complex of subterranean rooms located south of the press, thereby establishing that the corridor predates the installation of the olive press.

At least one layer of intentional fill was discovered inside the olive press chamber. In the baulk that remained after the excavation one can detect the changes in the shades of the soil, which may reflect

several phases of the installation. The section that cuts across L107 revealed a white chalk floor level (L107A, 0.4-0.8m deep) that sloped down toward the olive press and contained very few finds. It also included a brownish soil level (L107F1-4) that contained many finds, especially near the altar. However, only the bottom stratum – which directly overlay the bedrock – reliably represents a distinct phase in the history of the installation. Thus, the shade changes in the higher strata may reflect later fill or random penetrations of debris, collapse and alluvium.

The large number of boulders, particularly in L106 (the southern side of L107) forced our excavation to focus on the northern side of the olive press.

To verify whether or not the press was ever completed we decided to try to expose and examine the channel as well as search for the press weights that are usually located in the center of such installations (Fig. 1.12; see the press weight channels in several olive presses in Kloner and Sagiv 2003: 54, 56, 58; Kloner and Sagiv 1989: 36, 48, 51; Bliss and Macalister 1902: 92).

In the 1991 excavation the attempt to locate the press weights and their channel in the northern part of the olive press chamber was unsuccessful. During the excavation in the summer of 2005 we expanded the probe in the northern part of the installation and still failed to find either the weights or the channel. Nevertheless, it became apparent that the surface we uncovered was not the natural bedrock; rather it was a layer of crushed and tamped chalk which most likely was used during a particular phase in the chamber's history.

It was therefore decided to excavate the eastern part of the fill down to the level of the chalk bedrock. An examination of L107A and L107F1 would allow us to ascertain the nature and function of the fill and, in particular, to check whether press weights or a channel for the weights were concealed below.

We excavated a shallow rectangular probe (L107F4) measuring ca. 0.35m deep; neither the press weights nor their channel were discovered (Fig. 1.13). The pressing piers as well as the niches into which the beams were meant to be inserted were found in pristine condition, demonstrating that the olive press in SC 90 was never completed and therefore never operated.

Figure 1.12. A typical olive press from Maresha, with channels and weights.

Figure 1.13. The L107F4 probe (facing southwest), which revealed neither channels nor weights.

It seems that in the southern wing of the facility, located opposite the original entrance to the olive press, a crushing mill was either installed or was meant to be set in place. The type of crushing mill

Figure 1.14. *Nari* stone which functioned as a weight in the olive press.

that is characteristic of Maresha is a *trapetum*-like installation consisting of a single lens-shaped stone that did not break the pits of the fruit (Kloner and Sagiv 1989: 53-58).

A heavy *nari* stone (Fig. 1.14) was discovered on top of the aforementioned chalk floor. Its dimensions and shape were similar to those of a stone press weight except that there were no holes in the stone for lifting it. We can therefore assume that this stone was brought into the olive press to be used as a weight but following the decision not to complete the press the stone was abandoned and at some point it slid onto or was placed on the floor.

The collapse of the ceiling in this part of the olive press almost certainly disrupted the quarrying of the crushing mill. It is also possible that in the wake of this collapse the installation of the olive press was not completed, no channels were hewn for the press weights and no weights were set in place opposite the piers of the pressing facility.

The excellent state of preservation of the pressing installation had been noted in the excavation conducted there in 1991. The piers, between which the pressing baskets containing the olive mash were placed, were discovered intact (Figs. 1.15-16). In several other olive presses that we examined in the past there were signs of a recess on top of the piers. This recess was created when the oil and water were drawn from the *yam* (the basin in which the lees containing the water and oil collects) and when the pressing baskets were changed. While these tasks were underway, the beam would remain inserted in the rear wall of the olive press, turned diagonally upward and set atop the taller of the two piers. The repeated setting of the beam on top of the pier resulted in the formation of a recess and – over the years – even cracks in the pier.

In an olive press that has been operating for a long time signs of wear are discernable in the upper part of the niche into which the beam was inserted. The niche would become worn, lose its original circular shape and become elliptical (Kloner and Sagiv 1989: 61). In SC 90 the niches in which the olive press beams were inserted have remained completely round, without any signs of wear (Fig. 1.17). Tool marks from the original rock-cutting still remain along the entire perimeter of the niche interiors. The excellent state of the piers and niches had already led in the early 1990s to the conclusion that the olive press in this complex had never operated.

The remains of a cultic niche with a rounded top were discovered above the service channel (L107G) that ran between the arches of the olive-pressing

Figure 1.15. The left pressing device (lateral view).

Figure 1.16. The left pressing device (from above).

Figure 1.17. The right niche of the olive press.

chambers (Fig. 1.19). The cultic niche in SC 90 is quite similar to such features which have been identified and published in the past (Kloner and Sagiv 1989: 63). The niche described above was vandalized and its bottom part was smashed and damaged.

THE CULT CHAMBER

As noted above, our excavation revealed a layer of crushed and tamped chalk that almost certainly served as a floor for another installation which probably functioned there after it was decided not to complete the planned olive press.

Approximately 4m south of the service channel (L107G) stands a large rock-hewn altar (Figs. 1.3, 1.20, 1.21) in the corner of the wall, in what appears to be a later enlargement of the olive press chamber. The altar has a square, stylized outline. The bottom part of the base is molded and the upper part is decorated with a cornice. It stands approximately 1m high and the top features a square horizontal surface (dimensions 0.4 x 0.42m). In the middle of the upper surface is a round depression for burning incense, pouring a

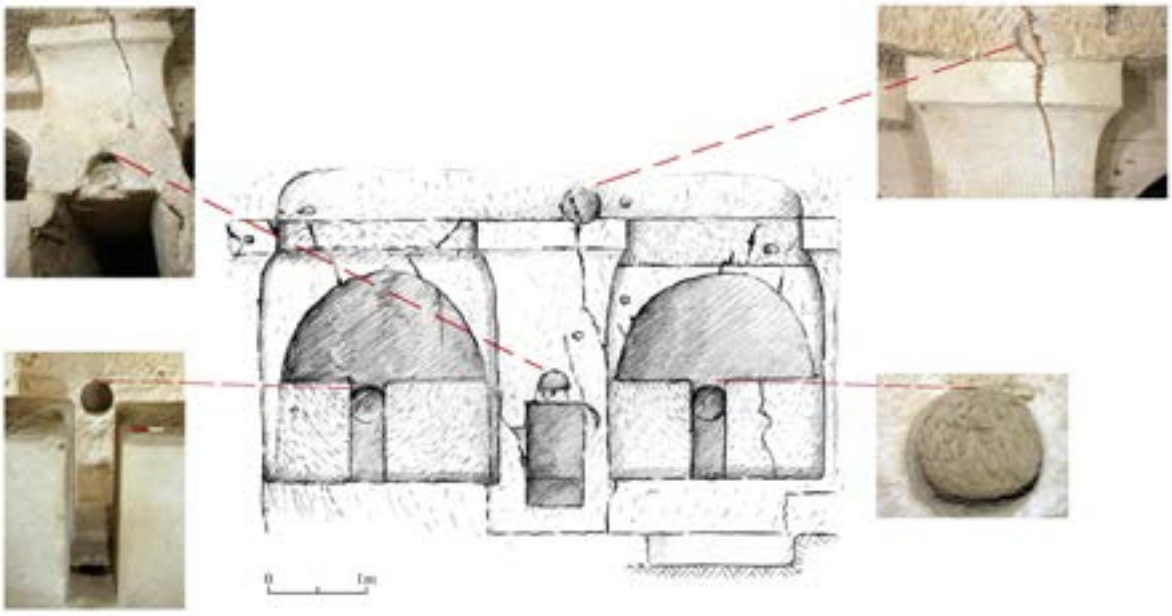

Figure 1.18. The L107 olive press.

Figure 1.19. Damaged cultic niche.

Figure 1.20. The smashed altar (facing southwest).

libation or perhaps for the placement of a round, flat vessel for libations. The upper part of the altar had been shattered and destroyed.

During the course of the excavations conducted by Sagiv and Kloner in 1991 three fragments of a marble bowl were discovered in the western part of the olive press (L107F1). Another two fragments of the same vessel were recovered in the excavation there in the summer of 2005 in L107A. This type of vessel is known as a patera, and is usually intended for cultic libations (Fig. 1.22). After M. Fischer conducted a preliminary examination of the vessel, he suggested that the marble from which it was made originated on the island of Thasos, in the northern Aegean Sea; thus, this may have been an imported vessel.

A bronze figurine of Heracles (Fig. 1.23) was discovered next to the fragments of the patera during the 1991 excavation. Heracles is identified with the Phoenician deity Melqart of Tyre, a cult that was

Figure 1.21. Drawing of the smashed altar.

Figure 1.22. A patera found in the eastern part of the olive press (L107). These vessels were usually used to receive cultic libations.

Figure 1.23. Bronze statue of Heracles.

characteristic of the Hellenistic period, and therefore its discovery here can be explained against the background of the presence of a Phoenician population at Maresha (Peters and Thiersch 1905: 38). According to A. Erlich (2008: 8), depictions of Heracles are more prevalent than those of any other deity at Maresha, attesting to the popularity of this cult in the city.

The figurine measures approximately 12.5cm high and features two bronze pins in its base that were meant to secure it atop a pedestal. It was discovered in a fine state of preservation except for a thin crack in its left arm. Heracles is depicted as a muscular bearded male. In his right hand he holds a club made of olive wood and draped over his left arm is the skin of the Nemean lion which he slew. In the palm of his left hand he grasps the apples he succeeded in taking from the garden of Hesperides. These objects are characteristic of Heracles and are found in different variants in Classical, Hellenistic and Roman art. Due to the fact that the Greek form frequently took on a Near Eastern identity it is difficult if not impossible to distinguish Melqart from Heracles in Hellenistic iconography (Erlich 2008b: 126).

Although there is a certain similarity between the figurine that was discovered in SC 90 and other figurines known from the Classical period and afterward, the Heracles figurine from Maresha differs from these in a number of details which encourage the conclusion that the figurine was provincial in nature. It was almost certainly produced in some workshop in the East. It was not made very carefully and the accuracy of the proportions and various details that characterize other such examples in the Hellenistic world are absent in this figurine. It also seems that when the figurine was cast, the mold was not heated to a sufficiently high temperature (Erlich 2004: 53-55; 2008: 126).

One can assume that after the owners of the cave decided to abandon their plan to quarry and install an olive press, the eastern portion of the room was slightly enlarged and was converted into a cultic site. It seems that the altar was then hewn in the southern part of the chamber (L107F2).

Neither the altar, the patera, nor the figurine of Heracles – all of which were found in the eastern part of the cave – are artifacts characteristic of olive presses.

As noted, the altar was found partially destroyed; it had apparently been struck a series of blows by a heavy, blunt, broad instrument. Three fragments of the shattered altar were found lying at its foot.

The Hasmonean struggle against the pagan cities and idolatry was extremely violent in nature. For example, Jonathan burned the temple of Dagon at

Figure 1.24. Lion's head found near the altar.

Ashdod and Simon expelled the pagan inhabitants of Jaffa and Gezer and cleansed the cities from the defilement of idolatry (I Maccabees 2:19-27, 44-47; 4:43-45; 5:44, 66-68; 6:7; 10:83-88; 11:4; 13:47-48; Kasher 1988: 70-71).

During Hyrcanus' reign Idumaea, and more specifically Maresha, was conquered (*The Jewish War* I:63; *Antiquities of the Jews* 13:257, 14:88). It is reasonable to assume that it was the Hasmoneans during the reign of John Hyrcanus I who shattered the altar, destroyed the patera and discarded the figurine of Heracles on the floor of the chamber.

A lion's head made of limestone was also discovered nearby (Fig. 1.24). The head is hollow and we assume it was used as a gutter in some monumental building that was most likely located on the surface level. This discovery is further proof of the high quality of life enjoyed by the population of Maresha in the third to second centuries BCE.

THE CISTERNS AND SMALL CHAMBERS (L101, 101A, 103)

The rooms on the northwest side of SC 90 are composed of two rock-cut cisterns accessed by spiral staircases with banisters. The northern cistern (L101), approximately 6m in diameter, was partially excavated. The excavation of the staircase (L101A) leading down into Cistern L101 revealed a large quantity of chalk-bricks – probably remains of dwellings that had once stood on the surface. A small, mold-made figurine of the Dioskouroi (Fig. 1.25), depicting two men standing side by side in a frontal pose, was discovered in the fill (Erlich 2008a: 6). There is a small water channel running into two small rooms (ca. 1m wide) (L103) adjacent to the spiral staircase (L101A) that leads into the cistern (L101). These rooms resemble baths. A few steps down from the entrance lead to rooms containing an area within which a person can sit or vessels might be placed. The channel leading from the cistern staircase into the rooms is designed so that a person can pour water from outside the room without entering. These rooms resemble purification baths for people or vessels (Figs. 1.3, 1.5).

Figure 1.25. Dioskouroi figurine found in the fill of the staircase (L101A) leading to the L101 cistern.

Figure 1.26. Intact vessels *in situ* in one of the rooms (L103) off the staircase (L101A) leading to the L101 cistern.

Figure 1.27. Intact vessels *in situ* in L103 (cont.).

Figure 1.28. Intact vessels *in situ* in L103 (cont.).

During the survey carried out in 1991, 112 indicative vessels (Figs. 1.26-28) were discovered on the floor and shelf of L103, including 38 intact and 44 complete vessels. A sample of these is illustrated in the next chapter (see Stern and Osband,, this volume, p. 183, 202, Fig. 2.12). While this system was not the main focus of our excavation in 2005, the significance of all these finds cannot be overemphasized. Most of the material finds discovered over the years at Maresha reflect surface fill that was dumped into the subterranean complexes from the dwellings above. These vessels, however, were found *in situ* and therefore reflect activity from within the subterranean complex during its final phase of use. For further discussion see Stern and Osband, this volume, p. 183).

INTERMEDIATE ROOM (L105)

This room had been designated L5 in 1991. Before our excavation began in 2005 it was looted by robbers who dug a trench along its northeastern side, spilling soil into the room itself (L105A1) and into L107 (L105A2). This material was excavated and finds from it were kept separate from those found in other deposits in these rooms. L105B (the upper level of material, approximately 0.5m deep) comprised wet gray clay. Below this level the soil was drier and changed to a brownish color (L105C). The function of this room is unclear.

DESIGN AND AESTHETICS

An interesting phenomenon which was characteristic of Maresha was the attempt to create an aesthetic appearance in the subterranean complexes. It should be emphasized that we are not referring to the residential buildings of the inhabitants of Maresha; these were located on the surface. The subject of discussion here are the various installations such as olive presses, columbaria, baths, bathing facilities, basement passages, etc.

This heightened sense of aesthetics is usually manifested in the design of various surfaces that were smoothed clean, cornices or arches whose margins were worked and meticulously finished, or façades that were dressed in a circular manner through the use of delicate radial incising. There is no doubt that the soft indigenous chalk, which contains practically no flint sediment and is homogenous and stable, was therefore suitable for quarrying and served as a convenient source for the masonry blocks used in construction at Maresha. The quarrying went on inside cavities that have fairly small openings leading to the surface.The fact that the cavities were largely isolated from the dry air on the surface provided them

Figure 1.29. Architectural elements of the olive press (L107). Note the charcoal marks (red arrow).

Figure 1.30. Architectural elements of the olive press (L107) (cont.). Note the charcoal marks (red arrow).

with relatively high and stable humidity which facilitated the rock-cutting. The rocks were cut using heavy iron sledgehammers or axes.

One can assume that these conditions allowed the owners of the caves to occasionally take an interest in designing a protruding and smooth cornice, or in hewing engaged pilasters such as those in the large columbarium (the Market Cave) on the western slope of Maresha, or in the magnificent façade of the pressing wing in Olive Press 44 (Kloner and Sagiv 2003: 51-72).

Generally speaking, the olive press in SC 90 features beautiful façades and smoothed corners. Charcoal lines have also survived on the walls of the olive press, drawn there by the installation's architect/planner (Figs. 1.8, 1.29, 1.30). In SC 90 one can see where plaster was used to fill cracks in the façade of the pressing installation, particularly above the service channel (L107G). It seems the owners of the cave attributed the utmost importance to its aesthetics. In some instances they apparently considered the cracks that were exposed at the time of the quarrying to be too large; we can see the repairs that were made to these cracks using a light gray plaster which is very similar to the shade of the bedrock itself. Several repairs using this plaster can be seen in the corners that were damaged during the cutting of the rock.

Attention was devoted not only to aesthetic detail in many of the olive presses at Maresha, but to other spaces as well, such as corridors, cellars, baths, etc. To the best of our knowledge this phenomenon has no parallels. It should be viewed as a unique and local occurrence due to the soft indigenous chalk in this region. It is also a reflection of the high standard of living the citizens of Maresha enjoyed in the Hellenistic period.

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2. POTTERY AND SMALL FINDS

Ian Stern & Mechael Osband

INTRODUCTION

The following is a description of the pottery found in the excavation of Subterranean Complex 90 – the first quantitative description of the different pottery forms from subterranean Maresha. Drawings of the main pottery types from SC 90 are included (Figs. 2.1-12).

Loci examined in 1991 and excavated in 2005 retain similar numbers when referring to the same room. The loci from 1991 have one number while those from 2005 have three numbers (Table 2.1). For example, L1 in 1999 was continued in 2005 as L101, L3 of 1991 became L103 in 2005, etc. This allowed us to easily compare the material finds from the same rooms or chambers but at the same time differentiate between the material finds from the respective excavation seasons.

In the 1991 season entire rooms were designated as single loci. During the 2005 season it was apparent that further subdivisions into additional loci were needed. These are represented by the addition of letters to the three numbered loci: 107A, 107B, etc. The finds from L103 are included in the typological charts as well as being discussed separately, because these vessels were found *in situ*.

The pottery forms described below range in date from as early as the fourth century through the late second century BCE. The latter date corresponds with the accepted *terminus ante quem* of Hellenistic Maresha. The finds were discovered inside and on top of unstratified fill within the caves. A mixing of finds from different periods is possible. Much of the pottery was well preserved and very little was disturbed except for recent robber activity. Materials disturbed by the robbers within L105 are designated 105A1, while materials from 105 dumped by the robbers into L107 are designated L105A2.

Table 2.1. Loci and their description (the loci from the 1991 excavation are in parentheses).

Loci (1991) 2005	Description
(1)101	Bell-shaped cistern
101A	Upper portion of staircase leading to Cistern L101
(2)120	Lower portion of staircase leading into small rooms
(3)103	Purification baths
(4)	Clay shelf blocking opening from L101–L105
(5)105	Intermediate Room
105A1	Robbers' trench in L105
105A2	Debris thrown by robbers into L107
105B	Upper material in L105 – wet, gray clay
105C	Material below L105B – dry, brown soil
(6)106	South side of olive press filled with boulders (unexcavated)
(7)107	Olive press
107A	White *kirton* level, 0.4–0.8m deep
107B	North side of olive press behind crushing area
107C	Pressing hole on northeast side of olive press
107D	Surface finds in L107
107E	Area at entrance to L105
107F1	Thin layer of brownish soil in center of press, 34cm thick
107F2	Next to altar, 35cm deep
107F3	Contiguous to stone shelf on east side of L107
107F4	Contiguous to stone shelf in front of pressing area
107G	Service channel
(8)108	Original entrance to olive press L107
(9)109	Corridor connecting L108 to L105 (unexcavated)
119	Entrance to olive press leading to L108
11	Corridor leading to remainder of SC 90 (unexcavated)

There is evidence of pottery production at Maresha (Levine 2003: 73). The identification of types as imported or local had been suggested by T. Levine based only on examination by the naked eye. It is possible that some of the so-called imported forms are locally made or that some of the cruder plain ware forms were imported. The terms imported and local as applied to specific forms in this report is a continuation of the terminology used by Levine (2003).

THE ASSEMBLAGE

Imported Bowls and Plates (Figs. 2.1-2)

Attic and Related Black-Glazed Wares (Fig. 2.1:1-5). Four forms of black Attic-style bowls were found: incurved rim, rolled rim, projecting rim and fishplate (Table 2.2). In addition, decorated sherds were discovered that could not be attributed definitively to any of the aforementioned forms. Fifteen rims and five sherds were identified as belonging to this group (see Levine 2003: 74-75 for summary).

Table 2.2. Attic and related black-gazed ware.

Locus	Incurved rims	Rolled rims	Projecting rims	Fishplate rims	Sherds
3			2		
5			1		1
8			1		
9					1
101A				1	
105A1			1		
105A2				1	
105B			3		
105C			2		
107A1					1
107A2					1
107F	1				
107F3		1			
107F4			1		
Total	**1**	**1**	**11**	**2**	**4**

Bowls with Horizontal "Pinched-Bow" Handles (Fig. 2.1:6). Forty-four rims of this form were found (Table 2.3). Two bases and eighteen sherds also belong to this type (see Levine 2003: 75 for summary).

Table 2.3. Bowls with horizontal "pinched-bow" handles.

Locus	Rims	Bases	Sherds
5	7		7
9	6		11
105A1	6		
105A2	15	1	
105B	3		
105C	1		
107A	1		
107F2	2		
107F4	3		
Total	**44**	**1**	**18**

Black-Slipped Predecessor and Eastern Sigillata A (Fig. 2.2:1-7). These imported wares make up a very small quantity of the pottery assemblage from this cave (Table 2.4). Only two BSP pieces – both from bowls – were found that belong to this type. Five ESA forms were identified: conical bowl, hemispherical bowl, fishplate, cup/bowl and plate. Nine pieces were identified as ESA wares (see Levine 2003: 75-79 for summary).

Table 2.4. BSP and ESA wares.

Locus	3	101A	105B	Total
BSP fishplates			1	1
BSP plates	1			1
Conical bowls	1	2		3
Hemispherical cup fragments		1		1
Hemispherical cups	4			4
Fishplate bases			1	1
Cups/bowls		1		1
Plates	1			1
Total	**7**	**4**	**2**	**13**

Italian Imports (Fig. 2.2:8-9). Four rim fragments and one body sherd belong to this group (Table 2.5). Two forms were identified: a bowl with a thick rim and a bowl with a thin rim (see Levine 2003: 79-80 for summary).

Table 2.5. Italian imports.

Locus	Thick rims	Thin rims	Sherds	Total
5	1			1
9		1		1
107		1		1
107F4		1		1
Total	**1**	**3**	**1**	**4**

Plain Ware Bowls and Plates (Figs. 2.3-4)

The undecorated and decorated bowls seem to be the most common pottery forms discovered in the complex. They make up about half of the pottery assemblage (see Levine 2003: 82-88 for summary).

Undecorated Plain Ware Bowls and Plates (Fig. 2.3:1-10). This ware was divided into six forms: saucer/lids, incurved-rim bowls with a disc base, incurved-rim bowls with a ring foot, carinated bowls, large, inwardly folded plate-rim plates, and Hellenistic mortaria (Tables 2.6-9).

Table 2.6. Saucer/lids.

Locus	Complete	Whole	Rims	Total
3	2	1		3
5	1	3	37	41
9	1	1	15	17
103			1	1
105A1		1	2	3
105A2			18	18
105B			9	9
105C		1	6	7
107A			3	3
107F3			2	2
107F4			2	2
107H			5	5
Total	**4**	**7**	**100**	**111**

Incurved-Rim Bowl (Fig. 2.3:1-5). Two variations of this form appear. Three have a disc base (Fig. 2.3:1-3, Table 2.7) and two have a ring foot (Fig. 2.3:4-5; Table 2.8).

Table 2.7 includes all rims that could not be identified as either of the above variations. Some most likely come from ring-foot vessels.

Table 2.7. Incurved rim bowls with disc base.

Locus	Complete	Whole	Rims	Total complete/ whole/rims	Complete bases	Base fragments	Total bases
2	1	1	3	5	1		1
3	16	14	42	72	2	3	5
4							
5	6	4	33	43	5	9	14
6							
7							
8							
9	3	12	48	63	12	5	17
17	2			2			
103			1	1			
105A1		7	21	28	2	1	3
105A2		5	28	33	2	6	8
105B	1	2	22	25	3		3
105C			10	10	2	3	5
107A			13	13			
107A1			7	7			
107D			3	3	1		1
107E					1	2	3
107F1			2	2			
107F2			1	1			
107F3			11	11			
107F4			23	23			
107H			6	6			
Total	**29**	**45**	**274**	**348**	**31**	**29**	**60**

Table 2.8. Incurved-rim bowls with ring foot.

Locus	Complete	Whole	Rims	Total	Whole bases	Base fragments	Total
5		1		1	1	1	2
105A1						2	2
105A2						1	1
105B						2	2
107A						8	8
107F2						2	2
107F3		4		4	1	3	4
107F4					1	6	7
Total		**5**		**6**	**3**	**26**	**29**

Table 2.9. Plain ware carinated bowls, large, inward-folded-rim plates and Hellenistic mortaria (Fig. 2.3:6-10).

Locus	Carinated bowl (rims)	Plate (rims)	Plate rims (whole)	Hellenistic mortaria rims	Hellenistic mortaria bases
5			1	1	
9		2			
105C					1
107A				1	
107C		1			
107D		1			
107F3		1			
107F4	2				
107H	2				
Total	**4**	**5**	**1**	**2**	**1**

Decorated Plain Ware Bowls and Plates (Fig. 2.4:1-7). The decorated plain ware bowls and plates were divided into different forms; incurved ring bowls with a ring foot (Fig. 2.4:1; Table 2.10), angular bowls with an upturned rim (Fig. 2.4:2; Table 2.11), decorated and upturned rim bowls with a disc base (Fig. 2.4:3; Table 2.12), decorated deep angular bowls with an out-turned rim (Fig. 2.4:4; Table 2.13), bowls with "pinched-bow" handles (Fig. 2.4:5; Table 2.14), fish-plates (Fig. 2.4:6; Table 2.15), a hybrid fishplate with a rolled rim (Fig. 2.4:7; Table 2.16), and flat infolded rim bowls (Table 2.17).

Table 2.10. Incurved-ring bowls with ring foot.

Locus	Complete	Whole	Rims	Total	Complete bases	Base fragments	Total
2		1		1			
3	3	9	97	109	11	7	18
5		2	61	63	9	10	19
9	1		62	63	6	4	10
103					1		1
105A1		4		4	3	2	5
105A2		3	56	59	2	5	7
105B		2	43	45	1	9	10
105C			19	19	1	1	2
107A			9	9		1	1
107A1			2	2	1		1
107F3			3	3			
107F4			4	4			
107H			10	10		1	1
Total	**4**	**21**	**366**	**391**	**35**	**40**	**75**

Table 2.11. Angular bowls with upturned rim.

Locus	Complete	Whole	Rims	Total
3	4	11		15
5		2		2
103		1	12	13
105A2		1		1
105C			4	4
Total	**4**	**15**	**16**	**35**

Table 2.12. Decorated incurved and upturned rim with disc base.

Locus	Complete	Whole
3	3	3

Table 2.13. Decorated deep angular bowls with out-turned rim.

Locus	Whole	Rims
3	3	
107F4		1
107H		1

Table 2.14. Bowl with horizontal "pinched-bow" handles.

Locus	Complete	Whole	Rims	Total
3	5	5	26	36
5		1	6	7
9			2	2
101A			1	1
105A2			2	2
105B		1	5	6
107H			3	3
Total	**5**	**7**	**45**	**57**

Table 2.15. Fishplates.

Locus	Complete	Whole	Rims	Total	Whole bases	Base fragments	Total
3	2	3		5	1		1
5		3	40	43	2	6	8
9			27	27	2	1	3
105A1		2	17	19		5	5
105A2		1	23	24	1	2	3
105B			32	32	2	3	5
105C		1	7	8	2	2	4
107A			3	3			
107A1			3	3			
107F3			1	1			
107F4						1	1
107H			1	1			
Total	**2**	**10**	**154**	**166**	**10**	**20**	**30**

Table 2.16. Hybrid fishplate with rolled rim.

Locus	Whole
10.5A2	1

Table 2.17. Flat infolded-rim bowls.

Locus	Rims
105A2	1
107A	2
107F3	1
107F4	2
Total	**6**

Lekanai (Fig. 2.5:1-2)

A total of nine (possibly ten) lekanai were found (Table 2.18; see Levine 2003: 88-90 for summary).

Table 2.18. Lekanai.

Locus	Whole	Rims
3	1	
5		1
9		2
105A2		2
105B		1
107F3		1?
107F4		3
Total	**1**	**9 (10)**

Deep Krater (Fig. 2.5:3-5)

Only one example of this form was found (Table 2.19; see Levine 2003: 91-92 for summary).

Table 2.19. Deep krater.

Locus	Rim
107A	1

Cooking Vessels (Fig. 2.6:1-12)

Globular cooking pots (Fig. 2.6:1-9). The globular cooking pot, both ribbed and non-ribbed, is the most common form of cooking pot (Table 2.20). Small squat angular cooking pots are less frequent (Fig. 2.6:11; Table 2.21). In comparison to plain ware and imported serving vessels, cooking ware is not as frequently found. In addition some cooking pot lids (Fig. 2.6:10; Table 2.22) were found, as well as one fragment from a cooking ware baking dish (Fig. 2.6:12; Table 2.23; see Levine 2003: 93-95 for summary).

Table 2.20. Globular cooking pots.

Locus	Rims
2	2
5	6
9	3
Total	**51**

Locus	Rims
105A	1
105A1	10
105A2	11
105B	5
105C	6
107A	2
107A1	1
107F4	4
Total	**51**

Table 2.21. Small squat, angular cooking pots.

Locus	Whole	Rims	Total
2	1		1
3		1	1
9	1		1
105A2	1		1
105B		1	1
107F4		2	2
Total	**3**	**4**	**7**

Table 2.22. Lids.

Locus	Rims	Fragment
5	2	
7		1
105A1		3
105A2		2
105B		2
105C		3

Table 2.23. Baking dish.

Locus	Base fragment
9	1

Storage Jars (Fig. 2.7:1-3)

Seventy-eight storage jar rims (including whole jars) were discovered (Table 2.24; see Levine 2003: 95-98 for summary).

