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The Flint Assemblage from Tel Lod

Polina Spivak

Introduction

A lithic assemblage comprising 2258 flint items was collected in the excavation at Tel Lod. These finds were retrieved from well-defined Strata VII–II, dated by ceramics to EB IB and the EB IB/EB II transition (see Golani, this volume). Flint items from Stratum I were found mixed with modern remains and are not presented here. The material was in part collected manually and in part by sieving through a 10 mm mesh screen, employed with loci from secure stratigraphic contexts.

Methodology

The flint items were initially grouped into three chronological assemblages: (1) the earliest stratum (Stratum VII; n = 428), which contained diagnostic ceramics of EB IB intermingled with residual finds of the Neolithic and Chalcolithic periods; (2) strata with pottery dated to EB IB (Strata VI–IV; n = 941); and (3) strata with pottery dated to the EB IB/EB II transition (Strata III–II; n = 889; Table 1). As the three assemblages demonstrated similar techno-typological characteristics, range of raw materials and state of preservation, the material is mostly presented below as one assemblage, except for the blanks and diagnostic tools for which data is provided on the range of variation among the three stratigraphically-grouped assemblages (Tables 1 and 2).

The assemblage is evaluated below in light of the results of preceding excavations at Tel Lod, which have yielded detailed information on Neolithic, Chalcolithic and Early Bronze Age flint assemblages, including published (Kaplan 1977; Golan 2000; Yannai and Marder 2000; Gopher and Blockman 2004; Masarwa 2011; Segal 2012; Brink et al. 2015) and unpublished data from two excavations in the northern part of modern Lod, one at the Bank Ha-Mizraḥi Compound[1] and another, in the old soccer field (Khalaily, pers. comm.).[2] The

[1] The lithic assemblage from this excavation, conducted by Orit Segal, will be published by the author (Permit No. A-5658; see also Segal 2012).

[2] This excavation was conducted by Eli Yannai and Ofer Marder (Permit No. A-3199).

Table 1. The Composition of Three Assemblages Grouped According to Strata

Type \ Stratum	VII		VI–IV (EB IB)		III–II (EB II)	
	N	%	N	%	N	%
Chunks	179	41.8	428	45.5	488	54.9
Primary elements	56	13.1	130	13.8	74	8.3
Flakes	159	37.1	343	36.5	281	31.6
Blades	6	1.4	14	1.5	7	0.8
Cores	4	0.9	1	0.1	6	0.7
CTEs	2	0.5	2	0.2	4	0.4
Canaanean blades	2	0.5	3	0.3	4	0.4
Tools	20	4.7	20	2.1	25	2.8
Total	*428*	*100.0*	*941*	*100.0*	*889*	*100.0*

most extensive and informative of the previous excavations revealing a Neolithic-period flint assemblage was carried out in the Newe Yaraq Neighborhood (Gopher and Blockman 2004). That excavation provided the basis for defining the Lodian Culture of the Pottery Neolithic period (Blockman 1997; Gopher and Blockman 2004). Previous excavations have also shown that Neolithic- and Chalcolithic-period remains at Tel Lod were often disturbed by Early Bronze Age activities, leading to some degree of stratigraphic mixing of lithic artifacts (Paz, Rosenberg and Nativ 2005; Yannai and Marder 2000; Brink et al. 2015).

THE FINDS

Raw Material

Most of the flint from the present excavation originated from the Meshash Formation of the Mount Scopus Group (Yechiely 2008). Most cores and chunks were produced from small wadi pebbles, rarely exceeding 5 cm in diameter, and were most likely transported to the vicinity of Tel Lod from higher elevations by Naḥal Ayyalon and its tributaries.

The raw material mainly consists of two types. One type is of non-homogeneous flint of poor to medium quality with sporadic lime inclusions. Its color varies from light to dark brown and gray with a variety of reddish shades. The items made of this flint type mostly include the chunks, primary elements, flakes and cores among the debitage; they also include the bifacial specimens and the Lodian sickle blades among the tools. Another flint type is of fine-grained material, varying in color from light to dark brown, that was mostly used in fashioning tools: awls, scrapers and burins. Yet another type of flint, of which only the Canaanean sickles and blades were made, is homogeneous and fine-grained, of a light and somewhat foggy beige color.

Debris

The most frequent component of all three lithic assemblages are chunks—amorphous pieces larger than 20 mm (41.8–54.9%; Table 1). The majority of these items were fire-cracked,

crushed and fractured. Many pieces of this size were almost entirely covered with cortex, making it difficult to separate modified items from unmodified ones.

Items smaller than 20 mm (chips), usually the most abundant component of any flint assemblage, are entirely absent. This could be a result of the lack of fine sieving or post-depositional processes. Another possibility is that knapping did not take place on-site; however, the ratio of debitage to tools is generally high in this assemblage, indicating that some knapping did take place on-site (Table 1). Previous excavations at Tel Lod have recorded chips in smll quantities (Gopher and Blockman 2004; Segal 2012; see also n. 1).

Debitage

Primary Elements

This category of debitage, representing the first stage in the core reduction process, includes flakes and blades, of which 40% or more of the dorsal face is covered with cortex. The frequencies of primary elements in the different assemblages from this excavation are quite low (8.3–13.8%; Table 1), indicating that most of the initial core preparation took place outside the excavated area, possibly by the river bank, where the raw material may have been collected.

