GAT-GOVRIN (NAHAL QOMEM): A LATE CHALCOLITHIC SITE IN THE NORTHERN NEGEV

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INTRODUCTION

The transition from the Chalcolithic period to the Early Bronze Age in the Northern Negev is still under debate, partially due to a lack of periodization consistency (cf. Levy 1992; Joffe and Dessel 1995; as opposed to Gilead 1994; 1995a), and partially because of the varying interpretations of the material culture (Gilead 1988; Braun 1996). In some sites, such as 'Arad (Amiran et al. 1978) and Tel 'Erani (Yeivin 1975), there is no clear evidence for continuity in occupation or material culture, nor for a transitional phase between the Chalcolithic and the Early Bronze Age strata. In contrast, in sites such as the modern town of Ashqelon, investigated by Golani (1997; 2004), Khalaily



Fig. 1. Location map.

and Walach (1998) and Khalaily (2004), there is ceramic evidence for continuity between the Chalcolithic and EB I periods. This assertion is based on the existence of typical Chalcolithic ceramic forms in EB I assemblages (see discussion below).

The salvage excavation at Gat-Govrin¹ presented here was conducted by Hamoudi Khalaily in the fall of 1999, following the identification of several ash pits in the section of a trench dug for the laying of a communication cable by the Israel Railways Authority.²

The site is located in the southern coastal plain, near Qiryat Gat, approximately 2 km west of Kibbutz Gat and 2 km east of the Be'er Sheva'-Tel Aviv highway (map ref. NIG 17900/61690; OIG 12900/11690; Fig. 1). This section of the coastal plain, extending between Nahal Lakhish in the north and Nahal Shigma in the south, is a transitional zone between the Mediterranean climate of central and northern Israel and the semi-arid conditions of the Northern Negev. The topography is dominated by very low loessial hills (Rosen 1991:192) with an average elevation of 80 m asl. Ephemeral streams, such as Nahal Qomem (Zeita), which runs adjacent to the site, cut deep stream-courses into the topography. Intensive modern farming has resulted in changes to the landscape and obscures the natural vegetation.

The site was discovered by members of Kibbutz Gat in the late 1950s following deep ploughing (Itaie 1959). Itaie identified many Chalcolithic and Early Bronze Age vessels, including complete cornets, scattered over an area of 35 dunams. Since its discovery, the site has been surveyed every year by Yehuda Dagan (pers. comm.).

Perrot investigated Gat-Govrin in the course of his study of Chalcolithic sites in the Northern Negev (Perrot 1961a; 1962) following the large excavations of Abu Matar and Safadi (Perrot 1984). The area he opened (50 sq m) was devoid of architectural remains; however, a series of pits were exposed in two distinct strata. Perrot assigned the lower group of pits to the Chalcolithic period, and the upper group, to EB I (Perrot 1961a; 1962), and suggested that the sequence showed no occupation gap between the Chalcolithic and EB I (Perrot 1972:438–439).

THE EXCAVATION

Six squares, measuring 5×5 m each (a total of 150 sq m), were excavated next to the damaged area, on a north–south axis, as dictated by the railway line (Plan 1). One archaeological layer was exposed below the disturbed surface, and subdivided into two sedimentological levels (Plan 1: Section 1–1).

The upper level is the topsoil, consisting of brownish gray clayey soil (loess), with an average thickness of 0.4 m. Although this level contained archaeological finds, it had been disturbed by deep plowing that eliminated the evidence of spatial distribution. The main level extends throughout the excavated area and has an average thickness of 0.2 m. This level is characterized by crumbly, light gray sediment, containing a high concentration of potsherds and flint artifacts. At the base of the archaeological layer it was possible to identify outlines of pits that cut into the lowest layer of sterile loess. Some pits are shallow and wide, while others have a deep bell shape (1.1 m). All pits contained ceramic sherds, stone vessels and flint artifacts.

The Pits

Most of the features uncovered were pits of various shapes and sizes. Ten pits were excavated (Plan 1), and they can be classified into three groups. The first group is a set of seven ash pits, with shallow rounded outlines, and an average diameter of 0.7–1.0 m (L117, L120 and L125 in Sq A1; L111 and L123 in Sq D1; L108 and L127 in Sq F1). They were dug down to virgin soil, at an average depth of 0.4 m. These pits intersect each other, a fact that indicates that they were not opened at the same time. They were poor in findings.

The second group consists of two pits (L124 in Sq B1 and L128 in Sq C1). They are U-shaped, with a circular opening, straight walls and a flat, wide bottom. Their depth was up to one meter. Both pits contained a gray-colored, crispy sediment, rich in archaeological material that included pottery fragments, flint artifacts and grinding stones. It is worth noting the high quantity of cornets among the pottery vessels. The two pits were sealed with large wadi pebbles and fragments of stone vessels.

The third group also consists of two large, bell-shaped pits, with a narrow opening and a wide bottom. Their diameter was 1.0-1.2 m at the opening, increasing to about 3 m at the bottom. Both were dug to a depth of about 1.5 m. One of the pits (L122) was located on the eastern border of Sq E1, and a small part of it remained unexcavated. The second (L129), also only partially excavated, was found in the southeastern corner of Sq E1. Although of similar shape, L129 was larger and reached a depth of 1.75 m. The fill of these pits consisted of a loose, dark brown sediment, interspersed with fine horizontal layers of ash. A number of wadi pebbles of various sizes were collected from their bottom.