Table 2.24. Storage jars.

Locus	Whole	Rims
2		3
3	2	2
5		8
9		15
101A		2
105A1		4
105A2		5
105B		14
105C		6
107A1		4
107C		1
107F1		1
107F3		3
107F4		5
107H		3
Total	**2**	**76**

Table Amphorae (Fig. 2.8:1-2)

Two variations of this vessel type were noted. The more prevalent is an imitation of Greek table amphorae. There are also two rim fragments of a table amphora (Table 2.25; see Levine 2003: 98-100 for summary).

Table 2.25. Table amphorae.

Locus	Greek imitation rims	Greek imitation fragments	Undecorated rims
3	1		
5		6	
9		1	
105A2		4	
105B		3	
105C		1	
107H			2
Total	**1**	**15**	**2**

Jugs (Fig. 2.9:1-5)

Several jugs – mostly undecorated but a few with ornament – were discovered (Table 2.26; see Levine 2003: 100-104 for summary).

Table 2.26. Jugs.

Locus	Complete jugs	Whole jugs	Jug rims	Decorated jugs (complete)	Decorated jugs (rims)	Total
2			1			1
3		3	2			5
5			8			8
7				1		1
9			9			9
103			1			1
105A1			3		1	4
105A2			1			1
105B			3			3
105C			2			2
107A1			1			1
107D			3			3
107H			2			2
Total		**3**	**36**	**1**	**1**	**41**

Juglets (Fig. 2.9:6-10)

Different variations of juglets were found. No one form can be said to be more popular than the others (Table 2.27; see Levine 2003: 108-112 for summary).

Table 2.27. Juglets.

Locus	Decorated cup-mouthed jar rims	Undecorated cup-mouthed jar rim	Pear-shaped whole	Pear shaped rims	Feeder fragment	Whole globular juglet rims	Total
3	1		1	1		1	4
5	1			1			2
105A		1					1
Total	**2**	**1**	**1**	**2**	**1**	**1**	**8**

Amphorae (Fig. 2.10:1)

A total of 80 amphora sherds were identified (Table 2.28); however, only eight rims were found. It is possible that many of the body sherds come from the same vessels (see Ariel and Finkielsztejn 2003: 137-138 for summary).

Table 2.28. Amphorae.

Locus	Body sherds	Rims	Handles	Bases	Total
2	1				1
105A1	8		1		9
105A2	7	1	1		9
105B	3	1			4
105C		1	2		3
107A	5	1	1		7
107A1	5	1			6
107D	6				6
107F2	3				3
107F3	11	2			13
107F4	7		1	1	9
107H	9	1			10
Total	**65**	**8**	**6**	**1**	**80**

Amphoriskos, lagynoi, and flasks

These forms were found in very small quantities (Tables 2.29-31).

Amphoriskos (Table 2.29; see Levine 2003: 100 for summary).

Table 2.29. Amphoriskos.

Locus	Sherds
105B	1
107H	1

Lagynos (Fig. 2.10:2; Table 2.30; see Levine 2003: 106-108 for summary).

Table 2.30. Lagynos.

Locus	Sherds	Rim
5	1	1
105A2	1	

Flask (Table 2.31; see Levine 2003: 100 for summary).

Table 2.31. Flask.

Locus	Sherds
9	1
105A1	1

Fusiform unguentaria (Fig. 2.11:1-5)

Six variations of this vessel were noted. The following (Table 2.32) includes rims and sherds which reflect the diversity of these vessels found at Maresha in general (see Levine 2003: 113-114 for summary).

Table 2.32. Fusiform unguentaria.

Locus	Athenian gray	Long thin	Out-turned	Small plain	Flat rim	Red painted	Total
5		1		2		2	5
9				1			1
105A2			1				1
105B			1			1	2
107F4					1		1
Total	**1**	**1**	**2**	**3**	**1**	**3**	**10**

DISCUSSION

A comparison of the different forms found in SC 90 is presented in Table 2.33. It is important to note that the quantities which appear do not represent the total number of vessels but rather the rims of complete vessels as well as rim fragments. Even considering that some rim fragments came from the same vessels, and that certain vessels are thinner and break more easily and into more pieces, certain conclusions can still be drawn. The most common wares found in SC 90 are the decorated and undecorated local plain wares. Local forms are much more common than those considered imported. Over all, serving bowls are by far the most common pottery type. This may demonstrate their importance in dining customs, with an emphasis on individual dining dishes.

As with many of the subterranean complexes at Maresha, it is problematic to come to conclusions about the use of the cave based on the pottery remains since it is assumed that much of the material was dumped in the caves around the time of the city's destruction. Therefore we believe that estimates of the various rooms' last use phase cannot be based on the pottery.

The data – as presented in the above tables – show little variation in the forms found in the different areas of SC 90. One noteworthy difference, however, is the large number of complete and whole vessels from L103 and to a lesser extent L105. Similar forms are found in L107 but not as many complete and whole vessels. Loci 103 and 105 are not directly under an opening to the surface and it is likely that just before or when the caves were backfilled, many of these vessels were placed inside rather than randomly discarded from above as was probably done in the other rooms. It can be suggested that although the olive press (L107) and L3 and L105 were filled approximately at the same time, the manner of filling in each case was different. The olive press seems to have been haphazardly destroyed, with dirt and pottery thrown inside, while the other two rooms were filled in a more deliberate manner. Since the olive press was never utilized, it seems that the ceramic materials found inside L107 reflect the time period when the cultic chamber was in use as well as when the debris was discarded from the surface above.

Table 2.33. Total quantities of identifiable rim fragments from SC 90.

Forms	Rims
Decorated bowls with incurved rim	394
Undecorated bowls with incurved rim	354
Fishplates (local)	166
Saucers/lids	111
Storage jars	78
Globular cooking pots	58
Pinched handles (local)	57
Jugs	45
Imported "pinched-bow" handles	44
Angular bowls	35
Black-glazed ware	15
BSP and ESA	11
Lekanai	10
Small squat, angular cooking pots	9
Amphorae	8
Juglets	7
Flat infolded rim bowl	6

Forms	Rims
Large inwardly folded rim plate	6
Deep angular bowl with out-turned rim	5
Carinated bowl	4
Italian import	4
Table 2.amphora	3
Amphoriskos	2
Hellenistic mortaria	2
Cooking ware baking dish	1
Deep krater	1
Hybrid fishplate with rolled rim	1
Lagynoi	1

Locus (3)103

Over the years, the vast majority of the material finds discovered in the subterranean complexes at Maresha have been recovered from fills of an anthropogenic nature which lack clear stratigraphy. The prevailing theory is that this material was dumped as refuse into the underground systems from the dwellings above, with a *terminus ante quem* of ca. 111-107 BCE, associated with the conquest of Maresha by John Hyrcanus.

The significance of L103 lies in the fact that we have a corpus of ceramic material found *in situ* in a small chamber above Cistern L101. The repertoire (Fig. 2.12)[1] includes imported bowls and plates, amongst which we find black attic carinated bowls with projecting rim, ESA conical bowls and plates, and a BSP plate with upturned rim. Also included were many decorated and undecorated plain ware bowls and plates, fishplates, storage jars, cooking pots, table amphorae, a large open krater, jugs and juglets. All these types are well represented in other loci in SC 90 as well as in the other subterranean complexes excavated around Maresha. This corpus of material represents the last period of occupation of the subterranean complex and perhaps by extension Hellenistic Maresha.

However, the discovery of 112 vessels and various vessel types dispersed on the shelf and floor of this small chamber raises certain questions. The chamber, as mentioned above, has a water channel leading into it. Were these vessels brought into this water installation to be cleaned? Could this bath-like chamber have also been used as a purification bath for vessels as well as for people?

Various ethnic markers such as ritual baths are frequently identified in excavations and lead to conclusions that suggest a direct relationship between the archaeological finds and literary sources. Jones (1998: 37-39) critically asserts that "archaeological material is still attributed a particular identity in a monolithic and fixed fashion." She goes on to caution that material finds are unlikely to reveal "a particular ethnic or religious group represented by a discrete, uniform pattern of particular types of material culture in the archaeological record." Material finds frequently reflect syncretism of cultures and in fact rarely directly reflect a single identity.

If L103 was a purification bath, what are the implications *vis à vis* the local population of Maresha? Is this a reflection of a cultural norm on the part of a Judean minority who resided in Maresha at this time? If so, this along with other purification baths discovered at Maresha (Kloner 2011: 570) would predate any other such installations found in a Judean context. Material finds from "Idumean" Maresha have been noted in earlier publications (Stern 2012: 57-88) with distinct parallels to finds identified in other, later-period sites with Judean characteristics. Alternatively, could this represent a custom of the Idumaean population, with whose cultural norms we are still very unfamiliar? There is a tendency in archaeology to focus more on distinctiveness rather than on overlapping interests but it seems that ethnic interrelationships cannot be easily categorized. We believe that this bath is likely another example of intersecting ethnic identities within multi-ethnic Maresha.

1 The pottery displayed in this plate is not to scale. To see the actual scale see the typology plates presented earlier.

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Figure 2.1.

No.	Locus	Reg. no.	Description
1	107E	4361/05 90-107E-112	Black attic bowl with incurved rim
2	107F3	4361/05 90 107F3-135	Black attic plate with rolled rim
3	105A1	4361/05 90-105A1-114 Fr. 6	Black attic bowl with projecting rim
4	105A2	4361/05 90-105A2-117	Black attic fishplate
5	107A1	4361/05 90-107A1-103 Fr. 5	Decorated attic sherds
6	105A2	4361/05 90-105A2-118 Fr. 4	Bowl, horizontal "pinched-bow" handles

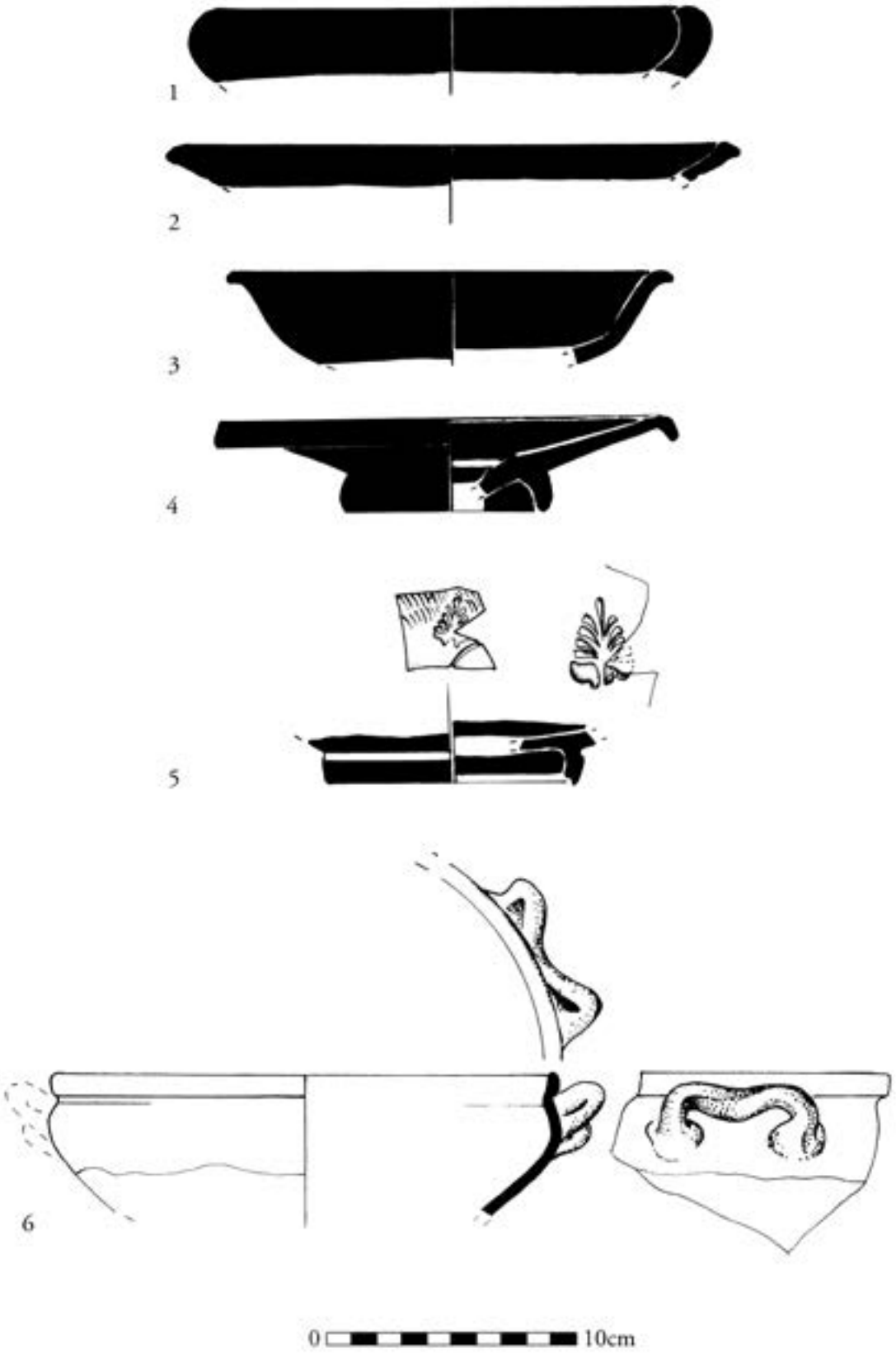


Figure 2.1. Attic and related black-glazed wares.

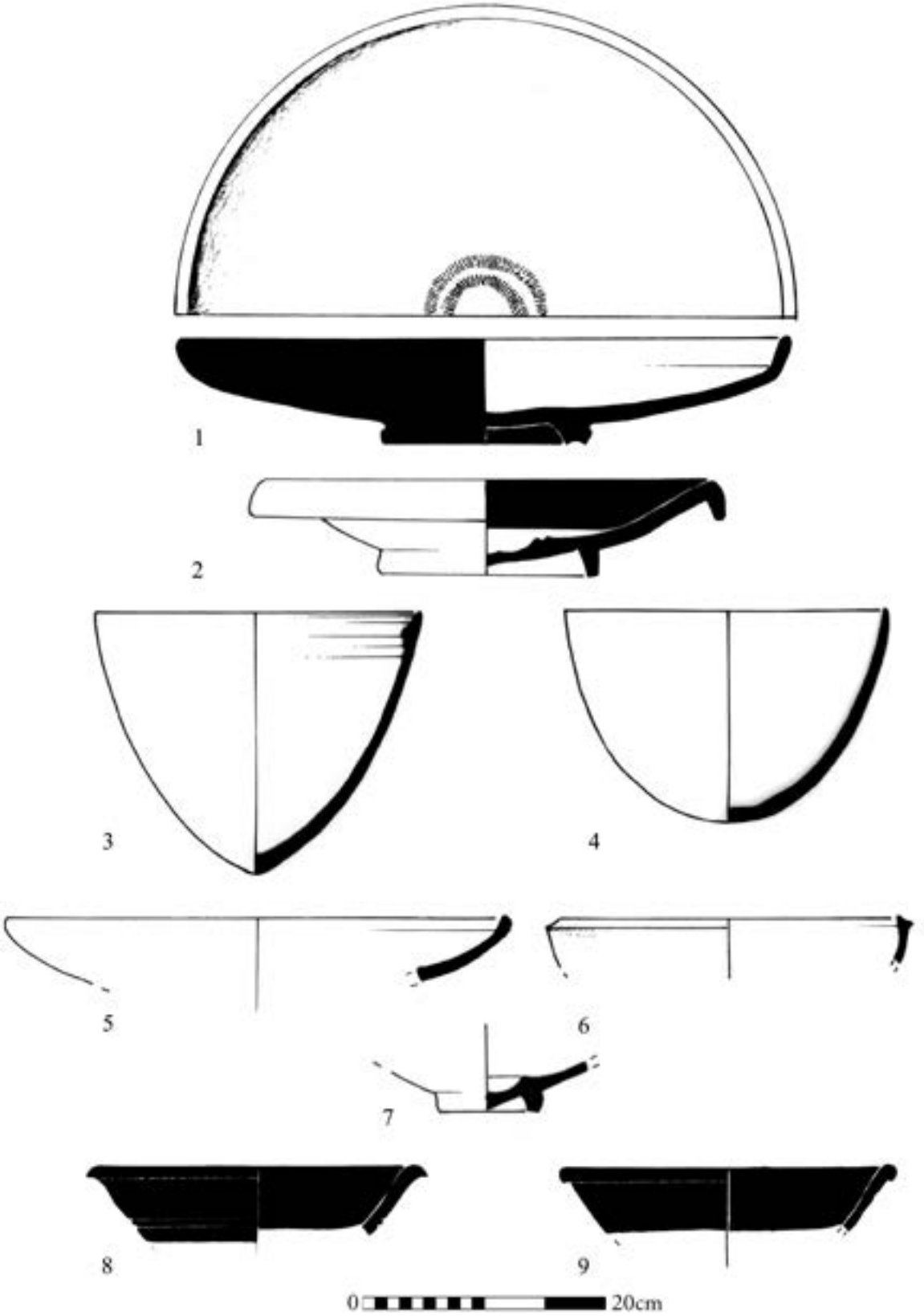


Figure 2.2. Black-slipped predecessor and Eastern Sigillata A (1-7); Campana A (8-9).

Figure 2.2.

No.	Locus	Reg. no.	Description
1	3	46/91 90-3/86	BSP plate
2	105B	4361/05 90-105B-106 Sp.1	BSP fishplate
3	105	4361/05 90-105-104 Sp.1	ESA conical bowl
4	3	46/91 90-3/83	ESA hemispherical bowl
5	3	46/91 90-3/82	ESA plate
6	101A	4361/05 90-101A-119	Imitation of ESA cup or bowl
7	105B	4361/05 90-105B-120	ESA fishplate, yellow clay, red slip
8	5	46/91 90-5/84	Campana A angular bowl, ring foot, out-turned rim, brown clay, black slip
9	107F4	4361/05 90-107F4-142 Fr.1	Campana A angular bowl, ring foot, out-turned rim, brown clay, black slip

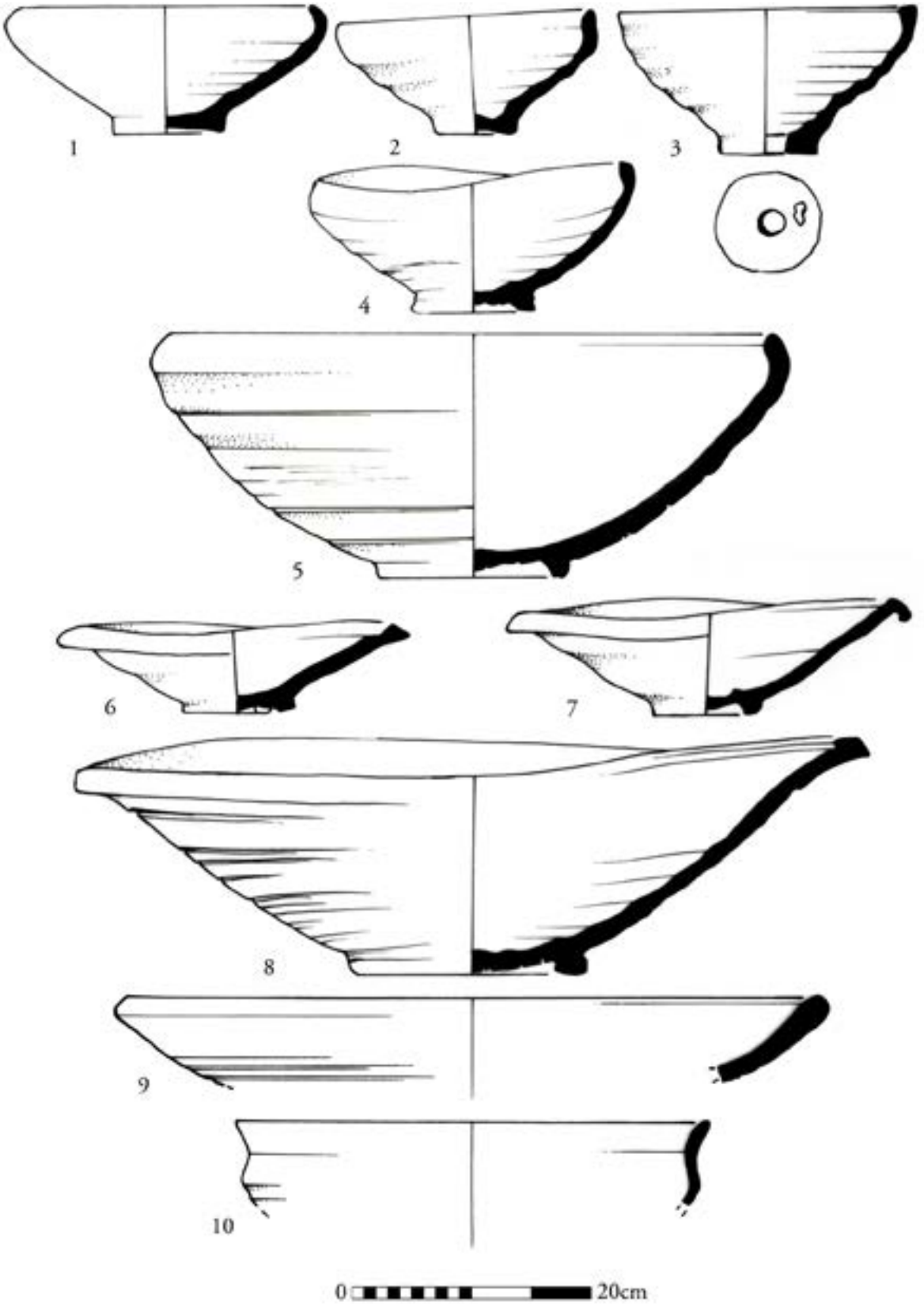


Figure 2.3. Undecorated plain ware bowls and plates.

Figure 2.3.

No.	Locus	Reg. no.	Description
1	9	G-46/91 90-9/13	Incurved rim bowl, disc base, yellow clay
2	9	G-46/91 90-9/14	Incurved rim bowl, disc base, brown clay
3	9	G-46/91 90-9/15	Incurved rim bowl, disc base, reddish-brown clay
4	3	G-46/91 90-3/28	Incurved rim bowl, ring foot, light brown clay
5	107F3	A-4361/05 90-107F3-140	Incurved rim bow, ring foot, light brown clay
6	3	46/91 90-3/24	Saucer or lid, reddish-brown clay
7	3	46/91 90-3/59	Saucer or lid, brown clay
8	5	46/91 90-5/24	Large plate, inwardly folded rim, light brown clay
9	107A	4361/05 90-107A-108 Fr. 2	Mortaria, pale yellow clay
10	107F4	4361/05 90-107F4-142 Fr. 2	Carinated bowl

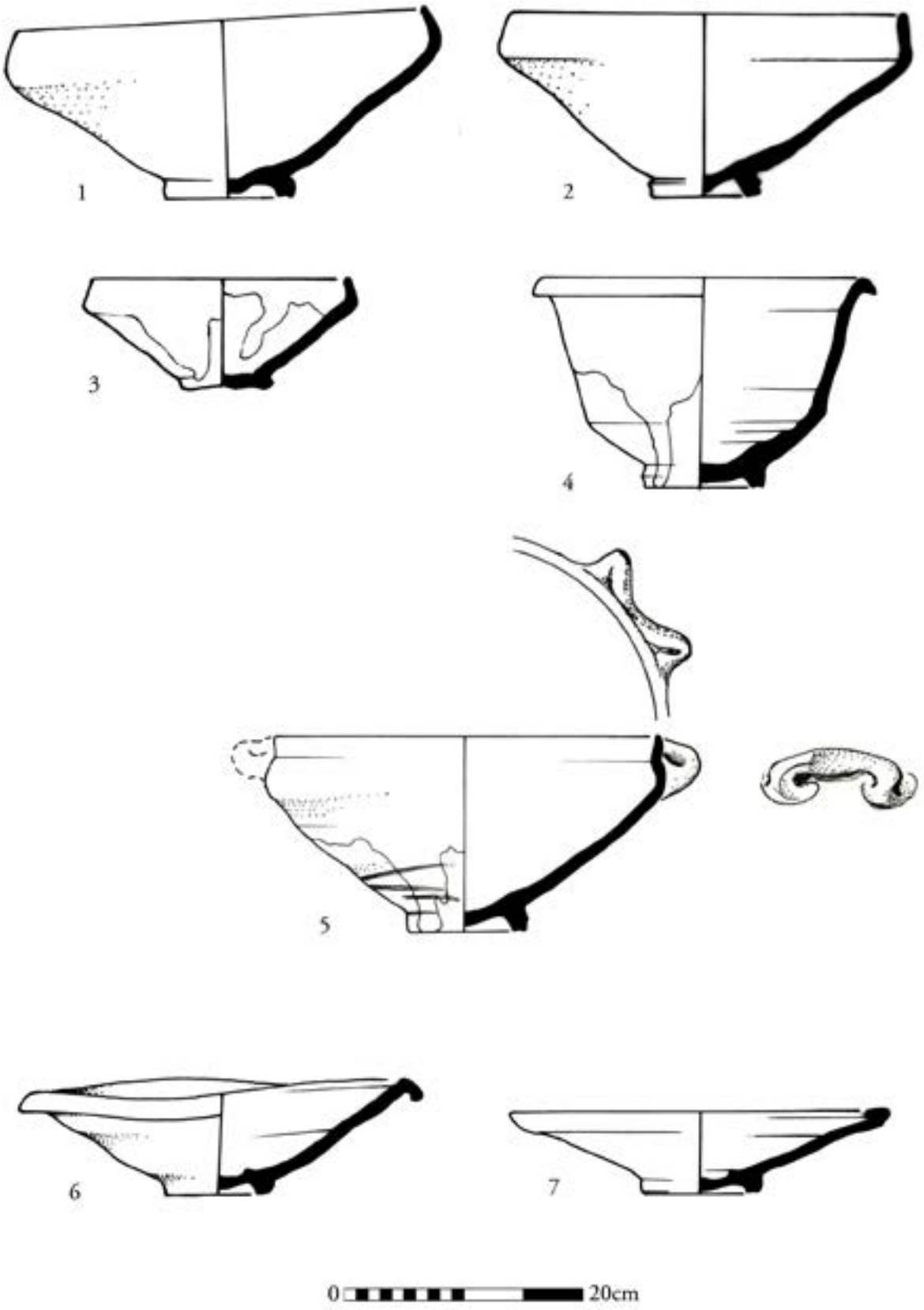


Figure 2.4. Decorated plain ware bowls and plates.

Figure 2.4.

No.	Locus	Reg. no.	Description
1	3	G-46/91 90-3/85	Decorated incurved rim bowl, ring foot, pink clay, red slip
2	103	A-4361/05 90-103-104	Decorated angular bowl, upturned rim, ring foot, pink clay, red slip
3	3	G-46/91 90-3/23	Decorated angular bowl, upturned rim, disc base, pink clay, dark red slip
4	3	G-46/91 90-3/84	Deep angular bowl, out-turned rim, pink clay, red slip
5	3	G-46/91 90-3/16	Decorated bowl, horizontal "pinched-bow" handles, pink clay, red slip
6	3	G-46/91 90-3/13	Fishplate, pink clay, red and black slip
7	105A2	A-4361/05 90-105A2-115 Fr. 3	Hybrid fishplate, rolled rim

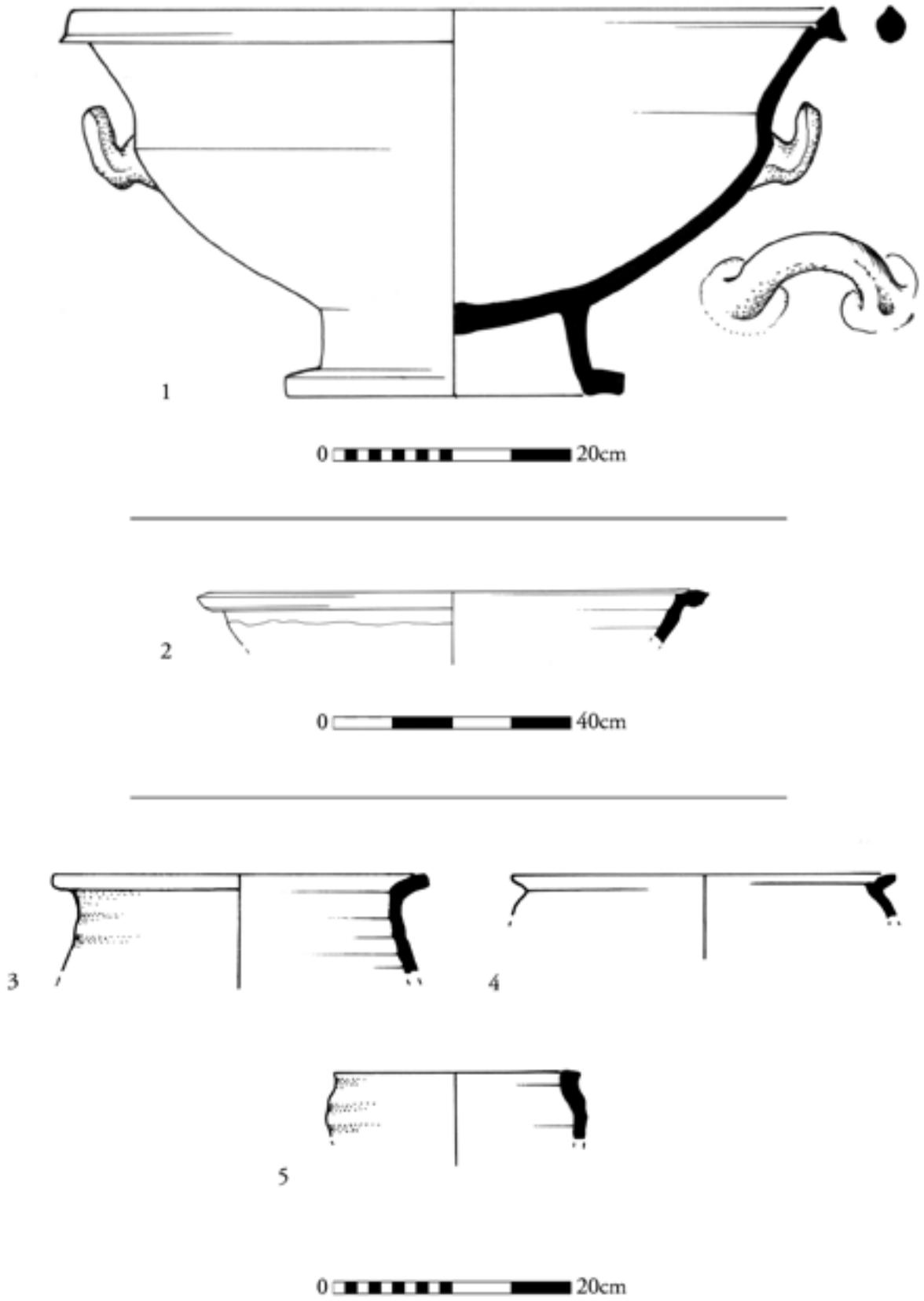


Figure 2.5. Lekanai (1-2) and deep kraters (3-5).

