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Fazael 2, One of the Latest Chalcolithic Sites in the Jordan Valley? Report of the 2007–2008 Excavation Seasons

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ABSTRACT

Excavations at Fazael 2 provide important insights into our understanding of the latest phases of the Chalcolithic period in the southern Levant. Radiometric determinations suggest that Stratum 2 at the site was occupied about 4000–3900 Cal BC, thus being among the latest Chalcolithic settlements in the Jordan Valley. This article describes the first two seasons of excavation and presents the architecture and stratigraphy accompanied by a description of the various assemblages found at the site. These assemblages are typically Chalcolithic in almost every aspect, but the flint artifacts attest to the beginning of the use of Canaanean blades at the end of the Chalcolithic period. This is contrary to the accepted opinion that ascribes their appearance to the beginning of the succeeding period (Early Bronze Age I). Thus the possibility of a very late, possibly even post-Ghassulian Chalcolithic, entity may not be ruled out.

KEYWORDS: Fazael 2, Late Chalcolithic, Ghassulian, Jordan Valley

INTRODUCTION

The site is located in the central Jordan Valley (map reference: Israel Old Grid 1913/1618; Figs. 1, 2). First described briefly by Porath (1985), and extensively surveyed in 2006 within the framework of the Manasseh Hill Country Survey (Zertal 2012), the Fazael Chalcolithic site proved to be a concentration of sites covering an area of about 200 dunams along the northern terrace of Wadi Fazael. These sites, Fazael 1, 2, 5, and 7 (Bar 2008), and salvage excavations carried out by Porath (1985) and Peleg (2000), make up an aggregation of Chalcolithic settlements, or possibly one large site, on the perimeter of the fertile alluvial fan of this watercourse which drains the steep Samarian hills to the east.

Modern destruction of portions of the site by bulldozers has made some elements of Fazael 2 particularly vulnerable to degradation, prompting excavations of some parts of the site. Excavations have shown that Stratum 2 of this three-strata site should be dated as very late in the Chalcolithic period, making it important for the study of the end of this period and the poorly understood transition to the Early Bronze Age I (EB I), in both the regional and larger contexts of the southern Levant.

The main feature discovered in the excavation of Stratum 2 is a very large courtyard house, approximately 620 sq. m (Figs. 3–5). The first two seasons detailed here concentrated on excavating the southeastern part of this courtyard house, where a large broad room was found.

STRATIGRAPHY AND ARCHITECTURE

The 2007–2008 excavation seasons (about 170 m^2) focused on a building, located in the southern part of the

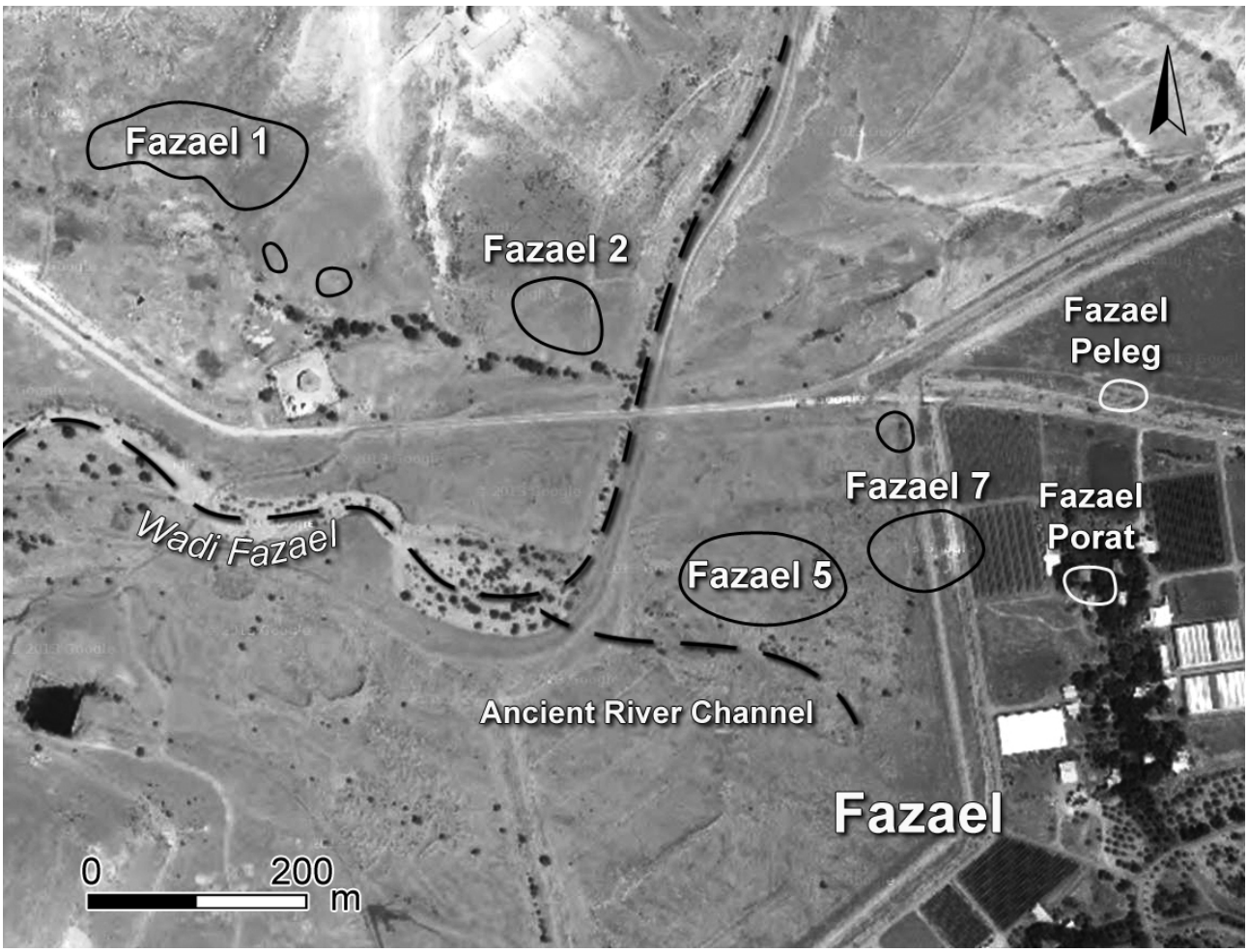

Figure 1. The Fazael Valley: Satellite photograph of the Chalcolithic sites that have been identified. Source: Google Earth.

site, whose southeastern part was damaged. Three strata were discerned: Strata 3 and 2, the earlier two, were dated to the Chalcolithic period, while the uppermost Stratum 1 could not be dated.

Stratum 3

Only a limited area of Stratum 3 (Figs. 6–8) was exposed in Squares C 1 and C 2. It includes two pits and meager remains of two hearths with an average diameter of 24 cm. Only a few finds, characteristic of the Chalcolithic culture (see below), were collected near the pits and hearths.

Stratum 2

The primary element exposed in this area, a broad room of about 62 m^2, had two rooms: Unit 1 at the south side, and Unit 2 at the north. To the east, an open space, possibly a courtyard (Unit 3) of unknown size, was partly excavated (Fig. 9). The southeastern corner of Unit 1, which covers an area of 28 m^2, had been destroyed prior to excavation. In the centre of the western wall are the remains of a stump wall (W14) of unclear function, which represents a secondary phase of construction.

The stone walls, preserved to a height of three courses, still had meager remains of mudbrick preserved atop them in several places. Two tamped earth floors were identified at the level of the top of the lowest stone course. The outer walls of the building range between 80 and 100 cm in thickness. In most cases, they were constructed of two rows of medium and large stones, with a fill of small stones and soil deposited between them. Infant burials were found beneath the floor in the two northern corners of the room (Eshed and Bar 2012).

Unit 2 (Fig. 10), covering an area of 34 m2, has only been partly excavated. The entrance, in the southern wall (W 11), was paved with flat stones and included a stone

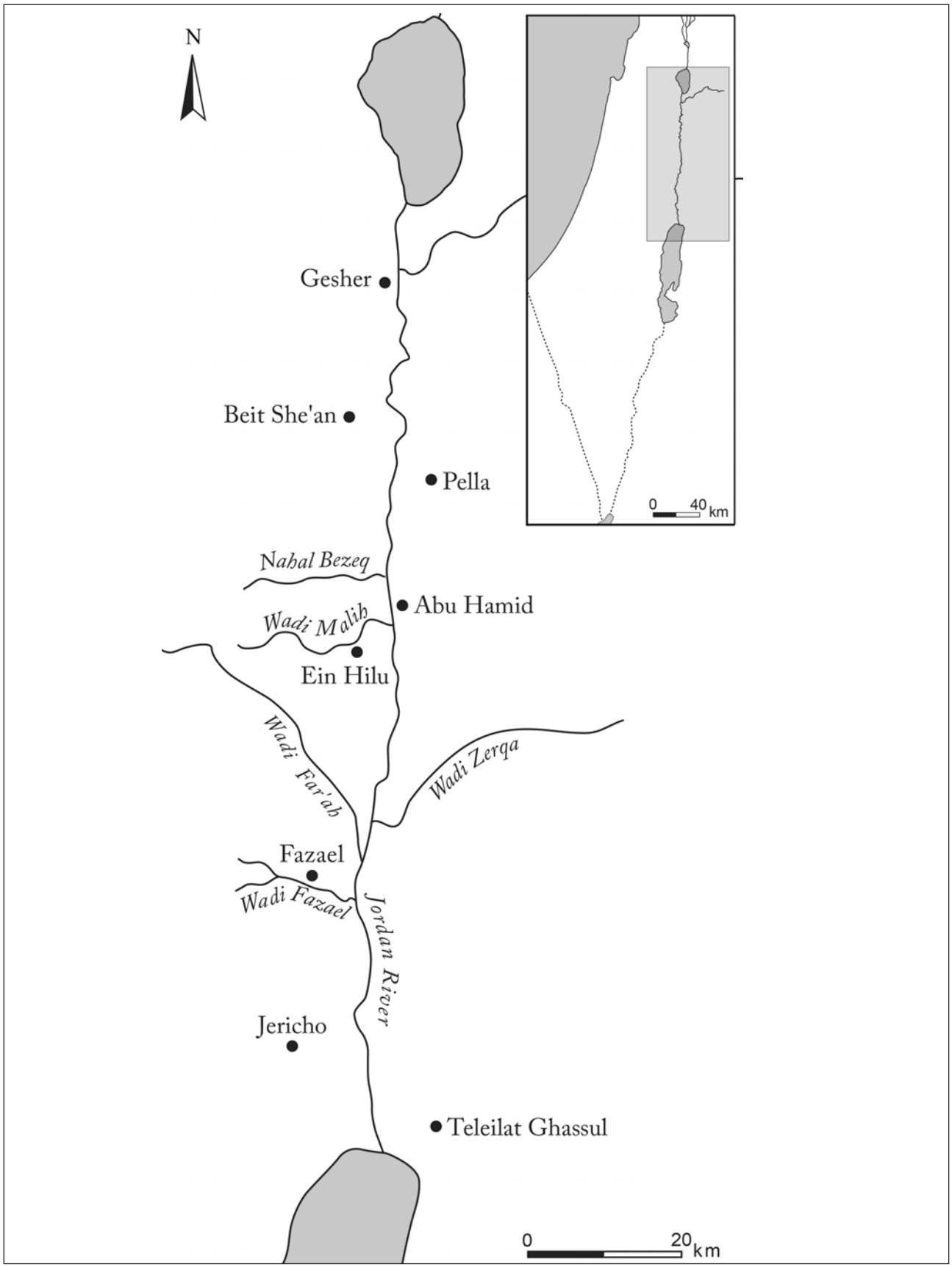

Figure 2. General location map.

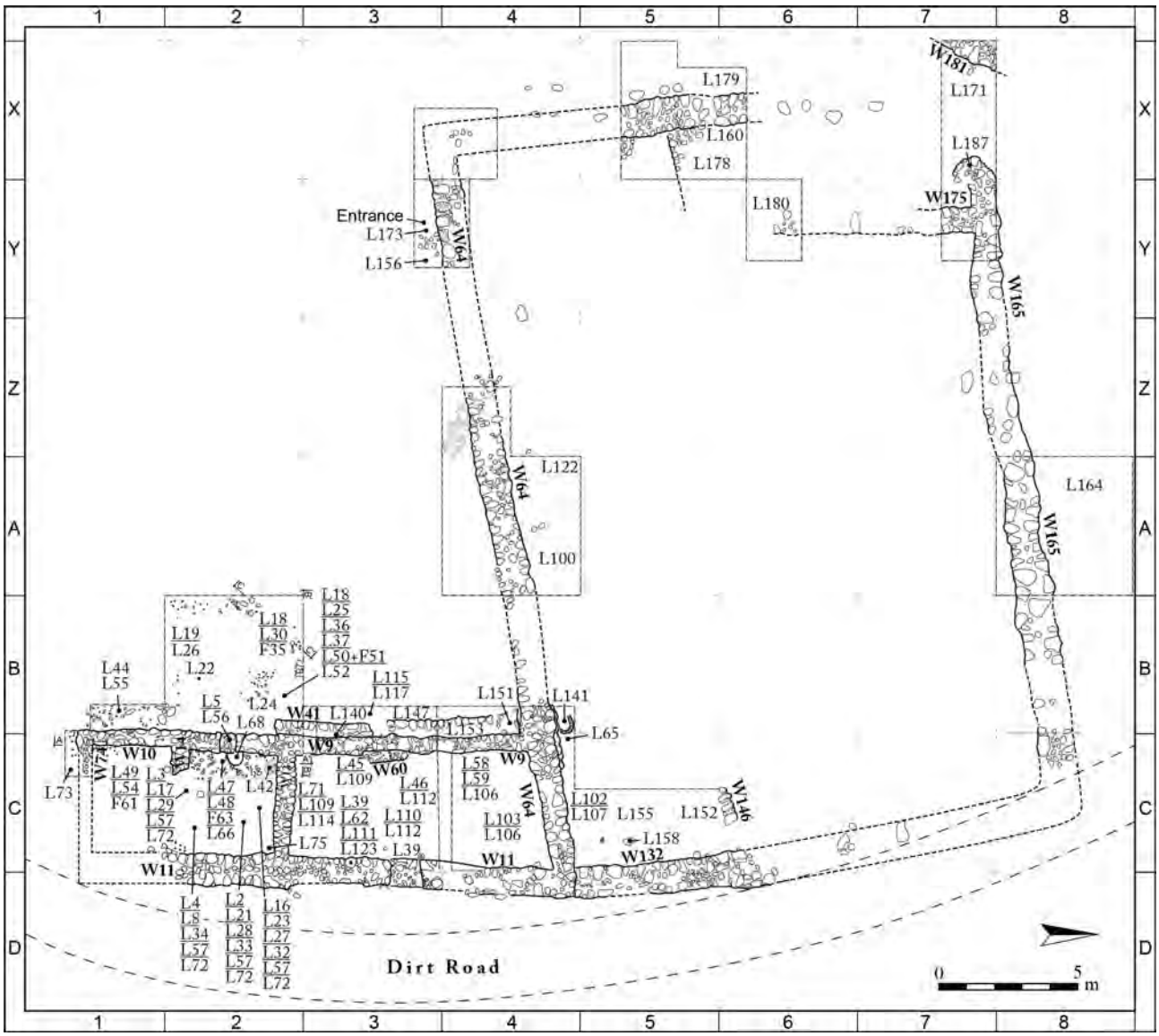

Figure 3. A general plan of the site at the end of the 2011 season. Note the large courtyard and the location of the broad house excavated in 2007–2008 at the southeast.

socket to the right of the opening, adjacent to the wall. No evidence of mudbrick was encountered on the stone-constructed walls of this room. Wall 64, continuing to the west of the northwestern corner beyond the limits of the room, formed part of the southern wall of the courtyard house. Wall 132, the continuation of Wall 11, extending beyond the limits of the room to the north, formed part of the eastern wall of the courtyard house. Additional construction phases (Wall 41, possibly a bench, and Wall 60, possibly a threshold leading to a courtyard), later than the first, were noted, but the precise order of their construction could not be ascertained. Two occupation levels with about 20 cm of deposits between them were observed outside the broad room in Unit 3 (Fig. 11; Sections B–B' and C–C' in Fig. 7).

The finds from Stratum 2 are characteristic of late phases of the Chalcolithic period (see below). The 14C analyses from this stratum date it to the first century of the 4th millennium Cal BC, making it one of the latest Chalcolithic sites in the Jordan Valley.

Stratum 1

Stratum I consists of the remains of a long wall (W15) and two installations found on the surface of the site (Figs. 7,

Figure 4. Aerial view of Fazael 2 looking north, 2012. Note the broad house discussed in this paper on the right of the picture.