THE FINDS

Pottery

Although the excavated area was relatively small, a large amount of pottery (N = 2051) was recovered. Analysis of the assemblage exhibits homogeneity within the Chalcolithic repertoire. The pottery was manufactured from local material. The clay derived from the loess sediment, and was tempered with small to medium-sized sand inclusions that were found



Plan 1. Square A/1, plan and section.

	Rim	Base ⁱ	Handle	Body Sherds	Total
No.	402	301	64	1293	2059
%	19.5	14.6	3.1	62.8	100

Table 1. Pottery Sherd Count, according to Vessel Part

ⁱ Including cornet bases.

Туре	Rim	Base	Total	%
Bowl	182	57	239	33.6
Basin	57	4	61	8.6
Cornet	27	182	209	29.4
Jar	133	55	188	26.6
Pedestal	1	1	2	0.3
Churn	2	-	6 ⁱ	0.7
Varia ⁱⁱ	-	-	6	0.8
Total	402	309	711	100.0
Total	102	50)	, 11	100.0

Table 2. Frequencies of Pottery Types

ⁱ Four churns were identified by parts other than rim or base.

ⁱⁱ Varia are shapes without rims or bases.

in nearby wadies (Goren 1991:118; Gilead and Goren 1986). Open vessels, such as bowls and basins, were manufactured on a fast wheel, while the jars were handmade.

The pottery sherds recovered from the excavation were well-preserved, although complete vessels were scarce. All fragments were counted and classified, first into major groups of vessel-parts (Table 1) and subsequently, according to shape (Table 2).

Bowls (Fig. 2:1–13).— The V-shaped bowls (Fig. 2:4–13) are the dominant vessel-type in the Gat-Govrin assemblage. Small bowls, characterized by thin walls, with or without fine inclusions, are abundant. The majority are classified as V-shaped with everted walls and pointed rims. Medium-sized and large bowls occur in low frequencies. Their rims are usually decorated, inside and out, with thin, red-painted bands. The large bowls are sometimes decorated with thumb indentations around the rims (Fig. 2:10). Included in this type are 12 small vessels,

defined as "cups", which are characterized by straight or flaring rims, carinated walls and flat or rounded bases (Fig. 2:1–3).

Small bowls are dominant in Chalcolithic assemblages and generally constitute onethird of the type (Gilead and Goren 1995:143). Furthermore, small carinated bowls are frequent in assemblages from the central coastal plain, including sites such as Azor (Perrot 1961b: Fig. 37), Ben Shemen (Perrot and Ladiray 1980: Fig. 123), Palmaḥim (Gophna and Lifshitz 1980: Fig. 4), Naḥal Qana Cave (Gopher and Tzuk 1996:93–94) and 'En Esur Layer IV (Yannai 2006).

Basins (Figs. 2:14, 15; 3:1–4).— Basins are one of the hallmark vessels of the Chalcolithic repertoire. In terms of morphology, these are large, open vessels that resemble the bowls. Basins were manufactured using a combined technique of hand forming and slow wheel. The rims were separately made and then attached to the body. In some instances, the point of



Fig. 2. Cups, bowls and basins.

	1			1
No.	Туре	Locus	Basket	Description
1	Cup	102	1017	Light brown clay, small gray grits, red paint on rim
2	Cup	111	1012	Light brown clay, small gray grits, red paint on rim
3	Cup	122	1026	Light brown clay, fine black grits, red paint on rim
4	V-shaped bowl	109	1009.1	Buff clay, small grits, thick band of red paint on rim
5	V-shaped bowl	106	1006	Buff clay, small grits, thick band of red paint on rim
6	V-shaped bowl	106	1006	Dark gray clay, small grits, band of red paint on rim
7	V-shaped bowl	106	1006.2	Light brown clay, small grits, red paint on rim
8	V-shaped bowl	106	1006.3	Buff clay, small grits, thick band of red paint on rim
9	V-shaped bowl	106	1006.1	Buff clay, fine black grits, thick band of red paint on rim
10	V-shaped bowl	100	1000.2	Buff clay, small grits, thumb decoration
11	Bowl (base)	124	1027	Buff clay, small grits
12	Bowl (base)	101	1001	Buff clay, small grits
13	V-shaped bowl	102	1008	Buff clay, small gray grits
14	Basin	104	1004	Brown clay, small gray grits, thumb decoration
15	Basin	104	1027	Light brown clay, small black grits, thumb decoration

✓ Fig. 2

Fig. 3 ▶

No.	Туре	Locus	Basket	Description
1	Basin	103	1003.2	Brown clay, small and medium gray grits, thumb decoration
2	Basin	106	1006.6	Brown clay, medium gray grits, thumb decoration
3	Basin	110	1011	Brown clay, medium gray and black grits, thumb decoration
4	Basin	106	1006.9	Brown clay, small and medium gray grits, red paint
5	Cornet	105	1005.2	Brown clay, no grits, several bands of red paint
6	Cornet	106	1006.4	Brown clay, no grits, two bands of red paint
7	Cornet	105	1005.1	Brown clay, no grits, bands of red paint
8	Cornet	110	1011.1	Brown clay, no grits, thick band of red paint
9	Cornet	124	1027.1	Brown clay, no grits, band of red paint
10	Cornet	105	1005.3	Brown clay, no grits, thick band of red paint
11	Cornet	106	1006.5	Brown clay, no grits, thick band of red paint
12	Stand	102	1002	Dark brown clay, small gray grits, red paint on ext. and int.
13	Stand	103	1003	Brown clay, small gray grits, red paint on ext.