Flakes and Blades

In all three assemblages of this excavation, flakes greatly outnumber blades (24:1 to 40:1; Table 1). Similarly high ratios were found in all Early Bronze Age stratigraphic units at the Bank Ha-Mizraḥi Compound (see n. 1), while a somewhat lower ratio was found at the Newe Yaraq Neighborhood (10:1; Gopher and Blockman 2004). The frequencies of blades are low in all three assemblages (0.8–1.5%), which together with the simple character of the blades indicates that these assemblages belong to a flake-based industry (see Rosen and Vardi 2014).

The flakes are non-standardized in shape and size. Most are thick, with unworked, unprepared striking platforms, indicating general lack of core preparation that is usually representative of ad hoc knapping. The blades also seem to have been produced in an expedient manner, as they lack signs of preparation prior to removal in the form of standardized striking platforms.

Cores

Only 11 cores were found (Table 1), which are generally small (average length 4.5 cm). Most were prepared on small pebbles and small angular blocks covered with cortex, while one was prepared on a large flake. The cores can be roughly divided into three groups, which are nearly equally represented among the three assemblages: cores with a single striking platform (Fig. 1:1), cores with a double striking platform (Fig. 1:2) and cores with multiple platforms of variable striking orientations (not illustrated).

Most of the cores were used to produce flakes, while four of them show mixed removal patterns of both flakes and blades. The mixed cores bear no more than two–three removal

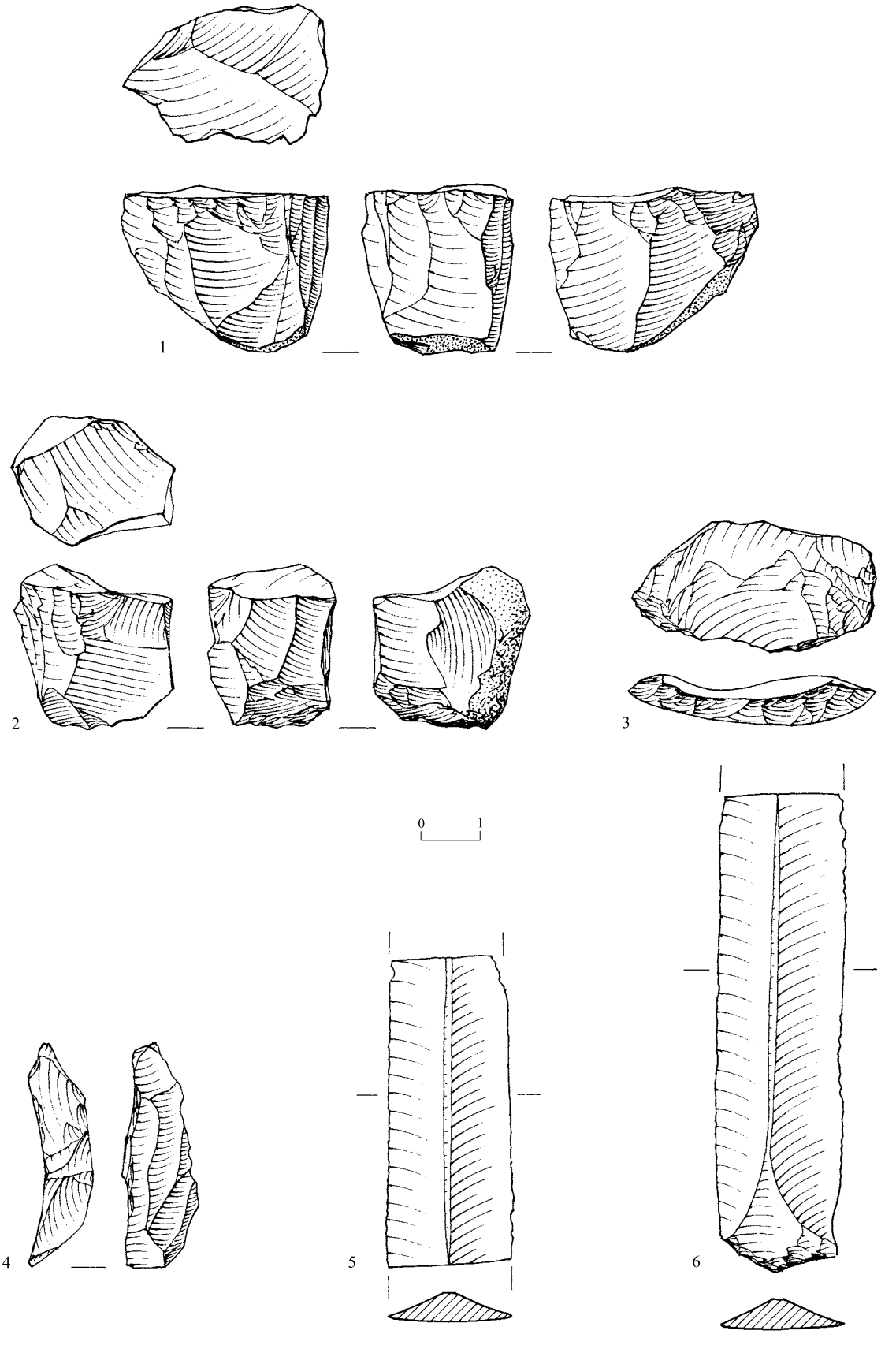

Fig. 1. The flint assemblage: (1, 2) cores; (3, 4) CTEs; (5, 6) Canaanean blades.

scars of blades or bladelets, indicating that they were most likely also used mainly to produce flakes. Two of the cores are semi-triangular in shape, four are rectangular and five are irregular.

None of the cores reveal evidence that they were products of a standardized reduction sequence; rather, reduction seems to have been sporadic, using most of the available surface with no signs of preparing striking platforms, which is a tell-tale indicator of ad hoc production.

