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## Table of Contents

Editors' forward	4
An Extensive Neolithic/Chalcolithic Axe and Adze Workshop Found within a Paleolithic Extraction Complex at Mt. Reihan, Northeastern Galilee, Israel <b>Meir Finkel, Avi Gopher, Erez Ben-Yosef and Ran Barkai</b>	5
Pits and their Contents: The Wadi Rabah Site of Qidron in the Shephela, Israel <b>Danny Rosenberg, Edwin C. M. van den Brink, Ron Shimelmitz, Assaf Nativ, Henk K. Mienis, Orit Shamir, Rivka Chasan and Tamar Shooval</b>	33
Cultural Continuity and Changes in South Levantine Late Chalcolithic Burial Customs and Iconographic Imagery: An Interpretation of the Finds from Peqi'in Cave <b>Dina Shalem</b>	148
Horbat Zur: Burial and Non-Burial Caves in the Ghassulian Chalcolithic and Early Bronze Age at the Haelah Valley <b>Anna Eirikh-Rose, Ianir Milevski, Omry Barzilai, Zinovi Matzkevich, Yossi Nagar and Deborah Sklar</b>	171
Fazael 7: A Large Chalcolithic Architectural Complex in the Jordan Valley, the 2009-2016 Excavations <b>Shay Bar, Haggai Cohen-Klonymus, Sonia Pinsky, Guy Bar-Oz, Roni Zuckerman, Golan Shalvi and Uri Davidovich</b>	208
Book review Review of <i>Paléorient</i> Thematic Issue — Connections and Disconnections Between the Northern and Southern Levant in the Late Prehistory and Protohistory (12 <sup>th</sup> -mid-2 <sup>nd</sup> mill. BC), Coordinated by I. Milevski, F. Bocquentin and M. Molist. <i>Paléorient</i> 42.2 (2016) <b>Edward B. Banning</b>	248
Obituaries Felix Burian: his special contributions, along with Erich Friedman, to the study of Israel's prehistory <b>Simcha Lev-Yadun</b>	251
Karl Wilhelm Butzer, 1934–2016 <b>Steve Rosen</b>	255
Note for authors	256
Hebrew abstracts	5*

## **Fazael 7: A Large Chalcolithic Architectural Complex in the Jordan Valley, the 2009-2016 Excavations**

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### **ABSTRACT**

Excavations in the Jordan Valley at the Chalcolithic site Fazael 7, situated about 20 km north of Jericho, and part of the large Chalcolithic cluster of sites on the northern bank of Wadi Fazael, have revealed a new and unknown settlement with unusual architecture, dated to the later phases of the Chalcolithic period. Parts of a residential complex were excavated, including two buildings and three adjacent courtyards, whose size and architectural layout are unparalleled in this period. The area of the main structure, which totals 120 m<sup>2</sup>, is one of the largest structures of the period discovered to date. The courtyards and the architectural complex excavated cover an overall area of more than 1,300 m<sup>2</sup>. The main structure was split into four rectangular spaces by two dividing walls in order to roof a 6 m span. The economic data indicate a combination of field-crops, grazing of sheep/goats, and hunting. The present article discusses the main architectonic features of Fazael 7 and the main aspects of its material culture.

**KEYWORDS:** Chalcolithic, Ghassulian, Fazael, Jordan Valley, Southern Levant

### **INTRODUCTION (S.B.)**

Eight annual excavation seasons (each of 1 to 2 weeks) were conducted between 2009 and 2016 at Fazael 7 (map reference New Israel Grid 24151/66161). This is one of several adjacent Late Chalcolithic sites located at the outlet of Nahal Fazael into the Jordan Valley, about 20 km north of Jericho (Fig. 1), excavated within the framework of a regional study dealing with Chalcolithic and EB I settlement patterns in the lower Jordan Valley (The Fazael Valley Regional Project: Bar 2008, 2013, 2014a, 2014b; Bar and Winter 2010; Bar *et al.* 2011, 2012, 2013, 2014, 2015; Cohen-Klonymus and Bar 2016; Eshed and Bar 2012).

The Fazael outlet was clearly one of the major areas of settlement in the Jordan Valley during these periods. The vast Chalcolithic settlement, which included Fazael 7, extends from the modern village (Moshav Fazael) to the west on the fairly flat ground along the northern bank of Wadi Fazael (Fig. 2). The site as a whole covers an area of about 12 ha, but is divided into non-contiguous architectural complexes, labelled Fazael 2, Fazael 5 and Fazael 7, all surveyed for the first time by the Manasseh Hill Country Survey (Zertal 2012: Sites 19, 22 and 24), in addition to two other complexes in the modern village, excavated by Porath (1985) and Peleg (2000). Fazael 7 is

located in the central part of this settlement just west of Moshav Fazael.

The survey and excavations of Fazael 7 exposed one of the largest architectural complexes ever uncovered in the south Levantine Chalcolithic (see Banning 2011 and Bar 2014: 73–81 for additional data on large Chalcolithic structures). It comprises a main structure, probably roofed, divided into four rooms, in itself one of the largest structures excavated so far in the Levantine Chalcolithic. Three wide courtyards containing a subsidiary structure adjoin the main structure on the east and north. Altogether, this complex covers an area of about 1,300 m<sup>2</sup>. The excellent level of preservation of the main structure, partly covered by a flimsy construction dated to the Roman period, also enables us to trace its architectural development and abandonment and allows a comparison with neighbouring Chalcolithic complexes, mainly Fazael 2 (Bar 2013: Chapter 4; 2014a: Chapter 10) and Fazael 5 (Bar *et al.* 2015). The present article discusses the main features of Fazael 7 and its material remains.

## STRATIGRAPHY AND ARCHITECTURE (S.B., G.S. AND U.D.)

During the survey, Fazael 7 was identified as a small mound associated with wall remains thought to represent a large broadroom structure and three large courtyards extending over relatively flat ground to the north and east of the mound. Apart from several Roman period sherds, all material remains collected from the site were Late Chalcolithic. A second, somewhat smaller, mound (named Fazael 7 east) was identified below the security fence of the modern village, about 50 m east of the main mound. It too produced sherds from the Chalcolithic period only and possibly contains another, as yet unstudied, architectural complex from this period.

The excavations focused on the main structure (Squares K-M/10-11; Figs. 3, 4) and another rectangular structure located in the western part of the northern courtyard (Squares H-J/8-9). Probes were opened in different parts of the courtyards, mainly in order to elucidate their stratigraphic and architectural relationships (Squares K-L/12, I-K/15-16, I/11-12, F/12-13, and F-G/8-9). The architectural elements, all interconnected, were designated Stratum II, as they

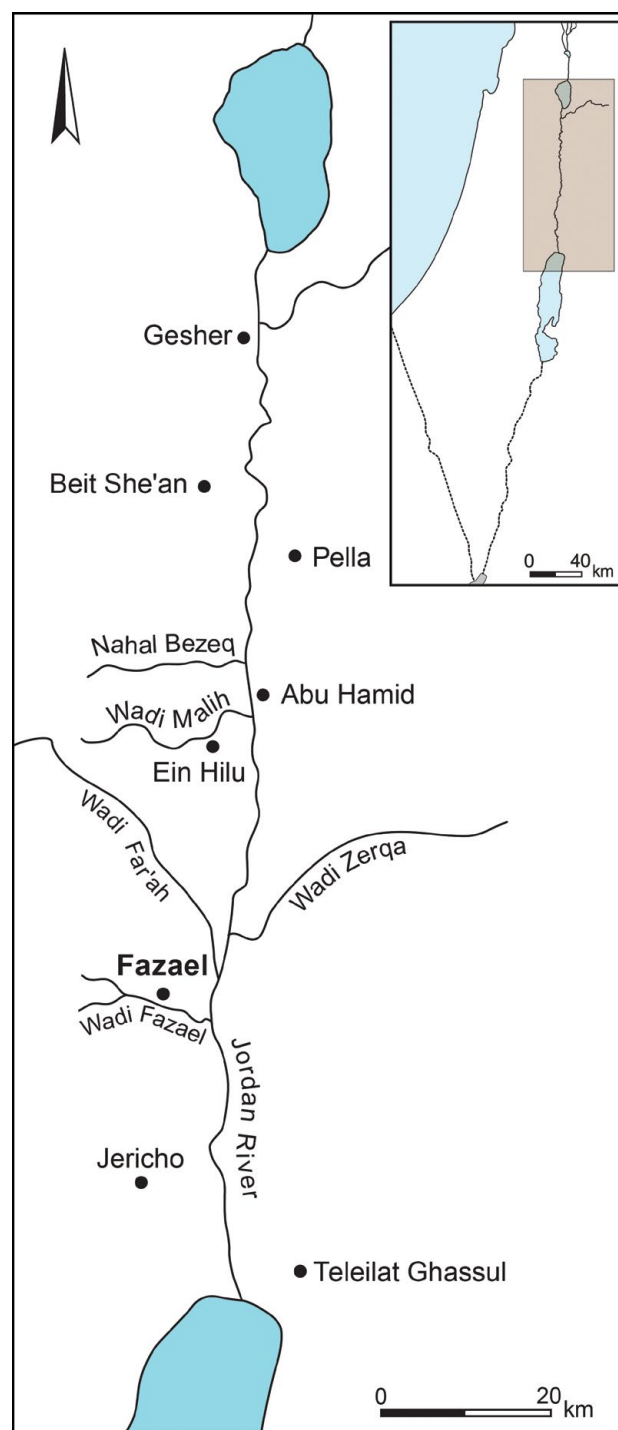


Figure 1. Map showing the published Chalcolithic sites in the Lower Jordan Valley.

are clearly stratigraphically below a flimsy construction attributed to the Roman period (Stratum I). Two probes below the Stratum II foundation levels (in Squares I/8-9 and K/10) revealed Chalcolithic remains which predate the erection of the large architectural complex and were designated Stratum III.

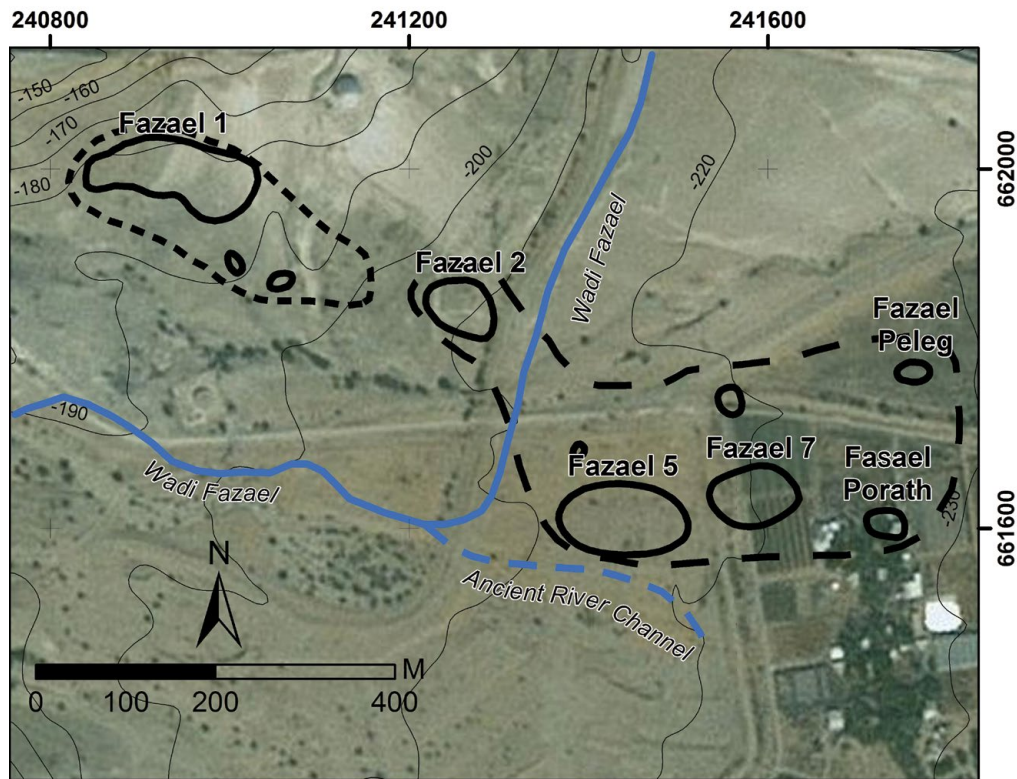


Figure 2. The northern Fazeel Valley: the main Late Chalcolithic sites identified in the region (Background by ESRI sources: ESRI, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, Swisstopo, and the GIS User Community).

### Stratum III

Stratum III remains were found on the natural conglomerate surface below foundation levels of the Stratum II walls in two locations: 1) in the northwestern room of the main structure (Loci 128 and 133, Square K10); and 2) in the southern part of the subsidiary structure excavated in the northern courtyard (Loci 81, 96, 125 and 131, Square I/8-9). No architectural remains were found and only pottery (including complete vessels), flint, copper and bone remains were associated with these levels. Given the available data and the meagre exposure of this stratum, we cannot suggest the duration and extent of activity here. However, it should be noted that similar pre-construction activities were also noted in Fazeel 2 (Stratum III, Bar *et al.* 2013) and Fazeel 5 (Stratum III, Bar *et al.* 2015). These pre-structure phases may signify an initial stage of sedentarization in the Fazeel outlet which did not entail large stone constructions or, more likely, temporary presence during construction of the architectural complexes.

### Stratum II

#### *The main structure*

As stated above, the main structure was the primary target of the excavations at Fazeel 7. Following eight seasons and an almost complete exposure of the structure, it became apparent that this was not a typical Chalcolithic broadroom house of the type excavated in Fazeel 2 and Fazeel 5 (and also in the northern courtyard of Fazeel 7, see below), but a uniquely designed structure which, in its final form, consisted of four almost identical rectangular rooms created by the division of two roughly square units (Fig. 5). Its overall dimensions, about  $8 \times 15$  m and  $120 \text{ m}^2$ , make it one of the largest Chalcolithic structures in the southern Levant. The structure is massively built with walls about 1 m thick, preserved to more than 1 m high in places and built typically of two rows of medium-sized and large fieldstones with smaller stones and sediment in between. The evidence of massive stone collapse excavated in all units and around the structure, suggests that it was built entirely of stone.



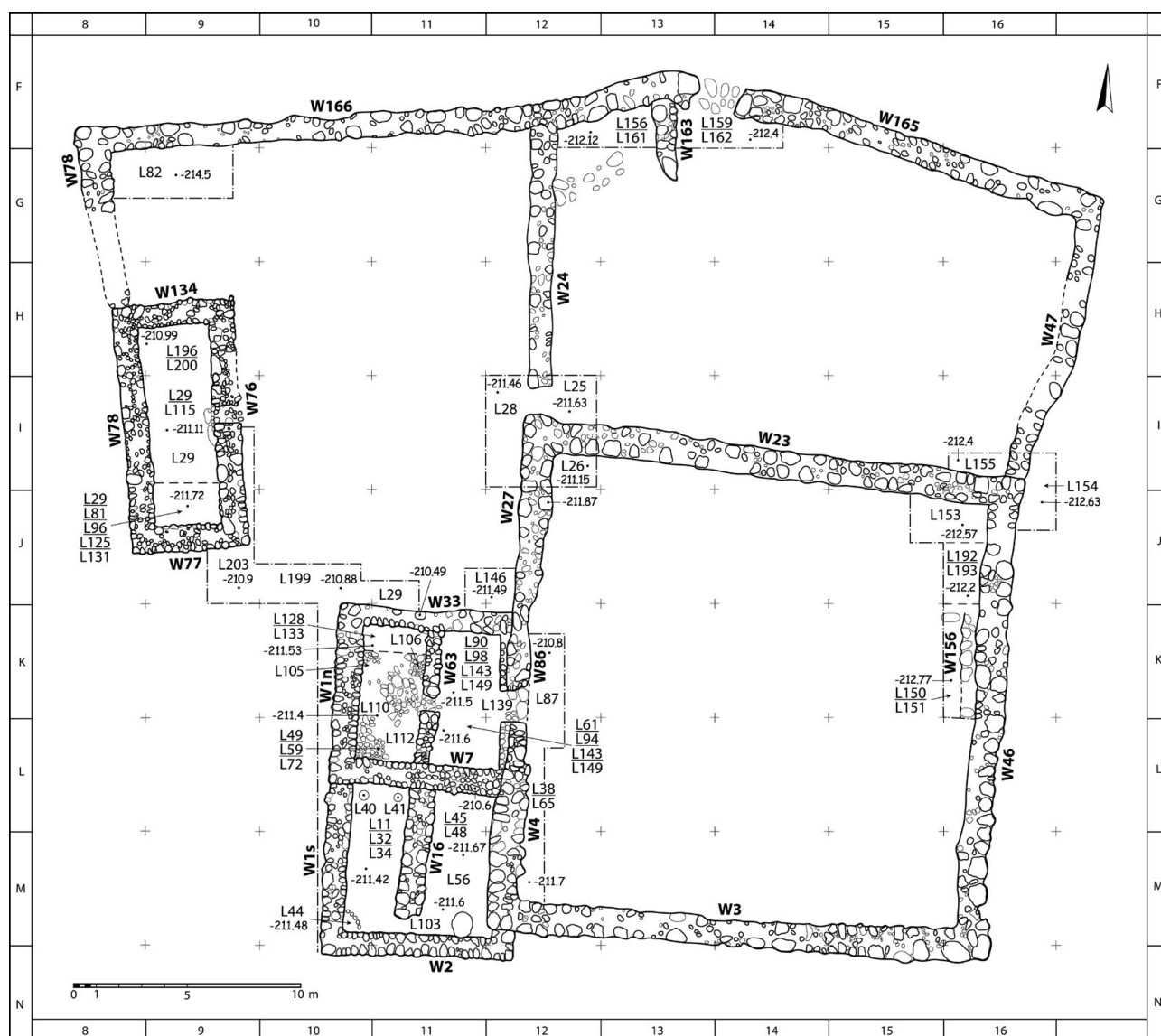


Figure 3. Plan of Fazeal 7.



Figure 4. Aerial view of Fazeal 7 to the west, 2012 (A. Solomon).

The height of the walls, the massive stone collapse indicating additional courses and the thick sediment accumulation in all four units suggest that the whole structure was roofed, although no roofing materials were clearly recognized (probably due to decaying of organic materials used). Although no parallels to this structure are known from other Chalcolithic sites, its association with large, open (non-roofed) courtyards is typical of the Ghassulian Chalcolithic, further suggesting that the structure itself was roofed, rather than comprising high free-standing walls with no roofing.

The architectural analysis of the structure, based on wall relationships, shows that its architectural development followed at least four phases, some of which

may have chronological significance (Fig. 5):

The first element to be built was the eastern courtyard. This is evident from the fact that all the walls of the structure abut, either definitely (W2) or probably (W7, W33), the western wall of the courtyard (the latter was labelled W4, W86 and W27 in its southern, central and northern parts, respectively).