attachment was not smoothed, leaving a visible bulge. The most frequent variant displays straight walls and thickened square rims, often decorated with red paint and thumb indentations (Fig. 3:2, 3). The hemispherical basins, which are characterized by either rounded or square rims (Figs. 2:15; 3:1, 4), are not common. *Cornets* (Fig. 3:5–11).— The high frequency of cornets in the assemblage is remarkable. This excavation alone yielded more than 180 bases and 25 identifiable rim fragments. Cornets almost always have the same shape. Some of them are elongated with a narrow openning; others are similar to small V-shaped bowls with



Fig. 3. Basins, cornets and stands.

an elongated base. In many cases it is difficult to distinguish between small-bowl rims and those of cornets. The distinction is based on rim diameter and the thickness of the red bands that decorate the vessels. Over 90% of the pieces belong to a subtype characterized by a coneshaped body and an elongated cylinderical base. A second variant is classified as Y-shaped, with a wide opening (Fig. 3:11). These vessels are exclusive to the Chalcolithic ceramic repertoire, and appear in most Ghassulian sites. Nevertheless, they are almost absent in the Be'er Sheva' sites (Commenge-Pellerin 1987:47), but present in the Besor Cluster (Gilead 1995a:473).

Stands (Fig. 3:12, 13).— Only two stand fragments were identified, both of ring-base stands. Their shape and size point to these fragments being non-fenestrated, short-ring stands.

Jars (Fig. 4:2–17).— The jars in the Gat-Govrin assemblage are either necked or holemouth vessels. The necked jars have a variety of shapes, but the dominant one is medium-sized with a high cylindrical neck and flaring rim (Fig. 4:2–7). Other subtypes include vessels with a high straight neck, or with a short neck and a slightly everted rim (Fig. 4:10). The rims are either simple, rounded and thinning toward the top (Fig. 4:9), or have the same thickness as the walls with square cut edges (Fig. 4:4). Thumb indentations sometimes decorate the edge of the rim (Fig. 4:6). This is a common feature in southern assemblages, as well as at Ghassul North, Stages 2 and 3 (Blackham 1999:42). According to Braun (1996:26), this type of decoration continues into EB I.

The holemouth jars are the more common of the two shapes in Chalcolithic assemblages. These jars are characterized by a rounded or pointed rim, cut neck and flat base (Fig. 4:11–17). The pointed rim is the predominant shape and accounts for 60% of the holemouth jars. Most holemouth jars are wheel-made, and they come in a range of sizes. The ware ranges in color from brown to beige, with small to medium gray and white grits temper.

Churns (Figs. 4:1; 5:3).— Only six sherds were identified as fragments of churns. Four are of the typical thick loop handle with triangular section (Fig. 5:3), while two are fragments of

No.	Туре	Locus	Basket	Description
1	Churn	113	1014	Light brown clay, small black grits
2	Necked jar	114	1015	Light brown clay, brown core, small black grits
3	Necked jar	106	1006.7	Light brown clay, brown core, small black grits
4	Necked jar	111	1012.1	Brown clay, small dark grits, red paint
5	Necked jar	111	1012.2	Light brown clay, small dark grits
6	Necked jar	111	1012.3	Dark gray clay, medium dark grits, thumb decoration
7	Necked jar	110	1011.2	Brown clay, small dark grits, red paint on ext.
8	Necked jar	101	1001.1	Light brown clay, brown core, small black grits
9	Necked jar	116	1019	Brown clay, fine dark grits
10	Necked jar	101	1001.2	Light brown clay, brown core, small black grits
11	Holemouth jar	116	1019.2	Gray-brown clay, small dark grits
12	Holemouth jar	110	1011.3	Light brown clay, small dark grits
13	Holemouth jar	103	1003.1	Brownish clay, few small dark grits
14	Holemouth jar	107	1017	Gray-brown clay, small black grits
15	Holemouth jar	112	1013	Light brown clay, brown core, small black grits
16	Holemouth jar	106	1006.8	Brown clay, fine gray grits, red decoration on ext.
17	Base	122	1025	Light brown clay, brown core, small black grits

Fig. 4 ▶



Fig. 4. Necked jars and holemouth jars.

pointed rims and high necks (as Fig. 4:1). The necks of these vessels were usually decorated with red paint or horizontal red bands.

Handles and Bases (Figs. 4:17; 5:1–5).— Sixty-four handles were found. Most of them are lugs, which are generally small and often perforated; most are decorated either with red paint or by thumb impressions (Fig. 5:1, 2). Other handle types are the common pointed knob-handle (Fig. 5:4) and the elongated loop handle that most likely belongs to jars or basins (not illustrated). Figure 5:3 shows an unusual example of a handle with an impressed rope



Fig. 5. Handles, decorative motifs and clay objects.

