'Atiqot 61, 2009

Late Chalcolithic Burial Remains and Early Bronze Age I Dwelling Remains from a Karstic Cave at Shoham (Northeast)

Edwin C.M. van den Brink

The modern town of Shoham is located on the western flank of the mountainous Samaria anticline, c. 90 m above sea level, at the eastern edge of the Lod Valley facing the central coastal plain (NIG 1954/6575; OIG 1454/1575; Fig. 1).

Intensive public works conducted throughout Shoham since its inception in the early 1990s have resulted in the discovery, and subsequent excavation, of about ten karstic caves used for burial and dwelling purposes during the Late Chalcolithic period and/or the Early Bronze Age I (Fig. 1; Areas B1–B5: see Gophna and Feldstein 1998; Lazar-Shorer 2001; Areas A1–A3: van den Brink and Gophna 2005:2–3), as well as settlement remains from the same periods (e.g., Area F: Nadelman 1995).

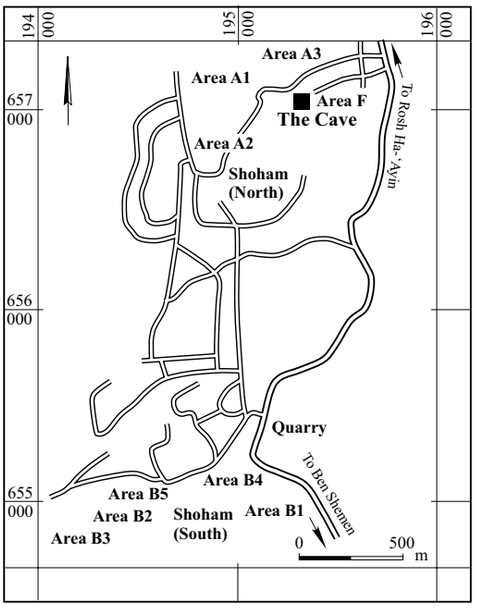


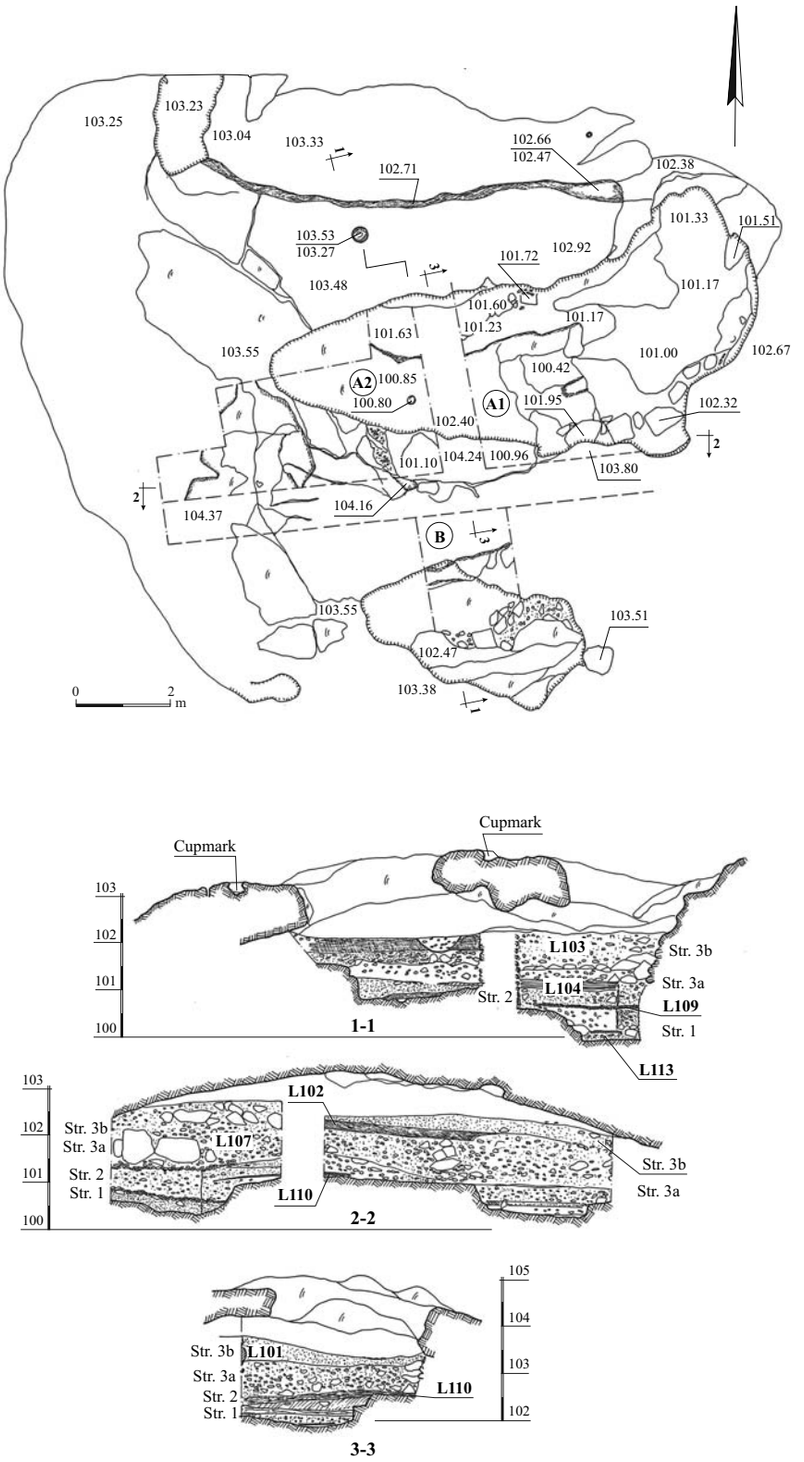
Fig. 1. Location map.

The Excavation

This report focuses on the excavation of a single karstic cave in 1999 in the northeastern part of Shoham. The cave is at least 18 m long, 15 m wide and a maximum of 3 m high (Plan 1; Fig. 2). The central part of the cave's roof (c. 5 × 11 m), as well as portions of its northern and southern extremities, had collapsed in antiquity. These areas were found filled and sealed by modern construction waste, which was mechanically removed during the first day of excavation down to the original, undisturbed topsoil inside the cave (L101; Plan 1: Sections 2–2, 3–3). At the same time, the shallow, natural soil cover above the preserved part of the roof and the surrounding bedrock (L100) was manually cleaned (Fig. 2), revealing open joints or fossil vugs that furthered the karstification process and (cave) collapse (see Kafri 2005). Two deep, circular cupmarks of unknown date were hewn into the bedrock above the cave (Plan 1: Section 1–1).

The collapsed entrance, situated at the eastern end of the cave, was fully exposed and excavated down to bedrock. The cave's northern, western and most of the southern extremities were inaccessible due to danger of roof collapse, as well as the large amounts of soil fill almost reaching roof level.

Two probes (Sqs A1 and A2; Plan 1), measuring 4 × 7 and 4.0 × 6.5 m respectively, were manually excavated down to bedrock in the central, caved-in area of the cave. A third



Plan 1. Plan and sections of cave.

Fig. 2. Cave entrance at the end of the excavation, looking west.

and much smaller probe (Sq B), measuring 2.5 × 3.0 m, was excavated to bedrock in the southern part of the cave (Plan 1).

