

A PRE-POTTERY NEOLITHIC B SITE (PPNB) AT HAR KARKOM (NEGEV, ISRAEL)  
REPORT ON THE HK/361 SITE

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### Background

In 1996, a survey conducted by members of the Italian Archaeological Expedition directed by Emmanuel Anati, found an interesting site, named HK/361, in the foothill of Har Karkom (Southern Negev, Israel).

The area of Har Karkom is a stony desert where the Italian Expedition, with the occasional help of scholars from Israel, North America and different European countries, has been active since 1980. The location, archaeologically unknown before the survey of the Italian team, turned out to be a trove of archaeological findings, with about 1,300 sites in an area of 200 km<sup>2</sup>. Such sites record the presence of human activities for at least a million years, from Lower Palaeolithic stations to the remains of Bedouin encampments. Har Karkom and its surroundings represent an immense laboratory of archaeological research, holding exceptional information about the lifestyle of people in what is now a desert (Anati E. 1986:34,35).

The whole area is dominated by the Mount Karkom massif, with a top level of 847 m asl protruding from the almost levelled plateau. The massif is surrounded by mostly eroded and crumbling precipices of difficult access. The easiest ascent is from the West. The mountain affords a series of panoramic views: toward the South East and East, the sight stretches across the Paran desert as far as the Arava valley; toward the West are the hills and the lands of the Central Sinai peninsula, with Jebel Arif en Nake; toward the North the eyes rove over the mountains and valleys of Central Negev and Makhtesh Ramon.

The mountain is visible from a distance both from the South and from the East and in ancient times it must have caught the attention of those peoples that across the millennia frequented this area in search of quality chert to be worked into their implements.

Har Karkom, along the natural path of their migrations toward Eastern Europe and Asia, was in fact a mandatory passage for those human ancestors (*H. erectus*, *H. neanderthalensis*, *H. sapiens*), who moved from Eastern Africa across the Sinai peninsula enroute to the Middle East. Traces of the passage of ancient human groups in the Har Karkom area are everywhere, as well as evidences of settlements of later periods, historical ages and more modern times.

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The plateau of Har Karkom hosts the remains of over 320 Palaeolithic sites (40 sites per km<sup>2</sup>, perhaps the largest concentration in the whole Sinai and Middle East) (Mailland F. & I, 2006:20) and cult sites belonging to the Chalcolithic and Early Bronze Age, characterised by standing stones, tumuli, spiral stone structures, private sanctuaries, remains of two temples, and thousands of rock engravings with hunting scenes, symbols, worship representations. Dominant is the image of the ibex with oversized horns representing the lunar crescent of the Moon God Sin.

At the foot of Har Karkom there are several valleys: the Northern valley, formed by the Nahal Karkom and including the Beer Karkom waterhole (a well of the Early Bronze Age); the Western valley with the tributaries of Nahal Karkom, the Southern valley with the tributaries of Nahal Sagi and the Eastern valley with the Nahal Paran. To the South-East lies the Paran desert.

At the Har Karkom foot, there are the remains of the Early Bronze age: the surrounding area bears traces of frequentation during the Palaeolithic and settlements dated to the Neolithic, Chalcolithic, Early Bronze and beginning of the Middle Bronze ages. Then a hiatus occurred, with few sites of the Iron age. The area was again settled during the Roman and Byzantine times, until the Islamic conquest.

### **Location, Geology and Environment**

The HK/361 site is located in a good strategic position in the Karkom Valley; it lies at the foot of a low hill on the western side of the Har Karkom plateau, along a well defined path heading toward Beer Karkom. It is oriented in a North to South direction, close to the eastern bank of a tributary stream of the Nahal Karkom. The area, approx. 60 by 10 m in size, is set at a mean altitude of 535 m asl. The northern and the southern limits of the site are identified by the WGS84 coordinates N30°18.375'-E34°43.487' and N30°18.344'-E34°43.484' respectively.

Three geologic formations make up the bedrock of the Nahal Karkom area: the base of the sequence consists of rare outcrops of greenish-grey calcareous shale, with limonitic nodules and unconformable gypsum veins belonging to the Taqiye Formation (Palaeocene).

The Mor Formation (Lower Eocene) follows in conformity; it is made up of biomicrites with frequent blackish-brown chert layers 1 to 10 cm thick. Sometimes the chert layers are included in well cemented, white-greyish, partially silicified calcareous strata of Chalk type.

The Nizzana Formation (Lower Eocene) sits at the top of the succession and covers almost completely the Har Karkom Plateau. In general, it is made of hard limestone and silicified limestone with a black patina. The upper layers of this unit are characterized by greyish-black tabular flint.

From a geomorphologic point of view, the site is set on an alluvial terrace deposited at the confluence of a small stream with the main valley of Nahal Karkom.

The quaternary deposits seem to have been consolidated by man at some points, with roughly-aligned rows of limestone blocks placed along the old stream bank. As the soil subsided, the stones moved out of their original location and some are presently found in a recumbent position towards the wadi edge. The blocks must



Fig. 22 a HK/361: view of the excavation from West.

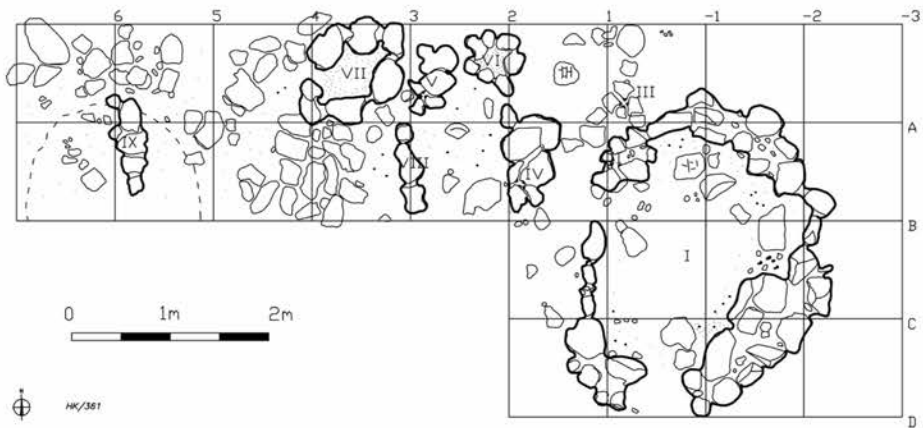


Fig. 22 b HK/361: plan of the site. I: basement of hut; II, III, IV, V: postholes; VI, VII: circles of stones; VIII, IX: stone alignments

have been sourced either from stones fallen from the Nizzana limestone scarp or from the alluvial material.

Immediately above the path, a talus made up of blocks and cobbles of limestone and chert covers the soft rocks of the Taqiye Formation.

At the HK/361 site the raw material for the toolkit is made up of chert, mostly of the gray variety from the Nizzana Formation, though the brown one from the

Mor formation is also present; sandstone artefacts are very scarce; the milling implements recovered are made of local limestone. The fall and shattering of cherty limestone blocks from the overlying formations favoured the quarrying and the in situ manufacturing of flint tools. Some paths leading to the plateau's slopes probably served nodular and tabular chert quarries.

### **History of HK/361 findings**

The site became evident during the 1996 campaign, when abundant flint blades were found on the ground during a survey of the area. The lithic industry, based on very thin laminar flints, produced many blades, small blades, bladelets, microliths and points. The implements showed either retouched or naturally sharp edges. Denticulate retouch, notches and blades with a sharp distal edge were also present. Some of them carried use retouches or denticulate retouch on the distal edge. Even naviform cores, though not arrowheads, were found in that occasion.

During the 2006 campaign it was decided to survey again the HK/361 site. The rains of the previous 10 years had washed away the soil, leaving a conspicuous number of flints on the surface. On that occasion, the first Jericho points were found and the site thus confirmed as a Pre-Pottery Neolithic B (PPNB) Site. After the removal of the superficial debris, some clusters of stones were evidenced and abundant flint industry was collected.

In April 2007, a trench of 4.5 (North-South) by 1 m (East-West) was dug at a depth of 15 cm in the Southern portion and of 25 cm in the Northern section. The research was then extended to the area immediately East of the trench, cleaning a surface of 4 (North-South) by 6 m (West-East) and excavating 8 m<sup>2</sup> to a depth of 10 cm. In the Southern end of the trench, a section of 0.5 by 0.5 m was dug to a depth of 50 cm.

