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KABAZI V: INTERSTRATIFICATION OF MICOQUIAN & LEVALLOIS-MOUSTERIAN CAMP SITES

Edited by
Victor Chabai, Jürgen Richter and Thorsten Uthmeier

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Chapter 8

Kabazi V, Sub-Unit III/2: The Ak-Kaya Facie of the Crimean Micoquian

Victor P. Chabai

In Kabazi V, sub-unit III/2 (levels III/2 and III/2A) artefact assemblages are not as numerous as in the uppermost occupations. Whereas in level III/2 a total of 10,671 pieces were discovered, in level III/2A the assemblage comprises 2,806 items. Artefact densities are, however, high – 1,285.7 items per m³ in level III/2, and 666.6 items per m³ of cultural bearing deposits in level III/2A. As such, these layers are among the most dense of the Crimean Middle Palaeolithic so far, and are comparable with the situation, for example, at Zaskalnaya V, layers I-VI; Zaskalnaya VI, layers II-V; Buran Kaya III, layer B; Kiik Koba, upper level; and Chokurcha I, Unit IV (Chabai 2004c, pp. 226, 230-232; Chabai, Uthmeier 2006, pp. 323, 327, 332). On the basis of depositional characteristics and archaeozoological studies, it can be stated that both sub-unit III/2 levels are palimpsests (Chabai, Patou-Mathis 2006; Chapter 6, this volume), however not as intensive as observed in the uppermost occupations.

Artefact Assemblage Composition

Artefacts are made of both flint and bone (Table 8-1). Bone artefacts were found in level III/2 and comprise three retouchers on bone tube fragments. As usual, the majority of artefacts are flint chips, although flakes dominate the artefact assemblage in the essential count (Table 8-1). The percentage of tools corresponds to the lowest range for Crimean Middle Palaeolithic assemblages, and is comparable with the assemblages recovered from Kabazi II, Unit II as well as Zaskalnaya V and Zaskalnaya VI. Altogether the core-like pieces (cores and preforms of cores and/or bifacial tools) compose just over 1% of the artefact assemblage. In level III/2 the ratio of blanks to core-like pieces lies at 35.7:1, and in level III/2A at 73:1. The former ratio is close to the same calculated for Zaskalnaya V, layers I and II, and Zaskalnaya VI, layers II and III, while the latter resembles those calculated for Zaskalnaya V, layers IV and V (Chabai 2004c, pp. 226; Chabai, Uthmeier 2006, pp. 323). However, if only the real cores are considered in these calculations, the ratio observed for level III/2 increases to 339:1. Such a ratio might imply a complete, or nearly complete, absence of on-site core reduction processes. On the other hand, the high percentage of debitage does suggest some kind of knapping activity.

Chunks

Chunks are unmodified pieces of flint plaquettes. In the sub-unit III/2 flint assemblage, eleven (10 from level III/2 and 1 from level III/2A) of 58 chunks are large enough (max. dimension > 5 cm) to be interpreted as representative of a raw material reserve. Chunks vary in length from about 10 to 1.5 cm, they are between 6.5 and 1 cm wide, and are 4 to 0.5 cm thick. Most chunks are breakage from flint plaquettes. The majority of chunks (35 of 58 items) is 1-2 cm thick, a thickness which is also "standard" among bifacial tools in Crimean Micoquian assemblages.

Probably, most chunks were transported to the site for further modification into bifacial tools. During the knapping process chunks were broken and / or modified into either bifacial tools preforms or pre-cores.

Bifacial Preform or Pre-Core / Core Fragments

Artefacts which might be interpreted as either bifacial preforms or core preforms were found in level III/2 (Table 8-1). These fragments are – on average – 43.94 mm long, 34.69 wide, and 18.87 mm thick. On the basis of such features as scars and the presence/absence of striking platforms it proves extremely difficult to establish whether these fragments stem from preforms of bifacial tools, pre-cores or cores fragments. Also, some fragments may have resulted from bifacial tool reshaping. Nevertheless, the average thickness of this category of artefacts falls within the range of bifacial tools thicknesses common as is for Crimean Micoquian. Seven of eleven fragments are between 1 and 2 cm thick.

Cores

There are two cores in the level III/2 assemblage, a complete Levallois Tortoise core (Fig. 8-1) and a broken radial core. Both cores, even in their fragmented state, are relatively large, they measuring in excess of 70 mm in length, >50 mm wide, and >20 mm thick. The biggest negatives observed on their flaking surfaces are >55 mm long and >37 mm wide. Cores are relatively rare in Crimean Micoquian assemblages, and especially rare are Levallois Tortoise cores. The Levallois Tortoise cores discovered at Zaskalnaya V, in layers II and III, and at Zaskalnaya VI, in layers II, III and IV, were all identified as WCM contributions to the Micoquian palimpsests of these layers (Chabai 2004c, p. 76-79). On the other hand, all the above mentioned Micoquian assemblages contain some Levallois blanks, *débordantes*, crested blades and other attributes of WCM. However, this is not the case of Kabazi V, level III/2, where the Levallois Tortoise core is the only representative of the Levallois-Mousterian techno-complex.

Preforms of Bifacial Tools

A total of six bifacial tool preforms were found in level III/2, with one preform discovered in level III/2A. All but one piece was broken. Broken preforms do not exceed 65 mm in maximum length or width; they are between 12 and 23 mm thick. The only complete preform stems from level III/2 and is 158.65 mm long, 86.31 mm wide, and 38.82 mm thick (Fig. 8-2). Both the complete preform and one of the broken preforms were elaborated in a bi-convex manner. All remaining preforms were worked in plano-convex manner. The biggest negatives observed on preform flaking surfaces range in length from 34 to 60 mm, and are between 29 and 71 mm wide. Bifacial tool preforms have been found at most Crimean Micoquian sites; by no means are they rare finds.

Debitage Structure

Debitage comprises the following categories in descending numerical order: chips, flakes, blades, and unidentifiable debitage (Table 8-2). Each of these categories is further subdivided into "regular", bifacial thinning, natural and unidentifiable items. Regular blanks among flakes and blades are the most numerous. Unidentifiable items are most numerous among chips. In level III/2, chips and bifacial thinning

	Level III/2			Level III/2A		
Flint Artefacts	#	%	esse %	#	%	esse %
Chips, <2.99 cm	9,885	92.67	·	2,719	97.00	·
Chunks	50	0.46	·	8	0.29	·
Preform & Core Fragments	11	0.10	1.50	·	·	·
Cores	2	0.02	0.27	·	·	·
Preforms of Bifacial Tool	6	0.06	0.82	1	0.04	1.32
Flakes	518	4.86	70.77	54	1.93	71.05
Blades	55	0.52	7.51	6	0.21	7.89
Tools	140	1.31	19.13	15	0.53	19.74
Total:	**10,667**	**100.00**	**100.00**	**2,803**	**100.00**	**100.00**
Pebble Artefacts						
Retouchers	1			·		
Bone Artefacts						
Retouchers	3			3		

Table 8-1 Kabazi V, sub-unit III/2: Artefact totals.

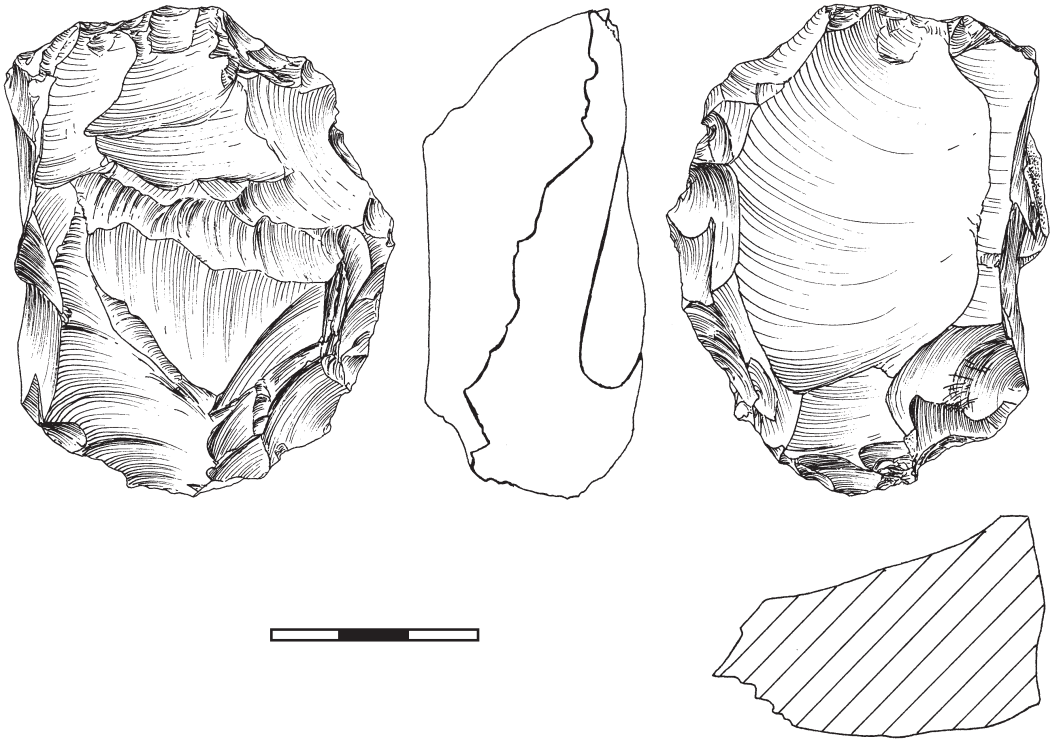

Fig. 8-1 Kabazi V, level III/2. Levallois Tortoise core.

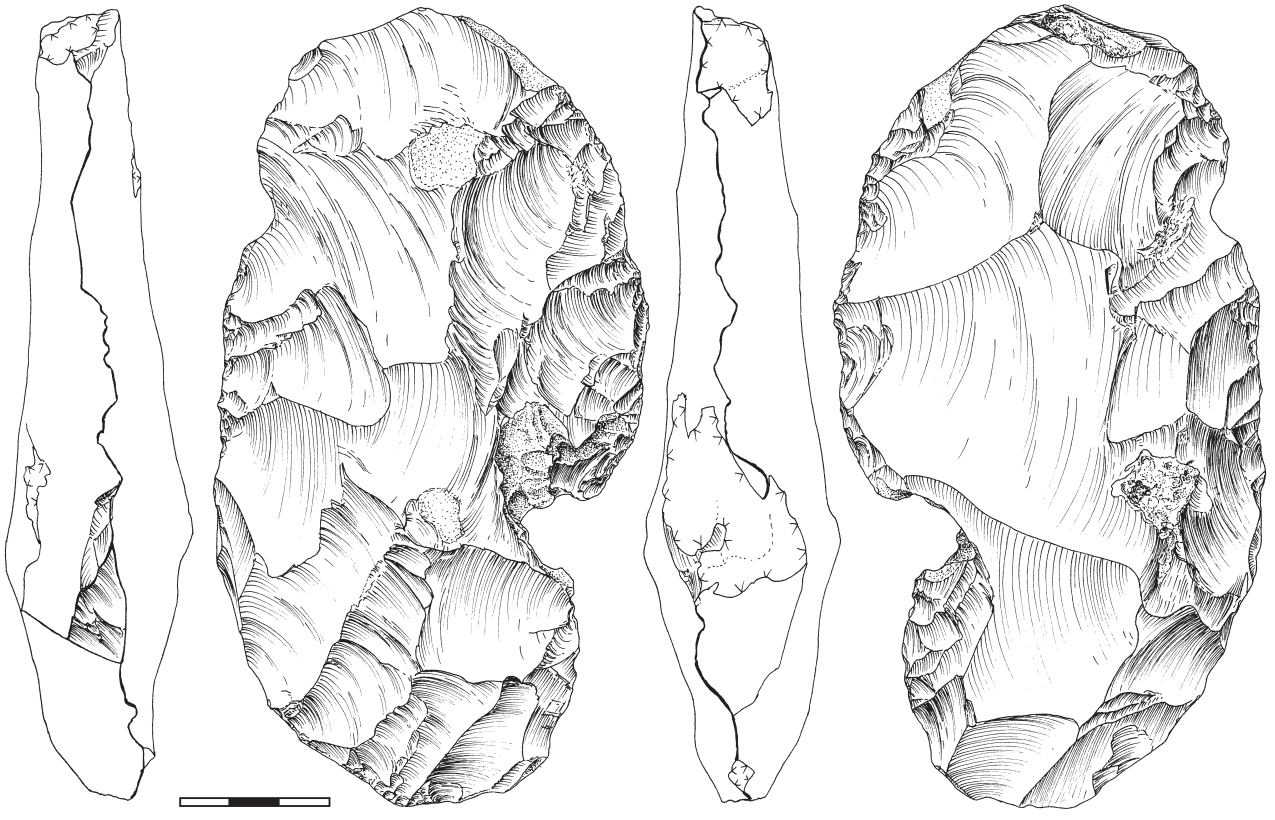

Fig. 8-2 Kabazi V, level III/2. Bifacial tool preform.

debitage comprise 41.39 % (without chips 18.21 %) of all identifiable debitage. The blade index lies at 9.91; however, if chips (>2,0 cm in length) are considered for this same calculation, this value drops to 5.58.