All 11 cores were exhausted, i.e., discarded only when further reduction was no longer possible, and yet 9 still retained remnants of cortex even in this exhausted state. All cores also bear evidence of unsuccessful attempts at additional reduction, including hinges (knapping mistakes), some of which were failed attempts at removing further cortex. Such extreme core exhaustion could indicate a shortage of large-sized raw material.

Core Trimming Elements

These elements, which were scarce in all three assemblages (Table 1), comprise two core tablets (Fig. 1:3) and five side sections (Fig. 1:4). Six of the seven CTEs lacked cortex, indicating that they were removed at a relatively late stage in the reduction sequence. The side sections present an average of 3.8 removal scars on their backs, most of which are blade/bladelet scars (Fig. 1:4), indicating that core rejuvenation was mostly applied in the fairly rare instances when blades were struck. Nonetheless, it seems that the CTEs from this excavation were not specifically intended for blade production, but rather products of an ad hoc, disordered reduction process. This is indicated by the absence of CTEs associated with the production of blades (i.e., ridge blades) and the general lack of standardization among the blades. It is possible that bladelet production was part of the lithic industry at the site, but that the products of this activity are absent from the assemblage due to the use of coarse sieving.

Canaanean Blades

Canaanean blades, blanks used in the production of Canaanean sickles, comprised nine pieces, two of which conjoined (Fig. 1:5, 6). The trapezoidal cross-section typical of such blades, formed along their back by two parallel scar ridges, was observed in all but one of the items (Rosen 1983); this last item was a small tip fragment. Seven of the blades were made of homogeneous fine-grained flint of a light beige color, belonging to a non-local flint type. This observation, together with the absence of debitage related to the production of Canaanean blades, indicates that they were made off-site and imported to it, as has been commonly seen in Early Bronze Age assemblages (for more detailed information on the distribution of Canaanean blades, see Milevski 2013).

Tools

Apart from the sickle blades and bifacial tools, the tools in this assemblage are not chronologically diagnostic, as were all the debris and debitage elements. Noteworthy information regarding the stratigraphic distribution of the diagnostic tools is provided below. Other tool types occurred from as early as the Pre-Pottery Neolithic (PPN) period onward, representing ad hoc production.

Awls/Drills/Borers
Five items belong to this category (Table 2). All have small, carefully shaped tips (Fig. 2:1, 2) and were made of fine local flint of a light gray-beige color.

Sickle Blades
Sickle blades are the most frequent tools found in the excavation (Table 2). Three types of such blades were found (Table 3), which variably occurred throughout the stratigraphic sequence.

Canaanean Sickle Blades.— Most of the sickle blades (n = 17) were prepared using Canaanean blade technology. These blades were mostly broken at both ends (Fig. 2:3–5). Seven blades bore gloss on one edge, while the other ten were glossed on both edges. The working edge of most of the sickle blades was either denticulated, semi-denticulated or nibbled on the dorsal face (Fig. 2:3, 4), while retouch on the ventral face occurred less frequently (Fig. 2:5).

Table 2. Flint Tool Frequencies

Stratum / Type	VII		VI–IV (EB IB)		III–II (EB II)		Total	
	N	%	N	%	N	%	N	%
Awls/drills/borers	1	4.8	2	8.7	2	8.7	5	7.5
Sickles	6	28.6	11	47.8	12	52.2	29	43.3
Bifacial tools	2	9.5	1	4.4	2	8.7	5	7.5
Scrapers	6	28.6	3	13	2	8.7	11	16.4
Burins on retouched blades	2	9.5	2	8.7	1	4.4	5	7.5
Retouched blades			1	4.4	2	8.7	3	4.5
Retouched flakes	1	4.8					1	1.5
Multiple tools	2	9.5	2	8.7	1	4.4	5	7.5
Transversal flakes	1	4.8	1	4.4			2	3
Hammerstones					1	4.4	1	1.5
Total	*21*	*100.0*	*23*	*100.0*	*23*	*100.0*	*67*	*100.0*