The October 2008 campaign extended the previous excavations to the East. The excavation of the additional quadrants reached -10 cm. A further sounding to a depth of 50 cm was done in the South Eastern corner. During the excavation of the Eastern sectors a circular stone structure was unearthed, probably part of a dwelling site, with a curving wall enclosing an internal space having an opening to the South. Beyond this, other minor structures were identified, including the remains of a fireplace and four postholes. A general view of the excavation is given in Figure 22a. The excavated sediment was screened through a 5 mm mesh and all lithic material collected for classification. The most significant pieces were set aside to be drawn.

### **Architectural Features**

Within the excavated area some distinct, interlocking structures were partially excavated. The plan of such structures is provided in Figure 22b. Pending additional investigations, they are assumed to rest on the alluvial deposit identified in the pit stratigraphy. The architectural remains are poorly preserved, because of the many floods that have occurred since those times. Moreover, everything indicates that additional structures may lie in the still unexcavated sections. Probably the settlement was not very large, considering the size of the HK/361 area (approx. 60 by 10 m), although we will not be able to define its extent until completing the excavations of the whole site.



Fig. 23 HK/361: oval structure I, particular of the wall, with a double row of large stones filled in with cobbles

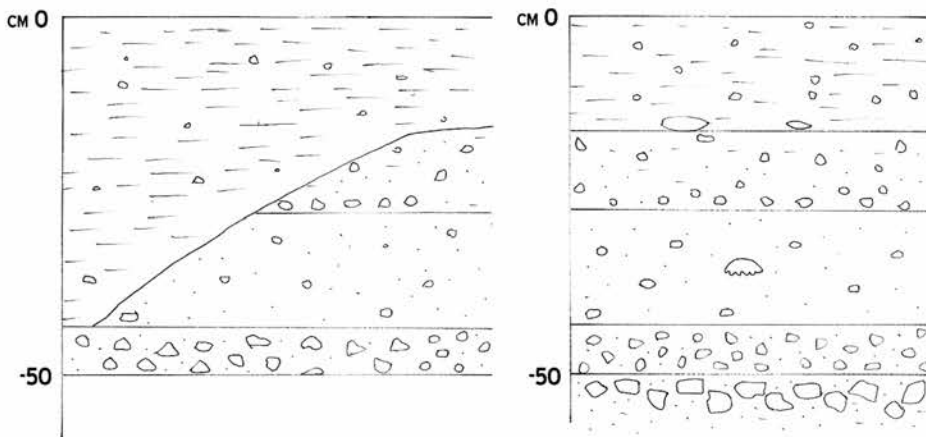


Fig. 24 HK/361: 2007 pit stratigraphy. Right: N-S section, with lithics between the colluvial deposits and the upper alluvium; left: E-W section, showing the erosional event

The major architectural feature is an oval structure (squares A-2, A-1, B-3, B-2, B-1, B1, C-3, C-2, C-1, C1, D-2, D-1 and D1) with an entrance to the South, measuring 3.30 x 2.20 m in diameter. The internal measurements are 2.10 x 1.60 m. The walls are quite thick (50-80 cm). Rough pieces of local limestone bedrock were used for the construction; the size of these stones varies from about 50 cm to less than 20 cm; there seems to be no preferences for a particular rock shape. The less disturbed area (C-3, C-2 and D-2) shows a double row of large stones filled-in with cobbles (Figure 23). Since the structure was not fully excavated, we could not determine the maximum height of the walls. Immediately outside (squares D-3 and C-3) we found a large concentration of chert artefacts while the findings were more scanty inside the structure. Though we have not reached the living pavement yet, we took two samples of the terrain for micromorphological analyses.

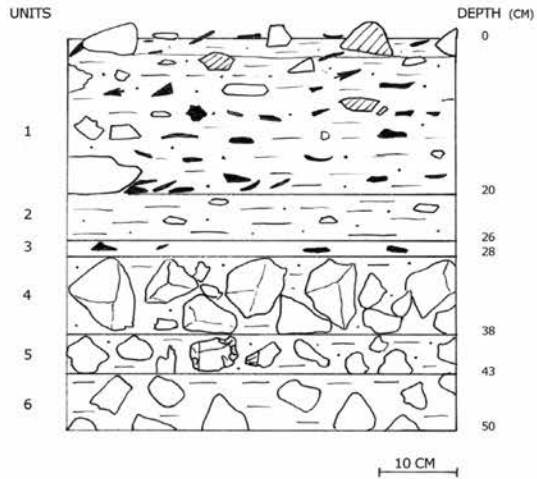


Fig. 25 HK/361: 2008 pit stratigraphy. 1, 3: Sandy silts with lithics; 2: Sterile sandy silt; 4: Alluvial deposit (with big cobbles); 5: Alluvial deposit (with pebbles); 6: Alluvial deposit (with cobbles). Black flints: undifferentiated artefacts; Striped flints: cores

Features II (A-1), III (B-1), IV (B1), V (B2), namely small circles of four and five stones, may have been postholes; the size of these stones varies from less than 20 to about 30 cm. Wooden posts, together with stone piers, if the alignment VIII may be interpreted as the remains of a pier base, may have supported a roof covering an open courtyard.

Features VI and VII are also circles of stones, the former measuring 50 cm in diameter, the latter 1 m. The size of these stones varies from about 20 cm to less than 30 cm. Although the small size of these structures might suggest that they were fireplaces, to the present day no ashes or bones have been found inside.

In the western part of the excavation, apart from the small alignments VIII and IX, most stones show no apparent mutual connection. The size of these varies from about 10 cm to 50 cm. In this sector (squares B5 and B6) we found a dark brown (10YR 5/2) layer with many artefacts; the relationship between these elements will have to be investigated through further excavations.

### Test pits

The first pit was dug to a depth of 50 cm in an area located near the wadi edge, at the south-western corner of the trench investigated in the 2007 campaign.

The pit stratigraphy outlines a sequence of at least three alluvial deposits below the colluvial silts and one erosional event which followed the last two alluvial phases; the three alluvia are of decreasing energy (Figure 24); though some distinctions still have to be made, the trend is clearly one of less intense precipitations with time.

Lithic material was mainly recovered from the upper colluvial sediments. A naviform core and a quartzite point were found at the contact between the colluvia and the upper alluvium.

The second pit, also 50 cm deep, was dug into the south-eastern corner of the area cleared during the 2008 campaign. The stratigraphy clearly shows that the Neolithic settlement lies above the alluvial events that have built the terrace. At the top of the intermediate alluvium, a cluster of calcareous fragments, some



showing Middle Palaeolithic retouch evidences, testified of a previous occupation of the area. Neolithic levels were found only in the colluvial silts. Two different Neolithic levels were identified: a first, very thin one with scattered artefacts and a second one, at least 20 cm thick, with many lithic tools of various kinds, including several bipolar cores and points (Figure 25).

### Ground Penetrating Radar (GPR) Survey

During the 2007 campaign a GPR survey was performed by Harry M. Jol (University of Wisconsin - Eau Claire) and Philip P. Reeder (University of Florida) over the western sampling trench and the C and D columns. Details of the surveyed area is reported in Figure 26. This was an out-of-necessity choice, as the presence of many protruding stones forced the survey team to investigate only these two columns, where an undulating trail skirting the biggest stones could still be managed.

