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The Flint Assemblage from Tel Bet Yeraḥ

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The excavation at Tel Bet Yeraḥ Area AG yielded a total of 209 flint items, originating from five distinct occupation strata, in four excavation squares (64 sq m; Strata V–I; see Golani, this volume). This material was retrieved by the sieving of all sediments, except for those from ground surface loci, through a 1 cm mesh.

The Finds

The assemblage comprises three main types of flint raw material: (1) very fine dark brown flint (c. 32%); (2) fine yellowish gray flint (c. 29%); and (3) chalky gray to white flint (c. 15%). About 24% of the items are covered by a light yellowish patina and therefore, the raw material could not be identified. Most items are in a good state of preservation, showing minimal signs of abrasion. Mild abrasion, indicated by the presence of small irregular scars on the lateral edges, was detected on several items from the uppermost loci of the excavation (Loci 100–104); this damage most likely resulted from proximity to the ground surface.

The flint items from each of the five strata were treated as separate assemblages. The material described below comprises 168 items, excluding items from ground surface loci (L100–104, L120; n = 34) or from mixed contexts (L133, L149, L177; n = 7).

The diagnostic items from all strata generally represent an industry characteristic of the Early Bronze Age, defined mainly by the consistent presence of Canaanean blades. These blades, appearing in the assemblage as both unretouched blanks and finished tools, were mostly made of the fine-grained yellowish flint (91%). As no clear-cut differentiation between EB I, II and III industries can be achieved based on the lithic technology and assemblage composition, the lithic material could not contribute to establishing stratigraphic subdivision in the excavation. The Stratum II assemblage, dating to EB III (n = 80; 48%), was the largest, in accordance with the extensive exposure of this layer compared to the others.

Stratum V

Only two items of flint debitage that did not provide technological or typological information, were ascribed to this stratum: a flake and a chunk (Table 1).

Table 1. The Flint Assemblage from Area AG

Stratum	Type	Flakes	Blades	Canaanean Blades	Primary Elements	Naturally Backed Items	Core Trimming Elements	Cores	Tools	Chunks	*Total*
I	N	19	1	1	4				7	20	*52*
	%	36.5	1.9	1.9	7.7				13.5	38.5	*100.0*
II	N	31	1	1	9	3	3	4	9	19	*80*
	%	38.8	1.3	1.3	11.3	3.8	3.8	5.0	11.3	23.8	*100.0*
III	N	6		1						2	*9*
	%	66.7		11.1						22.2	*100.0*
IV	N	6	1		7			1	3	7	*25*
	%	24.0	4.0		28.0			4.0	12.0	28.0	*100.0*
V	N	1								1	*2*
	%	50.0								50.0	*100.0*
Total	*N*	*63*	*3*	*3*	*20*	*3*	*3*	*5*	*19*	*49*	*168*
	%	*37.5*	*1.8*	*1.8*	*11.9*	*1.8*	*1.8*	*3.0*	*11.3*	*29.2*	*100.0*

Stratum IV

A core retrieved from this stratum (3.5 × 2.7 × 2.1 cm) was shaped from a nodule of dark brown flint, from which a series of flakes was removed from a single surface using multiple striking platforms. Over 60% of its surface bears cortex, indicating the small size of the original nodule.

The tools comprise 12% of the flint artifacts in this stratum. A convex sidescraper (9.2 × 6.8 × 1.0 cm; Fig. 1:1) made on a Levallois flake is an artifact distinctly diagnostic of the Middle Paleolithic period. It bears a centripetal scar pattern, its distal edge is an overpass which removed the edge of the core. This artifact is covered with a unique light yellow-white patina. The patina was partially removed by retouch, indicating that this item was collected and recycled, and does not necessarily indicate the presence of an *in situ* Middle Paleolithic occupation phase at the site. This conclusion is reinforced by the absence of other Middle Paleolithic items in the present assemblage and in previously published assemblages from Tel Bet Yeraḥ (Bankirer 2006; Shimelmitz and Rosen 2014).

A medial fragment of an unretouched Canaanean sickle blade (max. width 2.2 cm, max. thickness 0.7 cm) was identified based on the presence of a characteristic gloss.

Another item, ascribed to the varia category of tools, is a core on a flake bearing lateral retouch (3.1 × 3.5 × 0.7 cm). The original flake was naturally backed and made of yellowish pink flint, a color indicating that the item may have been exposed to heat prior to its use as a core on a flake. A series of at least four small flakes was removed, using the ventral side of the original flake as a removal surface, and the lateral edge was subsequently retouched in a semi-abrupt manner, creating a working edge opposite the natural back.