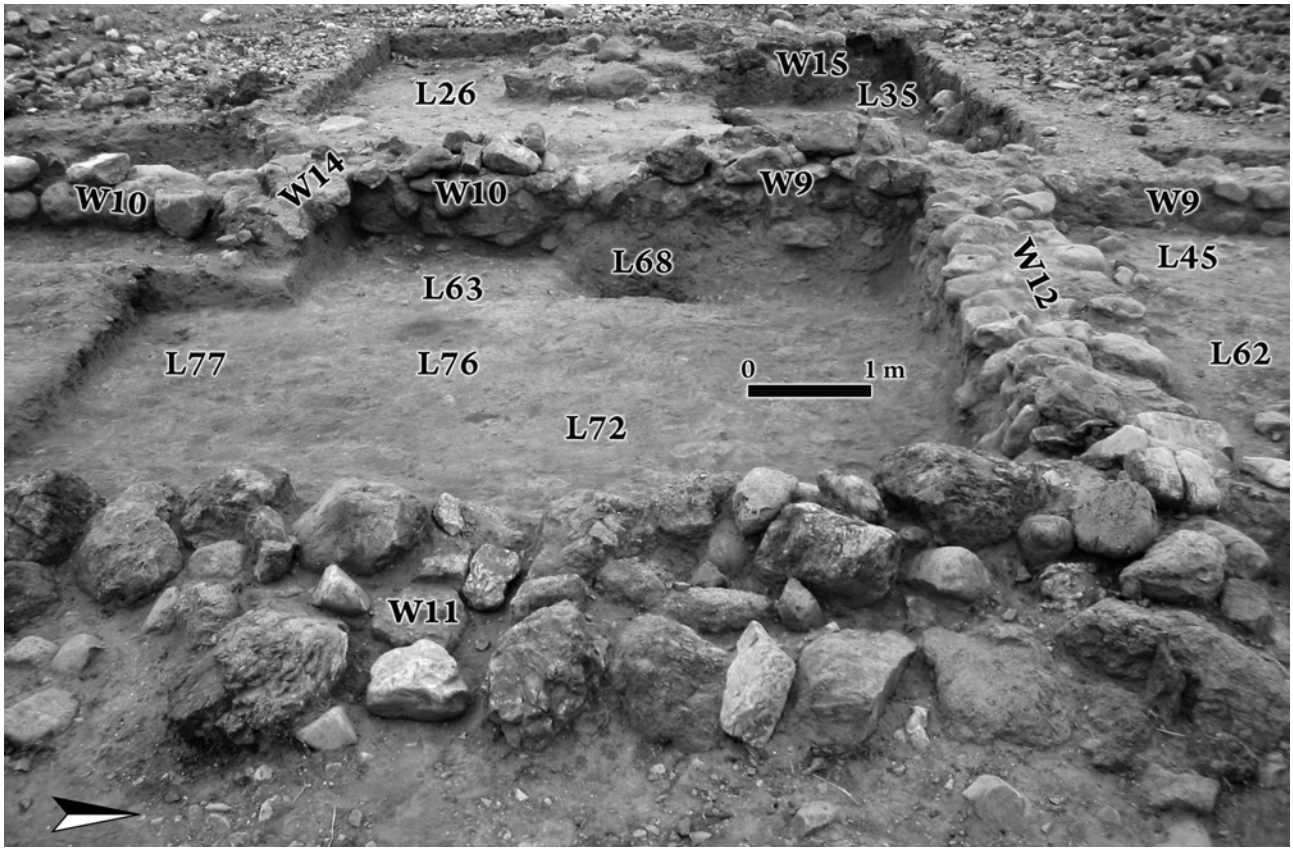

Figure 5. View of the southern part of the broad house in 2007, looking west.

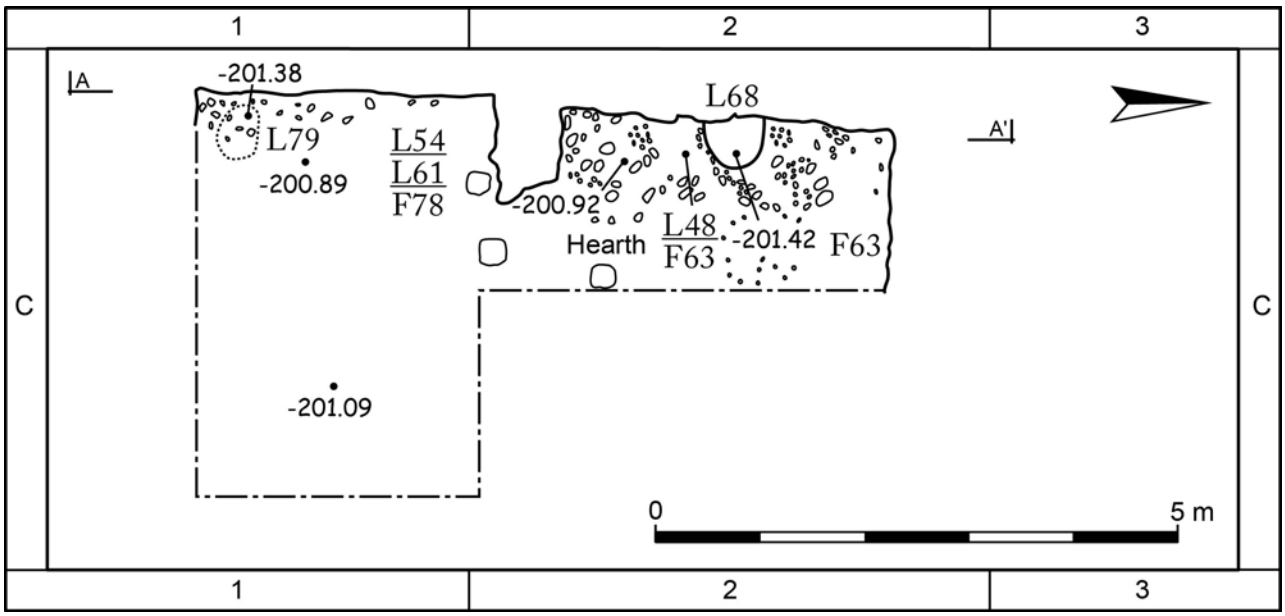

Figure 6. Plan of Stratum 3.

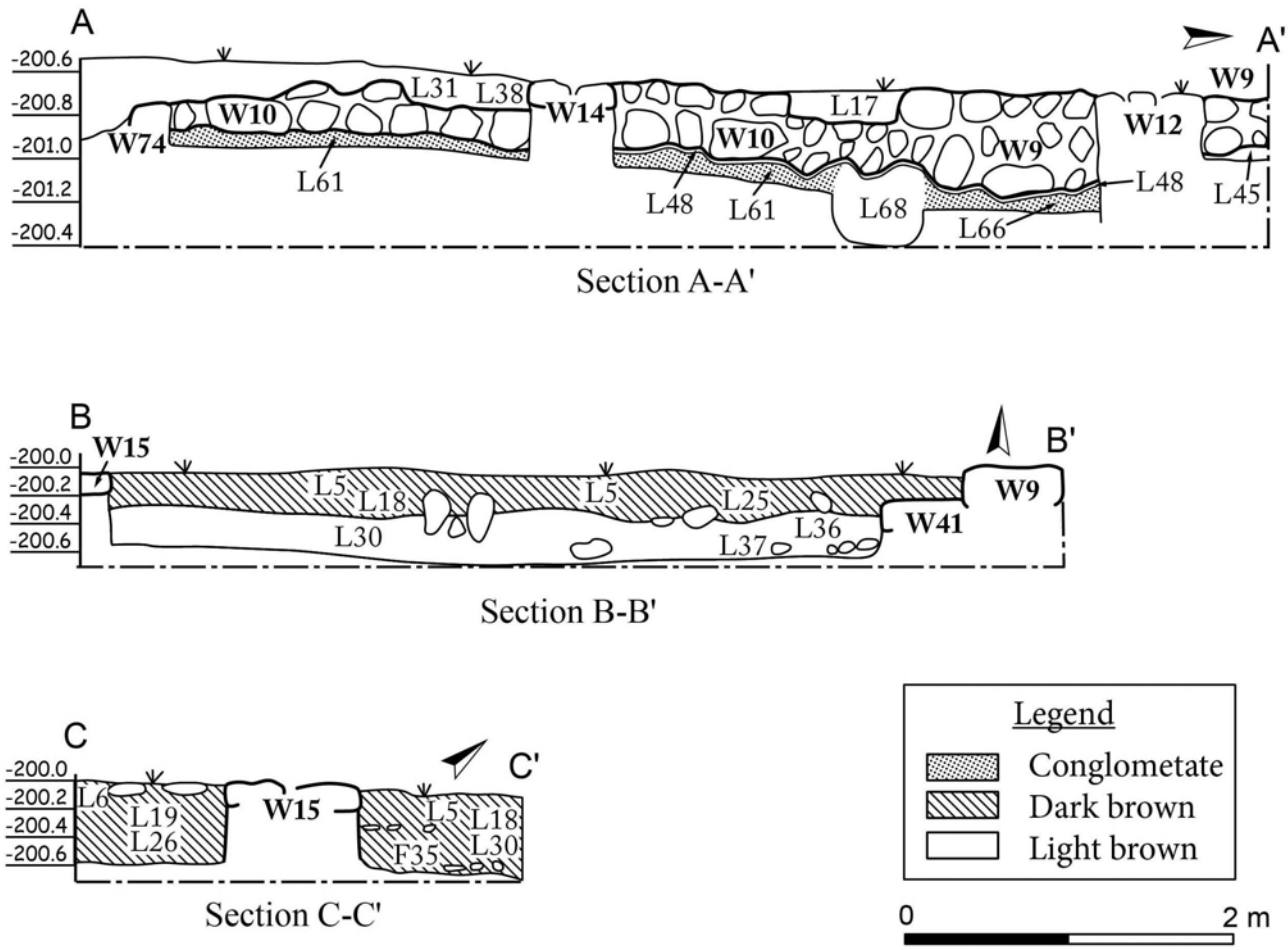

Figure 7. Sections A–A', B–B', C–C'.

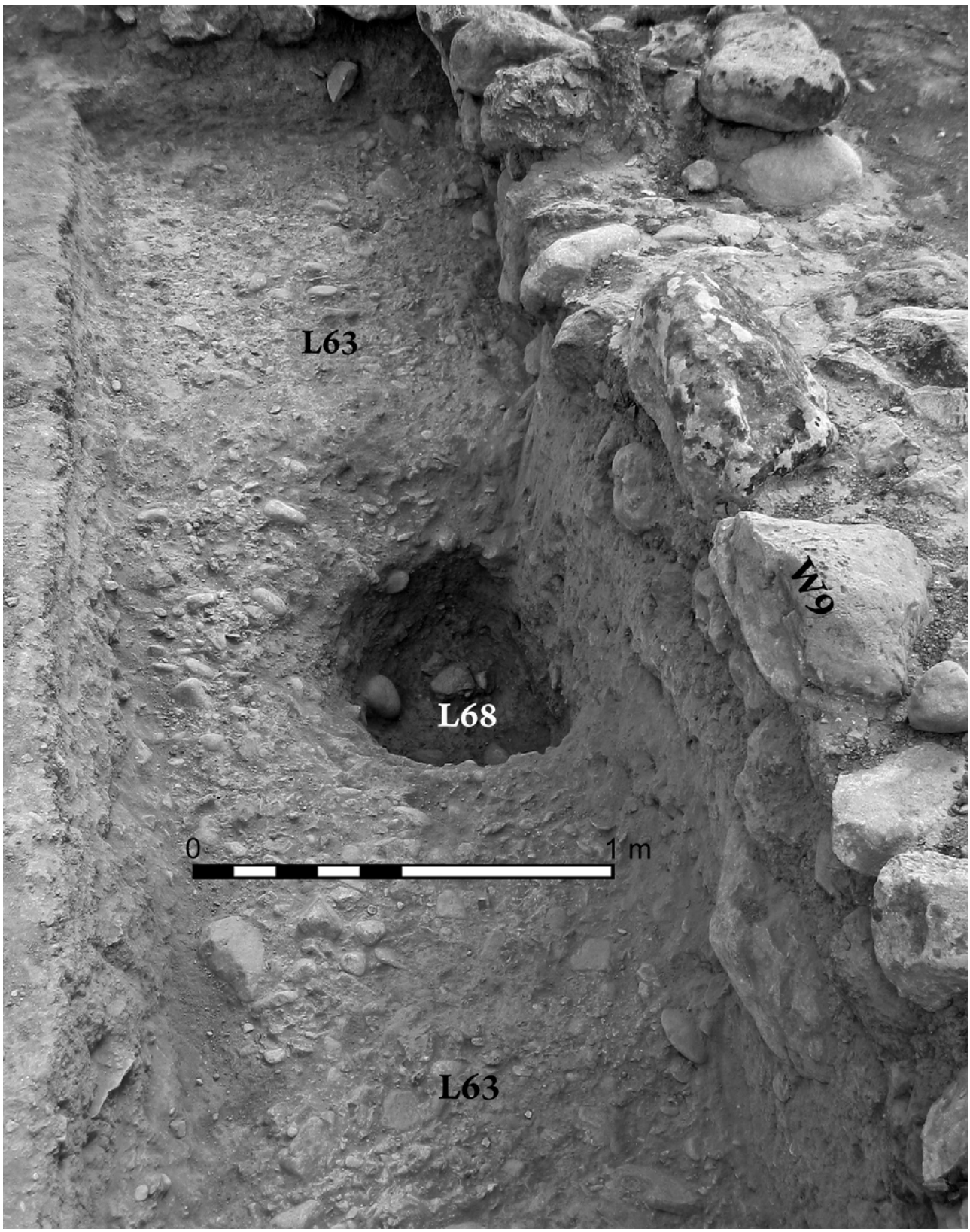

Figure 8. Stratum 3: Pit (L 68) dug into conglomerate (L 63). Note the wall of Stratum 2 (W 9).

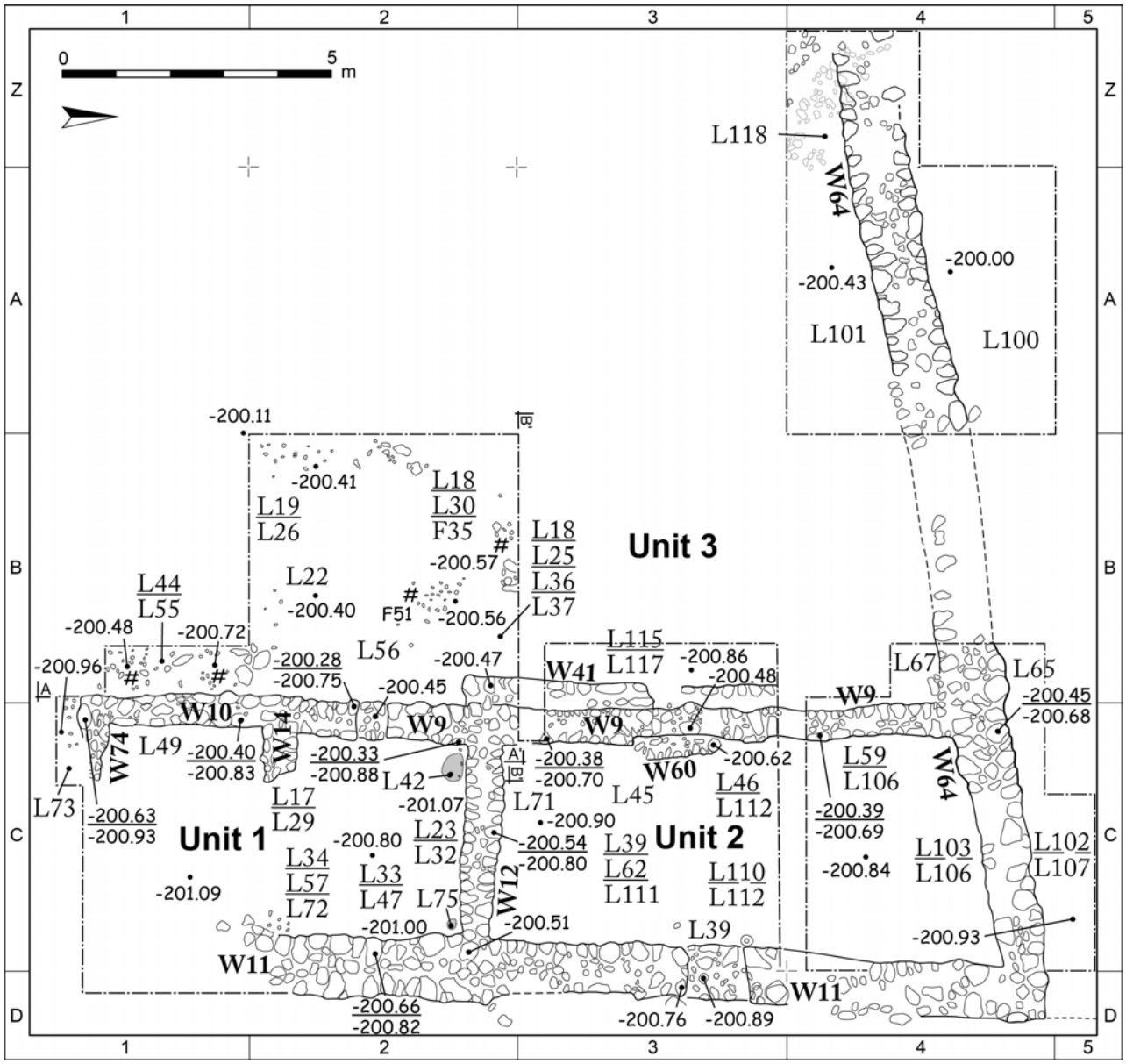

Figure 9. Plan of Stratum 2, 2008.

11–12). As no datable associated material was recovered it could not be definitively associated with the Chalcolithic period. However, there is no evidence of post-Chalcolithic material culture at the site, and attribution of this enigmatic structure to that period cannot be conclusively ruled out.

THE CERAMIC ASSEMBLAGE

The ceramic assemblage recovered in the first two seasons includes 8,545 pottery sherds, each at least 4 cm^2 in area, most of which derive from Stratum 2. Diagnostic rims (n=397) indicate that the most common types of vessels were open shapes, bowls and basins (n=190, 47.9% of the assemblage), followed by holemouth jars (n=134, 33.7% of the assemblage) and jars (n=73, 18.4% of the assemblage). The jars include small jars – amphoriskoi (n=11, 2.7% of the assemblage) and pithoi (n=9, 2.2% of the assemblage).

Surface treatment in this assemblage is limited to rare painted examples (n=18 items, 0.002% of the assemblage). Most take the form of red-painted rims (n=13), but a few vessels (n=5) are completely covered in red slip. Plastic additions are also limited (n=92, 0.01% of the assemblage) mostly to rope-like decoration (n=36), diagonal ribbing (n=38) and thumb-like impressions on lug-handles (n=16). Some examples of incised decoration were also found.

