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Palaeolithic Sites of Crimea,  
Vol. 2

KABAZI II:  
THE 70 000 YEARS  
SINCE THE LAST INTERGLACIAL

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# Chapter 4

## Kabazi II, Level II/7AB: Hunting and Raw Material Procurement for Stone Artefact Production

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The ancient living floor Kabazi II, level II/7AB is situated in stratum 7. This horizon is dated by the ESR method; the analysis of teeth from *Equus hydruntinus* yielding two results: 38,000±400 BP and 36,000±300 BP. These dates also correlate with the results from palynological studies, which place stratum 7 sometime between the Hengelo Interstadial and Huneborg Stadial (Chabai 2005a, p. 21).

This archaeological horizon is an *in situ* occupation which is separated from both over- and underlying levels by sterile sediments (Chabai 2005a, p. 10). The finds from level II/7AB comprise 944 flint artefacts, eleven pebbles and 2,202 faunal remains.

### RAW MATERIAL

The lithics from level II/7AB were subjected to a transformation analysis (cf. Weissmüller 1995, p. 13-71). A total of 590 pieces of the assemblage are smaller than 3 cm (Chabai 1998c, p. 201) and can be assigned to the category of chips. This great mass of simple chips and chunks, which has a weight of 578 g, prove too small for sortation into raw material units. The remaining 365 flint artefacts from level II/7AB were considered in the transformation analysis. Of these pieces the majority (n=223) are simple flakes, there are 65 chunks, 25 formal tools, 21 blades and 19 cores. A total of 305 artefacts were sorted into 42 raw material units, 60 patinated pieces could only be assigned to the sorting rest, and were excluded from transformation analysis.

The high variability of the raw material from

this level permitted a sortation into raw material units (RMU). Exotic raw materials proved particularly easy to distinguish in the RMUs 1-8, e.g. RMU 3 is characterised by a very light orange colour, and was conspicuous from the very start, and the orange-brown colour and rough surface of RMU 2 meant that this material also caught the eye from an early stage. This said, even the less exotic material was easy to distinguish, a large number of raw material units featuring conspicuous types and magnitudes of dark schlieren and inclusions (RMUs 9-17). Additionally, the very light grey coloured raw material of RMUs 18-24 was easily sorted. On the other hand, RMUs 25-34 comprise a very dark grey-brown coloured raw material, and the lithics belonging to RMUs 35-42 display a black-grey hue. The sortation

of these pieces was not so simple, and particularly the assignment of small sized artefacts to a given RMU proved difficult. Nevertheless, such features as conspicuously large inclusions (RMU 35) or nodule shape (RMU 36) helped in this respect.

More than half of the artefacts consist of cortical flakes or are partly covered by cortex. This indicates that mainly raw nodules or partly covered cores were imported to the site. In general, the cortex is white and chalky.

After consideration of the shape of the nodules from the raw material units, it appears that 13 RMUs

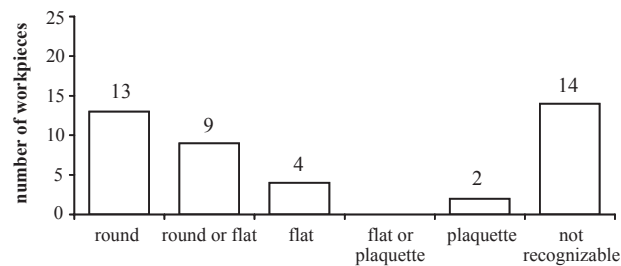


Fig. 4-1 Kabazi II, level II/7AB: frequency of workpieces, according to the raw material nodule shape.

feature round nodules, and a further four are flat. However, in the case of 14 RMUs it proved impossible to ascertain whether the nodule had been round or flat, and the core shape of some, mainly single pieces was not distinguishable at all. Only two workpieces included flakes and cores, here nodules were either flat or were plaquettes (Fig. 4-1).

The nodules stem predominantly from primary and residual sources. In the case of 22 RMUs the source was either primary or secondary. The origin of a further ten raw material units was indistinguishable (Fig. 4-2).