In level III/2A, chips and bifacial thinning debitage comprise 25.38 % (without chips 10.0 %) of all identifiable debitage. The blade index lies at 10.96; however, once again, if chips (>2,0 cm in length) are considered for this same calculation, this value drops to 4.40.

All in all, the debitage from Kabazi V, sub-unit III/2 is characterised by relatively high percentages of bifacial thinning items. In this respect, sub-unit III/2 is comparable with such assemblages as Starosele, Buran Kaya III, B; Kabazi II, Units III, V, VI; and Chokurcha I, IV (Marks, Monigal 1998, Demidenko 2004, Chabai 1998c, 2004b, 2005b).

Chips

Three main groups of chips are distinguished: regular, bifacial thinning chips, bifacial rejuvenating chips, and unidentifiable chips (Table 8-2). Pieces assigned to the latter category lack striking platforms. The chip assemblages from levels III/2 and III/2A are characterised by a high percentage of bifacial thinning and rejuvenating items (44.24 % and 27.19 %, respectively). Even upon exclusion of the smallest metrical category of chips (0.1 – 1.9 cm), a total of 38.76 % (level III/2) and 19.27 % (level III/2A) of chips are still associated with bifacial tool production. At the same time, real rejuvenating chips are not numerous. This might point to the absence of intensive on-site bifacial tool reshaping processes (Demidenko 2003).

Flakes and Blades

The quantitative and qualitative characteristics of blades give no reason to assume a significant role for blades in the sub-unit III/2 assemblage. Not only the aforementioned blade indexes, but also the absence of blade cores, as well as further blade attributes to be mentioned below, clearly imply a mere incidental role of blades in the Kabazi V, sub-unit III/2 assemblage. Six of 42 blades with unbroken butts resulted

		Level III/2			Level III/2A		
		#	%	esse %	#	%	esse %
Chips	"regular", 2.0-2.9 cm	326	3.09	8.87	88	3.15	22.33
	"regular", 0.1-1.9 cm	1,498	14.18	40.77	170	6.09	43.15
	"bifacial thinning", 2.0-2.9 cm	188	1.78	5.12	21	0.75	5.33
	"bifacial thinning", 0.1-1.9 cm	1,240	11.74	33.75	74	2.65	18.78
	"bifacial rejuvenating", 2.0-2.9 cm	2	0.02	0.06	·	·	·
	"bifacial rejuvenating", 0.1-1.9 cm	17	0.16	0.46	1	0.04	0.25
	unidentifiable	6,614	62.59	·	2,365	84.71	·
	unidentifiable, modified in tools, 2.0-2.9 cm	1	0.01	·	·	·	·
Flakes	"regular"	254	2.40	6.91	28	1.00	7.12
	"regular", modified in tools	43	0.41	1.17	5	0.18	1.26
	"bifacial thinning"	63	0.59	1.72	4	0.14	1.02
	"bifacial thinning", modified in tools	4	0.04	0.11	·	·	·
	unidentifiable	198	1.86	·	22	0.79	·
	unidentifiable, modified in tools	34	0.32	·	6	0.21	·
	natural	3	0.03	·	·	·	·
	natural, modified in tools	1	0.01	·	·	·	·
Blades	"regular"	29	0.28	0.79	3	0.11	0.76
	"regular", modified in tools	4	0.04	0.11	·	·	·
	"bifacial thinning"	6	0.06	0.16	·	·	·
	unidentifiable	20	0.19	·	3	0.11	·
	unidentifiable, modified in tools	7	0.07	·	2	0.07	·
	unidentifiable blanks, modified in tools	14	0.13	·	·	·	·
	Total:	**10,566**	**100.00**	**100.00**	**2,792**	**100.00**	**100.00**

Table 8-2 Kabazi V, sub-unit III/2: Composition of blank assemblage

from bifacial tool reshaping, and seven blades from the total number of 74 display bladelet proportions, i.e. are between 7 and 12 mm thick.

Cortex

The majority of blanks is covered by cortex (Table 8-3). Whereas 10-13 % of blanks are completely covered by cortex on their dorsal surfaces, about 30% display less than one quarter coverage. This might be suggestive of intensive reduction of cortex-covered raw material. At the same time, there are, however, relatively few "real primary blanks "(relatively large blanks covered by cortex). In level III/2 non-corticated blanks display max. dimensions of 37.63 mm, while blanks whose dorsal surface display cortex coverage in excess of 76 % reach max. dimensions of 38.89 mm. This observation might be suggestive of either an off-site raw material decortication, or of a special method of on-site raw material flaking. Such a method might include bifacial preform and tool reduction, which would have resulted in a number of non-corticated and corticated small flakes.

On the other hand, there is an observable difference between cortication on "regular" and on

	Flakes, "regular"	Flakes, "bifacial thinning"	Flakes, unidentifiable	Flakes, natural	Blades, "regular"	Blades, "bifacial thinning"	Blades, unidentifiable	#	%	
0 %	87	29	76	1	7	5	11	216	32.43	LEVEL III/2
1-25 %	81	23	61	·	15	·	8	188	28.23	
26-50 %	61	6	37	1	5	1	6	117	17.57	
51-75 %	37	8	26	·	3	·	1	75	11.26	
>76 %	31	1	32	2	3	·	1	70	10.51	
Total:	**297**	**67**	**232**	**4**	**33**	**6**	**27**	**666**	**100.00**	
0 %	8	4	9	·	1	·	4	26	35.62	LEVEL III/2A
1-25 %	14	·	4	·	2	·	1	21	28.77	
26-50 %	2	·	7	·	·	·	·	9	12.33	
51-75 %	5	·	3	·	·	·	·	8	10.95	
>76 %	4	·	5	·	·	·	·	9	12.33	
Total:	**33**	**4**	**28**	**·**	**3**	**·**	**5**	**73**	**100.00**	

Table 8-3 Kabazi V, sub-unit III/2: Cortex, by blank types

"bifacial thinning" blanks. Whereas "regular" blanks display a pattern which is close to the average values (Table 8-3), "bifacial thinning" debitage is characterised by larger ratios of non-corticated blanks (up to 45%) and a smaller percentage of fully corticated blanks (about 1.5%). This observation might be interpreted logically as the difference between blanks from bifacial tools shaping/reshaping, i.e. "bifacial thinning blanks", and blanks from preform/core reduction processes, i.e. "regular blanks". In the level III/2 assemblage, average maximum sizes of blanks are 32.9 mm for bifacial thinning blanks with 51-75% corticated surfaces, and 42.1 mm for "regular" blanks. Thus, "regular" heavily corticated blanks are larger than "bifacial thinning" heavily corticated blanks. Average maximum sizes of non-corticated bifacial thinning and "regular" blanks are roughly equal (36.6 and 34.9 mm, respectively). All this may suggest that, generally speaking, "regular blanks" are not connected with core reduction, but appear to have resulted from bifacial treatment, too.

Patterns of cortex placement on the dorsal surfaces of both "regular" and "bifacial thinning" blanks are very similar, with the exception of non-corticated and completely corticated blanks (Table 8-4). The sum of distal and lateral-distal placements of cortex makes up about a quarter of all "regular", and about one-third on all "bifacial thinning" blanks. Such a high ratio of distally corticated blanks might be explained by the location of cortex on bifacial preform/tool surfaces. Often, whereas the corticated part of a bifacial tool is its central part, edge shaping resulted in numerous distally corticated blanks.

Thus, the pattern of cortex distribution on blank dorsal surfaces, as well as its correlation with blank sizes, suggests a preferential on-site reduction of bifacial preforms/tools, rather than cores.

Dorsal Scar Pattern

As is usual for Crimean Micoquian complexes, the Kabazi V, sub-unit III/2 assemblage is dominated by unidirectional and unidirectional-crossed scar patterns on dorsal negatives (Table 8-5). Between 40 and 58% of each blank group, including both "regular" and "bifacial thinning" blanks, have been identified as belonging to these types. The sum of bidirectional and bidirectional-crossed patterns comprises 12 - 20% in each of the blank groups. The same or about the

	Flakes, "regular"	Flakes, "bifacial thinning"	Flakes, unidentifiable	Flakes, natural	Blades, "regular"	Blades, "bifacial thinning"	Blades, unidentifiable	#	%	
None	87	29	76	1	7	5	11	216	32.43	LEVEL III/2
Proximal	16	3	4	·	1	·	·	24	3.6	
Lateral-Proximal	13	1	3	·	3	·	1	21	3.15	
Central	14	3	17	·	2	·	1	37	5.56	
Lateral	45	5	44	·	10	1	8	113	16.97	
Bilateral	10	2	4	·	·	·	·	16	2.41	
Lateral-distal	34	9	22	1	4	·	2	72	10.81	
Distal	37	13	29	·	3	·	3	85	12.76	
Distal-Proximal	10	1	1	·	·	·	·	12	1.80	
>76 %	31	1	32	2	3	·	1	70	10.51	
Total:	**297**	**67**	**232**	**4**	**33**	**6**	**27**	**666**	**100.00**	
None	8	4	9	·	1	·	4	26	35.61	LEVEL III/2A
Proximal	3	·	·	·	1	·	·	4	5.48	
Lateral-Proximal	1	·	·	·	·	·	·	1	1.37	
Central	·	·	2	·	·	·	·	2	2.74	
Lateral	10	·	3	·	1	·	1	15	20.55	
Bilateral	2	·	3	·	·	·	·	5	6.85	
Lateral-distal	2	·	·	·	·	·	·	2	2.74	
Distal	3	·	6	·	·	·	·	9	12.33	
>76 %	4	·	5	·	·	·	·	9	12.33	
Total:	**33**	**4**	**28**	**·**	**3**	**·**	**5**	**73**	**100.00**	

Table 8-4 Kabazi V, sub-unit III/2: Cortex placement, by blank types.

same distribution of dorsal scar types is common for the Crimean Micoquian, and has been noted at a number of sites (Kolosov 1983, 1986, Chabai 1998c, 1999, 2004b, Marks, Monigal 1998, Yevtushenko 1998b, 2004, Demidenko 2004).

Shapes & Axes

The sum of trapezoidal, trapezoidal elongated and rectangular shapes clearly dominates, comprising from 60% to 80% of identified shapes in each blank group. The exceptions are "bifacial thinning" and "unidentifiable" blades, where these shapes make up just 40% of identified shapes (Table 8-6). At the same time, blades are only available in statistically insufficient numbers. Another characteristic feature with regard to shape is observed among the flakes: "regular", bifacial thinning and unidentifiable flakes tend to display transversal proportions, which were observed in 41.67% of "regular" and 36.36% of "bifacial thinning" flakes. In level III/2 average values for blank length and width dimensions are very similar; "regular" flakes are 34.4 mm long and 32.94 mm wide, and "bifacial thinning" flakes are 31.89 mm long and 29.9 mm wide. In level III/2A average values for blank length and width are as follows: "regular" flakes are 35.8 mm long and 29.3 wide, and "bifacial thinning" flakes are 29.9 mm long and 30.0 mm wide. Hence, "regular" flakes from levels III/2A are slightly more

	Flakes, "regular"	Flakes, "bifacial thinning"	Flakes, unidentifiable	Flakes, natural	Blades, "regular"	Blades, "bifacial thinning"	Blades, unidentifiable	#	%	
Cortex	30	1	32	1	3	·	1	68	10.43	LEVEL III/2
Lateral	13	·	16	·	1	·	·	30	4.60	
Bilateral	5	·	9	·	1	·	·	15	2.30	
Radial	19	11	15	·	1	1	·	47	7.21	
Converging	13	5	5	·	2	1	2	28	4.29	
Unidirectional	91	20	51	3	9	1	6	181	27.76	
Unidirectional-crossed	70	16	45	·	9	3	10	153	23.47	
Bidirectional	26	9	22	·	5	·	3	65	9.97	
Bidirectional-crossed	16	5	23	·	·	·	1	45	6.90	
Crested	8	·	3	·	2	·	4	17	2.61	
Plain (Yanus flake)	3	·	·	·	·	·	·	3	0.46	
Total:	294	67	221	4	33	6	27	652	100.00	
Unidentifiable	3	·	11	·	·	·	·	14	·	
Cortex	4	·	5	·	·	·	·	9	12.5	LEVEL III/2A
Lateral	2	·	·	·	·	·	·	2	2.78	
Bilateral	·	·	2	·	·	·	·	2	2.78	
Radial	1	·	1	·	·	·	1	3	4.17	
Converging	1	·	3	·	·	·	·	4	5.56	
Unidirectional	14	2	5	·	·	·	3	24	33.33	
Unidirectional-crossed	9	·	8	·	1	·	·	18	25.00	
Bidirectional	1	1	3	·	1	·	1	7	9.72	
Bidirectional-crossed	1	1	·	·	·	·	·	2	2.78	
Crested	·	·	·	·	1	·	·	1	1.38	
Total:	33	4	27	·	3		5	72	100.00	
Unidentifiable	·	·	1	·	·	·	·	1		

Table 8-5 Kabazi V, sub-unit III/2: Dorsal scar pattern, by blank types.

elongated than "regular" flakes from level III/2, while the average sizes and proportions of bifacial thinning flakes from both levels are almost identical.