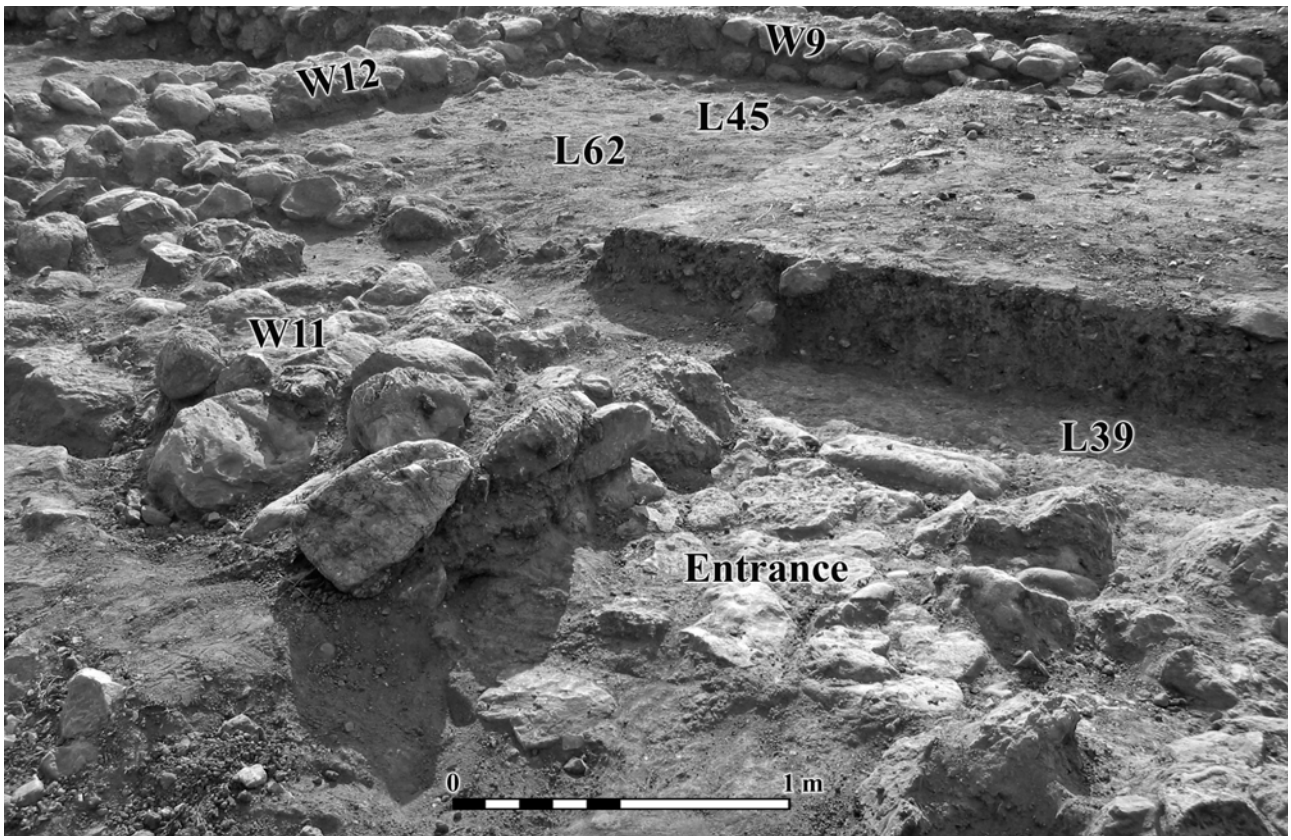

Figure 10. Stratum 2: Unit 2 during excavation, looking northeast. Note the building entrance.

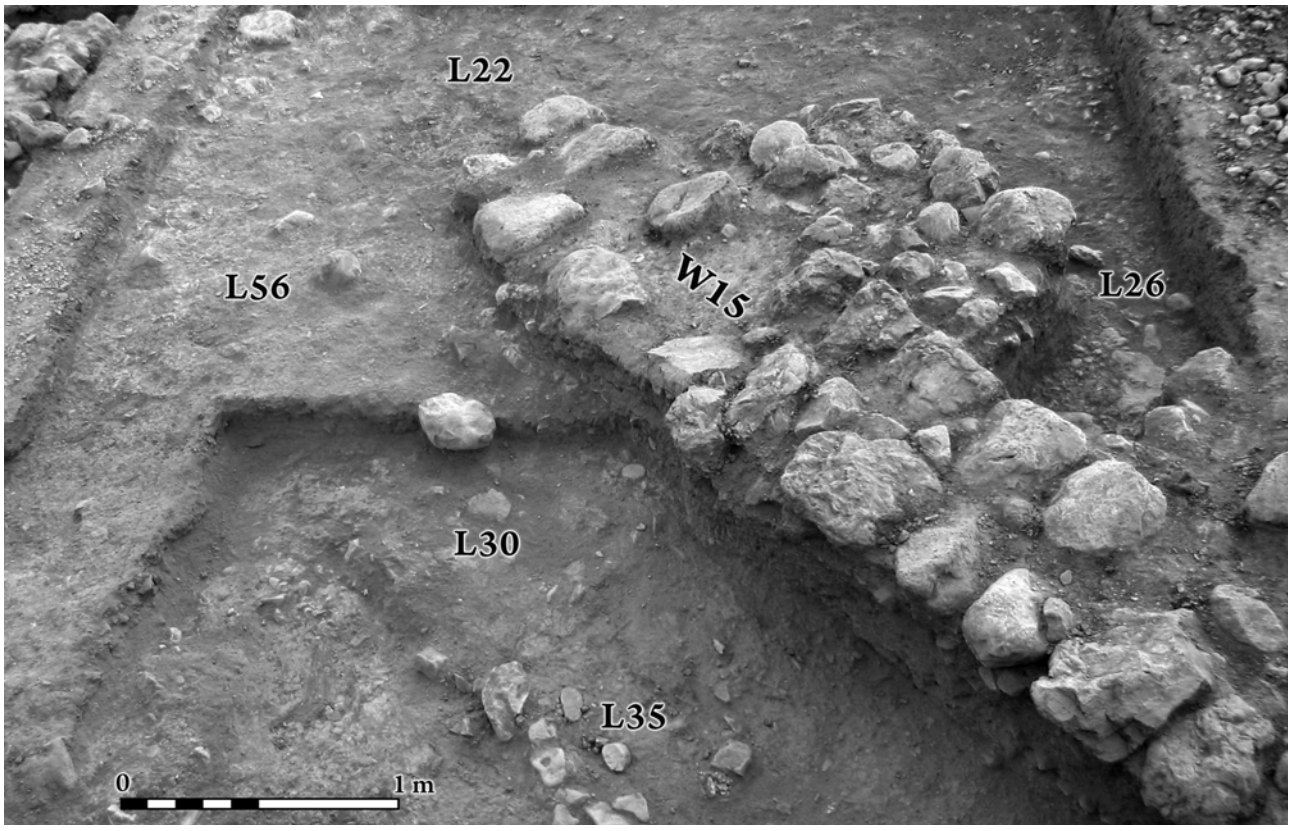

Figure 11. Wall (W15) from Stratum 1 above the paved levels of the courtyard in Stratum 2 (Loci 26 and 35).

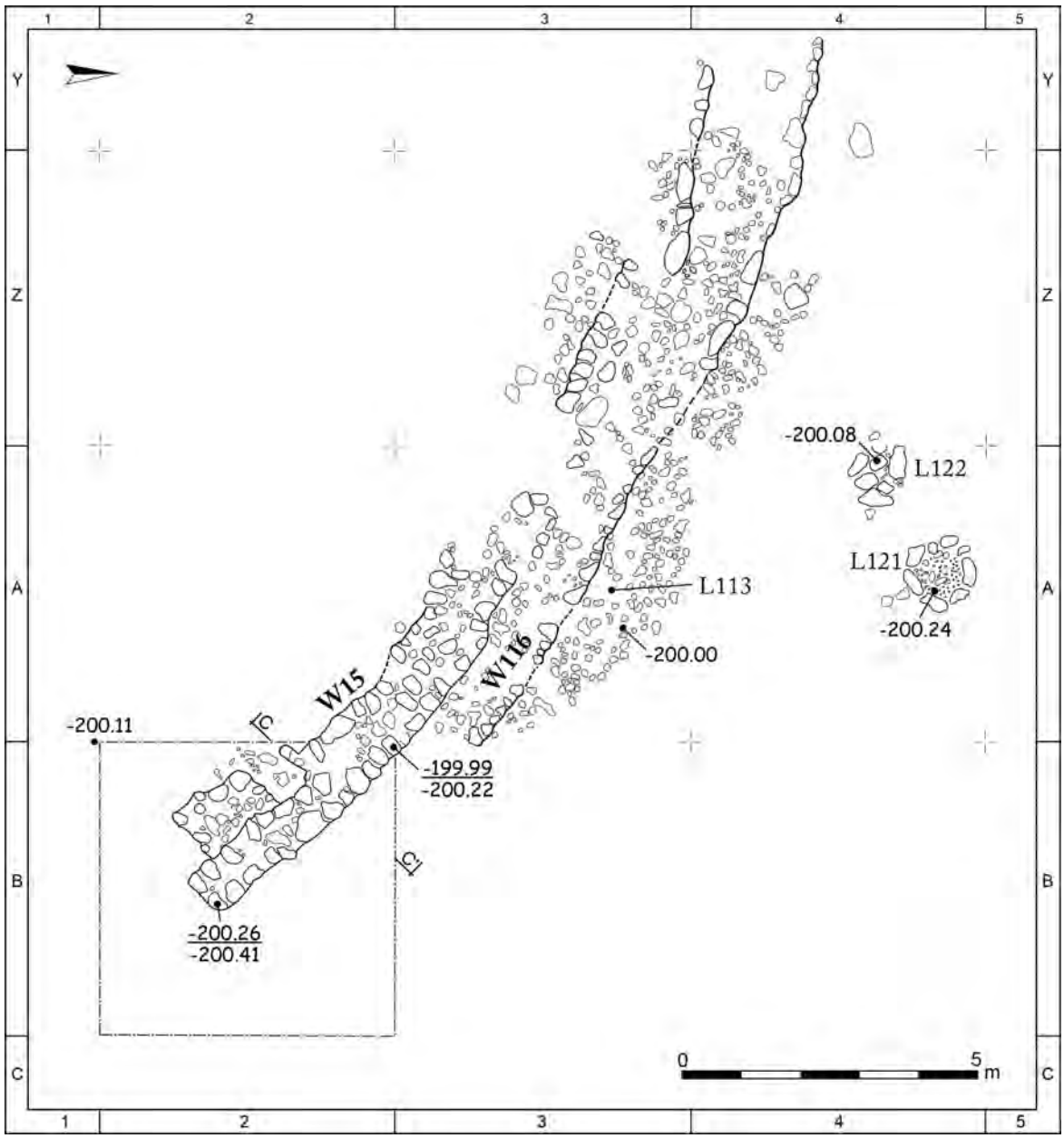

Figure 12. Plan of Stratum 1.

The ceramic assemblage of Stratum 2 (Figs. 13–17). The diagnostic ceramic assemblage of this stratum (n=365) comprises a broad range of bowls, basins, and cups of varying morphologies, depths and sizes. The most common type is the straight-sided bowl, which occurs in a variety of forms and sizes (rim diameter 7–25 cm): deep (Fig. 13:1–3, 5–6, 8); shallow (Fig. 13:4, 9) or with a slightly everted rim (Fig. 13:7, 10–12). Bowls with S-shaped profiles, mostly without decoration (e.g. Fig. 13:13–19) are common. They are considered a late type in the Chalcolithic repertoire, and have been found at such sites as Shoham (North) (van den Brink and Gophna 2005: fig. 6.13:1), and Modi'in (van den Brink, pers. comm.).

Hemispherical or round bowls, mostly undecorated and of varying sizes (7–18 cm in diameter), were also found (Fig. 14:1–7). While this form is common in EB sites, it is also found in many Chalcolithic assemblages. Another generic type, the deep and narrow cup-like bowl (Fig. 14:8–11), includes morphologically similar variations, some with everted rims decorated in various styles. Most

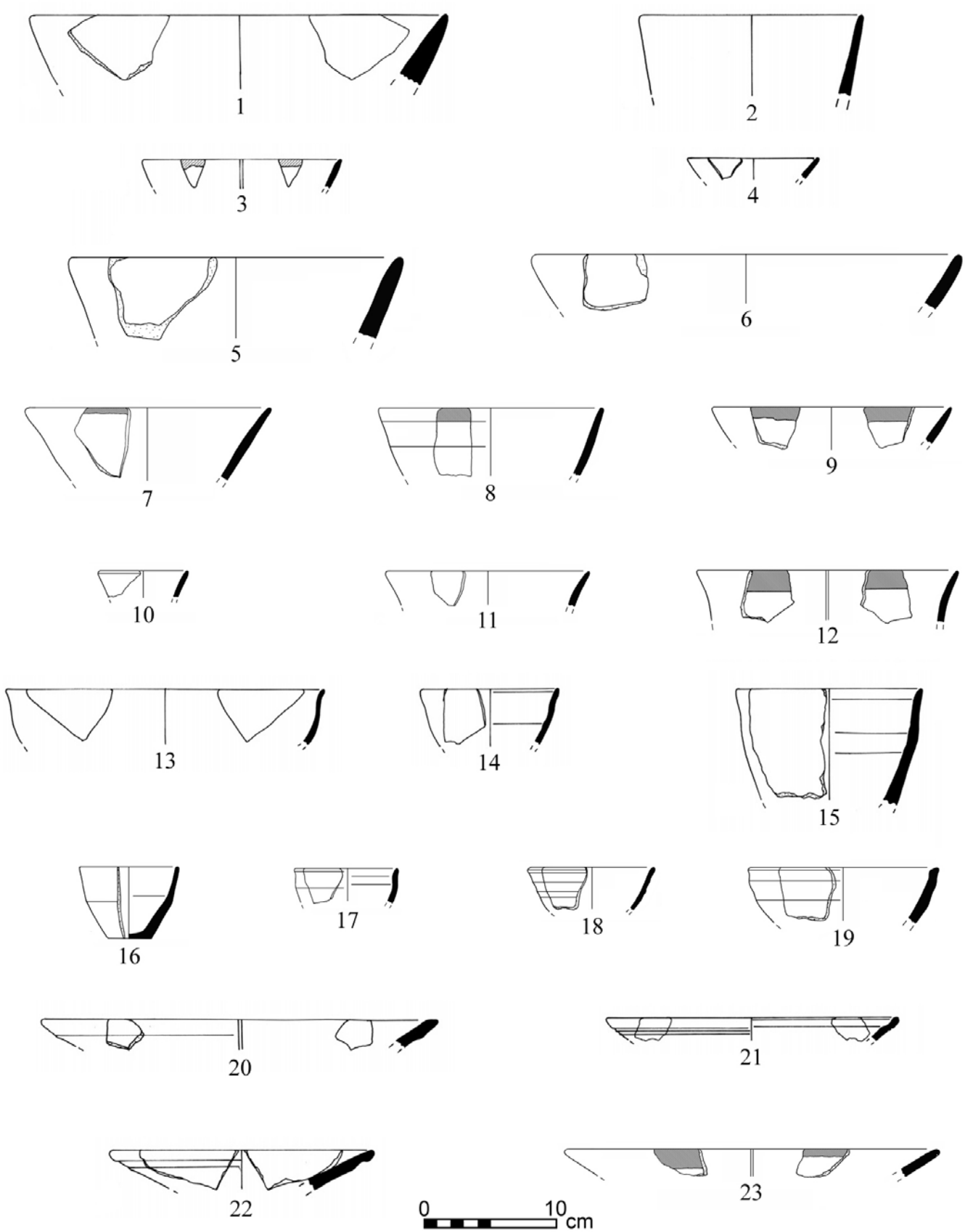

Figure 13. Stratum 2 – Bowls.

No.	Description	Parallels
1	Coarse reddish clay, red core, white inclusions.	Fazael (Porath 1985: fig. 3:7);Umm Qatafa (Perrot 1992: ill. 3:9)
2	Reddish clay, reddish core, white inclusions.	Ein Hilu II (Bar *et al.* 2008: fig. 23:9); Teleilat Ghassul, Late Chalcolithic (Lovell 2001: fig. 4.31:5)
3	Light colored clay, light-colored core, and red slip on outside and inside of the rim.	Teleilat Ghassul , Late Chalcolithic (Lovell 2001: fig. 4.31:3); En Gedi (Ussishkin 1980: fig. 8:8)
4	Light colored clay and core, good firing.	
5	Very light-brown clay and core, white and grey grits, medium firing.	Teleilat Ghassul , B (Lovell 2001: figs. 4.32:7, 4.35:4); Grar (Gilead and Goren 1995: fig. 4.1:12)
6	No data	
7	Very light-brown clay and core, white and grey grits, good firing.	Teleilat Ghassul , Late Chalcolithic (Lovell 2001: fig. 4.32:2); En Gedi (Ussishkin 1980: fig. 8:14)
8	Pale-brown clay and core, grey, white and red grits, medium firing. Red painting ('lipstic') on rim (outside).	
9	Very light-brown clay and core, grey, white, and red grits, medium firing. Red painting ('lipstic') on rim (outside and inside).	
10	Light-brown clay and core, white and grey grits, medium firing.	Teleilat Ghassul , C (Lovell 2001: fig. 4.33:2); Grar (Gilead and Goren 1995: fig. 4.3:10)
11	No data	
12	Light-brown clay and core, white and grey grits, medium firing. Dark-brown painting ('lipstic') on rim (outside and inside).	
13	Light colored clay, grey and white inclusions (quartz and calcite), excellently fired.	Shoham North (van den Brink and Gophna 2005: fig. 6.3:5); Umm Qatafa (Perrot 1992: ill. 3:3).
14	Coarse clay, light-colored core, white and grey inclusions (calcite and quartz).	Fazael (Porath 1985: fig. 3:3); Kissufim (Goren and Fabian 2002: fig. 4.1:4)
15	Coarse clay, light-colored core, white and grey inclusions (calcite and quartz), well fired.	Umm Qatafa (Perrot 1992: ill. 3:6); Teleilat Ghassul B (Lovell 2001: fig. 4.33:6)
16	Light-brown clay and core, white and brown grits. Good firing.	Shoham North (van den Brink and Gophna 2005: fig. 6.10:17)
17	Light-red clay and core, white, grey and black grits, high firing.	Shoham North (van den Brink and Gophna 2005: fig. 6.10:7)
18	Light-red clay and core, white, grey and black grits, high firing.	En Gedi (Ussishkin 1980: fig. 8:21)
19	Light-brown clay and core, white, black and grey grits, good firing.	
20	Coarse clay, white and grey inclusions (mostly quartz), poorly fired.	Fazael (Porath 1985: fig. 4:3); Shoham North (van den Brink and Gophna 2005: fig. 6.11:11); Gesher (Covello-Paran 1995: fig. 57:3)
21	Coarse light yellowish clay, white and grey inclusions (mostly quartz), remains of painting on the rim? Poorly fired.	
22	Coarse clay, white and grey inclusions, poorly fired.	
23	Reddish-brown clay and clay, white, grey and red grits, medium firing. Traces of red painting on rim (outside and inside).	En Gedi (Ussishkin 1980: fig. 8:12); Fazael (Porath 1985: fig. 3:3)