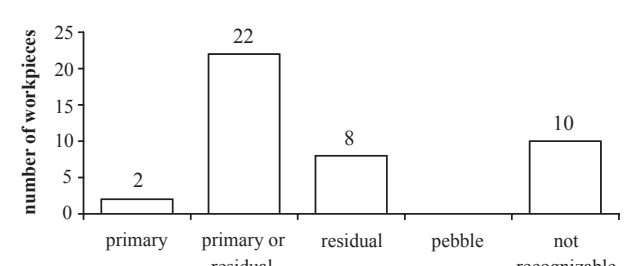


Fig. 4-2 Kabazi II, level II/7AB: frequency of workpieces, according to the raw material source.

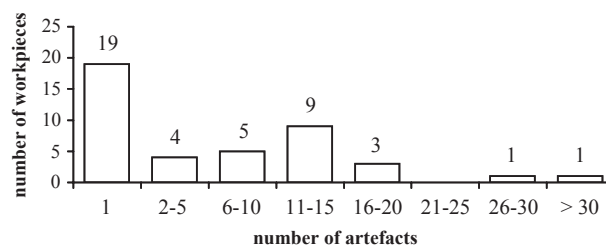


Fig. 4-3 Kabazi II, level II/7AB: frequency of artefacts in raw material units.

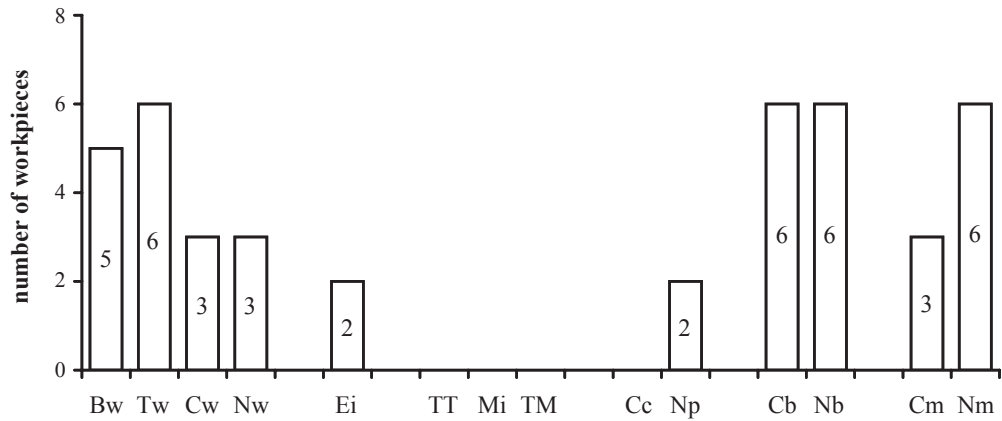
## TRANSFORMATION ANALYSIS

Of the 42 raw material units included in the transformation analysis 19 comprised single pieces and 23 were workpieces. The majority of workpieces comprises between two and 14 artefacts. Only three RMUs encompass between 16 to 20 artefacts. The only exceptions are RMUs 9 and 10, with 30 and 33 pieces respectively (Fig. 4-3).

The assemblage displays the following transformation sections of single pieces: Bw, Tw, Cw, Nw and Ei. These are complemented by transformation sections of workpieces, which feature the main aspects and phases of the *chaîne opératoire* (Geneste

1985, p. 179) as observed on-site: Cb, Nb, Cm and Nm. Whereas the transformation section Np occurs twice, the modification phases of a single tool or core (TT, Mi, TM, Cc) are not to be found at all in the assemblage (Fig. 4-4).