Figure 2.5.

No.	Locus	Reg. no.	Description
1	3	G-46/91 90-3/78	Lekane, reddish-brown clay
2	105A2	A-4361/05 90-105A2-117 Fr. 6	Lekane, brown clay
3	107A	A-4361/05 90-107A-108 Fr. 1	Small deep krater, light yellow clay
4	107H	A-4361/05 90-107H-144 Fr. 1	Small deep krater, brown clay
5	105A2	A-4361/05 90-105A2-117 Fr. 5	Small deep krater, pink clay, red slip

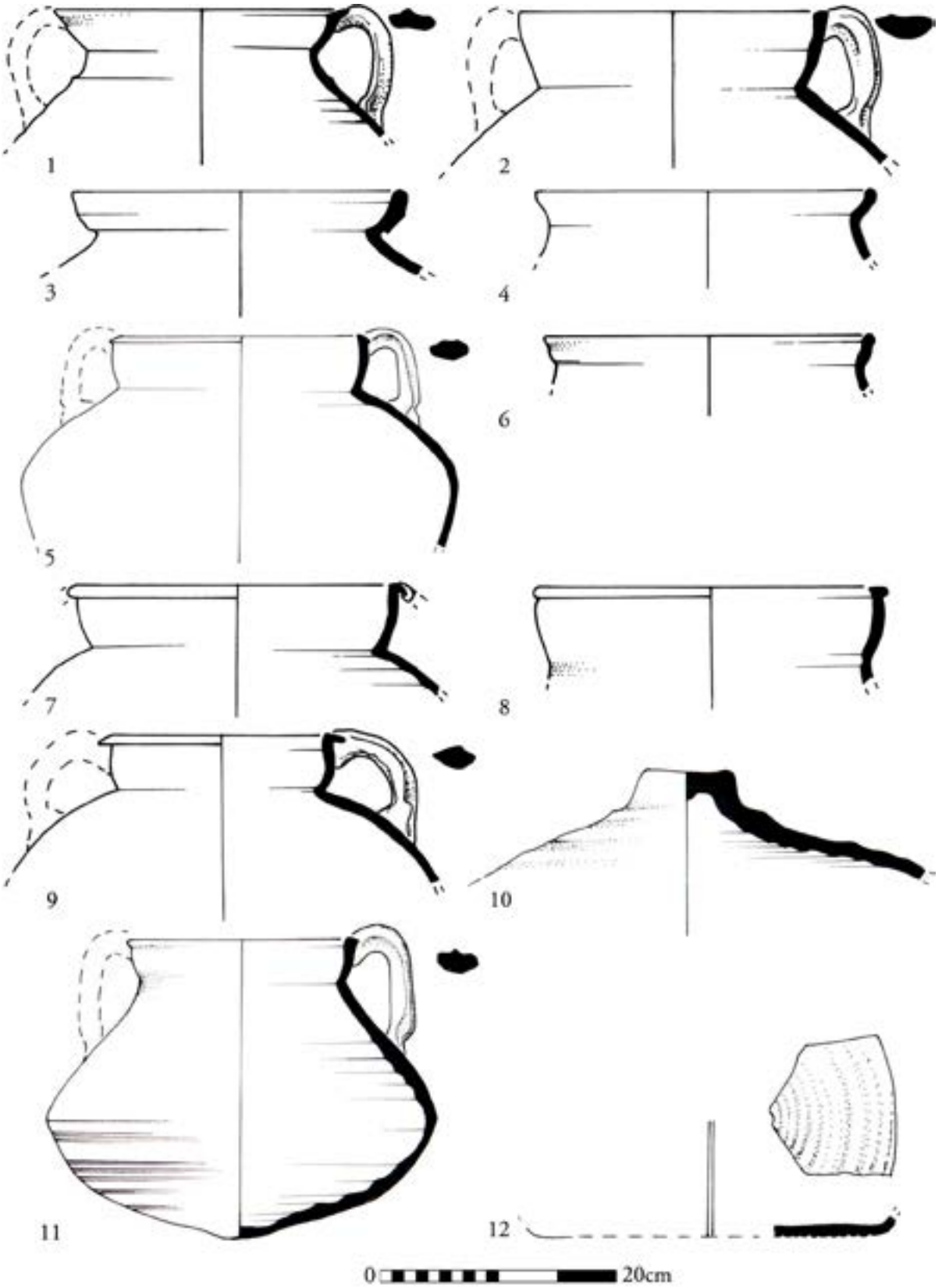


Figure 2.6. Cooking vessels.

Figure 2.6.

No.	Locus	Reg. no.	Description
1	104	G-46/91 90/104	Globular cooking pot, dark red clay
2	105A1	A-4361/05 90-105A1-114 Fr. 1	Globular cooking pot, dark gray clay
3	9	G-46/91 90-9/12	Globular cooking pot, dark red clay
4	3	G-46/91 90-3/81	Globular cooking pot, gray clay
5	105A2	A-4361/05 90-105A2-117 Fr. 2	Globular cooking pot, dark red clay
6	105A1	A-4361/05 90-105A1 Fr. 4	Globular cooking pot, reddish- yellow clay
7	103	G-46/91 90/103	Globular cooking pot, reddish- brown clay
8	105A1	A-4361/05 90-105A1 Fr. 2	Globular cooking pot, dark brown clay
9	105A2	A-4361/05 90-105A2-115 Fr. 1	Globular cooking pot, brown clay
10	7	G-46/91 90-7/80	Lid, red clay
11	2	G-46/91 90-2/78	Small squat angular cooking pot, light red clay
12	9	G-46/91 90-9/11	Imported cooking ware baking dish, brown, black clay, mica grits

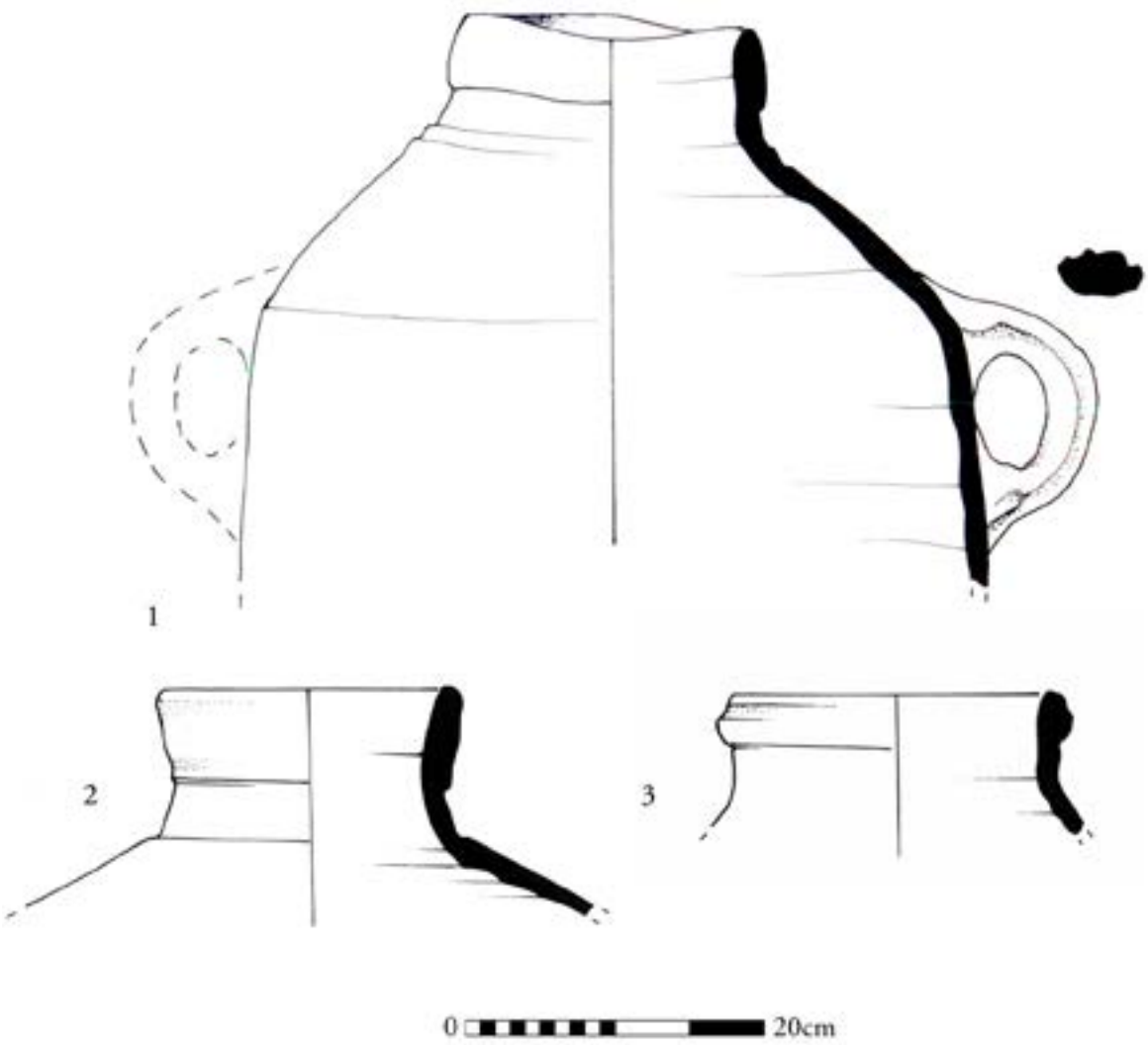


Figure 2.7. Storage jars.

No.	Locus	Reg. no.	Description
1	5	G-46/91 90-5/83	Storage jar, very pale brown clay
2	105A1	A-4361/05 90-105A1-102 Fr. 7	Storage jar, reddish-brown clay
3	3	G-46/91 90-3/14	Storage jar, reddish-yellow clay

Figure 2.8. Table amphorae.

No.	Locus	Reg. no.	Description
1	107H	A-4361/05 90-107H Fr. 2	Undecorated, Table 2.amphora, light reddish-brown clay
2	3	G-46/91 90-3/80	Decorated, Table 2.amphora, pink clay, red slip

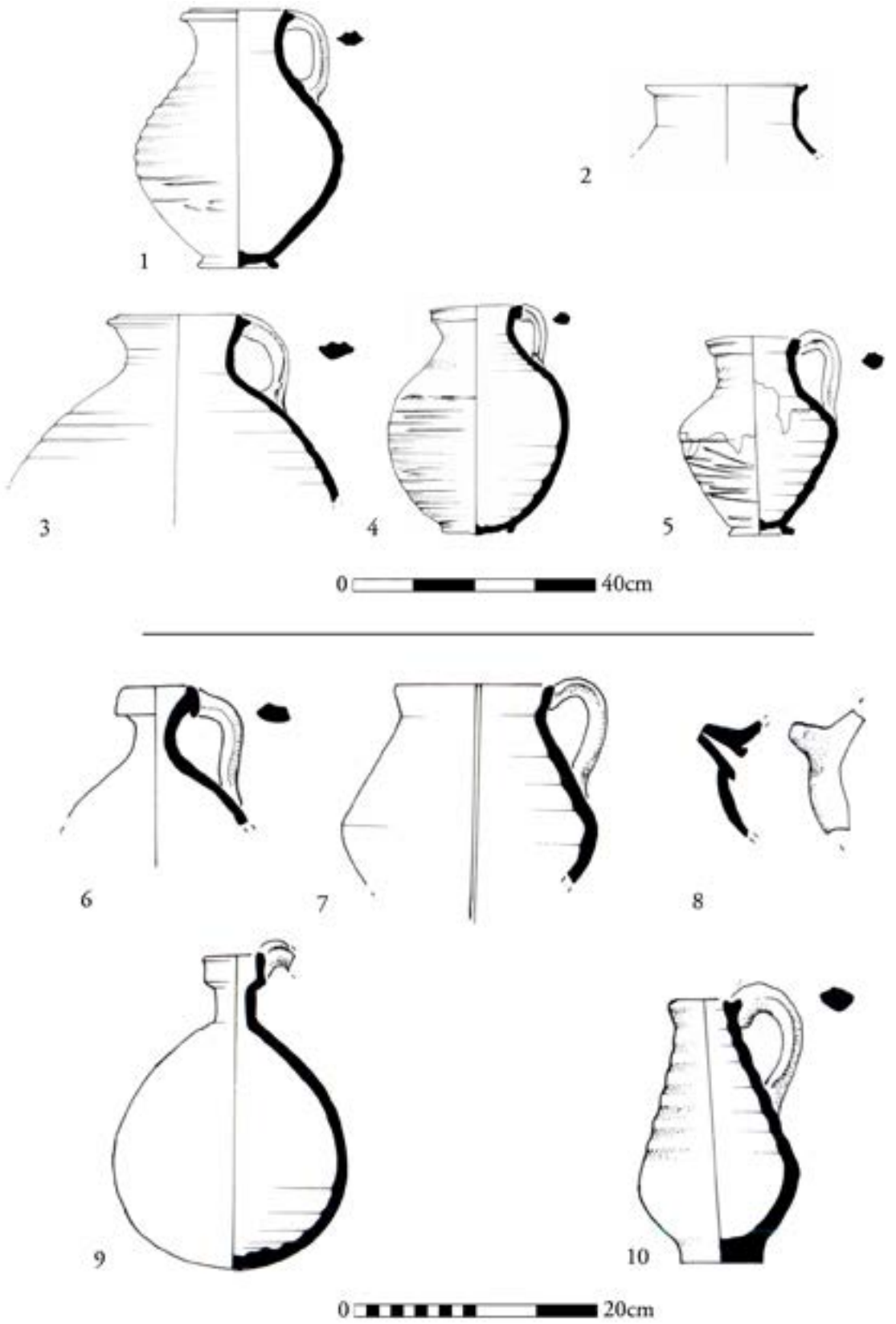


Figure 2.9. Jugs (1-5) and juglets (6-10).

Figure 2.9.

No.	Locus	Reg. no.	Description
1	3	G-46/91 90-3/70	Jug, light green clay
2	2	G-46/91 90-2/77	Jug, light reddish-brown clay
3	10	G-46/91 90/10	Jug, very pale brown clay
4	105	G-46/91 90/105	Jug, light brown clay
5	7	G-46/91 90-7/87	Decorated jug, imitation of handle below rim, pink clay, red slip
6	5	G-46/91 90-5/81	Decorated cup-mouthed juglet, pink clay, red slip
7	5	G-46/91 90-5/82	Juglet, out-turned thickened rim, reddish-brown clay
8	102	G-46/91 90/102	Feeder, reddish-brown clay
9	3	G-46/91 90-3/79	Gobular juglet, pink clay
10	3	G-4/91 90-3/68	Maresha Juglet, reddish-yellow clay

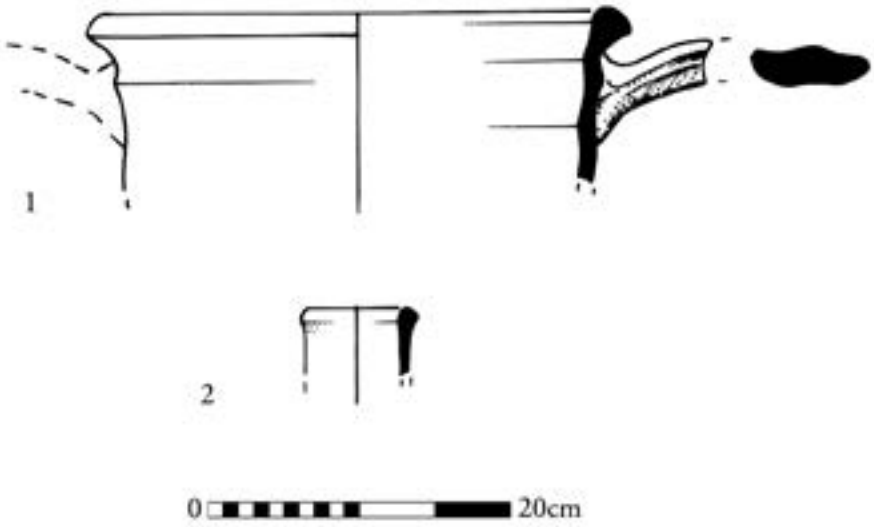


Figure 2.10. Amphora (1), Lagynos (2).

No.	Locus	Reg. no.	Description
1	105C	4361/05 90-105C-107	Amphora
2	5	46/91 90-5/86	Lagynos, yellow clay

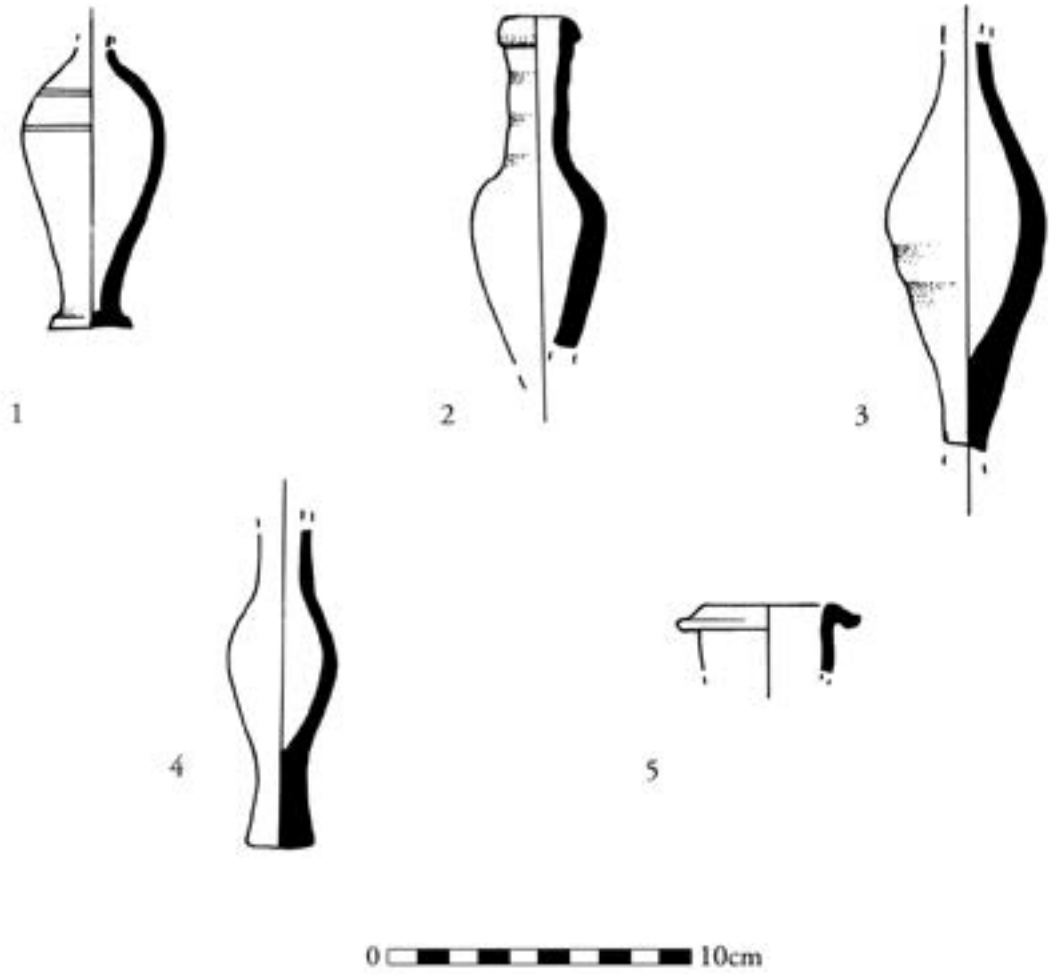


Figure 2.11. Fusiform unguentaria.

No.	Locus	Reg. no.	Description
1	101	G-46/91 90/101	Athenian fusiform unguentaria, dark gray clay, two white painted bands
2	5	G-46/91 90-5/10	Small plain unguentaria, reddish-brown
3	5	G-46/91 90-5/80	Long thin unguentaria, brown clay
4	5	G-465/91 90-5/13	Red painted unguentaria, pink clay, red slip
5	107F4	A-4361/05 90-107F4-142 Fr. 3	Downturned-rim unguentaria, reddish-brown clay

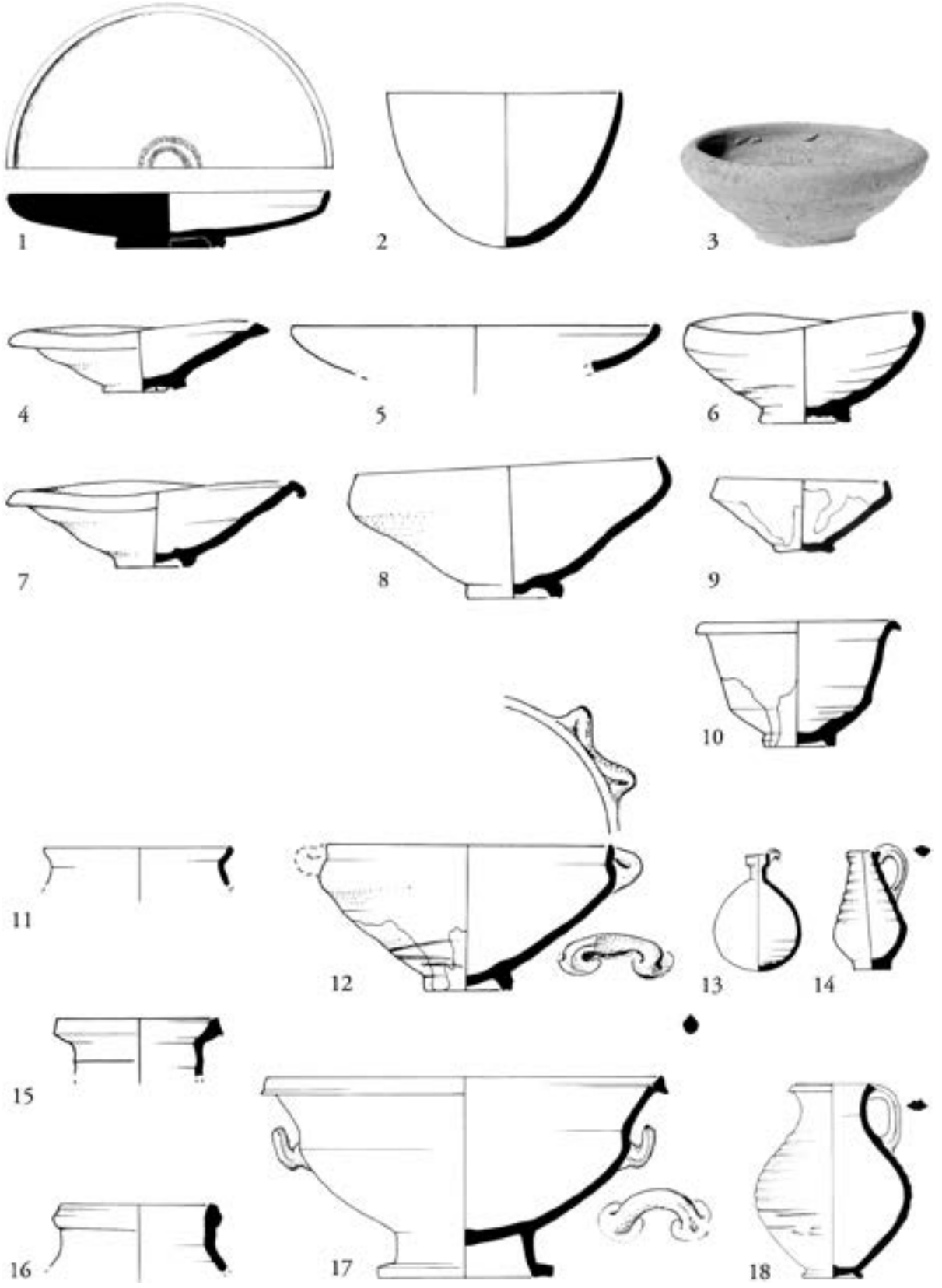


Figure 2.12. Ceramics from L103.

Figure 2.12.

No.	Reg. no.	Description
1	46/91 90-3/86	BSP plate, yellow clay, red and black slip
2	46/91 90-3/83	ESA hemispherical cup, pink clay, red slip
3	46/91 90-3/27	Incurved rim bowls, disc base, light reddish-brown clay
4	46/91 90-3/24	Saucer/lid, light brown clay
5	46/91 90-3/82	ESA broad plate, pink clay, red slip
6	46/91 90-3/28	Incurved rim bowl with ring foot, light brown clay
7	46//91 90-3/13	Fishplate, pink clay, red and black slip
8	46/91 90-3/85	Incurved rim bowl with ring foot, pink clay, red slip
9	46/91 90-3/23	Angular bowl, upturned rim, disc base, pink clay, dark red slip
10	46/91 90-3/84	Deep angular bowl with out-turned rim, pink clay, red slip
11	46/91 90-3/81	Globular cooking pots, gray clay
12	46/91 90-3/16	Bowl with horizontal "pinched-bow" handles
13	46/91 90-3/79	Globular cup-mouthed juglet, pink clay
14	46/91 90-3/68	"Maresha juglet", reddish yellow clay
15	46/91 90-3/80	Imitation of Greek table amphora, pink clay, red slip
16	46/91 90-3/14	Storage jar, reddish-yellow clay
17	46/91 90-3/78	Large open krater, reddish-brown clay
18	G46/91 90-3/70	Jug, light green clay

3. AMPHORA STAMPS FROM SUBTERRANEAN COMPLEX 90AMPHORA STAMPS

Gerald Finkielsztejn

Three Rhodian amphora stamps were uncovered in Subterranean Complex 90. Two are dated to the second decade of the second century BCE, and one to the second third of the same century. The first two stamps were discovered in L5 (designated "L105" in 2005 excavations; see Stern *et al.*, this volume, p. 163, Fig. 1.3) while the third was found in Room 17. Room 17 is located on the southern side of SC 90 in an area that was surveyed but not excavated.

THE CATALOGUE

No. 1 (46/91.90.5.12): Rectangular stamp

Wreath Ὑακινθίου
Φιλαινίου

This stamp was impressed on a half-sized amphora, as shown by the reduced size of the handle. This is the second type known for this fabricant, with a device also appearing on the eponym's stamp. Φιλαίνιος endorsed amphorae dated by eponyms Ξενοφάνης, Πρατοφάνης (Nilsson 1909: 154, 164) and Τιμασαγόρας (Calvet 1982: 34, no. 92) with this device. The fabricant also used circular stamps with the wreath in the center, and eponym names included Φιλόδαμος 2nd (see No. 2 below). For more on the dates of Φιλαίνιος' activity see Finkielsztejn 2001: 120-121. See also Macalister 1901: 132-133, no. 222, Pl. 2:43, Cankardeş-Şenol 1996: 453-454, no. 31, Pl. XIV, Fig. 37; 396, no. 327). Date: ca. second decade of the second century BCE.

No. 2 (46/91.90.5.9): Rectangular stamp

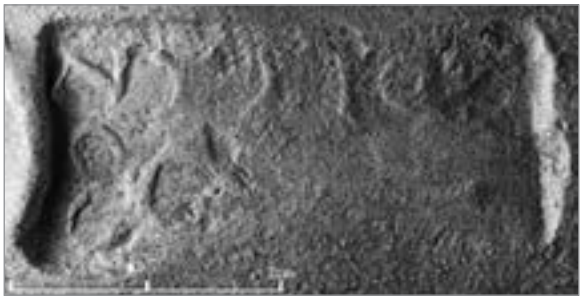
Ἐπὶ Φιλο
δάμου

This stamp names one of two now-identified homonym eponyms, Φιλόδαμος 2nd and Φιλόδαμος 3rd. The early one is attested in the Villanova Deposit and the second is mentioned in an inscription dated to 169 BCE (Badoud forthcoming). These contexts explain the association of that name with early and late types used by the fabricant Φιλαίνιος (No. 1 here; Finkielsztejn 2001: 120-121). Here the month should have appeared on the fabricant stamp. The script and aspect of the handle are in favor of Φιλόδαμος 2nd. See Macalister 1901: 132-133, no. 223. Date: probably ca. 185-182 BCE.

No. 3 (46/91.90.17.5): Rectangular stamp

This rare type used by the fabricant Νύσιος is known from Nilsson 1909: 464, no. 334, 27. He generally uses a statue of Rhodos as a device. According to name connections, Νύσιος was active from the end of V. Grace's Period III until the beginning of Period V (Schuchhardt 1895: 458-459, nos. 1003-1004; the

type is not otherwise known with extra letters as device; Nilsson 1909: Pl. II; Grace and Savvatianou-Pétropoulakou 1970: 305, E 12; Grace 1985: 8-9; Brugnone 1986: 71, no. 112; Finkielsztejn 1993: 315; 2001). The identification of the statue as that of Rhodos is suggested by Boussac 1992: 120-123 (see also Sztetyłło 1966). Date: ca. 169-135 BCE.