Three strata were distinguished in all three probes (Plan 1: Sections 1–1, 2–2, 3–3). They are described from bottom to top.

Stratum 1

This stratum, comprising 0.2–0.4 m of soil resting immediately upon the cave's bedrock floor, contained fragmentary remains of Late Chalcolithic secondary burials in ceramic ossuaries, and accompanying burial offerings. Preservation was poor, due in part to the subsequent EB I dwellers who apparently cleared much of the earlier remains in the cave.

Chalcolithic burials in ceramic ossuaries were usually deposited alongside the rear walls of the cave, according to the prevailing custom at the time. Unfortunately, these very parts of the cave remained unexplored.

Stratum 2

This stratum, varying in thickness between 0.3 and 1 m, dates to late EB I (EB IB). It consisted of a layer of reddish-brown soil used to level the uneven bedrock floor within the cave. The stratum was topped by a living surface consisting of a paving of small pebbles upon which many sherds were found *in situ*. In the absence of any evidence of burials on the one hand, and the presence of holemouth cooking and storage jars in the ceramic assemblage on the other, a domestic (re)use of the cave during the later part of the EB I is indicated.

Stratum 3

The uppermost stratum (at least 1.5 m in thickness) in all three probes consisted of two layers of natural soil fill, the upper layer apparently moister (Sub-Stratum 3b) than the lower one (Sub-Stratum 3a), containing stone boulders of varying size that attest to the partial collapse of the cave's roof. Within these layers is a mixture of pottery sherds dating to MB IIA, Iron I–II, the Persian, Hellenistic, Roman, Byzantine and Islamic periods. Given the apparently random mixture of these sherds in the upper part of the stratigraphy, they must be considered intrusive, probably washed into the cave from higher up the hill during heavy rains. This is further corroborated by the relatively

eroded, worn-down nature of many of the sherds. Their presence does, nevertheless, reflect post-EB I occupation in the vicinity of the cave (for an example of such post-EB I activity in the vicinity, see Appendix 1, below).

THE FINDS

Pottery

No intact ceramic ossuaries or pottery vessels were retrieved from the three probes inside the cave. Excluding some 20 ossuary fragments, a total of 477 diagnostic sherds (rims, handles, bases and decorated sherds) and 5764 plain body sherds were recovered (Table 1).

Stratum 1 (Late Chalcolithic; 276 diagnostic and 3192 non-diagnostic potsherds).

This fragmentary funerary assemblage includes sherds of rectangular or 'domiform' ceramic ossuaries (Fig. 3); small, open, wheel-fashioned ("V-shaped") bowls (most unpainted, a few with a painted rim; Fig. 4); a number of fragments of large fenestrated pedestal bowls (Fig. 5); spouted bowls and medium- to large-sized bowls and basins (Fig. 6), including a fragment of a relatively large bowl with an interior ledge handle (Fig. 6:3); medium-sized holemouth jars (Fig. 7:1–5), some with exterior combing (Fig. 7:6–8) typical of both burial and dwelling contexts in this region during the later stages of the Late Chalcolithic (see, e.g., Commenge 2005: Figs. 6.18–6.20); small to medium-sized, short-necked jars, one of them combed (Fig. 8:1, 2, 9), and large, necked jars or pithoi with finger-indented (Fig. 8:3–5) or plain (Fig. 8:6) rims. The few handles

Table 1. Distribution of Diagnostic and Non-Diagnostic Pottery Sherds

Square	Locus	Late Chalcolithic	EB I	Post-EB I	Body Sherds
Surface	100			4	13
A2	101		1	6	
A2	102			11	476
B	103				120
B	104			54	404
A2	105			3	30
A1	106	1	1	7	156
A1	107				30
A2	108	7		3	148
A1	109	10			549
A2	110		9	74	838
A2	111	49	1		638
A2	112	2			15
B	113	1	25		286
A2	114	6			124
A1	115	16			312
A2	116				51
A1/2	117	127	1		884
A1/2	118	2			20
B	119	55			670
Total diagnostic		*276*	*38*	*163*	
Non-diagnostic		*3192*	*993*	*1579*	*5764*

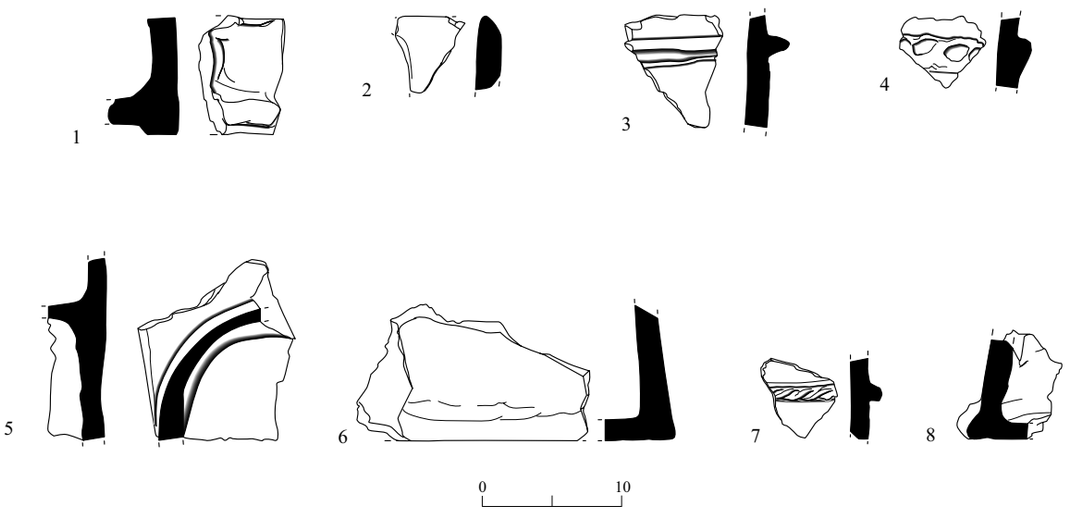


Fig. 3. Chalcolithic ceramic ossuary fragments.

No.	Locus	Basket	Description
1	115	1052	Fragment
2	115	1059	Left upper corner fragment of facade
3	117	1051	Wall fragment with applied horizontal plain clay band
4	117	1057	Wall fragment with applied, finger-impressed clay band
5	119	1068.1	Fragment of facade or backwall
6	119	1068.2	Base/wall fragment
7	119	1068.3	Wall fragment with applied rope decoration
8	119	1068.4	Base/wall fragment

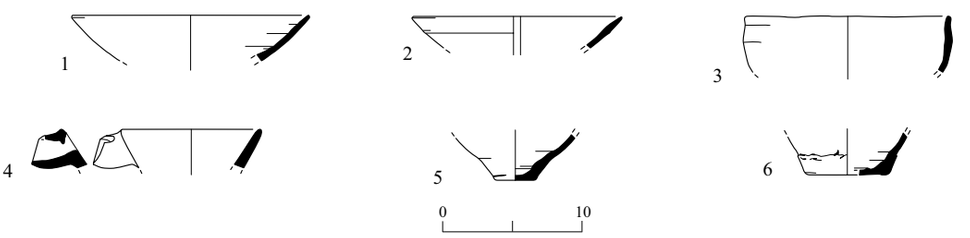


Fig. 4. Chalcolithic small open bowls.

