

## The Chalcolithic in the Central Highlands of Palestine: A Reassessment Based on a New Examination of Khirbet es-Sauma'a

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*Major formative socio-economic changes occurred during the Chalcolithic period (c. 4500-3600 BC) in the southern Levant, including the beginnings of metallurgy, intensified craft production, new mortuary practices and elaborated iconographic and symbolic expression. Although a mosaic of regional groups are located within discrete geophysical zones, much of our knowledge of these transformations derives from survey and excavation in a few core areas, in particular the northern Negev, the Jordan Valley and the Golan. Our understanding of Chalcolithic occupation and use of other regional zones remains largely cursory, particularly in the north-central highlands and the marginal zones of the south and east. In this article we suggest that the settlement expansion documented in areas such as the northern Negev took place in other regions, such as the southern highlands and central Judean Hills. Further, this expansion seems to occur earlier than previously thought. Khirbet es-Sauma'a, situated in the central hill country just south of Tell el-Ful, was investigated by Father Joseph Nasrallah in the 1930s and shown to date to the Chalcolithic period. A wealth of flint implements were recovered from the site and promptly published, but, unfortunately, Nasrallah excluded other material culture, including the pottery assemblage. Based on repeated visits to the site and presentation of unpublished material, we suggest Khirbet es-Sauma'a represents one of many sites signalling the exploitation of the hill country.*

### Introduction

The formative developments characterizing the Chalcolithic period (ca. 4500–3600 BC) are documented primarily from select areas of the southern Levant, with a few regions dominating our understanding of the period. Demographic expansion is attested for this period by the establishment of new, larger settlements and by the increased number of settlements in contrast to the preceding Late Neolithic. Concomitant to this demographic expansion is an apparent regionalism, most conspicuous in material culture. Our reconstruction of late prehistory continues to be hampered by limited information from some regions where few excavations have been conducted. One such area is the central hill country north of Jerusalem. Surveys document the relatively even distribution of comparatively small sites located in the highlands during the Chalcolithic, with no apparent centers or clusters (Finkelstein and Gophna 1993, 4–5, Table 1, Fig. 1). The subsequent Early Bronze I (EBI) period shows an even more marked expansion

of settlements in the hill country. Although remains from the Chalcolithic period (ca. 4500–3600 BC) are occasionally encountered during archaeological surveys in the central region of the Judean Hills, as well as in the hinterland of Jerusalem, the period is still poorly understood (Noy 1982; Klöner 2003, 19\*).<sup>1</sup> Very few Chalcolithic deposits have been uncovered *in situ* during excavation projects, and even fewer habitation sites have been exposed. For this reason, some scholars have suggested that the Judean Hills area was sparsely settled at this time in contrast to the Jordan Valley and the northern Negev (Gilead 1988, 412; and Hanbury-Tenison 1986, 42 who curiously described the highlands as 'a most unsuitable place to live' to explain the apparent sparse occupation in the Chalcolithic period), although other survey data would suggest the area was indeed inhabited to a greater degree than previously thought (cf. Joffe 1993, 32–33; see also the Chalcolithic sites in the hills of western Samaria: Gophna and Tsuk 1981). Others suggest that the Chalcolithic initiated a period of settlement in the hill country that culminated in a capacity for olive

cultivation in the Early Bronze Age (Finkelstein and Gophna 1993).

The site of Khirbet es-Sauma<sup>a</sup> (Tell es-Sôma<sup>a</sup>) represents one of the few Chalcolithic sites in the area of which anything is known and which is still partly accessible.<sup>2</sup> This rocky hillock is located immediately to the south of Tell el-Ful and frequently came under the scrutiny of travellers passing through the region (Figs. 1–2; for comparative aerial photographs of the hill of es-Sauma<sup>a</sup> taken in 1918 and in 1995, see Dalman 1925, 30, Photo 21 and Kedar 1999, 140–141). The hill was visited by Charles Warren (1869, 66) in 1868 at the time of his excavations at Tell el-Ful. The Reverend J. L. Porter was of the opinion that the ‘small ruin’ visible on its summit might be identified with biblical Nob, the city destroyed by Saul, who was angry with its high priest having provided sustenance to his enemy David. One of the Palestine Exploration Fund (PEF) explorers in the region in the early 1870s,

Charles F. Tyrwhitt-Drake, strongly disagreed with Porter’s identification (cf. Besant 1877, 175). Porter visited the site, which he describes as a ‘conical tell’, in 1865:

I found on its sides and summit traces of a small but very ancient town; cisterns hewn in the rock, large building stones, portions of the hill leveled and cut away, and the ruins of a small tower. It commands a distinct, though distant view of Mount Zion; Moriah and Olivet being hid by an intervening ridge [which is known today as French Hill – S.G., Y.R.]. I felt convinced that this is the site of the long lost Nob... (Porter 1876, 181–182).

Victor Guérin (1874, 187) climbed the hill in April 1870 and refers to the remains of buildings that he saw on the summit and a fine rock-cut cistern with a vaulted ceiling made of stones. The site was subsequently investigated during the ‘Survey of Western Palestine’ in February 1874 and in the list of places visited provided by Lance-Corporal James Brophy, the site is described as having ‘heaps of stones, one wall and one ruined building, probably modern. No indication of date’ (PEF archives/WS/347; WS/258: ‘Khurbet el Soma’; Conder and Kitchener 1883, 125). Schick (1884, 183; idem 1886, 56), at one point, suggested that es-Sauma<sup>a</sup> might actually be ancient Beth Shemesh, an idea that had no credence whatsoever and was quickly quashed by PEF explorer C. R. Conder. Later, the Franciscan scholar Liéven de Hamme (1897, 8–11) suggested that Gibeah itself might be identified at es-Sauma<sup>a</sup>. De Hamme mentions ancient ruins at the site, as well as cisterns and rock-hewn tombs, and agricultural areas on the slopes. Féderlin (1906, 271; cf. map on p. 267) also thought it possible that Gibeah was located at es-Sauma<sup>a</sup>. He noted the remains of a small ruined tower on its summit. Dalman (1905, 172), however, suggested the site should be identified as Madmenah of Isaiah (X: 27–32) and Birch (1911, map opposite p. 102) suggested that it might be Gallim. W. F. Albright (1922–23, 42; cf. 138, note 11 where he also indicates the site could not have been an Iron Age village), who excavated at nearby Tell el-Ful, was quite emphatic about the significance of the remains at Khirbet es-Sauma<sup>a</sup>, when he said that it was ‘no ancient town of any consequence’.

Khirbet es-Sauma<sup>a</sup> was re-investigated during a regional archaeological survey of north-east Jerusalem conducted by S. Gibson in 1981 on behalf of the Israel Archaeological Survey (Gibson 1982, 156). During March of that year three sites were

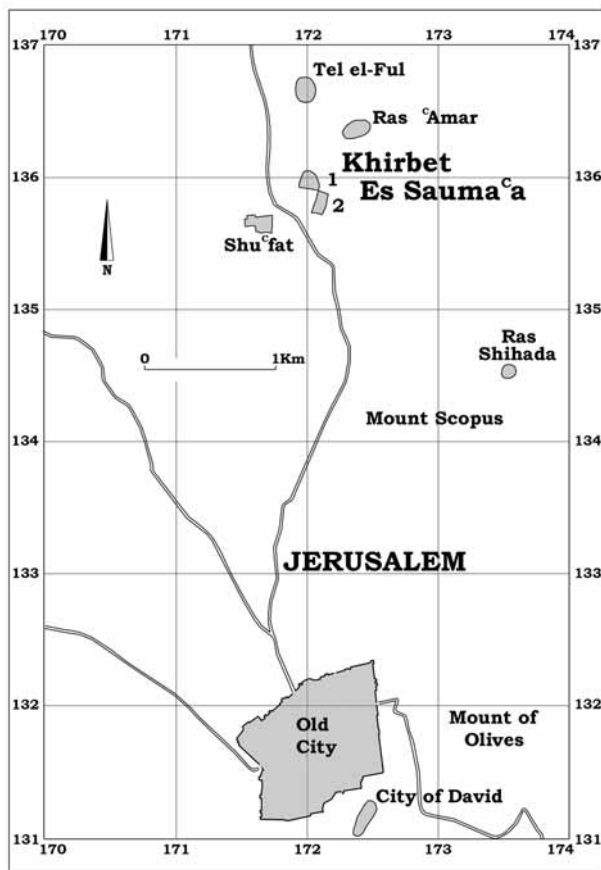


Figure 1. Location map showing the position of Khirbet es-Sauma<sup>a</sup>: 1) hill-top site with medieval structures and 2) Chalcolithic site on south-east slope. Drawing: F. Amirah.