Νυσίου
Caduceus ←

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4. OIL LAMPS FROM SUBTERRANEAN COMPLEX 90

Einat Ambar-Armon[1]

INTRODUCTION

This article presents 44 oil lamps found in Subterranean Complex 90 at Maresha. The complex contained a total of 18 rooms, which include among others a large oval cistern, winding staircase and two small baths. The most important area exposed in this complex is the olive press – one of the best preserved at Maresha. Two excavation seasons were undertaken in this area. Of the 44 lamps found in both seasons, 37 (84%) were found in 1991 and seven (16%) in 2005.

The oil lamps were found in 12 different loci. More than half were unearthed in three loci excavated in 1991: L103, L104 and L105. Several lamps from L103 were found *in situ*, as were numerous other complete vessels. The majority of the lamps recovered from this complex are well preserved.

THE ASSEMBLAGE

Three different groups of lamps were found: open lamps, wheel-made closed lamps and mold-made lamps. Below is an introduction to the typology, followed by photographs (Fig. 4.1) and a table with details of the individual lamps (Table 4.1).

Open Lamps (Fig. 4.1:1; Table 4.1:1)

Only one pinched open lamp was found in this complex (Fig. 4.1:1; Table 4.1:1). It is probable that this was connected to an open vessel called a kernos. These lamps and vessels are unique to Maresha, where large quantities were found. The discovery of the kernos lamps is one of the most interesting and important finds of the Maresha excavations (Ambar-Armon, Kloner and Stern 2010). Lamps of this type were also found by Bliss and Macalister (1902: 130, Pl. 66, 8-11) at Tel Sandahanna, dated by the excavators there to the Seleucid period. The dated context in the new excavations, and the typological and morphological study of similar lamps, show that they were in use from the Persian period until the end of the site's occupation at the end of the second century BCE.

Wheel-Made Closed Lamps (Fig. 4.1:2-4; Table 4.1:2-6)

Five wheel-made closed lamps were found in this complex. These can be subdivided into two types: biconical (Rhodian) lamps and Shephelah lamps.

The first type includes an imported lamp, probably from Rhodes (Fig. 4.1:2; Table 4.1:2), while the second is local but whose form was inspired by Rhodian oil lamps (Fig. 4.1:3; Table 4.1:3). These lamps are similar in biconical profile to the lagynoi – which were the source of inspiration for many lamp types – and resemble those which Howland classified as Types 29 and 32 (Howland 1958: 94-101). These are commonly known as Rhodian lamps because they are believed to have originated in Rhodes (e.g., Kassab Tezgör 1995: 83-89). These lamps have been widely found throughout the Land of Israel, for example in Samaria (Crowfoot 1957: 365-367, Fig. 85: 6; Reisner, Fisher and Lyon 1924: 318, Fig. 188:I1a) and Tirat Yehuda (Yeivin and Edelstein 1970: 61, Fig. 10:4). Local lamps of this type differ from their imported counterparts in the nature of the clay and slip – which is of a lower quality – and in their base design. While the imported lamps have an *omphalos* base, the bases of the local lamps are disc-shaped and string-cut. The lamps of this type are dated to the early Hellenistic period.

The second type, the Shephelah lamps, includes two sub-types that are distinguished by their body profile. Both sub-types have convex walls (Table 4.1:4-6), but the wall at mid-body of the second sub-type (Fig 1:4; Table 4.1:5, 6) is straight. Their main characteristic is a high ridge that surrounds the

1 For a detailed discussion on the different types of lamps from SC 90 and their dating, see the author's PhD dissertation (Ambar-Armon 2007).

filling hole. These lamps were found particularly in the Judean lowlands (the Shephelah) and were very common at Maresha. This type was first published by Bliss and Macalister, from Tel Maresha (1902: 129, Pl. 61:1) and later by Oren and Rappaport from the Maresha Necropolis (Oren and Rappaport 1984: 125, Pl.13:III). Most of Maresha's lamps of this type are dated to the Hellenistic period (up to the end of the second century BCE).

Mold-made Lamps (Fig. 4.1:5-15; Table 4.1:7-44)

Of the 44 lamps found in SC 90, 38 were mold-made. This technique came into being as early as the third century BCE. The change in the production technique from wheel- to mold-made led to the creation of a wide variety of forms.

Among the lamps of this group some have three knobs, some two and others one or none.

The two lamps which have three knobs (Fig. 4.1:5; Table 4.1:7, 8) both belong to the Erotes lamp type. These are characterized by Erotes figures on both sides of the filling hole, the heads of which flank a palmette. Most lamps of the Hellenistic period are decorated with geometric patterns and therefore the Erotes figures are exceptional, eventually lending their name to this type of lamp. Erotes lamps are prevalent at many sites and have been found in most regions of the Land of Israel. Their wide distribution is also related to the fact that they were in use for a long period. Rosenthal-Heginbottom (1995: 237) dated these lamps to a range between the early second century BCE and the middle of first century BCE at Tel Dor. The lamps from Maresha are even earlier, their use period extending until the end of the second century BCE.

There are seven lamps with two knobs in the assemblage. One was imported from Egypt (Fig. 4.1:6; Table 4.1:9), whilst the others (Fig. 4.1:7, 8; Table 4.1:10-15) are local but imitate Egyptian types. The knobs on all seven lamps are sharp, prominent and flank the filling hole. Egyptian lamps are not common in the Land of Israel during the period under discussion; however, a large number of Egyptian lamps have been found at Maresha. Also significant are the frequent local imitations of these lamps. Many of these "Egyptian" lamps – made of brown clay with mica – have been found at Alexandria, which was apparently their source. The lamp in Fig. 4.1:6 (Table 4.1:9) survived only partially; it might belong to Mlynarczyk's Type F and G, among others. These types are generally dated to the end of the third century and the second century BCE (Mlynarczyk 1997). The six other lamps have Egyptian morphological features but are made from local clay. They are characterized not only by the two sharpened knobs, but also by the "fluke"-shaped end of the nozzle and the small diameter of the wick hole.

Most of the mold-made lamps have one knob, situated on the right-hand side of the lamp (when the nozzle faces up). One of them imitates the biconical (Rhodian) lamps discussed above (Fig. 4.1:2, 3; Table 4.1:2, 3), although the Rhodian lamps are wheel-made (Fig. 4.1:9; Table 4.1:16). The main difference between these lamps is their production method, other distinctions being a knock-on effect of this. The main morphological difference is in the ring base, which is characteristic of this type, while – as noted above – the wheel-made lamps have either an *omphalos* base or a disc base. Its filling hole is depressed and surrounded by a two small ridges.

Chronologically this lamp precedes the dolphiniform lamps discussed below. According to its morphological characteristics and the large quantity found at Maresha, it can be dated to the second half of the third century BCE and to the beginning of the second century.

Twenty-six of the lamps in the assemblage are of the dolphiniform type (Fig. 4.1:10-13; Table 4.1:17-42); they all have one knob and a double-convex, low, pear-shaped body. A ridge encloses the central filling hole and the flat, round base is marked by a groove. The lamp also features decorations marking the border between the nozzle and the rest of the lamp. The nozzle in most cases is long and tapers toward the end. These lamps can be subdivided into sub-types that reflect both their morphological and their decorative characteristics. Most lamps are decorated with radial lines (Fig. 4.1:10, 11; Table 4.1:17-31); Fig. 4.1:12 (Table 4.1:32) also has an ear handle. Branches may appear next to the lines (Table 4.1:33-36), as well as

a palmette on the nozzle (Table 4.1:36). Table 4.1:37 and 38 have a different decoration but the same shape. Table 4.1:39-42 have distinct morphological characteristics: the nozzle of No. 39 tapers toward the wick hole; No. 40 has a flat nozzle and knob with a shell-shaped decoration; No. 41 is smaller, and is decorated only on its knob; and No. 42 is also small, and has a particularly short nozzle.

Like the Erotes types, these mold-made lamps are prevalent at many sites throughout most of the Land of Israel – for example, at Tirat Yehuda (Yeivin and Edelstein 1970: 61, Fig 10:1, 3) and Beer-Sheva (Derfler 1993: 135-137, Fig. 4.10: 4, 5, 6). Mold-made lamps were the most common type in the second century BCE but had already been in circulation by the end of third century BCE.

Only one lamp from this assemblage has no knobs, this item belonging to the round types (Fig. 4.1:14; Table 4.1:43). In the Hellenistic period the round lamps were rare compared to lamps with knobs. This is an interesting phenomenon, especially in light of the fact that most of the lamps from other periods were round. Nevertheless, round lamps have been found in all regions of the Land of Israel – for example, in Samaria (Crowfoot 1957: 369, Fig. 4.87:1) and at Tel Dor (Rosenthal-Heginbottom 1995: 238-239, Fig. 4.5.17:7). Coupled with the fact that these types are contemporaneous, the clay characteristics of this lamp and the similarity of its decorations to those of other mold-made lamps – at least the dolphiniform pieces – suggests that they were manufactured together.

The final mold-made type in this assemblage is a plastic lamp (Fig. 4.1:15; Table 4.1:44). This lamp is notable for its combination of both human and zoomorphic imagery: the eyes and nose are humanoid, while the horns and hair are typical of a bull's head. Although the lamp is now flaking, enough precise details are still visible to show that it was made in a high-quality mold. Lamps with bulls' heads have been found in all Hellenistic regions (for example at Athens [Howland 1958: 157, no. 617]). Such lamps were in use for a long period, beginning at least as early as the second century BCE and continuing until the first century BCE (Chrzanovski 2002: 13-34). Bailey presumed that these lamps began to be prevalent only in the first century BCE (Bailey 1975: 15). However, the lamp under discussion was in use during the second century BCE and is one of the earlier lamps of this type. Its discovery in L103 – together with so many other intact vessels – points to the final phase of Hellenistic-period Maresha.

CONCLUSIONS

The assemblage of lamps from SC 90 is varied, but of particular note is the fact that most were mold-made (n=38 [87%], as opposed to only six wheel-made pieces [13%]). In addition, almost a quarter of the lamps (n=8 [23%]) are Egyptian or imitate Egyptian types. Also noteworthy is that the mold-made lamps are finely crafted and not worn out. These lamps, in conjunction with the bronze statue of Heracles, marble libation bowl and hewn stone altar carved into the corner of the olive press (see Chapter 1, this volume), along with other finds (Stern *et al.* 2007) can be considered indications of the inhabitants' high standard of living.

In terms of dating SC 90, lamps from the Iron Age or the Persian period were not found in this complex, and only three lamps (7%) could be dated to the early Hellenistic period. Other finds from this complex were dated to the second century BCE. These include one coin of Alexander II Zebinas (126 BCE) and three Rhodian stamps (189-135 BCE). Together with these finds, the large number of lamps and their wide distribution throughout the excavated areas help to date the complex – at least its main occupation phase – to the second century BCE.

Figure 4.1. A selection of lamps (see Table 4.1 for details).

Table 4.1. Oil lamps from Subterranean Complex 90.

No.	Fig. 4.1	Locus	Dimensions (cm)	Color	Description	Type
1	1	105A1	L. 4.9, W. 4	Buff	Intact	Open lamp
2	2	107F3	L. 9.6 (B), W. 7.7, H. 4	Reddish, with red slip (inside and outside)	Nearly complete, tip of nozzle missing	Biconical (Rhodian) lamp
3	3	Surface	L. 7.9 (B), W. 6.4, H. 3.1	Light brown, brown slip on top of lamp	Nearly complete, tip of nozzle and body missing	Biconical (Rhodian) lamp– local
4		7	L. 7.3 (B), W. 4.7, H. 3.9	Light buff to beige, white inclusions	Nearly complete, tip of nozzle missing	Shephelah lamp
5	4	5	L. 8, W. 4.9, H. 3.2	Light buff to beige, white inclusions	Intact	Shephelah lamp
6		5	L. 8.9, W. 5.5, H.3.7	Light buff to beige, white inclusions	Intact	Shephelah lamp
7	5	9	W. 6.5, H. 2.9	Light gray, gray to black slip on top of lamp	Nearly complete, tip of nozzle missing	Erotes lamp
8		7	---	Light gray, gray to black slip on top of lamp	Lamp in brittle condition that is crumbling	Erotes lamp
9	6	5	---	Brown slip	Nozzle and part of the body	Egyptian lamp
10		5	L. 7.1, W. 5.7, H. 2.5	Pink clay, black slip on top of lamp	Intact	Imitation of Egyptian lamp
11	7	7	L. 7, W. 5, H. 2.6	Pink clay, red slip on top of lamp	Complete	Imitation of Egyptian lamp
12		5	L. 7.9, W. 6.2, H. 2.7	Pink clay, red slip on top of lamp	Intact	Imitation of Egyptian lamp
13		9	L. 7.5 (B), W. 5.9, H. 2.5	Brown clay, black slip on top of lamp	Nearly complete, tip of nozzle missing	Imitation of Egyptian lamp
14		5	L. 7.9, H. 3.1	Pink clay, black slip on top of lamp	Complete	Imitation of Egyptian lamp
15	8	105B	L. 8.4, W. 5.8, H. 2.8	Pink clay, red to black slip on top of lamp	Complete	Imitation of Egyptian lamp
16	9	5	L. 9.9, W. 7.1, H. 2.9	Pink clay, red slip on top of lamp	Intact	Mold-made lamp with one knob
17		Surface	L. 8.6, W. 5.2, H. 2	Gray clay	Intact	Dolphiniform lamp
18	10	3	L. 8.7, W. 5.2, H. 2	Light gray, gray to black slip on top of lamp	Intact	Dolphiniform lamp
19		3	L. 8.7, W. 5, H. 2.3	Light gray, gray to black slip on top of lamp	Intact	Dolphiniform lamp
20		4	L. 8.5, W. 5.3, H. 2.2	Light gray, gray to black slip on top of lamp	Intact	Dolphiniform lamp
21		4	L. 8.8, W. 5.4, H. 2.3	Light gray, gray to black slip on top of lamp	Intact	Dolphiniform lamp
22		5	L. 8.5, W. 5.3, H. 2.3	Light gray, gray to black slip on top of lamp	Intact	Dolphiniform lamp
23		5	L. 8.9, W. 5.3, H. 2.3	Light gray, gray to black slip on top of lamp	Complete	Dolphiniform lamp
24		2	L. 7.1 (B), W. 5.3, H. 2.2	Light gray, gray to black slip on top of lamp	Nearly complete, tip of nozzle missing	Dolphiniform lamp
25		11	L. 8 (B), W. 4 (B), H. 2.5	Light gray, gray to black slip on top of lamp	Nearly complete, part of the body missing	Dolphiniform lamp
26	11	103	L. 9, W. 5.4, H. 2.4	Pink clay, red slip on top of lamp	Intact	Dolphiniform lamp

No.	Fig. 4.1	Locus	Dimensions (cm)	Color	Description	Type
27		11	L. 8, W. 4.5, H. 2.6	Pink clay, red slip on top of lamp	Intact	Dolphiniform lamp
28		4	L. 7.8, W. 5, H. 2.5	Pink clay, slip on top of lamp	Intact	Dolphiniform lamp
29		4	L. 8.9, W. 5.3, H. 2	Pink clay, red slip on top of lamp	Intact	Dolphiniform lamp
30		4	L. 9, W. 5.3, H. 2.6	Pink clay, red slip on top of lamp	Complete	Dolphiniform lamp
31		3	L. 8.7, W. 5.2, H. 2.4	Gray clay, black slip on top of lamp	Nearly complete	Dolphiniform lamp
32	12	5	L. 11, W. 5.6, H. 2.6	Light gray, gray to black slip on top of lamp	Intact	Dolphiniform lamp
33		5	L. 9.7, W. 5.8, H. 2.6	Light gray, gray to black slip on top of lamp	Intact	Dolphiniform lamp
34		5	L. 8.8, W. 5.2, H. 2.9	Light gray, gray to black slip on top of lamp	Intact	Dolphiniform lamp
35		11	L. 9.1, W. 5.7, H. 2.7	Pink clay, red slip on top of lamp	Intact	Dolphiniform lamp
36		5	L. 8.7, W. 5.5, H. 2.6	Light gray, gray to black slip on top of lamp	Intact	Dolphiniform lamp
37		4	L. 8.9, W. 5, H. 2.4	Gray to black slip on top of lamp	Complete	Dolphiniform lamp
38		3	L. 7.6, W. 4.5, H. 2.6	Pink clay, gray slip on top of lamp	Intact	Dolphiniform lamp
39		3	L. 6.7 (B), W. 5.5, H. 2.4	Pink clay	Complete	Dolphiniform lamp
40	13	105B	L. 7.9, W. 4.9, H. 2.5	Light gray, gray to black slip on top of lamp	Intact	Dolphiniform lamp
41		103	L. 6.1 (B), W. 4.7, H. 2.9	Pink clay	Nearly complete, tip of nozzle missing	Dolphiniform lamp
42		3	L. 6.7 (B), W. 4.8, H. 2.5	Light pink, red slip on top of lamp	Nearly complete, tip of nozzle missing	Dolphiniform lamp
43	14	3	L. 6.1 (B), W. 4.7, H. 2	Light gray, gray to black slip on top of lamp	Nearly complete, nozzle missing	Round lamp
44	15	3	L. 7.3 (B), W. 5.5, H. 3	Light gray, gray to black slip on top of lamp	Nearly complete, tip of nozzle and part of the body missing	Plastic lamp

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A Roman/Byzantine Water Cistern at Mamilla (Independence Park), Jerusalem

Gideon Suleimany & Yonatan Mizrahi

(Pp. 5-10*)*

In May and October 2012 an archaeological excavation and educational project was carried out in the cemetery of Mamilla (now part of Independence Park) in Jerusalem (Permit No. G-31/2012; map ref. NIG 220860/631680; Fig. 1). The project team included students from the Experimental High School in Jerusalem, under the direction of archaeologists Gideon Suleimany and Yonatan Mizrahi. The endeavor was made possible by the sponsorship of Friends of the Earth, while the Nelson Glueck School of Biblical Archaeology provided academic oversight and logistical support.

The water cistern was one of several features carved in the bedrock at this location, dating back at least to the Roman period. Our excavations revealed three phases:

Phase 1: a two-level tomb accessed by a stone-carved staircase (Figs. 8, 9) which led down to a central chamber, from which branched off several other chambers (Fig. 2). This phase was badly disturbed by quarrying which took place during the two subsequent phases of the site. The tomb probably dates to the Late Roman or Byzantine period, although no diagnostic artifacts were recovered.

Phase 2: the tomb was converted into a water cistern (Figs. 3-6, 9). Much of the original plan was destroyed, resulting in a large, irregular-shaped cavity – i.e., the cistern. The artifacts from this phase appear to date to the Ottoman period.

Phase 3: the eastern part of the cistern was converted into a habitation area, the partition walls of which were extant (Figs. 3, 5, 14). At this time the use of this feature as a cistern was discontinued. This phase was modern, dating to the last 100 years. A great many hypodermic needles and (stolen?) personal documents (Figs. 11, 12) indicate that this underground space provided shelter to drug addicts.

Captions to Illustrations

Fig. 1. The site location.
Fig. 2. General site plan.
Fig. 3. Plan of the cistern.
Fig. 4. Section A-B in the cistern.
Fig. 5. Section C-D in the cistern.
Fig. 6. The water cistern (facing north).
Fig. 7. Damage to the wall in the northwest corner of the cistern (facing southwest).
Fig. 8. Stairs in the entrance passage (L106) (facing northwest).
Fig. 9. The cistern (facing north).
Fig. 10. Modern waste on the cistern floor (facing north).
Fig. 11. Syringes found in the modern waste within the cistern.
Fig. 12. Personal identification cards found in the cistern's modern waste fill.
Fig. 13. Column fragment from L103.
Fig. 14. Opening broken in the wall of the cistern (facing northeast).

Rescue Excavation at Hafetz Haim (Salugia)

Gideon Suleimany

(Pp. 11-13*)*

This salvage excavation was carried out at the Mekorot site of Hafetz Haim (Permit No. B-393/2012; map ref. NIG 178685-725/633500-760; Fig. 1). Layers of alluvium overlaid by recent debris were found to cover a shallow drainage feature. The few sherds found in the upper layer of alluvium probably derive from a nearby site. Two built walls in the northern part of the excavation area (Figs. 2-5) are probably terrace walls or dams built to create terraces or to dam drainage for irrigation purposes. No diagnostic material was recovered that might date these features.

Captions to Illustrations

Fig. 1. The site location.
Fig. 2. General site plan.
Fig. 3. Wall 2 (Square A6) (facing northwest).
Fig. 4. Plan of Wall 2.
Fig. 5. Section of Wall 2.

Ein Mazruk (Abu Ghosh)

Nathan Ben-Ari
with a contribution by Gideon Suleimany
(Pp. 14-34*)*

This excavation was carried out adjacent to Arazim Street in Abu Ghosh (Permit No. A-6292; New Israel Grid: 210200-634450; Figs. 1, 2). Two areas (A, B) were excavated, prior to the construction of a road.

Area A. Here we exposed part of what we interpreted as a complex irrigation system: a stone-built channel (L135; Figs. 10-12) brought spring water to a storage installation (L149; Figs. 15, 16), from which it could flow down and across the hillside. L135 was also connected to Channel 137 (Figs. 12-14) which carried water acros the slope, probably to another storage installation (L120; Figs. 8, 9).

This irrigation complex was later filled in and an agricultural terrace was built in the area.

Ceramic finds from the soil covering the irrigation features date mostly to the Hellenistic and Early Roman periods (Fig. 27), although some Late Iron Age and Late Roman – Byzantine sherds were also recovered (Fig. 26).

Area B. Here we uncovered parts of several walls (Figs. 23, 25) which we interpreted as agricultural in nature, i.e. serving to support terraces and optimize drainage.

Captions to Illustrations

Fig. 1. The site location.
Fig. 2. Satellite view of the site location.
Fig. 3. General view of the excavation areas.
Fig. 4. Area A.
Fig. 5. Area A, Section A-B.
Fig. 6. Area A, Section C-D.
Fig. 7. Area A, general view (facing northeast).
Fig. 8. Installation 120, general view (facing northwest).
Fig. 9. Installation 120 (facing southeast). Note the plaster remains on the south side of Terrace Wall 145.
Fig. 10. Channel 135 (facing south).
Fig. 11. Channel 135 (facing north).
Fig. 12. Intersection of Channels 137 (foreground) and 135 (facing east). Note the covering slabs over Channel 137.
Fig. 13. Channel 137 before the removal of the covering slabs (facing southwest).
Fig. 14. Channel 137 after removal of the walls (facing west).
Fig. 15. Installation 149 (facing north).
Fig. 16. Installation 149 (facing northwest). Surface 125 in the foreground.
Fig. 17. Channel 144 (facing southwest). Note the large stones overlying the channel.
Fig. 18. Channel 144 (facing southwest) after removal of the covering stones. Note Wall 131 standing above the channel, and the bedrock in which the latter was cut.
Fig. 19. Channel 144 after removal of the covering stones (facing northwest).
Fig. 20. Western section of Terrace Wall 145 (facing west), abutted by Wall 127 (foreground).
Fig. 21. Section view of Installation 149 fill (facing east).
Fig. 22. Square B2, plan and section.
Fig. 23. Square B2, Terrace 223 (facing north).
Fig. 24. Square B1, plan and section.
Fig. 25. Square B1 (facing northwest).
Fig. 26. Late Iron Age and Late Roman – Byzantine ceramic finds.
Fig. 27. Hellenistic and Early Roman ceramic finds.

Rescue Excvation at Nurit (Nuris)

Achia Kohn-Tavor

(Pp. 35-40*)*

In January 2013 Y.G. Contract Archaeology Ltd. carried out a rescue excavation on the northern slopes of Mt Gilboa, ahead of the expansion of the modern quarry of Even Vasid (Ein Harod) Ltd. The latter financed the excavation, which was directed by Achia Kohn-Tavor, under the academic auspices of the Hebrew Union College.

Our investigations revealed a series of paths, terrace walls, stone-built plot boundary lines, stone clearance piles, and three bedrock-hewn cist tombs. These archaeological remains reflect activities carried out on the periphery of the nearby village of Nuris, which was occupied from the Roman period through to modern times.

Captions to Illustrations

Fig. 1. The site location.

Fig. 2. General view of the eastern slope. The figure is standing on an old stone-made path.

Fig. 3. General plan of the site.

Fig. 4. Digging a section through the F10 path, Sq. A (facing west).

Fig. 5. F11 path and F22 boundary line, Sq. B (facing south).

Fig. 6. Section through the F14 terrace, Sq. E.

Fig. 7. Corner of the F14 terrace, Sq. E (facing southeast).

Fig. 8. F13 path, Sq. D (facing north).

Fig. 9. Section through the F21 stone clearance pile, Sq. G.

Fig. 10. Digging a section through the F19 stone clearance pile, Sq. F (facing northeast).

Fig. 11. Fragment of a basalt bowl from F21, Sq. G.

Fig. 12. F23 bedrock-hewn cist tombs (facing north).

סיכום

בשטח החפירה הנוכחית תועד חלק מהעורף החקלאי של היישובים הסמוכים, נוריס וגבעת יהונתן. בהעדר ממצא מתארך, לא ניתן לתארך את הממצא ישירות, אלא באמצעות משך החיים של היישובים הסמוכים, שלמעשה מכסה את כל תקופות היישוב החל מהתקופה הכלקוליתית. גבעת יהונתן היא היישוב הקדום, שהתקיים עד חורבן ממלכת ישראל, והכפר נוריס החליף אותו בתקופות הקלאסיות והמוסלמיות. המרכיב החקלאי החשוב של ההתיישבות המסורתית איננו מתועד תמיד במחקר הארכיאולוגי באופן מסודר, וזוהי הזדמנות למצות מידע על עיבוד החלקות בעבר. המשך החפירה הצפוי יניב מידע לגבי היקפן של החלקות החקלאיות. ההשתמרות של המרכיבים טובה, ומייצגת את השימוש בתוואי התלול של הערוץ. בניגוד למצב בהרי השומרון, מדרום לאתר הנוכחי, כאן לא נבנו טרסות היוצרות חלקות חקלאיות המאפשרות עיבוד אינטנסיבי. הסיבות לכך הן מיעוט אדמת הסחף וקרבת השדות הרחבים של העמקים הסמוכים. ייתכן כי בחלקות על המדרונות גודלו זיתים או גפנים, הדורשים מעט אדמה. עם זאת, גתות לא נמצאו בשטח החפירה, אלא רק בראש השלוחה המערבית. גתות נוספות קיימות סביב לנוריס, ממערב לחפירה. באזורים בהם הערוץ מתרחב מעט נוצלה אדמת הסחף שהצטברה לשדות רחבים יותר, אשר סוקלו מאבנים. בשדות אלו גודלו בוודאי דגנים בחקלאות בעל. השבילים החוצים את תחום החפירה קישרו בין היישובים הסמוכים לבין השטחים החקלאיים שלהם, ובין היישובים לבין עצמם. דרכים אלו קישרו גם בין העמק להר. ה.ב. טריסטראם עלה באחד משבילים אלו בדרכו מבית שאן לג'נין, ביום 6.4.1863 (טריסטראם 1981: 376). דרכים דומות לאלו מבחינת המבנה נמצאו בסקר בחלקו המזרחי של הגלבוע (כהן תבור 2012, אתרים 12, 16). אך בכל חלקו המזרחי של הגלבוע מוכרות שלוש דרכים, בעוד בשטח החפירה הנוכחי נמצאו ארבע דרכים שונות! עובדה זו מעידה על אינטנסיביות היישוב בחלקו המערבי של הגלבוע לעומת חלקו המזרחי, דבר הניכר גם בכמות אתרי היישוב ובעוצמתם.

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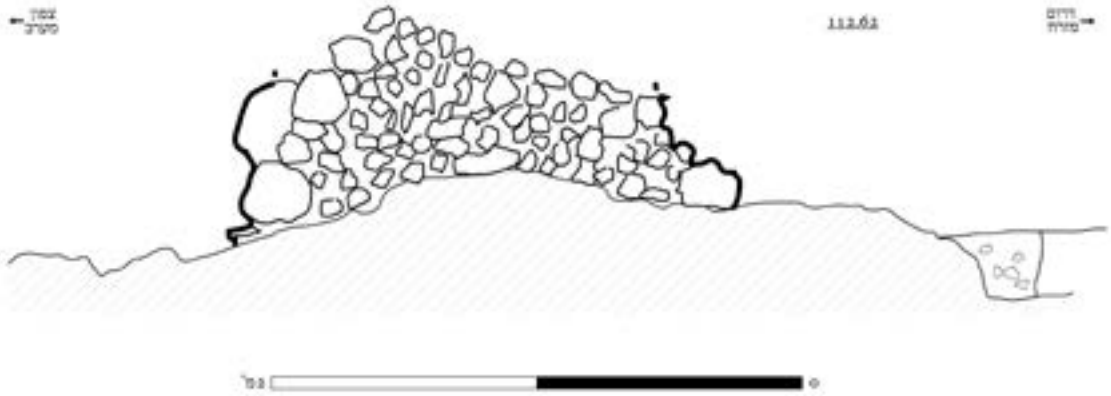


איור 9. חתך אופייני בערמת סיקול F21, ריבוע G.

איור 10. ריבוע F, חתך בערמת סיקול F19, מבט לצפון–מזרח.

איור 12. קברי ארגז F23, מבט לצפון.

איור 11. שבר קערת בזלת מ–F21 , ריבוע G.

קערת שחיקה מבזלת, שנזרקה לערמה לאחר שנשברה (איור 11).

קברי ארגז F23: נוקו 3 קברי ארגז חצובים במעלה הגדה המערבית. חלקם המערבי של שני הקברים התחתונים נפגע על ידי המחצבה הישנה. שני הקברים התחתונים מקבילים וצמודים זה לזה, בכיוון צפון–מערב – דרום–מזרח, והשלישי מעט גבוה מהם וניצב אליהם. הקברים עוצבו כארגז. סביב ראש הדופן של הקבר התחתון ניכר עיצוב מגרעת שנועדה לייצב את המכסה (שלא שרד). רוחב הדפנות 15–20 ס"מ. קברים רבים מסוג זה נמצאים בסביבות נוריס, וכן סביב לתל יזרעאל.