The single pieces discarded on-site were probably produced off-site. Six such single pieces are formal tools, category Tw; five are simple blanks, Bw; three are cores, Cw; three are raw pieces, Nw; and two pieces can be described as category Ei. The tools (Tw) are the most carefully modified pieces of the whole inventory. The only tools which



**Fig. 4-4** Kabazi II, level II/7AB: frequency of transformation sections: Bw = blank without transformation (within the excavated area), Tw = tool without transformation, Cw = core without transformation, Nw = nodule without transformation, Ei = isolated functional part of a tool, including resharpening flake, TT = broken tool with corresponding tip, Mi = two or more isolated chips from modification, TM = tool with corresponding chips from its modification, Cc = correction of a core, Np = preparation of a raw nodule, Cb = blank production from a core, Nb = blank production from a raw nodule, Cm = blank production from a core and modification of blank(s), Nm = blank production from a raw nodule and modification of blank(s).

	RMU	41	24	2	39	1	42	23	6	40	38	7
<b>OFF-SITE</b>	0 Import ➔	side scraper	side scraper	side scraper	point	convergent side scraper	convergent side scraper	flake	flake with use retouch	flake with use retouch	Levallois blade	Levallois point
<b>ON-SITE</b>	1 Preparation	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
	2A Blank Production	---	---	---	---	---	---	---	---	---	---	---
	2B Correction	---	---	---	---	---	---	---	---	---	---	---
	3 Modification	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
Discard	○	○	○	○	○	●	●	●	●	●	○	○
	Л-5	Н-4	П-4	О-7	Н-7	Н-4	Н-4	О-7	П-5	О-5	М-4	
Export ←	↗	↗	↗	↗	↗	↗	↗	↗	↗	↗	↗	↗
	Tw	Tw	Tw	Tw	Tw	Tw	Tw	Bw	Bw	Bw	Bw	Bw

**Fig. 4-5** Kabazi II, level II/7AB: transformation analysis.







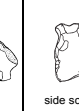

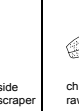

















	RMU	30	32	16	33	17	27	4	31	28	29	3
OFF-SITE	0 Import ➔											
		Levallois core	blade core	blade core	chunk	chunk	chunk	side scraper	side scraper	chunk from raw nodule	chunk from raw nodule	core
ON-SITE	1 Preparation											
	2A Blank Production											
	2B Correction											
	3 Modification											
Discard	 O-7	 П-5	 H-8	 O-7	 H-7	 -	 П-4	 O-4	 O-4			
Export ←												
	Cw	Cw	Cw	Nw	Nw	Nw	Ei	Ei	Np	Np	Cb	

Fig. 4-6 Kabazi II, level II/7AB: transformation analysis (continued).

were not broken were two convergent scrapers, one point, and three simple side scrapers (Fig. 4-5: RMU 1, 2, 24, 39, 41, 42). The imported blanks (Bw) consist of two conspicuous pieces: one Levallois blade and one Levallois point, besides three simple flakes with use retouch (Fig. 4-5: RMU 6, 7, 23, 38, 40). The cores (Cw) are residual cores: two blade cores and one Levallois core, which were discarded after having become too small for blank production (Fig. 4-6: RMU 16, 30, 32). The three pieces assigned to the category Nw are chunks from raw pieces, which were discarded without preparation on-site (Fig. 4-6: RMU 17, 27, 33).

The category Ei describes a tool which broke during usage on-site, and the subsequent discard of one part of this artefact. The two simple side scrapers from RMU 4 and RMU 31 are attributed to this category (Fig. 4-6: RMU 4, 31).

The category Np occurs twice in level II/7AB. In RMU 28 and RMU 29 two chunks from raw pieces were brought to the site (Fig. 4-6: RMU 28, 29).

These were discarded, probably due to them not being useful for blank production owing to the bad quality of the raw material. Four pieces in RMU 29 were refitted.

The category Cb is recorded in six raw material units in level II/7AB. This section involves the import of a core and the production of blanks. In three cases the core was re-exported following blank production (Fig. 4-6: RMU 3; Fig. 4-7: RMU 8, 21, 26). In RMU 11 and RMU 22 a residual core was discarded and target flakes probably removed from the site. There is some evidence for the application of the Levallois method (Fig. 4-7: RMU 8, 22).