A number of stones was detected in the two columns F5 and F6 at a depth of -20 to -40 cm, while the deeper layers evidenced a more regular stratigraphy. The radar analyses seem to exclude the presence of massive archaeological structures beneath the surveyed tracks while identifying a fluvial channel that had eroded into underlying fluvial deposits. It is to be noticed, however, that the GPR

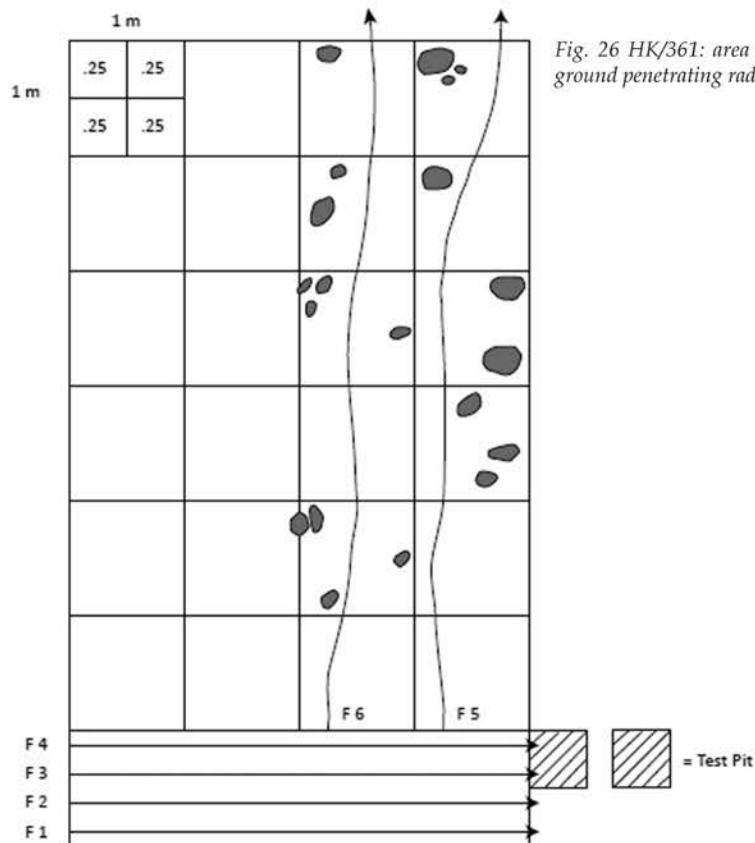


Fig. 26 HK/361: area surveyed in 2007 by ground penetrating radar (GPR)

survey stopped short of the area excavated in 2008, where a most conspicuous archaeological structure was unearthed.

### **Material culture**

The material culture from the site came from the findings collected on the surface, from the excavation of several sectors and from the deep soundings.

The findings within the various levels of the test pits, as well as those of each sector, were registered separately. Quantitative typological differences were noticed among the different sectors of the excavation, however no differences were identified in the materials from the various excavation layers and areas. At this phase of the research, the site presents a rather homogeneous material culture.

Overall, more than 15,000 flint artefacts, 4 limestone mortar pestles and a fragment of a grindstone were collected. Over 40% of the flints were typologically defined as implements, while 60% were debris. Out of the flint tools, the majority were made on laminar support and only 369 on flakes; 222 were cores; few artefacts were made on tabular chert or were a reutilization of debitage.

Definitions and descriptions of the artefacts are as follows:

- Blades are defined according to the standard rules: length/width ratio  $\geq 2:1$ . They have been divided into four groups according to their length: blades ( $> 6$  cm), small blades ( $\leq 6 - > 4$  cm), bladelets ( $\leq 4 - \geq 2$  cm) and microblades ( $< 2$  cm). Blades of different size present finely retouched or naturally sharp margins; some of them show also an inverse retouch. Among distal blades of all sizes, particular and abundant are those with a sharp distal edge, perpendicular to the blade's central axe, in some cases denticulate, achieved by detaching a flake along the blade central axe or through partial detachment. The resulting distal edge may be oblique (defined as distolateral, when the angle with the central blade axe is  $< 90^\circ$ ) or double (=double distolateral blade, when it presents with two opposite oblique distal edges). The implements, as sharp as knives, may have been used for activities such as cutting animal skin or sectioning meat. Backed blades are defined as having a triangular section; few are present.
- Points on backed blades, mostly with naturally sharp margins. Some of them present a finely denticulate retouch and notches, others are endowed with marginal retouch. The backed points are rare and retouched. There are also a few points on flake, in some cases retouched; also present are triangle, Levallois-type points without retouch and, particularly, a point on white quartzite.
- Tanged tools include Jericho points, defined as per Kenyon (1957:116-124), and Amuq points, defined as per Gopher (1989:45): the tip is on the central axe, the marginal retouch is sporadic (generally, edges are unretouched) and the tang is always retouched. Concerning the Jericho points, in one case the retouch is invasive on both sides, though not covering the entire surface, in another case the edges are finely retouched by a very fine denticulate while the tang is broken off.
- Pseudopedunculates are defined as false tanged tools. Few are present on backed blades. They are pseudopenduculated at the proximal, unretouched end.
- Cores: out of the 222 cores, 70 are naviform (navicular blade cores, as defined



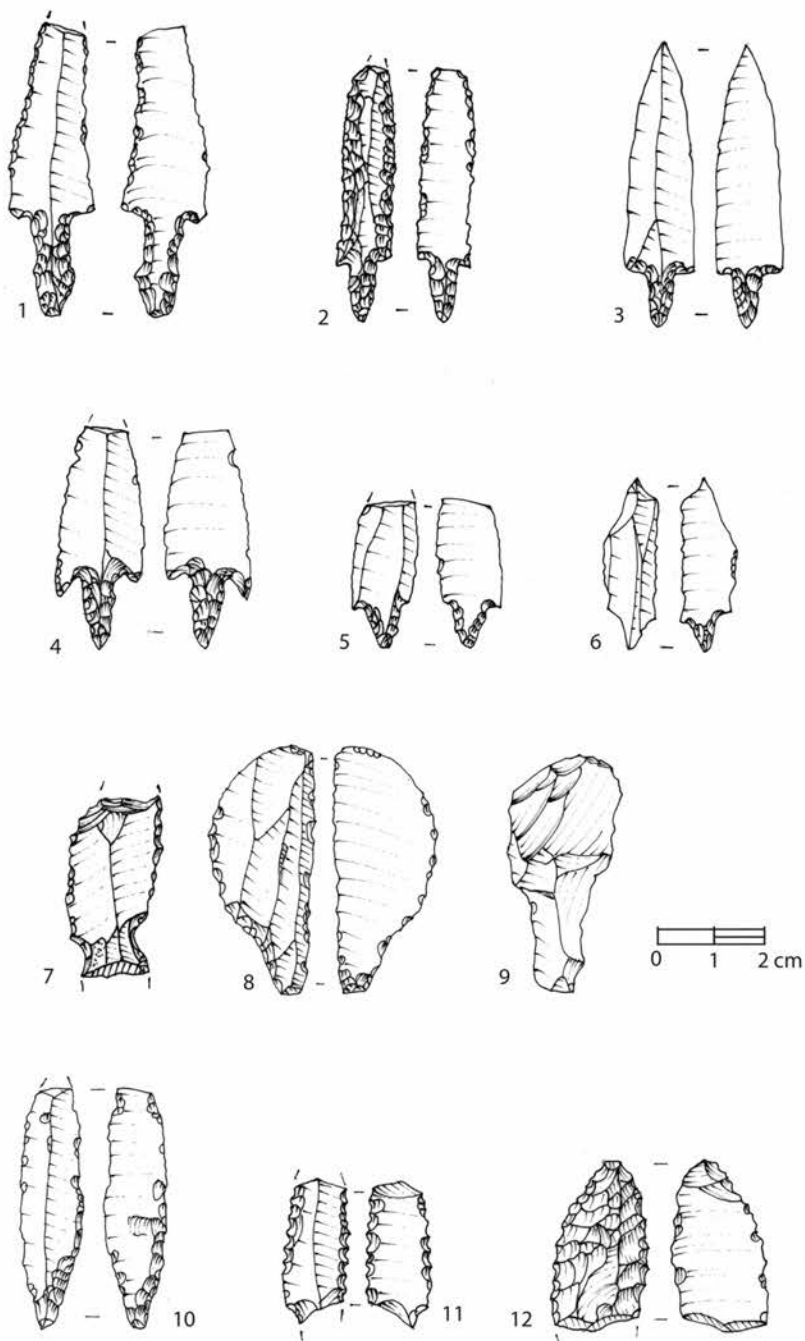


Fig. 27 HK/361: 1-5 Jericho points; 6 point on tanged bladelet; 7 double notch; 8,9 small blades, pseudopedunculate; 10 Amuq point; 11 blade sickle; 12 point fragment, invasive retouch