In a second stage, which seems to follow the creation of the courtyard, and could possibly be simultaneous with it, a roughly square structure, about 6 × 6 m in inner dimensions, was attached to the courtyard, outside the middle portion (W86) of its western wall. The other three walls of this unit (W7, W1n, and W33 to the south, west and north, respectively) are all bonded, while the

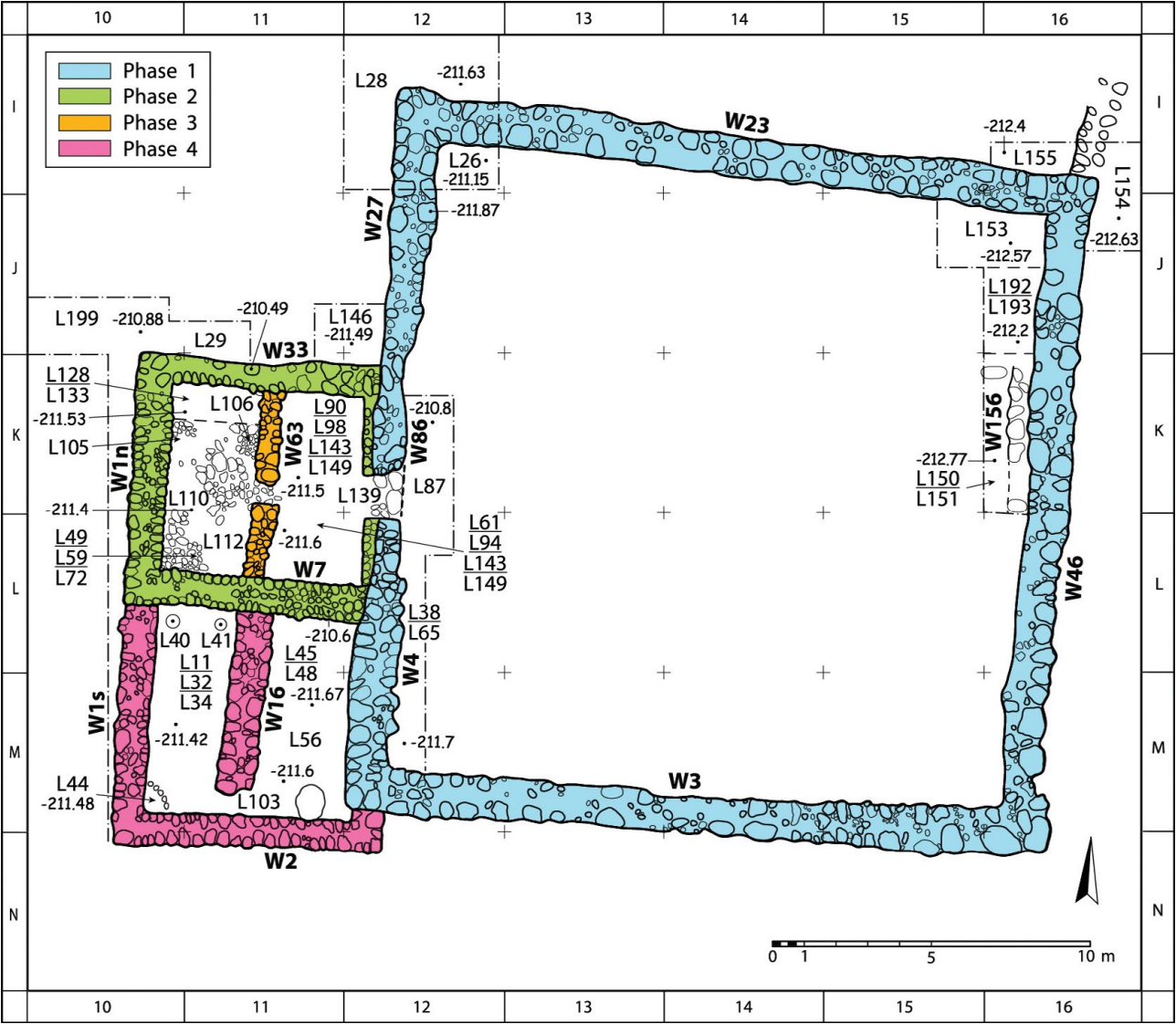


Figure 5. The four phases of architectural development of the main structure in Fazel 7.



relationships of Walls W7 and W33 of the structure with the western wall of the courtyard have yet to be definitely determined.

The third stage involved the addition of wall W63, a N-S wall which divides the square structure into two rectangular rooms of similar size, and abuts both walls W7 and W33. A 1 m gap observed in the middle of wall W63 was the location of an opening (Fig. 6) on the same axis as the outer entrance to the structure in W86. It is possible that this stage was only technically separated from the creation of the initial structure, as the span of the latter (about 6 m wide) was probably too difficult to roof.

During the next stage, a second square unit of about the same size was added to the south of the original structure. This involved the addition of a southern extension to wall W1 (abutting the original corner of W1n and W7), as well as of wall W2, the southern wall of the enlarged structure. The latter was built slightly to the south of the line of wall W3 (the southern wall of the eastern courtyard), probably in order to keep the dimensions of the new addition similar to those of the original structure, an attempt which resulted in

the peculiar deviation in the ground plan of the entire complex. Another construction was the second square's division into two rectangular rooms by the addition of wall W16, similar to the division of the original structure. The locations of the entrance to the southern structure and the passage between its two units are unclear and may have existed at a higher level than the current level of preservation of the wall (the short gap in the southern tip of W16 is probably a matter of preservation rather than a passageway).

The final outcome of the various additions was a large structure, probably roofed, containing four almost identical rectangular rooms arranged in two squares, with no apparent connection between them (at least at the ground floor level). It is possible that the complex consisted of only one square structure divided into two units, and only later functioned in its complete form. A possible argument in favour of this suggestion is Porath's reconstruction of the development of a house excavated in Moshav Fazael, where initially the complex functioned with only one structure attached to the central segment of the courtyard's western wall, to which additions were built on both sides (Porath 1985).

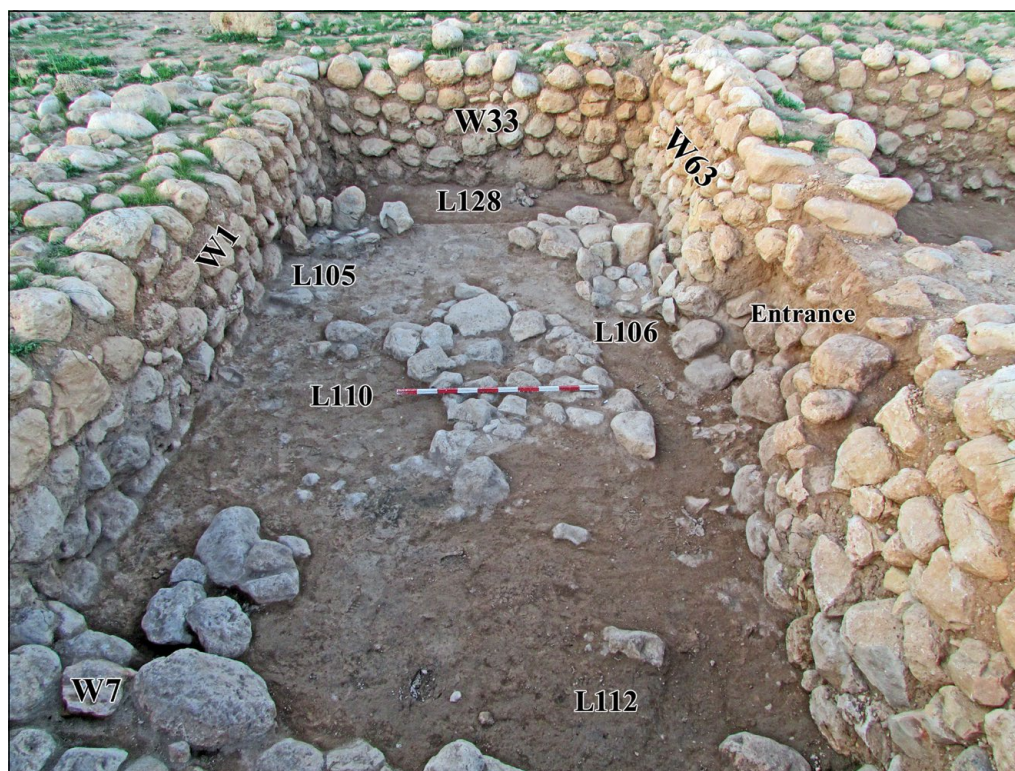


Figure 6. The northwestern room of the main structure, looking north, 2016. Note the preservation of the walls, the installations and the entrance.



A later renovation or addition to wall W86 was noted in Square L/11, attesting to maintenance work on this structure.

The main habitation levels, all based on beaten earth floors, were reached in all rooms at an approximate elevation of -211.4 m, below massive stone collapses observed in all parts of the building. The contents of the rooms varied, as presented below.

In the southwestern room, three installations were found. Two stone hearths (Loc. 40, Fig. 7; Loc. 41) about 40 cm in diameter, their bottom parts made of small stones, mostly pebbles, were embedded 5 cm below the habitation level of the room. The third element is an installation of flat-lying stones located in the corner between Walls W1 and W2 (Loc. 44). No *in situ* finds were noted in this room.

In the northwestern room, two installations and a paved area were found. Two rounded stone-built installations (Locs 105 and 106; Fig. 6) were located in the northern part of the room, abutting walls W1 and W63 respectively. Ashes were found near installation Loc. 106, and its flat-lying stones showed signs of fire. The other installation was only partly preserved, but it seems to be similar. A stone-paved surface (part of floor Loc. 110) was found in the centre of the room in front of the entrance in W63. This pavement, which was found covered with ash, had a complete copper chisel on it. In the southern part of the room a perforated flint star and at least one standing stone were found. In addition, several restorable holemouth jars and V-shaped bowls were found crushed on the floor of this room.

In contrast to the western rooms, the eastern rooms do not contain installations or stone-paved surfaces and their beaten earth floors were barely recognized beneath the massive stone collapses. The only exception was a giant monolith lying on W2 in the southwestern room (Loc. 103). In the northeastern room, two large partly restorable jars were found lying on walls W33 and W63.

The various units also differ in the post-depositional processes that took place in them. The excavation in Square L11 exposed a multi-layered stratigraphic picture related to its abandonment. A thin fine-grained greyish accumulation was identified above the habitation level in Loc. 34, and above this accumulation was a first layer of stone collapse (Loc. 32) (Fig. 8). These layers were overlaid with a layer of accumulation comprised mostly

of coarse sediment. Above it was a dusty layer about 15 cm thick, probably of aeolian origin. This whole sequence was sealed with a massive stone collapse, arranged in diagonal horizons near the walls. It seems that these were part of a rapid process because of the horizontal stratification that was noted. Disturbed, irregular fill appeared above the collapse phase during a period of slow disintegration of the building's remains.

The northern rooms, on the other hand, show no signs of this stratigraphic picture. Instead, a quicker process was noted. Once the building went out of use, a massive collapse was noted on the floors and installations of the rooms, suggesting a sudden destruction of the building. The collapse here was much more complete than in the southern rooms, either because of the original plan of the structure and the possible second floor here, or because this part of the building was more heavily damaged.

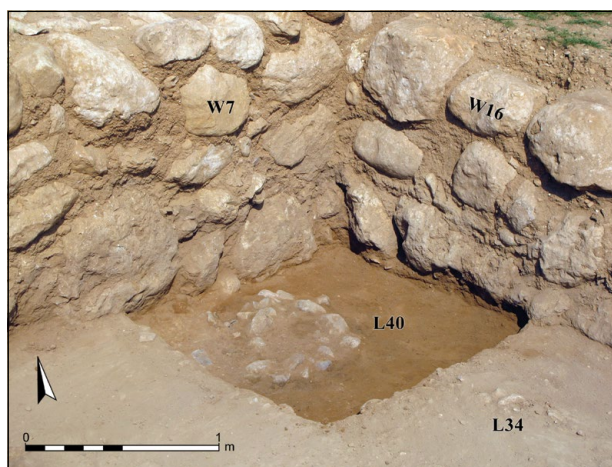


Figure 7. Hearth (Loc. 40), 2009, looking northeast.



Figure 8. The southwestern room, looking west, 2009.

The only unit in which a second Late Chalcolithic phase was noted is the northwestern room (Squares K-L/10). Here, a patch of pavement made of small stones (Loc. 72, Fig. 9) was found in the southwestern corner of the room north of Wall 7, at elevation -210.89 m, more than 50 cm higher than the building's original floor levels. This phase was not found in other excavated parts of the site, and probably represents a meagre squatter's activity taking advantage of the partly standing stone walls of the room.

A major field observation relating to the main structure is the absence of additional living surfaces (floor buildup), common in the other sites comprising the Late Chalcolithic site of Fazeel 2, and usually attesting to a long period of utilization of a structure. Unlike other structures from the same period that show a sequence of superimposed beaten earth floors, here only a very thin floor was observed in all units. Taking into account that stone collapses sealed these habitation levels, and that the excavation below them reached bedrock (Stratum III) almost immediately wherever checked, it seems safe to assume that the structure functioned only for a short time, or that it was carefully maintained and cleaned, with almost no changes or alterations during its life, as opposed to other typical dwelling structures.

### The eastern courtyard

As mentioned above, the courtyard located east of the main structure (Squares I-M/12-15) was probably the first unit constructed at the site. This roughly square courtyard measures about 20 × 21 m (420 m<sup>2</sup>), and is bordered by four walls. The western wall (W4-W86-W27), to which the main structure is attached (W27 is its northern part), was excavated in a small probe in Squares I/11-12. The southern wall (W3) extended eastwards from W4 and was excavated in Square M11. The northern wall (W23) was excavated at both ends at its junctions with walls W27 (Squares I/11-12) and W46 and W47 (Squares I-J/15-16). The main entrance to the courtyard was probably through the eastern wall (W46) which was excavated in Squares I-K/15-16.

All four walls are, as far as can be judged, bonded with each other and their lower course is generally built of two rows of boulders and large stones, some of which weigh more than 1 ton. Upper courses were preserved mainly in the western wall where they are constructed in a similar

fashion to the other walls of the main structure. The primary archaeological depositions in the courtyard are not as well preserved as in the main structure. All parts of the beaten earth floor of the courtyard excavated in the various probes are found less than 40 cm below the topsoil. Due to our focus on architectural relations and layout, only small probes were made in the courtyard and thus no spatial comprehension of human activities within it is possible at this stage of research.

### The northeastern courtyard

A second courtyard, about 400 m<sup>2</sup> in area, and with a somewhat irregular shape, is located to the north of the eastern courtyard and its northern wall W23 (Squares F-I/12-16). Its eastern wall, W47, extends northeast of the join between W23 and W46 of the eastern courtyard and is probably bonded with the latter. The western wall of this courtyard (W24) was not excavated but is clearly visible on the ground. The probe in Square I/11-12 failed to uncover the join between this wall and the northwestern corner of the Eastern Courtyard for a reason as yet unknown. The northern wall of this courtyard is divided into two sections. The main, eastern, section (W165) is somewhat parallel to W23. In its northwestern most segment, a small probe (Squares F/12-13) revealed a possible entrance (Loc. 162) and some restorable *in situ* pottery nearby, probably related to a beaten earth floor which was not clearly recognized due to its proximity to topsoil. West of this entrance, a short north-south wall segment (W163) extends southwards from W165, but its entire length and purpose are unclear at present.



Figure 9. The post-destruction squatter phase (Loc. 72) in the northwestern room, looking south 2011.



West of this wall, the courtyard’s northern wall changes direction (W166) to reach the northwestern corner of the courtyard.

The courtyard walls were built with the same masonry techniques as those of the eastern courtyard, and the habitation level of beaten earth was found less than 30 cm below the surface.

**The northwestern courtyard and the broadroom house**

The third courtyard is attached to the northeastern courtyard from the west. It is almost square in shape, measuring about 20 × 19 m (380 m<sup>2</sup>), and is located north of the main structure (in Squares F-J/8-11). Its northern wall (W166) is a continuation of the northeastern courtyard’s northern wall, while its eastern wall (W24) is shared with the latter courtyard. It appears that this courtyard did not have a southern wall and that a wide entrance enabled movement into the courtyard north of the main structure.

Another structure attached to the western wall of this courtyard (W78) was excavated (Fig. 10). This is a typical Late Chalcolithic broadroom house, measuring 10 × 4 m. It comprises three walls in addition to W78 (W77, W76, and W134 to the south, east and north, respectively), which are all about 1 m wide and built similarly to the walls of the main structure. The beaten earth surface of this unit (Loc. 115) was found under a stone collapse less than 30 cm below the topsoil, abutting the first course of stones of the surrounding walls. The entrance to this unit was in the eastern wall (W76), thus it was entered from within the courtyard. In the probe excavated in the southern part of this unit below the floor, most of the finds attributed to the earlier Stratum III were found above the natural conglomerate surface.

**THE CERAMIC ASSEMBLAGE (S.B.)**

Altogether, 11,047 pottery sherds with a surface area greater than 4 cm<sup>2</sup> were collected and sorted (Table 1). Seventeen of these are body sherds dating to the Late Roman period, ascribed to the temporary structure that stood on the mound in the centre of the site. These sherds are not discussed in this report.

The following is a report on the ceramic finds that were recovered. Parallels are made with the nearby sites

of the Fazeal valley cluster and from relevant sites in the broader region, mainly from the Jordan Valley and Samaria Mountains.

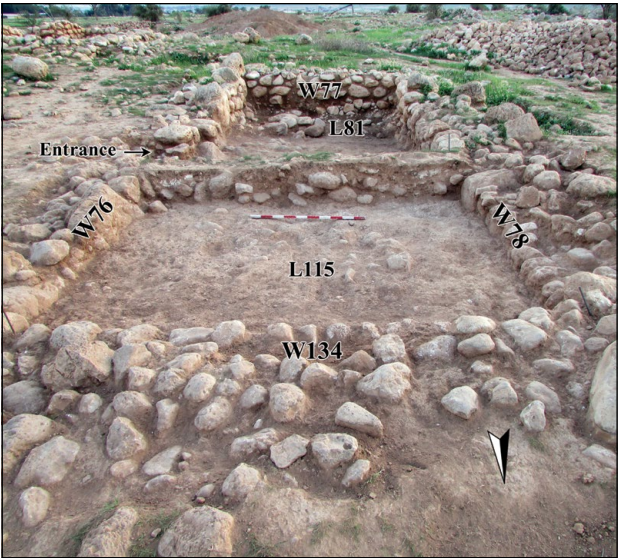


Figure 10. The structure in the northwestern courtyard during excavation, 2016. Note the location of the living surface (Loc. 115) close to topsoil, the collapse above it (in the baulk), and the location of Stratum III (Loc. 81) below the foundation levels of Stratum II walls.