There are slightly more off-axis than on-axes blanks in all groups of debitage (Table 8-7). Thus, both "regular" and "bifacial thinning" flakes are short, wide, either trapezoidal or rectangular, sometimes on-axes, and sometimes off-axes. Such characteristics of debitage are considered rather more common for bifacial flaking than for core reduction.

Blank Profiles and Cross-Sections

Incurvate profiles are clearly dominant (Table 8-8), with twisted, incurvate medial, and distal types making up 80 – 85 % of profiles in all blade groups. Among the flake groups, these aforementioned profiles are, however, more characteristic for "bifacial thinning" flakes (about 75 %) than for "regular" flakes (54.55 – 60.78 %).

The feathering type of distal extremity dominates (Table 8-9). Also, the percentages of all

	Flakes, "regular"	Flakes, "bifacial thinning"	Flakes, unidentifiable	Flakes, natural	Blades, "regular"	Blades, "bifacial thinning"	Blades, unidentifiable	#	%	
Rectangular	76	20	34	2	16	2	5	155	29.52	LEVEL III/2
Triangular	15	3	7	·	2	·	1	28	5.33	
Trapezoidal	74	24	44	·	·	·	·	142	27.05	
Trapezoidal elongated	30	10	8	·	6	1	4	59	11.24	
Ovoid	13	2	5	1	1	·	·	22	4.19	
Leaf-shaped	8	·	4	·	1	3	5	21	4.00	
Crescent	4	1	10	·	4	·	4	23	4.38	
Irregular	40	3	25	·	3	·	4	75	14.29	
Total:	**260**	**63**	**137**	**3**	**33**	**6**	**23**	**525**	**100.00**	
Unidentifiable	37	4	95	1	·	·	4	141		
Rectangular	7	1	3	·	·	·	3	14	24.14	LEVEL III/2A
Triangular	2	·	·	·	·	·	·	2	3.45	
Trapezoidal	7	2	4	·	·	·	·	13	22.41	
Trapezoidal elongated	8	·	5	·	2	·	·	15	25.86	
Ovoid	2	·	2	·	·	·	·	4	6.90	
Leaf-shaped	·	·	1	·	·	·	·	1	1.72	
Crescent	1	1	1	·	1	·	1	5	8.62	
Irregular	2	·	1	·	·	·	1	4	6.90	
Total:	**29**	**4**	**17**	·	**3**	·	**5**	**58**	**100.00**	
Unidentifiable	4	·	11	·	·	·	·	15		

Table 8-6 Kabazi V, sub-unit III/2: Shapes, by blank types.

"worthless" distal ends, e.g. hinged, overpassed and blunt types, reach very high values in each of the blank groups; among "regular" flakes these values reach 42.86 – 57.94 %, among "bifacial thinning" flakes about 40 %, among "unidentifiable" flakes 33.33 – 40.09 %, and among blades 35 %. Thus, all the above types must be considered "problematic" regarding the production of tools; it should be noted that these comprise between 40 and 57 % of all blanks.

Regarding mid-point cross-sections, trapezoidal and triangular types are the most common in practically all debitage groups (Table 8-10).

Thus, blanks profiles are not of immense quality, most being incurvate in one way or another, and often with blunt and hinged distal ends. Obviously, these are not "desired" characteristics for a blank assemblage. In other words, the quality of these blanks is very low.

	Flakes, "regular"	Flakes, "bifacial thinning"	Flakes, unidentifiable	Flakes, natural	Blades, regular	Blades, "bifacial thinning"	Blades, unidentifiable	#	%	
On-axis	133	28	74	·	19	6	14	274	49.10	LEVEL III/2
Off-axis	144	36	77	·	14	·	13	284	50.90	
Total:	**277**	**64**	**151**	·	**33**	**6**	**27**	**558**	**100.00**	
Unidentifiable	20	3	81	4	·	·	·	108		
On-axis	12	2	8	·	3	·	2	27	46.55	LEVEL III/2A
Off-axis	17	2	9	·	·	·	3	31	53.45	
Total:	**29**	**4**	**17**		**3**		**5**	**58**	**100.00**	
Unidentifiable	4	·	11	·	·	·	·	15		

Table 8-7 Kabazi V, sub-unit III/2: Axes, by blank types.

	Flakes, "regular"	Flakes, "bifacial thinning"	Flakes, unidentifiable	Flakes, natural	Blades, regular	Blades, "bifacial thinning"	Blades, unidentifiable	#	%	
Flat	77	14	51	·	6	2	4	154	24.37	LEVEL III/2
Incurvate medial	93	21	43	·	10	4	8	179	28.32	
Incurvate distal	33	14	29	·	6	·	1	83	13.13	
Twisted	49	14	55	·	11	·	14	143	22.63	
Convex	36	3	30	4	·	·	·	73	11.55	
Total:	**288**	**66**	**208**	**4**	**33**	**6**	**27**	**632**	**100.00**	
Unidentifiable	9	1	24	·	·	·	·	34	·	
Flat	11	·	5	·	1	·	2	19	26.40	LEVEL III/2A
Incurvate medial	11	·	10	·	·	·	2	23	31.94	
Incurvate distal	4	·	2	·	·	·	·	6	8.33	
Twisted	3	3	8	·	2	·	1	17	23.61	
Convex	4	1	2	·	·	·	·	7	9.72	
Total:	**33**	**4**	**27**	·	**3**	·	**5**	**72**	**100.00**	
Unidentifiable	·	·	1	·	·	·	·	1		

Table 8-8 Kabazi V, sub-unit III/2: Lateral profiles, by blank types.

	Flakes, "regular"	Flakes, "bifacial thinning"	Flakes, unidentifiable	Flakes, natural	Blades, "regular"	Blades, "bifacial thinning"	Blades, unidentifiable	#	%	
Feathering	98	32	80	1	14	5	10	240	46.07	LEVEL III/2
Hinged	76	17	49	1	5	·	3	151	28.98	
Overpassed	·	2	5	·	2	·	·	9	1.73	
Blunt	59	6	39	·	11	1	5	121	23.22	
Total:	**233**	**57**	**173**	**2**	**32**	**6**	**18**	**521**	**100.00**	
Retouched	18	1	9	·	·	·	3	31	·	
Missing	46	9	50	2	1	·	6	114	·	
Feathering	12	4	12	·	1	·	3	32	65.31	LEVEL III/2A
Hinged	3	·	1	·	·	·	·	4	8.16	
Blunt	6	·	5	·	1	·	1	13	26.53	
Total:	**21**	**4**	**18**	**·**	**2**	**·**	**4**	**49**	**100.00**	
Retouched	3	·	4	·	·	·	1	8	·	
Missing	9	·	6	·	1	·	·	16	·	

Table 8-9 Kabazi V, sub-unit III/2: Distal end profiles, by blank types.

Platform Preparation

Plain platforms are the most frequent among all groups of blanks, followed by dihedral and polyhedral types (Table 8-11). Faceted platforms are not numerous. For the sum of all blanks, faceting indexes are: Ifl=52.51 and Ifs=14.57 for level III/2; and Ifl=37.50 and Ifs=20.00 for level III/2A. As usual, these same indexes are somewhat higher for "bifacial thinning" blanks (Ifl=62.33; Ifs=16.88), and slightly smaller for "regular blanks" (Ifl=39.4 – 49.32; Ifs=14.73 – 21.21).

Average platform sizes on "regular" flakes from level III/2 are: width – 13.98 mm, and thickness – 4.64 mm. Average sizes of platforms on "bifacial thinning" flakes are somewhat smaller: width – 11.49 mm, and thickness – 3.27 mm. All types of platforms on "bifacial thinning" flakes are smaller than those on "regular" flakes, with one exception: the average width of faceted platforms on "regular" flakes is 15.62 mm, but on "bifacial thinning" flakes 15.84 mm. Nevertheless, the faceted platforms on the "regular" flakes are still much larger (7.80 mm) than those on "bifacial thinning" flakes (5.23 mm). In any case, faceted platforms are the largest platform type found on "bifacial thinning" flakes. The largest platforms among "regular" flakes are the polyhedral type, with an average width of 20.28 mm, and an average thickness of 7.79 mm. The smallest platform type on "bifacial thinning" flakes is the plain platform, with an average width of 7.26 mm and an average thickness of 1.86 mm. These same platforms on "regular" flakes are much bigger, they having an average width of 11.46 mm and an average thickness of 7.26 mm.

All the aforementioned variations of platform types and sizes among both "regular" and "bifacial thinning" blanks differ from observations made for blanks from core reduction (Chapter 14, this volume).

Whereas semi-lipped platforms prevail among the "regular" blanks, lipped platforms dominate bifacial thinning blank assemblages (Table 8-12). Also, about a quarter of "regular" blanks display pronounced lipped platforms.

Obtuse platforms make up more than half of all identifiable platforms (Table 8-13). On the other hand, "regular" blanks demonstrate some dominance of right angle platforms.

	Flakes, "regular"	Flakes, "bifacial thinning"	Flakes, unidentifiable	Flakes, natural	Blades, "regular"	Blades, "bifacial thinning"	Blades, unidentifiable	#	%	
Flat	11	1	2	·	·	·	·	14	2.25	LEVEL III/2
Triangular	92	20	77	1	12	3	12	217	34.89	
Lateral steep	23	·	20	2	9	·	4	58	9.33	
Trapezoidal	96	30	48	·	7	3	7	191	30.71	
Polyhedral	18	13	10	·	2	·	3	46	7.39	
Convex	23	3	26	·	2	·	·	54	8.68	
Irregular	20	·	19	1	1	·	1	42	6.75	
Total:	**283**	**67**	**202**	**4**	**33**	**6**	**27**	**622**	**100.00**	
Unidentifiable	14	·	30	·	·	·	·	44	·	
Flat	1	·	·	·	·	·	·	1	1.49	LEVEL III/2A
Triangular	10	2	4	·	1	·	4	21	31.35	
Lateral steep	2	·	1	·	1	·	·	4	5.97	
Trapezoidal	12	1	12	·	1	·	1	27	40.30	
Polyhedral	·	1	·	·	·	·	·	1	1.49	
Convex	5	·	4	·	·	·	·	9	13.43	
Irregular	3	·	1	·	·	·	·	4	5.97	
Total:	**33**	**4**	**22**		**3**		**5**	**67**	**100.00**	
Unidentifiable	·	·	6	·	·	·	·	6	·	

Table 8-10 Kabazi V, sub-unit III/2: Cross-sections, by blank types.

All in all, common characteristics of blank platforms might be summarised in following terms: in general, blank platforms from sub-unit III/2 are narrow, thin, lipped or semi-lipped, and display mainly an obtuse angle. Such characteristics are consistent with the assumption that we are dealing with an on-site bifacial tool production rather than core reduction.

Blank Dimensions

Being more statistically complete, blank dimensions were studied for the sub-unit III/2 assemblage as a whole. On average "regular" flakes are 34.38 mm long and 33.03 mm wide. "Bifacial thinning" flakes appear slightly smaller, being 31.89 mm long and 30.68 mm wide. Also, average thickness is higher among "regular" flakes (5.54 mm) than for "bifacial thinning" flakes (4.15 mm). By definition, both "regular" and "bifacial thinning" blades are longer (48.96 mm versus 40.56 mm), but narrower (20.12 mm versus 16.83 mm), than flakes. The average thickness of "regular" blades (5.63 mm) is about the same as that observed among "regular" flakes. However, the average thickness of bifacial thinning blades (2.97 mm) is much smaller than of any flake or blade. Thus, bifacial debitage is smaller than "regular" debitage; indeed, the same was suggested above on the basis of the average sizes of "bifacial" and "regular" blank platforms.