No.	Туре	Locus	Basket	Description
1	Lug handle	106	1006.10	Brown clay, no grits, red paint
2	Lug handle	111	1012	Brown clay, no grits, red paint
3	Loop handle	100	1000.1	Brown clay, red core, small gray grits
4	Knob handle	127	1030	Brown clay, brown core, fine dark grits
5	Thumbed ledge handle	124	1027	Light brown clay, small gray grits, plastic decoration
6	Plastic decoration	107	1017	Light brown clay, fine dark grits, plastic decoration
7	Painted fenestrated vessel	122	1025	Light brown clay, fine dark grits, red paint
8	Pierced rounded disc	107	1007	Brown clay, no grits, red paint?
9	Clay spindle whorl	108	1010	Dark clay, no grits, polished surface

decoration, indicative of Golan ware (Epstein 1998:161). One ledge handle (Fig. 5:5) initially seemed similar to an Early Bronze Age type (Yekutieli 1992), but close examination showed it to be a plastic decoration with thumb impressions, a well-known decorative motif in Chalcolithic assemblages.

Apart from the jar base mentioned above (Fig. 4:17), bases could not be attributed to a specific shape, and may belong to either bowls or jars. The vast majority are flat, without any sign of mat-impressions or rope-cuts, as are known in other Chalcolithic sites from the same region.

Decorated Sherds (Fig. 5:6, 7).— Red paint is the most common surface treatment of the pottery assemblage at Gat-Govrin, although it appears less frequently than in the Be'er Sheva' assemblages (Commenge-Pellerin 1987; 1990), and is less diverse than in the Ghassulian assemblages (Hennessy 1969; Goren 1991). Red paint bands cover the outer and inner surfaces of bowl rims, and appear on other vessels, such as holemouth jars and fenestrated vessels (Fig. 5:7). Rope or plastic decoration appear on a few sherds (e.g., Fig. 5:6), and thumb impressions decorate mainly jar rims (Fig. 4:6).

Varia (Fig. 5:8, 9).— Two rounded and pierced clay discs (e.g., Fig. 5:8; Orrelle 1993) and a spindle whorl that resembles a mace head (Fig. 5:9) are the only other ceramic items that were found.

Flint

The flint assemblage consists of 236 items (Tables 3, 4), and mostly comprises waste products and tools. Debitage represents about half of the assemblage, followed by debris (27%) and tools (17%). Among the waste products, flakes dominate (70% of the debitage); blades account for 18.3% of the debitage, reflecting the importance of this kind of blank for the production of tools (see below).

Almost half of the tools were made on blades, and only a third on flakes. There is an apparent discrepancy in the ratio of flakes/ blades between waste products (3.8) and tools (0.8). A possible explanation is the import of tools to the site. However, since waste products of all production stages were found, a local manufacture of most tools is indicated. Therefore, a high number of flake blanks may reflect the exploitation mode of the cores, and not the orientation of the flint industry.

A prominent feature of the assemblage is the presence of Chalcolithic Be'er Sheva' sickle blades (on banded gray pebble-flint, double truncated, backed and denticulated) alongside

Table 3.	Flint	Break	down
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Туре	No.	%
Primary elements	11	9.2
Flakes	84	70.0
Blades	22	18.3
CTEs	3	2.5
Total Debitage	120	100.0
Chips	43	67.2
Chunks	21	32.8
Total Debris	64	100.0
Cores	12	5.1
Tools	40	16.9
Total	236	100.0

Table 4. Frequencies of Flint Tools

Туре	No.	%
Scrapers	3	7.5
Tabular scrapers	4	10.0
Burins	1	2.5
Awls	2	5.0
Drills	1	2.5
Retoutched flakes	3	7.5
Notches	5	12.5
Backed blades	1	2.5
Retouched blades	7	17.5
Sickle blades	10	25.0
Micrograttoir	1	2.5
Microliths	1	2.5
Bifacials	1	2.5
Total	40	100.0

Early Bronze Age Canaanean blades (on brown flint, with a trapezoidal cross-section), some retouched and with gloss. Their stratigraphic context excludes the possibility of intrusion. Two possible interpretations for their presence will be discussed: first, the coexistence of two tool-types, used as cultural hallmarks of two distinct periods, and second, two *chaînes opératoires*, applied to the production of the same type of tool, the sickle blade.

Spatial Distribution

Almost half of the assemblage was collected from the surface, throughout the excavated area. A quarter was found in an archaeological layer below the surface, and the rest in six shallow pits (19%) and two bell-shaped pits (10%). No marked difference is apparent in the relative distribution of the waste products and tools among the various types of contexts (surface, living level and pits). The large amount of waste products collected from well-defined stratigraphic contexts, such as shallow pits and bell-shaped pits, reduces the possibility that the coexistence of items that potentially belong to two distinct cultural entities-Chalcolithic and Early Bronze Age-is a result of intrusion or mixture. Therefore, the spatial distribution of the flint artifacts provides conclusive evidence for relating the flint assemblage to one cultural entity, and treating the assemblage as a homogeneous one.