איור 5. ריבוע B, שביל F11 ופינת קו תיחום F22, מבט לדרום.

איור 6. חתך אופייני בטרסה, F14, ריבוע E.

F22: קיר תיחום.

F23: שלושה קברי ארגז חצובים (F23, להלן).

נפתחו 7 ריבועי חפירה המיועדים לאפיין את המרכיבים ולתארכם במידת האפשר (איור 3).

ריבוע חפירה (ריבוע A) בוצע כחתך בשביל F10 היורד במדרון המערבי, דרך הטרסה והמילוי שממזרח לה (איור 4). המילוי המהווה את השביל היה ברובו אדמה עם מעט אבנים קטנות. בריבוע זה נמצאו מעט חרסים שחוקים, אשר ככל הנראה התגלגלו מראש השלוחה. בשאר ריבועי החפירה לא נמצא ממצא מתארך.

ריבוע חפירה נוסף (ריבוע B) נפתח על פינת שביל F11 ההולך לאורך הגדה המערבית עם קיר תיחום F22 היורד אל הערוץ (איור 5). פינתם סוגרת את חצר F17, אשר ייתכן כי שימשה לריכוז חקלאי. הטרסה בנויה בקטע זה אבנים בינוניות בגודלן. המילוי המהווה את השביל היה ברובו אדמה עם מעט אבנים קטנות, ללא ממצא.

ריבוע חפירה (ריבוע C) נפתח בפינה הדרומית–מזרחית של קיר טרסה F14. הקיר ברוחב 1–1.3 מ', וגובהו 0.5–1 מ', והוא תוחם שדה משלושה צדדים בצדו המזרחי של הערוץ. ריבוע נוסף נפתח בפינה הצפונית–מערבית של הטרסה (ריבוע E). כאן הקיר בנוי ברובו על הסלע הטבעי הגובל בשדה, וגובהו 0.5–0.7 מ'. הקיר בנוי בנייה יבשה של אבנים בינוניות בשני פניו, וביניהן מילוי של אבנים קטנות (איור 6). שימושו של הקיר כפול: גם תיחום השדה והגנה עליו, וגם כערמת סיקול.

ריבוע חפירה נפתח כחתך על שביל F13 במעלה הגדה המזרחית (ריבוע D). השביל בנוי על סלע גבוה ותלול יחסית, והטרסה נמוכה, כך שרוחב השביל עצמו פחות מחצי מ' (איור 8).

נחפרו שתי ערמות סיקול (F19, F21; ריבועים F, G בהתאמה; איור 9). ערמות סיקול נוספות נמצאות מצפון לשטח החפירה. בתוך ערמת הסיקול F21 נמצא שבר של

איור 7. ריבוע E, פינת טרסה F14, מבט לדרום–מזרח.

איור 8. ריבוע D, שביל F13, מבט לצפון.

וחרסים רבים מתקופות שונות (צורי תשל"ז: 5–6). ריכוז של עתיקות נמצא בראש השלוחה מערבית לנחל יהונתן.

כחצי ק"מ מצפון לשטח החפירה נמצאת גבעת יהונתן (חורבת כרמת) הצופה על פני עמק יזרעאל. זוהי גבעה מוקפת חומה עתיקה המקיפה כ–22 דונם, שהשתמרה לגובה 3–5 מ'. באוכף המחבר את הגבעה להר שאול ממזרח נחצב חפיר, המשאיר מעבר צר ברוחב 10 מ' לכניסה. צורי דיווח על ממצא מהתקופה הכלקוליתית ועד לתקופת הברזל ב', והציע לזהות באתר את עין חרוד המקראית, ממנה יצא גדעון. כמו כן נמצאו באתר חרסים ומטבעות מהתקופה הרומית, וכלי צור פזורים מהתקופה הפלאוליתית (צורי תשל"ז: 8–10).

בשנת 1992 ערך ד' שיאון חפירת הצלה במערת קבורה בתחום המחצבה. המערה היתה בנויה מחדר עם כוכים, ובהם סרקופג אבן וממצא הקשור לקבורה מהתקופה הרומית המאוחרת והתקופה הביזנטית. בתקופה הממלוכית שימשה המערה למגורים (שיאון 1994).

בחודש ספטמבר 2006 ערך י' טפר סקר פיתוח בתחום המיועד להרחבת המחצבה. בסקר תועדו אתרי פעילות חקלאית, קברים, חציבות ומתקנים. עיקר ממצא הסקר מתמקד בראש השלוחה דרומית לשטח החפירה הנוכחית, בסמוך לכפר נוריס. חלק מהממצא המתועד נמצא מדרום ומחוץ לתחום הפיתוח המתוכנן של המחצבה (טפר 2009). החפירה הנוכחית מתבססת על ממצא הסקר הנ"ל.

החפירה

בשלב הנוכחי הוגדר שטח לפיתוח במרכז הערוץ של נחל יהונתן. שטח זה מיועד להצבת מתקנים, ודרומית לו במעלה הערוץ שטח לעירום החומר החצוב. שטח זה כונה שטח A.

בשטח A הובחנו 14 מרכיבים (F23–F10) מחמישה סוגים:

א. שבילים בנויים ההולכים לאורך הוואדי או יוצאים ממנו; השבילים בנויים מאבנים מסוקלות המסודרות בשורה, או עשויים כקיר טרסה נמוך המשולב בסלעים הטבעיים והתומך במעבר צר, בהתאם לתוואי השטח. גובה הטרסה מגיע עד כחצי מ'. השבילים אפשרו גישה מהישובים אל החלקות החקלאיות וקישרו בין היישובים סביב.

ב. קירות תיחום חקלאיים המקיפים חלקות חקלאיות בצורה מלבנית. אלו שורות מקוטעות של אבנים בינוניות וגדולות בגובה נדבך אחד המחלקות את גדות הערוץ לחלקות חקלאיות. לא נראה כי קווי התיחום עשויים היו למנוע כניסה או יציאה של אנשים ובעלי חיים, אלא נועדו רק לסימון החלקות. נראה כי השבילים שימשו גם כקווי תיחום חקלאיים.

ג. טרסות המקבילות או ניצבות לערוץ, עשויות שני פנים של אבנים בינוניות או גדולות וממולאות באבנים קטנות. לטרסות כמה מטרות: סימון תחום, מניעת כניסה של מקנה, מניעת סחף ושימור קרקע, ומקום לסיקול.

איור 4. ריבוע A, חתך בשביל F10, מבט למערב.

ד. ערמות סיקול. אלו נמצאות בחלק התחתון של שטח החפירה, בו הערוץ מתרחב וקיימות חלקות אדמה רחבות יחסית. אלה נוקו מהאבנים אל ערמות שמוקמו על משטחי סלע בשולי החלקות, במטרה למצות את השטח החקלאי. הערמות בנויות אבנים בינוניות בהיקף וביניהן מילוי אבנים קטנות.

ה. בסמוך לשטח הפיתוח נוקו קברי ארגז, המשוייכים לאתר נוריס.

להלן תאור המרכיבים:

F10: שביל בכיוון מזרח–מערב. עולה מהערוץ למערב. מחבר את גבעת יהונתן לנוריס (נחפר בריבוע A).

F11: שביל בכיוון צפון–דרום. הולך בקו גובה על הגדה המערבית (נחפר בריבוע B).

F12: שביל בכיוון צפון–דרום. הולך במורד הגדה המזרחית, סמוך לערוץ (נחפר בריבוע C).

F13: שביל בכיוון צפון–דרום. הולך לאורך הגדה המזרחית, ממשיך לכיוון גבעת יהונתן (נחפר בריבוע D).

F14: טרסה בכיוון צפון–דרום בגדה המזרחית, תוחמת שדה בצורת 'ח' בערוץ (נחפרה בריבועים E, C).

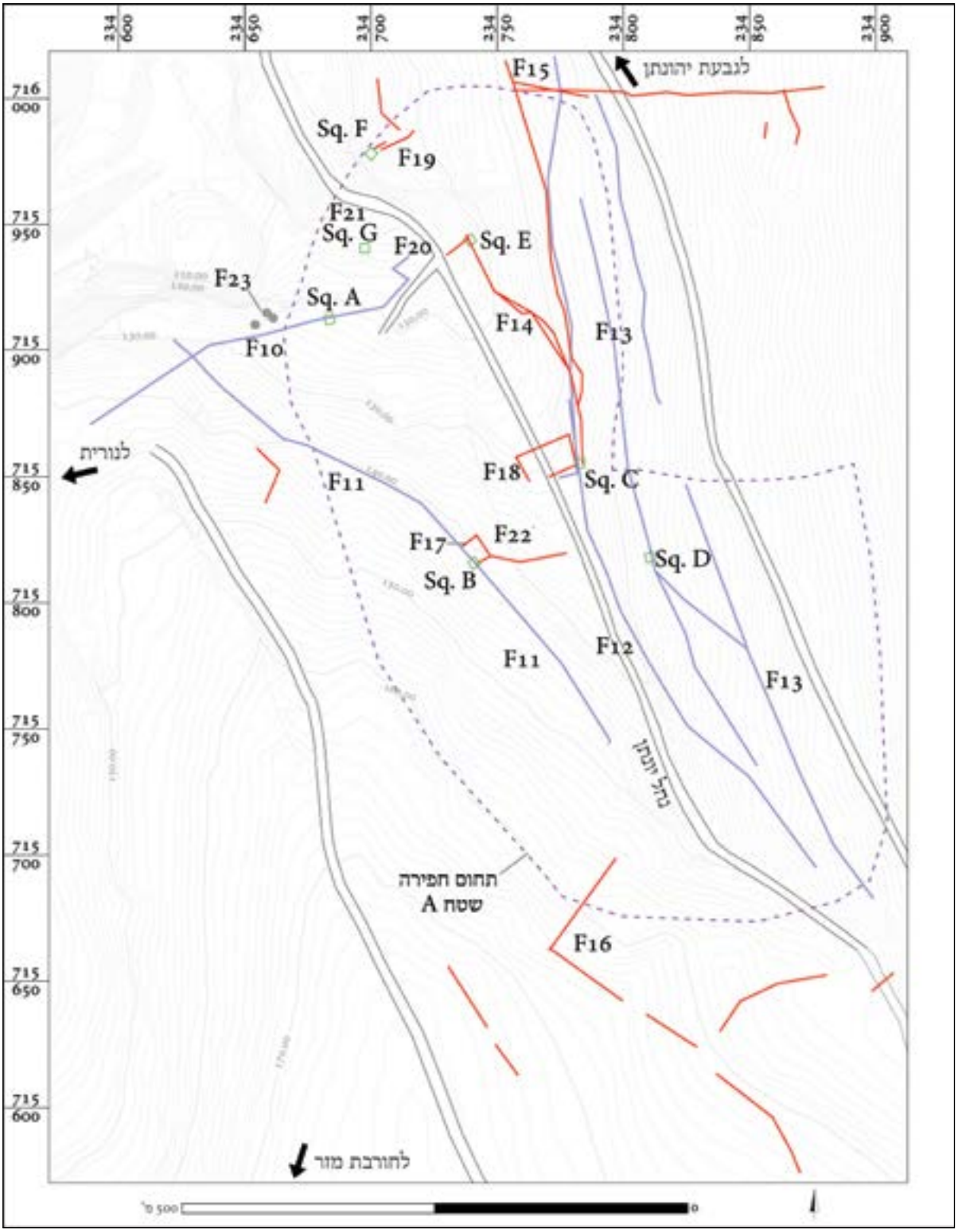
F15: קו תיחום שדה בכיוון מזרח–מערב, עולה מקצה שטח החפירה במעלה המדרון מזרחה.

F16: קו תיחום שדה בכיוון מזרח–מערב, עולה מקצה שטח החפירה במעלה המדרון מערבה ותוחם חלקה ממערב.

F17: קו תיחום התוחם חצר קטנה בפינת חלקה בגדה המערבית. שימשה לצרכי החקלאים בשדה (נחפר בריבוע B).

F18: טרסה התוחמת חצר בסמוך לשדה בערוץ. שימשה לצרכי החקלאים בשדה (נחפר בריבוע C).

F21–F19: ערמות סיקול בחלק התחתון של שטח החפירה (נחפרו בריבועים F, G). ערמות סיקול נוספות נמצאות בהמשך, מתחת לשטח החפירה.



איור 3. תכנית כללית של האתר.

חפירת הצלה בנורית (נוריס)

אחיה כהן–תבור

החפירה נערכה מטעם חברת י.ג. ארכיאולוגיה חוזית בע"מ ובחסות המכון למקרא ולעתיקות על שם נלסון גליק (נוריס B–398/2013), נוהלה על ידי א' כהן–תבור בסיוע י' גוברין (מנהלה).

מבוא

בחודש ינואר 2013 נערכה חפירת הצלה לקראת הרחבת מחצבת 'אבן וסיד – עין חרוד', במורדות הצפוניים של רכס הגלבוע, במימון חברת תעשיית אבן וסיד בע"מ. שטח החפירה נמצא בתחום הכרזת נוריס, אתר מספר 3213/0 (מוכרז בילקוט הפרסומים 1091, מיום 18.5.1964, עמ' 1413).

השטח המיועד למחצבה נמצא בתוך ערוץ נחל יהונתן, היורד צפונה מראש רכס הגלבוע אל עמק יזרעאל סמוך לגדעונה, בגובה 100–150 מ' מעל פני הים (נצ"מ 234250/715250; איור 1). ממזרח לערוץ מתרומם הר שאול. הערוץ תלול ומאופיין במסלע טרשי מגיל איאוקן. בחלקו הצפוני הערוץ מתרחב ושיפוע הגדות מתון יותר. במרכז הערוץ הצטברה מעט אדמת סחף מסוג טרה–רוסה. כתמי אדמת סחף הצטברו בין סלעי המדרון. הגדה המזרחית מאופיינת בסלעים משופעים חשופים, אך בגדה המערבית טרשים המאפשרים יותר הצטברות של אדמת סחף. הגדה המערבית גם מוצלת יותר, ולכן מתאימה יותר לגידול חקלאי.

דרך קק"ל עוברת בתוך הערוץ, ופגעה בחלק מהמרכיבים. דרך קק"ל נוספת עוברת על אמצע הגובה של הגדה המזרחית, ודרך שלישית בראש השלוחה שממערב לערוץ. האזור שמצפון לשטח החפירה הנוכחי נהרס על ידי המחצבה. השטח כולו נטוע בחורש אורנים, עובדה המקשה על איסוף ממצא מפני השטח.

איור 1. מפת איתור.

איור 2. הגדה המזרחית, מראה כללי. הדמות ניצבת על שביל.

רקע

האתר נוריס (נורית), שבתחומו מוכרז שטח החפירה, נמצא כחצי ק"מ מדרום–מערב לחפירה. מצפון לנוריס נמצא עין נורית, אשר שימש כמקור מים ליישוב. נ' צורי דיווח על ממצא מן האתר מתקופת הברונזה ועד לתקופה הערבית. בכפר ובסביבותיו שרידי עתיקות רבים, קירות, אבני גזית, מתקנים,

נספח 2. רשימת קירות.

קיר	שטח	ריבוע	שלב	תיאור
103	A	A1	2	מקטע מערבי בקיר 145
104	A	A2	1, 2	שלב קדום: קיר צפוני של מתקן 149; שלב מאוחר: מקטע מרכזי בקיר 145
105	A	A3, A5	1	קיר מערבי של תעלה 135
107	A	A4	2	קיר תמך?
119	A	A3	2	מקטע מזרחי של קיר 145
123	A	A4, A5	?	
127	A	A1	2	קיר שדה (נחלה?)
131	A	A2	1	קיר מערבי של מתקן 149
145	A	A1–5	2	קיר טראסה
148	A	A1, A5	1	קיר מערבי של מתקן 120
150	A	A5	1	קיר מזרחי של מתקן 120
151	A	A3, A4	1	קיר דרומי של תעלה 137
152	A	A4	1	קיר צפוני של תעלה 137
203	B	B2		קיר טראסה
206	B	B2		קיר (תמך?)
209	B	B1		קיר (תמך?)
215	B	B1		קיר (תמך?)
216	B	B1		קיר (תמך?)
220	B	B1		קיר (תמך?)
221	B	B2		קיר (תמך?)
222	B	B2		קיר (תמך?)
223	B	B2		מערכת קירות מדורגת

מס' לוקוס	שטח	ריבוע	שלב	תיאור
129	A			בוטל
130	A	A1, A2	2	מילויי אבנים וחרסים מעל קיר 131
132	A	A3	2	מילויי אבנים מדרום לקיר 119
133	A	A3, A4	2	מילויי אבנים מעל תעלה 135
134	A	A3, A4	2	מילויי אבנים וחרסים בתעלה 135
135	A	A3, A4	1	תעלה מקורה
136	A	A3	2	מילויי אבנים וחרסים
137	A	A3, A4	1	תעלה מקורה
138	A	A3, A4	2	מילוי בתעלה 135
139	A	A3	2	מילויי אבנים וחרסים מעל מפלס פעילות 140
140	A	A3	2	מפלס פעילות (רצפה?)
141	A	A2	2	מילויי אבנים וחרסים ומפולות אבנים מעל תעלה 144
142	A	A3, A4	?	מילוי בתוך תעלה 137
143	A	A2	1	מילוי בתוך תעלה 144
144	A	A2	1	תעלה מקורה בתוך מתקן 149
146	A	A2	1	מילוי בתוך מתקן 120
147	A	A5		פני שטח מעורבים במילויי אדמה
149	A	A2	1	מתקן אגירה מטויח לאגירת מים
200	B	B1		פני שטח
201	B	B2		פני שטח
202	B	B2		מילוי אבנים קטנות
204	B	B2		מילוי אבנים קטנות מעל קיר 206
205	B	B2		פרוק מילוי אבנים קטנות מעל קיר 206
207	B	B2		מילוי אבנים קטנות מדרום מזרח לקיר 206
208	B	B1		מילויים מודרניים מעורבים במילויי אבנים
210	B	B1		מילויי אבנים קטנות מדרום לקיר 216
211	B			בוטל
212	B	B1		מילוי אבנים קטנות מצפון לקיר 216
213	B	B2		יצירת חתך
214	B	B2		קרקע טבעית
217	B			בוטל
218	B			קרקע טבעית
219	B	B2		מילויי אבנים

Map of Ein Karim 1:10,000, 1933 (Compiled, drawn and printed in 1944; Survey of Palestine). Taken from the Maps Library at the Department of Geography, Tel Aviv University.
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נספח 1. רשימת הלוקוסים.

מס' לוקוס	שטח	ריבוע	שלב	תיאור
100	A	A1, A2		פני שטח
101	A	A4	2	פני שטח מעורבים במילוי אבנים וחרסים מעל תעלה 135
102	A	A3		פני שטח
106	A	A2	2	מילוי בתוך מתקן 149
108	A	A2	2	מילוי אבנים וחרסים בתוך מתקן 149
109	A	A4	2	מילוי אבנים וחרסים המכסה את תעלה 135 וחלק מ–137
110	A	A3, A4	2	מילוי אבנים וחרסים
111	A	A2, A5		חשיפת הפן הצפוני של קיר 104
112	A	A1	2	מילוי בתוך מתקן 120
113	A	A1	2	מילוי מעורב במפולות אבנים מעל רצפה 115
114	A	A3	2	מילוי אבנים וחרסים מעורב במפולות אבנים מדרום לקיר 119
115	A	A1	1	שרידי רצפת טיח מדרום לקיר 145
116	A	A5		פני שטח
117	A	A5		מילוי רדוד מעל סלע חוואר
118	A	A1, A5	2	מילוי בתוך מתקן 120
120	A	A1, A5	1	מתקן מטויח לאגירת מים
121	A	A2	2	מילוי אבנים וחרסים בתוך מתקן 149
122	A	A4	2	מילוי אבנים וחרסים מעל סלע חוואר
124	A	A3, A4	2	מילוי אבנים מעל ומצדי קיר 107
125	A	A2	1	רצפת טיח במתקן 149
126	A	A1, A2		הסרת מחיצה מעל קירות 127, 131
128	A	A1, A5	1	רצפת טיח במתקן 120

אם בתמיכה הלכה למעשה ובין אם בתיעול וניקוז עודפי מים. בריבוע B1 הרושם הוא כי קיר W209 תיפקד כקיר טראסה וכי לקיר שלבי בניה שונים אשר רק האחרון שבהם (הגלוי לעין) ברור. לדעת כותב שורות אלו שאר הקירות, ככל הנראה, שימשו לתמך וייצוב קיר הטראסה בתוך מילויים צפופים של אבנים שהקיפו אותו. ככל הנראה קירות אלו אף סייעו בתיעול עודפי המים. בריבוע B2 נחשפה מערכת קירות מדורגת ובה קיר עליון וסביבו קירות תמך שהוצבו בגבהים שונים מתחתיו. לדעתי, תפקידם של אלו היה לייצב את המילוי הצפוף של האבנים. חלקם, ככל הנראה, סייע אף הוא לתיעול עודפי מים. הרושם הוא כי כאן, במקום בו המדרון תלול יותר, נדרש דגם שונה של קירות טראסה התומכים במדרגת עיבוד – דגם מעט משוכלל יותר, שבא לידי ביטוי בבנייה חזקה יותר. אפשר שהדבר נבע גם מסוג הגידולים שנועדו להישתל בחלק זה, ואשר דרשו אדמה עמוקה.

לסיכום, עין מזרוק מהווה נדבך נוסף בנוף הכפרי ההררי שסבב את ירושלים לאורך התקופות. האתר הינו דוגמה לאופן בו האדם רתם את הטבע לצרכיו בתנאים קשים בסביבה הררית; במקרה דנן – הקמת "מדרגות" חקלאיות שאפשרו לאוכלוסייה המקומית לעסוק בחקלאות שלחין, והקמת מערכת מים שנועדה לתמוך בסוג זה של חקלאות. בשטח A בשלב השימוש השני הוצאה משימוש מערכת המים (לכל המוקדם במאות השלישית או הרביעית לספירה). ייתכן שפעולה זו נבעה כתוצאה מירידה במפלס המים או מהתייבשות המעיין ורצון לנצל את הקרקע לשימוש אחר, במקרה דנן, יצירת מדרגת עיבוד חדשה.

שלמי תודה

דו"ח זה לא היה יכול להכתב ללא עזרתם ותמיכתם של יובל גדות שקרא את כתב היד ודוד אילן שתמך לאורך כל הכתיבה. תודתי נתונה גם ליהודה גוברין שהפקיד בידיי את ניהול החפירה, ולאנשים הבאים שסייעו ותרמו מזמנם: יוסי לאור, דנית לוי, יעקב ביליג, דניאל עין מור, גדעון סולימני, אייל מרקו, פבלו בצר וקון הריוט.

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דיון

אחד מהמרכיבים הנפוצים בנוף האנתרופוגני באזורים הרריים הוא מדרגות העיבוד החקלאיות. אלו מאפיינות את כלל דרום הלבנט, ואת המרחב הכפרי סביב ירושלים בפרט (רון תשל"ז א; Gibson 1995, 2001; Gibson and Edelstein 1985: 143–144). למדרגות אלו ישנה חשיבות רבה משום שהן מייצגות מערכת יחסים בין האדם לבין הנוף הסובב אותו, ומייצגות את "ביותו" של הסובב הטבעי ורתימתו לצרכי האדם. כפי שדוידוביץ' ואחרים הצביעו נכונה (תשע"ב: 473), "ביות" זה דרש משאבים (כוח אדם), מאמץ וטכנולוגיה; מכאן שמדרגות אלו בבסיסן עשויות לשקף תהליכים חברתיים–כלכליים שחלו בזמן בנייתן.

תפקידה של מדרגת העיבוד ברמה הבסיסית ביותר הוא לייצר מרחב עבודה לעיבוד חקלאי במקומות בהם לא ניתן לעשות זאת מחמת תנאי השטח. זאת באמצעות יצירת "שלח" המהווה שטח מישורי מפולס על גבי המדרון. המדרגה הפשוטה ביותר בדרך כלל נבנתה באמצעות קירות תמך וביניהם מילוי. המילוי היה מורכב בעיקר מאבנים ואף מחרסים. הנחת האבנים ייצבה את המדרגה בכך שמנעה הצפת מים בתוך המילוי ואפשרה ניקוז יעיל ואף תיעול עודפים. השקיית הגידולים החקלאיים במדרגת העיבוד נעשתה באמצעות מערכות השקיה (תעלות ובריכות איגום; חקלאות שלחין) או באמצעות מי גשמים (חקלאות בעל; Ron 1966; Gibson 1995: 130-131; Gibson 2001: 113-114).

על אף החשיפה המצומצמת, לדעת כותב שורות אלו בריכות האיגום והתעלות שנתגלו בשטח A לא עמדו בפני עצמן, אלא היוו חלק ממערכת אחת מורכבת, שתכליתה לאפשר קיום חקלאות שלחין בסביבה הררית באמצעות תיעול וויסות מים לחלקות שככל הנראה היו ממוקמות נמוך מהמערכת (רון תשל"ז א; גיבסון תשנ"ח: 36).

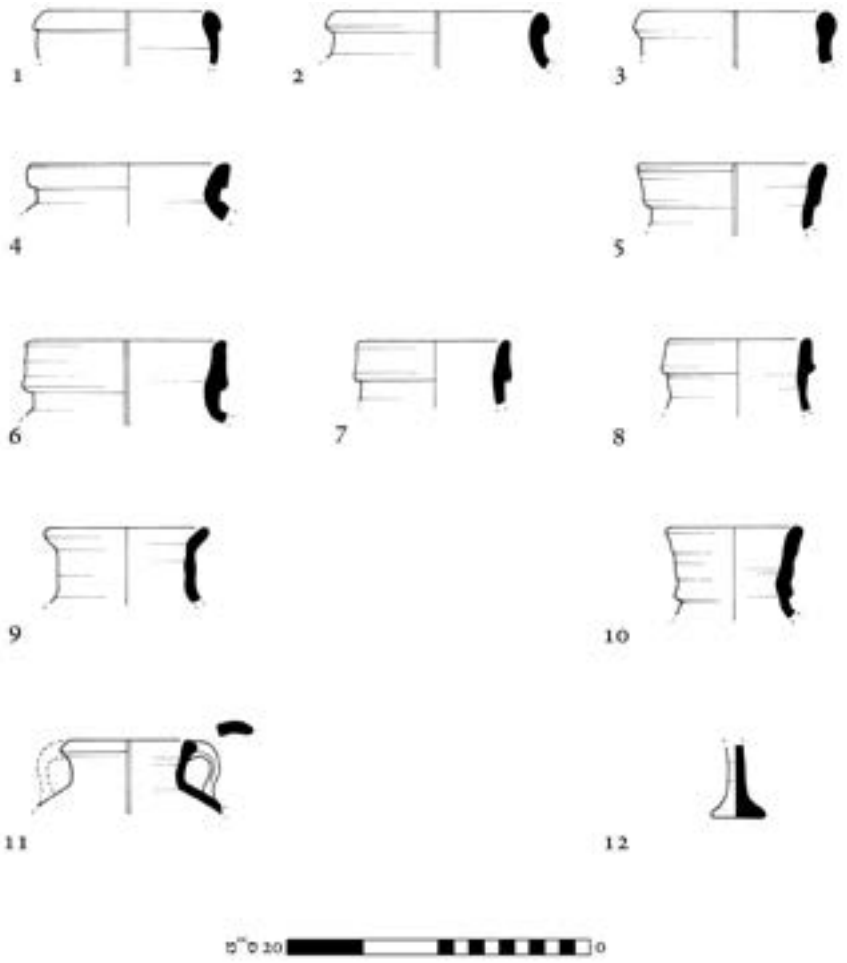
מקור המים שתועלו על ידי המערכת עצמו די לוט בערפל. ככל הנראה התעלה הובילה מים מן המעיין עצמו, אך מיקומו המדויק של זה אינו ידוע ואבד זה מכבר. זקני הכפר שבאו לצפות בחפירה ידעו לספר כי בילדותם שטח החפירה היה מלא במים והם נהגו לשכשך את רגליהם בעתיקות. המעיין (תחת השם עין מזרוק) מופיע רק במפות מנדטוריות משנות השלושים והארבעים (Map of Ein Karim 1933; מפת עין כרם 1958–1959). על פי מפות אלו המעיין ממוקם מעט צפונה משטח החפירה. בבדיקות המקדימות של י' ביליג, בשטח שמחוץ לגבולות החפירה, נתגלו קירות קדומים הן מצפון למערכת המים והן מצפון–מזרח לה (מצפון לשטח B). ניתן לשער כי הקיר הקדום שנחשף מצפון למערכת המים מהווה את המשכה. הקיר מצפון מזרח למערכת (ומצפון לשטח B) ראוי לציון. ניכר היה כי הקיר (כיוונו צפון–דרום) שאמנם נחשף בצורה מצומצמת, בנוי היטב מאבנים גדולות ומהוקצעות. הרחבה של חתך הבדיקה כלפי מערב חשפה קיר נוסף שהיה בנוי אף הוא היטב, אך מאבנים קטנות יותר. ישנה אפשרות כי מערך בנייה זה קשור במעיין, וייתכן שמקומו מצוי בנקודה זו או בסמוך לה. הלכה למעשה, נכון להיום, מערכת המים שנחשפה בעין מזרוק הינה העדות היחידה לקיומו של מעיין.

בשלב השימוש השני שונה ייעודו של שטח A. באמצעות הנחת קיר טראסה לרוחב המדרון ומילויי אבנים וחרסים הוצאה משימוש מערכת המים ונבנתה על גביה מדרגת עיבוד. מאחר שמערכות מים מסוג זה לרוב נמצאות בשימוש לאורך שנים רבות מאוד, הסיבות להוצאתה משימוש אינן ברורות. כן אין זה ברור מדוע כוסה המעיין במילויי פסולת. אפשר והמעיין יבש או שינה את זרימתו כתוצאה מפעילות טבעית או אנושית. מה שעשוי להסביר את הרצון לנצל את השטח להרחבת החקלאות.