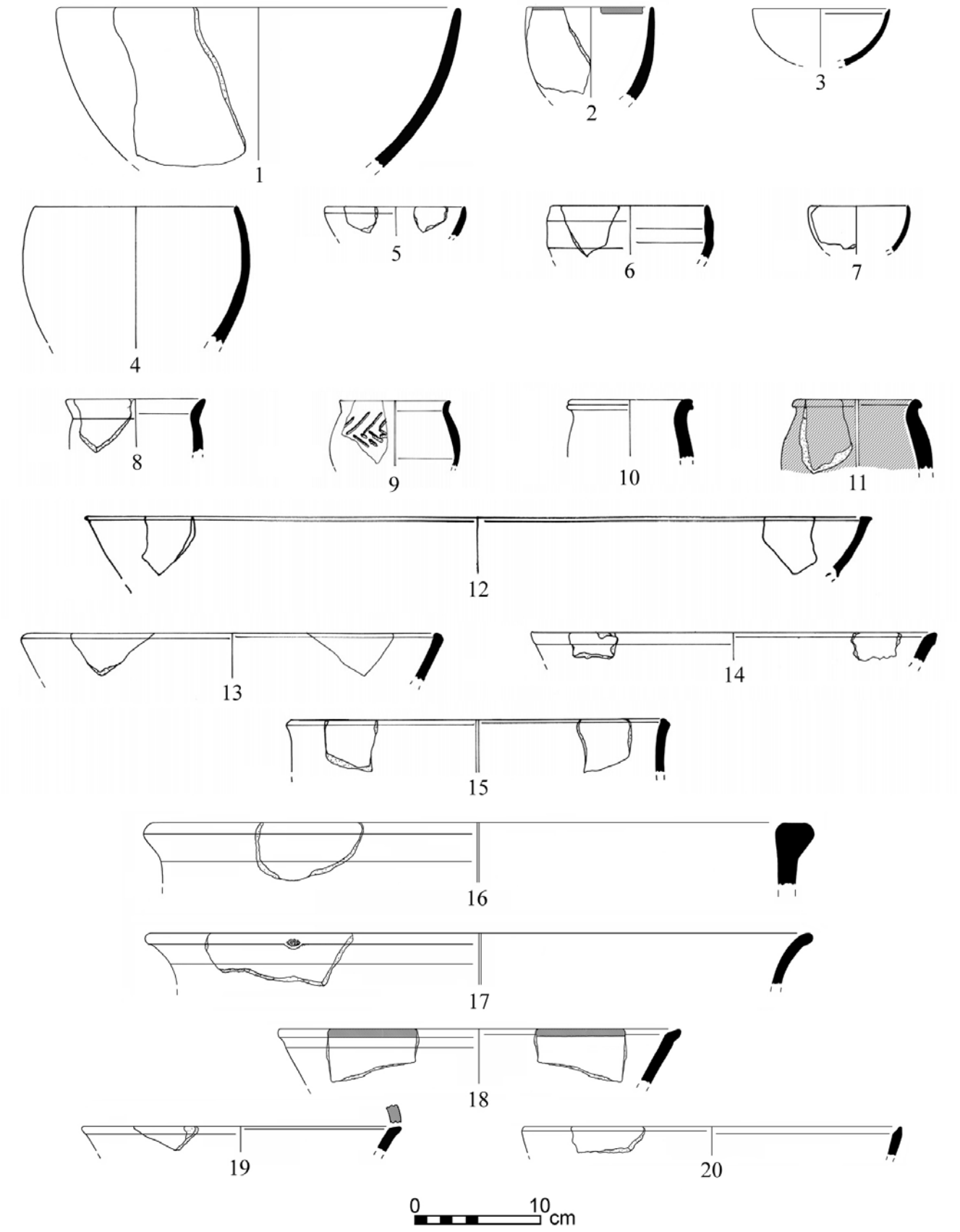

Figure 14. Stratum 2 – Bowls, basins and cups.

No.	Description	Parallels
1	Reddish-brown clay, pale-brown core, white, grey, black and red grits, good firing.	Teleilat Ghassul, Late Chalcolithic (Lovell 2001: figs. 4.32:5, 4.34:7); Fazael (Porath 1985: fig. 3:2)
2	Reddish-brown clay, pinkish core, white and grey grits, good firing.	
3	Reddish-brown clay, grey core, white and grey grits, good firing.	En Gedi (Ussishkin 1980: fig. 8:9); Ein Hilu II (Bar *et al.* 2008: fig. 23:13); 'En Esur, Late Chalcolithic (Yannai *et al.* 2006: fig. 4.18:18–19)
4	Coarse reddish clay, grey core, white, grey and black inclusions, poorly fired.	Teleilat Ghassul, Late Chalcolithic (Lovell 2001: fig. 4.32:4); En Gedi (Ussishkin 1980: fig. 8:10); 'En Esur, Late Chalcolithic (Yannai *et al.* 2006: fig. 4.30:17)
5	Reddish fabric, grey core, grey inclusions.	En Gedi (Ussishkin 1980: fig. 8:9); Ein Hilu II (Bar *et al.* 2008: fig. 23:13); 'En Esur, Late Chalcolithic (Yannai *et al.* 2006: fig. 4.18:18–19)
6	Reddish clay, grey core, grey inclusions, well fired.	
7	Reddish fabric, reddish core, white inclusions, well fired.	En Gedi (Ussishkin 1980: fig. 8:9-10); Ein Hilu II (Bar *et al.* 2008: fig. 23:13); 'En Esur, Late Chalcolithic (Yannai *et al.* 2006: fig. 4.18:18–19)
8	Coarse reddish clay, white and grey inclusions (quartz and calcite), poorly fired.	Fazael (Porath 1985: figs. 3:11, 4:13); 'En Esur, Late Chalcolithic (Yannai *et al.* 2006: fig. 4.30:8–9); Giv'at HaOranim (Scheftelowitz 2004: fig. 3.2:14)
9	Light-coloured clay, grey and white inclusions, well fired.	Fazael (Porath 1985: fig. 3:11)
10	Coarse light coloured clay, grey core, black and light grey inclusions, poorly fired.	Kissufim (Goren and Fabian 2002: fig. 4.1:9, 12)
11	Light-coloured clay, white and grey inclusions, red slip on the outside and inside, poorly fired.	
12	Light-coloured clay, grey core, white and grey inclusions, well fired.	Teleilat Ghassul, Late Chalcolithic (Lovell 2001: fig. 4.33:4); En Gedi (Ussishkin 1980: fig. 8:11); Fazael (Porath 1985: fig. 3:8); 'En Esur, Late Chalcolithic (Yannai *et al.* 2006: fig. 4.21:2)
13	Coarse reddish clay, grey core, large white and grey inclusions, poorly fired	Shoham North (van den Brink and Gophna 2005: fig. 6.13:1)
14	Coarse clay, white and grey inclusions (mostly quartz), poorly fired.	Ein Hilu II (Bar *et al.* 2008: fig. 23:23); 'En Esur, Late Chalcolithic (Yannai *et al.* 2006: fig. 4. 20:3); Nahal Qana (Gopher and Tzuk 1996: fig. 4.1:21)
15	Coarse clay, black core, black inclusions, poorly fired (charred fabric).	Beer Sheva (Contenson 1956: fig. 8:4)
16	Reddish clay, dark-grey core, light, grey and shiny grits, good firing.	Fazael (Porath 1985: fig. 3:12)
17	Pale-brown clay and core, dark-grey grits, medium-good firing. Thumb printing on top of rim.	Grar (Gilead and Goren 1995: fig. 4.4:2)
18	Very light-brown clay and core, white and grey grits, traces of red painting on rim (outside and inside), good firing.	En Gedi (Ussishkin 1980: fig. 8:22); Beer Sheva (Contenson 1956: fig. 8:14)
19	Pale-brown clay, reddish core, grey and shiny grits, medium firing. Traces of dark-red painting (on top of rim).	Teleilat Ghassul, Late Chalcolithic (Lovell 2001: fig. 4.35:6)
20	Light-brown clay and core, white and grey grits, good firing.	

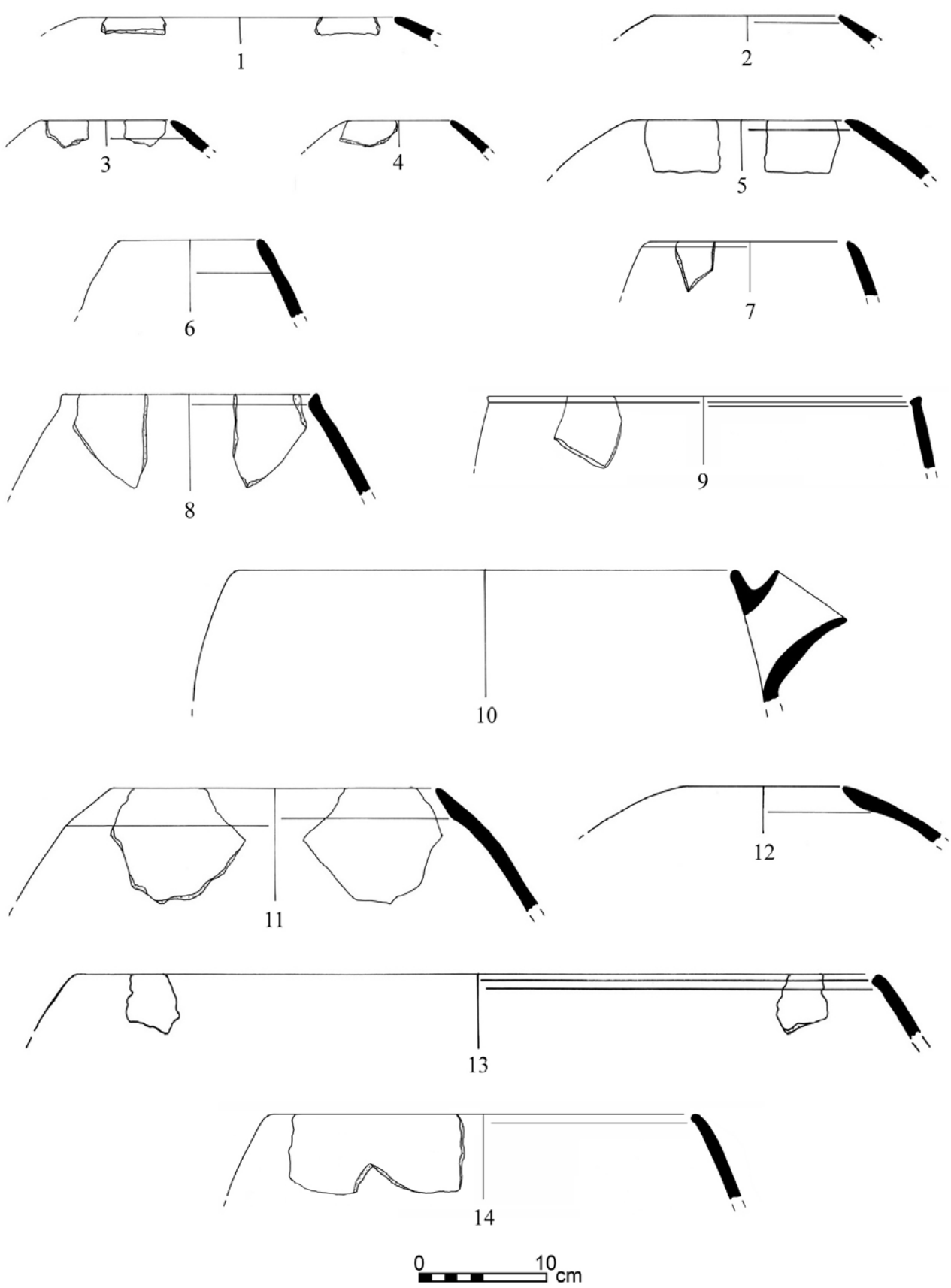

Figure 15. Stratum 2 – Holemouth jars.

No.	Description	Parallels
1	Coarse red clay, grey core, white, grey and black inclusions.	Teleilat Ghassul, Late Chalcolithic (Lovell 2001: figs. 4.36:8, 4.38:1, 4.39:1); Fazael (Porath 1985: fig. 4:6); Shoham North (van den Brink and Gophna 2005: figs. 6.18:12, 14)
2	Coarse clay, white and grey inclusions, poorly fired.	
3	Light-colored clay, grey core, white and grey inclusions (mostly calcite), remains of soot on the outer part of the vessel.	
4	Coarse red clay, red core, white and grey inclusions, poorly fired.	
5	Coarse red clay, grey core, white and grey inclusions (calcite and quartz).	
6	Coarse light coloured clay, light-coloured core, grey, white and black inclusions (mostly calcite and quartz), poorly fired, remains of soot on the outer part of the vessel.	Teleilat Ghassul, Late Chalcolithic (Lovell 2001: fig. 4.36:9); Ein Hilu II (Bar *et al.*2008: fig. 24:1); Gesher (Covello-Paran 1995: fig. 57:20)
7	Very light-brown clay and core, white, grey and dark-gray grits, low firing, remains of soot on the outer part of the vessel.	
8	Coarse red clay, red core, numerous large white and grey inclusions (mostly calcite).	Teleilat Ghassul, Late Chalcolithic (Lovell 2001: fig. 4.41:4); Ein Hilu II (Bar *et al.* 2008: fig. 25:8)
9	Coarse red clay, red core, white and grey inclusions (mostly calcite).	
10	Coarse light colored clay, grey core, grey and black inclusions (calcite and quartz), poorly fired.	Teleilat Ghassul A (Lovell 2001: fig. 4.38:7); Shoham North (van den Brink and Gophna 2005: fig. 6.7:1); Giv'at HaOranim (Scheftelowitz 2004: fig. 3.5:1)
11	Coarse clay, white chalky inclusions, poorly fired, remains of sort of the inside and outside of the vessel.	Teleilat Ghassul, Late Chalcolithic, A (Lovell 2001: figs. 4.37:6, 4.38:2); Fazael (Porath 1985: fig. 4:8)
12	Coarse red clay, grey core, black inclusions.	
13	Coarse light-colored clay, grey core, numerous grey and white inclusions (quartz and calcite), poorly fired.	
14	Brown clay, dark-brown core, large white and grey grits, soot traces outside, medium firing.	

Type	Stratum 2	Stratum 3	Total
Bowls and basins	175	15	**190**
Holemouth Jars	128	6	**134**
Jars	69	4	**73**
Lug handle	30	1	**31**
Ledge handle	9	0	**9**

Table 1. Counts of common vessel and handle types by stratum.

are unslipped, but a few specimens are slipped internally and externally (Fig. 14:11). Fairly common in this group are examples bearing incised herringbone decoration (e.g. Fig. 14:9). Another commonly encountered group of vessels includes wide deep basins and very large bowls 28–74 cm in diameter (Fig. 14:12–20) in a variety of shapes, with only rare instances of slipping or decoration. Platter bowls are less common (Fig. 13:20–23) and are rarely decorated.

The most common type of holemouth jar (Fig. 15) has a simple, gently tapering rim (Fig. 15:1–7), and varies in

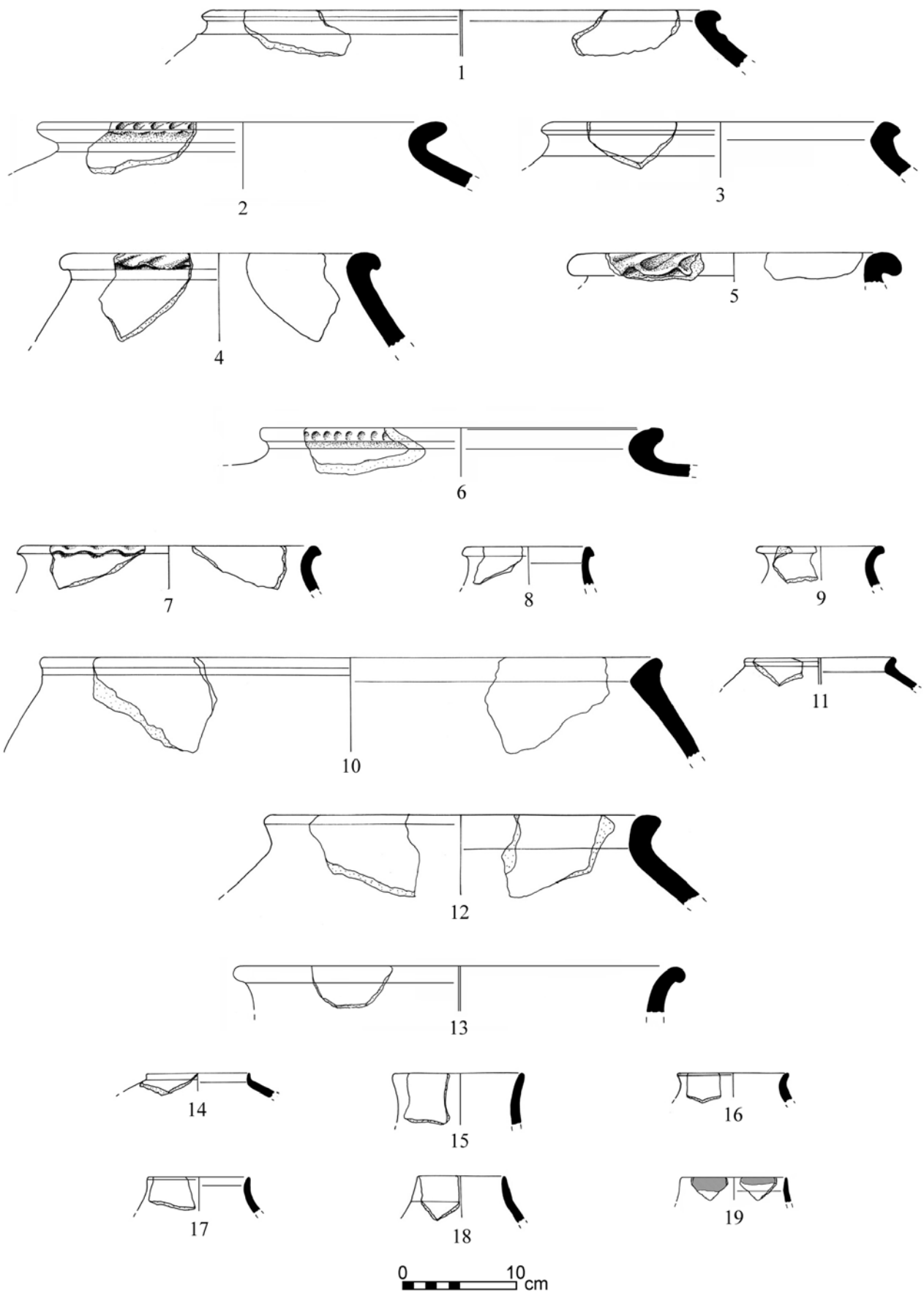

Figure 16. Stratum 2 – Jars.