Figure 2. General view of hilltop site of Kh. es-Sauma'a. Photograph: S. Gibson.

surveyed on the hill of es-Sauma'a.<sup>3</sup> The first site was on the summit and remains were found there of a medieval building, an enclosed vaulted water reservoir and stone enclosure walls (Israel Grid map ref. 17205 13601). The second site, situated on the east slope, consisted of an area of fenced agricultural terracing (an area of 21 dunam), a path, a rock-cut and plastered cistern and the remains of an oval structure superimposed by an artificial hillock containing a plastered tank (Israel Grid map ref. 17210 13594). The third site, ca. 60 × 100 meters, is located in a flat area of orchards on the lower south-east slope of the hill (Israel Grid map ref. 17210 13586). Flints, worn potsherds and basalt fragments were found scattered at this location and dated to the Chalcolithic period. The rest of this site appears to be located to the west beneath the football grounds of the adjacent school for children.

#### Prehistoric researches at the site

According to Vincent (1907, 394; cf. Nasrallah 1936, 294), the prehistoric site of Kh. es-Sauma'a was first investigated by Féderlin at the beginning of the twentieth century, but it does not appear to have been systematically explored, although some flint tools were apparently collected. René Neuville, also refers to the site and mentions flint materials there of Neolithic and Chalcolithic date (1929, 120). The local Inspector of Antiquities Dimitri Baramki in 1930 mentions flint associated with the site 'to the south of the tell [i.e. Tell es-Sôma'] and to the east of the Jerusalem-Nablus Road, near kilometer 5' (IAA archive files). The first systematic survey of the site was conducted by Father Joseph Nasrallah in the early 1930s and the results promptly published with a detailed description of the site and numerous drawings of the flint assemblage (Nasrallah 1936).



Figure 3. General view of the Chalcolithic site looking south. Photograph: S. Gibson.

Subsequently, Stekelis (1956, site No. 11) mentions the site as having the vestiges of a Chalcolithic settlement, with megalithic tombs, and cupholes, but presumably his description relied on Nasrallah's publication.

On the west slope of the hill, Nasrallah found what he considered a small Neolithic ('Tahunian') site and on the east slope he found a Mesolithic 'station' site. About 30 m. south of the summit, Nasrallah (1936, 313-14) found a rock-cut circular depression (2.5 m diameter, 0.80 m deep) with interconnected curving channels leading to it from a flat area (1.9 m across) further west. Nasrallah thought this installation was of ritual significance, but it is clearly a press used for extracting small quantities of olive oil, similar to examples found in north-east Jerusalem and elsewhere, some of Chalcolithic date (e.g., at Ras Abu Salah: Gibson and Edelstein 1985, 149, Pl. XII B; cf. Frankel *et al.* 1994, 28-31). Further down in the center of a rocky

promontory separating the 'tell' at its base, Nasrallah came across what he described as a 'megalithic structure.' This structure was situated at the centre of an area with stony debris, heaped up in some parts to a height of 3 m and with a breadth of 8 × 10 m. To the south/south-east of this promontory, Nasrallah noted modern houses and fields. Grinding stones, pestles and other ground stones were observed built into the enclosure walls of these fields, where he also found scattered flint tools.

The site has changed considerably since the survey of 1981 with many more new houses in the area than before. A new road, extending from west to east, now separates the orchard area in which the scatters of Chalcolithic potsherds and flints were found (Fig. 3), from the higher area to the north in which the oval ('megalithic?') structure was investigated. Large heaps of stone along the western edges of the orchard, serving as a boundary with the football field, are all that has survived of the 'stony area'

observed by Nasrallah. The trees within the area have been depleted substantially since 1981. The thickness of the *terra rossa* soil deposits within the area of the orchard varies, with a greater soil depth close to the trees at the southern end of the area, and with a thin cover of soil, and a number of bedrock outcroppings, visible elsewhere. There are no signs of any architectural remains that could be assigned to the Chalcolithic period. Surface inspections indicate the presence of a light scatter of worn Chalcolithic potsherds and a segment of a basalt grinding-slab (Fig. 12). Worn potsherds from the Early Roman (first century), Byzantine/Umayyad (sixth/seventh centuries) and Late Ottoman (nineteenth/twentieth centuries) periods were also noted.

#### A megalithic structure?

During the 1981 survey an attempt was made to locate the 'megalithic structure' previously discovered by Nasrallah (1936, 311–13) in the 1930s. It was difficult to know what to expect because the term 'megalith' was sometimes used by early twentieth century explorers to describe small farm buildings with corbelled ceilings and not only structures/tombs made of large slabs of stone (Vincent 1901, 278–98; cf. Gibson and Edelstein 1985, 145, Fig. 2). A curvilinear wall built of large fieldstones was indeed found in 1981 on the south-east slope (see below), but at that time there was no certainty that this structure was connected with the megalithic chamber recorded and photographed by Nasrallah (1936, Pl. XXI).

While noting that the 'megalithic structure' that he had found at es-Sauma<sup>a</sup> was unique, Nasrallah speculated that others might be found beneath the abundant heaps of stone on the slopes of the hill. He described the structure as being of a box-like rectangular form, measuring 2.19 m by 1.13 m, with two large covering slabs of stone still *in situ* (one 1.85 x 0.88 m, the other 1.80 x 0.90 m) and with one covering slab missing. The interior of the structure was full of stones and soil, but Nasrallah was able to note that the interior west and east walls, built of medium-sized stones, were actually curved. The general orientation of the structure was from north to south. Although he did not excavate the structure, Nasrallah suggested that it was used for burial purposes and was probably contemporary with the Chalcolithic use of the site.

As pointed out above, the structure found in 1981 does appear to be at the same location as the 'megalithic' structure seen by Nasrallah in the 1930s. The top of a curvilinear wall is discernable on the north-

ern edge of an artificial mound (approximately 8 x 12 m, and 2.5 m in height) on rocky ground north and upslope of the orchard site with the scattered Chalcolithic flints and sherds (Figs. 4–5). The size of this mound resembles Nasrallah's measurements for his heap of stones containing the 'megalithic' structure: 8 x 10 m, and 3 m in height. A rocky scarp (2 m deep) runs along the eastern edge of the mound and may have caves or cavities within it. Indeed, this may very well be the 'ruin of a small building at a cave' that PEF explorer Thomas Black noted in 1881 on the south-east slope of the hill (PEF Archives/ ES/ CON/50/2L). The curvilinear wall is clearly buried within the edges of the artificial mound and on its summit is a small rectangular basin/tank (1.87 x 1.62), which appears to be fairly modern in date. How it functioned is unclear. The walls of the basin are coated with plaster against a backing of small stones.<sup>4</sup> The plastered floor of this basin was visible close to the surface of the mound in 1981, but during our visit of 2004 we noticed that clandestine diggers had destroyed it and had dug down to a depth of 1.75 m, revealing bedrock and the top of an irregular opening to a cavity of unknown size extending beneath the mound to the north.

The curvilinear wall (0.9 m thick) is built of rough fieldstones and appears to have been part of an oval structure (approximately 6 x 8 m), with a north-south orientation. A thorough surface examination was made of the site, but neither pottery nor flint was discerned, except for a few Late Ottoman potsherds. We suggest that the wall found in the 1981 survey represents the external surrounding wall of a tumulus and that the cist/grave, recorded by Nasrallah, that must have been sunk into the top of the stony mound, was most probably destroyed after 1936 by the construction of the plastered tank. Judging by the appearance of proto-historic tumuli in other parts of the country (e.g. Greenberg 2000, 584), the features of a tumulus are fairly consistent and include an external circle-wall which helped demarcate the heaped-up stones and earth (generally 4 to 9 m in diameter), and at the centre a central box-like cist/grave (generally 1 x 2 m in size).

#### Flint tools

Nasrallah describes a rich tool assemblage from Khirbet es-Sauma<sup>a</sup> and compares it to the flint assemblage derived from the Chalcolithic type site, Teleilat Ghassul, located not far to the north-east of the Dead Sea. Apparently Nasrallah collected some 3000–4000 items of flint at the site (cf. North 1961,

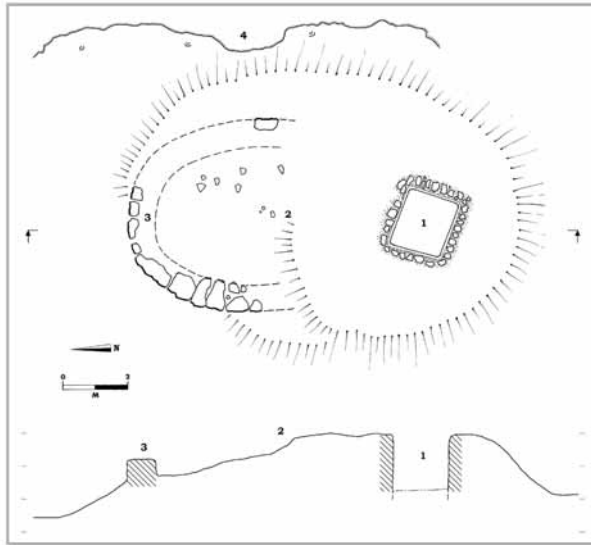


Figure 4. Plan of the site of the megalith/tumulus, based on the 1981 and 2004 visits: (1) plastered basin/tank; (2) heaped mound of stones and soil and presumed place of Nasrallah's cist/grave; (3) curvilinear wall of tumulus; (4) rocky scarp. Drawing: F. Amirah.