בתוך מילויי החרסים שכיסו את המערכת ניתן למצוא בעיקר ייצוג לשתי תקופות עיקריות: הברזל המאוחר (מאות שביעית ושישית לפנה"ס) וההלניסטית/הרומית הקדומה (מהמאה הראשונה לפנה"ס ועד למאה הראשונה לספירה, כולל). אלו מתארכים את המילוי עצמו בלבד ולא את זמן השימוש או בנייתה של המערכת. למעשה, ניתן לומר כי המערכת בוטלה לכל המוקדם בתקופה הרומית המאוחרת (מאות שלישית ורביעית לספירה). מקור החרסים לוט בערפל. הדעת נותנת כי הם הובאו מחורבות יישוב שהיה קיים בקרבת האתר. המבנה בחורבת מזרוק צפון, שנחפר לאחרונה על ידי פ' בצר וא' מרקו, תוארך על סמך החרסים והמטבעות לתקופה הרומית הקדומה. המבנה, הממוקם כ–150 מ' מדרום לאתר, עשוי להיות חלק מיישוב גדול בהרבה שהשתרע משני צדי המבתר בו עובר כיום כביש 1 (ואולי גם כלל את אזור המעיין ואת שרידי המבנים שנחפרו על ידי ד' עין מור בחורבת מזרוק, ר' הקדמה לעיל). חורבת מזרוק צפון עשויה להיות המקור העיקרי לחרסים במילויים שכיסו את מערכת המים. עם זאת, בחפירות שנעשו בסמיכות לעין מזרוק לא נמצאו חרסים מתקופת הברזל. לפיכך מקור חרסים אלו עשוי להיות ביישוב מתקופה זו שטרם התגלה ונמצא בסביבת האתר. אפשר ושרידי יישוב זה שוכנים מתחת לשכבה ההלניסטית/רומית שבחורבת מזרוק צפון, שרק חלק קטן ממנה נחשף. בהעדר הוכחות לכך הדבר נותר בגדר השערה בלבד. אפשרות נוספת היא שמקור החרסים הוא בתל קרית יערים הנמצא במרחק קילומטרים ספורים מצפון, ובו נתגלו שכבות מתקופת הברזל (נחפר באופן מצומצם על ידי ג' ברקאי ולא פורסם).

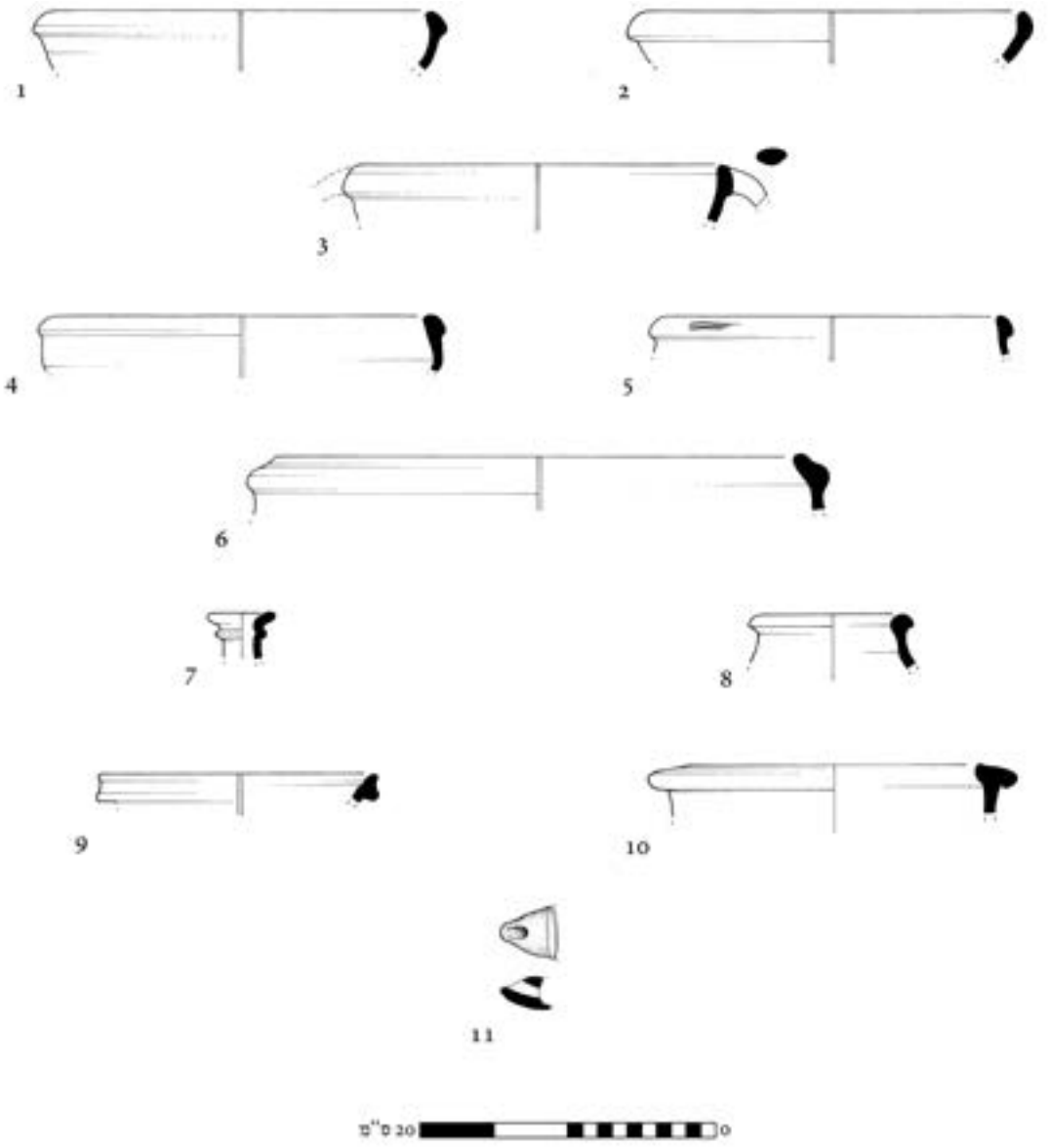
תכלית מערכת הקירות שנחשפה בשטח B אינה ברורה לחלוטין בשל חשיפתה המצומצמת. ברצוני להציע כי מדובר במערכת של קירות שדה שנועדו לתמוך במדרגת עיבוד, בין

מס'	טיפוס	לוקוס	סל	תיאור	הקבלות+תאריך	הערות לגבי תיארוך
1	קנקן	101	1001/3	חומר אפור, צרוף היטב, ממורק	Geva 2003: Fig. 171, Pl. 5.8:2	
2	קנקן	101	1001/4	חומר חום–אדום, צרוף היטב, ממורק	de Groot and Bernick–Greenberg 2012: Fig. 2.3:6	מאה שניה לפנה"ס
3	קנקן	101	1001/5	חומר חום, צרוף היטב, ממורק	de Groot and Bernick–Greenberg 2012: Fig. 2.3:10	מאות שלישית – שניה לפנה"ס
4	קנקן	140	1044/1	חומר אפור, צרוף היטב, ממורק	de Groot and Bernick–Greenberg 2012: Fig. 2.3:9; Geva 2003: Fig. 118, Pl. 5.1:type 5,4:15,sj1b	מאות שניה – ראשונה לפנה"ס
5	קנקן	108	1009/6	חומר חום–אדום, ממורק	Geva 2003: Fig. 118, Pl. 5.1: type 5,2:25,sj3a	
6	קנקן	108	1009/7	חומר אדום, חיפוי לבן–אפור, צרוף היטב	Geva 2006: Fig 135, Pl. 4,9, no. 2	
7	קנקן	108	1009/8	חומר אדום, צרוף היטב, ממורק	Geva 2006: Fig. 123, Pl. 4.3:7–8	מאה ראשונה לפנה"ס
8	קנקן	108	1009/9	חומר אדום, חיפוי לבן–אפור, ממורק	Geva 2006: Fig.123, Pl. 4.3:7–8	
9	קנקן	140	1044/2	חומר אדום, חיפוי לבן, ממורק	Netzer 1981: Fig. 112, Pl. 1:2	מאה ראשונה לספירה
10	קנקו	140	1044/3	חומר חום אדום, ממורק	Netzer 1981: Fig. 112, Pl. 1:4	מאה ראשונה לספירה
11	סיר בישול	108	1006/2	חומר אדום–שחור, ממורק	Geva 2006: Fig. 101, Pl. 4.2:9	מאות שניה – ראשונה לפנה"ס
12	בסיס פכית–אינגוטריום	121	1026/1	חומר חום–אפור, גריסים לבנים קטנים, ממורק	Geva 2006: fig. 131, pl. 4.7: 3–4	



איור 27. ממצא כלי החרס מהתקופות ההלניסטית והרומית הקדומה.

מס'	טיפוס	לוקוס	סל	תיאור	הקבלות	הערות לגבי תיארוך
1	קערה קטנה	101	1001/1	חומר אדום, גריסים לבנים קטנים, ממורק	de Groot and Bernick-Greenberg 2012: 63, Fig. 4.2: 3-4, 5; Aharoni 1964: fig. 20:2-4	מאות 6–7 לפנה"ס
2	קערה	108	1006/1	חומר אדום, גריסים לבנים קטנים, ממורק	de Groot and Bernick-Greenberg 2012: Fig. 4.2: 3-4, 5; Aharoni 1964: Fig. 20: 2-4	
3	קערה	101	1001/2	חומר אדום, גריסים לבנים קטנים, חיפוי ורוד, ממורק	de Groot and Bernick-Greenberg 2012: Fig. 4.2: 3-4, 5; Aharoni 1964: Fig. 20: 2-4	
4	קערה	108	1009/1	חומר אדום, גריסים לבנים קטנים, ממורק	de Groot and Bernick-Greenberg 2012: Fig. 4.2: 2-3.	
5	קערה	108	1009/2	חומר אדום, גריסים לבנים קטנים, חיפוי ורוד, ממורק	de Groot and Bernick-Greenberg 2012: Fig. 4.2: 7; Aharoni 1964: Fig. 20: 4	
6	קערה	108	1009/3	חומר חום, גריסים לבנים קטנים, ממורק	de Groot and Bernick-Greenberg 2012: Fig. 4.2: 2-4; Aharoni 1964: Fig. 18: 1-2	
7	פך	108	1009/4	חומר אדום, גריסים לבנים	Aharoni 1962: Fig. 11: 26	
8	קנקן	213	2018/1	חומר אדום, גריסים לבנים, ממורק	de Groot and Bernick-Greenberg 2012: Fig. 4.6: 7-8; Aharoni 1964: Fig. 20: 11	
9	קערה	121	1028/1	חומר חום–אדום מפולם היטב, ממורק	Magness 1993: Fig. 186, Form 1	מאות 3–4 לספירה
10	קדרה	121	1028/2	חומר חום, ממורק	Magness 1993: Fig. 204, Form 1; Aharoni 1962: Fig. 17: 1	מאות 3–4 עד ה–6 לספירה
11	פיית נר	108	1009/5	חומר חום אדום	Magness 1993: Fig. 250-251, Form 2	מאות 4–6 לספירה



איור 26. ממצא כלי החרס מהתקופות ברזל המאוחר ורומי המאוחר – ביזנטי.

ריבוע B1

בריבוע זה רשת צפופה של קירות המהווים, כפי הנראה, חלק ממערכת אחת שכיוונה הכללי דרום מזרח–צפון מערב (איורים 24, 25). הקירות בנויים מאבני שדה לא אחידות שהונחו בבנייה יבשה (לרוחב המדרון הפונה אל המבתר). כל הקירות, מלבד קיר 209, ממשיכים מעבר לגבולות הריבוע. בין הקירות ומעליהם מילוי צפוף של אבנים קטנות, שנראה היטב בחתך המזרחי ואשר מאפיין בניית מדרגת עיבוד. בניגוד למערכת 223 בריבוע זה כל הקירות נבנו באותו הגובה, למעט קיר W209 אשר נבנה מעט גבוה יותר, ובשל כך ייתכן שיש להבינו כשלב בנייה מאוחר יותר. להלן פירוט מכלול הקירות:

W209. נחשף בחלקו המזרחי של הריבוע. הונח בציר מזרח–מערב והיה בנוי מבולדרים גדולים וביניהם שתי שורות אבנים בינוניות. לקיר מספר שלבי בניה לא אחידים, ורק השלב האחרון גלוי לעין. לאחר הסרת מילויי האבנים מצפון מערב (L212) התברר כי הקיר קצר בהרבה ממה ששיערנו (1.60 מ').

W220. כיוונו צפון מערב–דרום מזרח. בנוי מאבנים קטנות ובינוניות לגובה נדבך אחד. הקיר מונח מצפון לקיר W209 וביניהם הונח מילוי אבנים קטנות (L212).

W216. כיוונו צפון מערב–דרום מזרח (מקביל לקיר W215). הקיר בנוי מאבני שדה בינוניות וגדולות לגובה של עד שני נדבכים. הקיר נבנה מדרום לקיר W209 וחלקו המזרחי צמוד לחלקו התחתון של האחרון. מדרום מזרח לקיר ישנה הפרעה מודרנית הכוללת צינור (ביוב?) ומעליו ומתחתיו חול ים.

W215. נחשף בפינה הדרום מערבית של הריבוע. כיוונו צפון מערב–דרום מזרח (מקביל לקיר W216). בנוי מאבני שדה בינוניות וגדולות לגובה של עד שני נדבכים. מדרום מזרח לקיר ישנה ההפרעה המודרנית שצוינה לעיל. בינו לבין קיר W216 ישנו מילוי אבנים קטנות (L210).

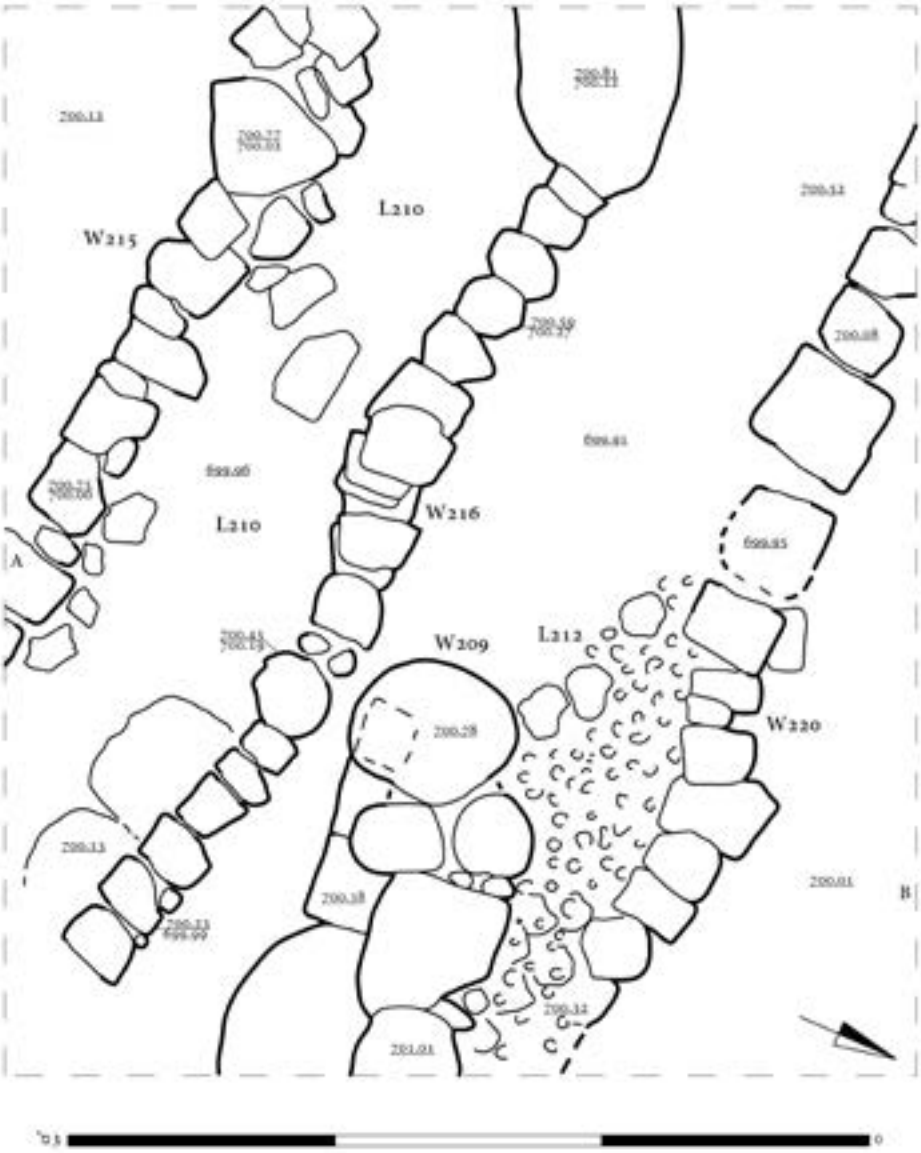
איור 25. ריבוע B1, מבט לצפון מערב.

מהתיאור לעיל עולה כי לפנינו מכלול קירות שככל הנראה שימש כיחידה אחת. מאחר שהחפירה חשפה רק חלק קטן מהמכלול, שממשיך מעבר לגבולות החפירה, קשה לקבוע את המטרה העומדת מאחורי בניית הקירות. בניגוד למכלול המדורג בריבוע B2, במכלול הנוכחי כל הקירות, למעט אחד, נבנו באותו הגובה. ניכר כי הוכנסו בו שינויים ותיקונים לאורך השנים. לא נמצאו כל ממצאים המאפשרים את תיארוך בניית הקירות וזמן השימוש בהם, אך ניתן לשער כי הם בני אותו הזמן. בדומה למכלול הקירות בריבוע B2, ככל הנראה תכלית קירות אלו היתה לספק ייצוב ותמיכה למילויי האבנים והאדמה במדרון התלול. כפי הנראה חלקם אף סייעו בנוסף בניתוב וניקוז עודפי מים אל מחוץ למדרגה.

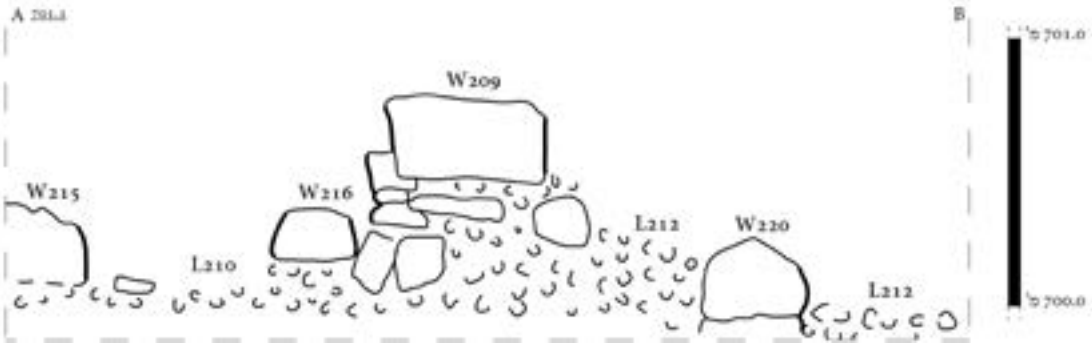
ממצא כלי החרס

גדעון סולימני

ממצא כלי החרס הגיע ממילויי האדמה אשר כיסו (קברו) את מערכת המים והוציאו אותה משימוש. כלי החרס אינם מייצגים את תקופת הבניה והשימוש של מערכת המים, הם מייצגים את מכלול החרסים אשר נמצא במילוי האדמה, ומתארכים אותו בלבד. החרסים הקדומים במכלול (איור 26) הם מסוף תקופת הברזל (מאות 6–7 לפנה"ס). מתקופה זו נמצאו קערות חרס קטנות ובינוניות בעלות שפה מקופלת ומעובה כלפי חוץ, עם ובלי ידיות (איור 26: 1–5), הקערות מחופות בחיפוי ורוד וממורקות. קדרה גדולה (איור 26: 6), פך בעל ידית מתחת לרכס הנמצא בצמוד לשפה וקנקן בעל שפה מעובה מסוף התקופה (איור 26: 7, 8). מכלול חרסים זה אופייני לסוף התקופה ומקבילותיו נמצאו בירושלים (עיר דוד) וברמת רחל. התקופות הדומיננטיות במילוי הן התקופה ההלניסטית והרומית הקדומה (איור 27). מהתקופה ההלניסטית נמצאו קנקנים בעלי צוואר קצר ושפות מעובות ומעוצבות (איור 27: 1–8). זמנם מהמאה השלישית עד הראשונה לפנה"ס. כן נמצא סיר בישול בעל צוואר נטוי, שפה ישרה וידית מהשפה אל הכתף ובסיס פכית (אונגנטריום) ממאות אלו (איור 27: 11–12). מהתקופה הרומית הקדומה נמצאו בעיקר קנקנים (איור 27: 9, 10). זמנם מהמאה הראשונה לפנה"ס ועד המאה הראשונה לספירה. מכלולים דומים נמצאו בחפירות הרובע היהודי, רמת רחל, והרודיון. החרסים המאוחרים ביותר – זמנם התקופה הרומית המאוחרת ו/או ראשית התקופה הביזנטית (המאה השלישית עד הרביעית לספירה). נמצאו קערה, קדרה ושפת נר (איור 26: 9–11). כך שמערכת המים יצאה משימוש לכל המוקדם מזמן זה ואילך, עד לימינו.



חתך (A-B)



איור 24. ריבוע B1, תכנית וחתך.

מתקן 149 כלל אדמה, אבני שדה קטנות, בינוניות, גדולות (בולדרים) ושברי חרסים רבים מאוד (איורים 5, 21), שרובם מתוארכים לתקופה ההלניסטית/רומית קדומה ומיעוטם לתקופת הברזל המאוחרת. הבולדרים עצמם נחשפו בעיקר בצדו הדרומי של המתקן; חלקם הונחו ישירות על לוחות הקירוי של תעלה 144 שבצדו הדרום מערבי.

בצמוד לחלקו המזרחי של קיר טראסה 145 נחשף מפלס אבנים קטנות שעל גביו נמצאה שכבה דקה לבנה הנראית כמפלס חיים או רצפה (L140; איורים 4–6, 21). מהותה של שכבה זו אינה ברורה, בשל החשיפה המוגבלת שלה, אך נראה כי מדובר במפלס פעילות אנושי ולא ברובד טבעי. במידה וכך הדבר, ייתכן שהחלק המזרחי של קיר הטראסה שימש לתכלית אחרת. מאחר שמפלס זה לא נחשף ממערבו עד לחשיפה מלאה של השטח מדרום וממזרח לחפירה, לפי שעה אין בידינו די מידע העשוי לשפוך אור על תכלית הקיר והשכבה הניגשת אליו.

לסיכום, בשלב המאוחר בשטח A הוצאה משימוש מערכת המים, ובמקום נבנתה מדרגת עיבוד, הכוללת קיר טראסה ארוך שהונח לרוחב המדרון, ומילויים צפופים של אבנים וחרסים שנועדו לפלס את השטח ולמלא את החללים שבמתקנים ובתעלות. מילויי האבנים שכיסו את מערכת המים אופייניים לבניית מדרגות עיבוד. מילוי מסוג זה סיפק להן יציבות רבה יותר, בין השאר משום שהוא מאפשר ניקוז יעיל של עודפי מים (Gibson 2001: 113–115). ייתכן והנחת הבולדרים בחלקו הדרומי של מתקן 149 תחמה ותמכה במילוי במקום בו שיפוע המדרון נהיה תלול יותר.

שטח B

זהו השטח המזרחי מבין השניים (איור 3). נפתחו בו שני ריבועים (5×5 מ'), ובהם נחשפו קירות טראסה, וקירות שנועדו לייצב ולתמוך במילויי האבנים והאדמה. אלו נבנו כמפורט להלן:

ריבוע B2

בריבוע זה נחשפה מערכת קירות מדורגת (223) בכל שטח הריבוע (וממשיכה מעבר לגבולותיו), שהונחה בציר מזרח–מערב, לרוחב המדרון הפונה אל המבתר. המערכת כוללת מכלול קירות עשויים אבני שדה שהונחו בבנייה יבשה ומילויי אבנים ביניהן ומעליהן (L204) כמפורט להלן (מצפון לדרום; איורים 22, 23):

W222. הקיר נמצא מכוסה במילוי אבנים קטנות. מתחת למילוי נחשפה שורה אחת של אבנים בפינה הצפונית–מערבית של הריבוע. קיר זה תחם את קיר W203 מצפון והיה מעט נמוך ממנו.

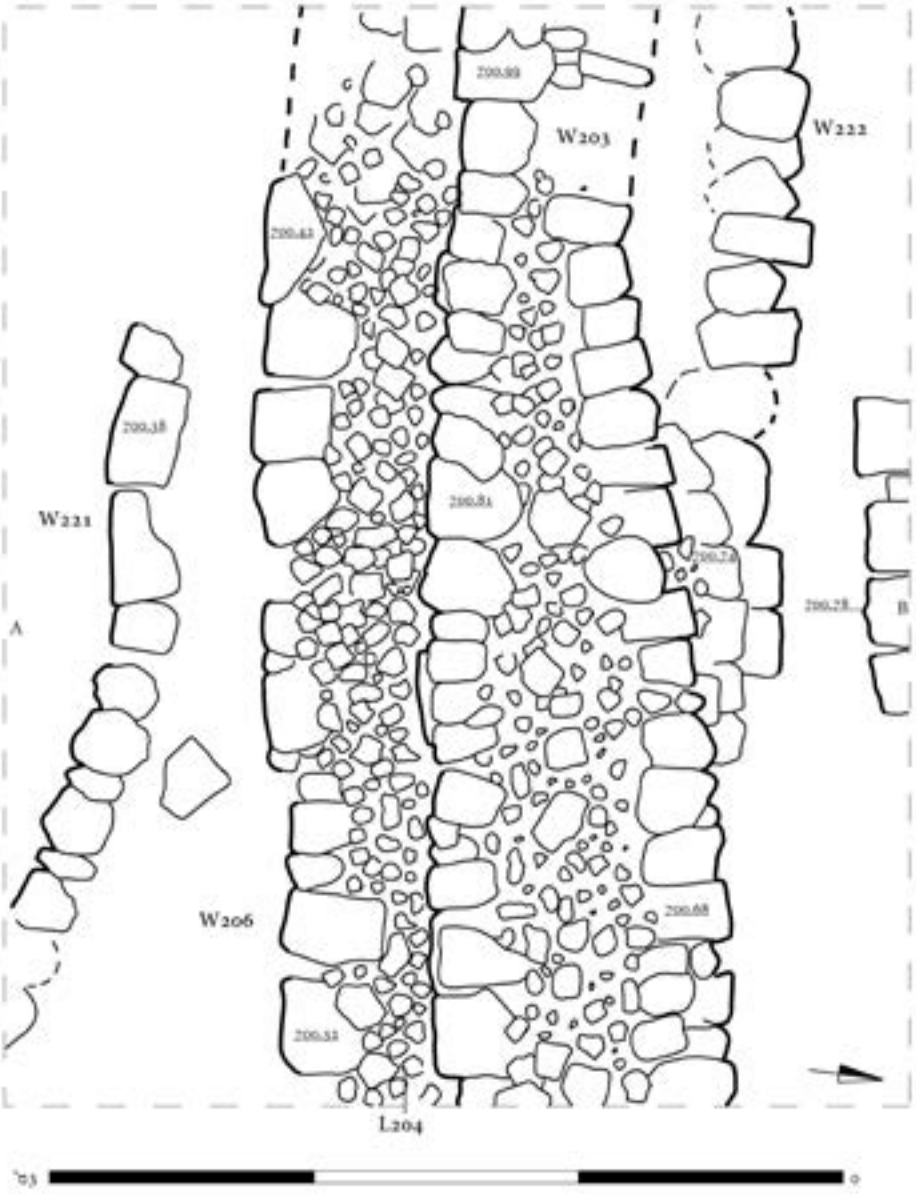
W203. חלקו המערבי של הקיר בלט מיד עם תחילת החפירה. לקיר זה שתי שורות אבני שדה שהונחו לגובה שני נדבכים. בין שתי השורות מילוי אבנים קטנות וקרקע חומה כהה. השורה הדרומית הונחה בצורה מסודרת וכיוונה מזרח–מערב. השורה הצפונית הונחה בצורה מעט מרושלת יותר ונחה על קיר W222. כיוונה הכללי מזרח–מערב, למעט הקצה המערבי הסוטה מעט דרומה.

W206. קיר תוחם הכולל שורת אבנים יחידה לגובה שני נדבכים. קיר זה הנו נמוך בחצי מ' מקיר W203, ותכליתו היתה לתמוך במילוי אינטנסיבי של אבנים קטנות שכיסה אותו והפריד בין W221 לבין W203.

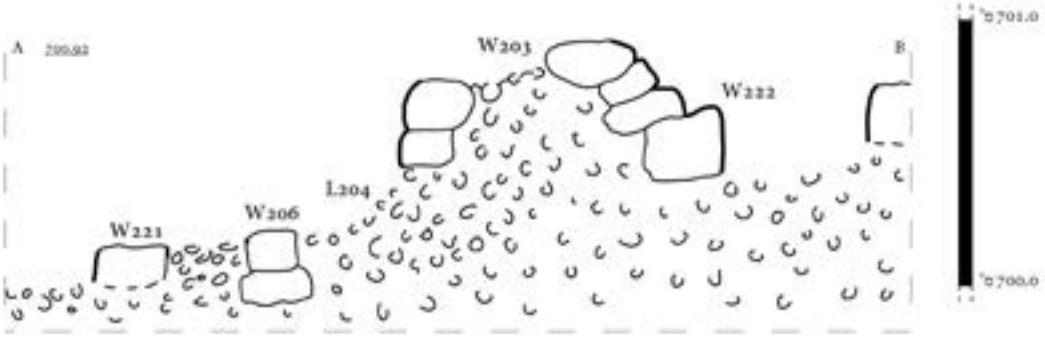
W221. הקיר הדרומי ביותר. בינו לבין קיר W206 ומעליהם הונח מילוי אבנים קטנות. תפקידו של קיר זה אינו ברור לחלוטין, ככל הנראה שימש כקיר תוחם נוסף, וכן ייתכן ששימש גם לניתוב עודפי מים מחוץ למדרגת העיבוד. לאחר סיום חשיפת הקירות והמילויים שביניהם, הוסר חלקם המזרחי של קירות 203 ו–206 לטובת יצירת חתך, שמטרתו הייתה לאפשר הבנה טובה יותר של תכלית מכלול הקירות. נתגלה כי קיר 203 הונח על מילויי האבנים שבינו לבין קיר W206 (L204); כן נתגלה כי לקיר W206 נדבך נוסף. עוד עולה מהחתך כי הקירות התחתונים (W206 ו–W221). נבנו על שכבת קרקע סטרילית אשר לה מרכיב גירני (נחפרה לעומק של כ–70 ס"מ).