The similarity between the relative amounts of flint groups in the shallow pits, bell-shaped pits and the living surface, may indicate that none of these features was directly associated with the production of flint tools, and that their content was not related to this industry. The only discrepancy in relative quantities is in the appearance of gray flint in higher proportion in the bell-shaped pits than in the shallow pits.

The presence of flint artifacts, waste and tools, in all the features, may be interpreted as the outcome not of random disposal of artifacts, but rather as discard of redundant material by different knappers, possibly in different periods, using whatever space was available.

Raw Material

Different types of flint were used as raw material: Eocene brown flint, known as Canaanean flint (cf. Rosen 1997) accounts for 44% of the items; Senonian brown flint, 22%; translucent chalcedony, 15%; pebble gray flint, 9%; and striped gray pebble flint, 10%. Several possible collection-locations of these raw materials were identified. Canaanean flint originates in the Negev highlands (cf. Rosen

1997), and the nodules may have been modified before they were brought to the site; pebble flint, gray and striped gray, is found in the main streams of the Negev wadis (see Gilead 1995b); brown Senonian and chalcedony flint probably originated in the hills surrounding the site.

Debitage

The small flint assemblage collected from the site of Gat-Govrin contains all the elements of lithic industry, suggesting local production. Even though no blade-cores on Canaanean flint were found at the site, several cores of this raw material were collected. It is possible that some of these cores were used for the production of blades at an earlier stage of their exploitation. Some of the tools, such as tabular scrapers and sickle blades made on striped gray pebble flint, may have been produced elsewhere and brought to the site as end-products. The presence of most types of debitage within the excavated area of the site also indicates local production of most of the tools. The relative quantities of the various groups of debitage are presented in Table 3, and the following is a description of the main categories.

Flakes.— The flakes underwent a detailed attribute analysis, and the results reveal several aspects of the flint industry. More than a third of the flakes are on Canaanean flint, possibly reflecting the intensity of exploitation of Canaanean cores, as well as the preference of this raw material for manufacturing tools. Comparison of the blank flakes and the tools shows that brown flint, Canaanean flint and translucent flint were exploited in the same proportions for both groups. This is not the case, however, for striped gray flint. The large quantity of tools made on striped gray flint contrasts with the small number of flakes made on this material. This may indicate a central source of supply of tools-used also by other major southern Chalcolithic sites, such as Abu-Matar, Safadi and Shigmim-and a low-scale exploitation of this type of raw material on site. Tools made on tabular flint (tabular scrapers) were all probably brought to the site as endproducts, a phenomenon observed elsewhere (Rosen 1997). Patinated white flint was present in small quantities. Due to the small number of items and the fact that all were collected from the surface, we assume that they were intrusive within the assemblage. Flakes made on breccious flint, which was not used for the production of tools, may have been naturally produced, or resulted from unsuccessful attempts to use this kind of raw material.

Several types of striking platforms were observed, the common ones being flat (59%), followed by natural (14%) and faceted (12%). Punctiform and crushed butts appeared only sporadically. The knapping products point to a general uniformity of reduction techniques, with a flat butt, probably obtained by a direct percussion, appearing on most of the flakes. The choice of different techniques may be related to the raw materials exploited. A larger amount of translucent and Canaanean flakes have a punctiform butt, compared with other types of raw materials. This observation may be related to the production of blades at a particular exploitation stage of the cores, which is consequently reflected in the tool assemblage (see below). It should be noted that the small amount of artifacts available for analysis is not sufficient to draw general conclusions.

Cores and Core-Trimming Elements (Fig. 6).— Only twelve cores were recovered. Of these, four were made on Eocene dark brown flint known as Canaanean flint, four on brown flint, two on translucent flint and two on pebble gray flint. The presence of a relatively high number of cores made on Canaanean flint, a type of raw material that is not common in the area of the site, may reflect a preference for this type of flint, possibly due to its quality. Other factors may be cultural (a fashion for the raw materials that were selected) or economic (an established network of procurement of this kind of flint). The importance of Canaanean flint is exemplified also by the degree of exploitation of these cores, found with up to three striking platforms, and used for the production of both flakes and blades (Fig. 6:2). Translucent and brown cores were used mainly for the



Fig. 6. Bladelet cores.

production of bladelets (Fig. 6:1). Two radial cores of gray flint were used for the production of flakes only. The general impression is that cores were used extensively. This is at variance with the typical Be'er Sheva' Chalcolithic mode of core exploitation, where the practice was to have a limited number of removals from each core (Gilead, Hershman and Marder 1995; Gilead and Hermon, in press).

Only three core-trimming elements were collected, one core tablet on Canaanean flint, one on translucent flint and one ridge on translucent flint. These artifacts support the suggestion above, regarding the importance of Canaanean flint and the use of this type of raw material and of translucent flint for the production of blades and bladelets respectively.

Debris.— A relatively small amount of chips and chunks was collected, even though all the material from the archaeological layers was sieved. This observation is compatible with Chalcolithic assemblages that were not sieved, as in the case of Tel Sheva', Abu Matar or Safadi (see Hermon 2003; Gilead and Hermon, in press). It seems, therefore, that the collecting methods of lithics have little effect on the flint assemblage.