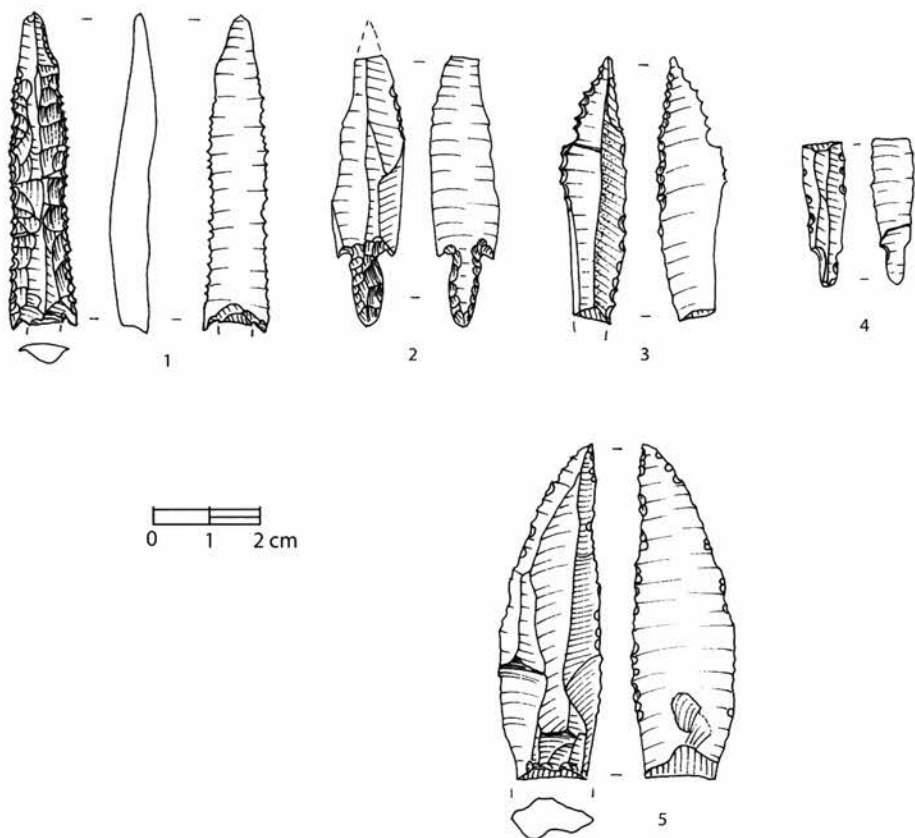


Fig.28 HK/361: 1 Jericho point, invasive retouch and finely denticulate edge retouch. Tang is broken off; 2 Jericho point; 3 point with convergent denticulate retouch and alternate edge retouch; 4 pseudopedunculate; 5 point with inverse retouch

by Ronen (2000:69). They have been obtained from tabular chert or from small, even cylinder-shaped nodules. Most of them are made of light coloured chert, those of the brown variety are rare. Most nodules were fully exploited and sometimes the cores still show part of their original cortex; some of them are retouched at both ends and were apparently reused as implements. Many cores are bipolar and navicular, i.e. they have two opposite striking platforms; others, with a pyramidal shape, have one platform for the detachment not only of blades, but also of flakes. Sometimes, the cores are disk-shaped, and served for the detachment of flakes and microblades. Occasionally, the cores present more than two striking platforms and were used to detach flakes and bladelets. The detachment method always combined pressure and heating.

- Denticulates, notches, small axes, picks: the definition are those in general use. They are all tools related to the collection and cutting of vegetables, not yet domesticated but abundant in a period when the climate favoured their growth in the valleys surrounding Har Karkom.

- Denticulates were mostly made on blades and represent the most frequent retouch among the various implement categories. Denticulate retouch is present on blades, bladelets, distal blades/bladelets, points, pedunculates and debitage reutilization.
- Notches are present on blades, even associated with denticulate retouch; notches are rare on flakes.
- Axes were obtained from reutilization of debitage and from tabular flint. They present a triangular section and a straight cutting edge; one is side-transverse and retouched; in two cases the retouch is also inverse, and one edge is natural. The platform is almost always thick and the sides present a steep retouch. Some of them have an unretouched ventral face.
- Picks are few.
- Blade sickles are rare: two only were found, with denticulate retouch.
- Awls, or borers, are defined as tools from a flake, a blade or a core, that have been retouched to a point. Very few awls were found on the corners of distal/distolateral blades, one even on a large flake. Few borers were found, mostly on laminar support. Two had been made on flake, one of them also presents a burin blow and use retouch.
- Burins are made on blade and are infrequent. They are in part associated with other implements (distal pseudopedunculate, double burin on notched end-scraper, end-scraper, distal bladelet, point on backed blade, borer, naviform core with denticulate retouch.
- Side-scrappers: one transverse side-scraper is present.
- End-scrappers: two were made on bladelet: one has a burin blow, the other is the a.m. double burin with notch; five are round scrapers.
- Microliths: we defined microliths the implements that measure < 2 cm in length. They are made on laminar support (microblades); most of them are unretouched: and include many geometric microliths.
- Other flint tools: a knife on primary flake with side-transverse cutting edge; trapezoidal flakes with transverse distal cutting edge.
- Other tools: one fragment of a limestone grindstone and 4 mortar pestles.

Debris: the debitage included 8,917 units (58.96% of total artefacts), and was classified as follows:

- core trimming elements: 2,139 - they include: primary elements according to Marks (1976:376), i.e. their function is to remove the natural surface (cortex) from the core; core tablets, according to Marks (op.cit.:374), i.e. rejuvenation of the platform by eliminating a flake, carrying the former platform on the dorsal side; crested elements, as defined by Hoffmann Pedersen (1995:26) i.e., blades with a triangular cross-section showing negative on the dorsal side, perpendicular to the flaking direction, removed from the edge of the core to create a new platform edge.
- Flakes: 3,723 - they include also flakelets and chips
- laminar debris: 2,735
- indeterminate 325: they include all fragments which have an appearance which makes it impossible to see if they came from blade or flakes. The group includes all pieces, mostly fragments, which cannot be attributed to any of the other debitage group.

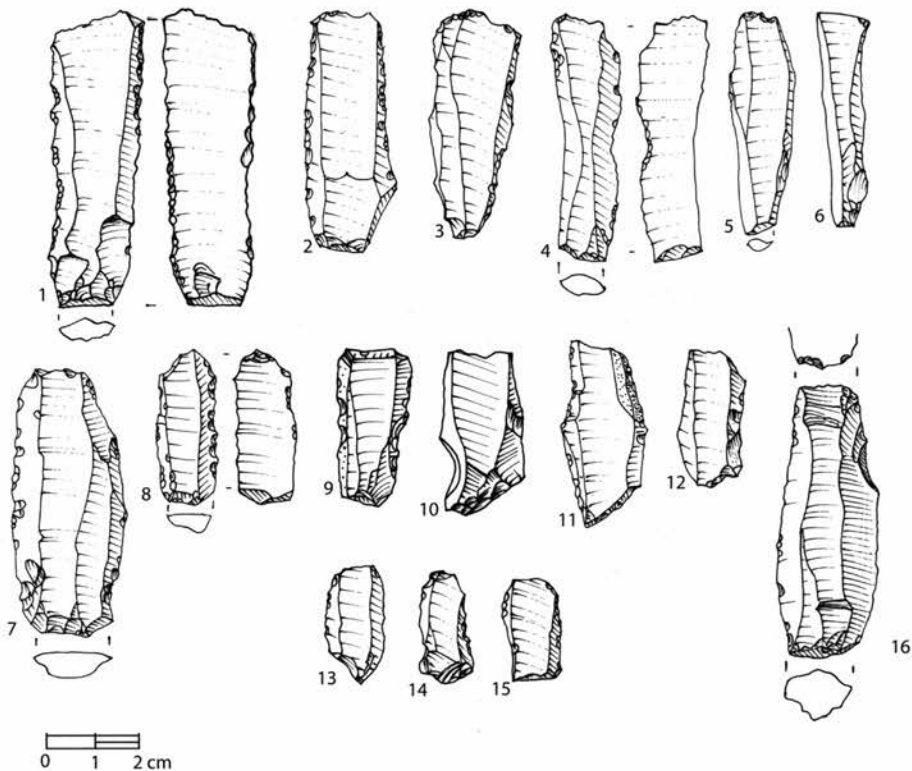


Fig. 29 HK/361: distal cutting edge on: 1 blade; 2,3,5,16 small blades; 4 small blade with notch; 8-15 bladelets