No.	Locus	Basket	Description
1	117	1057	Rim of small, wheel-fashioned V-shaped bowl
2	117	1051	Rim of small, wheel-fashioned V-shaped bowl
3	119	1068	Rim/wall of small hemispherical bowl
4	113	1049	Rim and spout of small open vessel
5	117	1064	Base of small wheel-fashioned V-shaped bowl
6	117	-	Base of small, wheel-fashioned V-shaped bowl

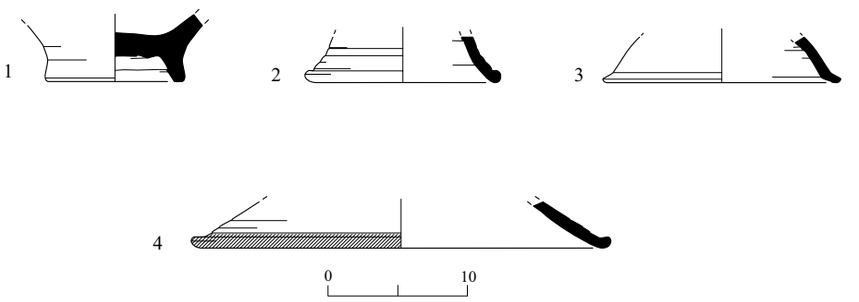


Fig. 5. Fenestrated bowls.

No.	Locus	Basket	Description
1	117	1061	Medial fragment
2	110	1036	Ring base
3	118	1063	Ring base; soot
4	111	1032	Red-painted rim of ring base

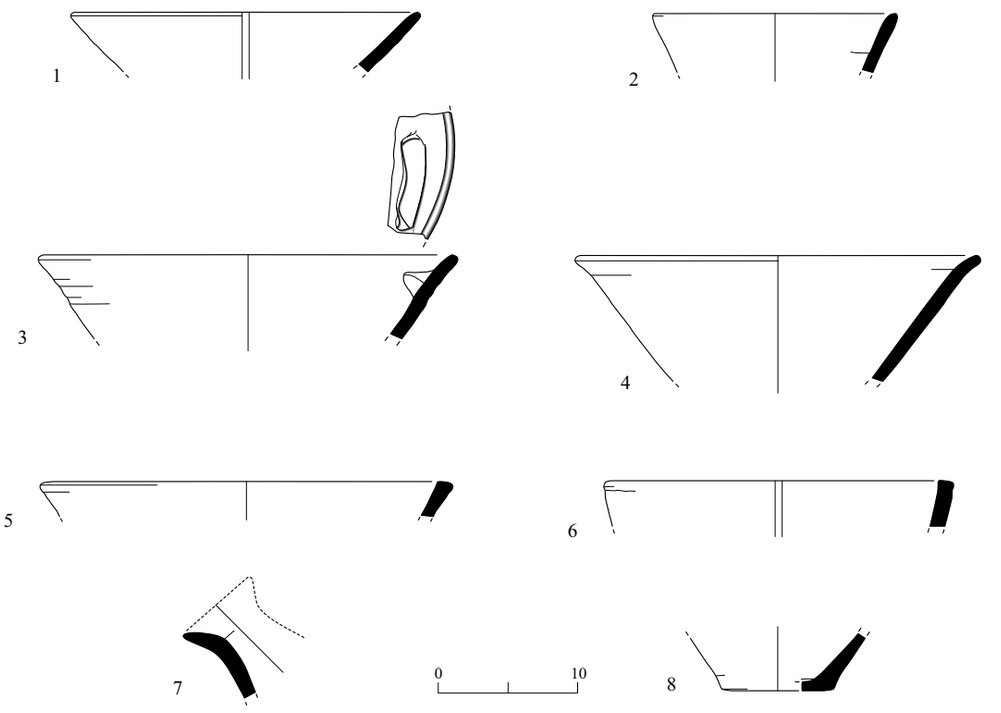


Fig. 6. Chalcolithic medium- and large-sized bowls, basins, and spouted bowls.

◂ **Fig. 6**

No.	Locus	Basket	Description	Parallels
1	117	1061	Rim of medium–large V-shaped bowl	
2	117	1058.1	Rim of medium–large V-shaped bowl	
3	111	1032	Large bowl with interior ledge handle	Cf. Commenge 1990:84–85, Fig. 31:1–5
4	118	1063	Rim of large bowl	
5	117	1051.1	Rim of deep bowl/basin, red-painted outside	
6	117	1051.2	Rim of basin	
7	106	1021	Large spout of basin	
8	117	1064	Base of bowl or jar	

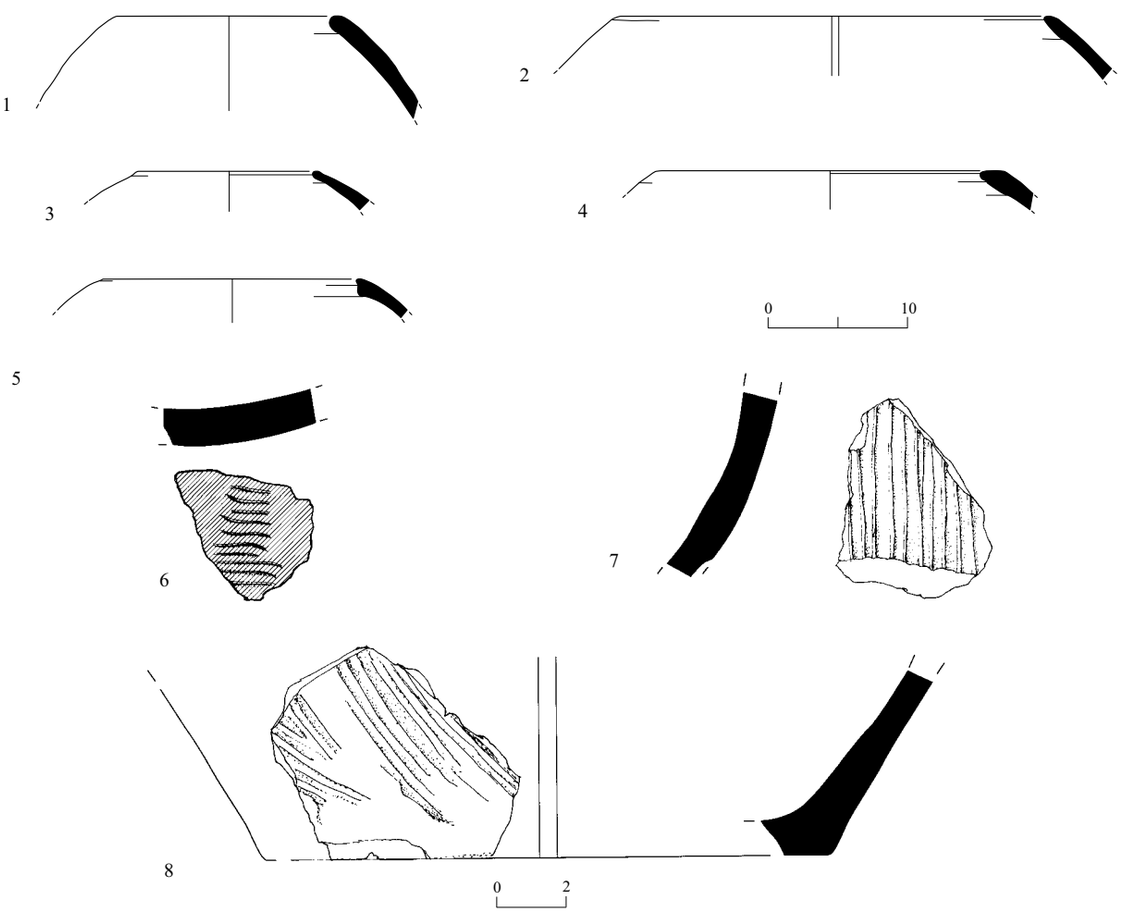


Fig. 7. Chalcolithic holemouth jars, plain and combed.