64). The flint assemblage is presently kept in the storerooms of the Museum of the White Fathers at St Anne in Jerusalem, and is available for future research. Nasrallah suggests that es-Sauma<sup>c</sup>a must have been a workshop based on the very large and diverse flint assemblage appearing there. Tools described include a relatively standard variety of forms for the period: axes, adzes, chisels, scrapers, 'tabular' fan scrapers, sickle blades, 'knives' (backed blades), borers, arrowheads and grinding stones of both limestone and basalt. Although he does not provide overall quantities of the flint tool classes, he sometimes includes counts of sub-types, as well as size ranges. Nasrallah, along with Neuville (1930, 69, Pl. 1:6), was one of the first to recognize a new microlithic tool type based on the assemblage from es-Sauma<sup>c</sup>a, later named the 'micro-endscraper' by Gilead (1984).

A few observations are possible, based on Nasrallah's description and illustration of the flint assemblage. All of these comments must be qualified by the lack of quantified information available from the site, which limits our ability to compare this assemblage to those originating in excavations with greater precision. Although Neuville commented on the rarity of flint axes at Teleilat Ghassul, Nasrallah notes that at es-Sauma<sup>c</sup>a both axes and adzes are quite common. Indeed, two examples were found in



Figure 5. The curvilinear wall towards the north-east. Photograph: S. Gibson.



Figure 6. *The plastered basin/tank in 2004. Photograph: S. Gibson.*

recent surveys at the site (Fig. 7: 1–2, and Table I). In North's opinion the preponderance of axes at es-Sauma<sup>a</sup> is of chronological significance and indicates that the site was of pre- or proto-Ghassulian date (North 1961, 64). However, given the lack of quantified data from Ghassul or es-Sauma<sup>a</sup>, these claims are of limited insight. Chisels seem to be more common here than at many Chalcolithic sites. Although they occur at the Beersheba sites, they constitute less than 1% of flint tool assemblages at Bir es-Safadi and Abu Matar (Hermon 2002, 76), and are equally rare at Shiqmim (Rowan 1990). Chisels are more common at Gilat (ca. 15% of identifiable bifacial tools; Rowan 2006, Table 11.3), but also rare at Grar (Gilead *et al.* 1995, 259, Fig. 5.26:2). Bifacials are frequently polished, although polish on axes is generally limited to the working edge.

Microlithic tools and cores are also mentioned by Nasrallah (1936, 305–306). Bladelets and bladelet cores are well attested from some sites in the northern Negev, such as Gilat (Rowan 2006), Grar (Gilead *et al.* 1995) and North Sinai (Gilead 1984), as well as at Teleilat Ghassul (Mahan 1940; Neuville 1934) and Tell esh-Shuna (Baird 1987, 477–78), but are less frequent or rare at other sites, such as those in the Beersheba region (e.g., Shiqmim: Rosen 1987) or in the Golan (Rosen 1997). This suggests

that this tool may correlate with some chronological or regional pattern that remains undefined.

Like other typical Chalcolithic flint assemblages, Nasrallah's discussion includes mention of many forms of borers, perforators and awls. Blades and sickles are also abundant. Scrapers are also prevalent, including round scrapers, scrapers on blades and other forms, but the assemblage may include some earlier prehistoric forms. Tabular scrapers are also well attested. The occurrence of arrowheads at the site attests to some earlier Neolithic occupation in the area as well.

Recent observations of flint debitage and tools on the surface indicated very few remains visible on the surface, perhaps in part the direct result of Nasrallah's thorough collection from the site surface (Table I). The majority of tools observed were retouched or utilized flakes (n=14, 67% of tools), but a few borer/perforators were also noted (n=3, 14%, Fig. 7:3–4) as well as sickle blades (n=2, 9.5%, Fig. 7:6–8), a notched flake and bifacial tools (Fig. 7:1–2). Debitage suggests that tools were manufactured on-site. In addition to many flakes (n=61, 40.4% of debitage), the cores (n=8, 5.3%) and core fragments (n=7, 4.6%) suggest that flint was collected and brought to the site for tool manufacture (Fig. 7:5). The discovery of a few bladelet cores (n=3, 2%) and bladelets (n=7, 4.6%) indicate that bladelet

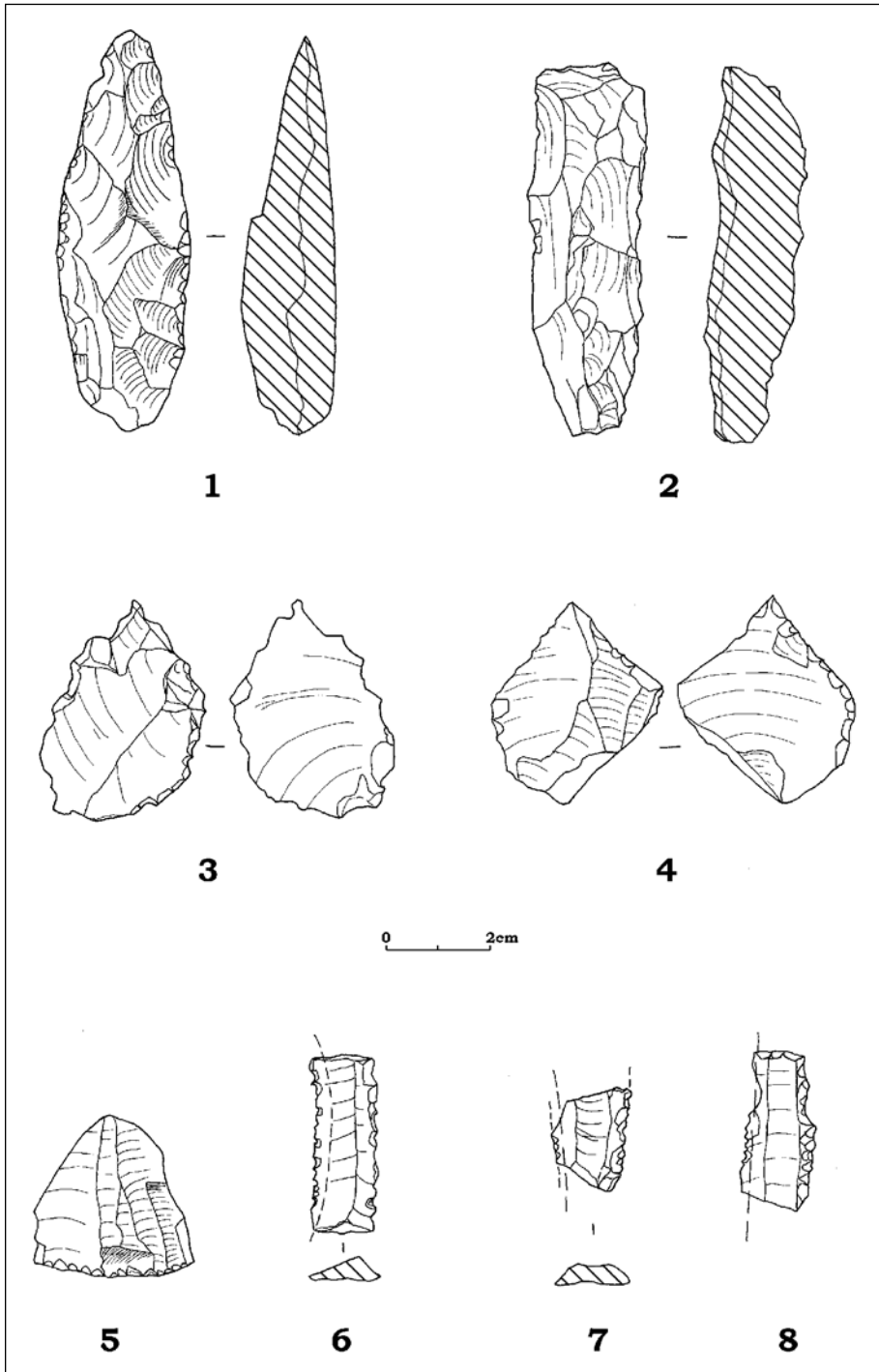


Figure 7. A selection of flint implements from Khirbet es-Sauma'a. Drawing: F. Amirah.



No	Survey Year	Tool Type	Description
1	1981	Axe	Bifacially worked, with lateral retouch. Not examined by authors (in IAA storage). Cf. Rosen 1997, Fig. 3.48: 6
2	2004	Axe/adze	Bifacially worked, trihedral cross-section, missing edge, cortical butt
3	2004	Borer	Distal point on flake, bilateral dorsal retouch
4	1981	Borer	Distal point on flake. Not examined by authors (in IAA storage)
5	1981	Core	Bladelet core, pyramidal. Not examined by authors (in IAA storage)
6	2004	Sickle blade	Dorsal backing, dorsal/ventral sheen on edge, triangular cross section, one end dorsal truncation, other end snapped
7	2004	Sickle blade	Dorsal backing, fragment only, dorsal sheen on edge, trapezoidal cross-section, burned
8	1981	Sickle blade	Dorsal backing, one end dorsal truncation, edge sheen. Not examined by authors (in IAA storage)

Table I. A selection of flint implements from *Khirbet es-Sauma'a* (see Fig. 7).

tools such as the micro-endscrapers were also manufactured on-site.