Type	Stratum II	Stratum III	Total
Bowl	363	35	398
Basin	30	1	31
Strainer	9	-	9
Holemouth jar	175	9	184
Jar	84	4	88
Chalice	1	-	1
Lug handle: large/small	27/42	2/5	29/47
Vertical handle	35	-	35
Ledge/knob handle	3/3	-	3/3
Flat base	454	21	475
Red paint	202	22	224
Rope decoration	22	5	27
Incision	12	5	17
Other decorations	5	-	5
Body sherd	8,882	572	9,454
Total Sherds	10,349	681	11,047

Table 1. The Stratum II and III pottery assemblage.

### The Stratum III assemblage

Stratum III was excavated in two small trenches totalling only about 14 m<sup>2</sup>, and therefore the assemblage is small (681 pottery sherds with a surface area >4 cm<sup>2</sup>).

Analysis of the diagnostic items (rims: n=49) shows that the most common vessels are bowls (n=35, 71.5% of the assemblage) followed by holemouth jars (n=9, 18.4%), jars (n=4, 8.1%) and a basin (n=1, 2%). All the 21 bases retrieved were flat (two of them were thickened and five were concave). Only seven handles were retrieved, five small and two large lug handles (Fig. 11:11, 12). Twenty-two of the body sherds (mostly bowl fragments, 2.9% of the assemblage) were red-painted, most having a red stripe on the rim. Plastic ornamentation is limited to five body sherds adorned with rope decoration. Herringbone pattern incisions appeared on five body sherds.

The commonest bowl was the straight-sided bowl ranging in diameter between 8 and 20 cm. Most of these bowls were deep, decorated with a red stripe on the rim ('lipstick', Fig. 11:1–3). This was also the most common bowl in Stratum II (see below) and in the nearby sites of Fazeal 2 and Fazeal 5 (Bar *et al.* 2013: fig. 13:3, 8; Bar *et al.* 2015: fig. 10:4). Two bowls had a slightly incurved rim (Fig. 11: 4). A cup-like bowl with a rounded body and a folded-out rim was also found (Fig. 11:5).

The holemouth jars were usually narrow and deep. The main type was large with a wide opening (maximum rim diameter of 25 cm) and a simple rim (Fig. 11:6, 7). This type is very common in many Chalcolithic assemblages and is also found in Stratum II here and in Fazeal 5 (Bar *et al.* 2015: fig. 11:1). Two examples of a smaller type with a narrow opening (9 and 12 cm) were also found (Fig. 11:8). A cup-like holemouth jar with an upward pinched plain rim and a red stripe on the inside was also retrieved (Fig. 11:9). Another jar had a long neck and an everted rim, with a red stripe on the outside (Fig. 11:10; parallels at Stratum II).

There is a clear resemblance of some of the types to the Stratum II assemblage, but some types are as yet missing in comparison with the much larger Stratum II repertoire, especially when viewing the bowls, which are the most common type in both assemblages (*e.g.* the S-shaped bowl and the large bowls/basins, very common in Stratum II, are completely absent in Stratum III). It is not yet clear if this difference is the result of the limited

exposure of Stratum III, or if it bears chronological or functional significance.

### The Stratum II assemblage

Analysis of the diagnostic items (n=662) shows that the most numerous vessels are bowls (n=363, 54.8% of the assemblage), followed by holemouth jars (n=175, 26.4%), jars (n=84, 12.6%), basins (n=30, 4.5%), strainers (n=9, 1.4%), and a chalice (n=1). Apart from some of the small straight-sided and S-shaped bowls, made using a slow wheel, the rest of the assemblage is hand-made.

#### Bowls

The most common bowl is the straight-sided bowl, occurring in a variety of shapes and sizes:

- A shallow bowl with thin sides, ranging in diameter between 7 and 12 cm, usually with a red stripe on the inside of the rim (Fig. 12:3–7).
- A small medium-sized deep bowl with thicker sides, usually undecorated, ranging in diameter between 10 and 22 cm (Fig. 12:1, 2). Infrequently this bowl has a slightly everted rim, with an average diameter of 14 cm, usually with a red stripe (Fig. 12:8–10).
- Very large deep bowls, with a thick side, and a simple, cut, or thickened rim and a diameter between 30 and 44 cm (Fig. 13:1–8).

Another very common bowl, comprising more than a third of the repertoire, is the bowl with an S-shaped profile (Fig. 12:11–16). These are deep or shallow with a slightly in-curving side and a slightly everted rim. They are similar to the straight-sided bowls, and when only the rim is found it is hard to distinguish between the two. They range in diameter from 9 to 24 cm, and are mostly decorated with a red stripe on the rim.

The globular bowl, 20–35 cm in diameter, frequently appears as a shallow bowl (Fig. 12:18), sometimes with a red stripe on the rim. It is also common as a wide deep bowl with thick sides and a cut or thickened rim (Figs. 13:9; 14:1–3). A globular cup, 13 cm in diameter with a red stripe on the inside of the rim, is an uncommon sub-type (Fig. 12:17).

Another type is the very shallow large bowl (Figs. 12:19–21; 13:1). It has a simple or cut rim and ranges in diameter between 25 and 52 cm. Most of the examples are straight-sided, but there is also a globular example.



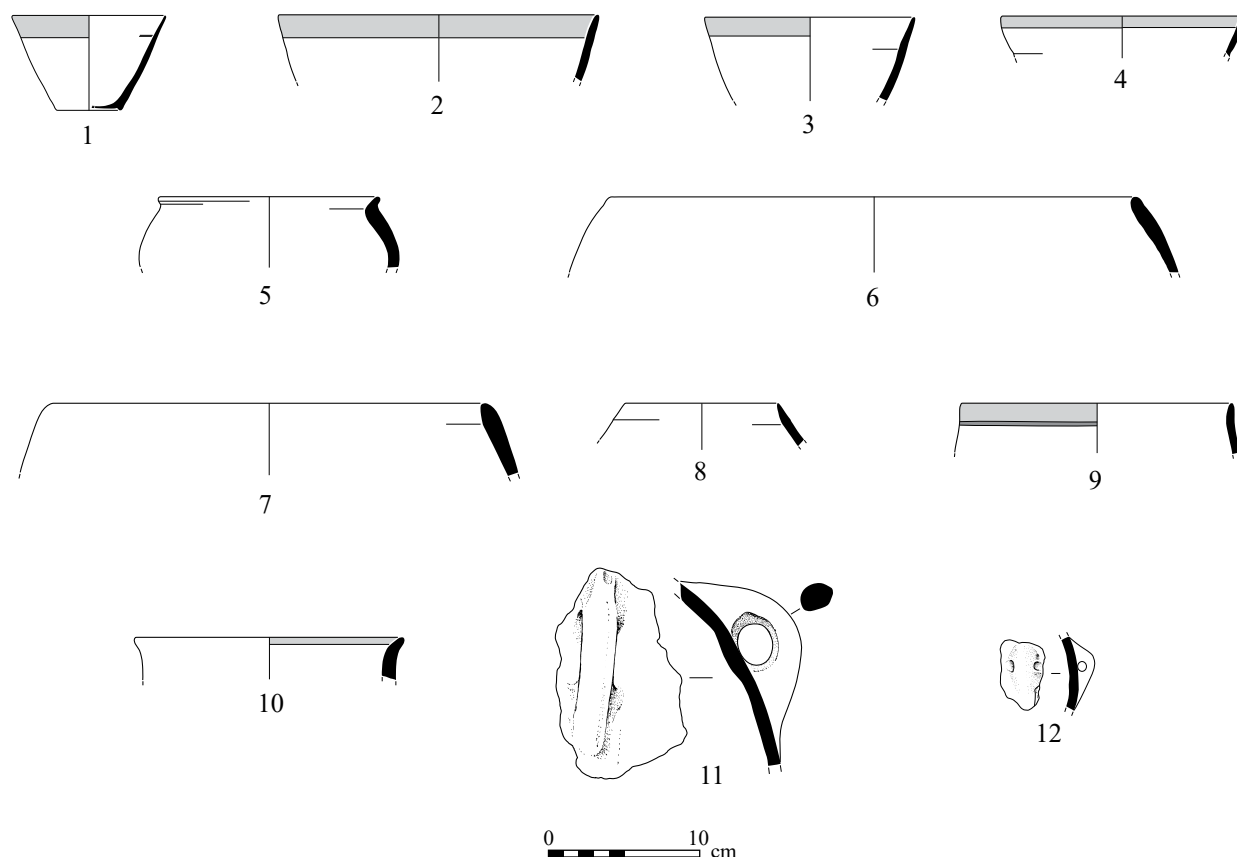


Figure 11. The Stratum III pottery assemblage: 1–4) straight-sided bowls; 5) cup-like bowl; 6–9) holemouth jars; 10) jar; 11, 12) lug handles.

No.	Description	Parallels
1	Light clay and core, many white and grey grits. Reddish painting on outer rim	Fazael 2 (Bar <i>et al.</i> 2013: fig. 13:3, 8); Fazael 5 (Bar <i>et al.</i> 2015: fig. 10:4); Shoham North (van den Brink and Gophna 2005: fig. 6.3:8); Fasa'el (Porath 1985: fig. 3:2)
2	Light clay and core, many white and grey grits. Reddish painting on outer and inner rim	
3	Light clay and core, many white and grey grits. Reddish painting on outer rim	
4	Light clay and core, many white and grey grits. Reddish painting on outer and inner rim	
5	Brown clay and core, many white and grey grits	Fazael 2 (Bar <i>et al.</i> 2013: fig. 14:9); Shoham North (van den Brink and Gophna 2005: fig. 6.3:5)
6	Light clay and core, many white and grey grits	Fazael 5 (Bar <i>et al.</i> 2015: fig. 11:1); 'En Esur (Yannai 2006: fig. 4.24:8)
7	Light clay and core, many white and grey grits	
8	Brown clay and core, many white and grey grits	Teleilat Ghassul (Lovell 2001: fig. 4.36:4, 5); 'Ein Hilu (Bar 2013: fig. 3.24:12)
9	Light clay and core, many white and grey grits. Reddish painting on outer rim	
10	Light clay and core, many white and grey grits. Reddish painting on inner rim	Fazael 2 (Bar <i>et al.</i> 2013: fig. 18:18); Fazael 5 (Bar <i>et al.</i> 2015: fig. 11:7)
11	Light clay and core, many white and grey grits	
12	Light clay and core, many white and grey grits	

The sides of these bowls are very thick. One example had a finger-impressed rim and another had a red stripe on the inside of the rim and a more elaborate red stripe design on the outside.

Also common are the deep bowls/basins (Fig. 14:4–8). They are 30–58 cm in diameter, usually with a wide

flat protruding rim. Their walls are very thick and straight, inverted or everted. They are neither slipped nor decorated.

Almost all of the bowls are composed of the same matrix of light clay and core, with medium firing, and many white and grey grits.

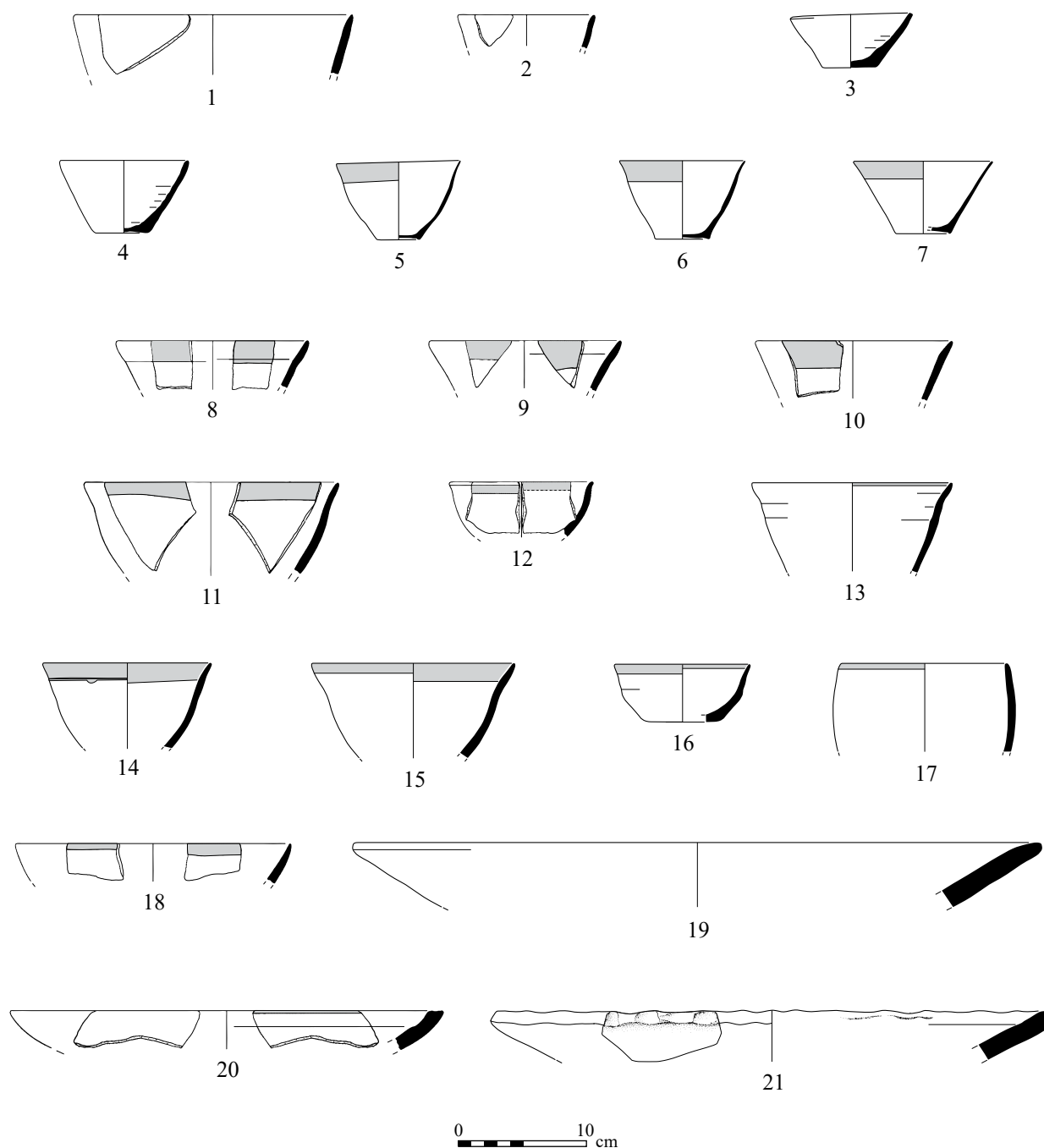


Figure 12. Stratum II bowls.

No.	Description	Parallels
1	Light clay and core, many white and grey grits	Fazael 2 (Bar <i>et al.</i> 2013: fig. 13:1, 2, 4, 5, 7); Fazael 5 (Bar <i>et al.</i> 2015: fig. 10:5, 7, 8); Fasa'el (Porath 1985: fig. 3:9); Shoham North (van den Brink and Gophna 2005: fig. 6.1:1); 'Ein Hilu (Bar 2013: fig. 3.23:10); Teleilat Ghassul (Lovell 2001: figs. 4.31:1, 4.32:7)
2	Light clay and core, many white and grey grits	
3	Light clay and core, many white and grey grits	Fazael 2 (Bar <i>et al.</i> 2013: fig. 13:3, 12); Fazael 5 (Bar <i>et al.</i> 2015: fig. 10:1–4); Fasa'el (Porath 1985: fig. 3:2, 3, 7); 'En Gedi (Ussishkin 1980: fig. 8:8)
4	Reddish-brown clay, light core, many white and grey grits. Soot traces on inner and outer face	
5	Light clay and core, many white and grey grits. Reddish brown painting on outer face rim	
6	Light clay and core, many white and grey grits. Reddish brown painting on outer face rim	
7	Light clay and core, many white and grey grits. Reddish brown painting on outer face rim	
8	Light clay and core, many white and grey grits. Reddish brown painting on inner and outer face rim	
9	Light clay and core, many white and grey grits. Reddish brown painting on inner and outer face rim	
10	Light clay and core, many white and grey grits. Reddish brown painting on outer face rim	
11	Light clay and core, many white and grey grits. Reddish brown painting on inner and outer face rim	Fazael 2 (Bar <i>et al.</i> 2013: fig. 13:13–19); Fazael 5 (Bar <i>et al.</i> 2015: fig. 10:6); Shoham North (van den Brink and Gophna 2005: figs. 6.3:3, 6.10:1–12)
12	Light clay and core, many white and grey grits. Reddish brown painting on inner and outer face rim	
13	Light clay and core, many white and grey grits. Reddish brown painting on inner face rim	
14	Light clay and core, many white and grey grits. Reddish brown painting on inner and outer face rim	
15	Light clay and core, many white and grey grits. Reddish brown painting on inner and outer face rim. Soot traces on outer face	
16	Light-brown clay and core, many white and grey grits. Reddish brown painting on inner and outer face rim. Soot traces (?) on inside face	
17	Light clay and core, many white and grey grits	Fazael 2 (Bar <i>et al.</i> 2013: fig. 14:2, 4); 'En Gedi (Ussishkin 1980: fig. 8:10); Teleilat Ghassul (Lovell 2001: figs. 4.32:4)
18	Light clay and core, many white and grey grits. Reddish brown painting on inner and outer face rim	Fazael 2 (Bar <i>et al.</i> 2013: fig. 13:6); Fazael 5 (Bar <i>et al.</i> 2015: fig. 10:10); 'En Gedi (Ussishkin 1980: fig. 8:24)
19	Light brown clay and core, many white and grey grits	Fazael 2 (Bar <i>et al.</i> 2013: fig. 13:20–23); Fasa'el (Porath 1985: fig. 4:3)
20	Light clay and core, many white and grey grits	
21	Light-brown clay and core, many white and grey grits. Wavy decoration on rim	

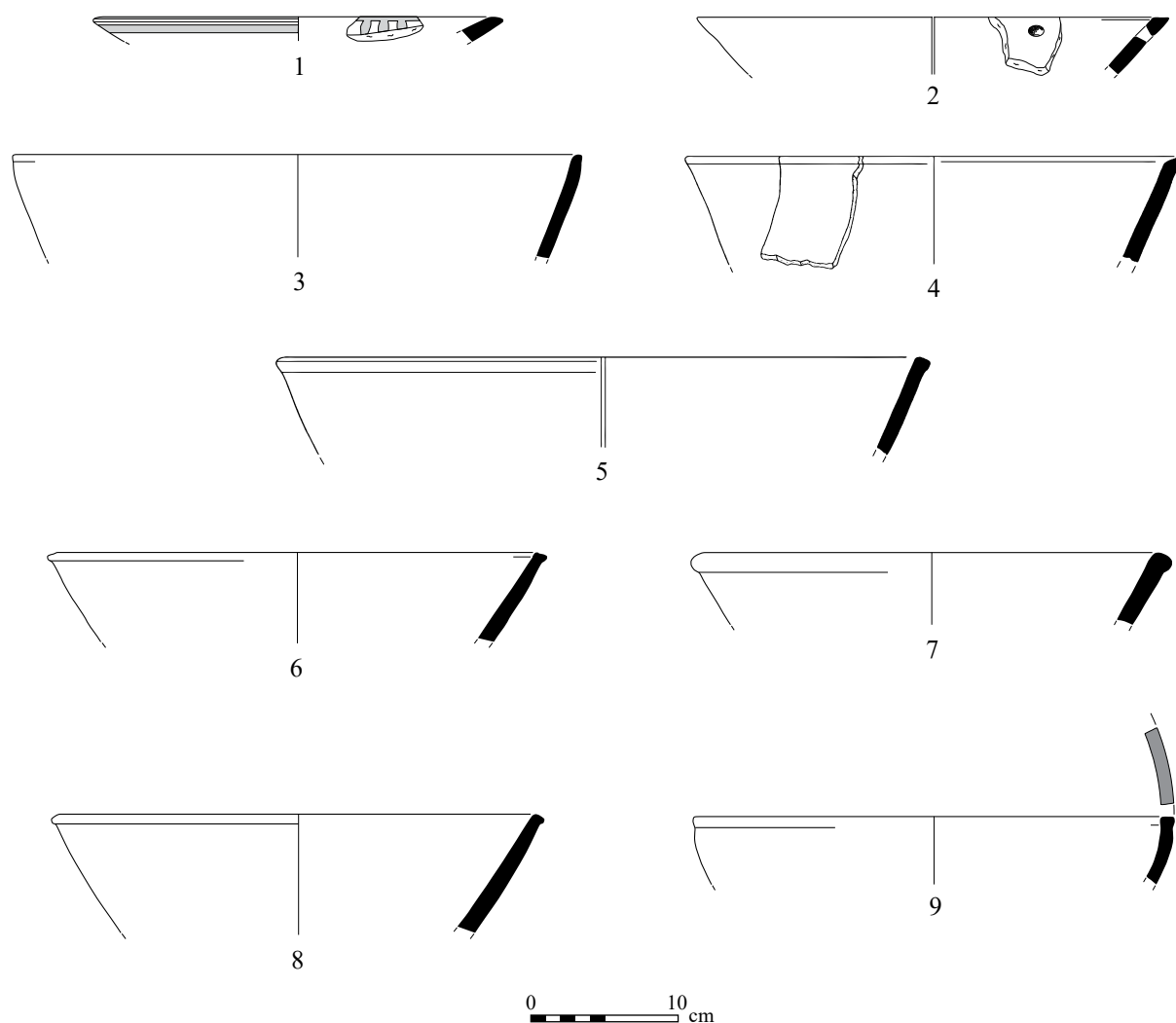


Figure 13. Stratum II bowls (continued).