	Flakes, "regular"	Flakes, "bifacial thinning"	Flakes, unidentifiable	Flakes, natural	Blades, "regular"	Blades, "bifacial thinning"	Blades, unidentifiable	#	%	
Cortex	22	·	·	·	1	·	·	23	5.78	LEVEL III/2
Plain	126	22	·	·	14	4	·	166	41.71	
Dihedral	50	16	·	·	10	·	·	76	19.10	
Polyhedral	51	17	·	·	6	1	·	75	18.84	
Faceted straight	20	3	·	·	1	1	·	25	6.28	
Faceted convex	23	6	·	·	1	·	·	30	7.54	
Faceted lateral	·	3	·	·	·	·	·	3	0.75	
Total:	**292**	**67**	·	·	**33**	**6**	·	**398**	**100.00**	
Crushed	5	·	59	·	·	·	10	74	·	
Retouched	·	·	5	·	·	·	2	7	·	
Missing	·	·	168	4	·	·	15	187	·	
Cortex	3	·	·	·	1	·	·	4	10.00	LEVEL III/2A
Plain	17	3	·	·	1	·	·	21	52.50	
Dihedral	2	1	·	·	·	·	·	3	7.50	
Polyhedral	4	·	·	·	·	·	·	4	10.00	
Faceted straight	2	·	·	·	1	·	·	3	7.50	
Faceted convex	4	·	·	·	·	·	·	4	10.00	
Faceted concave	1	·	·	·	·	·	·	1	2.50	
Total:	**33**	**4**	·	·	**3**	·	·	**40**	**100.00**	
Crushed	·	·	5	·	·	·	2	7	·	
Missing	·	·	23	·	·	·	3	26	·	

Table 8-11 Kabazi V, sub-unit III/2: Platform types, by blank types.

Another important feature are the differing ratios of "regular" and "bifacial thinning blanks" in different metrical groups (Fig. 8-3). Whereas the smallest metrical group (0.1 – 1.9 cm) comprises 45.63 % "bifacial thinning" debitage, the subsequent group (2.0 – 2.9 cm) contains 36.82 %. In the following metrical group (3.0 – 3.9 cm) this same type of debitage constitutes 21.03 % of pieces, and in the next metrical group (4.0 – 4.9 cm) its contingent drops to 17.81 %. Finally, in the last group (5.0 – 5.9 cm) it makes up just 6.67 % of the assemblage. Not a single bifacial thinning blade or flake was found in the 6.0 – 6.9 cm metrical group. Indeed, the next largest groups comprise very few artefacts whatsoever. Thus, the smaller the metrical group, the larger the ratio (quantity and percentage) of "bifacial thinning" debitage.

One more specific feature of level III/2 debitage metrics is the near absence of primary debitage, i.e. a lack of relatively big flakes and blades that are completely or mainly covered by cortex. The largest dimensions for corticated (>76 % of cortex) blanks were measured for two flakes. These are 56.55 and 62.93 mm long, respectively. Dimensions of all remaining corticated blanks range from to 31 to 45 mm. Among the partly corticated flakes (51-75 % of cortex) two items belong to the metrical group 6.0-6.9 cm, five stem from the 5.0-5.9 metrical group, and all remaining 23 pieces are smaller than 4.9 cm.

	Flakes, "regular"	Flakes, "bifacial thinning"	Flakes, unidentifiable	Flakes, natural	Blades, "regular"	Blades, "bifacial thinning"	Blades, unidentifiable	#	%	
Lipped	66	43	·	·	12	2	·	123	30.52	LEVEL III/2
Semi-lipped	139	24	·	·	18	4	·	185	45.91	
Unlipped	92	·	·	·	3	·	·	95	23.57	
Total:	**297**	**67**	·	·	**33**	**6**	·	**403**	**100.00**	
Unknown	·	·	232	4	·	·	27	263	·	
Lipped	8	2	·	·	1	·	·	11	27.50	LEVEL III/2A
Semi-lipped	15	2	·	·	1	·	·	18	45.00	
Unlipped	10	·	·	·	1	·	·	11	27.50	
Total:	**33**	**4**	·	·	**3**	·	·	**40**	**100.00**	
Unknown	·	·	28	·	·	·	5	33	·	

Table 8-12 Kabazi V, sub-unit III/2: Lipping, by blank types.

	Flakes, "regular"	Flakes, "bifacial thinning"	Blades, "regular"	Blades, "bifacial thinning"	#	%	
Acute	1	·	·	·	1	0.25	LEVEL III/2
Obtuse	137	66	21	6	230	57.07	
Right	159	1	12	·	172	42.68	
Total:	**297**	**67**	**33**	**6**	**403**	**100.00**	
Acute	·	·	·	·	·	·	LEVEL III/2A
Obtuse	22	4	2	·	28	70.00	
Right	11	·	1	·	12	30.00	
Total:	**33**	**4**	**3**	·	**40**	**100.00**	

Table 8-13 Kabazi V, sub-unit III/2: Platform angles, by blank types.

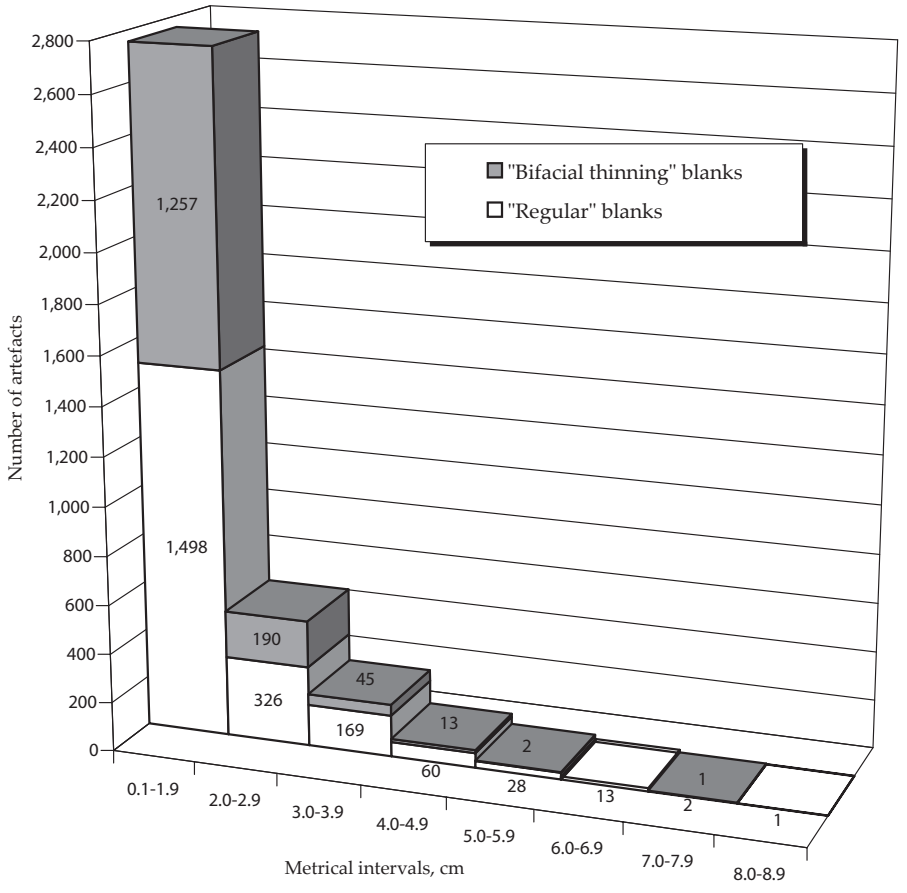

Fig. 8-3 Kabazi V, level III/2. "Regular" and "bifacial thinning" blanks, by metrical intervals.

The blank assemblage from level III/2A comprises five flakes from the 5.0 – 5.9 cm metrical group. One of these flakes is completely covered by cortex, and another has 51-75 % cortex coverage on its dorsal surface. All remaining pieces exhibit less than 50 % dorsal cortex.

Thus, the blank dimensions presented above are suggestive of intensive bifacial preform and tool retouching and reshaping, but without the preceding decortication stage.

Summary of Attribute Analysis

In summary, the analysis of technologically representative attributes has demonstrated that the main modes of flint exploitation comprised an intensive on-site bifacial tool production from preforms which had already been decorticated off-site. This conclusion is based on the following observations:

1. The rarity of cores and relatively good representation of bifacial preforms
2. The absence of primary flakes
3. The over-representation of "bifacial thinning" blanks of small sizes
4. The typology and metrics of blank platforms, shapes and profiles

Consequently, the sub-unit III/2 blank assemblage is made up predominantly of the waste from bifacial tool production. In other terms, the average blank is not very impressive, it being short, with often transverse proportions, and with hinged or blunt distal extremities and incurvate lateral profiles. At the same time, only a limited amount of flakes (no more than 10 % of all blanks bigger than 3 cm) could be used as blanks for tool production. These are mainly blanks bigger than 4 cm in maximum dimension with more or less straight lateral profiles and feathering distal ends.

Flint Tools

A total of 140 tools were recovered from sub-unit III/2. These comprise 108 unifacial and 32 bifacial tools. The bifacial tool index lies at 22.86. There are 30 retouched pieces, and 43 heavily fragmented typologically unidentifiable items, of which 28 are unifacial and 15 bifacial. Upon exclusion of both the retouched pieces and the unidentified tools, the bifacial tool index adjusts slightly to 25.37. Hence, there is no great difference between these two index values; both are relatively high, over 20, and correspond with bifacial indexes from "classical" Ak-Kaya facie assemblages from such sites as Zaskalnaya V, layers II, III, and V, and Zaskalnaya VI, layers II and III (Kolosov 1983, 1986). The bifacial tool index for the level III/2A tool kit was not calculated owing to this assemblage being too small, it consisting of just 15 items (13 unifacial and 2 bifacial tools), with 2 unidentifiable and 3 retouched pieces among the unifacial tools.

The sub-unit III/2 assemblage is dominated by scrapers, followed in descending order by bifacial scrapers, unifacial points, and bifacial points. All remaining tools are represented by four more classes, each of them containing just a few artefacts (Table 8-14). In the essential count (without retouched pieces and unidentifiable tools) the tool assemblage comprises the following tool types: points (N=6; 8.95 %), scrapers (N=38 ; 56.74 %), denticulates (N=1; 1.49 %), notches (N=3; 4.48 %), a truncated-faceted piece (N=1; 1.49 %), an end-scraper (N=1; 1.49 %), bifacial points (N=4; 5.97 %), bifacial scrapers (N=11; 16.41 %), and bifacial reutilised fragments (N=2; 2.98 %). Level III/2A tools comprise points (N=3), scrapers (N=5), and bifacial scrapers (N=2) (Table 8-14).

Points

There are six types of obversely retouched points. Each type is represented by one point, except the semi-crescent and semi-leaf, which account for three and two items, respectively (Table 8-14). Five points were elaborated using scalar flat, non-invasive retouch (Fig. 8-4, *1*). Two points were produced by scalar semi-abrupt, non-invasive retouch (lateral and semi-crescent), and two further pieces were produced using a combination of scalar flat and scalar semi-abrupt retouch (semi-leaf and semi-crescent points). The tip of a semi-leaf point was made on the proximal part of the blank. This same point was made on a blade, as were a distal point and one semi-crescent point. All remaining points were made on flakes, including the sub-triangular point which was made on a transversal (canted) flake (Fig. 8-4, *1*). The lengths of points range from 39.33 mm to 56.62 mm.

Scrapers

Scrapers are subdivided into two morphological groups: simple and convergent scrapers. The group of simple scrapers comprises transverse-diagonal, one-edge longitudinal, and double types.

Transverse and diagonal scrapers account for 10 items, or 23.25 % of all scrapers. Transverse scrapers are further subdivided into convex (Fig. 8-4, *7*) and straight types, which also applies to diagonal scrapers (Table 8-14). Three transverse-convex scrapers were elaborated by obverse scalar semi-abrupt and one by scalar flat retouch. Both transverse-straight scrapers were made using obverse scalar flat retouch, as were two of the diagonal-convex scrapers. The third diagonal-convex scraper was worked using an obverse scalar semi-abrupt retouch. The only diagonal convex scraper was made with an obverse scalar flat retouch. All transverse and diagonal scrapers were made on flakes with transversal proportions, with the exception of one diagonal scraper which was produced on a longitudinal flake. The lengths of transverse and diagonal scrapers range from 23.09 mm to 50.11 mm, widths lie between 31.44 mm to 66.83 mm.

One-edge longitudinal scrapers can be attributed to six different types (Table 8-14), which together account for 10 items, or 23.25 % of all scrapers. All one-edge longitudinal scrapers were elaborated using an obverse retouch (Fig. 8-4, *2, 3, 4, 6*). On the other hand, ventral thinning was observed in two cases: one straight scraper was distally thinned (Fig. 8-4, *4*) and one convex scraper displays a thinned back. One further convex scraper was made on a naturally backed blank. There is some diversity in the retouch types used in the production of one-edge longitudinal scrapers. All four straight scrapers were made using scalar flat and non-invasive retouch (Fig. 8-4, *2, 3*), as was also noted for wavy scraper production. All convex scrapers were made using a scalar semi-abrupt retouch (Fig. 8-4, *6*). Finally, the straight, distally thinned scraper was elaborated using a stepped semi-abrupt retouch (Fig. 8-4, *4*). One-edge longitudinal scrapers are between 38.11 and 64.94 mm long, and between 20.82 and 51.11 mm wide. Both convex scrapers were made on blades. All remaining one-edge scrapers were made on flakes.