◂ Fig. 7

No.	Locus	Basket	Description
1	119	1066	Rim of holmouth jar
2	117	1064	Rim of holmouth jar
3	111	1039	Rim of holmouth jar
4	117	1051	Rim of holmouth jar
5	111	1045	Rim of holmouth jar
6	117	1057	Incised and red-painted body sherd
7	117	1058	Combed body sherd
8	119	1062	Combed base of jar; joins 113/1054

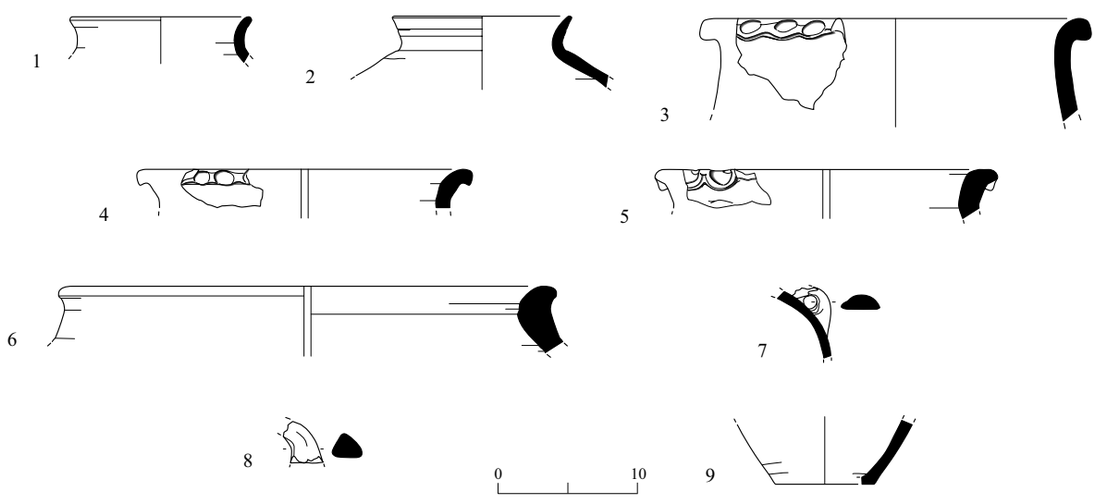


Fig. 8. Chalcolithic necked jars.

No.	Locus	Basket	Description
1	116	1046	Rim of short-necked medium-sized jar
2	117	1057.2	Rim/neck of medium-sized, short-necked jar with very fine combing on ext.; on int. of rim-neck, joint visible; neck is wheel-finished
3	119	1068	Finger-indented rim of pithos
4	109	1055	Finger-indented rim of large jar
5	117	1057.1	Finger-indented rim of pithos
6	114	1044	Rim of large storage jar
7	119	1066	Horizontally pierced lug handle, red-painted
8	111	1045	Lug handle, triangular cross section
9	117	1058.2	Base of jar

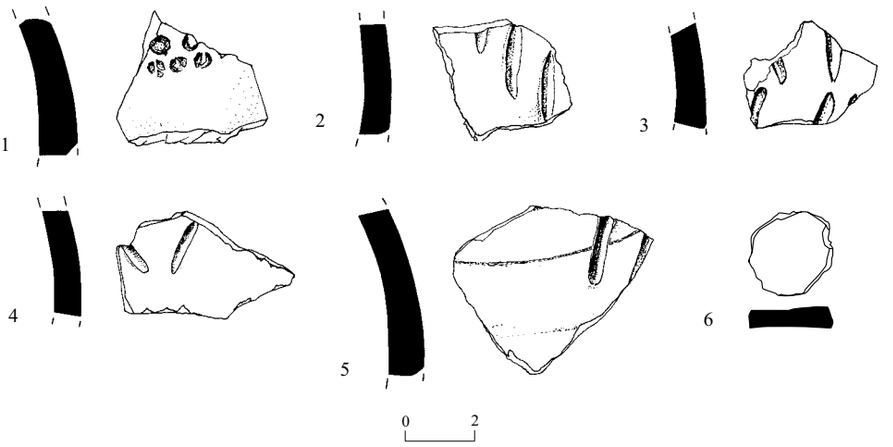


Fig. 9. Chalcolithic decorated body sherds, potmark, and stopper.

No.	Locus	Basket	Description
1	119	1067	Body sherd with reed/stylus impression
2	117	1057	Body sherd with incised decoration; traces of red paint
3	117	1051	Body sherd with incised decoration
4	117	1058	Body sherd with incised decoration (potmark?)
5	119	1067	Body sherd with incised potmark
6	117	1064	Stopper (reworked body sherd)

retrieved include small, horizontally pierced lug handles (Fig. 8:7), as well as two fragments of lug handles with triangular cross sections (Fig. 8:8). Punctured and incised decoration is rare (Fig. 9:1–4). One example of a deeply incised, but incompletely preserved, potmark was recovered (Fig. 9:5). The phenomenon of incising potmarks on pottery vessels prior to firing becomes more and more evident toward the end of the Chalcolithic period (as at Shoham [North]; see Commenge 2005: Fig. 6.33–35). A single reworked sherd, probably used as a stopper on a smallish jar, was noted (Fig. 9:6). Cornets and churns are notably absent from the burial assemblage, possibly indicating a relatively later sub-phase within the Late Chalcolithic period.

Stratum 2 (Late EB I; 38 diagnostic and 993 non-diagnostic potsherds).

The small assemblage from Stratum 2 includes fragments of various small, hemispherical bowls, mostly plain (Fig. 10:1–3), in one instance red-slipped inside and out (Fig. 10:4). A plain rim fragment of what appears to be a platter (Fig. 10:5), more frequently associated with EB II assemblages in the country, may indicate a relatively late phase within EB I for this pottery assemblage. The coarse fabric of a bowl fragment with a flattened rim and strap handle(s) appears more Chalcolithic than EB I (Fig. 10:6), and should perhaps be regarded as intrusive. The Late EB I assemblage also includes fragments of holemouth jars (Fig. 11:1) and necked jars, in one instance with applied rope decoration on its shoulder (Fig. 11:2), one small, spouted amphoriskos (handles not preserved; Fig. 11:3), a small amphoriskos with red-painted vertical lines and two different kinds of (diminutive) handles—one double handle and one vestigial, plain ledge handle (Fig. 11:4). Also found were fragments of a small red-slipped jar with a tubular handle (Fig. 11:5), a red-slipped ompholos base (Fig. 11:6),

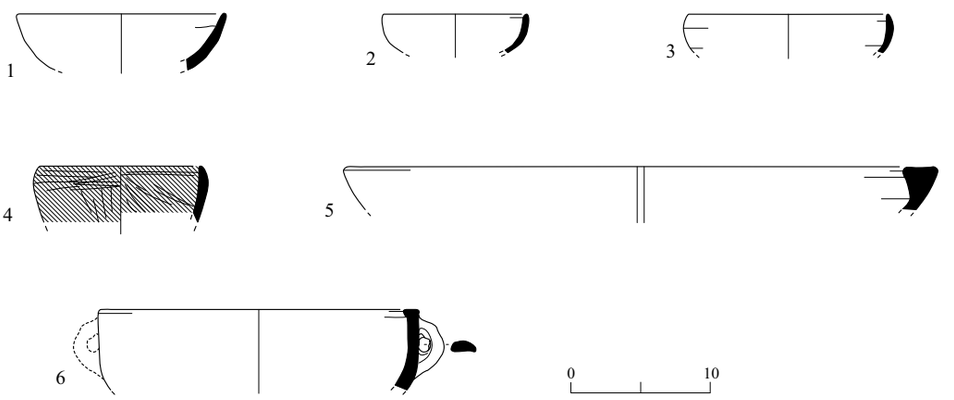


Fig. 10. Late EB I bowls.