The typology of the lithic industry is shown in Figures 27 to 38. Descriptive statistics of lithic industry at the state of the research is provided in Table 1. The highest number of flint artefacts came from squares B-3, C-3 and D-3, immediately East of the oval structure I, with a rather low ratio of implements/total artefacts. Square D-3, with a total number of 1795 artefacts and an implement/total artefact ratio of 0.29, may have hosted a knapping centre for the preparation of flint tools. The figures are different inside the structure I, with only 660 artefacts for the square C-1 and a higher implement ratio of 0.37. Fewer artefacts and higher implement ratios were found in the remaining squares: square B2 (n=528, implement ratio=0.40, and fragments of grindstone), in the "courtyard" between the structures IV and VIII; square A2 (n=487, implement ratio=0.46), adjacent to the former and lying between structures V and VI; square A3 (n=282, implement ratio=0.40), inside the structure VII; square A4 (n=320, implement ratio=0.43), to the west of the structure VII.

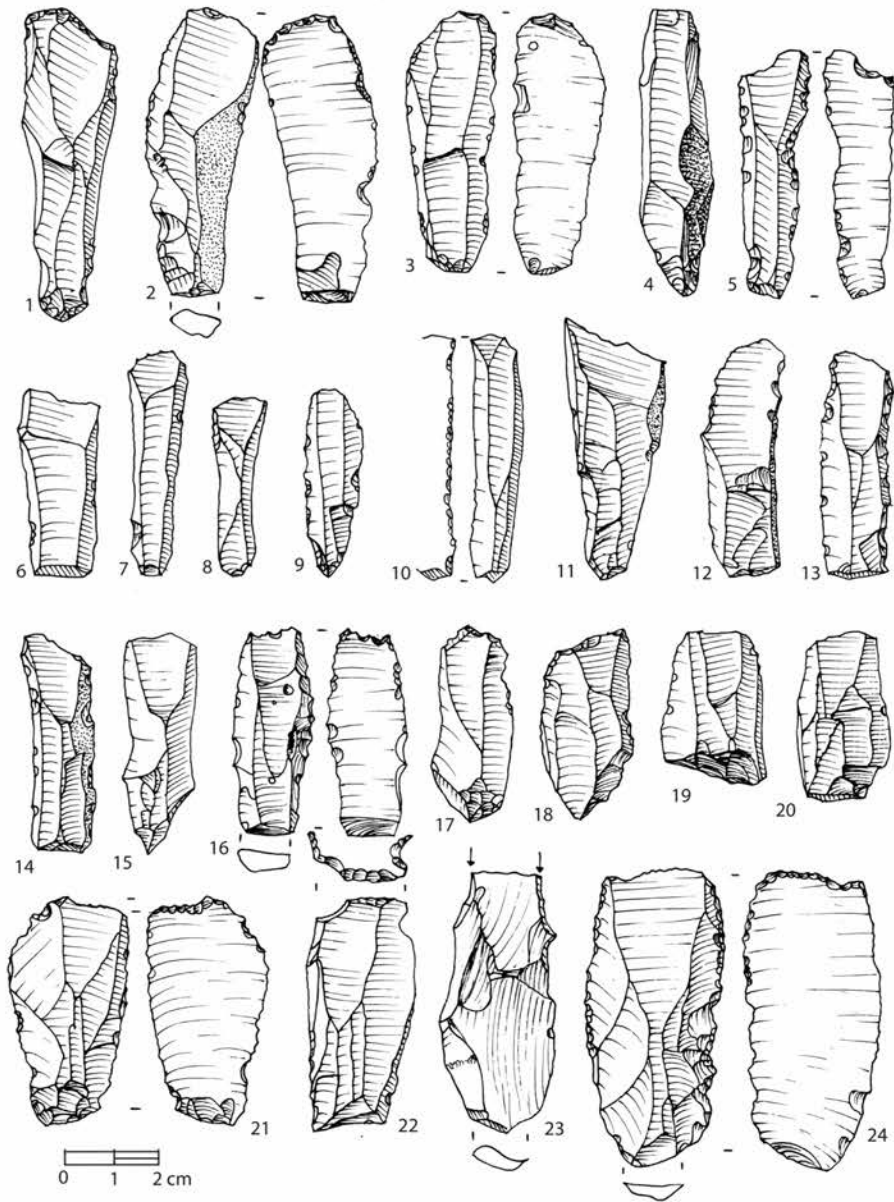


Fig. 30 HK/361: distal cutting edge on: 1 blade; 2 blade with notch; 24 blade with inverse retouch on distal, denticulate on side; 3-9,12-14,17-22 small blades; 10 small blade with inverse retouch; 15 small blade with borer at the proximal; 16 small blade with denticulate distal; 23 small blade with double burin; 11 small blade, distolateral

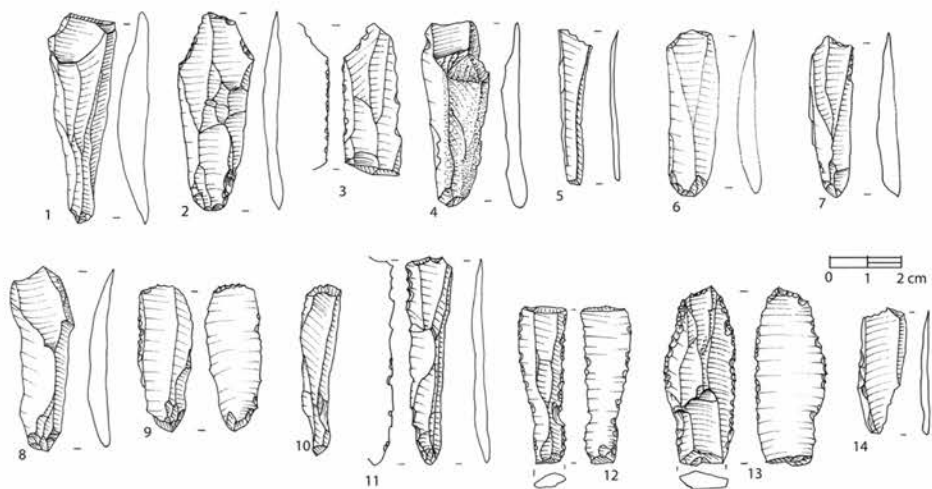


Fig. 31 HK/361: 1,2 distal blades; 11 distal blade, denticulate retouch; 4,6,9,10 small distal blades; 3,5,8 small blades, distolateral; 7 small blade, distolateral convergent; 12 small blade distal, denticulate and notch; 13 small blade distal, continuous retouch, inverse on distal; 14 distal bladelet

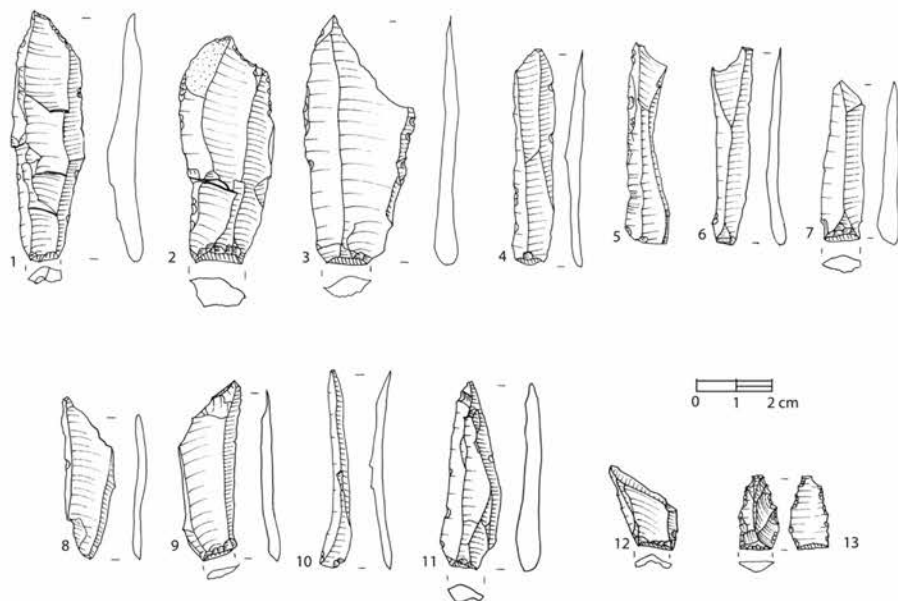


Fig. 32 HK/361: 1-4 distolateral blades; 5-9 small blades, distolateral; 10,11 points on small blades; 12,13 microliths