	Level III/2	Level III/2A	Total:	%
Points				
Distal, dorsal	1	·	1	*1.30*
Lateral, dorsal	1	·	1	*1.30*
Sub-triangular, dorsal	1	·	1	*1.30*
Semi-trapezoidal, dorsal	·	1	1	*1.30*
Semi-crescent, dorsal	2	1	3	*3.88*
Semi-leaf, dorsal	1	1	2	*2.60*
Scrapers				
Transverse-straight, dorsal	1	1	2	*2.60*
Transverse-convex, dorsal	3	1	4	*5.19*
Diagonal-straight, dorsal	·	1	1	*1.30*
Diagonal-convex, dorsal	3	·	3	*3.88*
Straight, dorsal	3	1	4	*5.19*
Straight, dorsal, distally thinned	1	·	1	*1.30*
Convex, dorsal	2	·	2	*2.60*
Convex, dorsal, naturally backed	1	·	1	*1.30*
Convex, dorsal, thinned back	1	·	1	*1.30*
Wavy, dorsal	1	·	1	*1.30*
Double straight, dorsal	2	·	2	*2.60*
Straight-convex, dorsal	2	·	2	*2.60*
Double-convex, dorsal, thinned base	1	·	1	*1.30*
Double-convex, alternating	1	·	1	*1.30*
Double-wavy, alternate	1	·	1	*1.30*
Semi-trapezoidal, dorsal, naturally backed	2	·	2	*2.60*
Semi-rectangular, dorsal	2	·	2	*2.60*
Semi-rectangular, dorsal, thinned back	1	·	1	*1.30*
Semi-crescent, dorsal	1	·	1	*1.30*
Semi-crescent, dorsal, thinned base	1	·	1	*1.30*
Crescent, dorsal, thinned back	1	·	1	*1.30*
Semi-leaf, dorsal (one reverse)	4	·	4	*5.19*
Semi-leaf, dorsal, distally thinned	1	·	1	*1.30*
Semi-leaf, dorsal, thinned base/back	1	·	1	*1.30*
Sub-leaf, dorsal, distally thinned	1	·	1	*1.30*
Semi-ovoid, dorsal, distally thinned	·	1	1	*1.30*
Denticulates				
Straight, dorsal	1	·	1	*1.30*
Notches				
Lateral, dorsal	1	·	1	*1.30*
Distal, dorsal	2	·	2	*2.60*
Truncated-faceted				
Proximal	1	·	1	*1.30*
End-scrapers				
Transverse-convex, dorsal, thinned base/back	1	·	1	*1.30*
Bifacial Points				
Semi-leaf	2	·	2	*2.60*
Semi-crescent	1	·	1	*1.30*
Semi-crescent, backed, thinned base	1	·	1	*1.30*

Table 8-14 Kabazi V, sub-unit III/2: Tools.

	Level III/2	Level III/2A	Total:	%
Bifacial Scrapers				
Straight	1	·	1	*1.30*
Straight, naturally backed	1	·	1	*1.30*
Semi-leaf	4	·	4	*5.19*
Leaf, thinned base	2	·	2	*2.60*
Semi-crescent	1	1	2	*2.60*
Sub-crescent	1	1	2	*2.60*
Sub-crescent, thinned base	1	·	1	*1.30*
Bifacial tool reutilized fragments				
Straight, naturally backed, on edge fragment	1	·	1	*1.29*
Sub-triangular, on edge fragment	1	·	1	*1.29*
Retouched pieces				
Transversal, dorsal	6	1	7	
Lateral, dorsal	22	2	24	
Lateral, ventral	1	·	1	
Lateral, alternating	1	·	1	
Unidentifiable				
Unifacial tool edge fragments	26	2	28	
Unifacial tool tip fragments	2	·	2	
Bifacial tool base fragments	4	·	4	
Bifacial tool edge fragments	6	·	6	
Bifacial tool mid part fragments	2	·	2	
Bifacial tool tip fragments	3	·	3	
Total:	**140**	**15**	**155**	***100.00***

Table 8-14 Continued.

There are 7 double scrapers (16.28 % of all scrapers) which could be attributed to five different types (Table 8-14). There are three variants of retouch placement; 5 pieces are obverse, one piece is alternating (a double-convex scraper) and one is alternate (double-wavy). Mostly, the retouch on double scrapers is non-invasive. One example of ventral thinning was found on a double-convex scraper. All double scrapers were elaborated using scalar retouch. At the same time, there is some variety among the angles of retouch. One double-straight scraper was produced with a flat, another with an abrupt retouch. The flat retouch was used for the production of straight-convex and double-convex, alternating scrapers. The semi-abrupt retouch was used to produce a straight convex scraper, with this same type of retouch used for double-convex, thinned base (Fig. 8-4, *5*) and double wavy, alternate scrapers. Double scrapers are between 66.51 and 43.41 mm long, and between 40.71 and 20.19 mm wide. Only one double scraper was made on a blade (the double-straight scraper), while all remaining double scrapers were madeon flakes.

Convergent scrapers account for 16 pieces, or 37.21 % of all scrapers. Convergent scrapers were assigned to 6 different forms: semi-trapezoidal (N=2), semi-rectangular (N=3), semi-crescent (N=2), crescent (N=1), semi-leaf (N=6), sub-leaf (N=1), and semi-ovoid (N=1). All convergent scrapers were made using an obverse retouch. Invasive retouch was generally used for convergent scraper production.

Both semi-trapezoidal naturally backed scrapers were made using an obverse scalar retouch. The only difference between the two is that one scraper has a flat retouch angle (Fig. 8-5, *2*), while that of the other is abrupt. One of the three semi-rectangular scrapers has a thinned back. Both this semi-rectangular, thinned back scraper, as well as another of the semi-rectangular scrapers, was produced using a scalar flat retouch. The third semi-rectangular scraper was produced by means of a scalar semi-abrupt

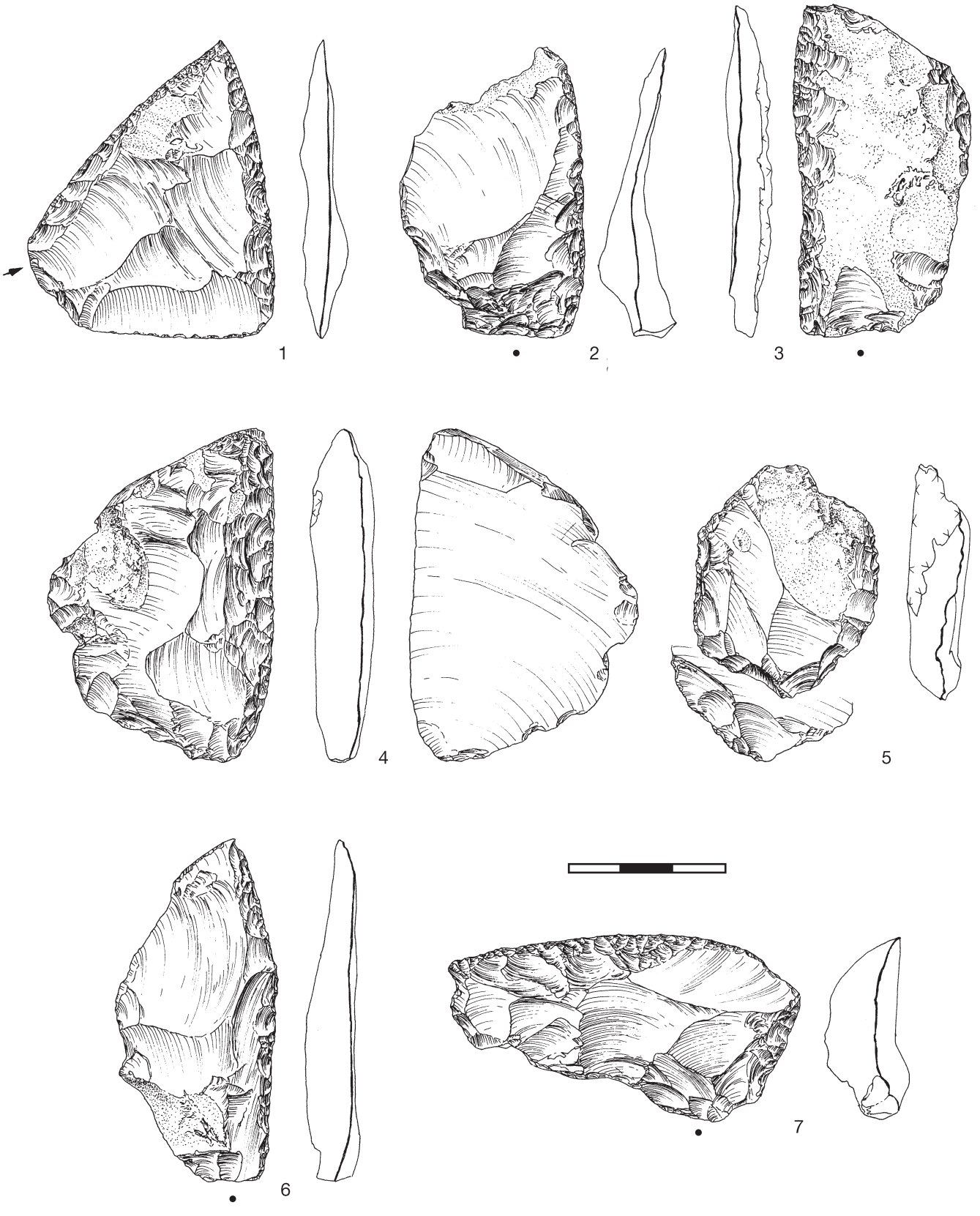

Fig. 8-4 Kabazi V, level III/2. Tools: 1 – point, sub-triangular; 2 and 3 – scrapers, straight; 4 – scraper, straight, distally thinned; 5 – scraper, double convex, thinned base; 6 – scraper, convex; 7 – scraper, transverse convex.

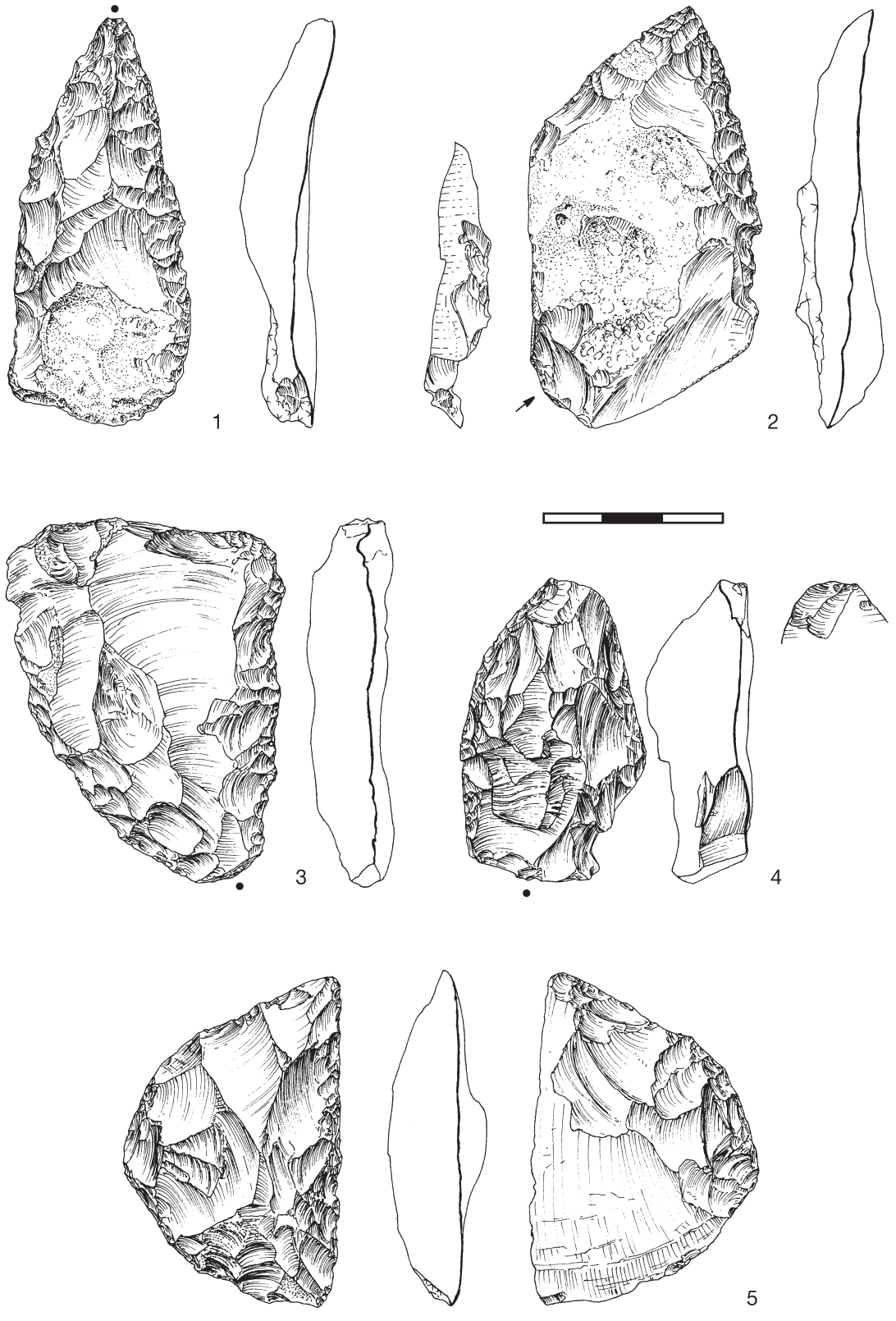

Fig. 8-5 Kabazi V, level III/2. Scrapers: 1 – semi-leaf; 2 – semi-trapezoidal, naturally backed; 3 – semi-rectangular; 4 – sub-leaf, distally thinned; 5 – crescent, thinned back.

retouch (Fig. 8-5, *3*). The semi-crescent and semi-crescent, thinned back scrapers were made using scalar semi-abrupt and scalar flat retouch, respectively. Scalar semi-abrupt retouch were also used in the production of the crescent-shaped scraper with a thinned back (Fig. 8-5, *5*).