#### Pottery and stone artefacts

Below, we offer a description of the pottery and a few stone artifacts collected by Nasrallah and many of these are now well recognized in the corpus of Chalcolithic assemblages (Figs. 8–12 and Tables II–VI). The pottery descriptions provided are arranged from closed to open ceramic forms, and end with miscellaneous items. The identification numbers follow those appearing on the objects themselves and represent either Nasrallah's numbering system or, alternatively, accession numbers given to artifacts deposited in the museum collections of the White Fathers at St Anne in Jerusalem. Readings of ware types was made based on the *Munsell Soil Color Charts* (1988 ed.).

The assemblage includes a variety of fairly large vessels, mainly closed forms, all of which appear to have been consistently made in terms of temper and manufacturing techniques. Nasrallah's collection presented here includes only the diagnostic examples. Nasrallah collected 110 ceramic vessel fragments, of which there were three bowl or small vessel base fragments in an extremely abraded state (not illustrated). The collection includes 42 handles: one lug handle, and 20 loop handles with oval sections (three represented here), and four splayed handles. The remainder (n=17) were non-diagnostic fragments. Notably, the splayed handles seem to represent a lower relative frequency at the site in

contrast to the loop handles. There were 20 vessel rim fragments, 11 of which are illustrated here, but the remainder are non-diagnostic or badly abraded. Body sherds (n=48) include two with surface décor illustrated here, and one that had been manufactured into a spindle-whorl.

According to Garfinkel, the characteristic pottery forms of the 'Middle Chalcolithic' include pierced handles, but this is true of the Late Chalcolithic as well (Garfinkel 1999, 306). The *es-Sauma'a* lug handle (Fig. 11: No. 3600), has parallels from the 'City of David' Jerusalem excavations (Ariel *et al.* 2000, 92, Fig. 6: 20: lug handle), as well as from Sataf (Braun, forthcoming). One of the *es-Sauma'a* jar rims (Fig. 8: No. 3523) may be compared with the 'Beth Shean Ware' from Tel 'Ali Ib (Garfinkel 1999, Fig. 110:6). Our only example from *es-Sauma'a* of a necked jar (Fig. 9: No. 4587), has affinities to low necked jars, such as those known from Tell el-Mafjar (Garfinkel 1999, Fig. 109.5). The surface decoration apparent on one item from *es-Sauma'a* (Fig. 11: No. 4582) may be paralleled with examples from the 'City of David' Jerusalem excavations (Ariel *et al.* 2000, Fig. 6:5: pithos), and from Sataf (Braun, forthcoming). The large open-form bowls at *es-Sauma'a* (Fig. 9: Nos. 3231 and 5412) are found throughout the Chalcolithic spectrum and thus cannot be considered diagnostic to any particular sub-phase or region. They may be paralleled with the shallow bowls of the 'Beth Shean Ware' at Tell el-Mafjar (Garfinkel 1999, Fig. 95.11) and to basins of 'Beth Shean Ware' from Beth Shean and Tel Tsaf (Garfinkel 1999, Fig. 98.4–5).

The splayed strap handles, such as those from *es-*

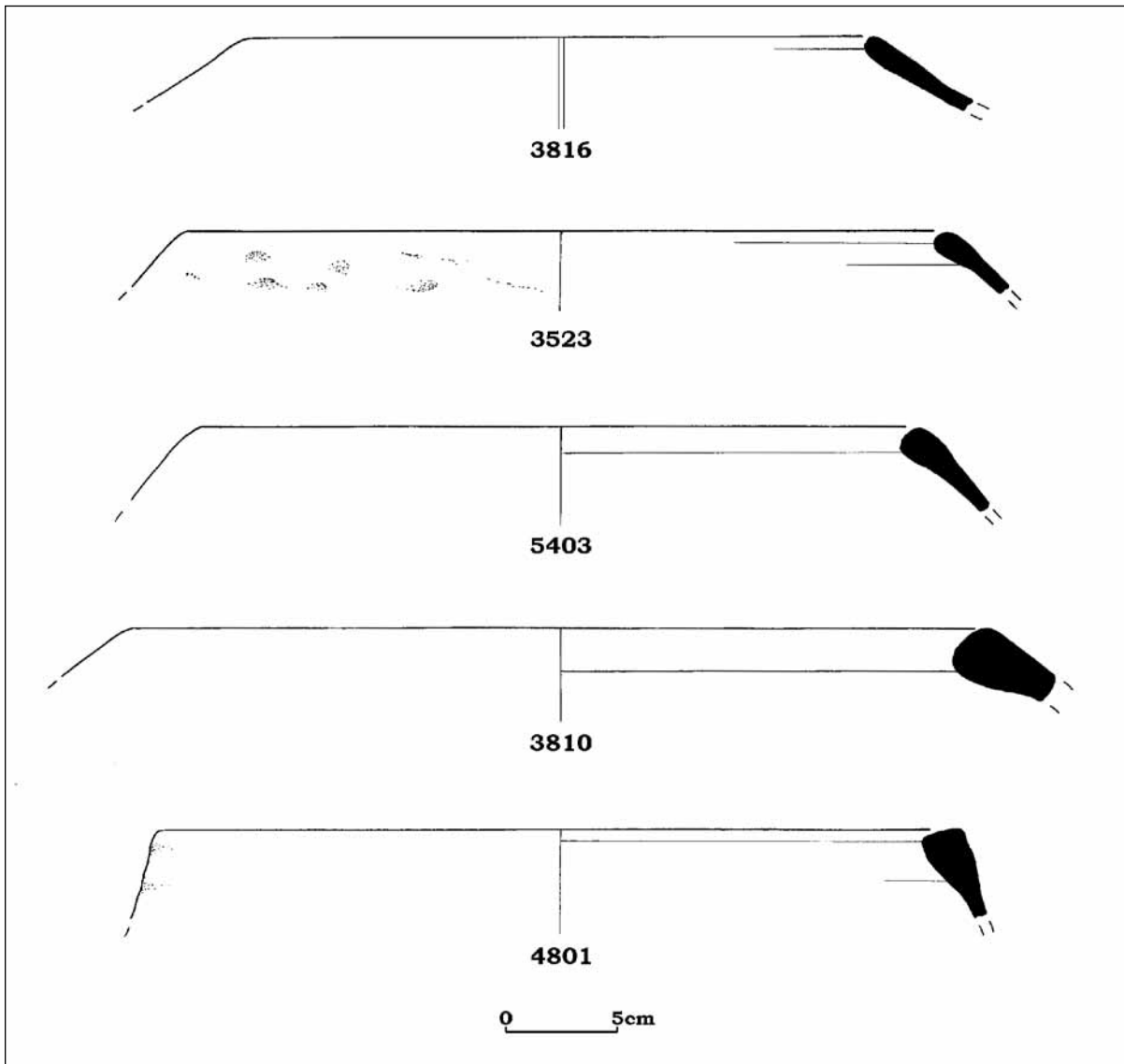


Figure 8. Closed-mouth ceramic vessels from Khirbet es-Sauma'a. Drawing: J. Rudman.

Sauma'a (Fig. 10: 3838, 5297, 5406, 3661), are common to sites in the general region, such as at Beth Shean, although Garfinkel considers them a characteristic of the 'Middle Chalcolithic'. The examples from es-Sauma'a, however, are less flat in cross section (strap handles) and more rounded, somewhat similar to those that are considered typical of the Late Chalcolithic (Garfinkel 1999, 184). However, loop handles that widen at their point of connection with the vessel body (strap handles), considered by Garfinkel to be typical of the 'Middle Chalcolithic', are unknown in the Late Chalcolithic

(1999, 198). These strap handles are typical of sites that Garfinkel describes as containing 'Beth Shean Ware' characteristic of the Middle Chalcolithic. Notably, the examples selected to represent this type of strap handle are primarily from sites in the Jordan Valley, such as Tell esh-Shunah, Abu Habil, Beth Shean and Tel Tsaf (Garfinkel 1999, Fig. 111). This suggests a regional component to this ceramic variation rather than a chronological sequence. Few of these sites have radiometrically dated deposits. The exceptions are Tel Tsaf, which dates perhaps to the early 6<sup>th</sup> millennium BC (Burton and Levy 2001, Fig.