No.	Description	Parallels
1	Coarse red clay, grey core, grey and black inclusions, poorly fired.	Grar (Gilead and Goren 1995: figs. 4.15:2–3, 4.16:1); Shoham North (van den Brink and Gophna 2005: fig. 6.21:4); 'En Esur, Late Chalcolithic (Yannai *et al.* 2006: fig. 4.30:1); Giv'at HaOranim (Scheftelowitz 2004: figs. 3.13:1, 3.15:4)
2	Dark-grey clay, black core, grey, black and white grits, good firing, soot traces (outside). Thumb-print decoration on rim (outside).	
3	Light-red clay, vary light brown core, many white, grey and black grits, good firing.	
4	Coarse clay, light-coloured core, grey inclusions, poorly fired	
5	Coarse pale yellow clay, light-coloured core, white and grey inclusions (mostly calcite), poorly fired.	
6	Light-brown clay and core, grey and black grits, medium firing. Thumb-print decoration on rim (outside).	Grar (Gilead and Goren 1995: fig. 4.15:3)
7	Light-coloured clay, light-coloured core, white and grey inclusions.	Shoham North (van den Brink and Gophna 2005: fig. 6.7:4)
8	Light-coloured clay and core, white and grey inclusions (quartz and calcite).	Shoham North (van den Brink and Gophna 2005: fig. 6.28:4); Beer Sheva (Contenson 1956: fig. 1:3)
9	Reddish-brown clay, light-coloured core, black-and-white inclusions (quartz and calcite).	En Gedi (Ussishkin 1980: fig. 10:5); Nahal Qana (Gopher and Tzuk 1996: fig. 4.4:11); Fazael (Porath 1985: fig. 5:3)
10	Coarse red clay, grey core, white and grey inclusions.	Teleilat Ghassul, Late Chalcolithic (Lovell 2001: fig. 4.39:5); 'En Esur, Late Chalcolithic (Yannai *et al.* 2006: fig. 4.23:8)
11	Coarse red clay, red core, red and grey inclusions, poorly fired.	Shoham North (van den Brink and Gophna 2005: fig. 6.21:5); Beer Sheva (Contenson 1956: figs. 1:7–8, 4:15)
12	Coarse red clay, red core, grey inclusions, poorly fired.	'En Esur, Late Chalcolithic (Yannai *et al.* 2006: fig. 4.23:9, 12–13); Giv'at HaOranim (Scheftelowitz 2004: fig. 3.12:11)
13	Reddish clay and core, white and grey grits, medium firing.	En Gedi (Ussishkin 1980: fig. 10:5)
14	Light-coloured clay and core, white inclusions.	Fazael (Porath 1985: fig. 4:9); Shoham North (van den Brink and Gophna 2005: fig. 6.21:12); Beer Sheva (Contenson 1956: fig. 3:6)
15	Coarse light-coloured clay, white and grey inclusions (calcite and quartz), poorly fired.	Teleilat Ghassul A (Lovell 2001: fig. 4.40:6); Fazael (Porath 1985: fig. 5:6)
16	Light-coloured clay and core, white and grey inclusions.	En Gedi (Ussishkin 1980: fig. 10:8); Ein Hilu II (Bar *et al.* 2008: fig. 25:6); Teleilat Ghassul B (Lovell 2001: fig. 4.41:3)
17	Reddish clay and core, white, grey and dark-grey grits, medium firing.	
18	Coarse red clay, grey core, white and grey inclusions (mainly calcite).	Shoham North (van den Brink and Gophna 2005: fig. 6.30:5); Ein Hilu II (Bar *et al.* 2008: fig. 25:6
19	Reddish clay and core, white and grey grits, medium firing, traces of red painting on rim (outside and inside).	En Gedi (Ussishkin 1980: fig. 10:10)

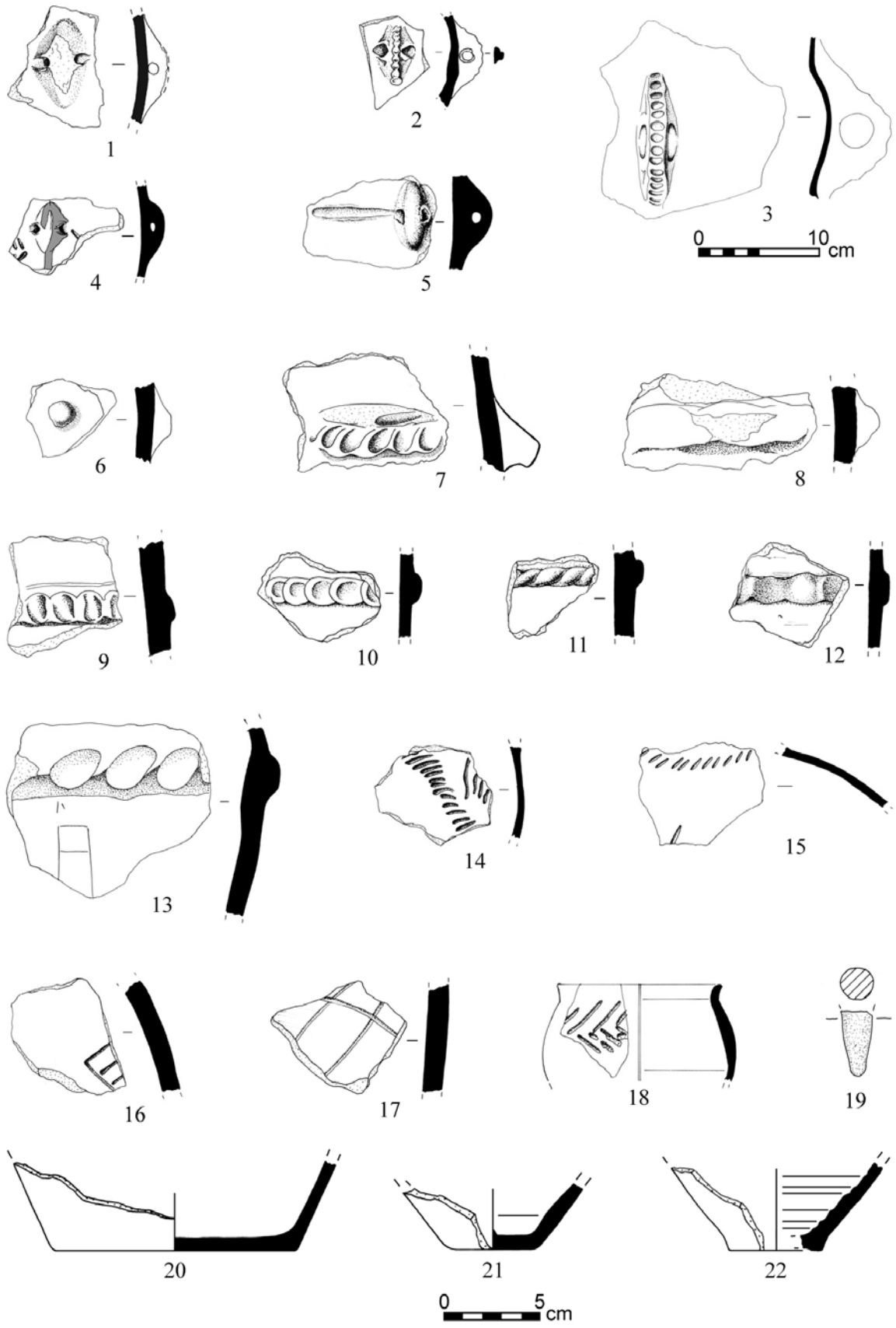

Figure 17. Stratum 2 – Varia.

No.	Description	Parallels
1	Coarse light-colored clay, red core, white and grey inclusions (quartz and calcite).	Shoham North (van den Brink and Gophna 2005: fig. 6.31:2–6); Grar (Gilead and Goren 1995: fig. 4.19:15); Giv'at HaOranim (Scheftelowitz 2004: figs. 3.13:1, 3.12:11); Teleilat Ghassul, Late Chalcolithic (Lovell 2001: fig. 4.43:5); En Gedi (Ussishkin 1980: fig. 10:14-20)
2	Red clay, grey core, black inclusions.	
3	Coarse light-colored clay, light-colored core, numerous white and grey inclusions (mostly calcite), poorly fired.	
4	Light-brown clay and core, white, grey and black grits, medium firing. Soot traces (outside and inside). Traces of reddish painting outside. 'Herring-bone' pre-firing incision outside.	
5	Reddish-brown clay and core, white and grey grits, soot traces (?) outside, low firing.	
6	Coarse red clay, light-colored core, white and grey inclusions (mostly calcite), poorly fired.	
7	Grey clay and core, white and grey inclusions (calcite and quartz), poorly fired.	Shoham North (van den Brink and Gophna 2005: fig. 6.32:5)
8	Coarse very light-colored clay, light-colored core, white and grey inclusions (calcite), poorly fired.	'En Esur, Late Chalcolithic (Yannai *et al.* 2006: fig. 4.27:5); Giv'at HaOranim (Scheftelowitz 2004: fig. 3.18:6–7)
9	Coarse yellow clay, red core, black, white and grey inclusions (especially large - mostly calcite), poorly fired.	Teleilat Ghassul, Late Chalcolithic (Lee 1973: D31); Fazael (Porath 1985: fig. 5:7)
10	Very light-brown clay and core, grey and white grits, good firing. Thumb-print decoration (outside).	
11	Reddish-brown clay, very light-brown core, white, grey and dark-grey grits, good firing. Rope decoration (outside).	
12	Very light-brown clay and core, white, grey and dark-grey grits, good firing. Thumb-print decoration (outside).	
13	Coarse red clay, grey core, white and grey inclusions (quartz and calcite), poorly fired.	
14	Light brown clay, brown core, white and grey inclusions (quartz and calcite), well fired, slip remains?	Shoham North (van den Brink and Gophna 2005: fig. 6.3:7)
15	Yellow clay and core, grey and white inclusions (mostly calcite).	Shoham North (van den Brink and Gophna 2005: fig. 6.3:5)
16	Coarse red clay, black core, black glittering inclusions.	Shoham North (van den Brink and Gophna 2005: fig. 6.33:5–7)
17	Light brown clay, brown core, white and grey inclusions, well fired.	Shoham North (van den Brink and Gophna 2005: fig. 6.34:8)
18	Light-colored clay, grey and white inclusions, well fired	Shoham North (van den Brink and Gophna 2005: fig. 6.6)
19	Reddish clay and core, grey grits, medium firing.	Teleilat Ghassul, Late Chalcolithic (Lovell 2001: fig. 4.42:3); En Gedi (Ussishkin 1980: fig. 7:23-28)
20	Reddish clay, light-brown core, grey and black grits, good firing, soot traces outside.	
21	Light-red clay, vey light-brown core, grey, dark-grey and shiny grits, low firing.	
22	Light-brown clay and core, white and grey grits, good firing.	

size between 10 and 30 cm in diameter. Other rim types are bevelled and slightly everted (Fig. 15:8, 9), inverted (Fig. 15:13, 14), spouted (Fig. 15:10) and thickened (Fig. 15:11, 12). In no instance is there evidence of a holemouth jar having been slipped or otherwise decorated.

Jars (Fig. 16), which vary in size, are characterized by their out-folded rims and lack of slips (Fig. 16:1–7, 12). Very large examples have rim diameters ranging from 28–55 cm, often with wavy 'pie-crust' decorations on their rims (Fig. 16:2, 4, 5, 7). Small jars (sometimes called amphoriskoi; *e.g.*, Fig. 16:8, 9) are similar in morphologies, but have average rim diameters of about 12 cm. There is also a jar type with a short upright rim (Fig. 16:14), another with an elongated, slightly everted neck (Fig. 16:13), and several examples with slightly everted rims (Fig. 16:15–19).

The remaining pottery objects from Stratum 2 are examples of handles and plastic ornamentation (Fig. 17). The most common handle type is the circularly pierced lug, which occurs in two size ranges, 5–8 cm long (Fig. 17:1, 2, 4, 5) and 15–22 cm long (Fig. 17:3). In almost half the examples these lugs are additionally impressed at regular intervals in a style similar to that used to create rope-like ornamentation. The flat ledge (Fig. 17:7, 8), similarly indented, is less common in this assemblage. The

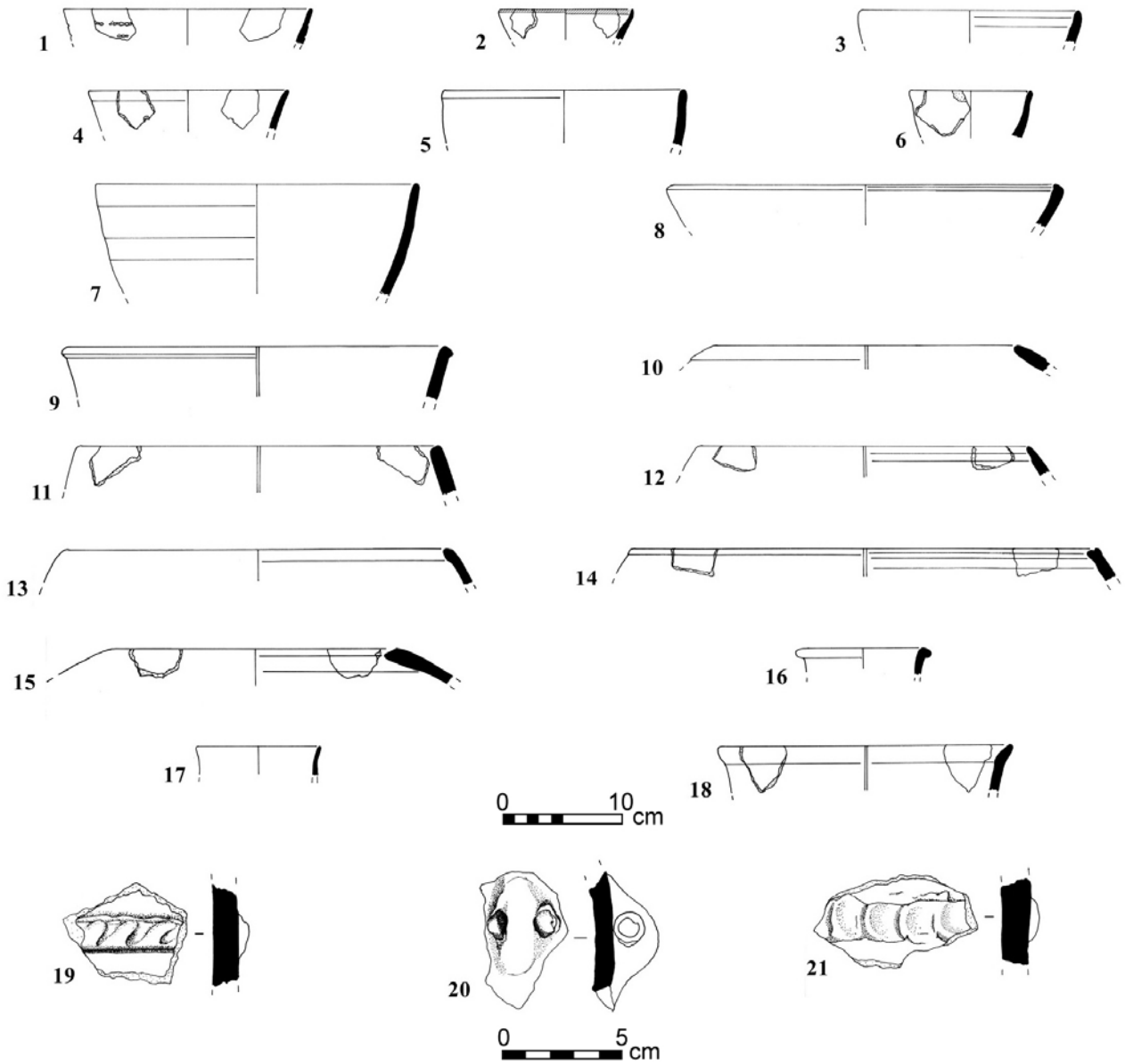

Figure 18. Stratum 3 – Pottery assemblage.

No.	Description	Parallels
1	Red clay and core, grey inclusions (mostly calcite).	'En Esur, Late Chalcolithic (Yannai *et al.* 2006: fig. 4.28:19); En Gedi (Ussishkin 1980: fig. 8:6)
2	Red clay and core, grey and white inclusions, slip on inside and outside of rim.	Teleilat Ghassul, Late Chalcolithic (Lovell 2001: fig. 4.32:3)
3	Coarse red clay, light-coloured core, grey inclusions (mostly calcite), poorly fired.	En Gedi (Ussishkin 1980: fig. 8:9); Ein Hilu II (Bar *et al.* 2008: fig. 23:13)
4	Red clay and core, white and grey inclusions (calcite), remains of a slip on the outside?	Teleilat Ghassul C (Lovell 2001: fig. 4.33:2); 'En Esur, Late Chalcolithic (Yannai *et al.* 2006: fig. 4.28:7); Giv'at HaOranim (Scheftelowitz 2004: figs. 3.3:7)
5	Coarse red clay, grey core, numerous white and grey inclusions, poorly fired.	Shoham North (van den Brink and Gophna 2005: fig. 6.13:5)
6	Red clay and core, grey inclusions.	Fazael (Porath 1985: fig. 3:3); Kissufim (Goren and Fabian 2002: fig. 4.1:4)
7	Coarse light-coloured clay, light-coloured core, numerous white and grey inclusions (quartz and calcite), poorly fired.	Teleilat Ghassul A (Lovell 2001: fig. 4.31:6)
8	Coarse red clay, light-coloured core, numerous white and grey inclusions (quartz and calcite), poorly fired.	Shoham North (van den Brink and Gophna 2005: fig. 6.13:1)
9	Coarse red clay, light-coloured core, numerous grey inclusions (quartz and calcite), poorly fired.	Teleilat Ghassul + A (Lovell 2001: fig. 4.32:9); Ein Hilu II (Bar *et al.* 2008: fig. 23:22)
10	Black core, grey inclusions, burnt fabric.	Teleilat Ghassul, Late Chalcolithic, A (Lovell 2001: figs. 4.36:8, 4:38:1, 4:39:1); Fazael (Porath 1985: fig. 4:6)
11	Coarse red clay, red core, white and grey inclusions, poorly fired.	'En Esur, Late Chalcolithic (Yannai *et al.* 2006: fig. 4.24:9, 16); Nahal Qana (Gopher and Tzuk 1996: fig. 4.6:5)
12	Coarse red clay, grey core, white and grey inclusions.	Umm Qatafa (Perrot 1992: ill. 3:14)
13	Red clay, light-coloured core, grey inclusions, poorly fired.	
14	Coarse red clay, grey core, white and grey inclusions, remains of soot on the outer part of the vessel.	
15	Coarse red clay, red core, white and grey inclusions, poorly fired.	Ein Hilu II (Bar *et al.* 2008: fig. 24:6)
16	Light-coloured clay and core, numerous white and grey inclusions, poorly fired.	Shoham North (van den Brink and Gophna 2005: fig. 6.28:4); Beer Sheva (Contenson 1956: fig. 1:3)
17	Light-coloured clay in core, grey inclusions.	En Gedi (Ussishkin 1980: fig. 10:8); Ein Hilu II (Bar *et al.* 2008: fig. 25:6);
18	Red clay and core, white and grey inclusions, poorly fired.	Teleilat Ghassul A (Lovell 2001: fig. 4.40:6)
19	Light-coloured clay, red core, white and grey inclusions, poorly fired.	
20	Red clay, light-coloured core, numerous white and grey inclusions, poorly fired.	
21	Red clay, grey core, white and grey inclusions, remains of soot, poorly fired.	

ledge handles from Stratum 2 tend to be much smaller than most developed EB I types. They are not very common in Chalcolithic assemblages, but do appear in sites such as Shoham (North), 'En Esur, Teleilat Ghassul and Giv'at HaOranim (van den Brink and Gophna 2005: fig. 6.32:5; Yannai et al. 2006: fig. 4.27:5; Lovell 2001: fig. 4.43:7; Scheftelowitz 2004: fig. 3.18:6–7). These handles also resemble some examples from early phases of the EB I in the south, such as Palmahim Quarry and Afridar Area G (Braun pers. comm.). Knobs (Fig. 17:6) are uncommon in this assemblage; they tend to be circular and very small, not more than 3 cm in diameter.