Leaf-shaped scrapers are the most numerous among convergent scrapers (Table 8-14). Semi-leaf scrapers account for four regular examples, and there is one distally thinned piece and one piece with a thinned base and back. Two regular semi-leaf scrapers were elaborated using a scalar flat retouch, and two further items were made using a scalar semi-abrupt retouch (Fig. 8-5, *1*). For semi-leaf, distally thinned scraper production a combination of stepped and semi-abrupt retouch was used, while the semi-leaf thinned base / back scraper was made using a scalar flat retouch. Finally, the sub-leaf, distally thinned scraper was manufactured using a stepped abrupt retouch (Fig. 8-5, *4*). The only semi-ovoid scraper is morphologically similar to the semi-leaf items. The former exhibits a ventral distal thinning and was made using a scalar flat retouch.

Convergent scrapers are between 24.03 and 76.33 mm long, and between 25.31 and 56.28 mm wide. The only tool, with exception of the three retouched pieces, to have been made on a bifacial thinning blank is a semi-rectangular, thinned back scraper. The semi-leaf scraper was made on a blade. All remaining convergent scrapers were produced on flakes.

Denticulates

The only denticulate tool encountered in sub-unit III/2 stems from level III/2. It has a single straight edge, and was made on a flake using an obverse scalar semi-abrupt retouch. It is 59.86 mm long, and 34.95 mm wide.

Notches

There were discovered one lateral and two distal notched tools. All were made using an obverse scalar abrupt retouch. The lateral notch was produced on a broken blade. Both distal notches are on flakes. These pieces are between 53,13 and 56.18 mm long, and between 28.86 and 40.67 mm wide.

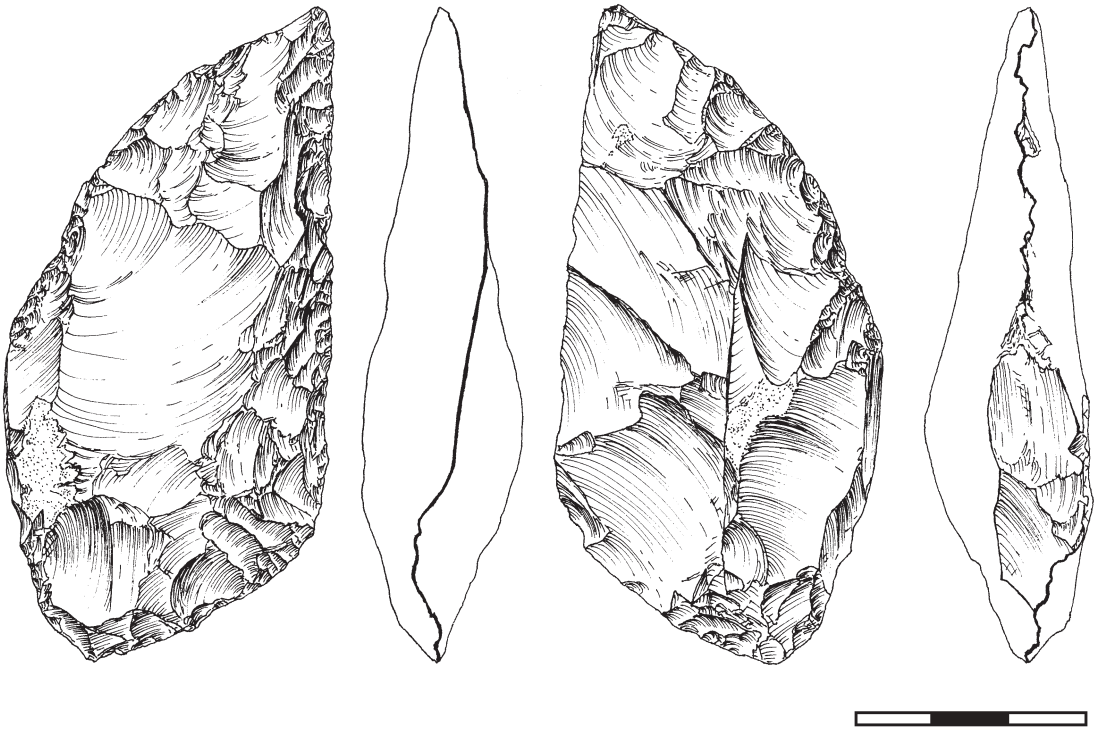

Fig. 8-6 Kabazi V, level III/2. Bifacial point, semi-crescent, backed and thinned base.

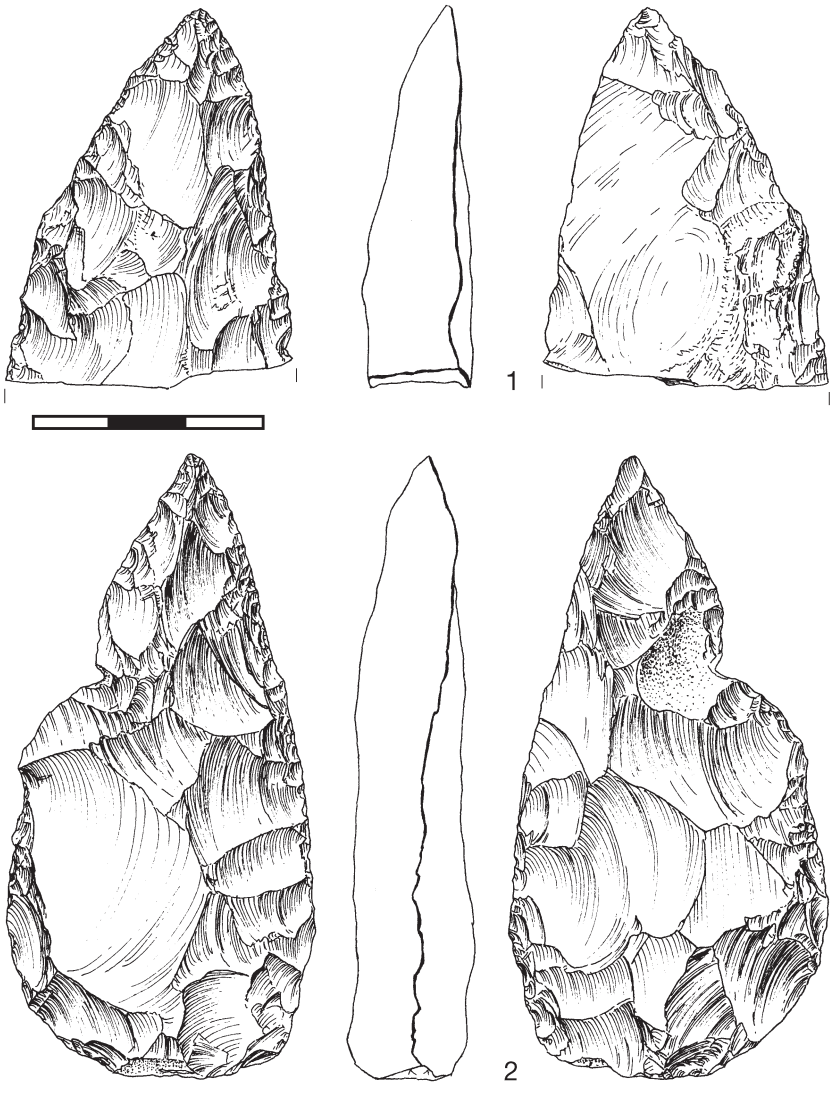

Fig. 8-7 Kabazi V, level III/2. Bifacial points: 1 – semi-crescent; 2 – sub-leaf.

Truncated-Faceted

A truncated-faceted piece was made on the proximal part of a flake using an obverse parallel abrupt retouch. The piece is 47.22 mm long, and 30.42 mm wide.

End-Scrapers

One end-scraper with a thinned base and back was made on a chip (length: 24.56, width: 23.15). Its distal extremity displays a convex edge which was shaped using an obverse sub-parallel abrupt retouch.

Bifacial Points

Four bifacial points were discovered in level III/2; two are semi-crescents (Fig. 8-6; 8-7, *1*) and two semi-leaf (Fig. 8-7, *2*). One of semi-crescent bifacial pieces is backed (Fig. 8-6). Yu. Kolosov evaluated such types as morphologically close to the *Klausennische Keilmesser* (Kolosov 1978). All bifacial points were made in a plano-convex manner, using scalar retouch. The retouch angles of the semi-crescent naturally backed point range from scalar flat to stepped semi-abrupt variations. The retouch angles observed on the three remaining points are flat. Bifacial points are between 81.14 and 88.44 mm long, between 36.93 and 40.98 mm wide, and between 12.59 and 15.88 mm thick.

Bifacial Scrapers

Thirteen bifacial scrapers are subdivided into three main morphological groups: items with one-edge (N=2), leaf-shaped (N=6), and crescent-shaped items (N=5) (Fig. 8-8; 8-9). Each of these morphological group is again further subdivided, whereby seven different types of bifacial scrapers are differentiated (Table 8-14). Semi-leaf scrapers are the most numerous, accounting for a total of 4 items. Three pieces were made in a plano-convex manner and one piece in plano-convex alternating manner. Scalar flat retouch was used for the elaboration of three semi-leaf scrapers, and in one case, scalar abrupt retouch was also applied. One of the leaf-shaped scrapers was made using a plano-convex stepped semi-abrupt retouch (Fig. 8-9, *1*); another was produced using a plano-convex alternate scalar flat retouch. Sub-crescent scrapers were produced in a plano-convex manner, using scalar semi-abrupt retouch, while semi-crescent scrapers were manufactured using a scalar flat retouch, but in the same plano-convex manner. One bifacial leaf scraper and one of the sub-crescents exhibit a thinned base (Fig. 8-9, *1*, *2*). Finally, there are two more bifacial scrapers which are plano-convex one-edge tools, one has a natural back, the other is made on a natural flake (Fig. 8-8). The former was elaborated using scalar semi-abrupt retouch, while for the latter a scalar flat retouch was used.

Unbroken bifacial scrapers range from 58.82 to 96.45 mm in length, 33.03 to 57.39 mm in width, and are between 12.45 and 18.46 mm thick.

Reutilised Bifacial Tool Fragments

There are two bifacial tools which broke but were subsequently reused (Table 8-14). In both cases there are the fragments of bifacial tool edges. The reshaping of breakage zones resulted in two re-modified scrapers, a sub-triangular piece, and a straight piece with a "natural" back. In the case of the latter, the "natural" back is represented by the breakage zone. Although these tools were made on fragments of former bifacial tools, the two pieces are still relatively large; they are 58.05 and 66.74 mm long, 39.41 and 34.89 wide, and 7.30 and 9.25 mm thick, respectively.