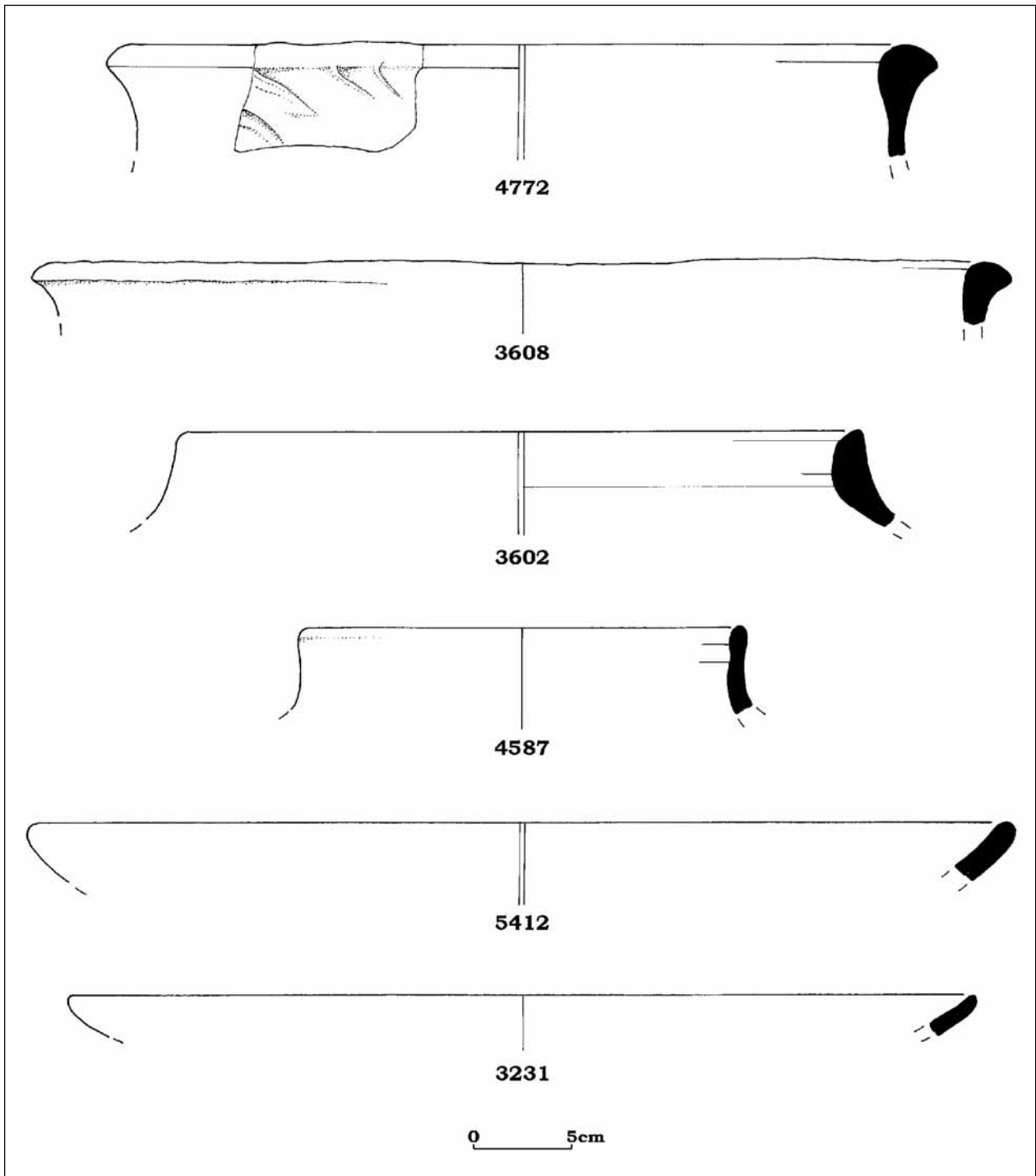


Figure 9. *Open ceramic vessels from Khirbet es-Sauma'a. Drawing: J. Rudman.*

No	Id. No.	Vessel Type	Estimated Rim Dia (cm)	Description
1	3816	Holemouth	?	Handmade; rounded rim; slightly smoothed exterior. Ware: 2.5 YR 6/4. Light reddish-brown exterior and grey interior. Large white and grey grits.
2	3523	Holemouth	15	Handmade; rounded thickened rim; slightly concave exterior depression on surface (not decoration). Ware: 2.5 YR 6/6. Light red exterior and slightly grey interior. Large white and grey grits.
3	5403	Holemouth	30	Handmade; thickened squared rim. Ware: 2.5YR N4/. Dark grey. Reddish-brown core. Large white and grey grits and grog inclusions.
4	3810	Holemouth	36	Handmade; thickened squared rim. Ware: 2.5 YR N5/. Grey. Reddish-brown core. Large grey, white and black grits, and grog inclusions.
5	4801	Holemouth or basin?	30	Handmade; thickened squared rim. Ware: 2.5 YR N/. Grey. Reddish-brown core. Large grey, white and black grits, and grog inclusions.

Table II. *Closed mouth ceramic vessels from Khirbet es-Sauma'a (see Fig. 8)*

No	Id. No.	Vessel Type	Estimated Rim Dia (cm)	Description
1	4772	Basin	36	Handmade; thickened rounded everted rim. Striations due to attachment of rim to body of vessel. Ware: 2.5 YR 6/6. Light red ware and core. Large grey, black and white grits (including small amount of quartz).
2	3608	Basin	36	Handmade; thickened squared everted rim. Coarse join between rim and body. Ware: 2.5 YR N5/. Grey. Large black and white grits, and grog inclusions.
3	3602	Jar	36	Handmade; thickened slightly everted tapered rim. Interior striations between rim and body. Ware: 2.5 YR N4/. Dark grey, reddish brown core. Large grey and white (some quartz) grits and grog inclusions.
4	4587	Jar	18	Handmade; rounded vertical rim, with slight interior indentation. Smoothed interior and exterior. Ware: 2.5 YR 6/6. Light grey. Large black and white grits, with grog inclusions.
5	5412	Bowl	36	Handmade; rounded rim. Reddish yellow to reddish brown. Ware: 7.5 YR 7/6. Large white quartz and black grits.
6	3231	Bowl	32	Handmade; rounded rim. Grey. Ware: 2.5 YR N5/. White quartz and gray grits.

Table III. *Open ceramic vessels from Khirbet es-Sauma'a (see Fig. 9).*

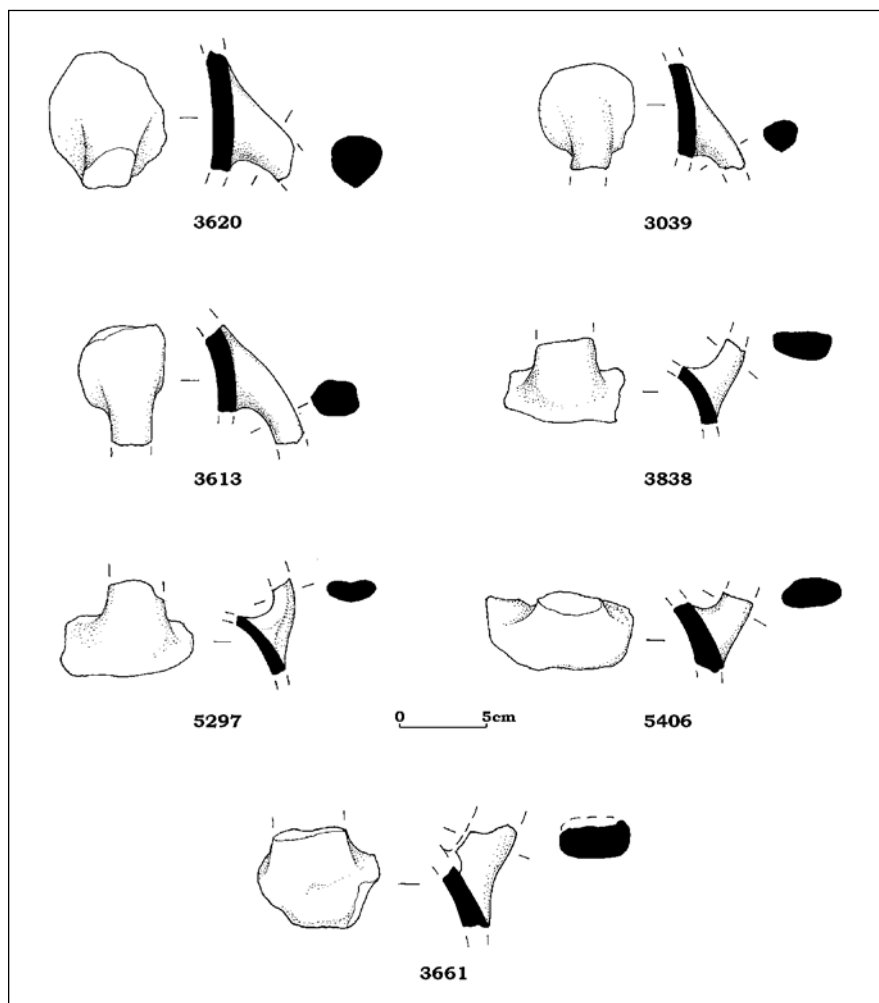


Figure 10. Jar handles from Khirbet es-Sauma'a. Drawing: J. Rudman.