General features of the assemblage include only rare instances (0.01%) of decoration, most of which are incised or ribbed examples, particularly of herringbone and floral motifs (Fig. 17:14–15, 18). Also noteworthy are geometric 'potters' marks' (Fig. 17:16–17). Crude rope-like ornamentation (Fig. 17:9–13) is mostly made by the potter depressing a raised strip on the body of a vessel at regular intervals. Bases of the assemblage are all simple flat bases (Fig. 17:20–22). A base of a cornet was also noted (Fig. 17:19).

Stratum 3 ceramic assemblage (Fig. 18)

Finds from Stratum 3 are meager, with only a few indicative items (n=32). The few identifiable types are:

Straight-sided bowls appear in a variety of forms and sizes (diameter 8–22 cm). Some are deep (Fig. 18:1, 5, 7), while others are shallower (Fig. 18:2) with slightly inverted (Fig. 18:3) or everted rims. The red stripe on the rim (Fig. 18:2) occurs less often than in Stratum 2. Undecorated bowls with S-shaped profiles also occur (Fig. 18:6), but they are uncommon. There are several deep basins with everted (Fig. 18:9) or inverted rims (Fig. 18:8). These are widespread in Stratum 2. The hemispherical bowl and the cup that are common in Stratum 2 do not appear here.

The six holemouth jar rims are of different types. These include holemouth jars with a plain or cut rim (Fig. 18:10–12); a cut and thickened inverted rim (Fig. 18:13); a beveled and inverted thickened rim (Fig. 18:15) and a holemouth jar with a gutter rim (Fig. 18:14).

Noteworthy among the jars is one with an everted diagonal rim (Fig. 18:18) and two amphoriskoi, one with a slightly everted neck (Fig. 18:17) and the other with a folded-out rim (Fig. 18:16). The latter two types were also found in Stratum 2. The large jars from Stratum 2 do not appear in the Stratum 3 assemblage. A lug handle and two plastic rope ornamentations were also found in Stratum 3 (Fig. 18:19–21).

Discussion

Despite the small sample from Stratum 3, it is possible to note a general typological similarity between the assemblages of Strata 2 and 3. The absence of large jars, cups and hemispherical bowls, which are characteristic of Stratum 2, is of particular interest, although this could be a function of the small size of the Stratum 3 assemblage. Notably absent in the entire assemblage are churns.

While there are some similarities between the pottery of Fazael 2 and that of other Ghassulian Chalcolithic assemblages from the Jordan Valley (particularly Teleilat Ghassul Strata I–IV, Ein Hilu, and En Gedi – see parallels in figure descriptions), there are also some differences. For example, at Fazael 2 there are relatively large numbers of hemispherical bowls and large jars decorated with wavy rims, as well as very low frequencies of slips and plastic ornamentation. This could be interpreted as evidence of a chronological differentiation which, when considered with corollary radiocarbon analysis (see below) and other evidence, seems to point to a later date for Fazael 2, especially its later, Stratum 2, occupation. Notably, some handles and decorations found at Fazael 2 and Shoham (North) are almost identical (e.g. van den Brink and Gophna 2005: figs. 6.3:7; 6.32:5; 6.33:5–7), with the latter site deemed to be late within the Ghassulian Chalcolithic sequence.

A comparison with the latest phases of Teleilat Ghassul, with its latest radiometric dates in the first two centuries of the 4th millennium BC (Bourke *et al.* 2001), shows interesting common traits, such as the appearance of similar spouted holemouth jars and ledge handles (Lovell 2001:34). On the other hand, this assemblage exhibits cornets and a wide variety of slips that are almost absent in Fazael 2. This is in agreement with other researches of contemporary eastern Jordan Valley Ghassulian sites (such as Abu Hamid and Pella) showing intra-regional diversity even within nearby settlements (Lovell 2001:47).

THE FLINT ASSEMBLAGE OF THE 2007 SEASON (H.W.)

Finds and analyses

During the excavation conducted in 2007, a total of 2,297 flint artifacts were found (Table 2; Figs. 19–21), of which 1,963 derive from Stratum 2. The finds include tools, cores, primary flakes, flakes, blades, waste products, and a few hammer-stones. In the tool group notches dominate, followed by sickle elements (in this study the term 'sickle elements' includes all kinds of reaping tools, while the term 'sickle blades' includes only those tools which were segmented from longer blades), and diverse handicraft tools. Bifacial tools, common in many Ghassulian assemblages, are absent. The composition of the assemblage suggests the local production of *ad hoc* tools. Preliminary observations of the sickle elements show that most of these are produced by a different technology (see below).

The flint sources were not located, but medium to poor quality flint is used for most artifacts, except those produced from Canaanean blades, such as the sickle elements and a few tools. All these are from light brown, fine-grained flint.

Apart from two sickle blades from Stratum 3, all sickle elements originate from Stratum 2. Among these, the common abrupt backed and truncated Chalcolithic type is present, but the Canaanean type, widely discussed and summarized by Rosen (1997:44–60), is dominant. The initial analysis of the sickle assemblage points to the presence of a new and different knapping technology, producing elongated blades alongside traditional modes of shaping the segments by abrupt backing (Bar and Winter 2010). In order to verify this observation all sickle elements from both 2007 and 2008 seasons (Tables 3–4) were analyzed.

Altogether 58 sickle elements are present in the assemblages of the two seasons. Forty-three (74.1%) are produced from blanks flaked by the Canaanean technology, usually attributed to the EB (Rosen 1983:20; 1997:46, 59–60). The cross-section of these pieces is either trapezoidal or nearly an isosceles triangle; most of them from the above-mentioned high quality flint, common in assemblages of the EB I (Rosen 1997:106). Nine sickle blades (15.5%) are typically Chalcolithic, with abrupt backing and truncations (Rosen 1997:44, 46, 59–60). The proportion of broken sickle blades is quite high (29.3%): six of these (10.4%) could not be assigned to either group while others, according to their cross-sections and similar flint quality, could be attributed to the Canaanean group. An analysis of broken sickle segment lengths could not be carried out. The maximum widths (Table 3) of the measured Chalcolithic type sickle blades fall within the range of 8–15 mm, while Canaanean type sickle elements are within the range of 8–29 mm. Of these, 50% are within the 16–29 mm range; this range of dimensions differs clearly from analogous Chalcolithic types. The widths of Canaanean types conform to those summarized by Rosen for EB sites (1989:208).

Additional features to be considered are backing and truncations. All Chalcolithic types (described in Rosen 1997:48) have abrupt backing and at least one truncation (Fig. 20:1–2). Backing is also applied to several segments produced from Canaanean blanks (Fig. 20:4, 6–7). Six of these (14% of the Canaanean pieces) have backing and four (9.3%) have at least one truncation. All these are made from the same light brown, fine-grained flint.

In order to verify the results and eliminate any possible admixture of artifacts from undated locations and levels, all 53 sickles found in Stratum 2 only were subjected to a re-analysis. Forty (75.4%) of these were produced by the Canaanean technology, eight (15.1%) were made in the Chalcolithic tradition and five (9.4%) could not be defined. These figures confirm the finds of the first analysis.

A single Canaanean blade core, on tabular flint, with a single striking platform (Fig. 21) was found on the surface in the vicinity of the excavation. Its shape and the fine-grained, light brown raw material are typical of the Canaanean industry. Tabular flint seems relatively rare for the production of Canaanean blade cores in the southern Levant (Rosen 1997:46), but it is reported from Titriş Höyük in Turkey (Hartenberger *et al.* 2000:55). At both Fazael and Titriş Höyük the edge of the core, intended for the single striking platform, was carefully prepared by the removal of flakes across both its width and length. The end opposite the striking platform was carefully prepared by detaching flakes from both cortex-covered surfaces in order to create a sharp ridge. This kind of preparation has also been observed at Har Haruvim, in the Manasseh Hills (Rosen 1997: figs. 3.5:1; 3.6:1, 2; Shimelmitz *et al.* 2000:7–9, figs. 3a, 4; Shimelmitz 2009:139, figs. 2:1; 4: 2).

The flint assemblage	Stratum 2		Stratum 3	
	n	%	n	%
Waste				
Core	52	2.65	1	0.55
Primary flake	200	10.20	16	8.80
C.T.E.	3	0.15		
Chunk	315	16.02	39	21.42
Chip	715	36.43	60	32.97
Subtotal	**1,285**	**65.50**	**116**	**63.74**
Debitage				
Flake	433	22.10	38	20.80
Blade	48	2.45	4	2.20
Bladelet	42	2.15	6	3.29
Subtotal	**523**	**26.70**	**48**	**26.39**
Tools				
Hammer-stone	2	0.10		
Burin	5	0.26		
Notch	40	2.04	1	0.55
Denticulate	2	0.10	1	0.55
Borer	11	0.57	3	1.65
Awl	3	0.15		
End scraper	7	0.35	3	1.65
Side scraper	5	0.26		
Rounded scraper	1	0.05		
Transversal scraper	1	0.05	1	0.55
Fan scraper	2	0.10		
Micro end scraper	1	0.05		
Sickle segment	21	1.07	2	1.09
Reaping knife			1	0.55
Retouched (or backed) flake	16	0.82		
Retouched (or backed) blade	12	0.61	2	1.09
Retouched fragment	2	0.10		
Backed knife	7	0.35		
Microliths	3	0.15	2	1.09
Truncation	2	0.10	1	0.55
Ad hoc, multiple, trimmed	12	0.61	1	0.55
Subtotal	**155**	**7.70**	**18**	**9.87**
Total	**1,963**	**100.00**	**182**	**100.00**

Table 2. The flint assemblage of the 2007 season. Data presented in this table are based only on clearly defined loci. Artifacts from disturbed levels or loci of uncertain stratigraphic origin are excluded.

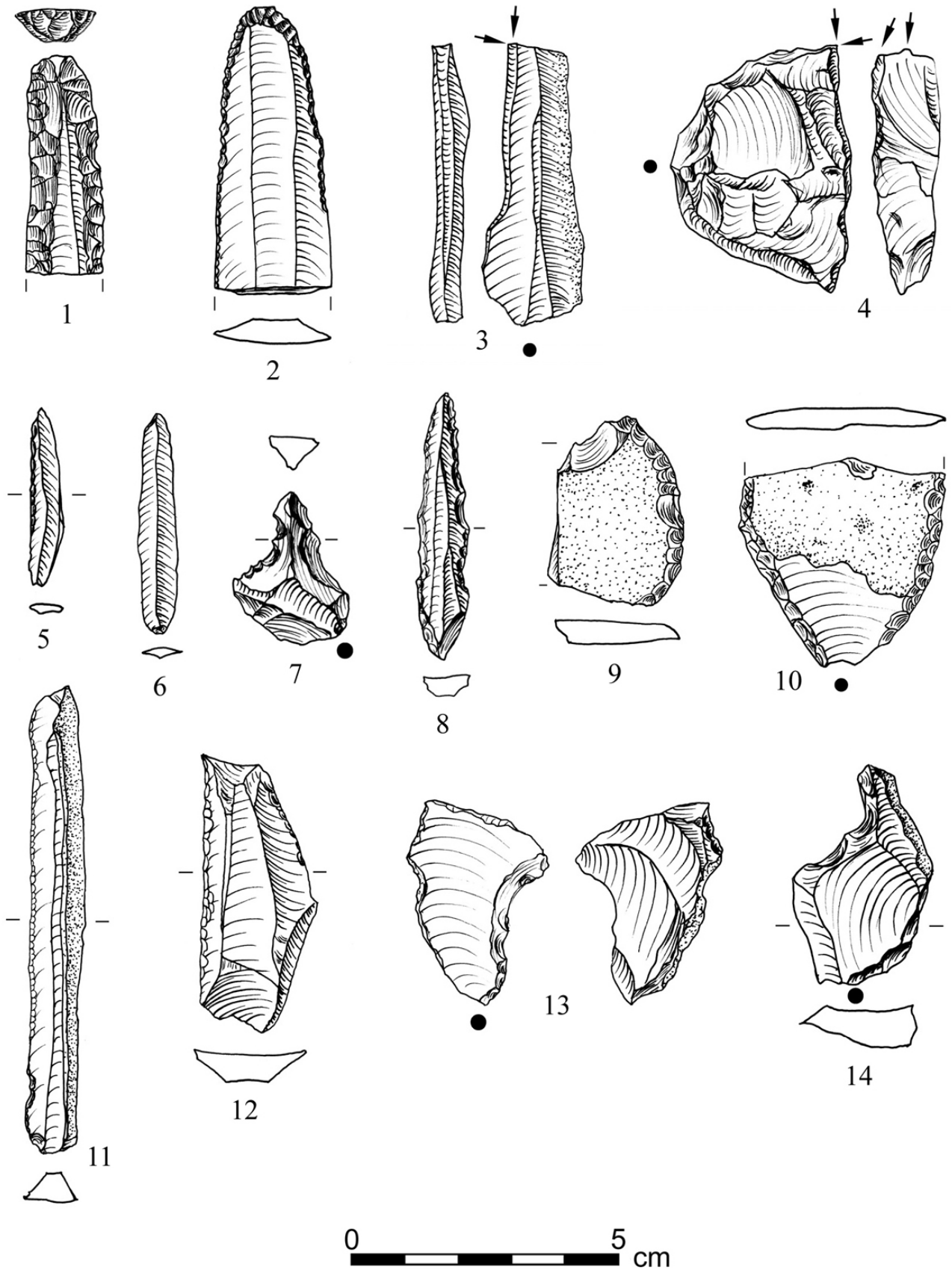

Figure 19. Flint tools: 1) End scraper; 2) end scraper on Canaanean blade; 3–4) burins; 5–6) bladelets; 7–8) borers; 9–10) tabular scrapers fragments; 11–12) retouched blades; 13–14) notches.

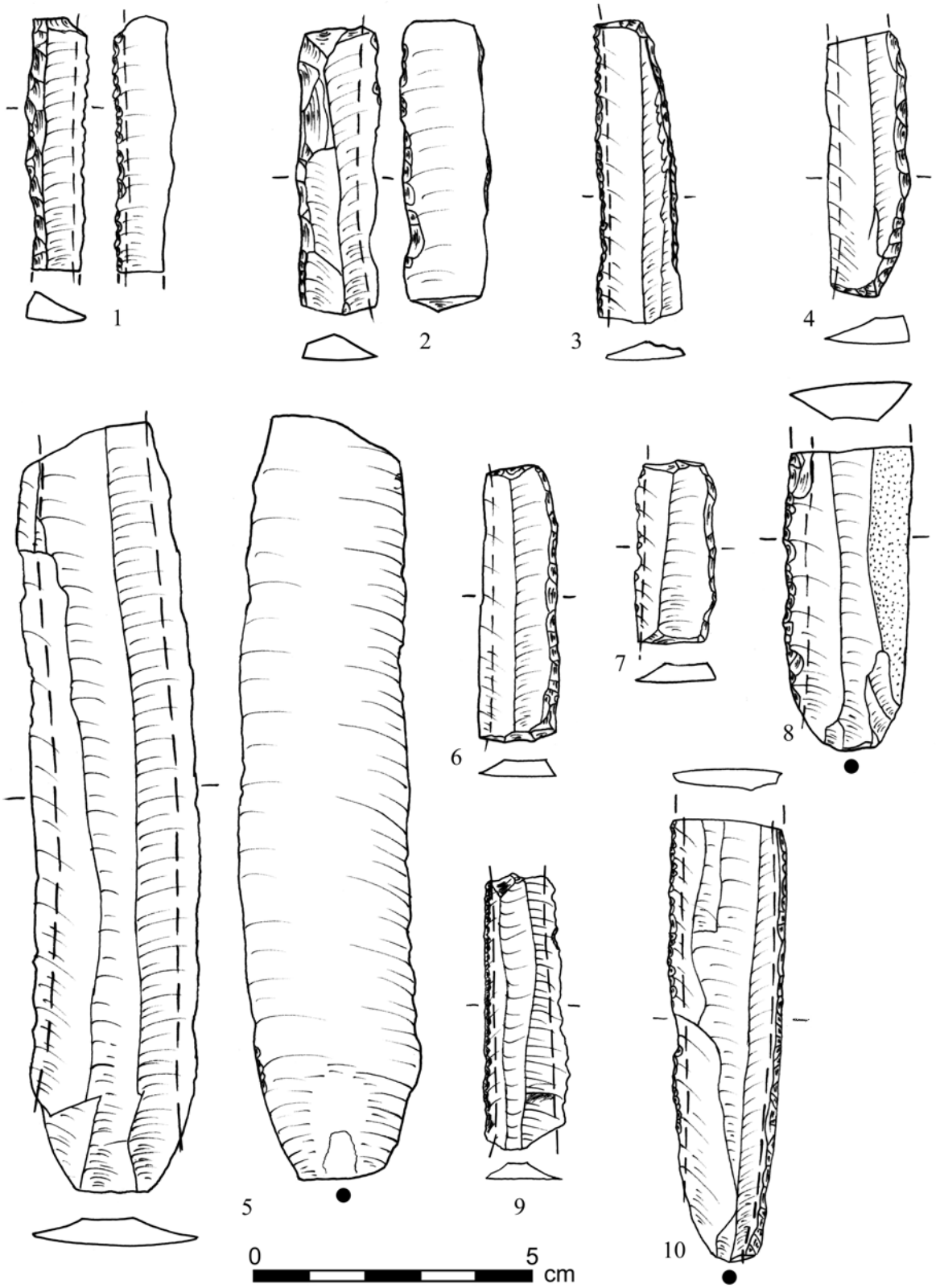

Figure 20. Sickle elements: 1–2) backed and truncated sickle segment (Chalcolithic type); 3–4) backed and truncated sickle segment on a Canaanean blade; 5, 10) Canaanean reaping knife with bilateral sheen; 6–7) backed and double-truncated Canaanean sickle segment; 8) Canaanean reaping knife with unilateral sheen; 9) Canaanean sickle segment with bilateral sheen (after Bar and Winter 2010: fig. 6).