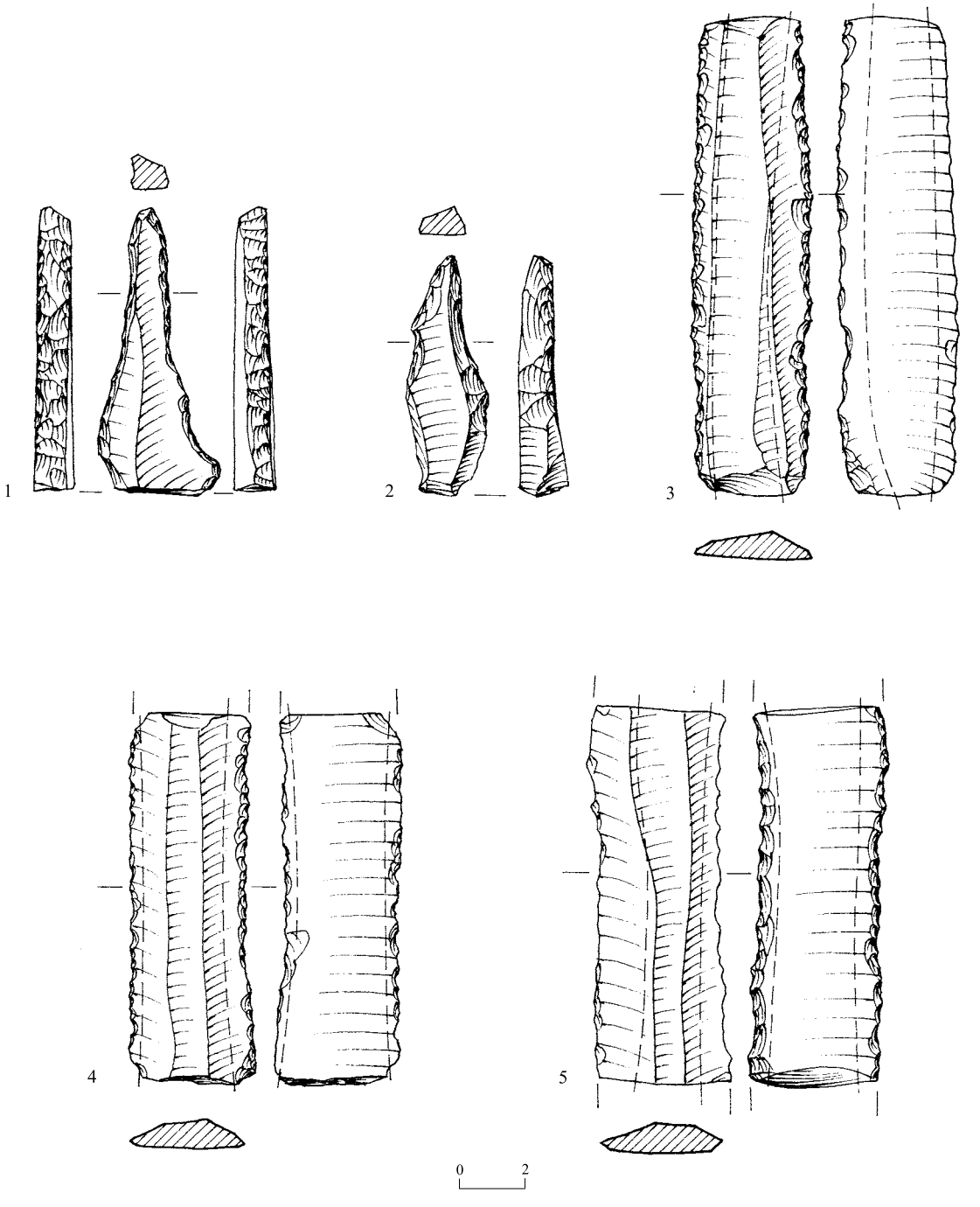

Fig. 2. The flint assemblage: (1, 2) awls/drills/borers; (3–5) Canaanean sickle blades.

Canaanean blades were produced from a fine-grained flint of light beige (n = 9) or brown (n = 8) color. While the possibility of vertical movement of flint items among the layers cannot be unequivocally discounted, it is noteworthy that most of the Canaanean sickles were found in Strata VI–IV dated to EB IB (Table 3).

Table 3. Sickle Blade Frequencies

Type \ Stratum	VII		VI–IV (EB IB)		III–II (EB II)		*Total*	
	N	%	N	%	N	%	*N*	*%*
Canaanean sickle blades	2	33.3	10	90.9	5	41.7	*17*	*58.6*
Lodian sickle blades	3	50			5	41.7	*8*	*27.6*
Other sickle blades	1	16.7	1	9.1	2	16.7	*4*	*13.8*
Total	*6*	*100.0*	*11*	*100.0*	*12*	*100.0*	*29*	*100.0*

Lodian Sickle Blades.— This type of sickle blade is representative of the Lodian Culture of the Pottery Neolithic period (i.e., Jericho IX; for the definition of this culture and history of research, see Gopher and Blockman 2004). Items of this type, belonging to the group of sickle blades known as Munḥata Type B (Gopher 1989:95), are rectangular or triangular in shape, fully or partially pressure-flaked on both faces and truncated with semi-abrupt to flat retouch.

The present excavation yielded eight Lodian sickle blades, most of which (n = 6) are represented by very small fragments of the original tool and severely damaged by fire. They bear pressure retouch over most of their surface, on both sides of the tool (Fig. 3:1, 2). All identifiable fragments, despite their fragmented state, demonstrate a clear lenticular section (Fig. 3:1, 2).

Five of the six Lodian sickle blade fragments were found in Strata III–II, dating to EB II (Table 3). The remaining item, also the largest of the fragments of this tool type, originated from Stratum VII, indicating that the small sickle pieces from Strata III–II may represent residual items derived from earlier deposits of Stratum VII. This latter stratum also yielded two complete sickles of a quasi-Lodian type (Barkai and Gopher 2012:800): one is rectangular and abruptly truncated at both edges (Fig. 3:3), and the other is of a triangular shape (Fig. 3:4), probably used at the tip of a composite sickle tool (see Stekelis 1972:118). Both of these items have a trapezoidal–triangular cross-section and a coarsely denticulated glossy working edge. Sickles of the Lodian type were found at other excavations at Tel Lod (Gopher and Blockman 2004; Segal 2012; Brink et al. 2015; see also n. 1).

Other Sickle Blades.— Four small sickle fragments of an indistinct type were retrieved from loci lacking a clear stratigraphic context. They were made either on blades (n = 2) or elongated blade-like items (n = 2); all had a single working edge and presented bilateral sickle gloss. The dating of these sickle blades is unclear.