No.	Locus	Basket	Description
1	113	1049	Rim of hemispherical bowl
2	113	1054	Rim of small hemispherical bowl
3	113	1045	Rim of small hemispherical bowl; soot on outer rim, used as a lamp
4	111	1045	Rim of hemispherical bowl, red slip on ext. and int.
5	113	1054	Rim of platter(?)
6	113	1054	Bevelled rim with strap handle, red slip

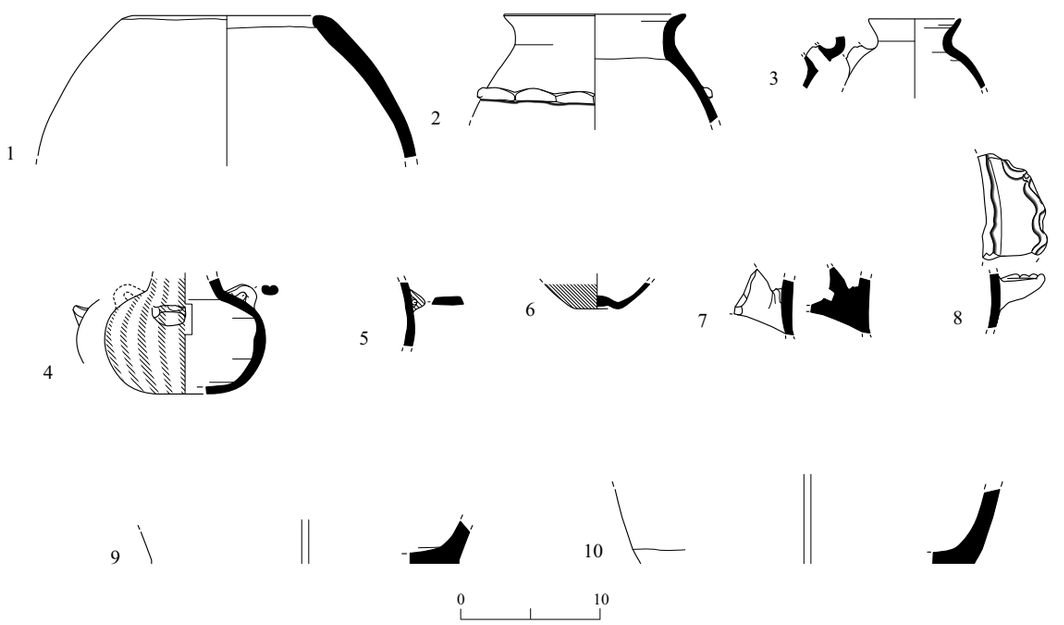


Fig. 11. Late EB I jars, amphoriskoi, and miscellaneous.

◂ Fig. 11

No.	Locus	Basket	Description
1	113	1049	Rim of holemouth jar
2	113	1054	Rim, neck and shoulder of medium-sized storage jar with applied rope decoration around the shoulder; white washed?
3	113	1054	Rim and shoulder of small, spouted amphoriskos
4	113	1054	Small closed vessel, red-painted vertical stripes; 1 small ledge handle; 1 small bisected lug handle
5	110	1040	Body sherd, red-painted, tubular handle
6	117	1051	Ompholos base, red slip on ext. (Tell el-Far'ah [N] style)
7	109	1041	Pillar spout
8	110	1044	Large indented ledge handle
9	113	1049	Base of holemouth cooking pot/jar
10	113	1054	Base of medium-sized jar, lime washed

Fig. 12 ▸

No.	Locus	Basket	Description
1	106	1021	Rim of cooking pot, MB IIA
2	104	1027	Rim of bowl, Iron I
3	105	1011	Rim of jar, Iron I
4	104	1035	Rim of jar, Persian
5	102	1004	Rim of jar, Persian
6	110	1036	Rim of bowl, Hellenistic
7	110	1044	Rim of jar, Hellenistic
8	110	1040	Rim of jar, Hellenistic
9	110	1028	Rim of jar, Hellenistic
10	110	1033	Tongue handle of lamp, Early Islamic
11	101	1002	Rim and neck of Gaza Ware jar, Late Islamic

a pillar-spout (Fig. 11:7), a wavy ledge handle (Fig. 11:8) and bases of large storage vessels (Fig. 11:9, 10).

Stratum 3 (post-EB I; 163 diagnostic and 1579 non-diagnostic potsherds)
Among the pottery recovered in the accumulations of sediments that sealed Stratum 2, the earliest sherd is from an MB IIA cooking pot (Fig. 12:1). Subsequent periods are attested by the presence of, e.g., fragments of an Iron I bowl and cooking pot (Fig. 12:2, 3), two Persian jars (Fig. 12:4, 5), a Hellenistic bowl and jars (Fig. 12:6–9), Roman and Byzantine sherds (not illustrated), an Early Islamic oil lamp (Fig. 12:10) and a Late Islamic jar rim (Fig. 12:11).

Groundstone Items

A small, possibly reworked, facetted limestone palette (Fig. 13:1) and a fragment of a basalt spindle whorl (Fig. 13:2) are the only groundstone items found at the site. Facetted limestone palettes are known from other Chalcolithic burial caves (see