No.	Description	Parallels
1	Light clay and core, many white and grey grits. Reddish brown painting (on outer face rim) and decoration (on inner face rim)	Fazael 2 (Bar <i>et al.</i> 2013: fig. 13:20–23); Fasa'el (Porath 1985: fig. 4:3)
2	Light clay and core, many white and grey grits. Drilled hole	Fazael 2 (Bar <i>et al.</i> 2013: fig. 14:14, 18–20); Fazael 5 (Bar <i>et al.</i> 2015: fig. 10:14, 16); Fasa'el (Porath 1985: fig. 3:8)
3	Light clay and core, many white and grey grits	
4	Light clay and core, many white and grey grits	
5	Light clay and core, many white and grey grits	
6	Light clay and core, many white and grey grits	
7	Light clay and core, many white and grey grits	
8	Light clay and core, many white and grey grits	
9	Light brown clay, dark core, and many white and grey grits. Dark red painting on rim	Fazael 2 (Bar <i>et al.</i> 2013: fig. 14:12); Fazael 5 (Bar <i>et al.</i> 2015: fig. 10:11); Teleilat Ghassul (Lovell 2001: fig. 4.35:3, 4)



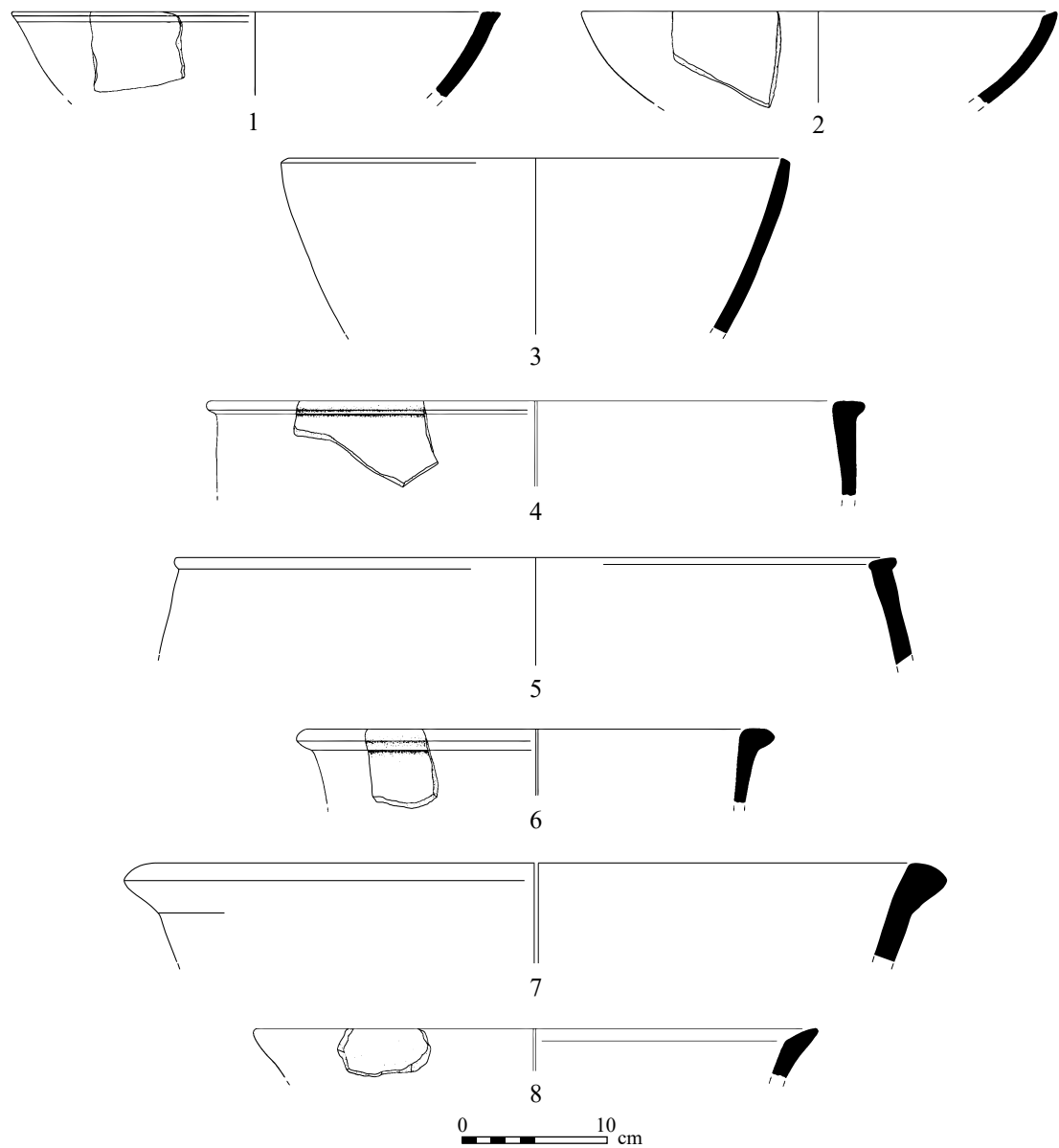


Figure 14. Stratum II bowls and basins.

No.	Description	Parallels
1	Light clay and core, many white and grey grits	Fazael 2 (Bar <i>et al.</i> 2013: fig. 14:12); Fazael 5 (Bar <i>et al.</i> 2015: fig. 10:11); Teleilat Ghassul (Lovell 2001: fig. 4.35:3, 4)
2	Light clay and core, many white and grey grits	
3	Light clay and core, many white and grey grits	
4	Light clay and core, many white and grey grits	Fazael 2 (Bar <i>et al.</i> 2013: fig. 14:16); Fazael 5 (Bar <i>et al.</i> 2015: fig. 10:12); Fasa’el (Porath 1985: fig. 3:12–13); ‘En Gedi (Ussishkin 1980: fig. 9:8)
5	Light clay and core, many white and grey grits	
6	Light clay and core, many white and grey grits	
7	Light clay and core, many white and grey grits	
8	Light clay and core, many white and grey grits	

**Holemouth jars**

The holemouth jars are usually narrow and deep with thick walls. They are always hand-made and their fabric is coarse. With just two exceptions, no slipped or decorated vessels were found. The main groups are:

- Very large narrow and deep holemouth jars, ranging in diameter between 35 and 47 cm. The rims are usually simple and rarely thickened on the inside or pinched upright. The sides are either straight or slightly in-curving. These are the most frequent at the site and more than half of the rim sherds belong to this type (Figs. 15, 16:1). Two examples of spouted holemouth jars are also a version of this type (Fig. 16:7).
  - Smaller jars that have the same morphological characteristics as the first type but are much smaller with a narrow opening (7–11 cm). These are the only holemouth jar type that is sometimes decorated with red paint on the rim or body (Fig. 16:2–4).
  - Flattened shallower and small holemouth jars that are not very common in the assemblage. The rim is usually thickened on the inside and they range in diameter between 9 and 14 cm (Fig. 16:5, 6).
- Almost all of the items are composed of the same matrix of light red or brown clay and core, with medium firing and many white and grey grits.

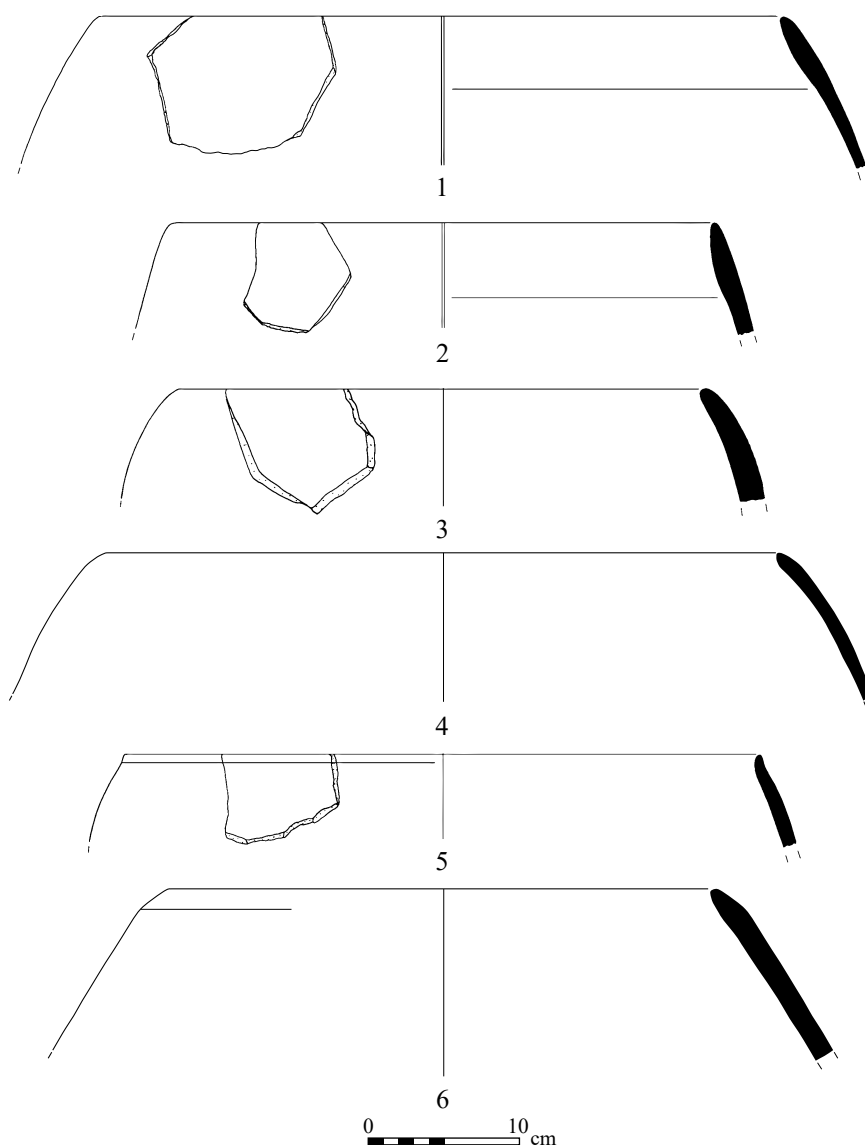


Figure 15. Stratum II holemouth jars.

No.	Description	Parallels
1	Light red clay and core, many white and grey grits	Fazael 2 (Bar <i>et al.</i> 2013: fig. 15:11, 14); Fazael 5 (Bar <i>et al.</i> 2015: fig. 11:1); Shoham North (van den Brink and Gophna 2005: fig. 6.18:14); Teleilat Ghassul (Lovell 2001: fig. 4.37:7)
2	Light red clay and core, many white and grey grits	
3	Light clay and core, many white and grey grits	
4	Light brown clay and core, many white and grey grits	
5	Brown clay and core, many white and grey grits	
6	Brown clay and core, many white and grey grits	

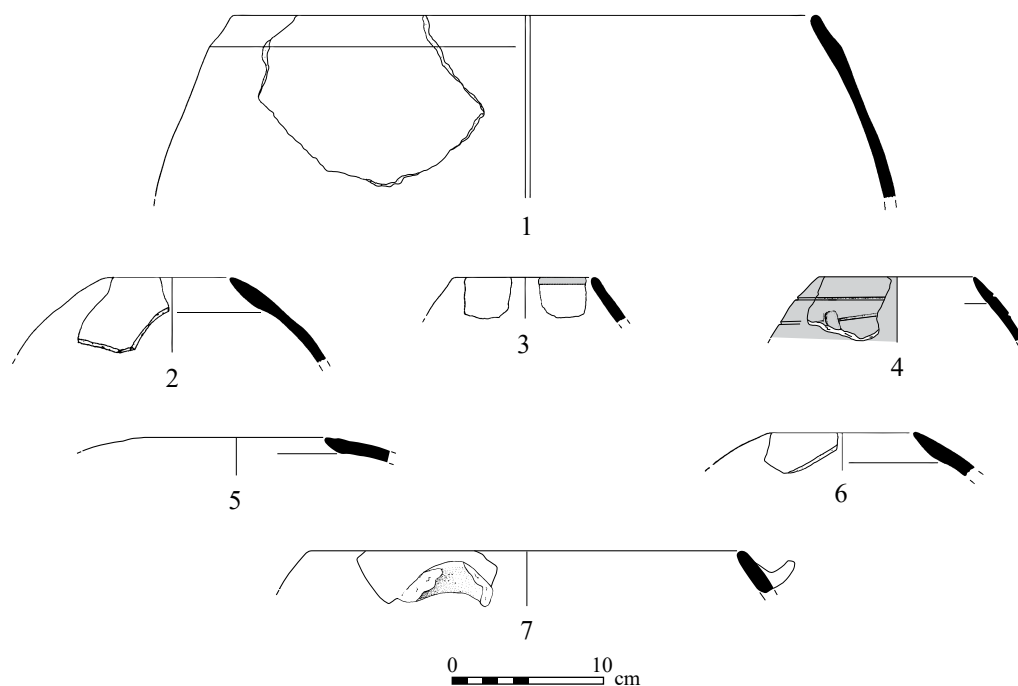


Figure 16. Stratum II holemouth jars.

No.	Description	Parallels
1	Light red clay and core, many white and grey grits	Fazael 2 (Bar <i>et al.</i> 2013: fig. 15:11, 14); Fazael 5 (Bar <i>et al.</i> 2015: fig. 11:1); Shoham North (van den Brink and Gophna 2005: fig. 6.18:14); Teleilat Ghassul (Lovell 2001: fig. 4.37:7)
2	Light clay and core, many white and grey grits	Fazael 2 (Bar <i>et al.</i> 2013: fig. 15:6, 7); Fazael 5 (Bar <i>et al.</i> 2015: fig. 11:4); Teleilat Ghassul (Lovell 2001: fig. 4.36:8)
3	Reddish clay and core, many white and grey grits. Reddish painting on outer rim	
4	Light clay and core, many white and grey grits. Reddish painting on outer wall	
5	Light red clay and core, many white and grey grits	Fazael 2 (Bar <i>et al.</i> 2013: fig. 15:1, 2, 12); Fazael 5 (Bar <i>et al.</i> 2015: fig. 11:3); Shoham North (van den Brink and Gophna 2005: fig. 6.18:2, 12); Teleilat Ghassul (Lovell 2001: fig. 4)
6	Light brown clay and core, many white and grey grits	
7	Light clay and core, many white and grey grits	Fazael 2 (Bar <i>et al.</i> 2013: fig. 15:10)

## Jars

Since only one complete jar was found, the entire typology is based on the rims and necks of the vessels. Almost all jar rims are everted, the predominant rim type of the Chalcolithic period. The jars are divided into two main categories: those with short necks and rim diameter between 14 and 21 cm (Fig. 17:1–3), and those with long necks and rim diameter between 10 and 15 cm (Fig. 17:4–11). In general, the long-necked jars had a smaller rim diameter than the short-necked type. The short-necked jars are less common at the site.

Another jar type has an upright rim and an average diameter of 12 cm (Fig. 17:12).

A very large jar/pithos (Fig. 17:13) has an everted, almost folded-out, rim and a relatively short thick neck. Its rim diameter is 38 cm.

In the almost complete absence of complete jars, it is unclear to what extent they had plastic ornamentations or some other kind of decoration, apart from two rare examples of red slip applied on rims and long necks.

Most of the jars are composed of the same matrix of light red clay and core, with medium firing and many white and grey grits.