Two of the sickles bore traces of bitumen on the side opposite the glossed cutting edge (Fig. 3:5). The ancient use of bitumen to affix sickle blades to a haft made of wood or bone has been extensively discussed (Borrell and Molist 2007, and see references therein; see also Connan, Nissenbaum and Dessort 1992; Marder, Braun and Milevski 1995). Artifacts smeared with bitumen, including sickle blades and pottery sherds, were previously found

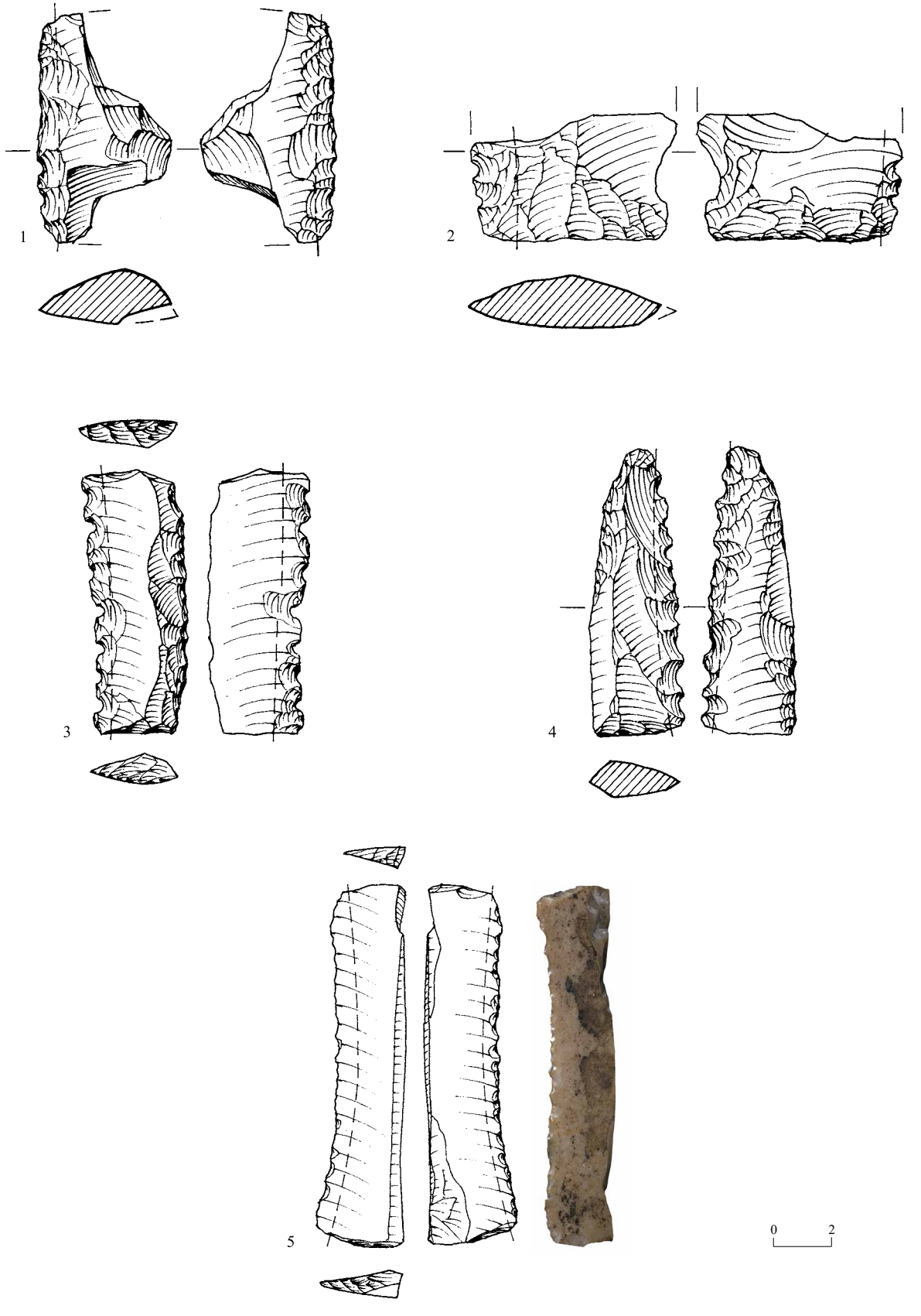

Fig. 3. Non-Canaanean sickle blades: (1–4) Lodian; (5) other.

at Tel Lod in late EB IB/EB II contexts, and possibly in EB IB contexts as well (Brink 1999:64; Yannai and Marder 2000). The presence of bitumen at Lod attests to long-distance trade, as the closest known asphalt source is found in the Dead Sea region, c. 130 km to the southeast (Nissenbaum et al. 1984; Milevski, Marder and Goring-Morris 2002; Milevski 2005).

One of those sickles reveals two burin removals on the bitumen-covered edge, possibly indicating an attempt to release a piece from the haft either for secondary use or for the purpose of repairing the hafted composite tool by replacing one of the blades. This possibility could not be assessed further due to the poor preservation of the item. The find may represent a rare case in the archaeological record of sickle maintenance.

Bifacial Tools and Transversal Flakes

None of the few fragments of bifacial tools found (n = 5) could be ascribed to a formal subtype. The fragments were misshapen and may have been discarded preforms or improvised tools. Two other fragments were blade-like transversal flakes with a triangular cross-section typical of debitage of the tranchet technique (Fig. 4:1). Such debitage that was an outcome of the production of bifacial tools is representative of the PPNA and the early PPNB periods, both of which are yet to be documented at Tel Lod.

Scrapers

Scrapers of variable size and shape were found in all three assemblages of this excavation (n = 11; Table 2), and all but one were made on flakes. Two broken pieces, both found in the assemblage of Strata VI–IV dated to EB IB, may be identified as tabular scrapers (Fig. 4:2, 3), which are typically associated with this period (Rosen 1997:71–79).