2); those two dates have large sigma ranges, and only suggest dates in keeping with a Late Neolithic/Wadi Rabah variant rather than a hypothetical specific sub-phase, such as Middle Chalcolithic<sup>5</sup>. Such strap handles are rare or unknown from sites in other regions, notably at the Beersheba sites, such as Shiqmim, Bir es-Safadi, and Abu Matar. The Golan sites also seem to lack pottery with this type of handle (cf. Epstein 1998; 1999).

The stone vessels from the site included nine fragments, of which two basalt items are diagnostic (Fig. 12.1, 2). The first is a medial fragment of a pedestaled, fenestrated stand with a single raised band, a typical decorative motif for this basalt vessel type (Type 4Ci, see Rowan 1998, 163–69, Figs. 30–32). Examples of this form typically have only one raised band on the medial section, such as Gilat (Rowan et al. 2006, Table 12.33: 1–2, 7, 9) and

Wadi Zeita (Rowan 1998, Fig. 30A), although multiple bands are also known, from sites such as Gilat (Rowan 1998, Fig. 32E, Appendix C.4), Wadi Zeita (Rowan 1998, Appendix A.3) and Teleilat Ghassul (Lee 1973, 267). This decorative motif may appear earlier in the Chalcolithic period based on these contexts. In addition, a mace-head fragment, possibly made of hematite, is illustrated here (Fig. 12.4), as well as a fragment of a basalt upper grinding stone (Fig. 12.5). Both hematite and basalt are non-local and indicate exchange with other regions.

## Conclusions

The discoveries at Khirbet es-Sauma'a help to shed light on the character of the Chalcolithic in the central highlands region of Palestine. Hitherto, sites

No	Id. No.	Vessel Type	Estimated Rim Dia (cm)	Description
1	3620	Jar, loop handle	–	Handmade. Light reddish-brown. Ware: 2.5 YR 6/4. White quartz grits and grog inclusions.
2	3039	Jar, loop handle	–	Handmade. Light reddish-brown. Ware: 2.5 YR 6/4. White and grey quartz grits.
3	3619	Jar, loop handle	–	Handmade. Light reddish-brown. Ware: 2.5 YR 6/4. Extra large grey and white grits.
4	3838	Jar, splayed handle	–	Handmade. Light grey. Reddish-grey core. Ware: 2.5 YR N5/. Extra large white and large grey grits, fine white quartz and grog inclusions.
5	5297	Jar, splayed handle	–	Handmade. Light reddish-brown. Ware: 2.5 YR 6/4. Extra large white and grey grits, and white quartz inclusions.
6	5406	Jar, splayed handle	–	Handmade. Pale red. Reddish-brown core. Ware: 2.5 YR 6/2. Extra large grey and white and large black grits, and quartz and grog inclusions.
7	3661?	Jar, splayed handle	–	Handmade. Light reddish brown. Ware: 2.5 YR 6/4. Extra large grey and white grits, and quartz and grog inclusions.

Table IV. *Jar handles from Khirbet es-Sauma<sup>a</sup> (see Fig. 10).*

were known primarily from scattered surface finds. In addition to Khirbet es-Sauma<sup>a</sup>, three other sites from the Chalcolithic period are known from north-east Jerusalem. The first was investigated during Gibson's 1981 survey at the south-western foot of Ras Shihada close to the edge of the bed of Wadi Salim (Nahal Og) (Kloner 2001, 72\*, Site No.205). Remains of a curvilinear wall were found, consisting of one row of fieldstones, supporting an area of grey ashy soil. Scattered flints were found in the immediate vicinity, but no pottery was visible. The site was badly eroded. Chalcolithic flint implements were also visible in the lower fills of Wadi Salim, which had been undercut by recent erosion. Traces of a second Chalcolithic site were mentioned by Stekelis at elevation 750 above sea level in the fields immediately west of Tell el-Ful (Stekelis 1956, 97, Site 10). He noted 'polished axes made of dolomite' as coming from this site (presumably this was based on the comments made by Neuville (1929, 120) and Nasrallah (1936, 309). The site is now largely covered with modern houses and was recently visited by one of the authors in 1998, but no signs of architectural remains or flint scatters were visible. A third site was located at Neve Yaaqov and Shalem (1973, 205, Fig. 4:1–7) published a group of flint implements that he found at the site in 1934, including a number of polished axes. The site is now completely covered over by modern apartment buildings. Shalem (1973, 225, Site 38) also mentions a few

scattered Chalcolithic flints found along Wadi Farah near Hizma. Further to the east and north-east, Chalcolithic sites with scattered flints and potsherds were investigated during Uri Dinur's survey in Wadi Farah and Wadi Suweinit (Sites 530, 531, 539, and perhaps 544: Dinur and Feig 1993, 345).

It would appear that in the Jerusalem hills and particularly to the west of the watershed, Chalcolithic sites were situated next to natural springs of water (cf. Gophna and Tsuk 1981, 115). Such was the case in regard to the settlements from this period that have been excavated at the 'City of David' in Jerusalem (Ariel *et al.* 2000), Abu Ghosh (Perrot 1952)<sup>b</sup> and at Sataf (Gibson *et al.* 1991, 34–35, 48). The latter site was fairly small with scattered houses on rocky slope terraces, and inhabitants practiced woodland clearance, a certain amount of farming, with the cultivation of grain crops, horticulture (e.g. olive trees), and animal husbandry. A difference exists in regard to the Chalcolithic sites identified in the Pisgat Zeev area to the north-east of Jerusalem – including es-Sauma<sup>a</sup> – since none of them are near water sources. The sites were situated at two different types of locations: on the upper slopes of hills (as at es-Sauma<sup>a</sup>, Neve Yaaqov and possibly also West Tell el Ful) or close to wadi beds (as at the Wadi Salim site). We suggest the sites on the upper slopes of hills were established intentionally so as to be in close proximity to the major route extending north-south along the natural watershed

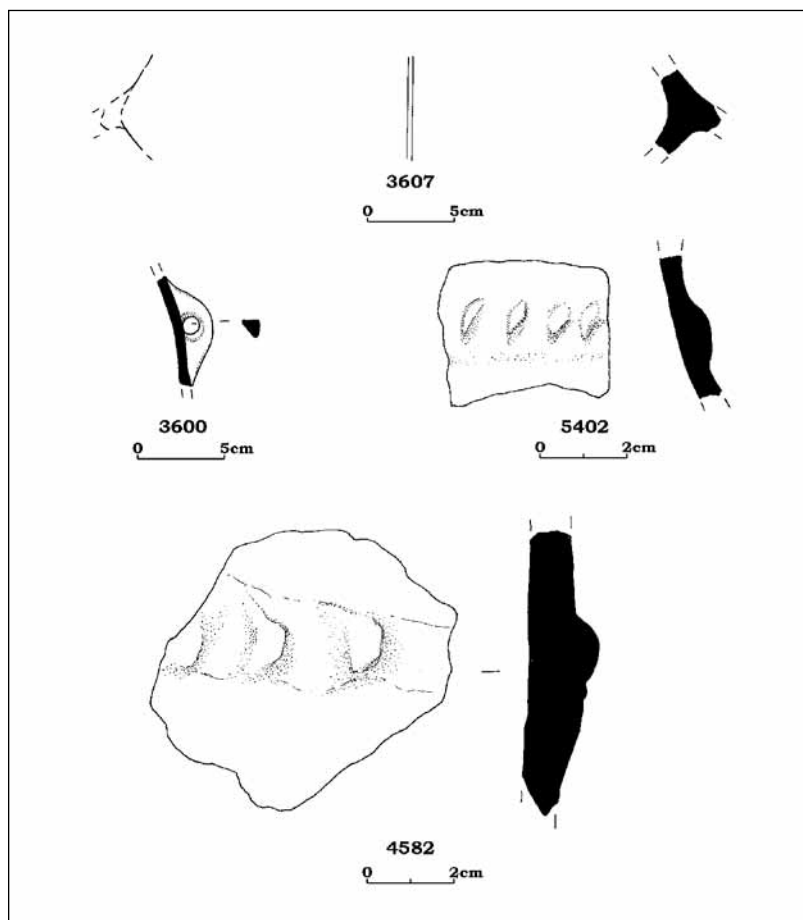


Figure 11. *Handles and decorated fragments from Khirbet es-Sauma'a. Drawing: J. Rudman.*

No	Id. No.	Vessel Type	Estimated Rim Dia (cm)	Description
1	3607	Handle	-	Handmade. Light reddish brown, grey core. Ware: 2.5 YR 6/4 (exterior). Extra large red, white and grey grits, and grog inclusions.
2	3600	Handle	-	Handmade. Light reddish brown, reddish core. Ware: 2.5 YR 6/4. Extra large white, large grey grits; grog and quartz inclusions.
3	5402	Body sherd	-	Handmade. Pinched band décor. Light red. Ware: 2.5 YR 6/6. Extra large white, large grey grits and quartz inclusions.
4	4582	Body sherd	-	Handmade. Pinched band décor. Light reddish brown. Extra large white and black grits with grog and quartz inclusions.