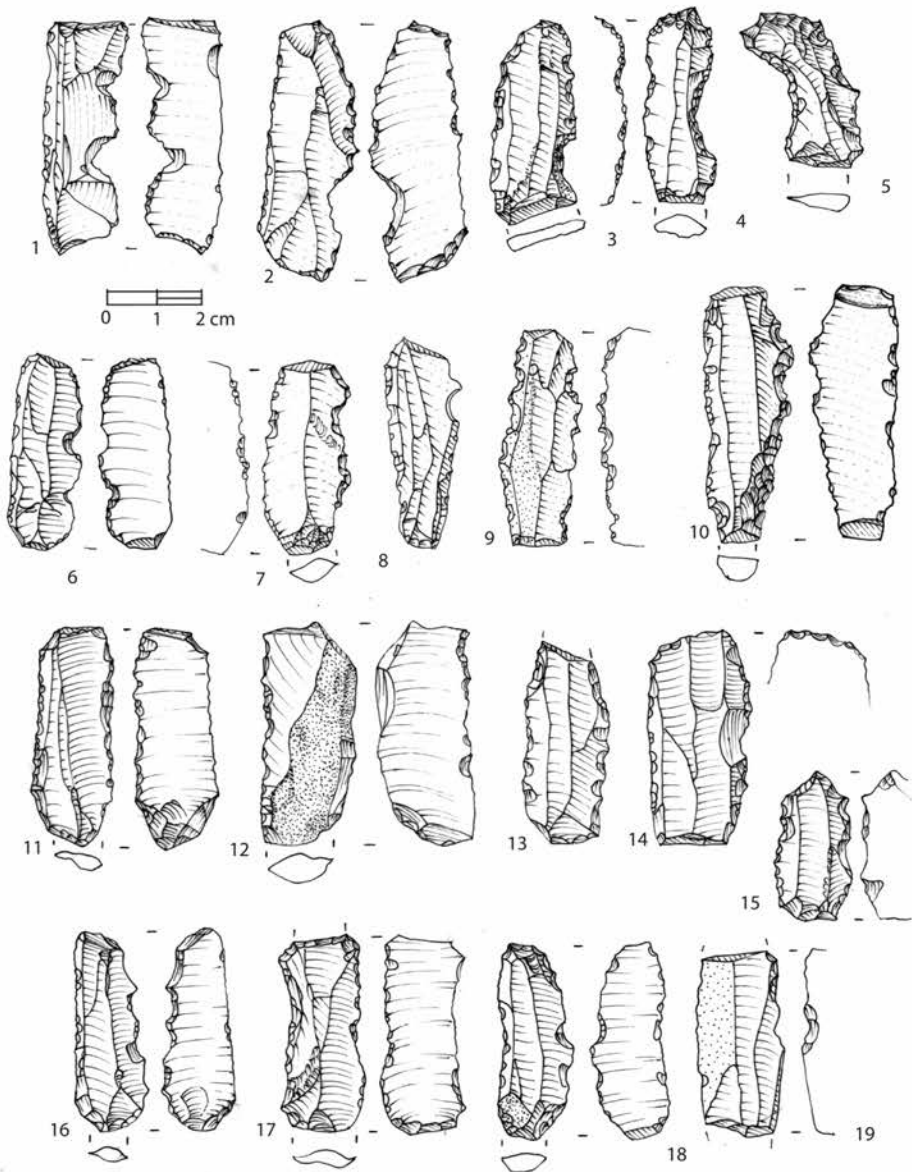


Fig. 33 HK/361: 2-9,11-14,17,19 denticulates on small blades; 1,10,16,18 denticulates and notches on small blades; 15 denticulate on bladelet

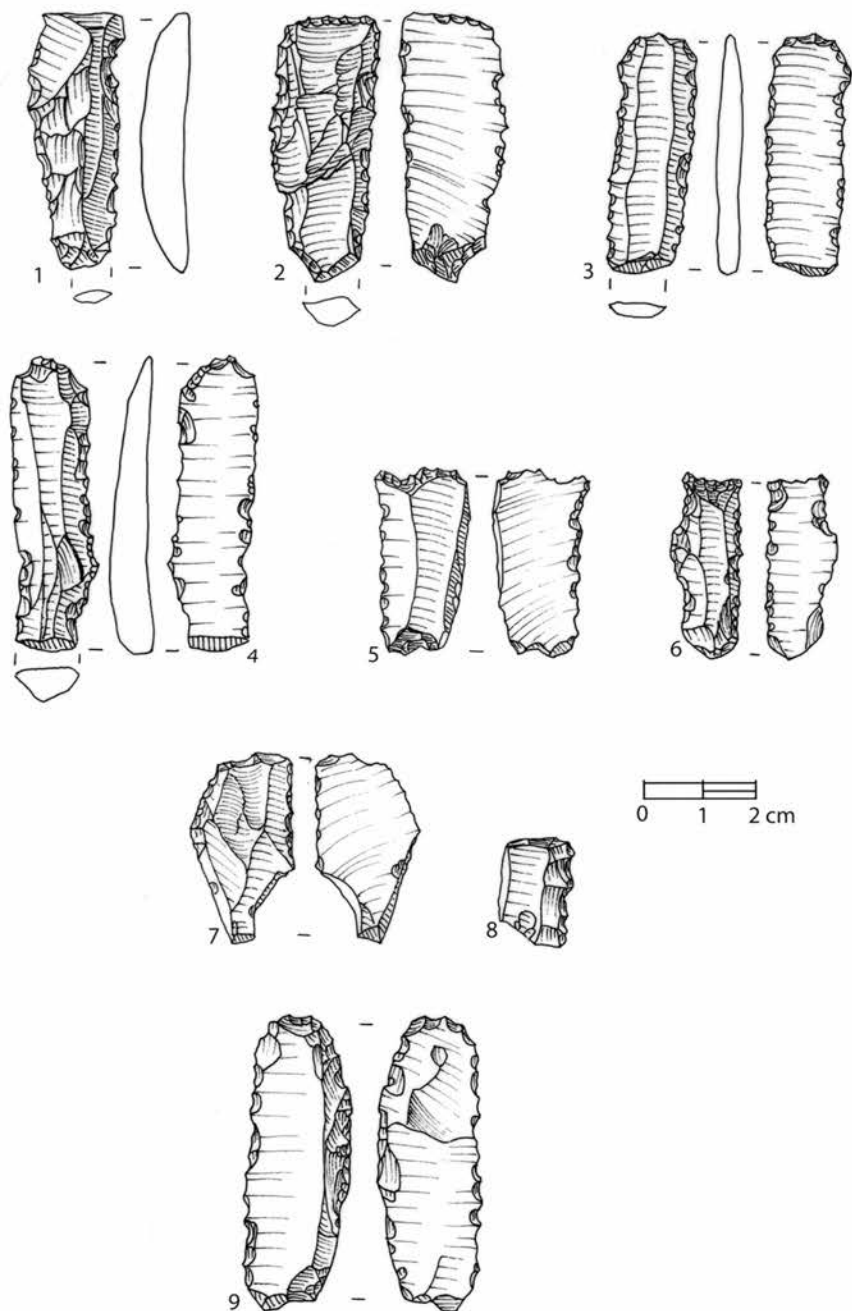


Fig. 34 HK/361: 1,3,4,9 denticulates on small blades; 2 denticulate on small blade with point on proximal; 5 borer on bladelet with denticulate retouch; 6 borer on bladelet with denticulate retouch and notches; 7 flake with use retouch; 8 sickle blade