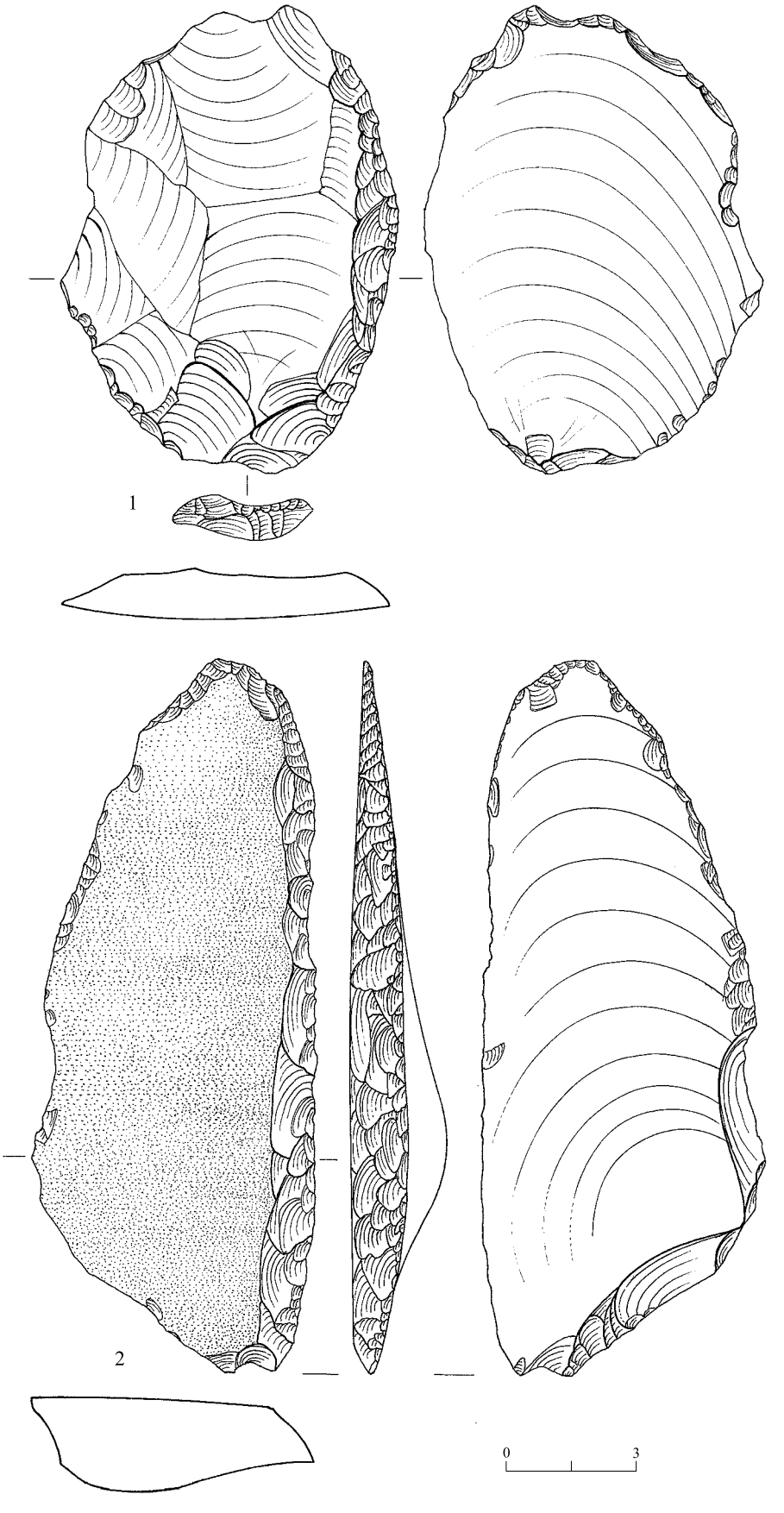

Fig. 1. The flint tools: (1) convex sidescraper made on a recycled Levallois flake from Stratum IV; (2) elongated tabular scraper from Stratum II.

Stratum III

The assemblage of this stratum is very small (n = 9) and includes only debitage and an unretouched Canaanean blade (Table 1).

Stratum II

This large assemblage (n = 80) is the only one to yield items representing all the stages of the reduction sequence (Table 1).

Core Trimming Elements.— These artifacts (n = 3, c. 4%; length 2.7–4.7 cm, width 2.7–3.1 cm, thickness 1.2–1.6 cm) resulted from the rejuvenation of the removal platform of cores by eliminating hinge scars and other small protuberances. The small size of these items in comparison to that of the Stratum II cores raises the possibility that they represent *in situ* maintenance of the cores found in this stratum.