Six workpieces fall into transformation section Nb. Here a raw nodule was brought to the site, and a core produced from which blanks were detached. In most cases the raw material was of poor quality. In RMU 14, 19 and RMU 35 the prepared cores had broken in the course of flaking, and discarded prior to the production of target flakes (Fig. 4-8: RMU 14, 19, 35). The core from RMU 12 was also broken








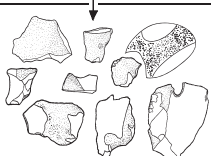
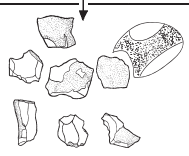
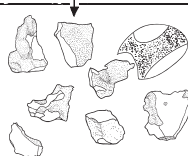
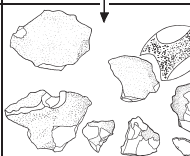
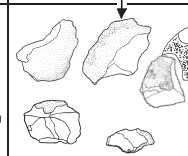
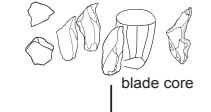




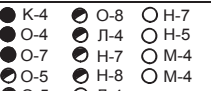

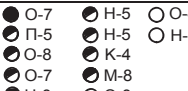
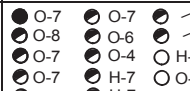
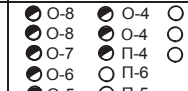





	RMU	13	14	19	35	12
OFF-SITE	0 Import ➔	 raw nodule	 raw nodule	 raw nodule	 raw nodule	 raw nodule
	1 Preparation					
ON-SITE	2A Blank Production	 blade core	 core broken	 core broken	 core broken	 target flake from broken Levallois core
	2B Correction					
	3 Modification					
	Discard	 <ul style="list-style-type: none"> <li>● K-4   ● O-8   ○ H-7</li> <li>● O-4   ● П-4   ○ H-5</li> <li>● O-7   ● H-7   ○ M-4</li> <li>● O-5   ● H-8   ○ M-4</li> <li>● O-5   ○ П-4</li> </ul>	 <ul style="list-style-type: none"> <li>● H-8   ● H-4   ○ M-4</li> <li>● П-4   ● O-8   ○ K-4</li> <li>● O-5   ● M-4   ○ П-4</li> <li>● H-8   ● M<sub>П-4</sub>   ○ П-4</li> <li>● H-6   ○ H-8</li> </ul>	 <ul style="list-style-type: none"> <li>● O-7   ● H-5   ○ O-4</li> <li>● П-5   ● H-5   ○ H-8</li> <li>● O-8   ● K-4</li> <li>● O-7   ● M-8</li> <li>● H-8   ○ O-8</li> </ul>	 <ul style="list-style-type: none"> <li>● O-7   ● O-7   ● -</li> <li>● O-8   ● O-6   ● -</li> <li>● O-7   ● O-4   ○ H-7</li> <li>● O-7   ● H-7   ○ O-6</li> <li>● O-7   ● H-7</li> </ul>	 <ul style="list-style-type: none"> <li>● O-8   ● O-4   ○ H-7</li> <li>● O-8   ● O-4   ○ O-6</li> <li>● O-7   ● П-4   ○ O-7</li> <li>● O-6   ● П-6</li> <li>● O-5   ○ П-5</li> </ul>
	Export ←	 Nb	 Nb	 Nb	 Nb	 Nb

Fig. 4-8 Kabazi II, level II/7AB: transformation analysis (continued).

In general, three different reduction sequences (*chaîne opératoire*) can be reconstructed for level II/7AB:

1. Single pieces (Bw, Tw, Cw, Ei; n=16)
  - Off-site: production, preparation and modification of carefully produced tools, blanks, residual cores made of exotic raw materials (n=16)
  - On-site: discard of imported single pieces, partially after usage
2. Import of cores (Cb, Cm; n=9)
  - Off-site: extraction and decortication of raw nodules, preparation of cores
  - On-site: blank production (n=9)
  - On-site: modification of tools for usage on-site (n=3)
  - On-site: discard of residual cores (n=3), broken tools (n=3) and simple flakes
  - Off-site: export of cores (n=6) and probably target flakes
3. Import of raw pieces (Nw, Np, Nb, Nm; n=17)
  - Off-site: extraction of raw nodule
  - On-site: discard of raw material of poor quality (Nw, Np; n=5); decortication of nodule, initial shaping of core (Nb, Nm; n=12)
  - On-site: preparation of cores, followed by the discard of poor quality raw materials (Nb; n=5); production of target flakes from raw material of good quality (Nb, Nm; n=7)
  - On-site: modification of tools for usage on-site (Nm; n=6)
  - On-site: discard of blanks, residual cores (n=4) and broken tools (n=6)
  - Off-site: export of cores (n=3) and probably target flakes and prepared cores







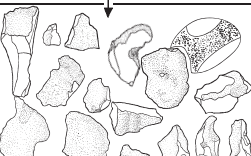











	RMU	18	5	20	25	10	
OFF-SITE	0 Import ➔	 raw nodule	 core	 core	 core	 raw nodule	
	1 Preparation						
ON-SITE	2A Blank Production	 core broken					 Levallois core
	2B Correction						
	3 Modification		 notch	 denticulate	 side scraper	 side scraper	
	Discard	● O-6 ● O-5 ● П-5 ● П-4 ○ H-6	● П-4 ● M-4 ● O-8 ● O-7 ● H-7 ○ O-6 ○ H-8	● O-5 ○ П-5 ○ O-6 ○ O-6 ○ O-6	● H-5 ● O-6 ● O-6 ● П-4 ● Л-5 ○ O-7 ○ O-6 ○ O-6 ○ H-8 ○ П-4	● M-5 ● O-8 ● O-7 ● O-7 ● O-4 ● O-4 ● O-4 ● O-4 ● O-5 ● O-4 ● H-7 ● O-7 ● O-4 ● O-8 ● O-4 ● H-5 ● O-6 ● O-6 ● O-8 ● O-4 ● O-6 ● O-8 ● O-4	
	Export ←		 core	 core	 Levallois flakes	 core	
		<b>Nb</b>	<b>Cm</b>	<b>Cm</b>	<b>Cm</b>	<b>Nm</b>	

Fig. 4-9 Kabazi II, level II/7AB: transformation analysis (continued).

In 17 transformation sections a raw nodule was imported, and sometimes the import of a large raw piece can be presumed. Furthermore, there are nine core-sections. This suggests that the humans responsible for the assemblage from level II/7AB had previously visited a flint outcrop in the vicinity of Kabazi II. The main part of the raw material is of a dark, middle or light grey colour and would appear to have been collected from local outcrops near Kabazi II, either from the Alma or Bodrak valley (Chabai, Marks, Monigal 1999, p. 228). One part of the local raw material is of a relatively good quality, suitable for blank production. Nevertheless, many raw nodules also display clefing surfaces or inclusions which led to their ultimate discard.

The assemblage encompasses a total of 19 single pieces. Generally, these comprise carefully modified formal tools or Levallois primary flakes, often from exotic coloured raw material. These single pieces appear to derive from non-local raw material sources.

It seems that the humans who visited this site remained only for a very short period. During this time they imported blanks and tools, which had been produced elsewhere, and prepared cores from pieces of raw material procured from local outcrops. Additionally, some simple blanks and tools were made for usage on-site, and cores prepared and target flakes detached for export and for use elsewhere.