Table 1 - HK/361: Descriptive statistics of lithic assemblage

Technology	Typology	n	% on class	n	retouch	n	% on class
<b>Debitage</b>	core trimming elements	2134	23.9%				
	flakes	3723	41.8%				
	laminar debris	2735	30.7%				
	indeterminate	325	3.6%				
	<b>Totaldebitage</b>		<b>100.0%</b>	<b>8917</b>			
<b>Cores</b>	naviform	70	31.5%				
	others	152	68.5%				
	<b>Total cores</b>		<b>100.0%</b>	<b>222</b>			
<b>Reutilization ofdebitage</b>	on core	4	13.8%		denticulate	5	17.2%
					burin	1	3.4%
					axe	5	17.2%
	on tabular flint	9	31.0%		notch	2	6.9%
					steep	4	13.8%
					hammerstone	1	3.4%
others	16	55.2%		dagger	2	6.9%	
				pick	4	13.8%	
				other retouched	3	10.3%	
				total retouched	24	82.8%	
	<b>Total reuse ofdebitage</b>		<b>100.0%</b>	<b>29</b>			
<b>Nodules</b>	hammerstone	1	100.0%				
	<b>Total nodules</b>		<b>100.0%</b>	<b>1</b>			
<b>Blades</b>	distal + distolateral	102	14.4%		end-scraper	1	0.1%
					denticulate	17	2.4%
					burin	5	0.7%
	backed	8	1.1%		borer	9	1.3%
					notch	5	0.7%
					steep	1	0.1%
	points	81	11.4%		alternate	1	0.1%
					invasive	1	0.1%
					tanged	1	0.1%
	others	518	73.1%		pseudopedunculate	3	0.4%
				other retouched	250	35.3%	
				total retouched	294	41.5%	
	<b>Total blades</b>		<b>100.0%</b>	<b>709</b>			

Technology	Typology	n	% on class	n	retouch	n	% on class
<b>Small blades</b>	distal + distolateral	297	22.0%		denticulate	62	4.6%
					burin	4	0.3%
	backed	6	0.4%		borer	5	0.4%
					notch	11	0.8%
	points	109	8.1%		alternate	2	0.1%
					sickle	1	0.1%
	others	937	69.5%		tanged	2	0.1%
					pseudopedunculate	6	0.4%
					other retouched	230	17.0%
					total retouched	327	24.2%
	<b>Total small blades</b>		<b>100.0%</b>	<b>1349</b>			
<b>Bladelets</b>	distal + distolateral	200	7.4%		denticulate	104	3.8%
					burin	3	0.1%
	backed	19	0.7%		borer	2	0.1%
					notch	17	0.6%
	points	96	3.5%		end scraper	3	0.1%
					invasive	1	0.0%
	others	2402	88.4%		tanged	6	0.2%
					pseudopedunculate	8	0.3%
					other retouched	750	27.6%
					total retouched	891	32.8%
	<b>Total bladelets</b>		<b>100.0%</b>	<b>2717</b>			
<b>Microliths</b>	distal + distolateral	58	7.2%		denticulate	31	3.8%
					burin	2	0.2%
	geometric	24	3.0%		borer	1	0.1%
					notch	13	1.6%
	points	74	9.1%		tanged	2	0.2%
					pseudopedunculate	3	0.4%
	others	654	80.7%		other retouched	70	8.6%
					total retouched	122	15.1%
	<b>Total microliths</b>		<b>100.0%</b>	<b>810</b>			
<b>Flakes</b>	distal + distolateral	13	3.5%		denticulate	2	0.5%
					burin	2	0.5%
	trapezoidal	21	5.7%		borer	1	0.3%
					notch	1	0.3%
	points	12	3.3%		transverse scraper	2	0.5%
					round scraper	5	1.4%
	others	323	87.5%		other retouched	286	77.5%
					total retouched	299	81.0%
	<b>Total flakes</b>		<b>100.0%</b>	<b>369</b>			

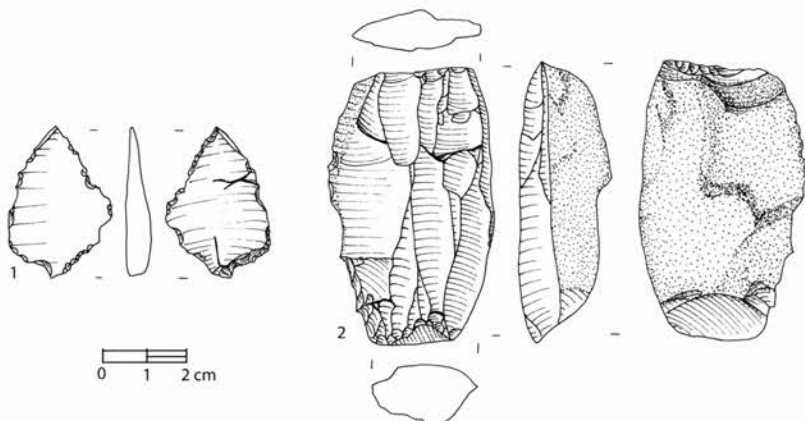


Fig. 35 HK/361: 1 point on quartzite, denticulate retouch and burin blow; 2 bipolar naviform core

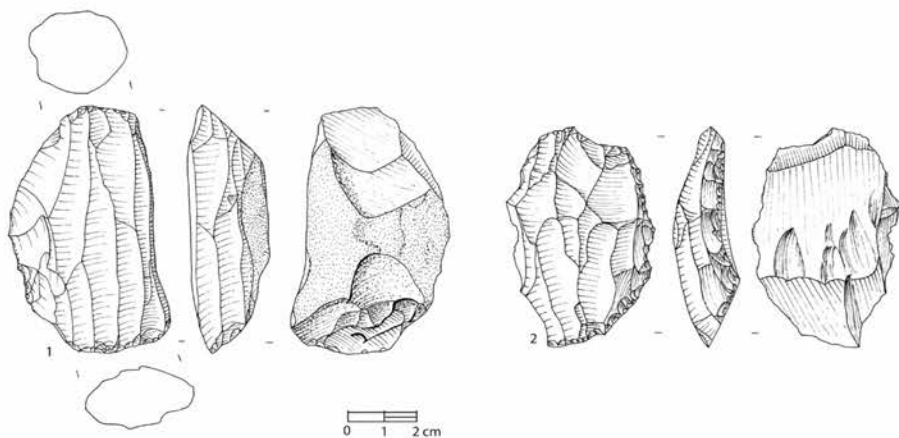


Fig. 36 HK/361: 1 bipolar naviform core; 2: multiple platform core with marginal retouch on side (reused as side-scraper)

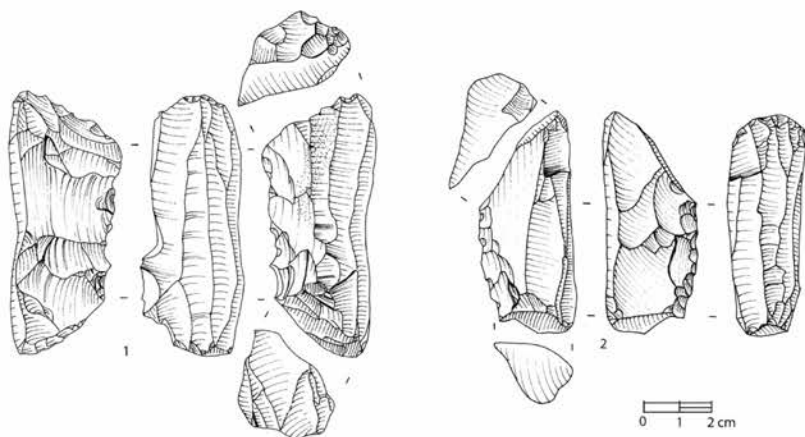


Fig. 37 HK/361: 1,2 bipolar naviform cores with flake knapping on sides

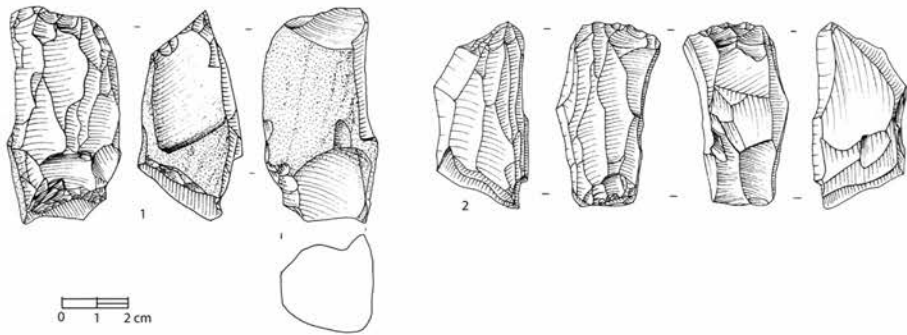


Fig. 38 HK/361: 1 core from cylinder nodule with residual cortex, with knapping of bladelets and flakes; 2 naviform core, with multiple platforms

### Faunal remains

At the present state of the research no animal remains were found, though the finding of arrowheads and cutting implements let us suppose that hunting, slaughtering and dissection activities took place at HK/361. We found two gastropods, *Cypraea* spp, likely to come from the Red Sea.