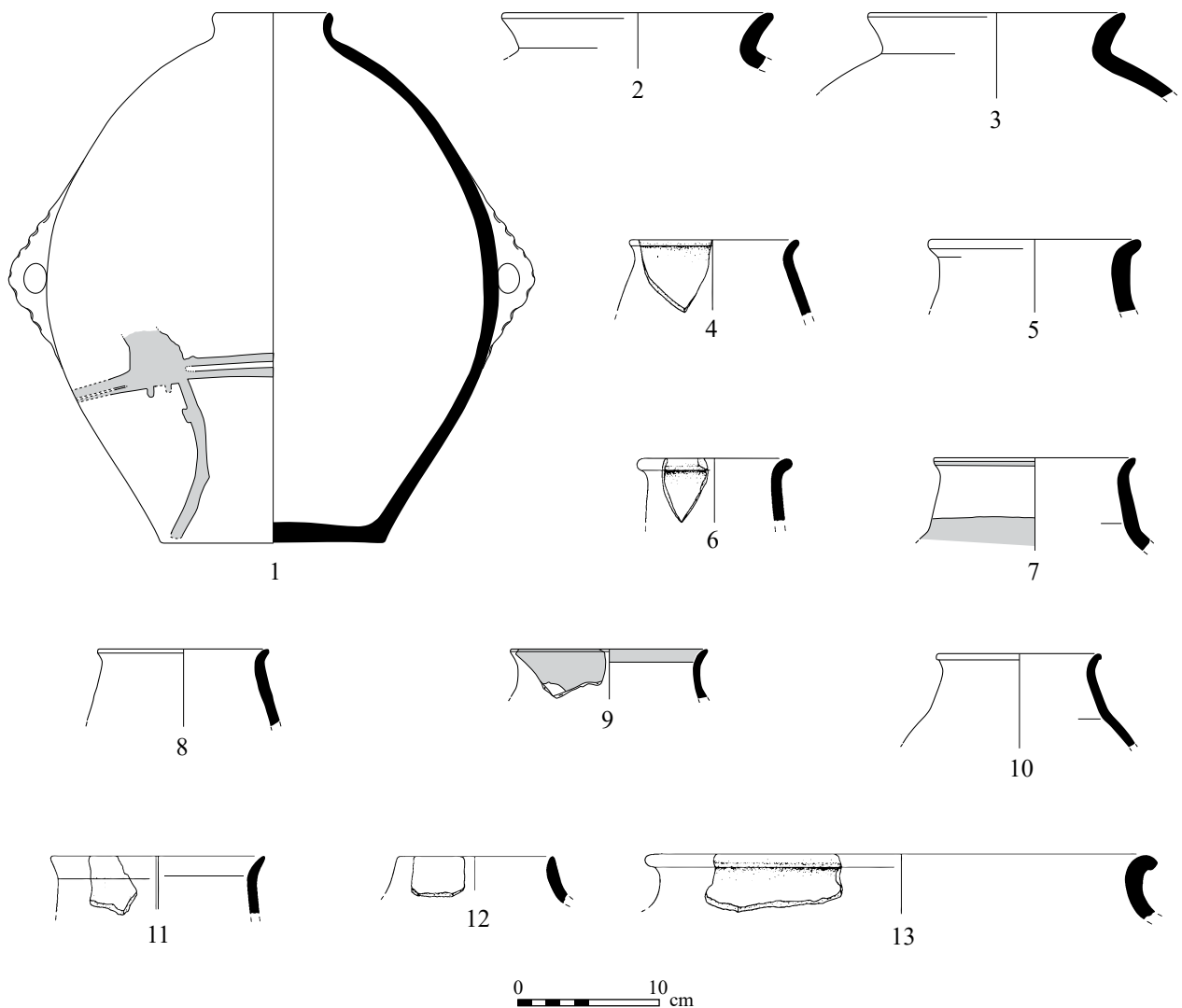


Figure 17. Stratum II jars.



No.	Description	Parallels
1	Light red clay and core, many white and grey grits. Painting on outer wall	Fazael 2 (Bar <i>et al.</i> 2013: fig. 16:6); Shoham North (van den Brink and Gophna 2005: figs. 6.7:4, 6.21:5, 6.27:4–7); ‘Ein Hilu (Bar 2013: fig. 3.25:13)
2	Light red clay and core, many white and grey grits	
3	Light clay and core, many white and grey grits	
4	Light red clay and core, many white and grey grits	Fazael 2 (Bar <i>et al.</i> 2013: fig. 16:15); Fazael 5 (Bar <i>et al.</i> 2015: fig. 11:8–10); Fasa’el (Porath 1985: fig. 5:1–5); Shoham North (van den Brink and Gophna 2005: figs. 6.7:2, 6.21:10); Teleilat Ghassul (Lovell 2001: fig. 4.40:3, 4)
5	Light brown clay and core, many white and grey grits	
6	Light red clay and core, many white and grey grits	
7	Light clay and core, many white and grey grits. Painting on outer wall	
8	Dark clay and core, many white and grey grits. Soot traces on inner and outer wall	
9	Light red clay and core, many white and grey grits. Dark red painting on inner and outer rim	
10	Light clay and core, many white and grey grits	
11	Light red clay and core, many white and grey grits	Fazael 2 (Bar <i>et al.</i> 2013: fig. 16:17, 18); Shoham North (van den Brink and Gophna 2005: fig. 6.27:11)
12	Light red clay and core, many white and grey grits	
13	Light clay and core, many white and grey grits	Fazael 2 (Bar <i>et al.</i> 2013: fig. 16:1); Shoham North (van den Brink and Gophna 2005: fig. 6.21:4)

### Varia

Two additional object types present in the assemblage are strainers and a chalice. The nine strainers found were all body sherds of bowls, and are not illustrated. The holes have an average diameter of 4–7 mm, and the distance between the holes varies from 7 to 15 mm. The only chalice found is a neck broken where the beginning of both the lower leg and the upper bowl are visible.

The most prevalent type of handles in the assemblage is lug handles ( $n=69$ ; 62.7% of all handles). They are divided by size into small ( $n=42$ ; Fig. 18:3–6) and large handles ( $n=27$ ; Fig. 18:1, 2). The hole of the small handles is up to 1 cm in diameter, and the average length and width are 3.5 and 2.9 cm respectively. The hole of the large types is between 2 and 3.5 cm in diameter, and the average length and width are 11 and 4.8 cm respectively. Both handles are found attached either vertically or horizontally to the body of the vessel. A few of both sub-types are decorated with finger impressions.

Other types of handles are vertical (loop) handles ( $n=35$ ; 31.8% of all handles), ledge handles ( $n=3$ ; 2.7%;

Fig. 18:7) and knob handles ( $n=3$ ; 2.7%). The ledge handle in the assemblage is not surprising since such handles were found nearby at Fazael 2 (Bar 2014a: chapter 10: fig. 10.16), Fazael 5 (Bar *et al.* 2015: fig. 12:2) and Fasa’el (Porath 1985: fig. 5:12).

All the 454 bases found were flat. A minor typological difference was noted between the bases and they were divided to three sub-categories: flat, thickened and concave. Most were flat (76% of the bases; Fig. 18:5, 14, 15), followed by concave (17%) and thickened (7%). The concave bases were more common on small bowls (Fig. 18:13).

The most frequent decoration was the application of red paint on the rim of vessels, mostly on small straight-sided and S-shaped bowls. A total of 202 sherds, mostly rims, were red-painted (2.3% of all the sherds collected and 21.8% of the rim collection). Plastic decoration is infrequent and only 22 body sherds with decoration were found (Fig. 18:8, 9). Incisions were made only on 12 sherds (Fig. 18:10).

Spindle whorls were also found (Fig. 18:11, 12), attesting to spinning activities at the site.

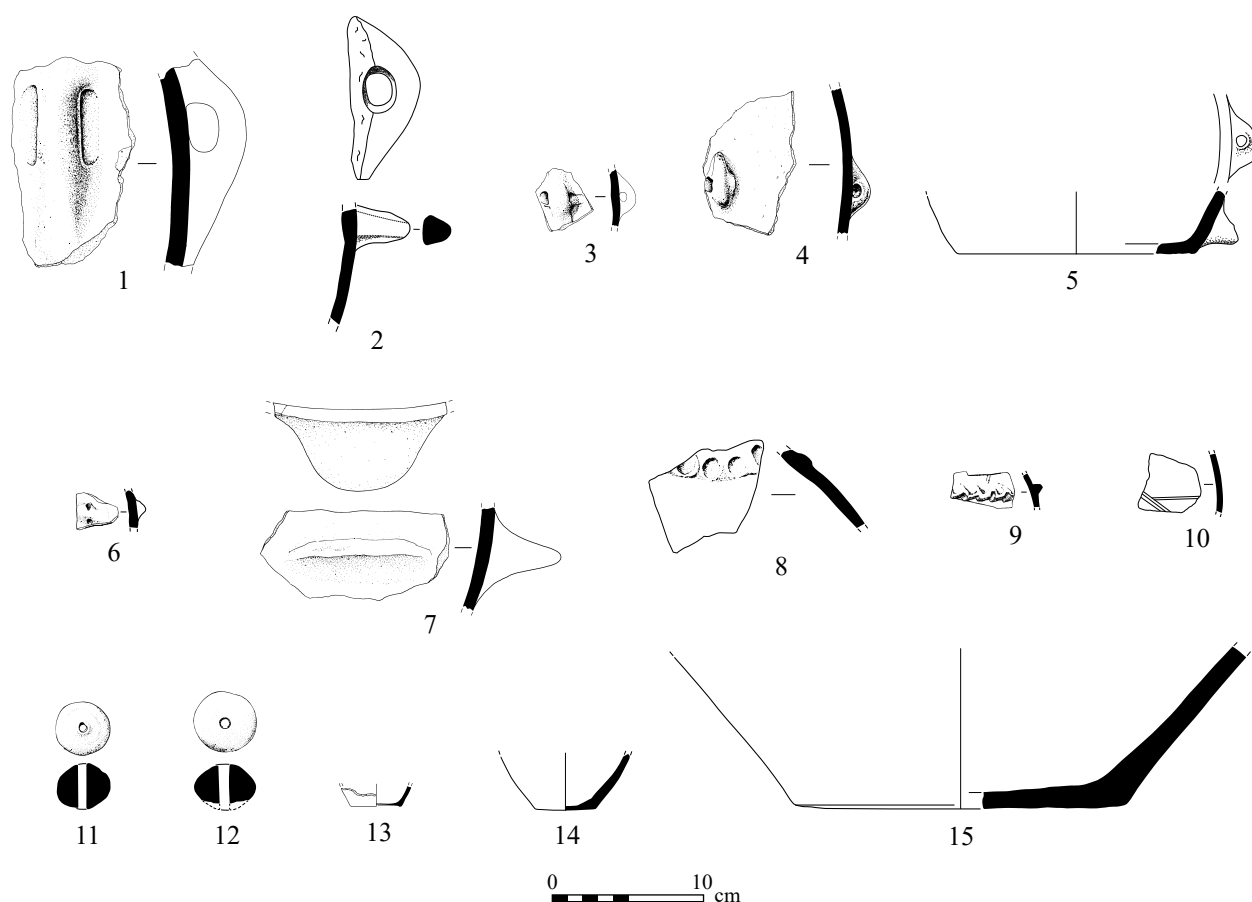


Figure 18. Stratum II varia: 1–6) lug handles; 7) ledge handle; 8, 9) rope decorations; 10) incised sherd; 11, 12) spindle whorls; 13–15) bases.

No.	Description	Parallels
1	Light clay and core, many white and grey grits	
2	Light clay and core, many white and grey grits	
3	Light clay and core, many white and grey grits	
4	Light clay and core, many white and grey grits	
5	Reddish brown clay and core, many white and grey grits	
6	Light clay and core, many white and grey grits	
7	Light clay and core, many white and grey grits	Fazael 2 (Bar 2014a: fig. 10.16); Fazael 5 (Bar <i>et al.</i> 2015: fig. 12.2); Fasa'el (Porath 1985: fig. 5.12)
8	Light brown clay and core, many white and grey grits. Finger decoration	
9	Light clay and core, Plastic decoration	
10	Light clay and core, Incised decoration	
11	Light clay and core, many white and grey grits	
12	Light red clay and core, many white and grey grits	
13	Light clay and core, many white and grey grits. Soot traces on inner and outer walls	
14	Light clay and core, many white and grey grits	
15	Light clay and core, many white and grey grits	

### Summary of the pottery assemblage

The pottery assemblage of Fazeal 7 represents an assemblage dated to the later phases of the Ghassulian culture of the Chalcolithic period. Almost all typical Chalcolithic pottery types are present in the assemblage, but two typical Ghassulian vessels are absent: the churn and the cornet. This phenomenon is typical of all the very late Chalcolithic sites of the Fazeal cluster (Fazeal 2, Fazeal 5, Fazeal 7 and Fas'ael), further supporting the suggestion that these are all sub-sites of one large site that flourished in the Fazeal valley floodplain in the 1st century of the 4<sup>th</sup> millennium BCE, in the latest phases of the Ghassulian culture (Bar 2014b). Further supporting a late date within the Chalcolithic continuum is the characteristic presence of the S-shaped bowl which is less common in typical Ghassulian Chalcolithic assemblages.

A comparison with the nearby sites of Fazeal 2 and Fazeal 5 (located less than 300 m from Fazeal 7) shows that most types of vessels appear in all three assemblages. In addition, many parallels to the Fazeal 7 assemblage were found in the burial site of Shoham North, radiometrically dated to the same time span as the Fazeal Chalcolithic cluster.

Almost all of the assemblage is homogeneous, composed of the same matrix of light red (and less often brown) clay and core, not reaching high firing temperature and including many white and grey grits.

### THE LITHIC ASSEMBLAGE (S.P.)

As the flint assemblage is not yet fully sorted, only preliminary results are presented. In Fazeal 7, 9,366 flint items, including the waste category, were excavated up to the 2017 season. The various categories are presented in Table 2.

Chunks and chips represent 47.4% (n=4,436) of the assemblage (18.7% chunks and 28.6% chips). It should be noted that in Fazeal 7 only the loci which represent floors, installations or other critical areas were completely sieved. Thus the low number of chips found is not representative of the knapping activity in the site and they are too few to indicate whether specific tools, such as sickle blades or fan scrapers, were actually manufactured. However, we can at least assume that reshaping of tools, or even production of simple tools, such as retouched flakes, was executed on site.

Category	N	%
PE flakes	318	6.5
PE blades	187	3.8
Flakes	2,569	52.1
Blades	499	10.1
Bladelets	596	12.1
CTE	57	1.2
Burin spalls	14	0.3
MBT	8	0.2
Cores	60	1.2
Hammerstones	2	0.002
Tools	620	12.6
<b>Total</b>	<b>4,930</b>	<b>100.1</b>
Chunks	1,755	
Chips	2,681	
<b>Total</b>	<b>9,366</b>	

Table 2. The lithic assemblage.

### Debitage

The debitage category, including flakes, blades and bladelets (together with primary elements – PE), represents 84.6% (n=4,169) of the assemblage (Table 2). In the debitage, flake production is by far the most significant, with 52.1% (n=2,569) of the assemblage (58.6% with the primary elements). The blades comprise 10.1% (n=499), and the bladelets 12.1% (n=596). Only 3.8% of the assemblage represents primary elements on blades and bladelet blanks. All the primary elements (flakes, blades and bladelets) together encompass 10.3% of the assemblage.

### Cores and core trimming elements

Sixty cores and core fragments (1.2% of the assemblage) were identified in the assemblage of Fazeal 7 (Table 3). The number of core trimming elements (CTE) is similar (n=57, 1.2%). The raw material is varied and similar to the raw material found in the tool groups.

Among the identified cores, some have one striking platform (n=32, 53.3%) and some have two (n=15, 25.0%). Forty five cores were used for flake production (75.0% of the cores), two were used for blade production (8.3%)

and 12 were used for bladelets (20.0%). Three cores show scars of both flakes and blades.

Among the cores with two striking platforms, six have perpendicular striking platforms and five have opposite striking platforms. Fifteen of the cores with a single striking platform have a general pyramidal form. The reason for the low number of blade cores may be the fact that the tools which are made on blades, such as sickle blades, borers and end-scrapers, are more specialized and were not knapped on the site, but in workshops elsewhere.

The core trimming elements (Table 4) were divided into several groups. The largest group is crested blades/bladelets ( $n=26$ , 45.6%), followed by 14 core tablets (24.6%) and only a single overshoot.

### Tools

Among the tools, 620 were identified, representing 12.6% of the assemblage (Table 5 and Fig. 19). The largest group was retouched flakes (29.2% of the tools), followed by retouched blades (12.9%). The third group of tools is the

denticulates/notches (10.6%). These tools do not show any standardization. The choice of raw material is variable, from very low quality to very high quality. There are also some items made on old retouched flint items with a double patina. Other tool types found in lesser numbers, such as burins (1.3%), scrapers (9.5%) and truncations (4.8%), also do not show any standardization.

On the other hand, there are other tool types which show some standardization in shape and size. These include end-scrapers (8.9%), micro-endscrapers (0.3%), borers (4.2%), bifaces (0.8%), fan scrapers (1.8%) and sickle blades (5.5%). Note that two perforated flint discs, including a complete example, were found.

### Discussion

In general, the assemblage of Fazael 7 corresponds with other Chalcolithic flint assemblages (Fig. 19). Flake production is predominant in the debitage category, but among the tools the blade is the preferred blank. The presence of chips in the waste category shows that tool reshaping at least was carried out at the site, but we

Core types	Total	Flakes	Blades	Bladelets
One striking platform	32	27	1	4
Two striking platforms	15	9	1	5
Pyramidal	16	14	0	2
Two opposite striking platforms	5	2	1	2
Perpendicular striking platforms	6	5	0	1
<b>Total</b>	<b>74</b>	<b>57</b>	<b>3</b>	<b>14</b>

Table 3. Core types.

CTE	N	%
Core tablets	14	24.6
Crested blades/bladelets	26	45.6
Overshots	1	1.8
Varia	16	28.1
<b>Total</b>	<b>57</b>	<b>100.0</b>

Table 4. Core trimming elements.

Tools	N	%
Retouched flakes	181	29.2
Retouched blades	80	12.9
Retouched bladelets	59	9.5
Micro-endscrapers	2	0.3
End-scrapers	55	8.9
Scrapers	59	9.5
Borers	26	4.2
Denticulates and notches	66	10.6
Bifaces	5	0.8
Burins	8	1.3
Truncations	30	4.8
Fan scrapers	11	1.8
Sickle blades	34	5.5
Varia	4	0.7
<b>Total</b>	<b>620</b>	<b>100.0</b>

Table 5. The tools.