	RMU	34	36	15	37	9
OFF-SITE	0 Import ➔	raw nodule	raw nodule	raw nodule	raw nodule	raw nodule
	1 Preparation					
ON-SITE	2A Blank Production					
	2B Correction					
	3 Modification					
Discard	<ul style="list-style-type: none"> <li>● O-8 ● O-6 ● M-5</li> <li>● O-7 ● П-4 ● O-7</li> <li>● O-7 ● O-7 ● O-7</li> <li>● H-7 ● H-8 ● M-4</li> <li>● O-5 ● H-7</li> </ul>	<ul style="list-style-type: none"> <li>● O-7 ● —</li> <li>● M-4 ● —</li> <li>● O-4 ● П-4</li> <li>● H-8 ● П-4</li> <li>● Л-4 ● Л-4</li> </ul>	<ul style="list-style-type: none"> <li>● O-7 ● M-4 ● П-4 ● П-4</li> <li>● П-4 ● O-4 ● O-8</li> <li>● П-5 ● O-7 ● O-7</li> <li>● П-5 ● H-7 ● П-5</li> <li>● П-6 ● H-8 ● O-7</li> <li>● M-5 ● П-5 ● O-6</li> </ul>	<ul style="list-style-type: none"> <li>● П-7 ● H-5 ● П-6 ● O-8</li> <li>● O-8 ● O-4 ● O-8 ● O-5</li> <li>● O-8 ● O-8 ● O-7</li> <li>● O-7 ● П-4 ● O-8</li> <li>● M-4 ● П-4 ● O-7</li> </ul>	<ul style="list-style-type: none"> <li>● O-4 ● H-4 ● H-8 ● O-6 ● П-5</li> <li>● O-5 ● H-4 ● O-8 ● O-7 ● M-5</li> <li>● O-6 ● H-5 ● П-4 ● O-7 ● H-5</li> <li>● O-6 ● H-6 ● П-5 ● O-8 ● H-8</li> <li>● O-7 ● M-4 ● — ● H-8 ● O-6</li> <li>● O-7 ● M-4 ● O-5 ● H-8 ● O-4</li> </ul>	
Export ←						
	Nm	Nm	Nm	Nm	Nm	

Fig. 4-10 Kabazi II, level II/7AB: transformation analysis (continued).

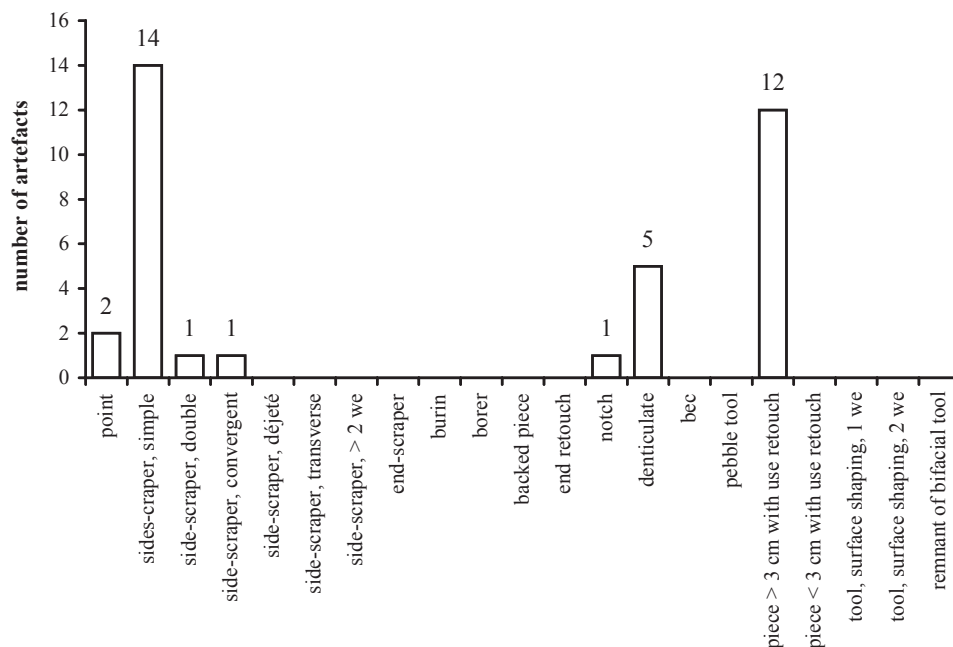


Fig. 4-11 Kabazi II, level II/7AB: frequency of tools (artefacts featuring use-retouch are not counted as formal tools).

	8	7	6	5	4
Е					
Ж					
З					
И					
К					6
Л				9	16
М	2			8	17
Н	20	19	7	9	6
О	26	63	31	21	22
П		4	10	22	30
Р					

Fig. 4-12 Kabazi II, level II/7AB. Artefact distribution.