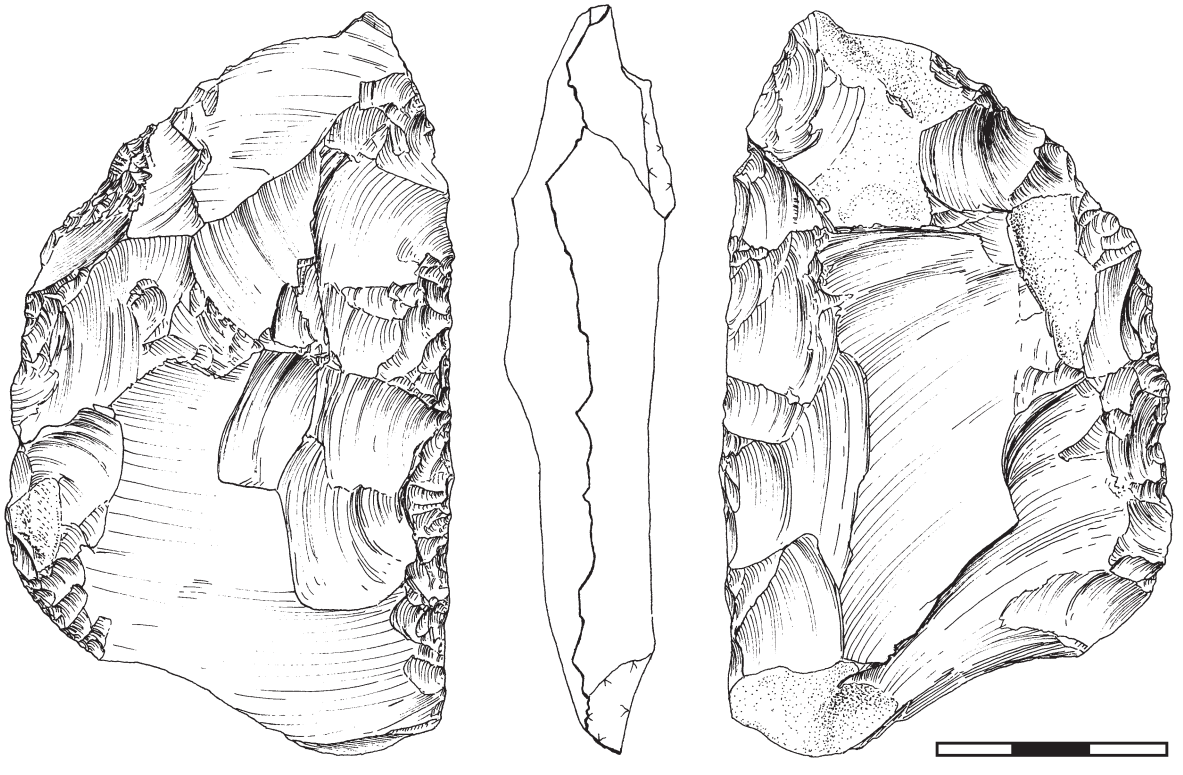

Fig. 8-8 Kabazi V, level III/2. Bifacial scraper, straight, made on natural flake.

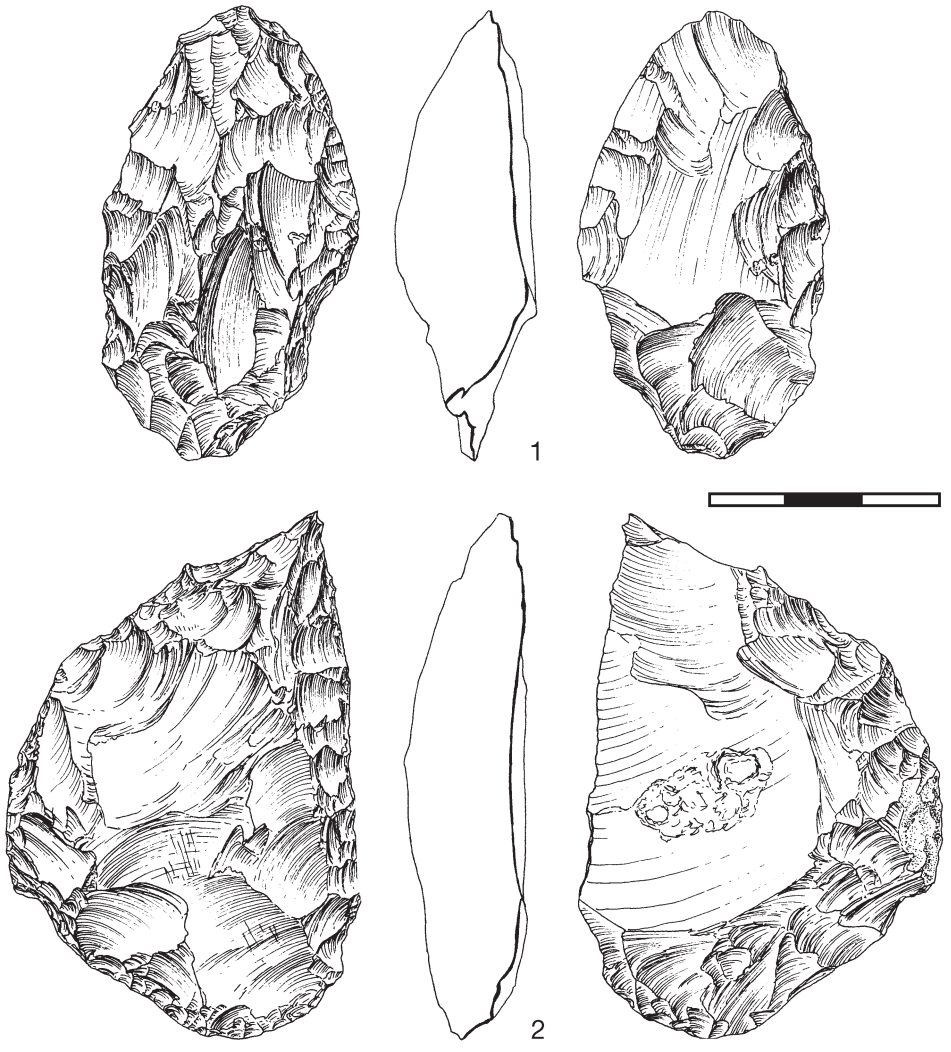

Fig. 8-9 Kabazi V, level III/2. Bifacial scrapers: 1 – leaf-shaped, thinned base; 2 – sub-crescent, thinned base.

Retouched Pieces

There are four types of retouched pieces (Table 8-14). The most numerous are those pieces with an obverse retouch on one of their lateral edges. Four of the lateral, obverse retouched pieces were made on blades; two were made on bifacial thinning flakes, and all remaining pieces on flakes; a piece with a distal, obverse retouch was made on a bifacial thinning flake. By definition, retouched pieces were made by marginal, scalar partial, scalar discontinuous and irregular retouch. Retouched pieces range in length from 23.00 mm to 65.03 mm, and are between 17.40 and 47.25 mm wide.

Unidentifiable Tools

These artefacts comprise tiny fragments of unifacial (30 items) and bifacial (15 items) tools (Table 8-14), which could not be assigned to any given class of tool.

Bone Retouchers

Sub-unit III/2 yielded a total of seven retouchers; six were made on fragments of bone tubes, and one made on a pebble. Retouchers are presented in Chapter 15, this volume.

Discussion: Tool Production & Tool Reshaping

Length and width dimensions of unifacial tools, "regular" and "bifacial thinning" blanks compose together a joint cluster of values (Fig. 8-10). Whereas unifacial tools tend to be the longest and widest artefacts, they still lie within the ranges characteristic of clusters of "regular" and "bifacial thinning" blanks. Indeed, such values have been identified as a criterion for blank selection (Stepanchuk, Chabai 1986). Accordingly, the biggest blanks are usually preferred for tool production (Fig. 8-11). In the case of Kabazi V, level III/2 this means that among the blanks selected for tool production 0.19 % measured between 2.0 and 2.9 cm; 1.46 % between 3.0 and 3.9 cm; 13.25 % between 4.0 and 4.9 cm; 41.9 % between 5.0 and 5.9 cm; and 53.3 % between 6.0 and 6.9 cm.

Interestingly, seeing as tool dimensions do not form a separate cluster, the blanks used in their production must have been made on-site. Indeed, this would appear to have been the case, i.e. the main source of these relatively big blanks were preforms and rare cores. The maximum dimensions of negatives from cores and preforms (Table 8-15) suggest that nearly all, if not all, blanks that were used for unifacial tool production were made on-site. Moreover, taking into account the maximum sizes of the negatives on bifacial tools (Table 8-15), it would appear that bifacials were also the source of blanks for unifacial tools production. At least, four clear bifacial thinning flakes were selected for the production of one scraper and three retouched pieces.

On the other hand, the metrical distribution of the main groups of tools (Fig. 8-12), as well as the average sizes of tools belonging to typologically different tool units (Table 8-15) raises the question whether tool reshaping was also conducted on-site. The biggest tools in the level III/2 assemblage are bifacials. Not one of the complete bifacials is smaller than 5 cm. Even the reutilized bifacials are still of

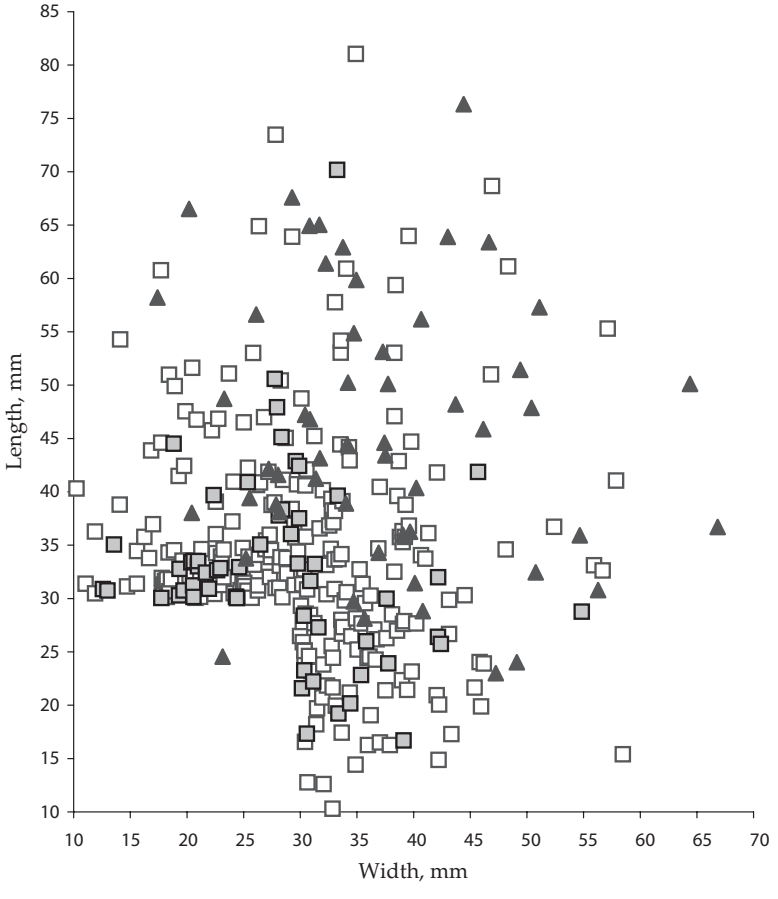

Fig. 8-10 Kabazi V, level III/2. Length / width scatterplot for blanks and tools on blanks: rectangles – "regular" blanks; grey rectangles – "bifacial thinning" blanks; black triangles – tools.

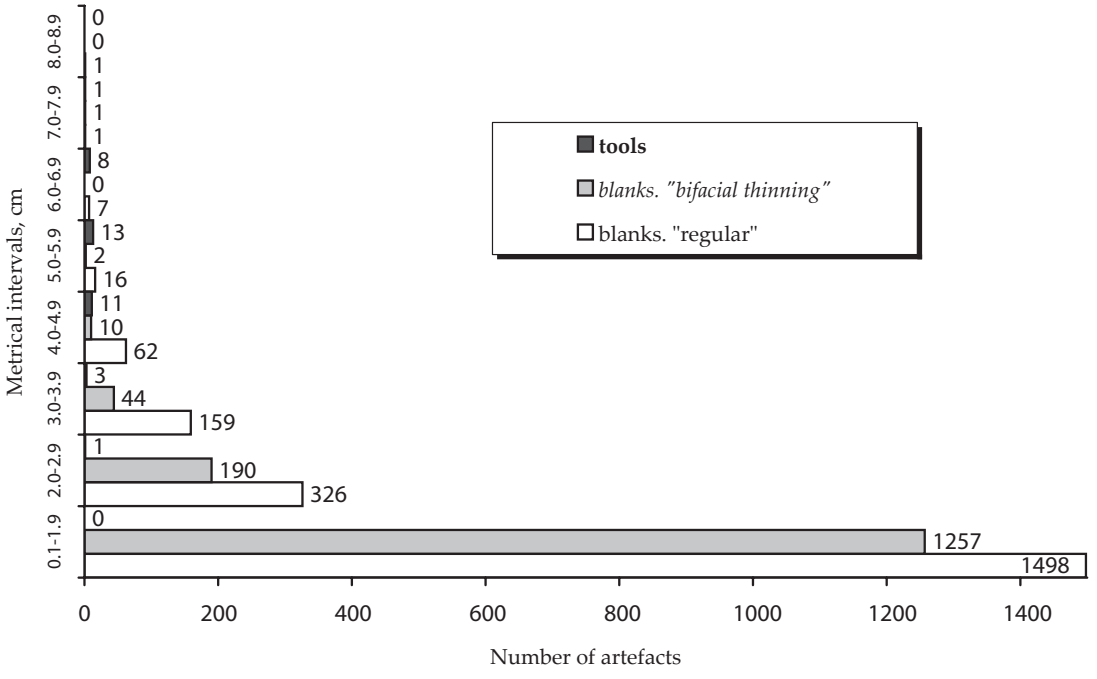

Fig. 8-11 Kabazi V, level III/2. Tools on blanks, "regular" and "bifacial thinning" blanks, by metrical intervals.