Burins on Blades

These burins (n = 5; Fig. 4:4, 5) were made on massive blades of good quality brown flint. Four of the blades bore retouch of the regular-intensive type on one or both edges. Despite their fragmented state, these items may be identified as bi-directional blades of the PPNB period (Barzilai and Garfinkel 2006). A burin removal strike was applied to each of the blades more than once, leaving it with at least two burin facets. This observation reinforces the possibility that the burins are of a PPNB date, as blades bearing multiple burin scars were typical of that period; intensive use of the burin technique with blades, mainly of the bi-directional type, was especially common at the time that naviform technology became widespread (Quintero and Wilke 1995). The raw material from which these naviform blades were made appears to be of a non-local source.

Retouched Blades and Flakes

Two retouched blades, both from EB II (Strata III–II), and a coarsely-shaped primary flake from Stratum VII were found. The retouch appearing on these items is regular and partially inconsistent.

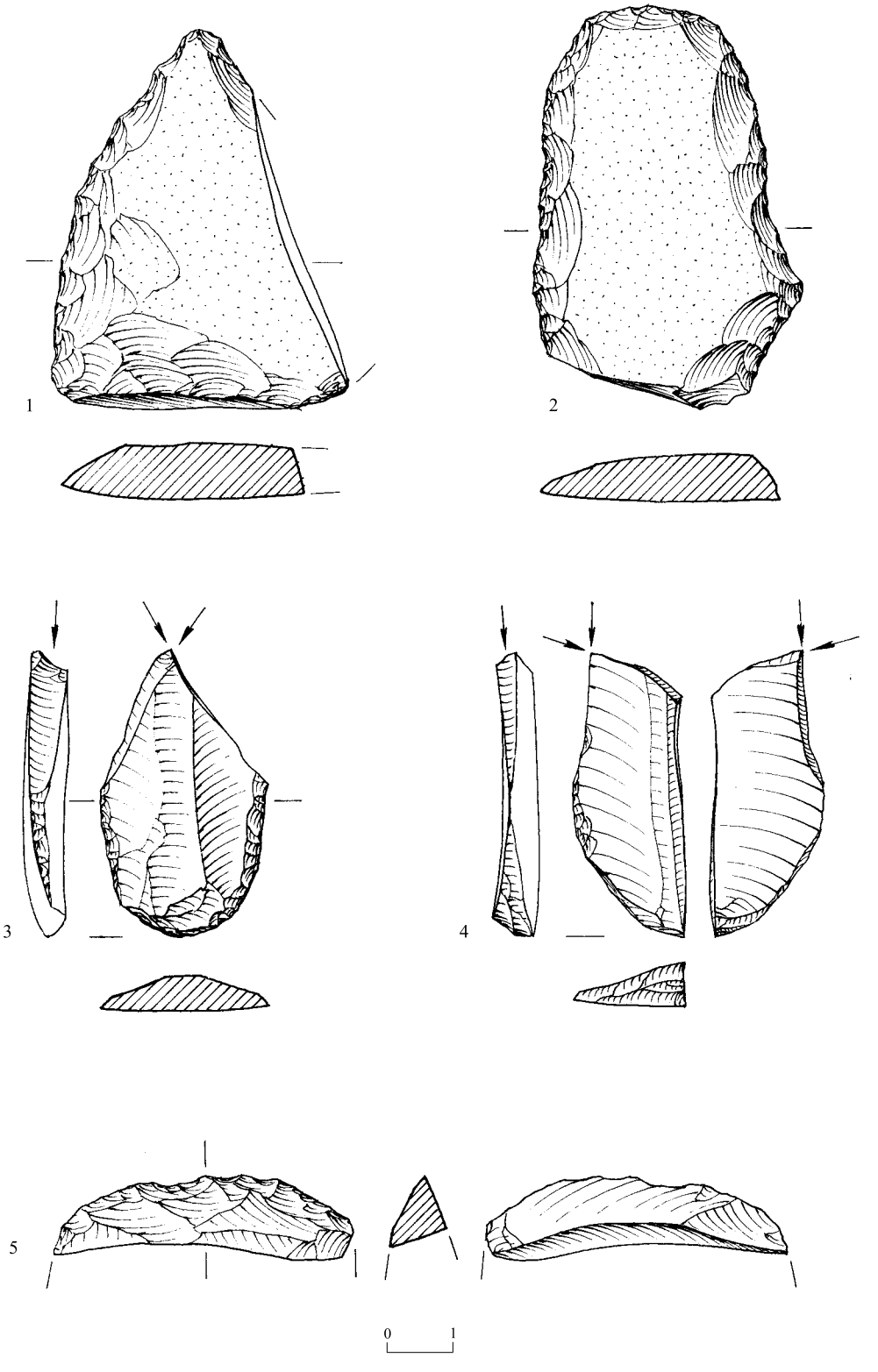

Fig. 4. The flint assemblage: (1) transversal flake; (2, 3) scrapers; (4, 5) burins on blades.

Multiple Function Tools
These tools comprise retouched flakes (n = 3) and awls (n = 2), also exhibiting one notch each.

Hammerstone
A single hammerstone (4.3 × 5.0 × 4.0 cm) made on a flint pebble was found in the assemblage of Strata III–II.

DISCUSSION AND CONCLUSIONS

The present assemblage resembles those from previous excavations at Tel Lod in the predominance of local raw material (Blockman 1997; Yannai and Marder 2000; Gopher and Blockman 2004; Paz, Rosenberg and Nativ 2005; Segal 2012; Brink et al. 2015; see n. 1; Khalaily, pers. comm.). Flint of a higher quality, most likely imported from more distant sources, was employed in producing the Canaanean blades (Yannai and Marder 2000; Masarwa 2011). This may also have been the case with the naviform blades, which were made of a good quality brown flint of a different kind than the material of Canaanean blades.