מהתיאור לעיל עולה כי לפנינו מכלול קירות שנבנו בדירוג כלפי צפון וכלפי דרום. מעל ובין הקירות הונחו מילויי אדמה ואבנים. מאחר שהחפירה חשפה רק חלק קטן ממכלול הקירות, שממשיך מעבר לגבולות החפירה, קשה לקבוע מה היתה תכליתו. לדעת כותב שורות אלו מדובר בדגם מעט משוכלל של קירות שנועדו לייצב ולתמוך במדרגת העיבוד בנקודה בה המדרון נעשה תלול יותר. קיר 203, העליון ביותר, הינו ככל הנראה קיר הטראסה העיקרי. ככל הנראה הקירות הנמוכים נועדו לייצב ולתמוך במילויים האינטנסיביים בנקודה בה המדרון הופך תלול. אפשר שחלקם סייעו בניתוב ובניקוז עודפי מים. לא נמצאו ממצאים המאפשרים לתארך את הקמת מכלול זה ו/או זמן השימוש בו.

איור 23. ריבוע B2, קיר טראסה 223, מבט לצפון.



חתך (A-B)



איור 22. ריבוע B2, תכנית וחתך.

איור 19. תעלה 144 לאחר הסרת הקירוי, מבט לצפון מערב.

איור 20. המקטע המערבי בקיר הטראסה 145, מבט למערב. שים לב לקיר 127 בקדמת התמונה הניגש אליו.

איור 21. חתך במילוי המבטל את מתקן 149, מבט למזרח.

שלב 2

בשלב זה הוצאה משימוש מערכת המים, ועל גביה נבנתה מדרגת עיבוד הכוללת קיר טראסה יחיד ומילויים צפופים של אבנים מעורבות בשברי חרסים רבים, שנועדו לפלס את השטח (איורים 4, 6). על פי שברי כלי החרס במילויים המערכת בוטלה לכל המוקדם בתקופה הרומית המאוחרת (ר' סולימני בהמשך). קיר הטראסה (W145; איורים 7, 13) נבנה לרוחב המדרון (נחשף כמעט למלוא אורך השטח הנחפר) ושילב בתוכו את קירות מערכת המים (לרבות חלקו העליון של קיר 104). בחתך המערבי ניתן לראות בבירור כי מקטע זה ממשיך מעבר לגבולות השטח הנחפר. לקיר שורת אבני שדה יחידה ושניים עד שלושה נדבכים שהונחו בבנייה יבשה.

למעשה הקיר מורכב משלושה מקטעים ברורים:

א. המקטע המערבי (איורים 5, 9). נבנה ישירות על גבי סלע החוואר לאחר פירוק צדו הדרומי של מתקן 120.

ב. המקטע המרכזי (איורים 4, 15). מורכב מהנדבך העליון של קיר 104 שסופח לקיר. לקיר נוספה תוספת לא אחידה לצדו הצפוני, על גבי הסלע, הכוללת אבנים בינוניות וקטנות. החיבור בינו לבין המקטע המערבי נעשה בצורה מרושלת למדי ואין התאמה בין קצות הקירות.

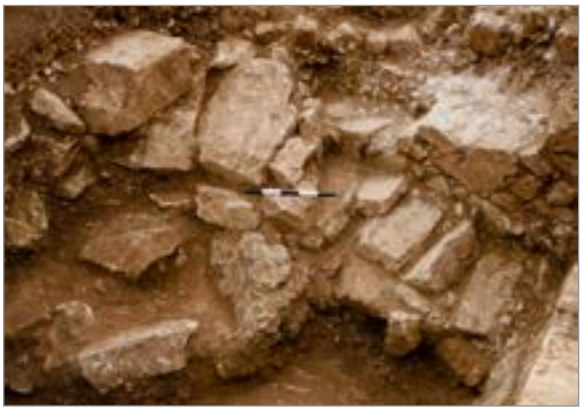
ג. המקטע המזרחי (איור 5; איור 13, בחלק האחורי של התמונה). מקטע זה הינו למעשה הארכת קיר 104 עד הקצה הדרומי של קיר 105 וסיפוחו לקיר. גם מקטע זה נבנה בצורה מעט מרושלת.

לחלקו המערבי של קיר W145 ניגש קיר נוסף (W127) שכיוונו צפון–דרום (איורים 4, 16, 20). לקיר שתי שורות אבני שדה שהשתמרו לגובה שני נדבכים שהונחו בבנייה יבשה. קיר זה נמצא מעל קיר 131, ובוניו הסירו את נדבכיו העליונים של האחרון (איור 5). מקום הנחתו ואופי בנייתו של קיר 127 מרמזים כי ייתכן והיווה גבול חלקה.

מצפון לקיר W145 הונחה שכבת מילוי שעוביה כ–60 – 70 ס"מ (עובייה המקורי אינו ידוע). שכבה זו הייתה מורכבת מעפר, אבני שדה ושברי חרסים רבים, שכיסו בבירור את מתקן 120 ואת השטח שממזרח לו (L117, L118, L146). שכבה זו כיסתה גם את תעלות 135 ו–137 (L101, L109, L133) והוציאה אותן משימוש. בנוסף, על גבי תעלות 135 ו–137 הונח כיסוי לא אחיד של אבני שדה גדולות ובינוניות (L124). כיסוי זה דומה מאוד לתוספת שהונחה מצפון לקיר 104 בשלב זה. בנקודת המפגש של התעלות ניתן לראות כי הכיסוי שהונח על תעלה 135 יורד אל תוך תעלה 137 ומבטל אותה בבירור. זאת ועוד, ישנה אפשרות שתעלה 137 הוסבה להיות קיר שדה (תמך?), משום שהכיסוי הונח באופן כזה שנוצר מעין קיר מרושל למראה (W107). מצפון ומעל לקיר זה כלל המילוי (L101, L109, L122) בעיקר שברי החרסים מתקופת הברזל המאוחרת (מאות 6–7 לפנה"ס, ר' סולימני בהמשך). זוהי הנקודה היחידה באתר בה החרסים מתקופה זו מהווים רוב. מדרום לקיר 145 הונח מילוי (L106, L108, L113, L121), שנחשף לגובה של כ– 1.70 מ' (איור 6) מגובה רצפת הטיח (L125) של מתקן 149 ועד ראש הנדבך השני של קיר 104 (הנדבך העליון, ששולב בקיר הטראסה, בלט מעל המילוי). בכך הוצא משימוש גם מתקן זה. המילוי שכיסה את

איור 14. תעלה 137 לאחר הסרת כיסוי האבנים, מבט למערב.

איור 16. מתקן 149, מבט לצפון מערב. רצפה 125 בקדמת התמונה.



איור 17. תעלה 144, מבט לדרום מערב. שים לב לבולדרים הגדולים מעל התעלה.

איור 15. מתקן 149, מבט צפון.

איור 18. תעלה 144 לאחר הסרת הקירוי, מבט לדרום מערב. שים לב לקיר 131 המתנשא מעליה ולסלע שמתחתיו.

איור 10. תעלה 135, מבט לדרום.

איור 11. תעלה 135, מבט לצפון.

איור 12. מפגש תעלות 137 – בקדמת התמונה – ותעלה 135, מבט למזרח. שים לב לכיסוי האבנים שיורד אל תוך תעלה 137.

איור 13. תעלה 137 לפני הסרת כיסוי האבנים, מבט לדרום מערב.

איור 7. שטח A, מבט כללי לצפון מזרח.

איור 8. מתקן 120, מבט לצפון מערב.

איור 9. מתקן 120, מבט לדרום מזרח. שים לב לשרידי הטיח מדרום לקיר הטראסה 145.

מתחת לכיסוי אבנים, שכיסה גם את תעלה 135. התעלה נמצאה מקורה בלוחות אבן שחלקם מהוקצעים באופן גס. לאחר הסרת הקירוי נמצא כי התעלה מלאה בסחף (L142). אף על פי שלא נמצא חיבור בין התעלה למתקן 120 הרושם הוא שהתעלה הובילה אליו מים מתעלה 135.

ג. מתקן אגירה מטויח ובתוכו תעלה קטנה (149; איורים 4, 15). מתקן זה היה ממוקם מעט נמוך יותר במדרון (ראש קיר המתקן היה גבוה ב–45 ס"מ בלבד מרצפת הטיח של מתקן 120). גבולותיו המדויקים אינם ידועים, אך ניתן לשער כי הוא השתרע דרומה מעבר לשטח החפירה, ומזרחה על לפחות עשרה מ' (ככל הנראה הגיע עד לפתח של תעלה 135, ואולי אף מעבר לה). קירות המתקן (W104, W131) הוצמדו לסלע גבוה ובסיסם הונח על מדרגת סלע חצובה (איורים 15, 16, 18). קיר 104 (ציר מזרח–מערב) כלל שורה יחידה של אבני שדה שהשתמרה לגובה שישה נדבכים. קיר 131 (ציר צפון–דרום) כלל שורה יחידה של אבני שדה שהשתמרה לגובה ארבעה נדבכים, נדבכיו העליונים הוסרו בשלב המאוחר (ר' איורים 5, 18, 20). הקירות נבנו בבנייה יבשה, אבניהם היו מהוקצעות בצורה גסה. כ–15–20 ס"מ מתחת למדרגת הסלע עליה הונחו קירות המתקן נחשפה מדרגת סלע חצובה נוספת, שעליה הונח טיח אפרפר (L125; איורים 4, 5, 16), בדומה לטיח שנחשף במתקן 120. על מדרגת סלע זו (ממערב לרצפת הטיח) נבנתה תעלה להובלת מים (144; איורים 4, 5), שכיוונה צפון–דרום (לאורך המדרון). מהתעלה נחשפו כארבעה מ' והיא ממשיכה דרומה אל מחוץ לגבולות החפירה (איורים 17, 19). לתעלה קיר יחיד שכלל שורה לא אחידה של אבני שדה. מדרגת הסלע החצובה העליונה (מתחת לקיר W131; איור 5) שימשה כדופן הנוספת של התעלה. הקצה הצפוני של התעלה ניגש למגרעת במדרגת הסלע העליונה (מתחת למפגש קירות W104 ו–W131; איור 19). יתכן והסיבה שהתעלה ניגשת למגרעת בסלע נובעת מקיומה של נביעה בנקודה זו ומכאן שתפקידה האפשרי היה להוביל מים מן הנביעה במורד המדרון. התעלה נמצאה מקורה בלוחות אבן מהוקצעים באופן גס. לאחר הסרה חלקית של הקירוי נמצא מילוי אדמת סחף (איור 5; L143) ומתחתיו רצפת סלע הנמוכה בשישה ס"מ מרצפת הטיח של המתקן (L125).

לסיכום, מהתיאור לעיל עולה כי באתר התקיימה מערכת מים מורכבת, שרק חלק קטן ממנה נחשף. אף על פי שלא נמצאה נקודת החיבור של תעלה 135 עם מתקן 149, לדעת כותב שורות אלו שני מתקנים אלו היו קשורים ישירות, כאשר התעלה הוליכה את מי המעיין אל המתקן. אמנם רק חלק קטן ממתקן 149 נחשף, אך נראה כי המתקן שימש לאגירת מי המעיין וממנו הם נותבו הלאה במורד המדרון ולרוחבו. אל תעלה 135 התחברה תעלה 137, שהובילה מים לרוחב המדרון, ככל הנראה לבריכת אגירה 120.

500 – 700 מ"מ. הקרקעות המאפיינות את האתר וסביבתו הן קרקעות טרה רוסה וקרקעות יער חומות, כולן בעלות מרכיב גירני ניכר. המסלע באתר הוא גירני ובמקומות מסוימים חווארי (רביקוביץ תש"ל; ניר תשל"א).

מאחר והמעיין אינו ניתן לאיתור כיום (ככל הנראה, בדומה לאתר עצמו, הוא קבור מתחת למילויים ולשפכים מודרניים) אין בידינו מידע בנוגע לכמויות ספיקה אפשריות. בתחומי החפירה נמצאה תעלה הניגשת למגרעת בסלע, העשויה להעיד על נביעה נוספת, קטנה בהיקפה, שככל הנראה היתה קשורה לזרימת מי המעיין מתחת לפני הקרקע. נביעה זו נמצאה יבשה בזמן החפירה

בחפירות קודמות בכפר אבו גוש וסביבתו נתגלו מבנים, מתקנים וממצאים מהתקופות הבאות: הניאוליתית, הביזנטית, הממלוכית, הצלבנית והעות'מאנית (זילברבוד 2007, 2010; חלאילה וברזילי 2007; Bommel-Yehuda 2006; Khalaily and Marder 2003). מדרום לאתר, מעבר למבתר (כביש 1), נחשפו בחורבת מזרוק שרידי שני מבנים, מאגרי מים ומערכת מסתור המתוארכים לתקופה ההלניסטית ולתקופה הרומית הקדומה (נמסר בע"פ על ידי ד' עין מור; ר' איורים 1, 2). לאחרונה, כ–150 מ' דרומית לאתר, במורד המדרון (קרוב למבתר), נחשפו בחורבת מזרוק צפון שרידיו של מבנה המתוארך לתקופה הרומית הקדומה. במבנה נמצאו בעיקר חרסים ומטבעות מן התקופה (מיעוטם מן התקופה הרומית המאוחרת) וכן מטמון מטבעות המתוארך לשנה ארבע של המרד הגדול (נמסר בע"פ ע"י א' מרקו ופ' בצר; ר' איורים 1, 2). ככל הנראה מבנה זה הוא שריד ליישוב גדול יותר, שנעלם ברבות השנים עם פיתוח האזור.

החפירה

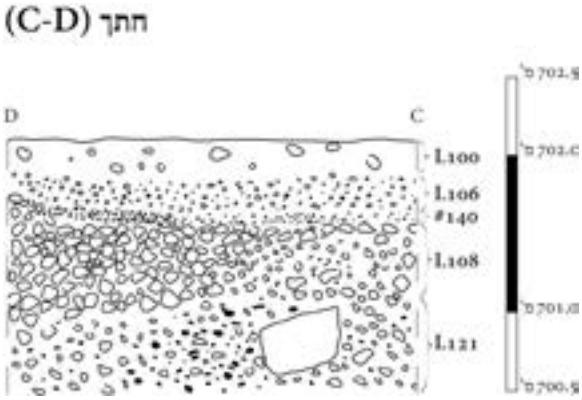
החפירה התרכזה בשני שטחים (A ו–B) בהתאם לתוואי הכביש ולממצאים שעלו בחתכי הבדיקה (איור 3). שטחי החפירה היו מכוסים בשכבה עבה של פסולת ומילויים מודרניים אשר פונו באמצעות מחפרון בעל כף אחורית חלקה.

שטח A

נפתחו חמישה ריבועים (5×5 מ') בהם נחשפה מערכת מים מורכבת. כשזו יצאה משימוש נבנה על–גביה קיר טראסה (איורים 4–7).

שלב 1

בניית מערכת מים מדורגת על המדרון הפונה אל המבתר. ככל הנראה תכליתה של מערכת זו היתה להוביל מים מהמעיין



איור 6. שטח A, חתך C–D.

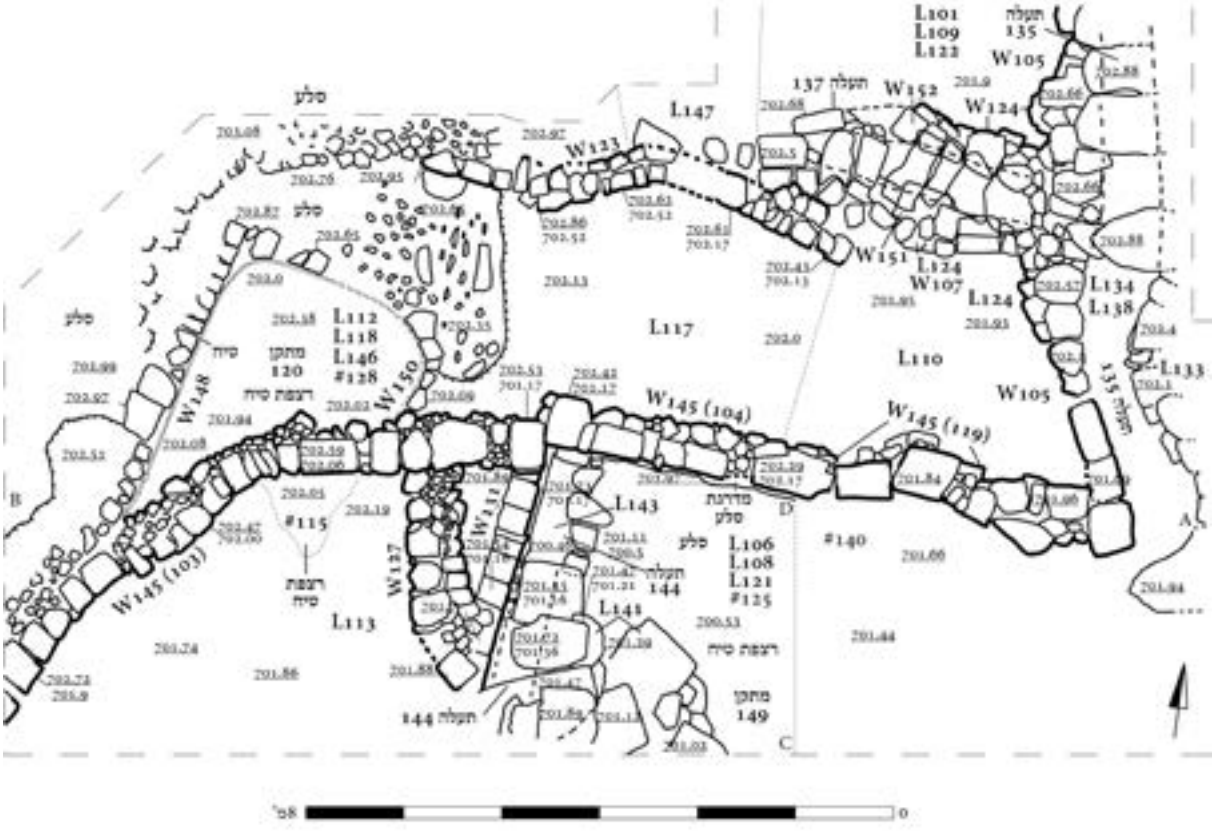
(כאמור לעיל, מיקומו המשוער הוא מצפון לה) לבריכות אגירה. המערכת כללה את המתקנים הבאים:

א. מתקן אגירה סגלגל חצוב בסלע (120; איורים 7–9). גודלו המקורי של המתקן אינו ידוע, משום שחלקו הדרומי הוסר על ידי בוני קיר טראסה 145 (חלק מרצפת הטיח השתמר מדרום לקיר זה; L115, איורים 4, 5). המתקן נחצב על גבי סלע החוואר, כפי שהתברר בזמן חשיפתו של קיר 145 שהונח ישירות עליו (ר' איור 20). על קירות המתקן (W148, W150) ורצפתו (L128) נחשף טיח העשוי מגיר כתוש בעל צבע אפרפר. ייתכן והצבע נבע מהוספת שכבת ביטומן שהגנה בפני חלחול (ברחבי האתר נמצאו מספר אבני גיר אשר להן מרכיב ביטומני). לקירות המתקן שורת אבנים יחידה ולפחות שני נדבכים.

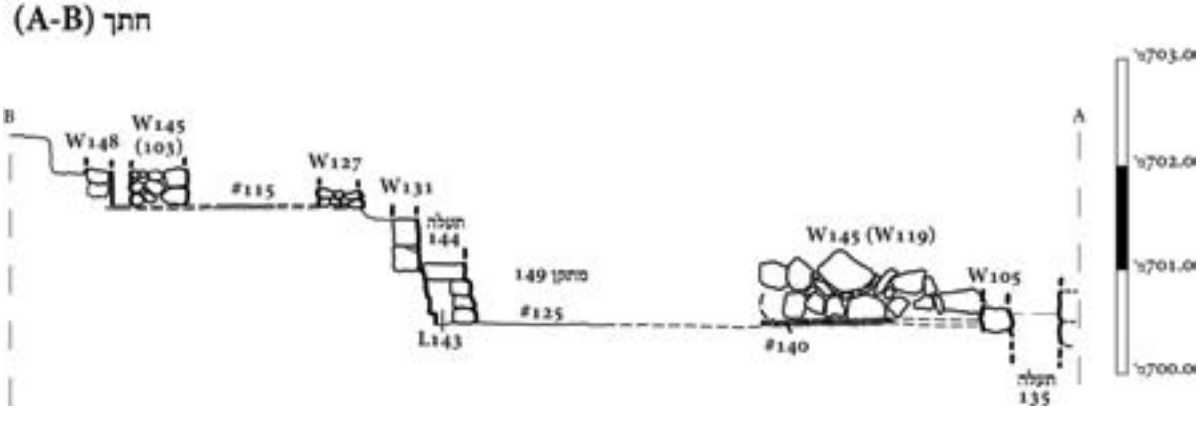
ב. שתי תעלות להובלת מים:

תעלה 135 שכיוונה צפון–דרום (לאורך המדרון; איורים 10–12). שבעה מ' מהתעלה נחשפו בחפירה, ונראה שהיא ממשיכה צפונה מעבר לגבולות החפירה (אפשר והיא מגיעה עד המעיין עצמו). ככל הנראה הובילה מים למתקן 149. התעלה חצובה בסלע. הדופן המזרחית של התעלה לא נחפרה בשל סיבות בטיחות אך חלקה הפנימי נראה היטב בחתך המזרחי. הדופן המערבית (W105) השתמרה במלואה (עד חמישה נדבכים). הפן הפנימי היה מהוקצע באופן גס ואילו הפן החיצוני היה מוסתר על ידי כיסוי אבנים, שהונח עליו ככל הנראה בשלב השני (L124, ר' מטה). חלקה העליון היה מקורה בלוחות מהוקצעים באופן גס. התעלה נמצאה מלאה באדמת סחף (L138, L134). בתעלה זו משתלבת תעלה 137.

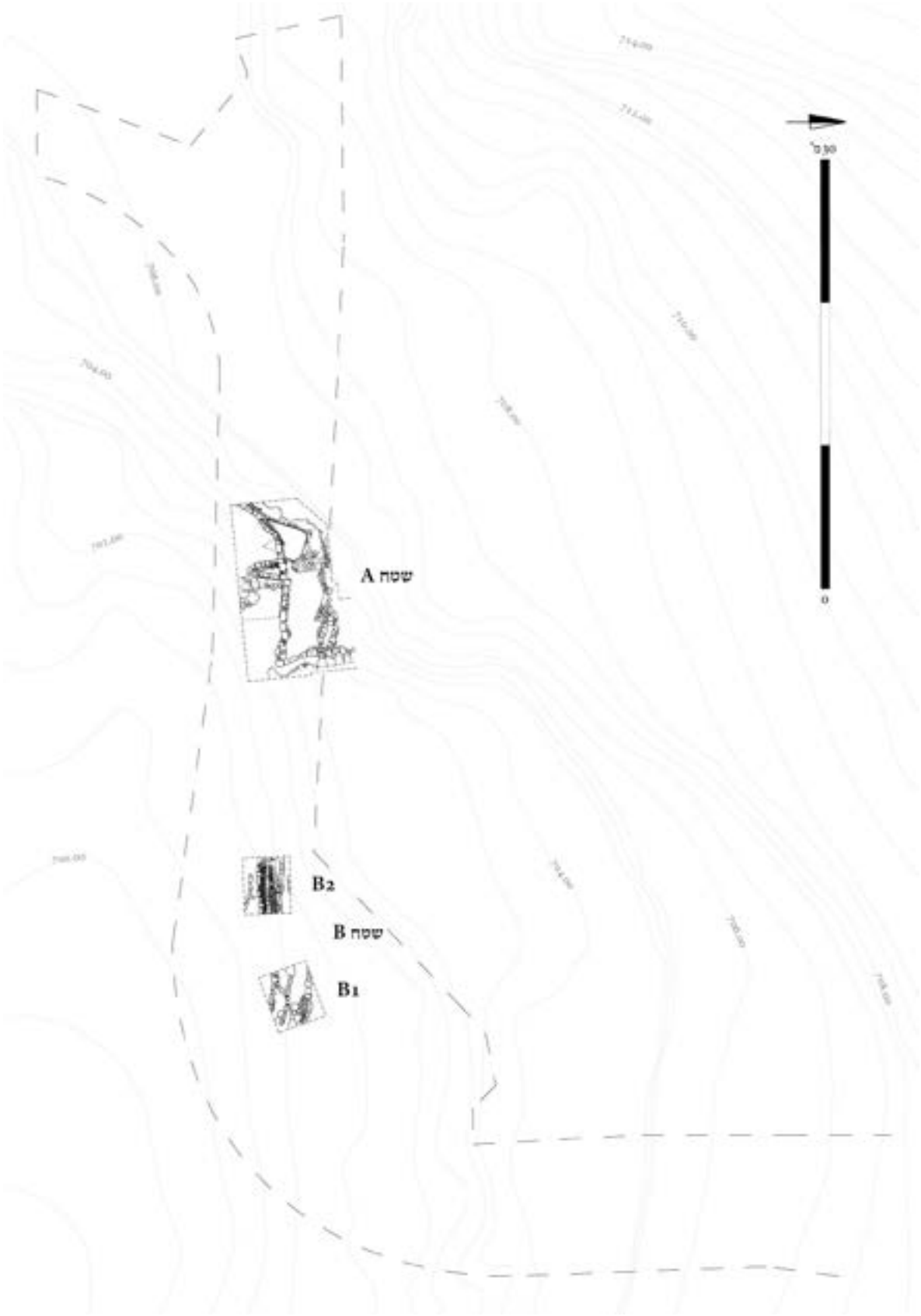
תעלה 137 שכיוונה הכללי מזרח–מערב (לרוחב המדרון) ואשר משתלבת בתעלה 135 (איורים 12–14). ארבעה מ' מהתעלה נחשפו בחפירה. נראה כי התעלה ממשיכה לצפון מערב מעבר לגבולות החפירה. התעלה נחצבה בסלע. קירות התעלה (W151, W152) נחשפו עד גובה שני נדבכים. הפן הפנימי היה מהוקצע באופן גס ואילו הפן החיצוני מוסתר



איור 4. שטח A.



איור 5. שטח A, חתך A–B.



איור 3. מבט כללי על מיקום שטחי החפירה.

עין מזרוק (אבו גוש)

נתן בן-ארי

החפירה נערכה מטעם חברת י.ג. ארכיאולוגיה חוזית בע"מ ובחסות המכון למקרא ולעתיקות על שם נלסון גליק (A-6292), נוהלה על ידי נ' בן-ארי בסיוע ג' סולימני (ניהול שטח) וס' אלון (מדידות, שרטוט וצילום שטח).

מבוא

בחורף 2011 נערכה חפירת הצלה בסמוך לרחוב הארזים באבו גוש לקראת סלילת כביש על ידי חברת פלגי טל. זאת לאחר שבבדיקות מקדימות, שנעשו על ידי י' ביליג מרשות העתיקות, נתגלו קירות קדומים וריכוזי חרסים, הן בתוואי הכביש והן מצפון לו.

האתר עין מזרוק (נ"צ רי"ח 550-80/634450-210200) ממוקם כ-12 ק"מ מערבית לירושלים, בשוליים הדרומיים של הכפר אבו גוש (איורים 1, 2). שמו של האתר נגזר ממעיין האמור להימצא בסמוך למקום החפירה, אך מיקומו המדויק אינו ידוע עוד. כיום אזכור למעיין ניתן למצוא אך ורק במפות מנדטוריות משנות השלושים של המאה הקודמת וככל הנראה היה ממוקם בצמוד לשטח החפירה מצפון.

אבו גוש שוכנת באזור הרי ירושלים, שגבהיו המרביים אינם עולים על 900 מ' מעל פני הים. האתר עין מזרוק שוכן במדרונות הכפר, המתנשאים מצפון למבתר שצירו מזרח-מערב (כביש 1) ונחל כסלון, בגובה 701 - 703 מ' מעל פני הים (איורים 1, 2). כמות הגשמים הממוצעת באזור הינה

איור 1. מפת איתור.

איור 2. מפת איתור לווינית.

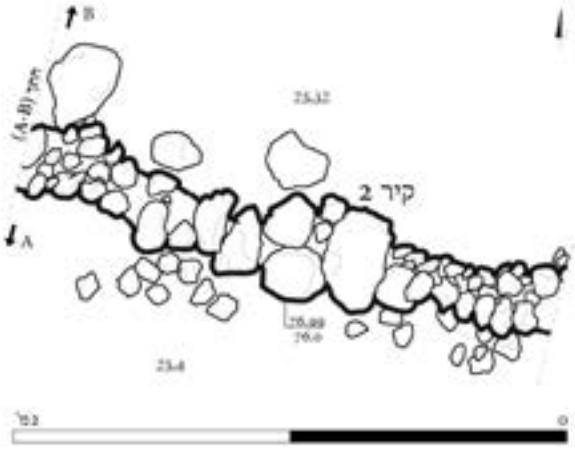
שלב 2

נוספו שני ריבועי חפירה בהיקף של 50 מ"ר מדרום לשטח החפירה, על פי דרישת רשות העתיקות.