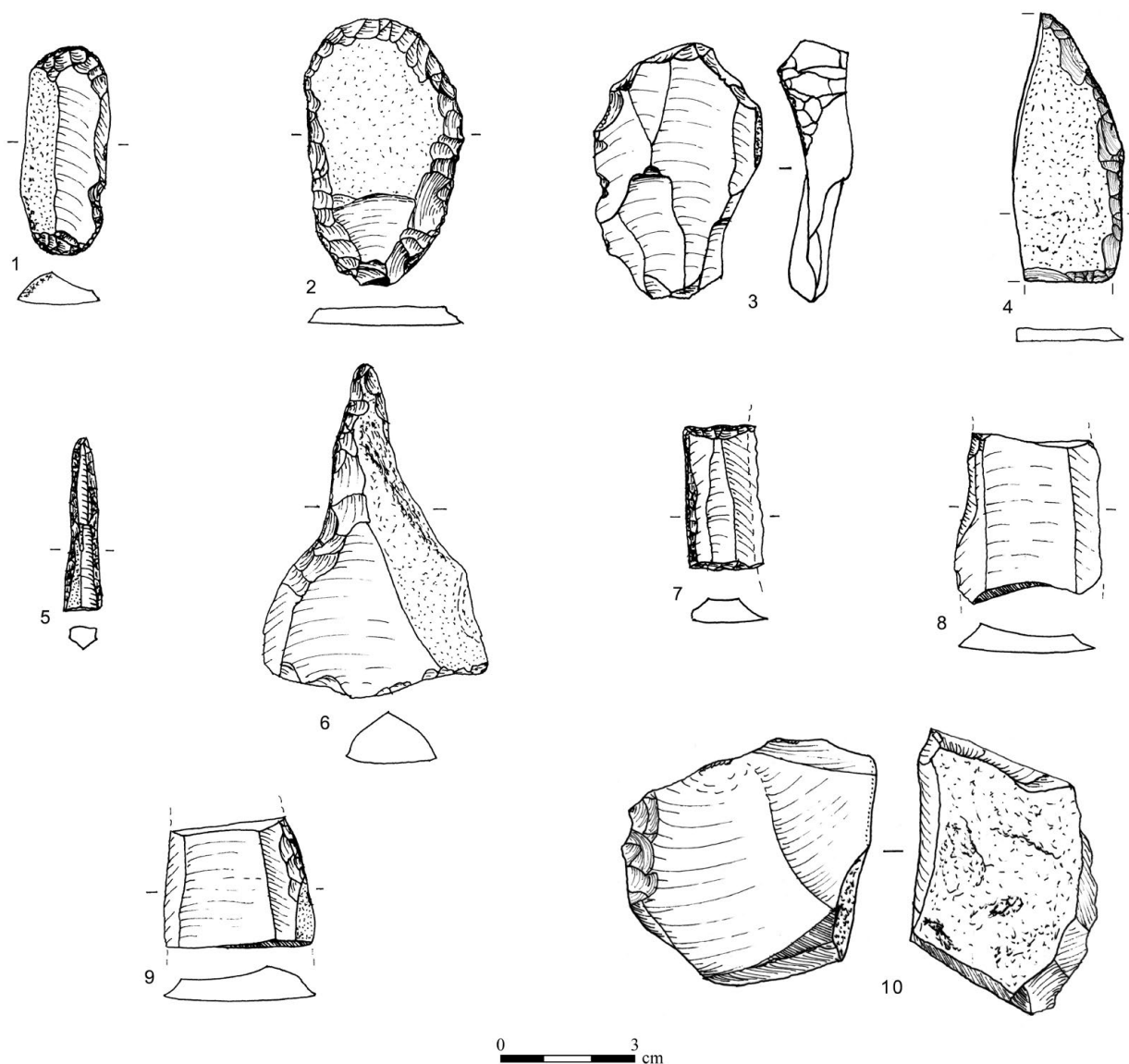


Figure 19. Flint items: 1, 3) end scrapers; 2) scraper; 4) tabular scraper; 5, 6) borers; 7) sickle blade; 8, 9) Canaanite blades; 10) flake core.

can assume that some basic knapping of ad-hoc tools (retouched flakes/blades or denticulates for example) was also done on site. The presence of some cores and CTE supports this supposition. Apart from the flakes, we can see that bladelet production was quite developed in this site.

Fazael 7 can be compared to other Fazael sites and to Chalcolithic sites in other areas in the southern Levant. The Fazael 7, Fazael 2 and Fazael 1 assemblages (Fig. 20) all show Chalcolithic characteristics (such as flake production or Chalcolithic sickle blades for example), but according to the present research, Fazael 2 and Fazael 7 come late in the Ghassulian Chalcolithic

period, while Fazael 1 is supposed to be chronologically similar to the typical Ghassulian Chalcolithic period – *i.e.* slightly earlier than Fazael 2 and Fazael 7 (for more details see Bar 2013, Bar *et al.* 2013, Bar *et al.* 2014). All these sites are currently being analysed, thus the results presented here are preliminary. The flint frequencies of Fazael 2 are based on Bar (2013). The flint assemblage from Stratum II of Fazael 2 and Stratum I of Fazael 1 were chosen for the discussion because of their larger size. In all the assemblages flakes are the main product (Fazael 7 – 52.3%; Fazael 1 – 31.3%; Fazael 2 – 47.1%), but only in Fazael 7 is the percentage of blades lower than that of the bladelets. In all the sites the percentage

of CTE and cores is very low (between 2.5% and 6.0% for both categories together). This shows that in all sites very little knapping, or even tool reshaping, was done on site. The percentage of tools in Fazeal 1 is high (34.9%) in contrast to Fazeal 2 and Fazeal 7 (15.1% and 12.6 %, respectively). Among the tools there are also some differences and similarities. In Fazeal 1 and Fazeal 7 retouched flakes are the dominant category, while in Fazeal 2 the number of denticulates and notches is larger; but this can also be a difference in definition between the categories. On the other hand, the percentage of retouched blades is very similar in the three sites (about 13%). Bladelet blanks are more frequent in Fazeal 7 than in Fazeal 1 and Fazeal 2 as the retouched bladelet category is also much higher, with 9.5%, against 2.1% in Fazeal 2 and 4.8% in Fazeal 1. Fan scrapers are non-existent in Fazeal 1, while there are 1.8% in Fazeal 7 and 1.6% in Fazeal 2. The percent of bifaces in the assemblages is quite similar in Fazeal 7 (0.8%) and Fazeal 1 (0.6%) and non-existent in Fazeal 2. However, in Fazeal 7 bifaces are not standardized, unlike in Fazeal 1. The subject of sickle blades must be more deeply analysed, but sickle blades on Canaanite blade blanks were found only in Fazeal 2 and Fazeal 7 but not in Fazeal 1. It is noteworthy that Canaanite sickle blades are found together with typical Chalcolithic sickle blades and Ghassulian pottery.

Comparisons can also be made between Fazeal 7 and other sites in the southern Levant. These include 'En Esur, Layer IV (Yannai 2006), Derech Namir, Area A1 (van den Brink *et al.* 2016) and Grar (Gilead *et al.* 1995) which represent well-published assemblages from three different regions in Israel (Fig. 21). Flake production is predominant in all the assemblages, but bladelet production is much higher in Fazeal 7 than in the other sites. The number of cores and CTE is much higher in 'En Esur, Grar and Derech Namir than in Fazeal 7. The percentage of the tools is quite similar in Grar (16.0%), but in 'En Esur and Derech Namir it is higher (21.7% and 23.9%, respectively). Among the tools the percentage of bifaces in Fazeal 7 is negligible in comparison with the other sites (about 6%). Canaanite sickle blade blanks are found only in Fazeal 7. The percentage of sickle blades in general is much lower (5.5%) than the other sites (12.3%, 12.8%, and 23.9%). The same is true for the borers (4.2% vs. 16.2%, 4.6% and 5.3%).

Comparison with Fazeal 1 and Fazeal 2 and other sites in the southern Levant, shows that Fazeal 7 shares many characteristics with other Chalcolithic flint assemblages. In spite of these similarities, a few details characterise Fazeal 7. Firstly, bladelet production is relatively important in Fazeal 7, a fact that is not connected to the area or to a chronological specificity, because neither in Fazeal 2 or Fazeal 1 is this tendency observed. Regarding the knapping activity, we can see that in Fazeal 7 and other Fazeal sites tool production was less intensive than in other sites in the southern Levant. Finally, the fact that the rarity of bifaces and the presence of sickle blades made on Canaanite blade blanks are possibly characteristic of the very late Ghassulian Chalcolithic assemblage, already proposed in the past, occurs again in Fazeal 7, as in Fazeal 2 and 5 (Bar 2013, Bar *et al.* 2014, Bar *et al.* 2015, Bar and Winter 2010).

## THE GROUNDSTONE TOOL ASSEMBLAGE (H.C.K.)

The groundstone tool assemblage of Fazeal 7 comprises 28 items. Most of the assemblage was assigned to Stratum II, including four tools found in the excavation of the courtyard topsoil (Table 6). Only ten tools were found on floor levels, of which only two hand-sized items were found intact, and another broken one-handed grinding stone could be restored. Three of the items were found on the site surface, while only two tools could be related to Stratum III. Therefore, it seems that no item can be securely considered as being found *in situ*.

Of interest are two large pieces of a large limestone bowl quern which was restored to slightly more than half of the complete item. One piece was found in the collapse in the northeastern room and the other in the collapse in the southeastern room (Tables 10 and 11, item 12; Fig. 22:2) of the main structure. This may hint at recycling of the tool as building material, and perhaps similar recycling of three more items found in the collapses in the rooms of the same structure, high above the floor levels (Tables 10 and 11, Items 2, 7 and 8). Perhaps the use of these stone tools may be seen as related to a phase earlier than the construction of the main structure.

The methodology used here is described elsewhere (Cohen-Klonymus 2014; see also Adams 2002; Adams *et al.* 2009). Items were checked by attribute analysis,

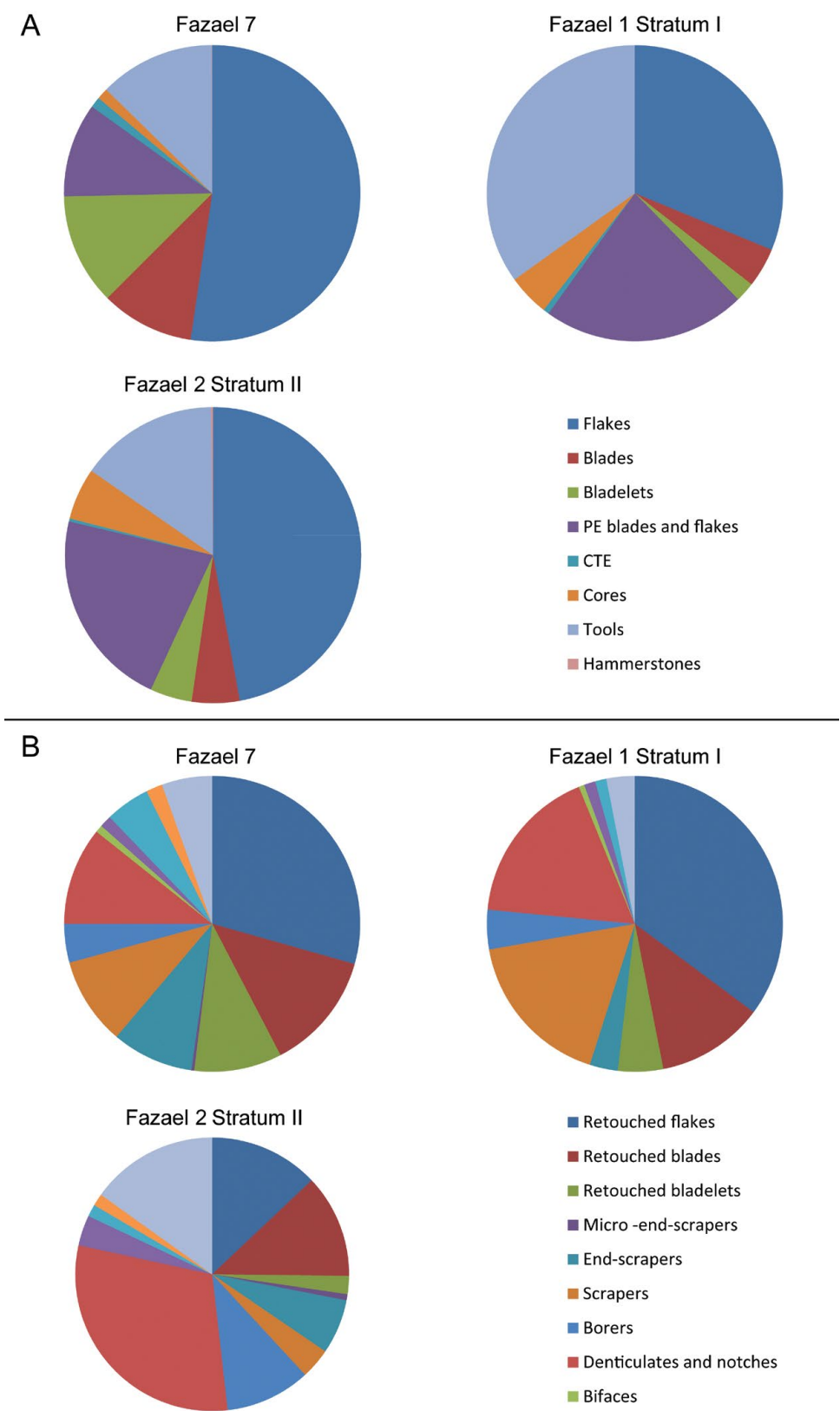


Figure 20. Comparison between the assemblages of Fazael 7, Fazael 2 and Fazael 1. A) The general assemblages; B) The tool assemblages.

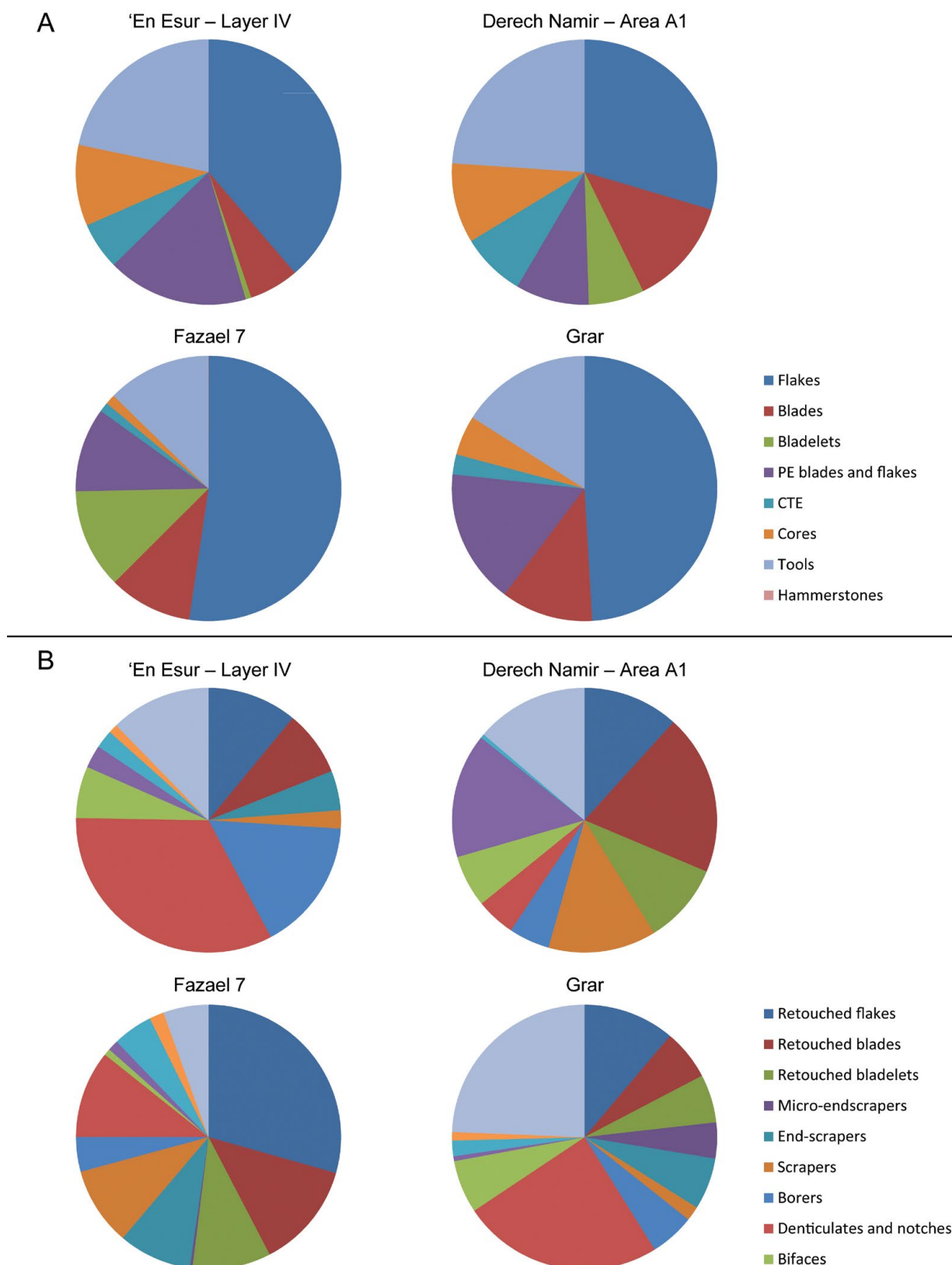


Figure 21. Comparison between the assemblages of Fazael 7 and other sites in the southern Levant ('En Esur - Layer IV (Yannai 2006), Derech Namir – A1 (van den Brink *et al.* 2016), and Grar (Gilead *et al.* 1995). A) The general assemblages; B) The tools assemblages.

for each item, registering its raw material, exterior and use surface morphological characteristics and measurements, level of strategic design and finishing of exterior surfaces, type and level of use-wear, state of preservation, secondary use and context of find. Typological classification of the items was based on the attribute analysis, considering item function as shown by use signs (pounding, crushing, abrasion, polishing or no use signs), wear patterns (for example, concavity versus convexity of loaf-shaped grinding stones), shape and section of the use surface (for example, as seen in the difference between grinding slabs and grinding querns), and specific type characteristics (for items showing no use signs, such as beads and spindle whorls).

Raw materials were recognized to the general rock type by up to  $\times 100$  magnification, and using 14% HCl acid. The raw materials seen in the site fit well within the range of raw materials found in the nearby site of Fazeal 2 and were already noticed to differ in rock types, their assignment to tool types, and incidence in the assemblage from those found in Fazeal 1 (Cohen-Klonymus and Bar 2016; see also Bar *et al.* 2014).

Raw materials show prominent use of the local limestone (Table 9, see also Sneh *et al.* 1998). This includes all mortars and bowl querns and all but one of the upper grinding stones. As in Fazeal 2, the use of the local brecciated *Mishash* flint and chalk is quite rare, and appears here only as one item of each of these rock types. Even the use of non-local basalt and purple sandstone, used for three items each, is more common. The use of purple sandstone was also common in Fazeal 2 and was noticed even in the small assemblage of Fazeal 5 (Bar *et al.* 2015; Cohen-Klonymus and Bar 2016).

## Description of the assemblage

The groundstone tool assemblage of Fazeal 7 is dominated by limestone mortars. Six of the nine mortars are bowl mortars (Tables 10 and 11, items 1–6, Fig. 22:1, 3). Of these, four are made of porous or biogenic limestone (hard or semi-hard limestone with negative imprints of fossil Mollusca, causing natural vascularity of the rock), a type of raw material which in this site was uniquely used for this tool type. In Fazeal 2 this raw material was used for bowl mortars, some with similar design to those found here, but also for grinding tools. The use of porous limestone appeared only in the later phase of Stratum II in Fazeal 2 (Cohen-Klonymus and Bar 2016). If stone tools found within the collapse filling the main structure are considered as recycled for building material, and therefore as originally earlier than the tools found on the floors and fills below the collapse, then the use of porous limestone in Fazeal 7 also corresponds with the later tools.

By definition, wall thickness of the bowl mortars remains quite even or changes gradually along the section. The use basin shows pecking and battering signs, possibly with some abrasion signs. Bowl mortars in Fazeal 7 generally have a rounded or U-shaped exterior profile. Items were shaped by careful well-made pecking, sometimes covering prior chipping signs, or followed with finishing by abrasion. The use basin is deep (items with use surface concave on both length and width were considered as ‘deep’ if the depth to diameter ratio was more than 1:4, or as ‘sunken’ for a shallower ratio; deep use surface is mostly addressed as ‘use basin’), and was originally finished with pecking or pecking with abrasion, as can be seen in its lightly used upper part.