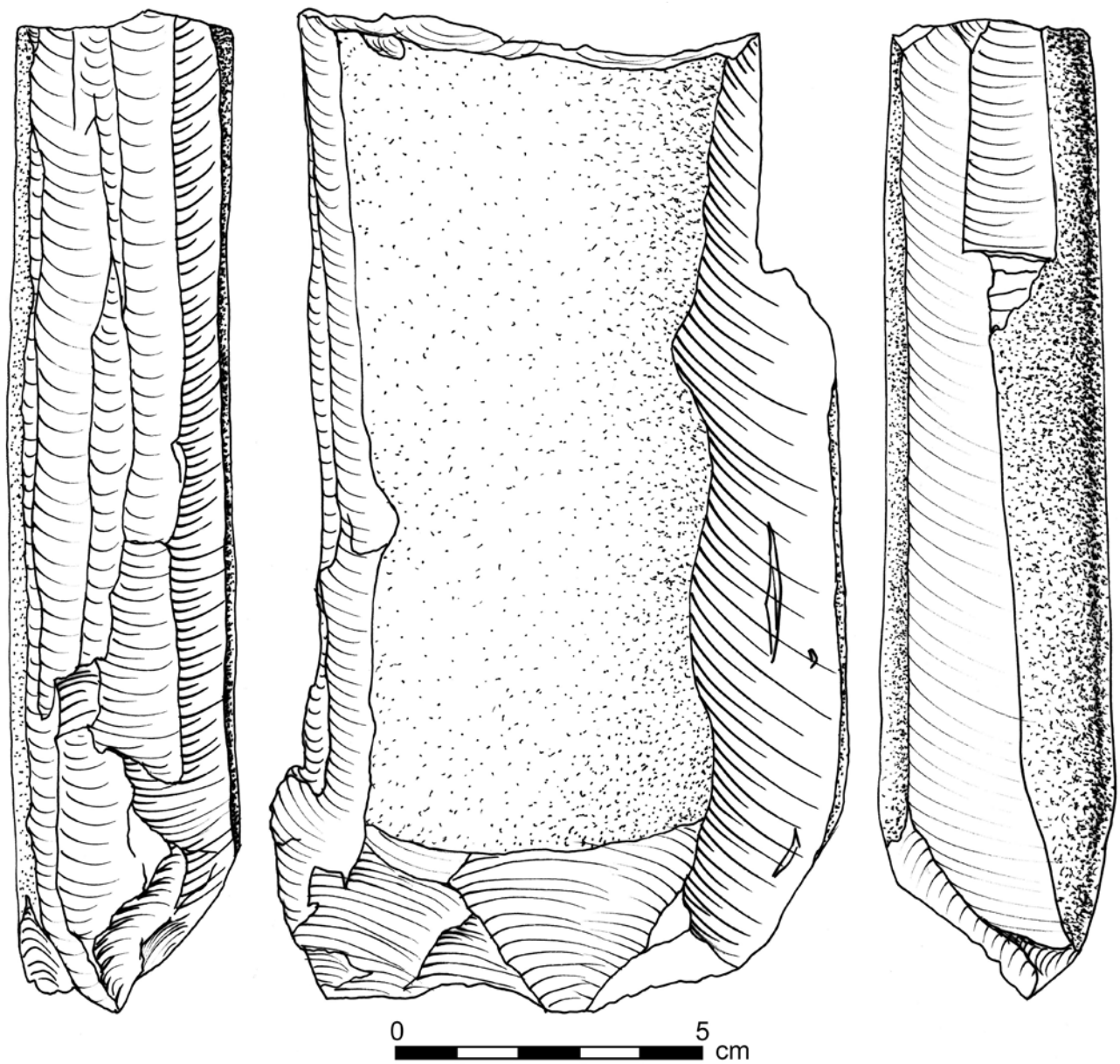

Figure 21. Canaanean blade core.

Discussion

The differences in raw materials and production modes of blanks clearly point to the fact that the assemblage includes two industries: the first – a local industry of *ad hoc* tools for daily use, and the second – the Canaanean industry supplying unmodified blanks, termed by the author as 'half-finished' products, from a still unknown location. Of the first industry, all components – cores, primary elements, waste, debitage and tools – were found, while for the Canaanean industry, no cores, primary elements or flaking debris were found in the excavation – only sickle elements (Fig. 20:3–10) and a few tools (Fig. 19:2–3). The single Canaanean blade core – a surface find – does not indicate the existence of a local Canaanean workshop, as no Canaanean flaking debris was found, and the core could have been discarded in the vicinity at any time. If such a workshop preparing Canaanean blades had existed at the site, some traces of waste materials of the primary flaking process would have been found during the preliminary survey or in the excavation. These facts fit the thesis of Rosen that bundles of unmodified Canaanean blades were distributed by "local distribution and exchange networks" (Rosen 1997:107). The final shaping of the end-product was probably carried out at the site. The fact that some of

Width (mm)		8–10		11–15		16–20		21–25		26–29	
	Total	n	%	n	%	n	%	n	%	n	%
Chalcolithic	8	3	37.5	5	62.5						
Canaanean	42	4	9.5	17	40.5	11	26.2	8	19.0	2	4.8

Table 3. Width distributions of sickle elements from the 2007 and 2008 seasons (50 measured pieces).

Type	Total		Backed		Unilateral gloss		Bilateral gloss		Unused		Bulb and platform present	
	n	%	n	%	n	%	n	%	n	%	n	%
Chalcolithic	9	15.5	9	52.9	9	26.5	0	0	0	0	0	0
Canaanean	43	74.1	6	35.3	20	58.8	14	100.0	9	90.0	10	76.9
Undefined	6	10.3	2	11.8	5	14.7	0	0	1	10.0	3	23.1
Total	58	99.9	17	100.0	34	100.0	14	100.0	10	100.0	13	100.0

Table 4. The sickle collection from 2007 and 2008 seasons according to technological traits.

the Chalcolithic-type sickle elements were produced from the same blanks as the Canaanean sickle elements supports the thesis that both types were used at the site.

The presence of the Canaanean technology in the assemblage, linked with the absence of bifacial tools, could be used as an argument for attributing the assemblage to the EB I. This assumption disregards the fact that typical abrupt backed and truncated Chalcolithic sickle blades and typical Canaanean sickle elements (reaping knives, segments with uni- and bi-lateral gloss; see Fig. 20:5, 8–10) were embedded side-by-side in the various loci of Stratum 2. Even more noteworthy is the fact that blanks from the same material as the other Canaanean segments, trapezoidal or isosceles-triangular in cross-section (Fig. 20:4, 6, 7), were backed and truncated similarly to Chalcolithic sickle blades (Fig. 20:1, 2). The dominant feature of these pieces is the relatively thick back formed by the deep abrupt retouch. This kind of backing, apparently points to a specific form of hafting, common in the Chalcolithic period.

The Fazael 2 flint assemblage provides an additional indication that Stratum 2 should be attributed to a very late Chalcolithic sequence, as it exhibits traits associated with both Chalcolithic and EB assemblages. The fact that such a quantity of both types of sickle elements was found in a radiometrically-dated stratum, in a variety of loci, proves that in this stratum both modes of sickle production were used. A possible explanation for this phenomenon is that the Canaanean technology had already been introduced in the latest phases of the Chalcolithic period. This is further supported by the recent publication of the excavations at Yesodot (Paz and Nativ 2013) and Gat Govrin (Khalaily and Hermon 2013), where typical Canaanean blades were found in late Chalcolithic contexts.

THE GROUND-STONE ASSEMBLAGE (D.B.-Y.)

Twenty-eight stone objects were found, as well as a single hematite pendant. All were found in Stratum 2, except for one that was recovered from Stratum 3. The items were made of limestone (n=14), basalt (n=12), hematite (2 items) and sandstone (n=1). Limestone is the main rock of the area, and the nearest source of basalt is found in Wadi Far'ah, about 20 km north of the site. The closest source of sandstone is east of the Jordan River, about 10 km from the site. No hematite sources are known in the vicinity of the site.

Grinding stones

Two broken items were found: an upper grinding stone made of basalt, and a lower grinding stone made of sandstone. Both are in a poor state of preservation, and it is difficult to reconstruct their original shapes.

Mortars and bowlets

Four mortars and bowlets (e.g. Gopher and Orrelle 1995;

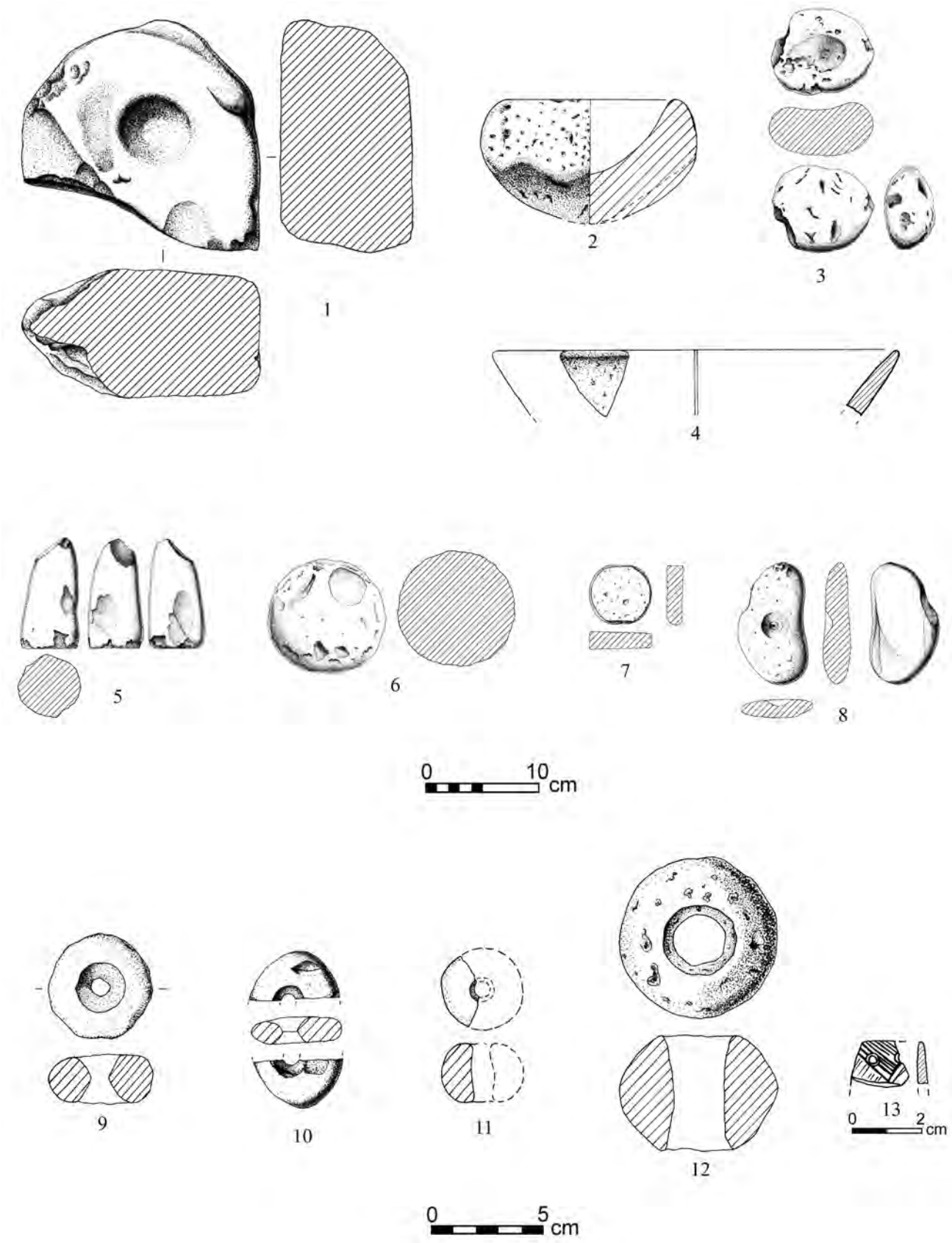

Figure 22. Ground-stone tools.

Rosenberg 2011) were found. The mortars are made of hard limestone, and were probably used with pestles for the coarse pounding of food products. One of the items is a square mortar with a cavity 8 cm in diameter and 5 cm deep at its center (Fig. 22:1). Another item is round, with a cupmark 12 cm in diameter and 6 cm deep at its center (Fig. 22:2). Both mortars were found broken. Parallels dating to the Chalcolithic period were found in Rasm Harbush (Epstein 1998: pl. XXXVIII:6, 8) and 'En Esur (Rowan 2006: fig. 6.6:2). The bowlets are made of hard limestone pebbles, and the cavity is 3.0–3.5 cm in diameter and about 1 cm deep (Fig. 22:3). It seems that they were used for delicate crushing. Parallels have been found in Rasm Harbush (Epstein 1998: pl. XXXVIII:7, 9).

Straight-sided bowls

Six fragments of straight-sided bowls were found. Two have tapering rims (Fig. 22:4) and the rest are body fragments. All the bowls are made of basalt. Parallels have been found at 'En Esur (Rowan 2006: fig. 6.1:4–7), Shoham (North) (Rowan 2005: figs. 9.6:7, 9.7:3–4, 9.8:1–2), and in various sites in the Golan (Epstein 1998: pls. XXXIV:6, 8–9, 11–12).

Pestles

Two broken basalt items were found. Both have round lateral cross-sections. One is conical, and the other has a straight body and an elliptical opposite end (Fig. 22:5). Parallels have been found at Ein Hilu (Bar *et al*. 2008: fig. 37:3) and el-Majami (Epstein 1998: pl. XLI:25).

Hammerstones

Two whole hammerstones were found in Area A. One is ascribed to Stratum 2, and is fairly square in shape, except for one side worn away by pounding. The other, ascribed to Stratum 3, is a large heavy pounder that has a somewhat round shape (Fig. 22:6), and it seems that its entire surface was used. These items are made of hard limestone, and were probably used for pounding and crushing during the preparation of food. Parallels have been found in Rasm Harbush (Epstein 1998: pl. XLI:15) and 'En Esur (Rowan 2006: fig. 6.1:13).

Discs

Two basalt 'discs' were found, apparently made of basalt bowl fragments in secondary use. All sides of the discs were smooth, thus rendering them elliptical (Fig. 22:7). Amiran believed that similar discs from the EB of Arad were used as stoppers (Amiran *et al*. 1978:58, pl. 80:1–4). Parallels have been found at Shoham (North) (Rowan 2005: fig. 9.3:1, 3) and at Teleilat Ghassul (Lee 1973: LB511a).

Elliptical stones with a cavity

Two limestone pebbles were drilled 0.5–1.0 cm deep to form small thimble-like symmetrical recesses (Fig. 22:8).

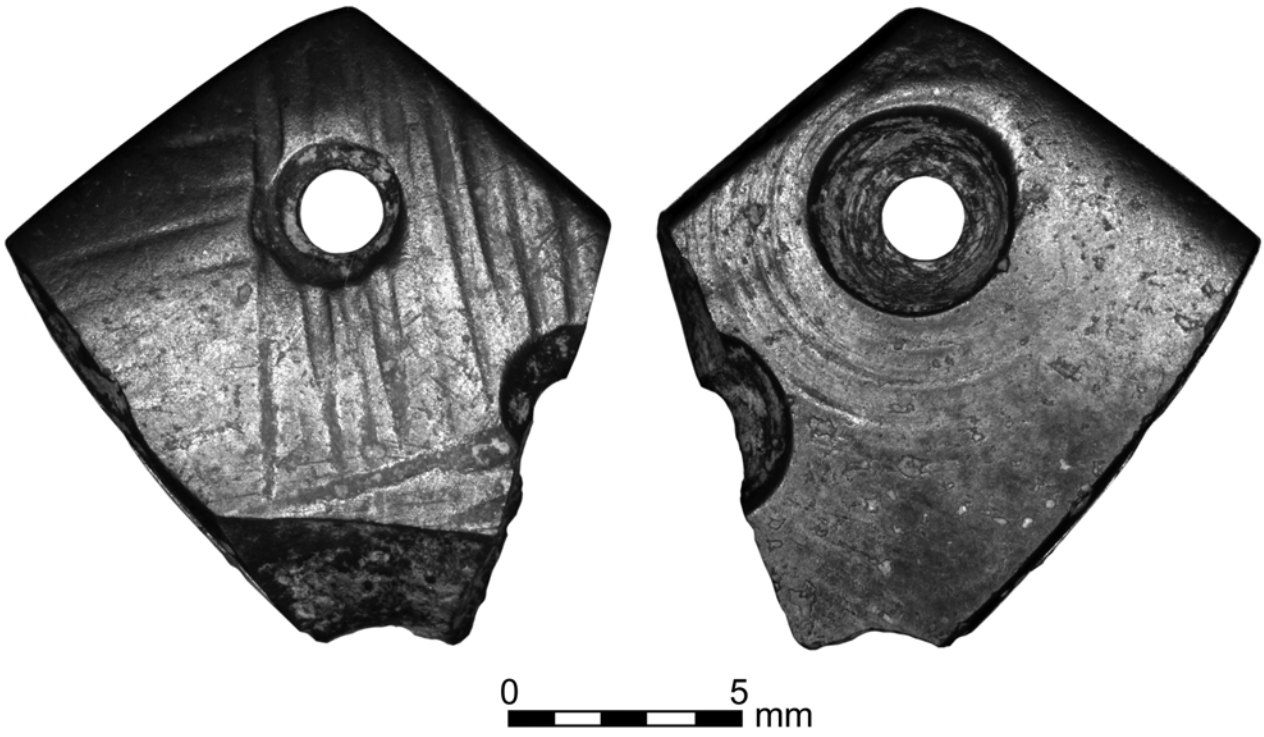

Figure 23. The hematite pendant.