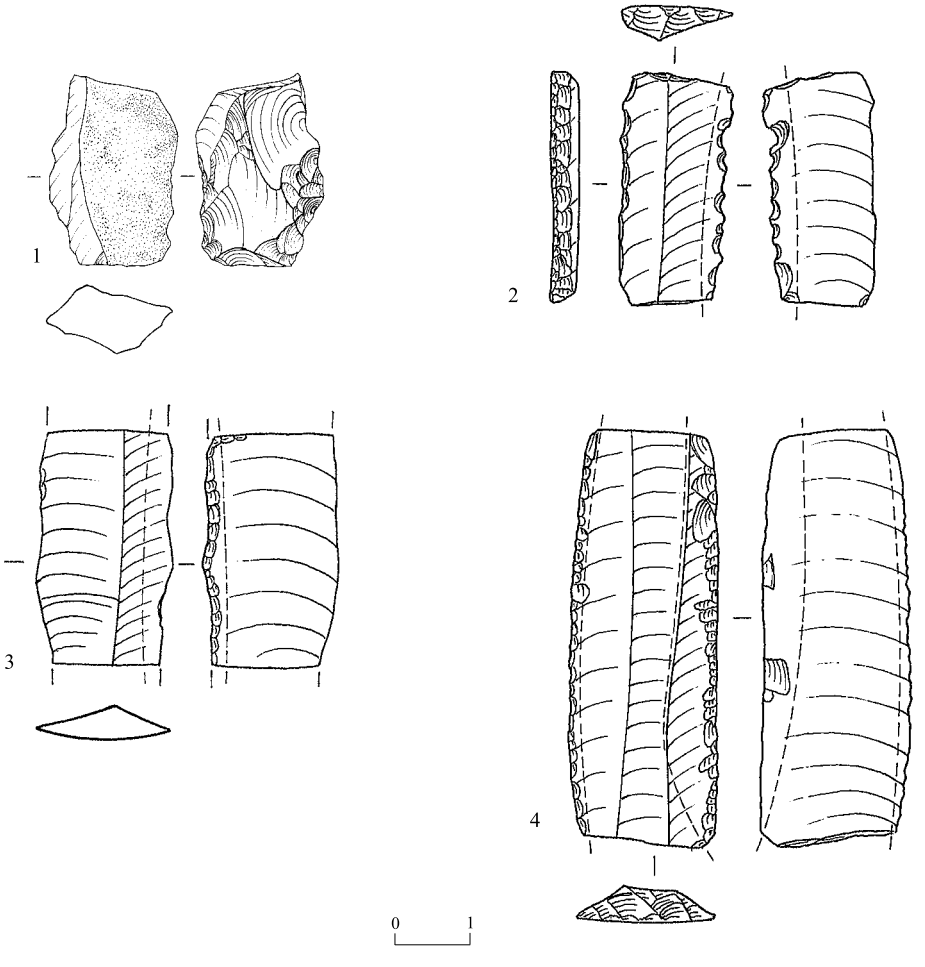

Fig. 2. Flint artifacts from Stratum II: (1) small core with a preferential removal surface and multiple striking platforms; (2–4) Canaanean sickle blades.

Cores.— Among the cores (n = 4, c. 5%; length 3.3–3.7 cm, width 3.1–4.9 cm, thickness 1.5–2.9 cm), two showed use of three or more striking platforms, while the other two, one of which was a core on a flake, indicted the use of a single platform. All four cores showed the use of a single removal surface, the remainder of the core covered in cortex (Fig. 2:1). According to the scar patterns, all four cores were used for the production of small flakes, many of which were probably naturally backed.

Tools.— Sickle blades are dominant among the nine artifacts from Stratum II identified as tools (n = 7, c. 78%; width 1.5–2.2 cm, thickness 0.4–0.7 cm; Table 2). Five of these items were made on Canaanean blade blanks; all were broken, missing one or both of their edges. Gloss appeared most often on only one of the lateral edges, accompanied in some of