Table V. *Handles and decorated fragments from Khirbet es-Sauma'a (see Fig. 11).*

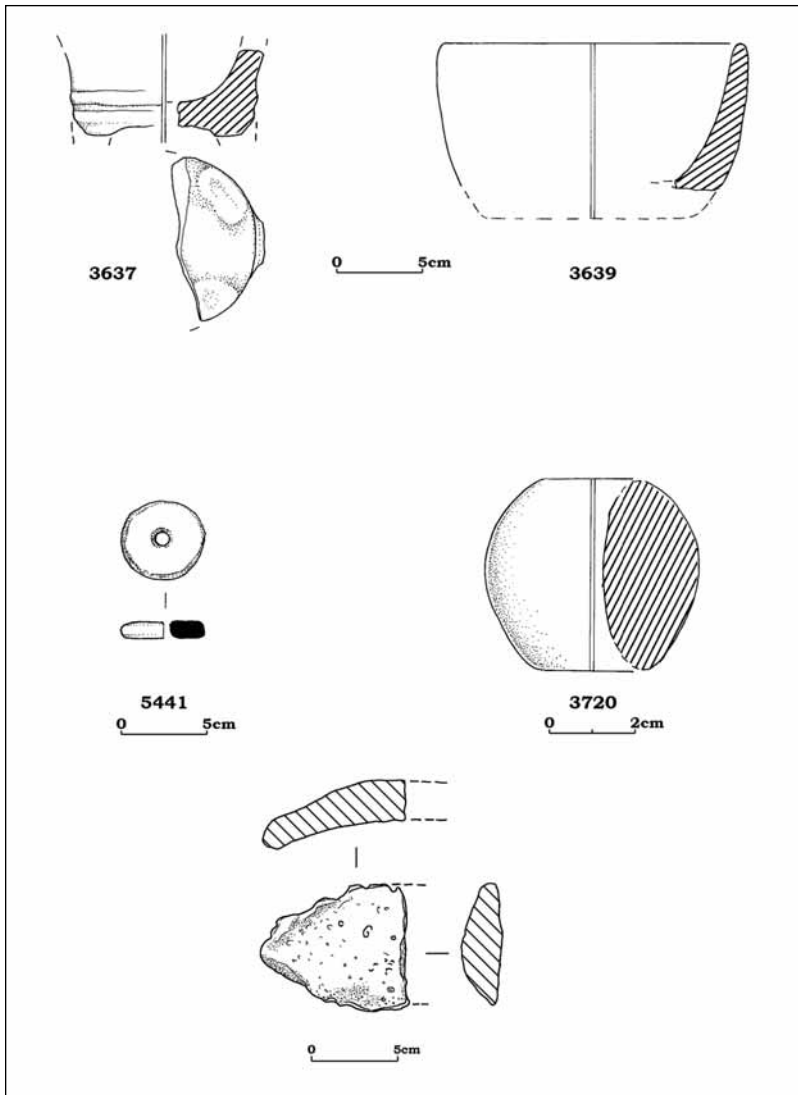


Figure 12. Stone artifacts and spindle whorl from Khirbet es-Sauma'a. Drawing: J. Rudman.

No	Id. No.	Vessel Type	Estimated Rim Dia (cm)	Description
1	3637	Pedestaled, fenestrated stand	–	Medial fragment, fenestrated stand. Single raised band. Basalt, low vesicularity.
2	3639	Open vessel	12–16	Rounded rim fragment, slightly convex wall profile. Low vesicularity.
3	5441	Spindle whorl	5	Bifacially drilled body sherd. Ware: 2.5 YR 6/6. Extra large white and large grey grits. Hole diam. 7–9 mm. Pared edges, flat profile.
4	3720	Macehead fragment	–	Finely smoothed and polished dark grey to black stone (hematite?). Drilled interior. Height ca. 5.5 cm.

Table VI. Stone artifacts and a ceramic spindle whorl from Khirbet es-Sauma'a (see Fig. 12).



running north from Jerusalem. This would have given these sites greater inter-regional connections for the purpose of exchanging goods and agricultural products. By comparison, Sataf was situated in a much tougher topographical location and was at a distance from significant local routes. The closest source of water to es-Sauma<sup>ca</sup> was the spring of Ain Farah, which was at a walking distance of about half-an-hour. In the general area of this spring, surveys have indicated the presence of scattered Chalcolithic flints and sherds (Dinur and Feig 1993).<sup>7</sup> In terms of settlement sizes there is not much difference between Sataf (5.4 dunam) and es-Sauma<sup>ca</sup> (6 dunam), and indeed *c.* 6 dunam was the average size for settlements of this period in the highlands (Finkelstein and Gophna 1993, 4; note also the size of Chalcolithic settlements in the hills of western Samaria as being between 2 and 5 dunam: Gophna and Tsuk 1981). Seasonal agriculture with the cultivation of grain crops in the nearby wadis must have played a significant role in the economy of es-

Sauma<sup>ca</sup>, judging by the appearance at the site of many sickle blades, as well as the presence of numerous grinding stones and pestles and mortars, some made of imported basalt. A simple rock-cut oil press found by Nasrallah, just north of the 'megalithic structure', suggests that olive groves were cultivated in the vicinity of the site as well. Scattered cupmarks were also found during the 1981 survey in the hinterland of the site and these too might have had a similar function, but their date is uncertain. Two other finds are noteworthy: the spindle-whorl which would suggest weaving activities at the site and the macehead which as a possible status object may imply some form of hierarchical differentiation existed within the Chalcolithic community living at the site. Certainly the basalt vessels, probably manufactured of basalt from the Golan or Galilee, confirm connections with other regions.

Nasrallah considered Kh. es-Sauma<sup>ca</sup> a 'workshop' site (i.e. a flint-production site) because of the large quantities of flint found at the site, and to a



Figure 13. *The summit of Khirbet es-Sauma<sup>ca</sup>. Photograph: S. Gibson.*

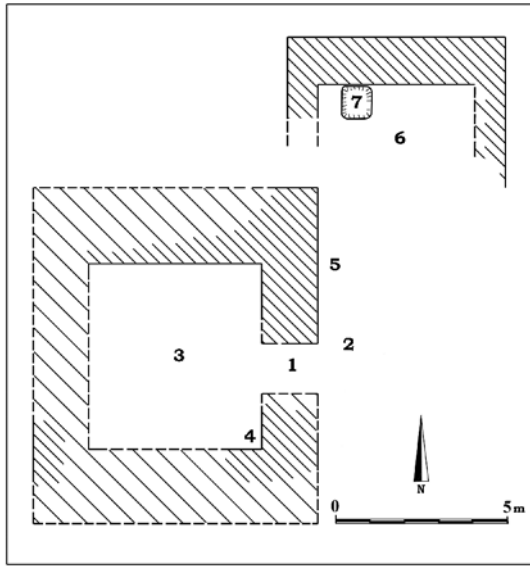


Figure 14. Plan of the structures on the summit of Khirbet es-Sauma'a. Drawing: F. Amirah.

certain extent this view was given added strength by the fact that pottery finds were not included in his publication and were seemingly absent. Our publication of Nasrallah's pottery (see above), however, has now re-balanced the picture of the material culture derived from the site. While we believe the site to be a multi-faceted domestic settlement, though to what extent it was maintained as a 'permanent' settlement cannot yet to be determined, the presence of numerous flint flakes at the site does suggest that considerable flint-knapping was undertaken there. The source of the flint used at es-Sauma'a, and possibly also at West Tell el-Ful, was from outcroppings of flint in Senonian chalk (Arkin *et al.* 1976) and one such source was investigated on the summit of Ras 'Amar situated immediately east of Tell el-Ful (Israel Grid map ref. 17238 13650). A careful examination was made at the site in 1987 in the company of Yossi Garfinkel (Gibson 1988). The lack of worked flints at Ras 'Amar implies that raw material was carried in the form of natural blocks to adjacent



Figure 15. East wall of the tower-like structure on the summit of Khirbet es-Sauma'a. Photograph: S. Gibson.

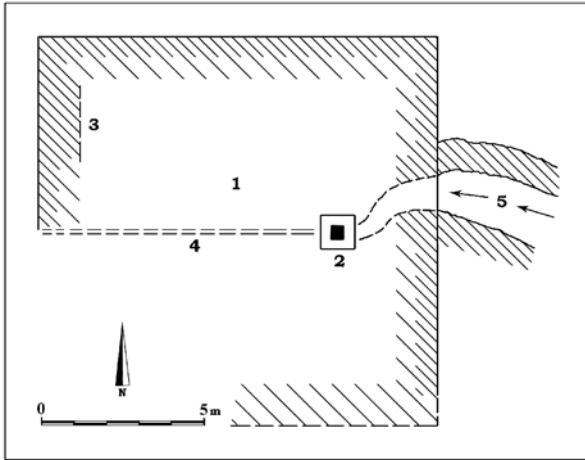


Figure 16. Plan of the top of the vaulted cistern on the summit of Khirbet es-Sauma'a. Drawing: F. Amirah.

sites. The inhabitants of es-Sauma'a would have exploited this flint source, but the diversity of flint tools found there suggests the site was undoubtedly a domestic settlement possessing the typical array of implements used for a mixed economy. By contrast, specialized flint-production sites typically consist of hundreds of tools of a single type, as is known from the blade and bladelet production workshop at Wadi Gaza Site A (Macdonald 1932, 10; Rosen 1997,

104–5, Table 4.1; Roshwalb 1981, 58), and the recent discovery of a blade-manufacturing site at Beersheba (Ofer Marder, pers. comm.). Given the selective nature of Nasrallah's collection, comparison of this assemblage with others must remain at a very general level.