### Discussion

The discovery of the PPNB site HK/361 at the foot of Har Karkom is an important finding, because it represents a new element for the understanding of the millenary story of this area. The climate in today's desert areas of Southern Negev was markedly wetter at the time of the settlement. The rains favoured the development of the vegetation, better living conditions for small and mid-size mammals, as well as the diffusion of wild cereals and legumes (even today, after the rains, wild ears sprout from the desert floor).

Only a small portion of the surveyed area has been unearthed; this part appears to be the southern peripheral area of the settlement which is likely to extend to the North. The unearthed oval stone structure appears too small to be considered a hut. It resembles the structures described by Gopher and Goring-Morris (1998:4-7) for the early PPNB site of Abu Salem and supposed to be storage facilities. Shape, thickness of walls and limited internal space are similar, but the construction technique at HK/361 (a wall made of a double row of large stones filled in with cobbles) was not reported for Abu Salem. That site was interpreted as a unique case (due to the peculiar stone structures), indicative of seasonal use, over a considerable length of time, by small groups of hunters/gatherers, whose permanent homes were further afield.

HK/361, beside having revealed the oval stone structure and other smaller structures, has produced a large lithic assemblage on a blade technology, with the typical use of opposed platforms, including naviform cores. Peculiar and abundant are the distal blades of all sizes. The presence of Jericho points, named from the site where they were first described (Kenyon K. op.cit.: 51-76 and 1960:36-57; Bartlett J. 1982:37-54), of Amuq points (Gopher A. op. cit.:45), as well as bipolar naviform cores, confirm that HK/361 belongs to the early PPNB, well diffused in the whole Southern Levant, particularly in the Negev - Nahal Issaron



(Goring-Morris A.N. and Gopher A. 1980:156-159) and Nahal Re' u'el (Ronen A. et al. 2000:68-74) in the South; Abu Salem (Gopher A. and Goring-Morris A.N. 1998), Har Harif (Marks A. 1973) in the North. In particular, HK/361 shares with the Abu Salem site the typology of the sole architectural remain so far unearthed, the lack of organic remains and the characteristics of its lithic assemblage. The lack of organic findings at Abu Salem was attributed to undefined events other than postdepositional processes (Gopher A. and Goring Morris A.N., op.cit.: 7), based on the presence of abundant, well preserved faunal remains in the immediately adjacent Harifian levels at the same site. For HK/361, further information is expected by planned, future excavations.

A peculiarity of HK/361 inventory is the presence of distal blades, namely blades provided with a cutting, distal (or disto-lateral) edge. This margin is generally unretouched, though sometimes carrying traces of use or a denticulate retouch. Lithic assemblage at HK/361 shows that primary knapping and full reduction sequence took place at the site; the differences in implement/total artefact ratios may indicate the specific locations where primary workshop activities took place: e.g. flint knapping in the square southeast of structure I, animal skin cutting and meat preparation within structure I, seed grinding in the "courtyard" between structures IV and VIII.

The finding of cowries may imply commercial ties with sea-side communities, being HK/361 located along ancient trails connecting the Red Sea, the Mediterranean and the Siro-Palestinian areas (Anati E. op.cit.).

At the present state of the research, HK/361 appears to be a settlement living out of a mixed economy, where hunting and gathering still continued in presence of an early agriculture spurred by the climate improvement occurred around 12-10,000 years B.P., during the humid Neolithic period which benefitted Northern Africa and Sahara.

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## ABSTRACT

Site HK/361 is a pre-pottery Neolithic B site recently excavated during the 2007 and 2008 seasons at Har Karkom (Negev, Israel). The site lies at the foot of a low hill on the western side of the Har Karkom plateau, along a well defined path heading toward the well of Beer Karkom. The site is set on an alluvial terrace deposited at the confluence of a small stream with the main valley of Nahal Karkom.

The stratigraphic investigation revealed that the Neolithic settlement lies above the alluvial events that have built the terrace. Neolithic levels were found only in the colluvial silts. Two different Neolithic levels were identified, characterized by the same lithic industry.

The major architectural feature is a small oval structure. On western side, an open courtyard covered by a roof is suggested by the finding of postholes and a stone pier base.

The rich flint assemblage included thin blades with a sharp distal edge, bipolar naviform cores, Jericho points and Amuq points. No faunal remains were found, apart from two gastropods, *Cypraea* spp. At the present state of the research, HK/361 appears to be a settlement living out of a mixed economy, where hunting and gathering still continued in presence of an early agriculture.

## RIASSUNTO

HK/361 è un sito neolitico preceramico-B scavato di recente durante le campagne del 2007 e del 2008 a Har Karkom (Negev, Israele). Il sito giace ai piedi di una piccola collina sotto il versante occidentale dell'altopiano di Har Karkom, lungo un sentiero che porta a nord verso il pozzo di Beer Karkom. Il sito è posto su un terrazzamento alluvionale alla confluenza fra un piccolo torrente e il wadi Karkom. La stratigrafia rivela che l'insediamento neolitico insiste su vari episodi alluvionali che hanno formato il terrazzamento, mentre i livelli neolitici sono presenti solo nei limi colluviali. Sono stati identificati due differenti livelli neolitici, caratterizzati dalla stessa industria litica.

La struttura in pietra più evidente è una piccola struttura ovale. Sul lato occidentale, la presenza di buche di palo e della base di un pilastro suggerisce la presenza di un cortile aperto coperto da un tetto.

È stata rinvenuta una ricca industria litica su lama, con lame caratterizzate da un tagliente distale, oltre a nuclei naviformi bipolari, punte di Gerico e punte di Amuq. Non sono stati rinvenuti resti di fauna, ad eccezione di due gasteropodi, *Cypraea* spp..

Allo stato attuale della ricerca HK/361 appare come un insediamento basato su una economia mista di caccia e raccolta di cibo, in presenza di una agricoltura iniziale.

## RÉSUMÉ

HK/361 est un site néolithique précéramique fouillé récemment pendant les campagnes de recherche du 2007 et du 2008 à Har Karkom (Negev- Israël). Le site se trouve aux pieds d'une petite colline sous le versant occidental du haut-plateau de Har Karkom, le long un sentier qui amène au Nord en direction du puits de Beer Karkom.

Har Karkom se situe sur un terrassement alluvial à la confluence entre un petit torrent et le wadi Karkom. La stratigraphie nous montre que le village néolithique se place sur des épisodes alluviaux qui ont formé le terrassement, tandis que les niveaux néolithiques sont présents seulement dans les dépôts colluviaux.

On a été identifié deux différents niveaux néolithiques caractérisés par la même industrie lithique. La structure en pierre plus évidente est une petite structure ovale. Au coté ouest l'existence de trous de piliers en bois et de la base d'un petit pilier en pierre, va suggérer la présence d'une cour ouverte et couverte par un toit.

On a retrouvé une riche industrie lithique sur lame. Des lames plus caractéristiques ont un distal au bord brut, très affilé ; il y a aussi des nucleus naviformes bipolaires, des point de Jericho e d'Amuq. On n'a pas retrouvé des restes de faune, sauf deux gastéropodes : *Cypraea* spp.

Actuellement HK/361 se présente comme un village qui vivait d'une économie mixte de chasse et de récolte d'aliments, et d'une agriculture au début.