The Tool Assemblage (Table 4)

Typologically, the tool assemblage of this site resembles other Chalcolithic flint assemblages typical of the Northern Negev (see Gilead, Hershman and Marder 1995:274). Quantitatively, however, it is much closer to Early Bronze Age assemblages (see Marder, Braun and Milevski 1995). In general, sickle blades and retouched blades form a major part of the assemblage, while scrapers and retouched flakes appear in insignificant numbers.

Scrapers (Figs. 7; 8:1).— Only three scrapers were found, all made on gray flint. They have a rounded working edge, obtained by semi-abrupt scalar retouch. These scrapers are typical of the Be'er Sheva'-Ghassul culture (cf. Gilead, Hershman and Marder 1995:237).



Fig. 7. Side-scraper (1), end-scraper (2).

Tabular Scrapers (Figs. 8:2, 3; 9).— Four tabular scrapers were collected, a relatively large amount considering the size of the sample. Three have an elliptic shape (Figs. 8:2; 9), obtained by parallel retouch, while the fourth

(Fig. 8:3) is a fragment. The bulb of percussion was removed by ventral invasive retouch. No striation marks, as occasionally found on Early Bronze Age tabular scrapers (cf. Rosen 1997), were noted on these items. The problem of



Fig. 8. Thick scraper (1), rounded tabular scraper (2), fragment of tabular scraper (3).



Fig. 9. Fan scrapers.

distinguishing between Chalcolithic and Early Bronze Age tabular scrapers were recognized (Rosen 1997), and the characteristics that may be used to identify assemblages of these periods have been discussed (Marder and Hermon, in prep.). The tabular scrapers from Gat-Govrin cannot currently be further defined typologically, or serve as a cultural hallmark to determine whether the assemblage dates to the Chalcolithic period or Early Bronze Age.

Burins.— Only one burin was found, made on a natural break. The raw material used is striped gray pebble flint. It is possible that this was a damaged blank prepared for the production of retouched/sickle blades. Burins are not a common tool-type in proto-historic assemblages of the Negev (cf. Gilead, Hershman and Marder 1995:278).

Borers.— Borers were subdivided into awls and drills. Awls (N = 2) were made on simple flakes, the point produced by the retouch of two notches. Drills were made on blades, the point shaped by double abrupt retouch along the edges. Borers appear consistently in proto-historic assemblages, but their variable characteristics cause them to be classified as ad hoc, and not as a cultural marker for either of the periods under discussion.

Retouched and Notched Flakes.— Retouched and notched flakes are common in most Chalcolithic flint assemblages, occasionally dominating the tool assemblage (Levy and Rosen 1987). Their small quantity at Gat-Govrin is in stark contrast to other Chalcolithic sites; however, given the small size of the tool assemblages, no firm conclusions can be drawn.

Retouched and Backed Blades (Fig. 10:1).— This group is among the most important in the tool assemblage of Gat-Govrin, accounting for approximately 20% of the tools. All except two are made on Canaanean flint, exhibiting a partial fine retouch (Fig. 10:1). The type of raw material and the typical trapezoidal cross-section warrant their classification as "Canaanean blades" (cf. Rosen 1997:46). The possibility that these items may be classified typologically as sickle blades cannot be excluded. Their attributes definitely indicate a similar mode of production, but the silica gloss which is found on Canaanean sickle blades is missing. The remaining two retouched blades are made on translucent flint, and typologically are on the verge of being defined as microliths.

Retouched blades made on Canaanean flint are used as *fossile directeurs* for Early Bronze Age lithic assemblages (Rosen 1997). Therefore, their appearance in an apparently clean Chalcolithic context must be explained (see below). At this point, suffice it to say that the presence of waste products of this flint, and the almost total absence of EB I pottery, reduces the likelihood of intrusive EB I tools in the Chalcolithic layers.

Sickle Blades (Figs. 10:2, 3; 11:1-5).— Sickleblades are the most important type of tool at Gat-Govrin, both because they are the most common type, accounting for a quarter of the tools, and because of the socio-economic and cultural implications they carry. The possibility that the relatively large amount of sickle blades is the result of intensive production and discard after minimal use, is inconsistent with the fact that the artifacts were all broken, showing exhaustive use. Assuming that all artifacts within this group are contemporary, the large amount of sickle blades may reflect the increasing importance of agriculture during the occupation period of the site in comparison with sites in the Besor area (Gilead, Hershman and Marder 1995:275; Hermon 2003:325), and the major role it came to play in the subsistence economy of the inhabitants, insofar as flint tools can do so. Another explanation for the relatively high percentage of sickle blades, when compared with assemblages from sites such as Abu Matar and Safadi (Gilead and Hermon, in press), is the way in which the sites came to an end-since the Be'er Sheva' sites were abandoned in an apparently organized



Fig. 10. EB stone tools: Canaanean retouched blade (1), Canaanean sickle blades (2, 3).

way, their inhabitants took with them most of the usable tools, while at Gat-Govrin, most of the used items were abandoned within the habitation area.