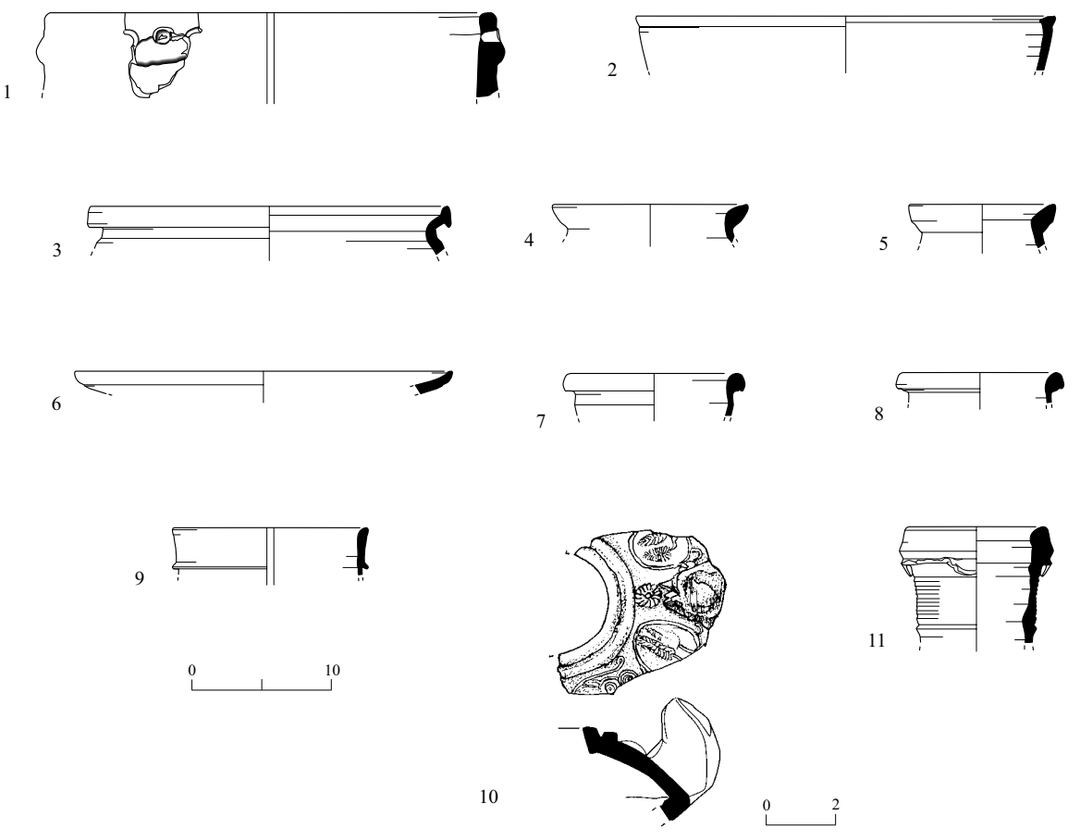


Fig. 12. Post-EB I selection of diagnostic sherds (MB IIA–Late Islamic period).

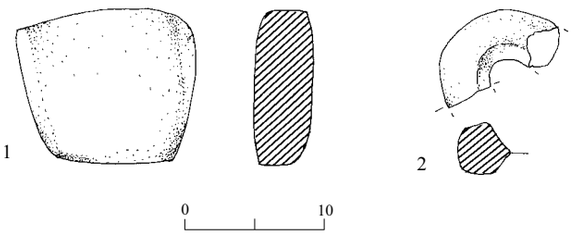


Fig. 13. Chalcolithic groundstone items.

No.	Locus	Basket	Description
1	111	1045	Small stone palette
2	111	1045	Perforated basalt ring

Table 2. Human Skeletal Remains from the Chalcolithic Period

Locus	No. of Individuals	Age Estimation	Gender Estimation	Remarks
109	1	Adult	M?	Relatively thick vault and femoral cortex
111	1	?	?	One non-diagnostic long bone fragment
114	1	Adult	?	Tibia—proximal epiphysis fused
115	1	?	?	One non-diagnostic long bone fragment
117	1	Adult	?	Proximal phalanges—epiphyses fused
119	1	40<	?	Advanced attrition in lower jaw fragment: M1 and M2 show dentine cup in all cusps, M3 shows dentine cup in one cusp

van den Brink 2005a:182, Fig. Exc. 1.3), including Cave 4 at Shoham North (Rowan 2005:116, Figs. 9.1:1–3; 9.2:4). Bifacially drilled, basalt spindle whorls are known from a variety of Chalcolithic and EB I contexts (Rowan 2005:114).

Human Skeletal Remains
Yossi Nagar

Human skeletal remains were found in loci associated with the Chalcolithic period (Table 2), and include a few fragmentary skull, teeth and postcranial bones. The bones were examined on-site and then sent for reburial. The remains represented six individuals. Four were identified as adults, although a more refined age estimation was possible for only one individual based on tooth attrition stages (Hillson 1993:176–201).

Dendroarchaeological Research
Nili Liphschitz

The climate of the region in which the cave is situated is typical Mediterranean, with a mean annual precipitation of c. 500 mm (499 mm mean annual precipitation measured at Mishmar Ayyalon, map ref. OIG 144/142, at 150 m elevation; see *Meteorological Notes* 1967).

Today the area is undergoing a heavy urbanization process and the native arboreal vegetation has been totally destroyed. Comprehensive dendroarchaeological research of the Mediterranean region of the country has proven that the dominant native arboreal climax vegetation was of the *Quercus calliprinos* (Kermes oak)—*Pistacia palaestina* (terebinth) association. The *Olea europaea* (olive) trees were one of the components of this association, although in low percentages (Liphschitz and Biger 1990). Following cultivation of the olive from the EB I onward, olive orchards became an important component of the landscape and their proportion within the vegetation cover became very prominent (Liphschitz et al. 1991).

Material and Methods.— Charred wood remains, as well as carbonized seeds retrieved during the excavation, were sent for botanical identification.

Pieces of 0.5–1.0 cu cm were taken from each of the charred wood samples for accurate identification. The samples were aspirated in absolute ethyl alcohol, dipped in celloidin–clove oil solution for 24 hours, rinsed in absolute ethyl alcohol and transferred to 55° C paraffin in the oven for 72 hours. Blocks were made in paraffin. Cross, longitudinal, tangential and radial sections were prepared for each sample. Identification of the wood up to the species level, based on the three-dimensional structure of the wood, was conducted microscopically from these sections. Comparison was made with reference sections prepared from systematically identified recent trees and shrubs and with anatomical atlases. Seeds were identified morphologically by comparison with recent seeds.

Table 3. Provenance of Wood Remains in the Late Chalcolithic–EB I Cave

Locus	Basket	Tree Species
116	1046	*Quercus calliprinos*
117	1061a	*Pistacia palaestina*
113	1043	*Pistacia palaestina*
114	1104	*Pistacia* sp.
115	1052	*Olea europaea*
115	1053	*Olea europaea*
115	1059	*Olea europaea*
117	1061b	*Olea europaea*

Table 4. Provenance of *Olea europaea* Stones in the Late Chalcolithic–EB I Cave

Locus	Basket	Quantity
108	1025	1 stone
109	1041	1.5 stones
111	1029	Broken pieces
111	1032	2 stones + broken pieces
117	1061c	2 stones
117	1064	1 stone
115	1052	1 stone

Results and Discussion.— The charred wood remnants found in the cave belong to three tree species: *Quercus calliprinos, Pistacia palaestina and Olea europaea* (Table 3), proving once again that the primary native association of the Mediterranean region during antiquity was of *Quercus calliprinos—Pistacia paleastina.* Since the cave is dated to the Late Chalcolithic–EB I, the period when olive cultivation began, the olive wood remains could belong to either wild or cultivated specimens.

All the seeds (deriving from Stratum 1 [Late Chalcolithic] and from Stratum 2 [EB I]) are cultivated olive stones (Table 4), further supporting the conclusion that the cultivation and spread of olive orchards in the Mediterranean landscape began as early as EB IA.

DISCUSSION

Three limited probes in the cave yielded the fragmentary and poorly preserved remains of six human interments, in all likelihood originally deposited in rectangular ceramic ossuaries, fragments of which were encountered throughout Stratum 1. The custom of multiple secondary burials and the presence in the cave of a few rectangular, but otherwise non-distinctive ossuary fragments, reflect similar mortuary practices encountered in Chalcolithic burial caves in other parts of Shoham (van den Brink 2005b) and elsewhere. Accompanying funerary gifts include open bowls of varying sizes, including small wheel-fashioned ones (so-called "V-shaped bowls"), one bowl with an internal ledge-handle and others on a fenestrated pedestal, spouted bowls, basins and holemouth jars, several with typical exterior combing applied with a wooden comb. These vessels are characteristic of Late Chalcolithic ceramic assemblages from contemporary burial sites in the region and compare well with domestic pottery assemblages, as at Ṣafadi and Abu Maṭar (Commenge-Pellerin 1987; 1990). Therefore, they can be attributed to the Be'er Sheva' facies of the Late Chalcolithic culture. Cornets and churns are absent in this cave, as, apparently, are basalt vessels. Cultivated olive stones and olive wood were present in both Late Chalcolithic and late EB I contexts in the cave, and have been noticed at numerous contemporary burial and habitation sites in the region and beyond (e.g., Lev-Yadun, Inbar and van den Brink, in press).