לאחר פילוס השטח באמצעות מחפרון עד לעומק שהותר לנו על ידי רשות העתיקות (כ–1.6 מ') הוחל בחפירה ידנית של שישה ריבועי בדיקה חדשים בגודל 2.5×2.5 מ' לסירוגין לאורך השטח (ובכלל זה תוספת הריבועים), כמפורט באיור 2 (ריבועים A1 – A6 מדרום לצפון).

ריבועים אלה נחפרו לעומק של 1.2 מ' בקירוב. גם ריבועים אלה הכילו אדמת סחף ואבנים בגודל קטן ובינוני ללא כל ממצא ארכיאולוגי. בריבוע המרכזי שבשורת הריבועים המערבית נתגלה קטע מן הסלע הטבעי מתחת לרובד של אדמה וחול זהוב נקיים לחלוטין מממצא.

בריבוע הצפוני שבשורה המזרחית (A6) נחשף קטע קיר 2 (איורים 3–5), שהוא ככל הנראה המשכו של קיר 111 שנחשף בחפירת הבדיקה של רשות העתיקות, ממערב לקטע קיר זה. לא נתגלו ממצאים ארכיאולוגיים בסמוך לקיר, ולא ניתן לתארכו.

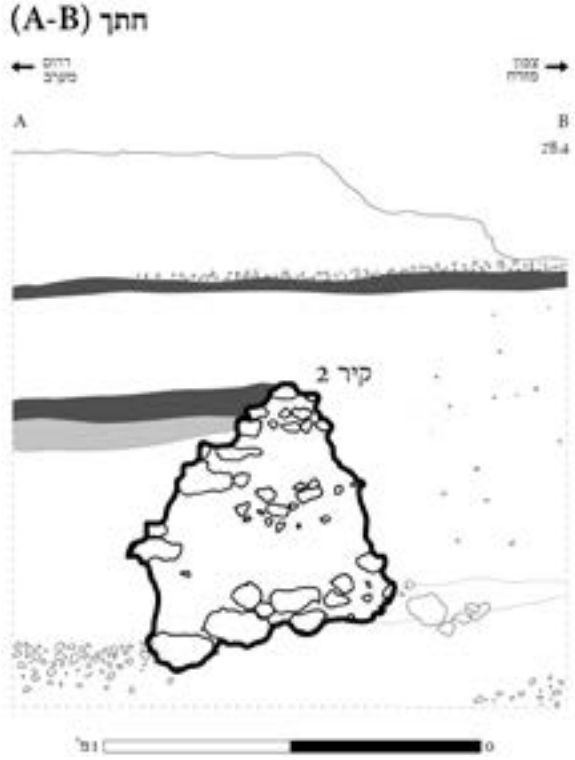


איור 4. תכנית קיר 2.

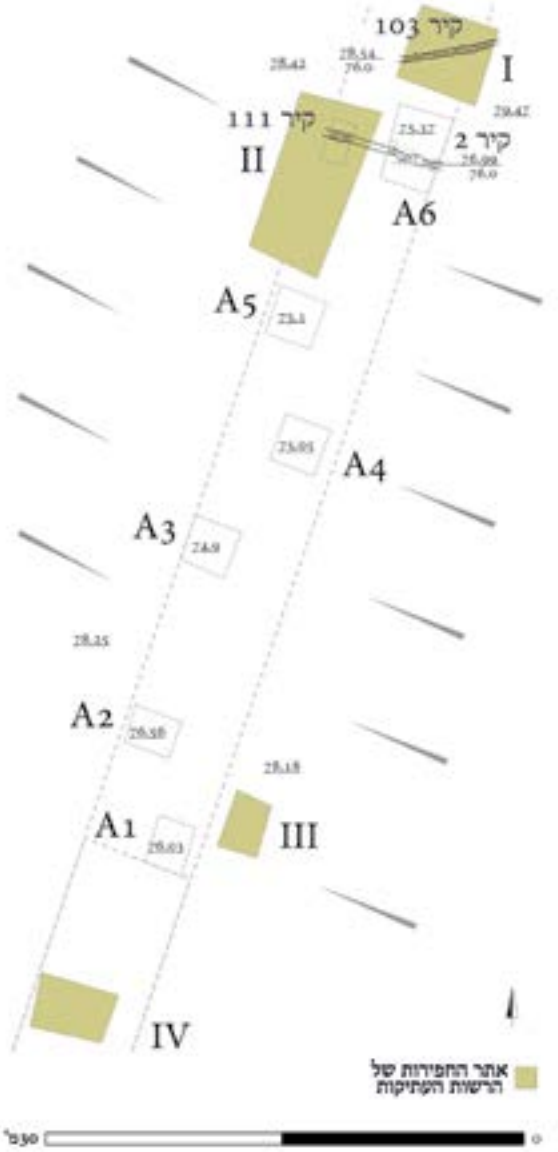
סיכום

חפירת ההצלה בחפץ חיים חשפה שכבות סחף שהצטברו בערוץ שנסתם בשפכי אדמה ופסולת רצנטית. חפירת ההצלה הגיעה עד לעומק הסלע הטבעי והאדמה הסטרילית. מעט שברי החרסים שנתגלו בתוך שכבות הסחף העליונות הגיעו, ככל הנראה, מאזורי עתיקות סמוכים, ואינם מייצגים את שטח החפירה עצמו.

שני קירות בנויים אבני גוויל שנחשפו בחלקו הצפוני של השטח ובגבהים שונים כבר בחפירת הבדיקה שערכה במקום רשות העתיקות, מעידים על פעילות חקלאית בערוץ שהתקיימה באזור. ככל הנראה היו אלה שרידי טראסות וסכרים שנבנו לצורך אגירת או עצירת מי נגר שזרמו בערוץ. מחוסר ממצא מתארך באתרו, לא ניתן לזהות את תקופת בניית הקירות.



איור 5. חתך קיר 2.



איור 2. תכנית כללית של האתר.

איור 3. קיר 2 (ריבוע A6), מבט לצפון–מערב.

החפירה

שלב 1

לאחר הסרת שכבת סחף בעובי 0.3 מ' מפני השטח באמצעות מחפרון, נפתחו שבעה ריבועי בדיקה בגודל 3×2 מ' (לסרוגין) בשתי רצועות לאורך השטח. ריבועי הבדיקה נחפרו ידנית עד לעומק של כ–1.6 מ'.

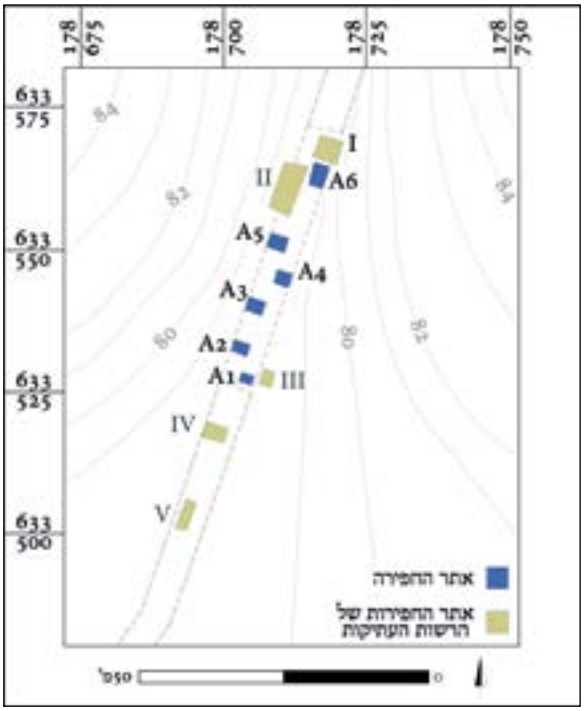
רצועת הריבועים המזרחית: שכבת המילוי העליונה והמהודקת, שעוביה היה כחצי מטר, היתה מאדמה חומה–אדומה שהכילה מעט שברי חרסים שחוקים וסחופים מפני השטח (לוקוס 100). לא נתגלו שברים אינדיקטיביים, אבל מתקבל הרושם הכללי שהחרסים הינם מן התקופה הביזנטית. מתחת למילוי אדמה זה נחפרה שכבת אדמה בעובי 0.2 מ', שבה אבני כורכר טבעיות, ללא ממצא כלל. מפלס זה הינו חלק ממילוי הסחף שסתם את הערוץ. מתחת למפלס הכורכר נמצא מילוי נוסף של אדמת סחף חרסיתית כהה. גם בשכבה זו לא נתגלה כל ממצא.

בתום שלב זה נערכו באמצעות מחפרון חתכי בדיקה לרוחב שטח החפירה בין ריבועי הבדיקה הנ"ל. לאחר שלא נתגלו כל ממצאים בחתכי הבדיקה הוסרו כל פני השטח עד לגובה של כ–1.6 מ' מתחת לפני השטח המקוריים.

חפירת הצלה בחפץ חיים (סלוג'ה)

גדעון סולימני

החפירה נערכה מטעם חברת י.ג. ארכיאולוגיה חוזית בע"מ ובחסות המכון למקרא ולעתיקות על שם נלסון גליק (B-393/2012), נוהלה על ידי ג' סולימני בסיוע א' מרקו (מדידות) וי' גוברין (צילומים).



איור 1. מפת איתור.

מבוא

בחודשים אוקטובר – נובמבר 2012 נערכה חפירת הצלה בסמוך למאגר המים שליד קיבוץ חפץ חיים, עבור חברת מקורות (נ"צ רי"ח 760–725/633500–178685; איור 1). נפתחו 9 ריבועי חפירה בשני שלבים, על פי הנחיית והגדרת דרישות רשות העתיקות (איורים 2–3). קדמו לחפירת ההצלה באתר חתכי בדיקה, שהתבצעו על ידי רשות העתיקות בניהולם של י' מרמלשטיין, ח' שיף, וא' גליק. בהמשך לכך נערכו בשנת 2012 חפירות בדיקה בהיקף של 3 ריבועי חפירה ע"י רשות העתיקות, בניהולו של ד' גולן. חפירת הבדיקה העלתה את הממצאים הבאים (איור 2): בריבוע הצפוני (I) נתגלה קיר (103) מאבני גוויל בעומק של 0.7 מ' מפני השטח. בסביבת הקיר נתגלו שברי חרסים מן התקופה הביזנטית. בריבוע המרכזי (II) נתגלה בעומק 2.20 מ' קיר (111) שרוחבו 1.6 מ' והוא בנוי מאבני גוויל קטנות ומושתת על מפלס אדמת חרסית.

איור 13. עמוד אבן מלוקוס 103.

איור 14. פתח נפרץ אל תוך בור המים, מבט צפון–מזרח.

(איור 12) וארנקים הכוללים מסמכים, כנראה שנזרקו למקום לאחר גניבה. לאחר פינוי פסולת זו, נחשף מפלס של סחף אדמה חומה (לוקוס 103), שכללה מעט אבנים בגודל בינוני וקטן ושברי חרסים רבים. כן נמצאו מעט שברי פריטים אדריכליים, שכללו בסיס לעמוד אבן (איור 13), ואבני בניה ששימשו לעיצוב מסגרות חלונות ודלתות. סחף האדמה יושב על רצפת הבור, המטויחת בטיח עבה. לוקוס 101 הוא חלל בגודל 3.5×6 מ' שפינוי הפסולת המודרנית ממנו לא הסתיים.

במפלס עליון, בגובה 3 מ' מעל רצפת הבור בצד דרום, נמצאים חללים חצובים בסלע, מטויחים גם הם: לוקוס 104 (3.5×4 מ'), לוקוס 105 (2×3.5 מ'), וביניהם חלל חצוב קטן – לוקוס 107 (2.5×2.5 מ'). אזור זה מהווה חלק ממפלס קבורה עליון.

שלב 3

מצד מזרח ובצמוד לקיר בור המים (מס' 3 באיור 2) ישנם קירות אבן של חדרי מגורים. פתח נפרץ אל תוך בור המים ונחצבה מנהרה אל תוכו (לוקוס 102; איורים 5, 14), שרוחבה כ–1 מ', אורכה 6 מ' וגובהה 1.20 מ'. כנראה בשלב זה הבור לא שימש לאגירת מים, והפך לחלק ממכלול המגורים של החדרים ממזרח. נראה שזמנו של שלב זה במאה השנים האחרונות.

סיכום

זמנה של מערכת הקבורה הדו–קומתית כנראה מהתקופה הרומית מאוחרת–ביזנטית, בין המאות 4–7 לספירה. בשלב מאוחר יותר, כנראה בתקופה המוסלמית הקדומה, הוסבה המערכת לבור מים גדול: קירות החדרים ורצפתם הוסרו, דפנותיהם טויחו, פתחים נפרצו בתקרת המערה לצורך איסוף מים, ופתח ירידה לבור נפתח בצפון לצורך ניקיון ואיסוף מים. הבור שימש במשך תקופה ארוכה. בשלב השימוש האחרון, כנראה במאה העשרים, הבור הפסיק לשמש כבור מים: חדרי מגורים נבנו בצמוד לדופן המזרחית, מנהרה חצובה נפרצה אל תוך הבור וקישרה בין החדרים לבור, והוא הפך לחלק ממערך המגורים של הבתים. אל האתר נקשרו אגדות נוצריות ויהודיות (בר תשמ"ז). על פי מחקרו של גדעון אבני (אבני תשנ"ז) סוג המערות במערכת זו הוא מטיפוס 7 – מערות אולם הכוללות חדר מרכזי שבדפנותיו חדרי קבורה. סוג זה הוא מהמפוארים בתקופה, וקיים בעיקר בבית שערים ובבית גוברין. המערות נסקרו ותוארו על ידי פרופ' עמוס קלונר בעבודת הדוקטורט שלו על קבורה בירושלים בימי בית שני. כמו כן ישנו דיווח ותיאור המערה בתיק פיקוח משנות החמישים, שדווח על ידי יוחנן אהרוני.

הפניות

אבני ג' תשנ"ז. **בתי הקברות של ירושלים ובית גוברין במאות ד'–ז' לסה"נ כדוגמא לבתי קברות עירוניים בארץ ישראל בתקופות הרומית המאוחרת והביזנטית** (עבודת דוקטור). האוניברסיטה העברית ירושלים. עמ' 379–386.

בר ד' תשס"ז. **לקדש ארץ: המקומות הקדושים היהודיים במדינת ישראל 1948–1968**. ירושלים. עמ' 120–123.

קלונר ע' תש"ם. **קברים וקבורה בירושלים בימי בית שני** (עבודת דוקטורט). האוניברסיטה העברית ירושלים. עמ' 57.

הנ"ל תשס"ב. סקר ירושלים ,האזור הצפוני– מזרחי ,**רשות העתיקות**, אתר מס' 384. עמ' 157.

תיק פיקוח: יוחנן אהרוני, (י–ם)/מ/5/, ארכיון רשות העתיקות.

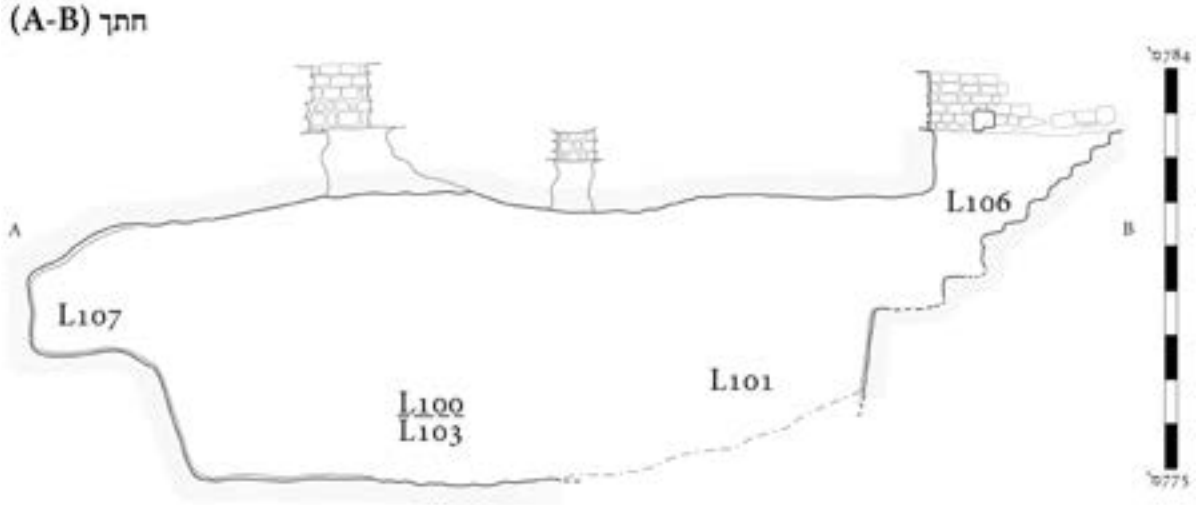
איור 8. מדרגות במסדרון (לוקוס 106), מבט לצפון–מערב.

איור 9. בור המים, מבט לצפון.

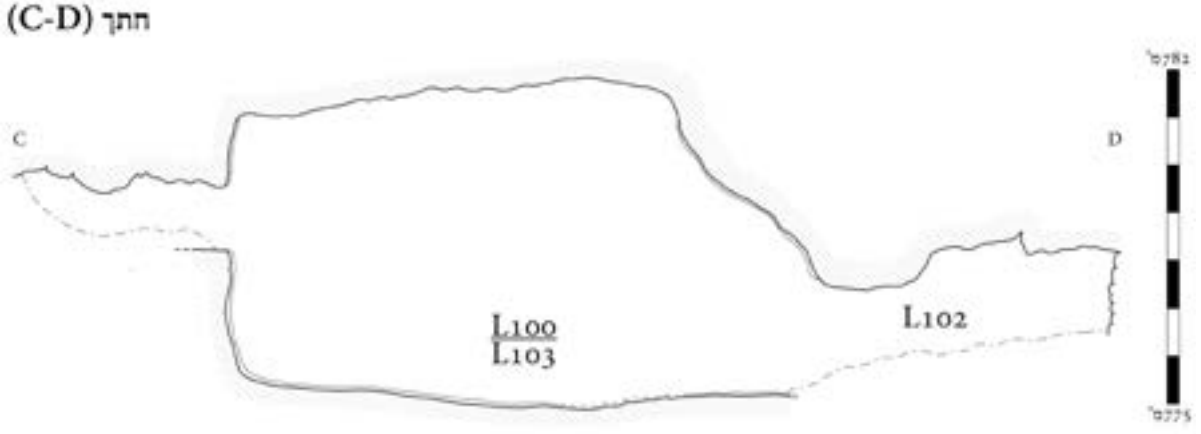
איור 10. פסולת מודרנית על מפלס קרקעית הבור, מבט לצפון.

איור 11. מזרקים שנמצאו בפסולת מודרנית בבור המים.

איור 12. מסמכים אישיים שנמצאו בפסולת מודרנית בבור המים.



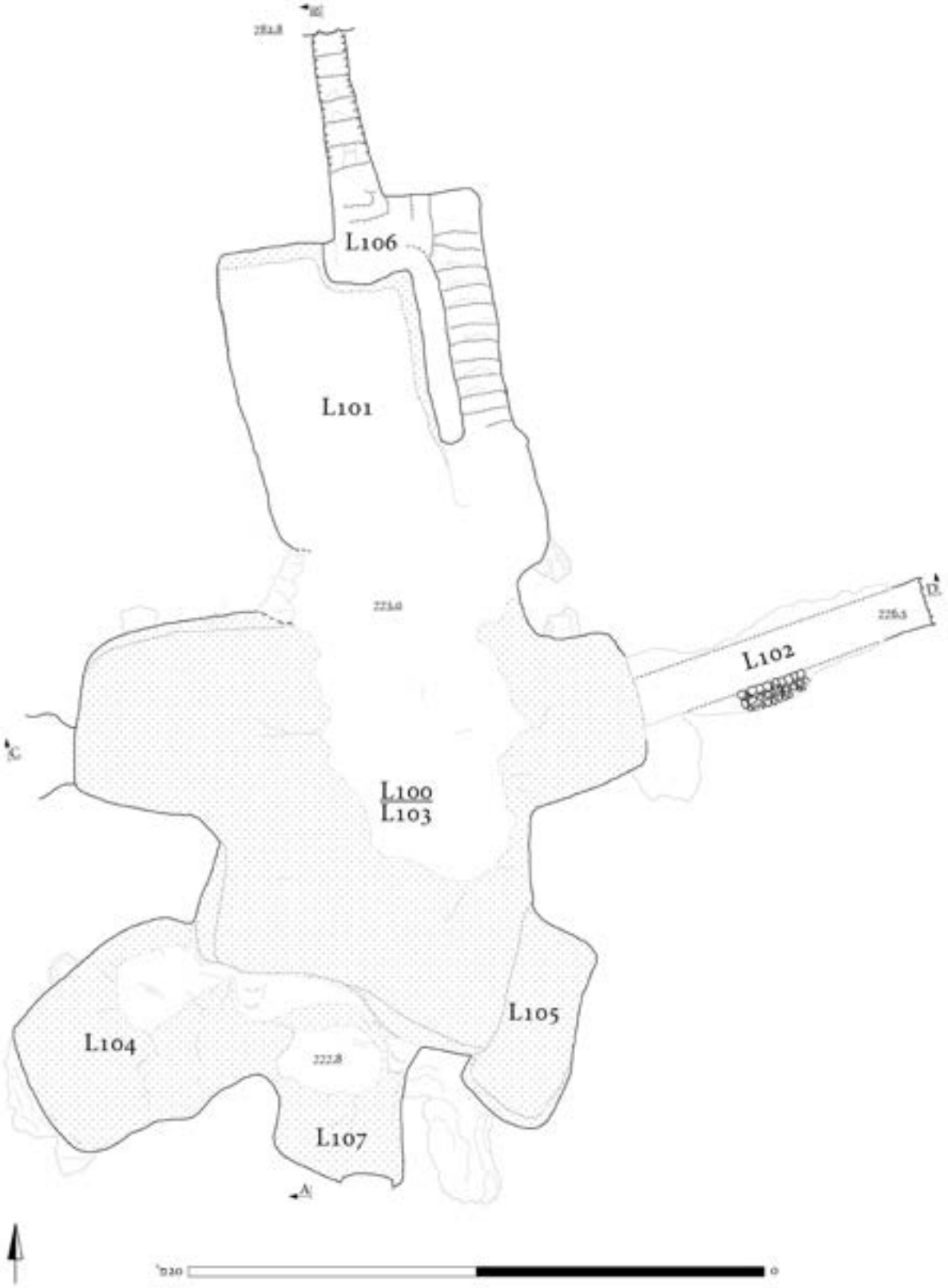
איור 4. חתך B–A של בור המים.



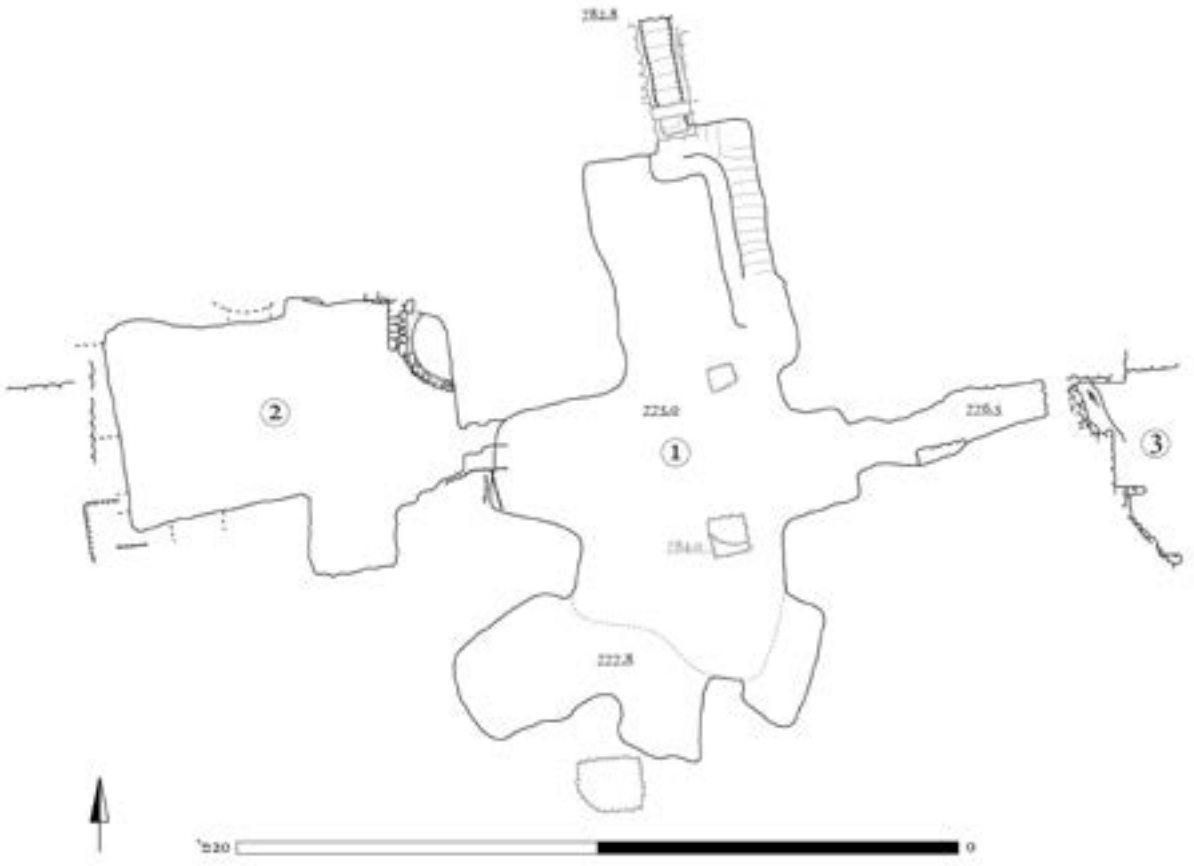
איור 5. חתך D–C של בור המים.

איור 6. בור המים, מבט לצפון.

איור 7. פרצה בקיר בפינה הצפונית–מערבית של בור המים, מבט לדרום–מערב.



איור 3. תכנית בור המים.



איור 2. תכנית כללית של האתר.

לבור המים (מס' 2 באיור 2) כולל מדרגות חצובות, היורדות אל חצר מלבנית חצובה (8×4 מ') מצד דרום. בדפנות החצר חדרים חצובים ששימשו לקבורה. שימוש משני בתקופות מאוחרות פגע בתכנית החדרים, וקשה לעמוד על תכניתם המקורית. בפינה הצפונית–מזרחית של חצר הקבורה ניתן להבחין בבנייה מאוחרת של קיר אבן עגול, כנראה ממאה השנים האחרונות.

מכלול הקבורה כולל את אזור בור המים (איורים 3–5). קשה לשחזר את תכנית מערכת הקבורה המקורית: כתוצאה מהפיכתה לבור מים, הוסרו הקירות בין חדרי הקבורה, כולל תחתיתם, אך ברור שמדובר במערכת קבורה דו מפלסית. הבדלי הגובה בין רצפת בור המים (לוקוסים 103/100) וחדרי הקבורה במפלס העליון (לוקוסים 104, 105, 107; איור 6) עומדים על כ–2.5 מ'. פרצה בקיר בפינה הצפונית–מערבית (איור 7) מצביעה על הקשר בין שני מכלולי הקבורה ושיוכם למכלול אחד.

שלב 2 – בור המים

פתח הבור מצד צפון (לוקוס 106). מסדרון חצוב הכולל כ–8 מדרגות יורד מצפון לדרום (איורים 3–5, 8). חלקו העליון של המסדרון עשוי קירות אבן חצובה. בקצה המסדרון פנייה מזרחה ברחבה קטנה אל תוך הבור. ממפלס זה יורדות לתחתית הבור 12 מדרגות חצובות הצמודות לדופן המזרחית של הבור (איור 9). שני פתחים לאיסוף מים נפרצו בתקרת הבור (איורים 3–4).

תכנית הבור איננה רגולרית, כתוצאה ממקורו במערכת קבורה. החלל כולל את לוקוסים 103/100, 101. גודלו כ–15×10 מ' בקרקעיתו, וגובהו המקסימלי 6 מ'. רוחבו במפלס העליון כ–20 מ'. מפלס קרקעית הבור היה מלא בפסולת מודרנית (לוקוס 100, 101; איור 10) שכללה חלקי קרשים, חביות ברזל, מיטות ומזרנים ששימשו חסרי בית ונרקומנים בתקופות שונות. נמצאו מזרקים רבים (איור 11) של צרכני סמים, שברי בקבוקי זכוכית, פחיות שתייה, מסמכים אישיים

בור מים, ממילא (גן העצמאות), ירושלים

גדעון סולימני ויונתן מזרחי

החפירה נערכה מטעם ארגון עמק שווה וידידי כדור הארץ ובחסות המכון למקרא ולעתיקות על שם נלסון גליק (G–31/2012), נוהלה על ידי ג' סולימני וי' מזרחי, בסיוע ד' אילן (כלי עבודה), ל' כהן וי' מזרחי (צילומים), ס' פירסקי וס' אלון (מדידות).

איור 1. מפת איתור.

מבוא

בחודשים מאי ואוקטובר 2012 נערכה חפירה ארכיאולוגית–חינוכית בבור המים אשר בבית הקברות ממילא, כיום חלק מגן העצמאות (נ"צ רי"ח 220860/631680; איור 1). החפירה היא חלק מפרויקט חינוכי אקלוגי–סביבתי של ארגון ידידי כדור הארץ ובית הספר הניסויי, ועסק בנושא מים ואגירת מים בתקופות הקדומות באזור בית הספר, שתלמידיו השתתפו בחפירה.

החפירה

בור המים (מס' 1 באיור 2) הוא חלק ממכלול חציבות ובנייה בקצה שלוחה היורדת ממערב למזרח (מס' 2 ו–3 באיור 2). בחפירה אובחנו שלושה שלבי שימוש במקום.

שלב 1 – מערכת הקבורה

נחצב במקום מכלול מערות קבורה דו קומתי, הכולל את אזור בור המים וקברים חצובים ממערב. מכלול הקבורה ממערב

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