Technologically, the sickle blades collected may be divided into two types that have only one common attribute: the gloss along their edge. This is a functional trait, and even though it is a defining attribute of sickle blades, should not be used as one in this typology which is based on morphological characteristics. One group is typical of the Ghassul-Be'er Sheva' culture (Gilead, Hershman and Marder 1995:255). It is made on striped gray flint, backed and truncated, occasionally with a denticulated working edge (Fig. 11:1–5). The other group includes two items made on typical Canaanean blades (Fig. 10:3) and one on Canaanean flint with a partial back and a denticulated working edge (Fig. 10:2). The "Chalcolithic" characteristics of this last item are the partial backing, straight truncation and



Fig. 11. Chalcolithic stone tools: Sickle blades (1-5), micro end-scrapers (6, 7).

denticulated working edge. The "Canaanean" characteristics are the type of raw material and its size.

The two types of sickle blades described above are commonly attributed to two periods: the Chalcolithic and the Bronze Age. Their presence in the same archaeological context has not been previously documented and requires an explanation. When their technological attributes are scrutinized in detail, however, the distinction between the types seems considerably diminished. The main differences are in the choice of raw materials, the platform preparation, the degree of standardization of scar patterns and size (Rosen 1997:47). Of these differences, platform preparation is difficult to identify in truncated items such as Chalcolithic sickle

blades; the scar patterns of Chalcolithic sickle blades show a wider degree of variability than those of Canaanean ones, but all fall within the range of parallel blade-scars (cf. Gilead and Hermon, in press), and moreover, the uniform appearance of parallel scars on Canaanean blades may reflect increasing standardization rather than a shift in technology; finally, size is not commonly used as a criterion for typological definition. Therefore, in strict technological terms there is no marked difference in the production of blanks for Chalcolithic and Canaanean sickle blades. The main differences reflect post knapping modifications, and are morphological and stylistic rather than technological in nature. The function of the two types is also similar, and their efficiency is apparently comparable.

Microliths (Fig. 11:6, 7).— Only one complete micrograttoir (Fig. 11:6) and one broken retouched bladelet (Fig. 11:7) were found, both on translucent flint. These artifacts are typical of Chalcolithic assemblages, but appear also in Early Bronze Age contexts (cf. Rosen 1997:65).

Celts.— Only one bifacial was found, a broken fragment of the polished working edge of a chisel. Bifacials have not been reported so far from secure Early Bronze Age assemblages (cf. Rosen 1997:93).

GROUNDSTONE TOOLS

A number of groundstone tools, most of them associated with pits, were revealed. The groundstones are described morphologically, and no attempt was made to analyze their manufacturing technology or function. Wright used various criteria to classify groundstones (Wright 1992; 1993); however, the typology here follows that proposed by Gilead for the groundstone industry at Gerar (Gilead 1995b). Groundstone artifacts were manufactured primarily from limestone cobbles, which are available in wadi courses in the vicinity of the site. A few were manufactured on other materials such as sandstone or beachrock. A distinctive group made of fine-grained basalt was produced elsewhere and brought to the site as a finished product (van den Brink, Rowan and Braun 1999:164).

Basalt Vessels (Fig. 12).— This group of basalt vessels is the hallmark of the Chalcolithic period (Amiran and Porat 1984). Although the group is mostly limited to two types— bowls and pedestalled bowls—it is the largest and the most representative group within the groundstone assemblage.

Basalt vessels from Chalcolithic sites are all characterized by their high quality of manufacture and the variety of decorative motifs. The most remarkable basalt vessels, and still the largest group of complete vessels ever found, were discovered in Abu Matar and Safadi (Perrot 1955). Similar bowls, as well as



Fig. 12. Basalt vessels: Bowls (1-3), pedestal bowls (4-6).

fenestrated ones, have been found, however, in almost every Chalcolithic site excavated.

The eight bowl fragments uncovered at the Chalcolithic site of Gat-Govrin are all V-shaped, with straight or flaring walls and simple pointed rims. The bases are thick and flat. It is possible to distinguish two subtypes: the more common one includes the plain vessels whose diameter is over 25 cm and a few rims of small bowls whose diameter is up to 15 cm (Fig. 12:3). Three of the rims and body fragments are not decorated; however, they are polished inside and out. The second subtype includes two rims that are decorated on the interior surface with a band of incised triangles, each with oblique incisions within (Fig. 12:1, 2). A band of incised triangles on both the inner and outer surfaces decorates the other three rims.

In addition, there are four fragments of pedestalled bowls, each fashioned from a single basalt block. Three of these (two illustrated, Fig. 12:4, 5) are of small elongated bowls whose stand was hollowed and fenestrated. The result is a ring at the base, surmounted by three or four legs. A wide band between the bowl and the fenestrated stand is decorated with circular incisions. The fourth fragment is of a large stand whose surface is entirely decorated (Fig. 12:6).

Grinding Slabs (Fig. 13:1, 2).— The most common type within the groundstone assemblage in Chalcolithic sites, grinding slabs were manufactured from large slabs of limestone, basalt or beachrock. The upper surfaces are flat and show abrasion marks; their sides were also utilized, and their underside is usually concave. Wright described this type as "the lower stationary stone" of two grinding slabs (Wright 1992:63).

Eight fragments of grinding slabs were recovered, seven of which are simple ones (e.g., Fig. 13:1). The eighth, with rounded sides and a flat base, and with a slight concavity on its flat surface, resembles a quern (Fig. 13:2).

Stoppers (Fig. 13:3, 4).— Five flat limestones with rounded contours were probably used as stone stoppers or possibly, as lids. All are radially flaked to shape their outline and show signs of worked surfaces.