This resemblance with previously studied lithic material from Tel Lod also extends to the composition of debris and debitage (Table 4): chips are scarcer than chunks; flakes rather than blades dominate the assemblages; and there is a low proportion of cores and CTEs. The low CTE proportion generally indicates little investment in core preparation, an observation reinforced by the absence of signs for platform preparation of flakes and blades, as well as by a low abundance of flakes and blades relative to that of primary elements in all three assemblages (Stratum VII: 3:1; Strata VI–IV: 3:1; Strata III–II: 4:1). Similar proportions of flakes and blades relative to primary elements were documented in other excavations at Tel Lod (Table 4).

Most tool types, awls, retouched blades, flakes and scrapers, were chronologically non-diagnostic and were found in similar frequencies in all assemblages in this study. The sickle blades, on the other hand, of which two distinctive types were found, the Canaanean and the Lodian sickle blades, provide some indication of chronology. Although Canaanean blade blanks and prepared sickle blades were found throughout the stratigraphic sequence, it is noteworthy that the EB IB assemblage of Strata VI–IV was the richest in Canaanean components (13 out of 25 items).

The Canaanean lithic industry is exclusively represented at Tel Lod by the unretouched blanks and end products (see also Bankirer 2003:180; Eisenberg 2012:59; Khalaily 2012; Rosen and Vardi 2014:330–332), while cores and other elements of the *chaîne opératoire* of these products are absent. This observation, together with the fact that non-local high-quality raw material was used in the manufacture of such items at the site, suggests that they were produced at a distant location and imported to Lod, sometimes as blanks.

Table 4. Comparison of Neolithic-Period Flint Assemblages from Different Excavations at Tel Lod

Type	Present Excavation (A-5732)						Gopher and Blockman (2004)		Bank Ha-Mizraḥi Compound (A-5658)				Segal (2012)		Brink et al. (2015)	
	Str. VII		Str. IV–VI, EB IB		Str. III–II, EB II		Neolithic		Str. VI, Neolithic		Str. V, Chalcolithic		Neolithic			
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Chunks	179	41.8	428	45.5	488	54.9	513	17.4	450	45.9	35	33	17	37.8	578	11.8
Chips															526	10.8
Primary elements	56	13.1	130	13.8	74	8.3	516	17.5	73	7.4	11	10.4	5	11.1	429	8.8
Flakes	159	37.1	343	36.5	281	31.6	1087	36.9	383	39.1	49	46.2	16	35.6	2385	48.8
Blades	6	1.4	14	1.5	7	0.8	58	2	13	1.3	1	0.9	4	8.9	106	2.2
Bladelets							49	1.7	5	0.5	2	1.9				
Burin spalls															4	0.1
Cores	4	0.9	1	0.1	6	0.7	158	5.4	17	1.7	1	0	1	2.2	239	4.9
CTEs	2	0.5	2	0.2	4	0.4	51	1.7	10	1	2	1.9			5	0.1
Tools	20	4.7	20	2.1	25	2.8	372	12.6	29	3	5	4.7	2	4.4	551	11.3
Total	*428*	*100.0*	*941*	*100.0*	*889*	*100.0*	*2942*	*100.0*	*980*	*100.0*	*106*	*100.0*	*45*	*100.0*	*4886*	*100.0*

The absence of diagnostic waste of Canaanean blade production is characteristic of many Early Bronze Age sites where such blades were found, while the production process appears to have been confined to specialized workshops where both waste and sets of prepared blades, apparently assembled for trade, were found (Rosen 1997:107–109). It has been suggested that trade in Canaanean products was based on a network comprising several distribution centers (Milevski 2013).

The Lodian sickle blades comprised two complete items and a fragment from Stratum VII and five small fragments from Strata III–II, which may have been residual finds.

The presence of bifacial tools and transversal flakes related to their production, as well as of burins on blades, may indicate the existence of a previously undocumented occupation from the PPNA–PPNB periods. Although the very low numbers of these items in the present excavation are difficult to interpret, the possibility that Tel Lod was inhabited as early as the Pre-Pottery Neolithic period deserves closer scrutiny in future research.

Despite the rather small size of the assemblage it can be concluded that it comprises elements from two main flint industries: (1) the Pottery Neolithic Lodian Culture, previously identified at Tel Lod (Gopher and Blockman 2004); and (2) the Early Bronze Age Canaanean blade industry that represented long-distance trade in finished products. These finds were accompanied by non-diagnostic elements belonging to an ad hoc industry, of the type that dominated most lithic assemblages following the Pottery Neolithic period.

The lithic assemblages from Tel Lod (Kaplan 1977; Tal and Blockman 1998; Golan 2000; Yannai and Marder 2000; Gopher and Blockman 2004; Segal 2012; Masarwa 2011; Brink et al. 2015; see n. 1), including finds from the present excavation, reflect the agricultural activities pursued by the inhabitants of this settlement during both the Late Neolithic and the Early Bronze periods.

REFERENCES

Bankirer R.Y. 2003. The Flint Assemblage. In A. Golani. *Salvage Excavations at the Early Bronze Age Site of Qiryat Ata* (IAA Reports 18). Jerusalem. Pp. 171–182.

Barkai R. and Gopher A. 2012. Flint Assemblages from Naḥal Zehora II: Techno-Typological Changes during the PN. In A. Gopher. *Village Communities of the Pottery Neolithic Period in the Menashe Hills, Israel: Archaeological Investigations at the Sites of Naḥal Zehora* II (Tel Aviv University Institute of Archaeology Monograph Series 29). Tel Aviv. Pp. 757–869.