Tool type	Site surface	Stratum II	Stratum III	Total
Lower grinding tools		5 (21.7%)		5 (17.7%)
Upper grinding tools		5 (21.7%)	2 (100.0%)	7 (25.0%)
Unspecified grinding tools		2 (8.7%)		2 (7.2%)
Mortars	2 (66.7%)	7 (30.4%)		9 (32.1%)
V-shaped bowls		1 (4.3%)		1 (3.6%)
Work tools	1 (33.3%)	1 (4.3%)		2 (7.2%)
Unidentified		2 (8.7%)		2 (7.2%)
<b>Total</b>	<b>3 (100.0%)</b>	<b>23 (100.0%)</b>	<b>2 (100.0%)</b>	<b>28 (100.0%)</b>

Table 6. Groundstone tool breakdown by stratum.

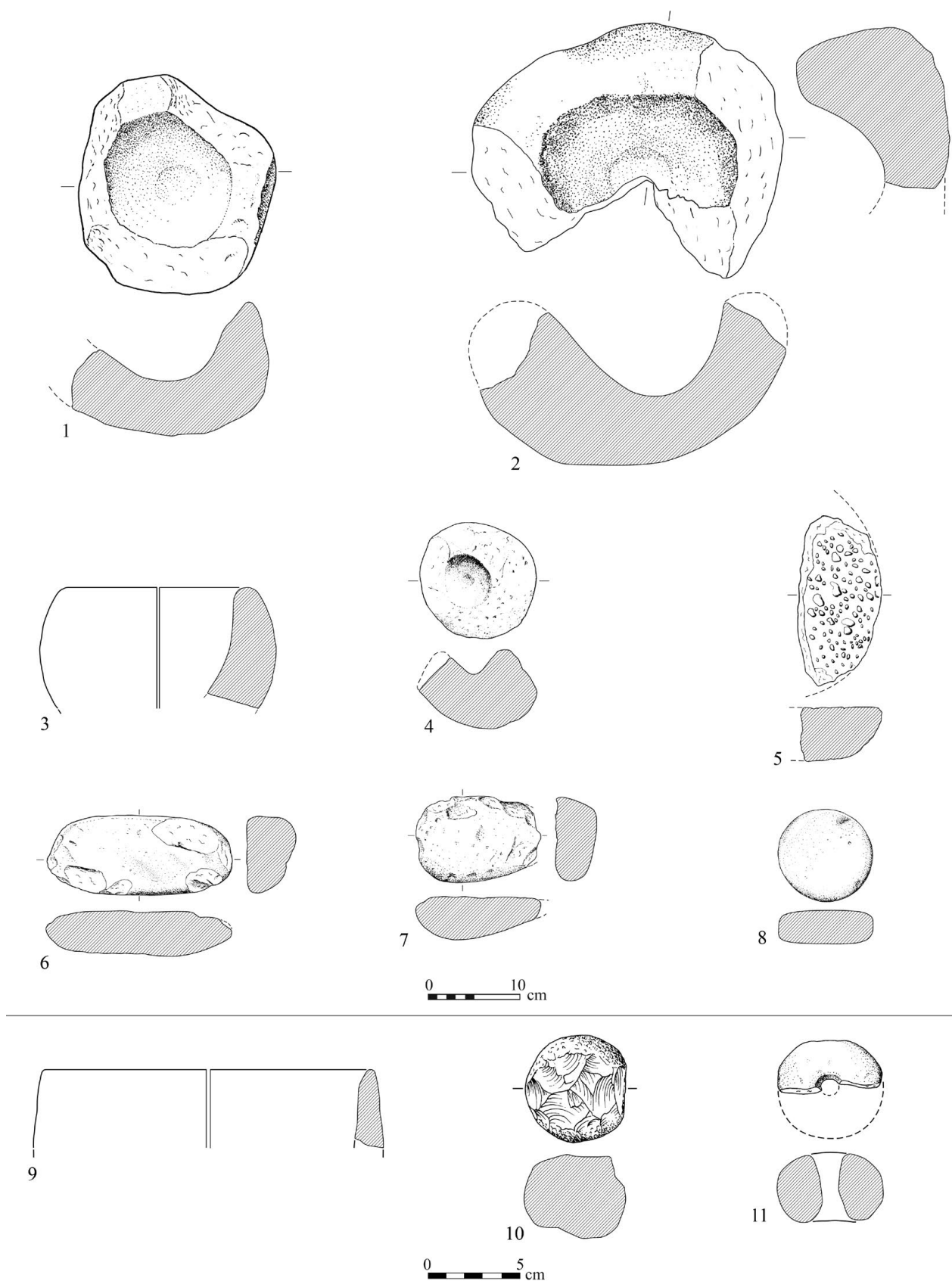


Figure 22. Groundstone tools from Fazel 7: 1, 3) bowl mortar; 2) bowl quern; 4) bowl mortar; 5) lower grinding stone; 6) two-handed grinding stone; 7, 8) one-handed grinding stone; 9) bowl; 10) hammerstone; 11) suspension weight.



Raw material		Grinding tools				Mortars		Other			Total
		Unspecified grinding tools	Bowl querns	Other lower grinding tool	Upper grinding tools	Bowl mortars	Large stone mortars	Fine bowls	Work tools	Und.	
Local	Limestone		2		4					2	8 (28.6%)
	Hard limestone		1		2	3	2				8 (28.6%)
	Porous limestone					4					4 (14.3%)
	Hard chalk								1		1 (3.6%)
	Brecciated Mishash flint								1		1 (3.6%)
Imported	Basalt	1		1				1			3 (10.7%)
	Purple sandstone	1		1	1						3 (10.7%)
<b>Total</b>		<b>2</b>	<b>3</b>	<b>2</b>	<b>7</b>	<b>7</b>	<b>2</b>	<b>1</b>	<b>2</b>	<b>2</b>	<b>28 (100.0%)</b>

Table 7. Groundstone tools by types and raw materials.

All bowl mortars are broken, therefore real measurements are unavailable. Estimated reconstruction of the items hints at a use basin diameter of 14–22 cm and depth diameter ratio of about 1:2. Wall thickness is 5–6.5 cm, sometimes with some thinning of 1.5–2 cm towards the rim. Estimation of the complete size of the items indicates a weight range of 5–22 kg.

Another possible bowl mortar was collected on the site's surface (Tables 10 and 11, item 9, Fig. 22:4). The item is made of a hard limestone river rock with only slight pecking of its exterior. The use surface was shaped as a 2.5 cm deep cup mark with use signs showing pecking, abrasion, and scratches. This item is very different from other bowl mortars, and could possibly show a door or window pivot with very light use wear. A similar item was set beside a door opening in Fazeal 2 and interpreted as a door pivot by its context. This item was covered by a thin layer of topsoil, and its use wear was probably completely eroded.

Two large mortars made of hard limestone were found broken in the collapse in the northeastern room (Tables 10 and 11, items 7, 8). These mortars show irregular wall thickness ranging in each item from 3.5 to 6 cm. Both are made of natural river rocks, with the first showing slight abrasion of its outer surfaces and the second with slight pecking and shaping of a relatively flat base. The use surface of both mortars is round, but only one item is preserved well enough to show use signs and some

measurements. The basin is 7.5 cm deep and its opening is 16 cm in diameter showing slight battering signs and heavy abrasive use. Rough estimates of complete item weight are about 13 and 7 kg, respectively.

No pestles were found. One flint hammerstone cannot be considered as a pestle, as it shows heavy damage caused by hard percussion (Tables 10 and 11, item 25, Fig. 22:10). Similar flint hammerstones were found in Fazeal 2 and 5 (Bar *et al.* 2015; Cohen-Klonymus and Bar 2016), and are quite common in other proto-historical sites (Rosen 1997: 101; Rowan 2006: 214; Rowan *et al.* 2006: 580–581; Wright 1992: 253–254 and table 5-36). The use surface of another possible limestone tool, found in the same locus, was not preserved well enough to show if it was used as a hammerstone (Tables 10 and 11, item 28). Pestles were probably made of perishable material, such as wood, or were taken for other uses if made of less available raw material, such as basalt. The relative lack of pestles was also noted in Fazeal 2 where only one pestle was found, as compared to more than a dozen mortars; a similar situation was noted also in Abu Hamid. The pestle from Fazeal 2, a single pestle found in Fazeal 5, and the pestles found in Abu Hamid were made of basalt (Bar *et al.* 2015; Cohen-Klonymus and Bar 2016; Wright 1992: 253).

Four fragments of three bowl-shaped limestone querns were found (Tables 10, 11, items 10–12, Fig. 22:2). As mentioned, two of the fragments could be reconstructed as a large quern (item 12) which is the only quern of which

enough was preserved to be reconstructed as having an oval use basin. This, and another quern, (item 10) showed a deep use surface and their estimated complete weights are about 22 and 19 kg, respectively. The estimated size of the third quern (item 11) indicated a weight of less than 6 kg. Both larger items seem to be made of large natural rocks which were pecked and smoothed. By definition, use-wear of querns shows round abrasive activity in the use basin. Bowl querns were not found in Fazeel 2 or Fazeel 5 (Bar *et al.* 2015; Cohen-Klonymus and Bar 2016). Only one bowl quern was found in Fazeel 1 (Bar *et al.* 2014).

One broken concave porous basalt lower grinding stone was found (Tables 10 and 11, item 13, Fig. 22:5), the only one identified in the site so far. Another fragment of porous basalt found was too small to be identified as either a lower or upper grinding tool (Tables 10 and 11, item 22). The item was broken along its long axis, with some damage to one end, but was probably originally designed as a wide loaf shape. The use surface was concave and polished by use, showing no signs of re-pecking. Another fragment was of the edge of a purple sandstone lower grinding tool. This fragment could either belong to a concave lower grinding stone or to a sunken saddle-shaped quern (Tables 10 and 11, item 14). Unlike the previous item, the use surface showed deep re-pecking signs.

Seven upper grinding stones were found. Only one, made of limestone, is elongated enough to be considered as a two-handed grinding stone (Tables 10 and 11, item 15, Fig. 22:6), while the rest are one-handed limestone grinding stones (Tables 10 and 11, items 16–20, Fig. 22:7), and a one-handed purple sandstone grinding stone (Tables 10 and 11, item 21, Fig. 22:8). Another purple sandstone fragment could have been a part of either an upper or lower grinding stone (Tables 10 and 11, item 23).

One-handed grinding stones are mostly rounded or oval in shape. Stones complete enough to estimate reconstruction of tool sizes show an average length of about 10 cm, with an approximate 0.7 width to length ratio. The purple sandstone tool, the only one-handed stone designed as disk-shaped, is the only upper grinding tool showing more than one use surface. The finishing of the exterior surfaces of most of these items is by pecking and abrasion, allowing comfortable holding.

Only a small badly preserved rim fragment of a basalt bowl was found (Tables 10 and 11, item 24, Fig. 22:9). This is in contrast to Fazeel 2 where basalt bowls make up more than 25% of the stone tool finds (Cohen-Klonymus and Bar 2016). Also found was a broken limestone suspension weight (Tables 10 and 11, item 26, Fig. 22:11), very similar to limestone suspension weights found in Fazeel 2.

Item no.	Tool type	Locus (stratum)	Context	Raw material	Measurements length × width × height (weight)*	Inner diameter (depth)*
1	Bowl mortar	On site surface	On surface in Courtyard I	Limestone - hard	~21.5 × ~7 × ~15 (~1808)	18 (~8.7)
2	Bowl mortar	61 (II)	Collapse in the NE room	Limestone - hard	~23 × ~23 × 12 (~7231)	~15.5 × ~13.6 (~6.8)
3	Bowl mortar	194 (II)	Topsoil in Courtyard I	Limestone - porous	~23 × ~9 × ~14.4 (~2458.4)	~11.5 × ~6.5 (~9.2)
4	Bowl mortar	72 (II)	On floor of the NW room	Limestone - porous	~16 × ~10 × ~14 (~1710)	22 (~11.6)
5	Bowl mortar	50 (II)	On floor of the NW room	Limestone - porous, hard	~11.9 × ~6.4 × ~11.6 (~850.4)	14 (~7.2)
6	Bowl mortar	49 (II)	Fill in the NW room	Limestone - porous, hard	~22 × ~19 × ~15.5 (~3883.8)	~11 × ~11.2 (~9.9)
7	Large stone mortar	61 (II)	Collapse in the NE room	Limestone - hard	~20 × ~17.5 × ~8.5 (~2725.6)	~10.8 × ~8.3 (~4.3)

Item no.	Tool type	Locus (stratum)	Context	Raw material	Measurements length × width × height (weight)*	Inner diameter (depth)*
8	Large stone mortar	94 (II)	Collapse in the NE room	Limestone - hard	~14 × ~14 × 11 (~1700.7)	16 (7.5)
9	Bowl mortar	On site surface	On surface in Courtyard III	Limestone - river rock, hard	13 × 12.9 × 8.6 (~1491.8)	6 × ~5.7 (2.5)
10	Bowl quern	150 (II)	Topsoil in courtyard I	Limestone	~15 × ~23.5 × ~12 (~3773.4)	~8.4 × ~10.5 (~4.5)
11	Bowl quern	199 (II)	Fill in Courtyard III	Limestone (biogenic?)	~13.2 × ~12.7 × ~5.2 (~737.1)	
12	Bowl quern	90, 45 (II)	Collapse in the NE and SE rooms	Limestone - hard	~33 × ~31 × 18 (~15049)	20 × 16.5 (~10)
13	Lower grinding stone	200 (II)	Fill in Courtyard III	Basalt - very porous	~18.5 × ~9.5 × ~6.5 (~1260.5)	~16.5 × ~8.5 (~0.2)
14	Unspecified lower grinding tool	151 (II)	On floor in courtyard I	Sandstone - purple	~9.5 × ~6 × 3 (~243.1)	
15	Two-handed grinding stone	156 (II)	Topsoil in courtyard II	Limestone	20.5 × 8.7 × 5.4 (1192.4)	
16	One-handed grinding stone	96 (III)	Fill in courtyard III	Limestone (biogenic?)	~9.2 × ~6.2 × ~6.3 (~401.4)	
17	One-handed grinding stone	94 (II)	Collapse in the NE room	Limestone - hard, pink	8.7 × 6.4 × 2.5 (~177.5)	
18	One-handed grinding stone	151 (II)	On floor in Courtyard I	Limestone - reddish	~13.4 × 9.5 × 4.7 (~770.7)	
19	One-handed grinding stone	56 (II)	On floor of the SE room	Limestone - reddish	~9 × ~4.5 × 2.8 (~126.5)	
20	One-handed grinding stone	96 (III)	Fill in Courtyard III	Limestone - river rock, hard	~7.2 × 7.2 × 2.9 (~196)	
21	One-handed grinding stone	11, 59 (II)	In fill and on floor in the SW room	Sandstone - purple	10.3 × 10.1 × 3.9 (679.7)	
22	Unspecified grinding tool	59 (II)	On floor of the SW room	Basalt - very porous	~5.3 × ~4 × ~4.1 (~105)	
23	Unspecified grinding tool	50 (II)	On floor of the NE room	Sandstone - purple	~6.8 × ~5 × ~3.8 (~202.3)	
24	Bowl	65 (II)	Collapse in Courtyard I	Basalt	~5.6 × ~1.6 × ~4.1 (~49.4)	18 (~4)
25	Hammerstone	192 (II)	On floor in Courtyard I	Flint - brecciated	5.9 × 5.6 × 4.3 (209.6)	
26	Suspension weight	On site surface	On surface	Chalk - hard	~5.8 × ~2.8 × 3.9 (~44.2)	2.4 × ~1.7 (3.6)
27	Unidentified	196 (II)	Topsoil in Courtyard III	Limestone	~4.4 × ~5.1 × ~1.3 (~32.7)	
28	Unidentified	192 (II)	On floor in Courtyard I	Limestone - river rock	~3.9 × 7.2 × 5.1 (~173.8)	

Table 8. Stone items: Context, raw material and dimensions.

\* Measurements in cm, weight in g. Incomplete measurements of broken items appear with “~”. All mortars are broken, therefore, diameters which appear as complete are a rough estimate.

#	Tool Type	Condition*	Exterior morphology (exterior section)**	Exterior finishing	Use surface morphology (use surface section)**	Wear type (level of wear)	Notes
1	Bowl mortar	Rim fragment	~Round (round)	Pecked	Round (deep)	Unknown	Highly designed. Shape similar to item 5
2	Bowl mortar	Broken-intentionally	~Squared (U-shaped)	Pecked and abraded	Round (deep)	Pounding with abrasive (Moderate wear)	Square-shaped bowl mortar. Rim intentionally chipped off. Possibly recycled as building material
3	Bowl mortar	Fragment	~Rounded (unidentified)	Chipped and pecked	~Rounded (deep)	Pounding with abrasive (Heavy wear)	
4	Bowl mortar	Fragment	~Rounded (oval)	Pecked and abraded	Round (deep)	Pounding/battering (Heavy wear)	Highly designed
5	Bowl mortar	Rim fragment	~Round (unidentified)	Pecked	~Round (deep)	Pounding with abrasive	Highly designed. One broken side is burnt. Shape similar to item 1
6	Bowl mortar	Broken intentionally	Unidentified	Pecked	~Round (deep)	Pounding with abrasive (Heavy wear)	Flat base. Intentionally broken
7	Large stone mortar	Broken intentionally	Unidentified	Abraded	Round (~deep)	Unknown	All walls were intentionally broken. Possibly recycled as building material
8	Large stone mortar	Fragment	~Rounded (round)	Slightly pecked	Round (deep)	Pounding with abrasive (Heavy wear)	Small flat base made by pecking. Possibly recycled as building material
9	Bowl mortar?	Chipping of rims	Round (oval)	Pecked	Round (deep)	Abrasive (Moderate wear)	Deep conical cupmark with abrasion, pecking signs and scratches on the sides. Could be a pivot with light use signs
10	Bowl quern	Fragment	Unidentified	Abraded	~Rounded (deep)	Abrasive (Heavy wear)	
11	Bowl quern	Fragment	Unidentified	Pecked	Unidentified	Abrasive	
12	Bowl quern	Fragment	Oval (oval)	Pecked	Oval (deep)	Abrasive (Heavy wear)	Restored from two collapses in different rooms of the main structure. Probably recycled as building material
13	Lower grinding stone	Broken longitudinally	~Round (half round)	Pecked and abraded	~Round (concave)	Abrasive (Heavy wear)	
14	Unspecified lower grinding tool	Fragment	Unidentified (flat with convex sides)	Chipped and abraded	Unidentified (flat)	Abrasive (Heavy wear)	Edge fragment. Flat base. Pecking signs (Re-roughening)
15	Two-handed grinding stone	Chipping of edges	Elliptical (half round)	Abraded	Elliptical (flat)	Abrasive (Heavy wear)	Shallow depression on use surface might show secondary use as abrader
16	One-handed grinding stone	Broken	~Rounded (oval)	Pecked and abraded	~Rounded (convex)	Abrasive (Moderate wear)	

#	Tool Type	Condition*	Exterior morphology (exterior section)**	Exterior finishing	Use surface morphology (use surface section)**	Wear type (level of wear)	Notes
17	One-handed grinding stone	Chipping of edges	Oval (elliptical)	Pecked and abraded	Oval (flat)	Abrasive (Low wear)	Use wear is very light
18	One-handed grinding stone	Chipping of edges	Oval (half round)	Pecked and abraded	Oval (flat)	Abrasive (Moderate wear)	Pecking signs (Re-roughening). Adhesive wear on the dorsal face. Moderate use, leaving an uneven use surface
19	One-handed grinding stone	Broken	~Round (elliptical)	Pecked and abraded	~Round (convex)	Abrasive (Heavy wear)	
20	One-handed grinding stone	Broken	Unidentified (triangular)	Naturally smooth	Unidentified (flat)	Abrasive (Moderate wear)	Natural river rock with triangular section. Moderate use, leaving natural uneven use surface
21	One-handed grinding stone	Broken	Round (rectangular)	Pecked and abraded	Round (convex)	Abrasive (Heavy wear)	Disk-shaped. Both use surfaces are slightly convex by use. Restored from two loci within the same room
22	Unspecified grinding tool	Fragment	Unidentified	Unknown	Unidentified	Abrasive	Small fragment
23	Unspecified grinding tool	Fragment	Unidentified	Unknown	Unidentified	Abrasive	Small fragment
24	Bowl	Rim fragment	~Rounded (unidentified)	Abraded	~Round (~deep)	Unknown	Rim fragment of a basalt bowl. Rim top was badly preserved, hindering clear diameter estimation
25	Hammerstone	Chipping of edges	Ball shaped (oval)	Pecked	Round (convex)	Pounding/ battering (Heavy wear)	<i>Mishash</i> flint spheroidal hammerstone. Main use surface is completely chipped off. Opposed use surface is slightly chipped by use
26	Suspension weight	Broken	~Round (oval)	Abraded	Round (hole)	No wear	Possibly half of a suspension weight. Hole is biconical and smoothed
27	Unidentified	Fragment	Unidentified	Abraded	Round (hole)	No wear	Facial fragment of a drilled item
28	Unidentified	Broken	~Rounded (oval)	Pecked	Unidentified	Unknown	Likely a hammerstone. Use surface is missing

Table 9. Stone items: Morphology, use wear, preservation, and general notes.