## TECHNOLOGY AND DISTRIBUTION OF ARTEFACTS

In level II/7AB direct hard hammer percussion was used, and there is no evidence of surface shaping. The Levallois method was often employed. In nine raw material units there is evidence of the Levallois technique (after Boëda 1994), including six workpieces and three single pieces. Five RMUs comprise artefacts which show that blade reduction sequences were also known. The number of 25 formal tools is not very high. The majority of tools are simple side-scrapers (n=16), as well as some convergent side-scrapers, points, denticulates and notches (Fig. 4-11). Eleven simple blanks were probably used without modification, though these show traces of use re-touch. The flaking technologies employed and the repertoire of formal tools show that this inventory should be assigned to the Western Crimean Mousterian, without bifacial tools, mainly simple side-scrapers and some points and denticulates (Chabai 2000, p. 196).

The assemblage also contains eleven pebbles,

three of which have been identified as hammerstones (after Hahn 1991, p. 237), and three as retouchers (Hahn 1991, p. 301). The remaining five pieces are chunks.

The artefacts from level II/7AB were found in one coherent zone in the southern part of the excavated area. One main concentration, featuring 63 artefacts, was situated in the square O7. This represents the central zone of flaking activity. All artefacts were encountered within a radius reaching up to squares П7-4, O8-4, H8-4, M8, M5-4, Л5-4 and K-4 (Fig. 4-12). The squares at the edge of the concentration M7-6 and Л8-6 are among those destroyed by local "amateurs" (Chabai 1998b, p. 179). Even if we take into account the fact that some artefacts are absent owing to this destruction, this does not detract from the results of the transformation analysis, i.e. that the three regular reduction sequences prevail: the reduction of 1) single pieces, 2) imported cores; and 3) imported raw pieces.

## FAUNAL REMAINS

An analysis by M. Patou-Mathis (Chapter 2, this volume) shows that the main part of the identified bones stem from *Equus hydruntinus*. The number and presumed ages of the eleven to 16 animals, are typical for a family group of *Equus hydruntinus* which was probably hunted in the summer months. The animals were butchered at the site of Kabazi II, and the nutritious parts removed from the site. The analysis of the faunal remains, together with the results from the transformation analysis, suggest that

a group of Neanderthals used the site as a butchery station. Moreover, they procured flint from a nearby outcrop, and produced blanks and tools for butchering activities. After a short-time stay they left the site, leaving behind broken artefacts, a number of reduced residual cores and those imported artefacts no longer of any use to them. On the other hand, newly produced cores and target flakes were removed from the site, together with nutritious parts of the *Equus hydruntinus*.

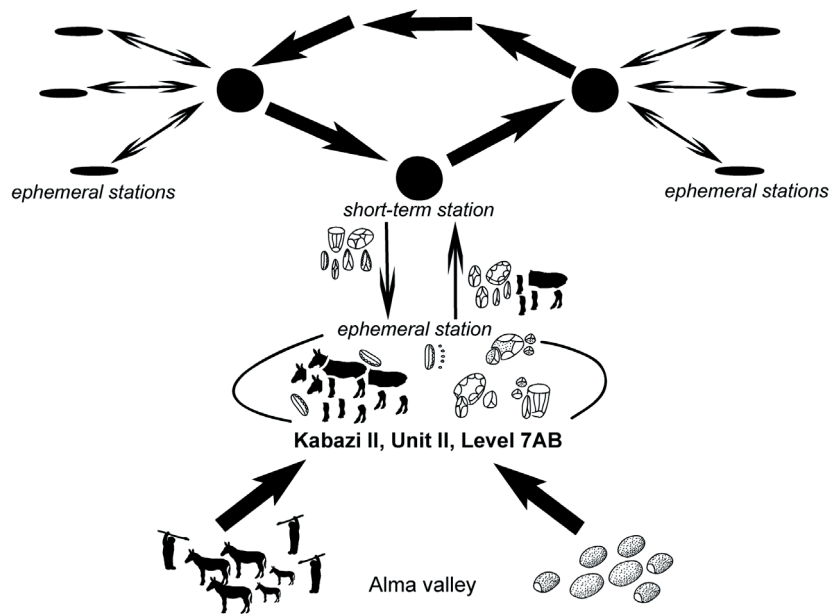


Fig. 4-13 Kabazi II, unit II, level 7AB: land use pattern.