Chronological and/or regional settlement diversification may be the reason for the differences apparent in the material culture of Chalcolithic sites in the vicinity of Jerusalem, such as at Khirbet es-Sauma'a and Sataf. The excavation of more sites from this period in the central highlands of Palestine and more comparative research is necessary to clarify such matters as the economic ranking of settlements and the degree of inter-regional contact. A very large quantity of axes/adzes was found at es-Sauma'a, and North (1961, 64) thought this might be a matter of chronological significance, perhaps indicating a proto-Ghassulian date for the site. As we have also shown above, certain examples of pottery from es-Sauma'a, notably the splayed strap handles, may also indicate that the site belonged to a slightly earlier stage of the Chalcolithic by comparison to the sites from Jerusalem ('City of David') and Sataf. The presence of microendscrapers may also represent an earlier phase of the Chalcolithic.

As Finkelstein and Gophna (1993, 4) note in their synthesis of survey data for the highlands, the central hill country witnessed a significant increase in settle-



Figure 17. The top of the reservoir towards the west. Photograph: S. Gibson



Figure 18. The north wall of the cistern on the summit of Khirbet es-Sauma'a, showing recent damage cause by modern construction. Photograph: S. Gibson.

ments during the Chalcolithic in contrast to the sparse occupation of the Late Neolithic. Even more dramatic demographic growth in the highlands during the transition from the Chalcolithic to the EBI is demonstrated by an increase in the number and size of sites (Finkelstein and Gophna 1993, Tables 1–2, Figures 4–5). That shift, occurring at approximately the same time as the abandonment of arid regions such as the northern Negev (Levy and Alon 1987), hints at resettlement at higher altitudes. Although acknowledging that olives were domesticated by the Chalcolithic or even earlier, Finkelstein and Gophna (1993, 12–13) argue that large-scale olive culture begins in the Early Bronze Age. However, it now appears that significant olive processing began during the Chalcolithic, possibly not limited to only the higher elevations. Processing of olives was probably one function of es-Sauma'a, suggested by the rock cut installation mentioned by Nasrallah. Evidence from a variety of sources and regions increasingly support the widespread production and importance of olive oil during the Chalcolithic (Lovell 2002, 97).

The presence of olive pits and wood from late prehistoric sites was established some time ago (Galili and Sharvit 1994–5, Kislev 1994–5; Carmi and Segal 1994–5), but recent research contributes new

insight underscoring the importance of olive cultivation during the Chalcolithic. In the vicinity of Jerusalem, other sites also suggest olive cultivation (Gibson et al. 1991, 34–35). Golan sites also seem to have been involved in olive production (Epstein 1998). At lower elevation toward the coastal plain, the site of Nevalat (van den Brink et al. 2001) produced numerous rock cut features and olive stones.

Olive oil production would have provided an important component for exchange with other sites and regions, even at sites such as Teleilat Ghassul situated in areas such as the lower Jordan Valley. Too arid for olive cultivation, olive stones are nevertheless found at Teleilat Ghassul suggesting that they were cultivated elsewhere (Neef 1990). Olive harvesting is also suggested in the hill regions flanking the Jordan Valley based on stones found at Pella, as well as wood found at Tel Tsaf, Tell Abu Hamid and Tell esh-Shunah (Bourke et al. 2000; Gophna and Kislev 1979; Neef 1990; Willcox 1992). Although this is a phenomenon that requires much more investigation, and precise dating of highland sites within the Chalcolithic sequence remains problematic, mounting evidence suggests that inhabitants at sites such as those at es-Sauma'a were engaged in mixed agricultural economies, including olive cultivation. In fact, the location of es-Sauma'a

along the border between the Judean highlands and the Samarian highlands and the highland crest may be of significance. We would posit that as more data from Chalcolithic sites in the highlands becomes available, the demographic expansion documented during the EBA in the highlands and attributed to olive oil production (Finkelstein and Gophna 1993) will be found to have started during the Chalcolithic period.

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#### Notes

<sup>1</sup> A large collection of flint implements mostly of Palaeolithic age was made by Herbert Clark, US Vice-consul and later resident in Jerusalem, and deposited in the museum of the Palestine Exploration Fund in London. An examination of the flint material in 1994, undertaken with the help of Prof. Ram Gophna, indicates that a small proportion of the flint, consisting mainly of axes/adzes, should be dated to the Neolithic or Chalcolithic. These implements, judging by the inked names on their sides, were collected by Clark in 1912 at the following sites in the central Judean Hills: Gibeon (el-Jib), Michmash, Tawanil, Koickass, Tmil A'amal, and Tannoar. A few of these implements were referred to by Macalister (1912, 84, Fig. 7). For a map of prehistoric sites with at least 7 Chalcolithic sites around Jerusalem, see Stekelis (1956, Fig. 1) and, more recently, for a survey of Epipalaeolithic and Neolithic sites around Jerusalem: Marder and Khalaily (2004). Chalcolithic remains represented by pottery and flints are known to the north of Jerusalem at Tell el-Nasbeh (McCown et al. 1947, 48), to the west of Jerusalem at Ain Karim (North 1961, 42), Kastel and Motza (Shalem 1973, 225) and Sataf (Gibson et al. 1991), and to the south of Jerusalem at Bethlehem

and Beit Sahur (Neuville and Mallon 1931; Stockton 1967; Dinur 1986), as well as from Hebron (Hammond 1965). For a general map showing the distribution pattern of Chalcolithic sites in the highlands of Palestine, see Finkelstein and Gophna 1993, Fig. 1.

<sup>2</sup> Although Nasrallah referred to the rocky hill as Tell es-Sōma', the Chalcolithic remains on the south-east slope are not part of an artificial mound. For this reason we refer to the site as Khirbet es-Sauma'a according to the reading of the name provided on maps from the British Mandate period (Palestine, Jerusalem Sub-District, 1942, scale 1:20,000) and to this day (cf. p. 158 of *Department of Antiquities: Geographical List of the Records Files, 1918-1948*. [Jerusalem]). The Khirbet es-Sauma'a name was also provided by Nasrallah (1936, 293) in addition to Tell es-Sōma', as well as the versions Wa'ar - or Qubbet - es Sauma'a. He also mentions Qarm el-Khariqa, and presumably this name refers specifically to the agricultural terraced areas on the east slope of the hill. Socin (1879, 162) makes reference to the site as 'Kasr Summa' and refers to ruins and a cistern on the hill and further remains on the east slope. Recent excavations at the foot of the lower west slope of es-Sauma'a, along the Jerusalem-Ramallah highway close to Shu 'fat, have brought to light remains of structures from the Roman and Byzantine periods: Sklar-Parnes, et al. 2004.

<sup>3</sup> The results of the 1981 survey, conducted with the assistance of Fathi Issa, were published in brief in the 'Jerusalem Survey': cf. Kloner 2001, Sites 87, 121, 125; 2003, 19\*.

<sup>4</sup> The details of the plastered walls of the basin/tank are as follows: (1) external first coat of plaster (3.5 cm thick), white with grog and gravel inclusions; (2) second layer of plaster beneath external coat (3 cm thick), white with ashy flecks with potsherds and flat stones; (3) backing of stones and plaster (12-30 cm thick), white and ashy, with crushed stone inclusions; the stones used for this backing are approximately 15 x 20 cm. Judging by the type of plaster, we would suggest a Late Ottoman to modern date for the construction of the tank. Around the base of the mound are a number of large fallen chunks of grey plaster which presumably belonged to the collapsed walls of the basin/tank.

<sup>5</sup> Various authors (Blackham 2002; Garfinkel 1999; Lovell 2001) use the term "Middle Chalcolithic", but such agreement in terminology does not imply consensus on what assemblages or dates correspond to that terminology. For comparison of the different assemblages and sequences, see Banning (2002).

<sup>6</sup> The site of Abu Ghosh has remains dating primarily from the PPNB and Pottery Neolithic (=Jericho Stage IX) periods, but it also has artefacts that Perrot attributed to the 'Éneolithique Moyen', i.e. to the Chalcolithic: Perrot 1952, 122, 140-141, and Fig. 4:2 for an axe with a polished edge. Chalcolithic remains were apparently absent from the recent archaeological excavations at the Abu Ghosh site by O. Marder and H. Khalaily in 1995.

<sup>7</sup> A scatter of Chalcolithic sherds was also noted at Khirbet Abu Musarrh, about 1.5 km to the SW of the spring of Ain Farah (Kochavi 1972, 186, Site 147).

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