Barzilai O. and Garfinkel Y. 2006. Bidirectional Blade Technology after the PPNB: New Evidence from Shaʿar Hagolan, Israel. *Neo-Lithics* 1/06:27–31.

Blockman N. 1997. *The Lodian Culture (Jericho IX) following the Excavations at Neve Yaraq, Lod.* M.A. thesis. Tel Aviv University. Tel Aviv (Hebrew; English summary).

Borrell F. and Molist M. 2007. Projectile Points, Sickle Blades and Glossed Points: Tools and Hafting Systems at Tell Halula (Syria) during the 8th Millennium cal. BC. *Paléorient* 33/2:59–77.

Brink E.C.M. van den. 1999. Lod, Neve Yaraq. *ESI* 110:47*–48*.

Brink E.C.M. van den, Horwitz L.K., Kool R., Liphschitz N., Mienis H.K. and Zbenovich V. 2015. Excavations at Tel Lod: Remains from the Pottery Neolithic A, Chalcolithic, Early Bronze Age I, Middle Bronze Age I and Byzantine Periods. *'Atiqot* 82:141–218.

Connan J., Nissenbaum A. and Dessort D. 1992. Molecular Archaeology: Export of Dead Sea Asphalt to Canaan and Egypt in the Chalcolithic–Early Bronze Age (4th–3rd millennium BC). *Geochimica et Cosmochimica Acta* 56:2743–2759.

Eisenberg E. 2012. The Early Bronze Age IV Site at Sha'ar Ha-Golan. *'Atiqot* 69:1–73.

Golan S. 2000. Lod, Abba Hillel Silver Street (A). *HA–ESI* 112:65*–66*.

Golani A. This volume. Early Bronze Age Remains at Tel Lod.

Gopher A. 1989. *The Flint Assemblages of Munhata: Final Report* (Les Cahiers du CRFJ 4). Paris.

Gopher A. and Blockman N. 2004. Excavations at Lod (Nevé Yaraq) and the Lodian Culture of the Pottery Neolithic Period. *'Atiqot* 47:1–50.

Kaplan J. 1977. Neolithic and Chalcolithic Remains at Lod. *Eretz-Israel* 13:57–75 (Hebrew; English summary, pp. 291*–292*).

Khalaily H. 2012. The Flint Assemblage. In I. Milevski, E. Boaretto, A. Cohen-Weinberger, E. Kamaisky, H. Khalaily, N. Liphschitz, M. Sade and S. Shalev. Er-Rujum (Sha'alabim East): An Intermediate Bronze Age (EB IV) Site in the Ayyalon Valley. *'Atiqot* 69:107–117.

Marder O., Braun E. and Milevski I. 1995. The Flint Assemblage of Lower Ḥorvat 'Illin: Some Technical and Economic Considerations. *'Atiqot* 27:63–93.

Masarwa D. 2011. Lod (Northwest). *HA–ESI* 123 (June 5). http://www.hadashot-esi.org.il/Report_Detail_Eng.aspx?id=1696&mag_id=118 (accessed August 30, 2017).

Milevski I. 2005. *Local Exchange in Early Bronze Age Canaan*. Ph.D. diss. Tel Aviv University. Tel Aviv.

Milevski I. 2013. The Exchange of Flint Tools in the Southern Levant during the Early Bronze Age. *Lithic Technology* 38:202–219.

Milevski I., Marder O., and Goring-Morris A.N. 2002. The Circulation of Asphalt in Southern Canaan and Egypt during the Early Bronze I. In E.C.M van den Brink and E. Yannai eds. *In Quest of Ancient Settlements and Landscapes: Archaeological Studies in Honour of Ram Gophna.* Tel Aviv. Pp. 219–236.

Nissenbaum A., Serban A., Amiran R. and Ilan O. 1984. Dead Sea Asphalt from the Excavations in Tel Arad and Small Tel Malhata. *Paléorient* 10/1:157–161.

Paz Y., Rosenberg D. and Nativ A. 2005. Excavations at Lod: Neolithic and Chalcolithic Remains and an Egyptian Presence in the Early Bronze Age. *Salvage Excavation Reports* 2:114–158.

Quintero L.A. and Wilke P.J. 1995. Evolution and Economic Significance of Naviform Core-and-Blade Technology in the Southern Levant. *Paléorient* 21/1:17–33.

Rosen S.A. 1983. The Canaanean Blade and the Early Bronze Age. *IEJ* 33:15–29.

Rosen S.A. 1997. *Lithics after the Stone Age: A Handbook of Stone Tools from the Levant.* Walnut Creek–London–New Dehli.

Rosen S.A. and Vardi J. 2014. The Chipped Stone Assemblage from Be'er Resisim—A Final Report. In W.G. Dever *Excavations at the Early Bronze IV Sites of Jebel Qa'aqir and Be'er Resisim* (Studies in the Archaeology and History of the Levant 6). Winona Lake. Pp. 327–339.

Segal O. 2012. Tel Lod. *HA–ESI* 124 (March 1). http://www.hadashot-esi.org.il/Report_Detail_Eng.aspx?id=1945&mag_id=119 (accessed December 23, 2015).

Stekelis M. 1972. *The Yarmukian Culture of the Neolithic Period.* Jerusalem.

Tal O. and Blockman N. 1998. A Salvage Excavation at Tel Ḥamid (The Lower Terrace). *Tel Aviv* 25:142–173.

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

Yechiely Y. 2008. *Geological Map of Israel 1:50,000, Sheet 8-III: Lod.* Jerusalem.