## RESULTS

The land use patterns and the mobility of Palaeolithic groups in their natural environment is influenced by subsistence strategies. Of great importance to the humans was the procurement of such resources as food, and raw material for the production of flint artefacts (Zimmermann et al. 2005, p. 46). The Middle Palaeolithic sites of the Crimea are characterised by a complex system of mobile human groups with camp sites, both ephemeral and short-term stations (Chapter 18, this volume), serving different functions.

Additionally, level II/7AB at Kabazi II highlights a section of hunting and raw material procurement strategies. A group of Neanderthals came to the site,

carrying with them a small number of well produced formal tools, blanks and some cores. However, the usage of local outcrops is also attested in the inventory. Some raw pieces of poor quality were discarded on-site after primary flaking. Thus, it may be assumed that these pieces were neither prepared nor tested at the outcrop, probably owing to the short distance separating this from the site of Kabazi II. The butchered family group of *Equus hydruntinus* found at the site is suggestive of a hunting event which would have taken place near the site. There are no indications that a longer stay was planned at Kabazi II, II/7AB, there being no such features as habitation structures (Chapter 1, this volume).

It seems that the typical ephemeral station Kabazi II was visited because of the nearby resources: The Alma valley is situated on the migration routes of animal herds, which would have passed the river valleys to proceed from the higher mountainous regions to the lower steppe region (Chabai, Marks, Monigal 1999, p. 231). The outcrop at Mt. Milnaya, which is situated only some hundred metres from Kabazi II, would have been accessible to humans since the Hengelo Interstadial (Chabai, Marks, Monigal 1999, p. 228). The export of nutritious parts of hunted *Equus hydruntinus* and

target flakes and cores produced on-site suggest the existence of a camp site where the selected meat taken from Kabazi II was consumed and the exported artefacts used (Fig 4-13). This resembles the function of the category of short-term camps, as proposed by V. Chabai (Chabai 2004c, 302-303). The abandonment of old, and the movement to new camp sites, together with the proposed landscape patterns of the Crimea resulted from the functional and seasonal subsistence and mobility strategies of the humans groups involved (Uthmeier 2004c).

## ABSTRACT

# КАБАЗИ II, ГОРИЗОНТ II/7AB: ОБЕСПЕЧЕНИЕ РЕСУРСАМИ – ОХОТА И СЫРЬЕ ДЛЯ АРТЕФАКТОВ

И. КРЕЩМЕР

Кремневые артефакты и фаунистические находки горизонта II/7AB датируются в диапазоне от  $38 \pm 0,4$  до  $36 \pm 0,3$  тыс. лет назад. Найдены горизонты II/7AB составляют 944 кремневых артефакта, 11 галек и 2202 фрагмента костей животных. Кремневый инвентарь относится к западнокрымскому мустье. Основная часть артефактов – отщепы, 25 изделий отнесенных к орудиям, представлены, в основном, простыми скреблами. Технология расщепления основана на использовании твердого отбойника для раскалывания леваллуазских и объемных нуклеусов. Выходы кремневого сырья находились неподалеку от стоянки. На стоянку были принесены блоки сырья, подготовленные на мастерской нуклеусы и орудия. После расщепления нуклеусов и блоков сырья был получен дополнительный инвентарь. Часть артефактов была оставлена на стоянке, тогда как другая часть унесена для дальнейшего использования. Кремневый инвентарь связан с охотничьим эпизодом по разделке туш гидрунтинусов. Анализ кремневых артефактов и фаунистического материала указывает на кратковременный характер обитания гоминид на стоянке.