\* 'Broken' is used for items broken along either width or length. 'Fragment' is used for items broken along both width and length.

\*\* Item exterior morphology and use surface are described regardless of each other. 'Round'/ 'oval'/ 'elliptical' morphology is defined by length to width ratio of less than 1:1.2; less than 1:3 and over 1:3 respectively. 'Half-round' is used for exterior plano-convex section with thickness to half the width ratio of 1 to 1–1.2. 'U-shaped' is used for exterior plano-convex items with round base and flat sides. 'Concave' or 'convex' use surface section is used for items with concavity or convexity along length or width only. 'Sunken' or 'deep' use surface is used for items concave along both length and width of the use surface, creating either a shallow basin or a deep basin if basin depth to basin diameter ratio is more than 1:4. "~" mark is added for items in poor condition, but for which morphology or section could still be understood. Otherwise, morphology or sections are considered as unidentified.



### The groundstone tool assemblage – discussion

The groundstone tool assemblage of Fazael 7 shows many similarities to the assemblage of Fazael 2 (Cohen-Klonymus and Bar 2016) and shows clear differences from what is known from Fazael 1 (Bar *et al.* 2014: 192–198), and 'Ein Hilu (Bar *et al.* 2008: 208–214). This is true for the incidence of raw materials in the assemblage (excluding the basalt bowls, which were found in exceptionally large numbers in Fazael 2), and the assignment of raw material to tool type. The techniques of design and tool shapes are also very similar to those found in Fazael 2, with only a few exceptions. The dominant use of mortars in Fazael 7 corresponds with their dominant appearance in the later phase of Stratum II in Fazael 2 (Cohen-Klonymus and Bar 2016). However, some large bowl querns also appear in Fazael 7, while in Fazael 2 these are completely absent. The high proportion of mortars in Fazael 2 and Fazael 7, compared to other Late Chalcolithic sites, has already been noted (Cohen-Klonymus and Bar 2016). Many similar limestone mortars, and possibly also bowl querns, were found in Teleilat Ghassul, but current publications include only general inadequate descriptions (Lee 1973: 268–269; Mallon *et al.* 1934: 66 and pl. 34). In Abu Hamid more than 20 similar items were recognized, some as bowl mortars and boulder mortars (or punctured mortars) and some as globular bowls. There is also a high proportion of mortars in the Abu Hamid assemblage. Interestingly, as noted in Fazael 2, no item can be recognized as a bowl quern (Wright 1992: 252–253 and figs. 5-54, 5-56, 5-57, 5-62).

The picture presented by the groundstone tool assemblage might be biased by the focus of the excavation around the main structure. In Fazael 2 it was noticed that mortars were concentrated in the eastern part of the compound and it is only because of the extensive excavation in the western part of Fazael 2 that the proportions of mortars are not as high as in Fazael 7 (Cohen-Klonymus and Bar 2016). The groundstone assemblage of Fazael 7 is far from showing a complete tool set. This again can be the result either of the small area of the excavation, or of the exceptional nature of the main structure in which almost half the groundstone tools were found. Together with the fact that no item can be securely considered as being found *in situ*, the conclusions here should be seen as only preliminary.

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

This report presents the faunal assemblage recovered since 2009 at the site. The bones were handpicked during excavation and from a 5 mm mesh used to sift about 10% of the excavated sediment and all high-quality loci. Some bones were coated with a hard matrix from which they were difficult to extract and clean. Consequently, these bones were immersed in 5% acetic acid. Following this procedure, the bones were rinsed with fresh water in order to buffer the acid. This procedure enabled us to carry out anatomical and taxonomic identifications and search for bone surface modifications.

Bone remains were identified to skeletal element and species using the comparative collections of the Laboratory of Archaeozoology at the University of Haifa. Skeletal elements were identified to the closest possible taxonomic unit. Elements for which species identification is less reliable (*i.e.* ribs, vertebrae, skull fragments, and diaphysis shaft fragments) were grouped with the closest species size category. Sheep (*Ovis aries*) and goats (*Capra hircus*) were distinguished based on morphological and metric criteria (Zeder and Lapham 2010). Sheep and goat skeletal elements that could not be identified to species were combined in a sheep/goat category. Bone fusion data were recorded in order to assess the age profiles of the animals (Grant 1982; Silver 1969).

The relative abundance of different taxa was quantified using number of identified specimens (NISP), minimum number of elements (MNE) and minimum number of individuals (MNI). These values were calculated using the assumptions of Lyman (1994). The NISP was used as a basic measure of taxonomic abundance. All identified bones were examined for bone surface modifications, such as butchery marks, carnivore and rodent gnawing, burning, weathering and fracture morphology (Lyman 1994).

The bone assemblage of Fazael 7 comprised 188 complete and fragmentary identified skeletal remains of mammals. Bone preservation was good as indicated by the cortical surfaces of bones, which are relatively well preserved. Their mode of preservation generally did not exceed Behrensmeyer's (1978) Weathering Stage II (*i.e.* presence of small cracks only), indicating fast deposition. This observation is also reflected in the pattern of bone fracturing, indicating that the majority of bones were

broken while still fresh. Both observations suggest that bones were not exposed to trampling long after their deposition and indicate minimum *in situ* bone attrition. This interpretation is supported by the few remains gnawed by dogs (NISP=5). The fact that bones were buried within a relatively short time prevented their prolonged exposure to animal activity.

The assemblage is dominated by sheep and goat bones, which together comprise approximately 80% of the sample (Table 10). Both sheep and goats are represented, even though most bones could not be differentiated according to the two taxa. Some gazelle (*Gazella gazella*) and fallow deer (*Dama mesopotamica*) bones indicate that hunting was part of the subsistence of the site inhabitants. Presence of cattle (*Bos taurus*) and equid (most probably donkey) bones tell us that beasts of burden were also part of the livestock economy. Finally, two bird bones (tarsometatarsus), two reptile bones (vertebra and a femur) and a fish (maxillary tooth) are presented within the studied assemblage.

The percentage of juvenile sheep and goat, calculated from long bones and first phalanges whose fusion age is under 18 months, is approximately 30% (Table 11). This ratio characterizes a ‘typical herd’ in which juvenile mortality is relatively low and the goal of the herders is to maximize the number of animals, so stock is generally not slaughtered young (Marom and Bar-Oz 2009).

The distribution of sheep and goat skeletal elements suggests that all body parts are present. The presence of both meaty upper limb bones with poor meat elements like feet and head supports the assumption that the bone assemblage represents consumption debris rather than slaughter waste. The very small sample of gazelle bones supports a similar conclusion, suggesting that complete carcasses were brought to the site.

Approximately 25% of the bones were found burnt to some degree. Many of these bones were completely burnt indicating that they were directly exposed to fire. A concentration of burnt bones was mainly identified in the vicinity of the two hearths discovered in Square L11. Butchery marks were identified only on two bones of sheep/goat (proximal radius and distal humerus). Both marks were made while dismembering the carcass for consumption.

Despite the relatively small size of the bone assemblage it seems that the animal remains at the site reflect an

economy that combines herding (sheep/goat and perhaps cattle) and hunting (gazelle and fallow deer). A similar mode of subsistence that combines herding and hunting was also found in the Chalcolithic site of ‘Ein Hilu (Bar *et al.* 2008).

The gazelle is the major game animal hunted. They were also represented in similar ratios in ‘Ein Hilu (Bar *et al.* 2008) and the nearby Early Bronze Age site of Fazel 4 (Bar *et al.* 2012). Cattle comprised only a minor component of the site’s economy. This pattern differs from Fazel 1 (Bar *et al.* 2014) and Fazel 5 (Bar *et al.* 2015), where cattle are the second most abundant taxa after sheep and goat (but the sample from these two sites is not very large). Other taxa that show striking differences between the nearby Jordan Valley assemblages is the pig. While in Fazel 7 it is represented only by isolated bones, it is abundant in Early Bronze Age I Sheikh Diab 2 (Bar *et al.* 2011) and Fazel 4 (Bar *et al.* 2012), and in the Chalcolithic sites of ‘Ein Hilu (Bar *et al.* 2008) and Fazel 1 (Bar *et al.* 2014).

The differences between sites demonstrate high variability, possibly pointing to a high level of subsistence diversity within these communities in the Chalcolithic and Early Bronze Age I periods. It may be suggested that the high ratio of pig represents a more sedentary community; while a high ratio of sheep and goat represents a herding and more mobile community. Such intra-site variability exhibits the mosaic of groups that existed within Chalcolithic and Early Bronze Age I societies in the Jordan Valley.

## THE COPPER FINDS (S.B.)

The Fazel cluster of sites is one of the richest locations in the southern Levant with copper finds from the Chalcolithic period. More than 50 tools and implements were found in the different sites, mainly concentrated in Fazel 2, where a copper industry was traced. This subject is in final preparation for publication, and therefore is not presented in detail in the current report.

The copper finds from Fazel 7 comprise 14 items. Most notable are the remains of three items (Fig. 23):

1. A complete chisel found on the floor of the northwestern room of the main structure.
2. A fragment of a copper “horn”, probably part of a decoration of a crown. This item was found below

	<i>Capra hircus</i>		<i>Ovis aries</i>		<i>Capra/Ovis</i>		Medium size		<i>Bos taurus</i>		<i>Gazella gazella</i>		<i>Sus scrofa</i>		<i>Dama mesopotamica</i>		<i>Equus sp.</i>		Total
	NISP	MNE	NISP	MNE	NISP	MNE	NISP	MNE	NISP	MNE	NISP	MNE	NISP	MNE	NISP	MNE	NISP	MNE	
<b>Head</b>																			
Horn/Antler					1	1			1	1					1	1			
Mandibular Teeth					1	1			2	1							2	2	
Maxilar Teeth					6	2			1	1							1	1	
Mandibula					6	3	1	1			1	1							
<b>Body</b>																			
Atlas					1	1													
Axis					2	2													
Vertebrae							1	1											
V. Cervical					2	2													
V. Thoracic					3	3	1	1											
V. Lumbar					1	1													
Ribs					1	1	4	1			3	2							
<b>Forelimb</b>																			
Scapula Glenoid fossa					4	4	5	3			3	2							
Humerus			1	1	9	7	3	2	1	1	4	3							
Radius					6	5	4	2			1	1							
Ulna					3	3					2	2							
Metacarpal					7	5	3	3	1	1	5	5	1	1					
<b>Hindlimb</b>																			
Pelvic acetabulum					6	4					2	2							
Femur					5	4	2	2			1	1							
Tibia					8	6	1	1			5	4					1	1	
Astragalus			3	3	5	4					1	1							
Calcaneum					5	3													
Metatarsal					1	1					1	1							
<b>Toes</b>																			
Phalanx 1					14	14													
Phalanx 2	2	1			4	4			1	1	2	2			1	1			
Phalanx 3					4	4											1	1	
Metapod					1	1	3	1	1	1	1	1							
<b>Total NISP</b>	<b>2</b>		<b>4</b>		<b>106</b>		<b>28</b>		<b>8</b>		<b>32</b>		<b>1</b>		<b>2</b>		<b>5</b>		<b>188</b>
<b>% NISP</b>	<b>1</b>		<b>2</b>		<b>56</b>		<b>15</b>		<b>4</b>		<b>17</b>		<b>1</b>		<b>1</b>		<b>3</b>		<b>100</b>
<b>MNI</b>	<b>1</b>		<b>2</b>		<b>5</b>		<b>2</b>		<b>1</b>		<b>2</b>		<b>1</b>		<b>1</b>		<b>1</b>		

Table 10. Fazel 7, the total number of identified bones (NISP), minimum number of elements belonging to the same sex (MNE) and the minimum number of individuals (MNI).

Age groups (Zeder 2006)	Element	Months	Unfused	Fused	% Unfused
A	P. Radius	0-6	2	1	32.3
B	D. Humerus	6-12	3	6	
B	Pelvis	6-12	2	1	
B	Scapula	6-12	1	1	
C	2 <sup>nd</sup> Phal.	12-18	2	3	
C	1 <sup>st</sup> Phal.	12-18	1	11	
D	D. Tibia	18-30	3	1	57.6
D	D. Metacarpal	18-30	4	3	
E	Calcaneum	30-48	1	3	
E	P. Femur	30-48	2	1	
E	D. Femur	30-48	0	0	
E	P. Ulna	30-48	2	0	
E	D. Radius	30-48	3	1	
E	P. Tibia	30-48	0	2	
F	P. Humerus	48+	0	0	

Table 11. Sheep and goat age-at-death according to fusion stages of bones.

the floor of the broadroom in the northwestern courtyard and its allocation to Stratum II or III is not definite.

3. A complete pear-shaped mace-head found between the stones of wall W46 in the eastern courtyard.

The chemical components of the copper assemblage were tested by XRF analysis. The results show that the mace-head and the horn contained antimony (Sb) and the chisel was made of almost pure copper. Therefore, we assume that the items containing antimony were part of 'prestige' imported items, while the chisel was produced in the region (probably originating from Feinan).

## SUMMARY (S.B., U.D. and G.S.)

Fazael 7 is situated in the middle of the Chalcolithic settlements in Wadi Fazael. Other reports (Bar 2013, 2014a, 2014b; Bar *et al.* 2013; 2015) have shown that the majority of sites in this cluster (Fazael 2, 5, 7, and the Porath 1985 excavation) should be attributed to the final phases of the Ghassulian Chalcolithic (radiocarbon dates from Fazael 2 suggest that the site was inhabited in the 1st century of the 4<sup>th</sup> millennium BCE, Bar 2014a: 319).

Major characteristics of the architecture and material remains of these sites include: 1) very large courtyard complexes, each up to 1,500 m<sup>2</sup> in area (Bar 2014b); 2) absence of a few noticeable attributions of Ghassulian Chalcolithic culture in the ceramic assemblage, mainly churns and cornets; 3) the appearance of the Canaanite blade industry (Bar 2013: fig. 6.20; Bar and Winter 2010); 4) and the almost complete lack of bifacial tools in the flint assemblage.

Excavations in Fazael 7 show similar traits with this cultural uniqueness, suggesting that this site is part of the large very Late Chalcolithic site on the Fazael Valley flood plain (see additional information in Bar 2014b). The architecture noted in the survey and further exposed in the excavation is similar to the large courtyard complexes in nearby sites, as evidenced by wall thickness and masonry of dwellings and courtyards (for further discussion see Bar 2014a: 74–81). The pottery assemblage of Stratum II has many parallels in the other sites of this cluster including late types such as the S-shaped bowl. The flint assemblage is typically Late Chalcolithic but the appearance of the Canaanite industry is also documented here.



Figure 23. Copper finds: 1) chisel; 2) “horn”; 3) mace head.

In Fazeal 7 a new and unknown settlement and building model that date to the later phases of the Chalcolithic period in the southern Levant was found. Parts of a residential complex were excavated including two buildings and adjacent courtyards, whose size and architectural layout are unparalleled in this period. The area of the main structure totals 120 m<sup>2</sup> and it is one of the largest, probably roofed, structures of the period discovered to date. Splitting each major unit into two rectangular spaces by means of a dividing wall in order to cover a 6 m span is also an innovation. In addition, the number of courtyards covering an area of more than 1,000 m<sup>2</sup> is unprecedented.

The economic data indicate a combination of field-crops, grazing sheep/goats, and hunting which is uncommon in this period. The appearance of equids late in the Chalcolithic period merits further research.

The characteristics of the site make it unique, especially concerning the main structure. This building has some noticeable aspects: its size, its unparalleled architectural plan and the massive stone masonry not found in any other excavated or surveyed Fazeal structures (including

the other broad room in the northern courtyard of the site). Unlike other structures from the same period, which usually show a sequence of superimposed beaten earth floors, here only one thin floor was observed in all units, so either the structure functioned only for a short time, or more probably, it was carefully maintained and cleaned, with almost no changes or alterations. The concentration of installations in the western rooms, the standing stones and some of the special finds (e.g. perforated stars, metal tools) within the rooms are also not comparable to other structures and finds excavated within the large Chalcolithic site complex. These characteristics, and the comparison to other structures excavated in the nearby sites (Fa’sael, Fazeal 1, Fazeal 2 and Fazeal 5), might suggest that it was not an ordinary household dwelling structure. However, the function of the building is unknown, and this enigma will have to await further research.

Further excavations at the site, planned for February 2018, will add to our information on the various aspects of the material culture of this intriguing site, and possibly solve some of the main open questions regarding its

function and date and cultural attribution within the later phases of the Chalcolithic period.

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