It is difficult to determine their function (Rowan 2005:115), but there are a number of possible explanations: the object broke when attempting to drill a hole through it; it was discarded after an attempt at turning it into a loom weight; it was used as a kindling stone for lighting fire with the aid of a dry branch that was twirled inside the thimble-like recess. Eight parallels have been found at Shoham (North) (Rowan 2005: fig. 9.5:2, 3) and in different sites in the Golan (Epstein 1998: pl. XLIII:13, 18, 19).

Elliptical stones with biconical perforations

Five items made of limestone (Fig. 22:9, 10), four broken and one complete, were found, and may have been used as loom weights. Parallels from the period have been found at Ein Hilu (Bar *et al.* 2008: fig. 37:9) and in different sites in the Golan (Epstein 1998: pl. XLIII:1–6, 8, 10–12).

Door-Socket

One door-socket made of hard limestone was found *in situ* (W11 in Unit 2), for use as a door hinge. The item is squarish, ca. 15X12 cm and the cavity is 6.5 cm in diameter and 3 cm deep.

Maceheads

Two items are considered maceheads. One is a broken elliptical macehead probably made of hematite (Fig. 22:11) and the other is a damaged basalt item (Fig. 22:12). Parallels have been found at 'En Esur (Rowan 2006: fig. 7.4:2) and Rasm Harbush (Epstein 1998: pl. XLIII:26).

Hematite pendant

A broken hematite pendant was found in Stratum 2, L44 (Figs. 22:13, 23). The fragment measures 1.3x1.5 cm and is 4 mm thick. An incised pattern characterizes its convex side, and two holes are drilled through it from both sides (circular marks left by the drilling are visible on both sides). Similar pendants made of other materials such as limestone, mother-of-pearl, slate and bone, have been found at numerous sites from the Chalcolithic period, such as Shiqmim (Levy 1987: figs. 6.12:1– 2; 14.14:2, 5), Cave of the Treasure (Bar-Adon 1980:152), Abu Matar (Perrot 1955: fig. 20) and Kissufim Road (Bar-Yosef Mayer 2002: fig. 7.1:6, 9, 11).

THE FAUNAL REMAINS (G.B.-O. AND N.R.-G.)

A total of 61 complete and fragmentary identified bones were found in the excavated area at Fazael 2 (Table 5). On the basis of taxonomically distinctive features of some bone epiphyses, it appears that sheep and goat comprise over 80% of the identified bones. The assemblage also contains a small number (<10%) of cattle bones and the remains of additional species living in and around human villages, such as fox (*Vulpes vulpes*) and felids. The felid bone could not be identified with much certainty, and it could represent any of the local species found so far in the region: wild cat, *Felis sylvestris*; jungle cat, *Felis chaus*; or domestic cat, *Felis cattus*. A single crab claw, most probably of *Potamon potamios*, the most common freshwater crab in permanent aquatic sources of the Jordan Valley, was found.

There are few single-surface modifications, and no signs of consumption and butchery activities were found. In addition, none of the bones was found burnt. Only a single second phalanx of a sheep/goat bore the remains of a carnivore tooth puncture. The size of the tooth puncture suggests that it was made by a dog/wolf-sized animal. This indicates that some of the remains were discarded soon after their abandonment.

The bone assemblage is too small to allow detailed analysis of anatomical representation or age structure. However, we combined the elements into meat refuse (long bones, scapula and pelvis) and butchery waste (hooves/toes, lower limbs, heads and neck). It appears that the occurrence of sheep and goat represents a mixture of both wastes, and there is no discrepancy between gourmet portions (upper limbs and axial skeleton) and less meaty elements (skull, lower limbs and hooves). The anatomical representation is therefore interpreted as reflecting the disposal of butchered carcasses.

The small faunal assemblage does not allow the reconstruction of mortality profiles. However, bone epiphysis fusion reveals that most long bones of sheep and goat derived from young individuals. Two mandibles (right and left) were found with fully worn dP4, attesting that these individuals were slaughtered at the age of approximately 12 months. The cattle remains are of immature individuals. These patterns suggest that animals were raised and exploited primarily for their meat.

RADIOCARBON DETERMINATIONS (E.B.)

Four charcoal samples were collected for radiocarbon dating from well-defined loci in Stratum 2 (Fig. 24; Table 6). The samples were treated before radiocarbon measurement to remove possible natural contaminants. The procedure used, aimed to eliminate carbonate mineral and humic substances, is based on an acid–base–acid sequence described in Yizhaq *et al.* 2005. The results of the analysis,

	Bos taurus		*Capra hircus*		*Capra/Ovis*		*Ovis aries*		*Vulpes vulpes*		*Felis sp.*	
	NISP	MNE	NISP	MNE	NISP	MNE	NISP	MNE	NISP	MNE	NISP	MNE
Head:												
Horn					2	1						
Mandible Ramus					1	1					1	1
Mandible Teeth					4	4	2	2	1	1		
Maxilla Teeth					3	3						
Body:												
Atlas									1	1		
Axis					1	1						
Cervical					2	1						
Thoracic					1	1						
Lumbar					1	1						
Rib fragment	1	1			1	1						
Forelimb:												
Scapula Glenoid Fossa					2	2			1	1		
Humerus Distal					1	1			1	1		
Radius Proximal					4	3	1	1				
Ulna Proximal					1	1						
Ulna Distal											1	1
Metacarpus Proximal	1	1			1	1						
Hindlimb:												
Pelvic Acetabulum					5	2						
Tibia Distal	1	1			1	1						
Astragalus			1	1	2	2						
Calcaneus					2	1						
Metatarsus Proximal					1	1						
Toes:												
Phalanx 2					5	4						
Phalanx 3					2	2						
Metapod cond	1	1			3	3			1	1		
NISP	4		1		46		3		5		2	
% NISP	7		2		75		5		8		3	
MNI	1		1		2		1		1		1	

Table 5. The faunal assemblage.

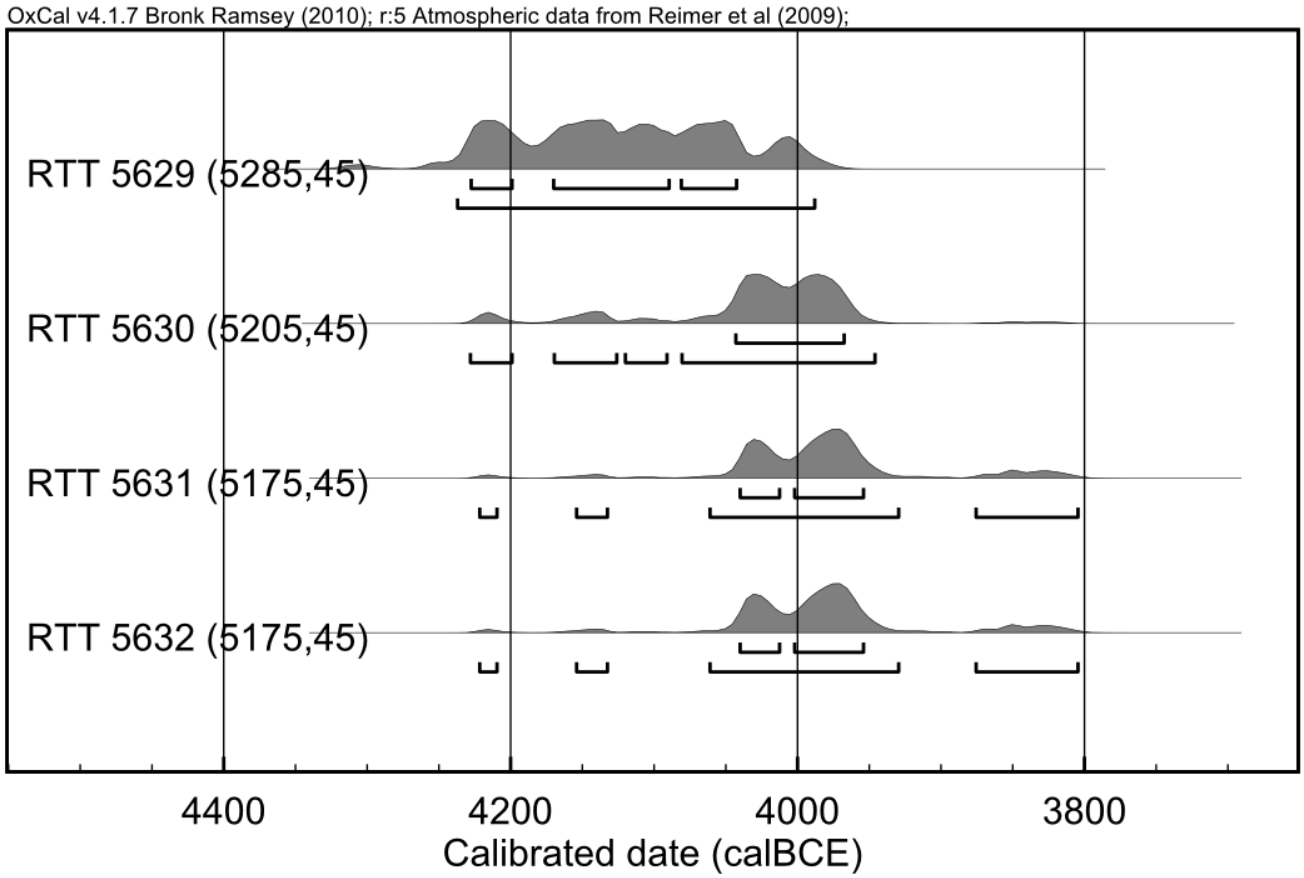

Figure 24. Probability distribution of the calibrated radiocarbon ranges for the four samples from Fazael 2.

RTT	**^{14}C age ± 1σ year BP**	**Calibrated age year BC ±1σ**	**Calibrated age year BC ±2σ**	**Sample ID**	**δ^{13}C ‰ PDB**
5629	5285 ± 45	4230–4190(13.8%) 4170–4040(54.4%)	4240–3980	L72, B188, Hearth on floor	-26.5
5630	5205 ± 45	4045–3965	4230–4190(4.2%) 4170– 4090 (9.4%) 4080–3940 (81.8%)	L47, B152 Fill above floor	-25.3
5631	5175 ± 45	4040–4010(22.2%) 4005–3950 (46.0%)	4160– 4130 (1.6%) 4060–3920 (83.7%) 3880–3800(10.1%)	L32, B145 Fill above possible floor	-24.9
5632	5175 ± 45	4040–4010 (22.2%) 4005–3950(46.0%)	4160–4130(1.6%) 4060–3920(83.7%) 3880–3800(10.1%)	L23, B123 Fill above floor	-26.7

Table 6. Sample number, ^{14}C age determination, calibrated ranges for ±1σ and ±2σ (σ is the standard deviation of the measured ^{14}C age), archaeological context and stable isotope ratio for the samples used in this study. All samples were wood-charcoal. Calibration was performed using OxCal 1.4.10 software (Bronk Ramsey 2001) with the calibration data by Reimer *et al*. (2009).

with calibrated ranges and archaeological contexts, are shown in Table 6.

The dates, performed on wood-charcoal, yielded calibrated ranges at the end of the 5th and the beginning of the 4th millennium Cal BC. It is important to note that since the material dated was wood-charcoal, it is not possible to exclude the 'old wood effect'. Therefore the dates might be slightly older than the stratum to which they are related. Since there was no botanical identification of the charred remains, it is not possible to estimate the old wood effect. According to the most recent modeling of the Late Chalcolithic – Early Bronze radiocarbon dates (Braun *et al.* 2013), a transition has been determined between 4040–3940 Cal BC (upper limit) and 3630–3540 Cal BC (lower limit) for all the southern Levant. The range of the Fazael 2 dates is closer to the upper limit of the transition, but considering the possible old-wood-effect, it may be that the transition was later.

FAZAEL 2 IN THE CHALCOLITHIC SEQUENCE

Fazael 2 seems to be an important site for the understanding of the latest phases of the Chalcolithic period. While most of the material culture can be attributed to the Ghassulian culture of the Chalcolithic period, some of the finds exhibit traits that can be attributed to a later phase within the Chalcolithic period, and even to the early phases of the Early Bronze Age I. Analysis of the finds is crucial to the task of dating Stratum 2 to its exact place within the Chalcolithic-Early Bronze Age I continuum.

An important point to emphasize is the fact that this report describes the pottery from the first two seasons and the flint assemblage from the first season only; while current field work is in its seventh season. This creates a situation where important finds discovered after the 2008 season are not presented here. Some of these (e.g. the rich copper assemblage, which provides additional support for a Late Chalcolithic date for the site) are important to this discussion. This situation will of course be remedied in subsequent publications.

The stratigraphy of the site is easily deciphered. Stratum 3, with its limited exposure and finds, can be dated to the Chalcolithic period, based on its ceramic assemblage. The meager data collected cannot be more precise regarding the position of this stratum within the Chalcolithic continuum, but it certainly pre-dates the large Stratum 2 courtyard house, and shows affinities with other sites in the region (mainly En Gedi and Teleilat Ghassul I–IV). Stratum 1, on the other hand, has no datable material, appears only in the southern part of the site, almost at the modern surface, and seems much later than the Stratum 2 occupation.

Stratum 2 is a large courtyard house the southeastern part of which was excavated in the first two seasons and is reported here. This stratum is divided into two sub-phases. These are best manifested in the western part of the site excavated in 2012, and represented in the southeastern part of the site in the additions to Unit 1 and Unit 2 and the two habitation levels of Unit 3 presented above. They are connected to different architectural phases within the construction of the courtyard house, and thus constitute a gradual development in the life-span of this stratum. It is important to note that the main type of building in this stratum is the rectangular broad room, which is the typical architectural tradition during the Ghassulian Chalcolithic, and is less common in EB I sites, which show more architectural variability with a tendency to build curvilinear walls. Our knowledge of post-Ghassulian architecture is still poor, but some examples show that the rectangular traditions continued to exist, for example, the architectural remains of the post-Ghassulian site at Yesodot (Paz and Nativ 2013).

The ceramic assemblage at the site shows many traits common in the Ghassulian culture, but some important representatives are missing. The absence of churns and fenestrated bowls/chalices, the presence of only a single cornet base, and the very low frequencies of slips and plastic ornamentation, are important in understanding that this is not a 'typical' Ghassulian assemblage. This is further supported by the appearance of 'pie crust' rims, hemispherical bowls, and ledge handles (the probable predecessors of the Early Bronze Age types). The possibility of regional differences in the Jordan Valley – already addressed by Lovell (2001) – may not be the only reason for these diversities, and a chronological variability should also be taken into consideration.

Comparing the ceramic repertoire with the possibly post-Ghassulian site of Yesodot (Paz and Nativ 2013: fig. 6) shows that almost all of the rare types from Yesodot have parallels in Fazael 2. On the other hand the Fazael 2 assemblage is very diverse, and exhibits many types and sub-types, in contrast to the very restricted repertoire

of Yesodot. This supports the notion that the Fazael 2 repertoire might be a very late Ghassulian assemblage or, less probably, a post-Ghassulian entity.

The lithic assemblage at the site exhibits traits associated with both Chalcolithic and EB assemblages. The complete absence of bifacial tools and the presence of the Canaanean blades alongside typical Chalcolithic blades in such large numbers is the most convincing indication of a comparatively very late date for the site within the Chalcolithic, possibly in a post-Ghassulian phase. This cannot simply be explained by the existence of an unexcavated Early Bronze Age stratum at the site, as claimed by Milevski et al. (2011), as no such layer was documented. Other very late Chalcolithic assemblages such as Shoham (North) (van den Brink and Gophna 2005) and the recently published sites of Yesodot (Paz and Nativ 2013) and Gat Govrin (Khalaily and Hermon 2013), present common traits with Fazael 2, while Canaanean blades are missing from the latest phases of Teleilat Ghassul and the Beer Sheva sites. Thus the data support the appearance of the Canaanean technology at a few sites in the latest phases of the Chalcolithic period, some of them possibly in a still poorly understood post-Ghassulian Chalcolithic stage.

The radiometric dating was performed on wood-charcoal, and yielded calibrated ranges at the end of the 5th and the beginning of the 4th millennium Cal BC. These dates are late within the recently modeled sequence (Braun *et al*. 2013; and see similar dates in Gilead 2007, 2009; Kerner 2010) that improves our understanding of the final phases of the Chalcolithic period.

CONCLUSIONS

Fazael 2 is important in improving our understanding of the latest phases of the Chalcolithic period in the Jordan Valley. Radiometric determinations suggest that Stratum 2 of the site flourished about 4000–3900 Cal BC, thus being among the latest Chalcolithic settlements in the Jordan Valley, contemporary with Teleilat Ghassul I–IV (Bourke *et al*. 2001) and the end of the Chalcolithic settlement in the Beer Sheva region.

The important question of the site's dating in the Chalcolithic sequence awaits further data to be analyzed from the 2009–2013 excavations. Although it is tempting to suggest a post-Ghassulian phase at the site (especially based on the lithic assemblage), the other components of the material culture (most of the ceramics, stone tools, and metal tools), the radiometric dates, and the architecture, support a very late date within the Ghassulian Chalcolithic.

The spatial and residential architecture of the Fazael sites is different from that of the other Chalcolithic sites excavated in the region. The distribution of the residential complexes is more extensive, unlike those at, for example, Teleilat Ghassul; and the buildings include spacious units that are not characteristic of Chalcolithic sites. Comparing this site to the nearby Fazael 5 and 7 sites supports the notion that a new type of building had appeared in the Fazael Valley – the large multi-courtyard building, where the area of each complex is between 0.6 and 1 ha. (Bar: in press).

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