Stone Cups and Rings (Fig. 13:5–8).— Six vessels, with small rounded depressions, are classified as stone cups (Fig. 13:5–7); one is a ring (Fig. 13:8). Some bear two depressions, one on each side (Fig. 13:5, 7). All items were manufactured on limestone pebbles, either rounded or elliptical in shape (Fig. 13:6), and their diameter ranges between 3.5 and 5 cm. The deepest cup is 5 cm in depth. Stone cups are well-known in Chalcolithic sites and are usually cup-shaped depressions in the bedrock, scattered around the site as seen, for example, at the site of Khirbat el-'Alya (east; Dagan 1998).

Limestone Vessels .-- Four fragments, two bowls (e.g., Fig. 13:9) and two mortars, were manufactured from hard limestone. The low frequency of this type may be due to plowing activities and previous surface collection. One bowl has a straight wall, about 5 cm thick, the rim is rounded, and the base was probably very thick. The shallow interior narrows toward the base, producing a conical shape. The second bowl is globular with slightly concave walls. The rim is thinner than the walls and displays signs of polishing on the interior surface. The pair of mortars are poorly preserved; one is a body fragment and the other shows an outline of a shallow, wide mortar. Both fragments retain marks of a worked surface.

DISCUSSION AND CONCLUSIONS

The following evidence suggests that the site of Gat-Govrin was a seasonal settlement occupied by small groups toward the end of the Chalcolithic period:

A. Neither the current excavation nor the previous one (Perrot 1961a) exposed more than



Fig. 13. Groundstone tools: Grinding slabs (1, 2), stoppers (3, 4), cups (5–7), ring (8), bowl (9).

a group of pits. No features, such as walls or installations that would indicate a permanent settlement, were found. The absence of built structures may be due either to the excavated areas being located at the periphery of the site, or to the site being used by nomadic herdsmen who undertook their domestic activities in the open space, and for whom pits were the only necessary installations. An identical layout was reported from several Chalcolithic sites in the northern Negev (Oren, Morrison and Gilead 1986; Gilead 1995a). The layout of these pits, which cut each other and are filled with diverse sediments, supports the second interpretation, as does the fact that they are generally small and narrow, not sufficiently large to be considered subterranean dwellings. They were probably used as garbage pits.

B. The material culture, especially the pottery, indicates a transitional phase. The pottery includes types that are present in small quantities in Ghassulian assemblages, increase in proportion toward the end of the Chalcolithic period (Braun 1996:17), and become dominant during the early stages of the Early Bronze Age.

C. The most conclusive evidence is the concurrent appearance of two distinct fossiles directeurs-typical Chalcolithic pottery and Canaanean sickle blades-in a single, homogeneous assemblage. The possibility that the Canaanean blades are intrusive within the Chalcolithic assemblage as a result of post-depositional processes is unlikely, given the stratigraphic context, and the fact that 'Canaanean' waste products were found in various areas around the site. A more likely explanation is that the 'Canaanean' artifacts are part of the Chalcolithic assemblage. The technological differences between the production of Chalcolithic and 'Canaanean' sickle blades, as shown above, are minor.

The presence of these apparently very distinct tool types may therefore be interpreted as an experiment in exploitation of a new type of raw material, applying a similar technique, adapted to the qualities of 'Canaanean' flint.

Assuming a relatively late date within the Chalcolithic period for the site of Gat-Govrin, the use of a new type of raw material, which would later become dominant, should not be very surprising. Two major reservations should be stated. First, the post-depositional processes at the site are not fully understood, and their influence cannot always be estimated accurately; therefore, the possibility of intrusion cannot be entirely dismissed, in spite of the apparent security of the stratigraphic context. Second, the quantification-so far, there are few sites where 'Canaanean' artifacts were found in a Chalcolithic context and the assemblage of Gat-Govrin is not large enough to claim statistical support for the suggestions made above. If, however, 'Canaanean' artifacts prove to be an integral part of the later Chalcolithic assemblages, as implied by the assemblage of Gat-Govrin, this phenomenon may indicate continuity from the Chalcolithic to the Early Bronze Age cultures in this area.

In conclusion, in the absence of radiocarbon dates, the material culture of Gat-Govrin, as well as the nature of the site itself, indicate an ephemeral occupation during the last quarter of the fourth millennium BCE. Until recently, many researchers believed that toward the end of the Chalcolithic period there was a major shift in settlement pattern, followed by abandonment of sites (cf. Joffe 1991). Other archaeological excavations, however, especially in the southern region of Israel (Braun 1996:4), shed a new light on this subject. The presence of ceramic types, which are typically EB I in characteristically Ghassulian assemblages, provides some evidence for continuity between the Chalcolithic period and EB I.

NOTES

¹ The name Nahal Qomem is the one given to the site by the IAA; Zeita is the local Arab name.

² The salvage excavation (Permit No. A-2968) was conducted in 1999 on behalf of the Israel Antiquities Authority, and directed by Hamoudi Khalaily with the assistance of Zvi Walach. Elisheva Kamaisky was responsible for pottery conservation; Leonid Zieger, for flint drawing and Alina Pikovsky, for pottery and stone drawing. Plans were made by Hamoudi Khalaily.

³ This article was last updated in 2004.

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