Additional karstic caves, both isolated as well as in groups, used during the Chalcolithic and/or EB I for burial or dwelling purposes, have been identified and excavated in the immediate environs of Shoham in recent years, as at Ḥorbat Ḥani (Lass 2003), Ḥorbat Tinshemet (van den Brink and Grosinger 2004), Qula (Milevski and Shevo 1999; Milevski 2001a; b; 2002; in press a), Giv'at Ha-Oranim (Scheftelowitz and Oren 2004), Nevallaṭ (van den Brink et al. 2001; van den Brink and Lazar, in press) and Mazor (Milevski, in press [b]). Contemporary open-air settlement remains were located in Shoham's environs at, e.g., Nevallaṭ (van den Brink et al. 2001; van den Brink and Lazar, in press), Yehud

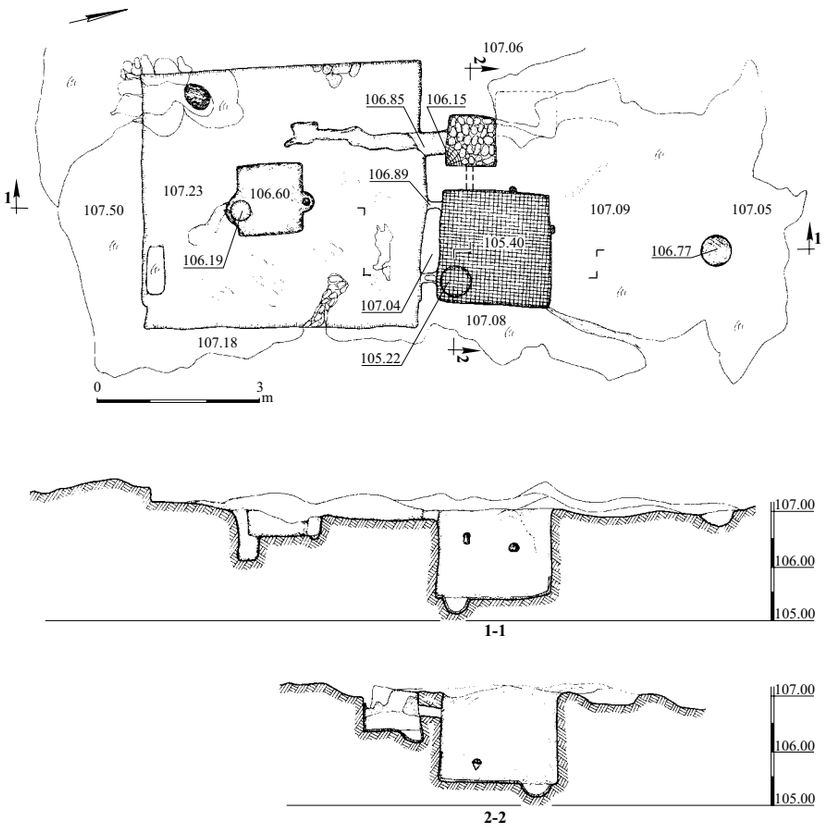
(van den Brink, Golan and Shemuel 2002), Ono (Gorzalczany 2000; Buchennino 2002) and Tel Lod (Yannai and Marder 2000:63*; van den Brink 2002; van den Brink et al., forthcoming). Additional contemporary sites in the same region, known mainly from surveys, include Ras es-Summaq, Naḥal Bet ‘Arif and Miẓpe Afeq (Karnat el-Haramiya) (Gophna and Beit-Arieh 1997: Site Nos. 26, 53 and 91; van den Brink 2005a; 2006; Torge, forthcoming).

The various Chalcolithic burial caves exposed at Samaria, including the one reported here, must be understood as only a sample of an entire system of cemeteries within karstic caves that served the population living in nearby settlements in the limestone foothills of the mountainous Samaria anticline (see, e.g., Gophna and van den Brink 2005), from Ben Shemen in the south to the vicinity of El‘ad (Mazor) in the north and beyond (van den Brink 1998; 2005a).

* * *

Appendix 1: A Late Byzantine Winepress

A winepress (Plan 2; Fig. 14), exposed less than 50 m to the west of the cave (see Plan 1), dates to the Late Byzantine period. It was unearthed during our 1994–1995 excavation at Shoham (North) (van den Brink and Gophna 2005:2, 4). The winepress installation includes an almost square, rock-cut treading surface with a central vat. The treading surface was drained through an intermediate pit into a plastered, mosaic-paved collection vat. A similar, albeit more elaborate, installation was uncovered by Greenhut (1998: Plan 8) at Ḥorbat Ḥermeshit, several kilometers southwest of Shoham.



Plan 2. Plan and sections of the late Byzantine winepress.

Fig. 14. Late Byzantine winepress, looking west.

Appendix 2. Locus List

Locus	Square	Stratum	Description
100	Surface	-	Cleaning bedrock above cave
101	A2	3b	Top of cave fill
102	A2	3a	Dark, clayey layer
103	B	3b	Top of cave fill (same as L101)
104	B	3a	Dark, clayey layer (same as L102)
105	A2	2	Light brownish soil along eastern section in 1 m strip, below L102
106	A1	3b	Cleaning after tractor (same as L102)
107	A1	3a/2	Probe down to bedrock floor in the entrance of the cave
108	A2	2	1.5 m wide test trench along eastern section
109	A1	2	Light brownish layer with EB I sherds and pebble floor (resembles L105)
110	A2	3a	Dark clayey layer in west of test trench (same as L102)
111	A2	2/1	Northern half of test trench down to bedrock along eastern section; bedrock floor alongside both sections
112	A2	2/1	Probe, north of and alongside southern balk; dark soil (same as L111?)
113	B	2/1	Grayish soil fill below L102 (=L104)
114	A2	1	Light brown fill below L112 and above bedrock floor L111 in 1 m wide strip along E–W section
115	A1	2	Reddish-brown, near-sterile soil with gray patches and soot, in between small stones in SW corner of square, below L109 and above bedrock
116	A2	2	'Floor' just above bedrock
117	A2	1	Below 'Floor' L116 and charcoal down to bedrock
117	A1	1	Reddish-brown fill down to bedrock in eastern half of Sq A1
118	A1	1	Removal of 'floor' fill down to natural bedrock
118	A2	1	Sherds on bedrock along N–S section
119	B	1	Below grayish fill, just above bedrock

NOTES

[1] Rescue excavations were conducted in the cave between January 10 and February 10, 1999 (Permit No. A-2991). The entrance to the cave is located within building plot 2519A. Work was directed on behalf of the Israel Antiquities Authority by the author, with the assistance of Dorit Lazar and with the participation of Avraham Hadjian (surveyor), A. Ganon (administrator), Tsila Sagiv (photography) and Eldad Barzilay (geologist). The work was financed by the Municipality of Shoham.