Table 2. Tool Types according to Blank Type Organized by Strata

Stratum	Tool Types		Blanks							*Total*	
			Flakes	Blades	Canaanean Blades	Primary Elements	Naturally Backed Items	Levallois flake	Core on flake	*N*	*%*
I	Sickle blades				1					*1*	*14.3*
	Denticulation		1							*1*	*14.3*
	Retouched tools		1							*1*	*14.3*
	Ventral retouch		1				1			*2*	*28.6*
	Abrupt back and ventral retouch				1					*1*	*14.3*
	Nibbling				1					*1*	*14.3*
	Subtotal	N	3		3		1			*7*	
		%	42.9		42.9		14.3				*100.0*
II	Sickle blades			2	5					*7*	*77.8*
	Tabular scrapers					1				*1*	*11.1*
	Retouched tools			1						*1*	*11.1*
	Subtotal	N		3	5	1				*9*	
		%		33.3	55.6	11.1					*100.0*
IV	Sickle blades				1					*1*	*33.3*
	Convex scrapers							1		*1*	*33.3*
	Varia								1	*1*	*33.3*
	Subtotal	N			1			1	1	*3*	
		%			33.3			33.3	33.3		*100.0*
Total		*N*	*3*	*3*	*9*	*1*	*1*	*1*	*1*	*19*	
		%	*15.8*	*15.8*	*47.4*	*5.3*	*5.3*	*5.3*	*5.3*	*100.0*	

the blades by nibbling scars, possibly indicating use wear (n = 4). Two sickle blades were retouched, presenting an abrupt back and truncation (Fig. 2:2) or ventral retouch (Fig. 2:3). One sickle blade displayed a double working edge (Fig. 2:4), indicated by the appearance of gloss and nibbling scars on both of the lateral sides.

The two other tools from Stratum II comprise a large tabular scraper (Fig. 1:2) and a retouched blade. The tabular scraper is the largest item in the assemblage (5.7 × 14.5 × 1.1 cm). It was made on a large cortical flake, heavily retouched diagonally, between its right proximal edge and its left distal edge, creating an extensive working edge.

Tabular scrapers are characteristic of both Chalcolithic and Early Bronze Age assemblages (Rosen 1983; 1997:75). According to a recent typological and technological framework developed for the classification of such tools from ʻEn Ẓippori (Zutovski et al. 2016), the present example falls into the category of fan-shaped, flat-cortex scrapers (fan-shaped FCFS; Zutovski et al. 2016:9–13, Fig. 10), which are more common in Early Bronze Age than Chalcolithic-period assemblages (Zutovski et al. 2016:24).

Stratum I

Flakes and chunks are the most common component of this assemblage (n = 39, 75%), while seven artifacts were identified as tools, of which three (c. 43%) were made on Canaanean blade blanks (Table 2): a double-edged sickle blade; a backed and ventrally retouched blade segment; and a Canaanean blade bearing nibbling scars, which might indicate use wear. Two artifacts, a flake and a naturally backed item, display ventral retouch: a retouched flake and a denticulated item.

DISCUSSION

The flint assemblages from Strata V–I included Canaanean blades typical of Early Bronze Age industries. These blades constituted 60% of the blanks from which tools were made. The most common tool type in all strata was the sickle blade. No appreciable differences were detected in the composition of these assemblages. Only the largest assemblage, retrieved from EB III Stratum II, contained all components of a lithic reduction sequence, whereas the assemblages from the other strata were of a very small size. The generally small sample size of the assemblages is due in part to the small excavation size, and in part, to the use of a coarse 1 cm mesh sieve in collecting the material, which could have resulted in loss of small artifacts.

The Stratum II assemblage indicates the use of small flint nodules and a preference for producing flakes. These were the most common debitage type, mostly produced from cores with multiple striking platforms and a single removal surface. The small size of the cores implies that they could not have been used for producing the Canaanean blades or the fan-scraper found at the site. Flint assemblages of this nature were also described in previous studies of lithic material from Tel Bet Yeraḥ (Bankirer 2006; Greenberg, Shimelmitz and Iserlis 2014; Shimelmitz and Rosen 2014) and seem to be a consistent feature of the site.

The similarity among these assemblages also extends to the type of raw material used, the predominant dark brown and yellowish gray flint type corresponding to raw material Type 1 in Greenberg, Shimelmitz and Iserlis (2014), and the less common gray-white flint, roughly corresponding to their Type 2. Furthermore, the use of cores with multiple striking platforms and a single removal surface at the site was previously noted by Greenberg, Shimelmitz and Iserlis (2014), who described them as radial cores. These authors mentioned the association of such cores with Khirbat Kerak Ware, whereas they were rare in contexts dominated by pottery of a local tradition, implying that the technology using a radial reduction sequence represented a foreign influence (Greenberg, Shimelmitz and Iserlis 2014).

Previous studies of the lithic material of Tel Bet Yeraḥ mentioned the importance of Canaanean blades and tabular scrapers as products of specialized manufacture and traded items (e.g., Rosen 1983, 1997; Milevski 2013; Greenberg, Shimelmitz and Iserlis 2014; Zutovski et al. 2016). While there is little indication for the production of these artifacts at the site, the high abundance of Canaanean blades produced from local raw material, the yellowish fine-grained flint, may indicate the existence of a specialized workshop near Tel Bet Yeraḥ, located perhaps close to the raw material outcrop.

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