	Platform width	Platform thickness	Length	Width	Thickness	Negative length	Negative width
Cores, *max.*	·	·	71.22	53.66	35.51	55.55	37.24
Preforms, *max.*	·	·	158.65	86.31	38.82	60.22	70.85
Bifacial tools, *av.*	·	·	76.30	40.86	10.29	33.46	25.85
Simple tools, *av.*	22.08	7.36	48.12	38.28	7.81	·	·
Convergent tools, *av.*	15.18	5.78	48.12	37.67	7.39	·	·
Other tools, *av.*	14.19	4.84	48.19	32.56	8.16	·	·
Retouched Pieces, *av.*	13.77	5.48	41.08	32.92	6.19	·	·
Flakes, "regular", *av.*	13.62	4.48	32.74	32.23	5.36	·	·
Flakes, "bifacial thinning", *av.*	10.74	2.85	31.89	30.11	3.94	·	·
Flakes, "unidentifiable", *av.*	·	·	30.52	31.59	4.92	·	·
Blades, "regular", *av.*	9.42	3.51	47.49	19.35	5.52	·	·
Blades, "bifacial thinning", *av.*	5.88	1.44	40.56	16.83	2.97	·	·
Blades, "unidentifiable", *av.*	·	·	41.29	15.02	4.43	·	·

Table 8-15 Kabazi V, sub-unit III/2: Artefacts maximum (max.) & average (av.) dimensions.

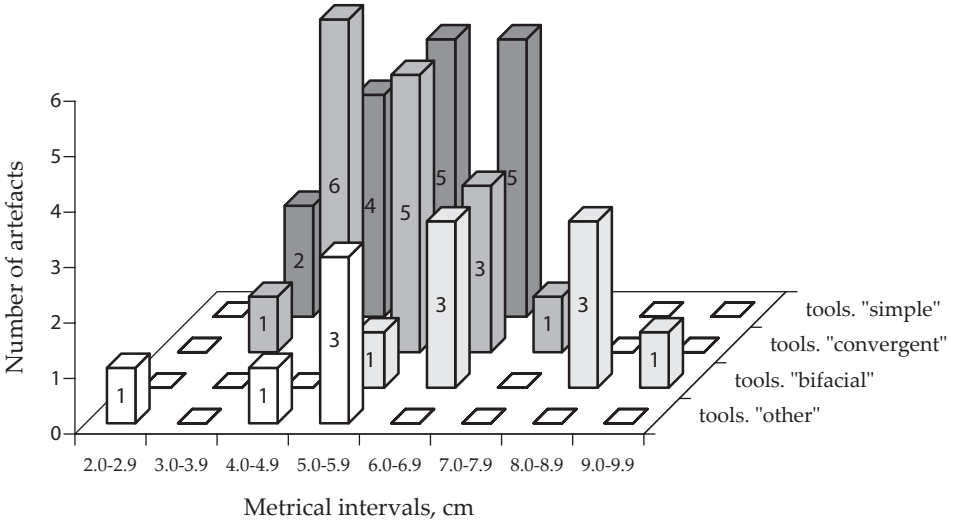

Fig. 8-12 Kabazi V, level III/2. Main typological groups of tools, by metrical intervals.

considerable sizes. Whereas the majority of unifacial tools is bigger than 5 cm and only about 10% are smaller than 4 cm (Fig. 8-12), unifacial tools are on average slightly smaller than 5 cm (Table 8-15). The predominant combination of retouch shape and retouch angle is the scalar flat variation (Table 8-16). Invasive retouch is rare and mainly characteristic of tools with convergent retouched edges.

Thus, considering not only the qualitative and quantitative characteristics of the bifacial plano-convex method of flaking, but also bifacial and unifacial tool dimensions as well as the dominant retouch types and angles, very little points to pronounced on-site reduction and to a tool-kit produced on-site. As usual, there are still some exceptions to this apparent trend, e.g. the reutilized bifacials, and a few – more or less – reduced unifacial scrapers and points. Also, worthy of mention is the possibility of a pocket tool-kit, which after having been reshaped several times, was eventually discarded during the Kabazi V, sub-unit III/2 occupation. Undoubtedly, all of these, and even more unexpected possibilities, exist. However, and this is certain, the main kind of activity which produced this assemblage was on-site bifacial and unifacial tool production accompanied by a small amount of tool reshaping. The main flaking technology evident in the Kabazi V, sub-unit III/2 assemblage is plano-convex method of bifacial flaking.

The thickness of the cultural bearing deposits, as well as the pronounced lenses of sterile sediments below and above the level III/2 occupation, are all suggestive of infrequent visits to the site, and are not consistent with a repeated exploitation of the same surface. According to M. Patou-Mathis, level III/2 is the result of two short economic episodes separated in time (Chabai, Patou-Mathis 2006). In cases where sedimentation rates were high, flint discarded at the site would not have been visible to groups who later visited the same surface, and therefore these same artefacts would not have been available for repeated reduction.

All in all, a number of economic and natural factors led to the formation of the Kabazi V, sub-unit III/2 assemblage. The characteristic features of this assemblage could be summarised as follows:

1. Pronounced evidence of bifacial plano-convex technology and, but with very weak, evidence of core reduction
2. A relatively high ratio of bifacial tools
3. A dominance of simple (transverse, diagonal, simple and double scrapers) over convergent (points and convergent shapes of scrapers) tools
4. The presence of bifacial backed and leaf-shaped tools
5. The presence of scrapers with canted shapes
6. The majority of both bifacial and unifacial tools are bigger than 5 cm.

In the context of Crimean MP, these features are characteristic of the Ak-Kaya facie of the Micoquian. Among those assemblages previously assigned to the Ak-Kaya facie of the Micoquian, those most resembling of Kabazi V, level III/2, as well as the

	Scalar, flat	Scalar, semi-abrupt	Scalar, abrupt	Sub-parallel, abrupt	Parallel, flat	Parallel, abrupt	Stepped, semi-abrupt	
Bifacial	19	11	1	·	·	·	1	LEVEL III/2
Simple	10	11	1	·	·	·	1	
Convergent	11	8	1	·	·	·	1	
Other tools	·	1	3	1	·	1	·	
Bifacial	1	1	·	·	·	·	·	LEVEL III/2A
Simple	3	1	·	·	·	·	·	
Convergent	2	2	·	·	·	·	·	
Other tools	1	2	1	·	1		·	
Total, #:	**47**	**37**	**7**	**1**	**1**	**1**	**3**	
Total, %:	**48.45**	**38.14**	**7.22**	**1.03**	**1.03**	**1.03**	**3.10**	

Table 8-16 Kabazi V, sub-unit III/2: Retouch combinations, by tool morphological groups.

	Simple	Convergent	Bifacial
Zaskalnaya VI, Layer III	53.9	26.1	20
Zaskalnaya V, Layer VI	41.7	35.4	22.9
Zaskalnaya V, Layer III	46.1	30.4	23.5
Zaskalnaya V, Layer II	49.9	26.2	23.9
Kabazi V, Level III/2	**37.7**	**34.4**	**27.9**
Kabazi V, Sub-Unit III/2	**38.0**	**35.2**	**26.8**
Zaskalnaya V, Layer V	28.2	42.3	29.5
Zaskalnaya VI, Layer II	37.8	32.1	30.1

Table 8-17 Percentages of morphological groups among tools from Crimean Micoquian sites-workshops.

entire sub-unit III/2, is those from Zaskalnaya V, layers II, III and VI. Both sites have in common that they are situated very close to flint outcrops. Zaskalnaya V, II, III and VI have produced the closest analogies to the simple, convergent and bifacial tools from Kabazi V, III/2 (Table 8-17). Cores are also relatively rare at Zaskalnaya V, III, with a minimum blank to core ratio of 110:1 (Chabai 2004c). Further, not only is the majority of bifacial and unifacial tools bigger than 5 cm (Stepanchuk, Chabai 1986), but bifacial backed "knifes" and canted scrapers are common (Kolosov 1983). All of these aforementioned occupations comprise palimpsests. The difference between the Kabazi V and Zaskalnaya palimpsests lies purely in the intensity and frequency of the evidenced exploitations. In contrast to the clear underlying and overlying sterile sediments with carpet-like scatters of bones and artefacts at Kabazi V, level III/2, the average thickness of Zaskalnaya V, II, III and VI is 15-20 cm, but *"on some squares up to 30 cm"* (Kolosov 1983, p. 45, 70, 103). The excavation and interpretation of palimpsests pose a number of questions. One such question is whether the reconstructed models of fauna and raw material exploitation result from a number of repeated similar repertoires or from an aggregation of different kinds of activity.

Abstract

КАБАЗИ V, ПАЧКА ГОРИЗОНТОВ III/2: АККАЙСКАЯ ФАЦИЯ КРЫМСКОГО МИКОКА

ЧАБАЙ В.П.

Пачку горизонтов III/2 составляют два горизонта III/2 и III/2A. Оба горизонта являются палимпсестами, сохранившимися в первичном положении (см. Главу 1, в этом томе.). В горизонте III/2 обнаружено 10667, а в горизонте III/2A – 2806 кремневых артефактов.

Структура категорий артефактов (Table 8-1) характеризуется преобладанием сколов, низким содержанием или полным отсутствием нуклеусов и незначительным, как для среднего палеолита Крыма, процентным выражением орудий. Такой тип соотношений основных категорий артефактов характерен для микокских лагерей, тип А, на которых происходило интенсивное изготовление и переоформление двусторонних орудий.

Незначительная роль нуклеусного расщепления подтверждается высоким соотношением сколов к нуклеусам (339 к 1), значительным содержанием сколов двусторонней обработки (41,39 %), низким индексом пластин (около 10), низким уровнем фасетажа ударных площадок (Ifl=52,51 и Ifs=14,57 для горизонта III/2; Ifl=37,50 и Ifs=20,00 для горизонта III/2A). Основную роль двусторонней обработки в образовании артефактов пачки горизонтов III/2 подтверждает анализ технико-типологических особенностей коллекции сколов. «Типичным сколом» для данной пачки горизонтов является отщеп длиной 31-32 мм, шириной 30-32 мм, толщиной 3-5 мм, зачастую поперечных пропорций, с коркой на дорсальной поверхности, с петлевидным или тупым дистальным и искривленным латеральным профилями, скошенной гладкой или двугранной ударной площадкой.

Орудийный набор горизонта III/2 отличается высоким содержанием двусторонних орудий – 22,86 % с учетом всех изделий с вторичной обработкой или 25,37 % без учета неопределимых орудий и сколов с ретушью. В пачке горизонтов III/2 были обнаружены следующие классы орудий: остроконечники (9 экз.); скребла (43 экз.); зубчатые (1 экз.); выемчатые (3 экз.); тронкировано-фасетированные (1 экз.); скребки (1 экз.); двусторонние острия (4 экз.); двусторонние скребла (13 экз.); реутилизированные фрагменты двусторонних орудий (2 экз.); отщепы с ретушью (33 экз.); неопределимые на уровне класса фрагменты односторонних (30 экз.) и двусторонних (15 экз.) орудий. Среди остроконечников наиболее часто встречаются полусегментовидные (3 экз.), обнаружены также дистальные (1 экз.), латеральные (1 экз.), подтреугольные (1 экз.), полутрапециевидные (1 экз.) и полулистовидные (2 экз.) типы.

Класс скребел представлен следующими морфологическими группами: поперечные (6); диагональные (4); продольные (10); двойные (7); трапециевидные (2); прямоугольные (3); сегментовидные (3); листовидные (7); овальные (1). Зубчатые, выемчатые, тронкировано-фасетированные и скребки – единичны. Двусторонние острия представлены полусегментовидными (2 экз.) и полулистовидными типами (2 экз.). Двусторонние скребла подразделяются на простые – однолезвийные (2 экз.), сегментовидные (5 экз.) и листовидные (6 экз.) формы. Среди реутилизированных двусторонних орудий определено одно подтреугольное и одно прямое, обушковое

изделия. Основной чертой двусторонних острий, скребел и реутилизированных орудий является наличие обушковых элементов. Наиболее распространенными комбинациями ретуши, использовавшимися для обработки односторонних и двусторонних орудий, являются чешуйчатая плоская и чешуйчатая полукрутая.

В целом, наиболее близкими технико-типологическими аналогиями кремневому инвентарю Кабази V, пачка горизонтов III/2 являются коллекции Заскальной V, культурные слои II, III, VI, которые относятся к памятникам аккайской фации крымского микока.