[2] The cave site is bordered on the east and west by apartment blocks in various stages of construction.

[3] The description of the post–EB I pottery is based on comments kindly made by Hagit Torge.

REFRERENCES

Brink E.C.M. van den. 1998. An Index to Chalcolithic Mortuary Caves in Israel. *IEJ* 48:165–173.

Brink E.C.M. van den. 2002. An Egyptian Presence at the End of the Late Early Bronze Age I at Tel Lod, Central Coastal Plain, Israel. In E.C.M. van den Brink and T.E. Levy eds. *Egyptian-Canaanite Interaction: From the 4th Through Early 3rd Millennium B.C.E.* London. Pp. 286–305.

Brink E.C.M. van den. 2005a. Chalcolithic Burial Caves in Coastal and Inland Israel. In E.C.M. van den Brink and R. Gophna. *Shoham (North): Chalcolithic Burial Caves in the Lod Valley, Israel* (IAA Reports 27). Jerusalem. Pp. 175–190.

Brink E.C.M. van den. 2005b. The Ceramic Ossuaries. In E.C.M. van den Brink and R. Gophna. *Shoham (North): Chalcolithic Burial Caves in the Lod Valley, Israel* (IAA Reports 27). Jerusalem. Pp. 27–46.

Brink E.C.M. van den. 2006. A Note on a Basalt Chalcolithic Bowl from Mitzpe Aphek, Rosh Ha-'Ayin. *IEJ* 56:102–104.

Brink E.C.M. van den et al. Forthcoming. Recent Salvage Excavations at Tel Lod in the Central Coastal Plain of Israel (with Byzantine, MB I, Late EB IB and Sporadic Chalcolithic and PNA Remains). *'Atiqot.*

Brink E.C.M. van den, Golan S. and Shemueli O. 2002. A Note on the Archaeological Investigations at Yehud and Some Chalcolithic Finds. *'Atiqot* 42: 25–34.

Brink E.C.M van den and Gophna R. 1997. Shoham (North). *ESI* 16:84–85.

Brink E.C.M. van den and Gophna R. 2005. *Shoham (North): Chalcolithic Burial Caves in the Lod Valley, Israel* (IAA Reports 27). Jerusalem.

Brink E.C.M. van den and Grosinger Z. 2004. An Early Bronze Age IB Burial and Dwelling Cave near Ḥorbat Tinshemet. *'Atiqot* 47:81–99.

Brink E.C.M. van den and Lazar D. In Press. A Chalcolithic Habitation Site with Agricultural Activity Areas in the Shephelah Foothills Region, Israel. *'Atiqot.*

Brink E.C.M, Liphschitz N., Lazar D. and Bonani G. 2001. Chalcolithic Dwellings Remains, Cup Marks and Olive (*Olea europaea*) Stones at Nevallat. *IEJ* 51:36–43.

Buchennino A. 2002. Ono (A). *HA–ESI* 114:114*.

Commenge C. 2005. The Late Chalcolithic Pottery. In E.C.M. van den Brink and R. Gophna. *Shoham (North): Chalcolithic Burial Caves in the Lod Valley, Israel* (IAA Reports 27). Jerusalem. Pp. 51–98.

Commenge-Pellerin C. 1987. *La poterie d'Abou Matar et de l'Oudi Zoumeili (Beershéva) au IV^e millénaire avant l'ère chrétienne.* Paris.

Commenge-Pellerin C. 1990. *La poterie de Safadi (Beershéva) au IV^e millénaire avant l'ère chrétienne.* Paris.

Gophna R. and Beit-Arieh I. 1997. *Map of Lod (80)* (Archaeological Survey of Israel). Jerusalem.

Gophna R. and Brink E.C.M. van den. 2005. Conclusions. In E.C.M. van den Brink and R.Gophna. *Shoham (North): Chalcolithic Burial Caves in the Lod Valley, Israel* (IAA Reports 27). Jerusalem. Pp. 165–174 .

Gophna R. and Feldstein A. 1998. Shoham (South). *ESI* 18:72–73.

Gorzalczany A. 2000. Ono. *HA–ESI* 111:42*–43*.

Greenhut Z. 1998. Ḥorvat Ḥermeshit (1988–1990). *'Atiqot* 34:121–172 (Hebrew, English summary, pp. 9*–10*).

Hillson S. 1993. *Teeth*. Cambridge.

Joffe A.H. and Dessel J.P. 1995. Redefining Chronology and Terminology for the Chalcolithic of the Southern Levant. *Current Anthropology* 36:507–518.

Kafri U. 2005. Location and Geological Background. In E.C.M. van den Brink and R. Gophna. *Shoham (North): Chalcolithic Burial Caves in the Lod Valley, Israel* (IAA Reports 27). Jerusalem. Pp. 7–8.

Lass E.H.E. 2003. An Early Bronze Age IB Burial Cave and a Byzantine Farm at Ḫorbat Ḫani (Khirbet Burj el-Ḫaniya) (West). *'Atiqot* 44:1–51.

Lazar-Shorer D. 2001. Shoham. *HA–ESI* 113:67*–68*.

Lev-Yadun S., Inbar M. and Brink E.C.M. van den. In Press. Two 6,000-Year-Old Chalcolithic Olive Stone Hoards from Modi'in, Israel. *Genetic Resources and Crop Evolution.*

Liphschitz N. and Biger G. 1990. Dominance of *Quercus calliprinos* (Kermes Oak)—*Pistacia palaestina* (Terebinth) Association in the Mediterranean Territory of Eretz Israel during Antiquity. *Journal of Vegetation Science* 1:67–70.

Liphschitz N., Hartman M., Gophna R. and Biger G. 1991. Beginning of Olive (*Olea europaea*) Cultivation in the Old World: A Reassessment. *Journal of Archaeological Science* 18:441–453.

Meteorological Notes 1967. *Climatological Standard Normals of Rainfall, 1931–1960* (Israel Meteorological Service, Ser. A. No. 21). Bet Dagan.

Milevski I. 2001a. Qula, Area J. *HA–ESI* 113:63*.

Milevski I. 2001b. Qula, Area K. *HA–ESI* 113:62*–63*.

Milevski I. 2002. A New Fertility Figurine and New Animal Motifs from the Chalcolithic in the Southern Levant: Finds from Cave K-1 at Quleh, Israel. *Paléorient* 28:133–142.

Milevski I. In press (a). Excavations at Qula (West). *'Atiqot*.

Milevski I. In press (b). Mazor (West). *HA–ESI.*

Milevski I. and Shevo E. 1999. Qula (West) 1997. *HA–ESI* 110:39*– 41*.

Nadelman J. 1995. Shoham. *ESI* 14:80–81.

Rowan Y.M. 2005. The Groundstone Assamblage. In E.C.M. van den Brink and R. Gophna. *Shoham (North): Chalcolithic Burial Caves in the Lod Valley, Israel* (IAA Reports 27). Jerusalem. Pp. 113–140.

Scheftelowitz N. and Oren R. 2004. *Giv'at Ha-Oranim: A Chalcolithic Site* (Salvage Excavation Reports 1). Tel Aviv.

Torge H. Forthcoming. Karnat el-Haramiya. *'Atiqot* (Hebrew).

Yannai E. and Marder O. 2000. Lod. *HA–ESI* 112:63*–65*.