

Chapter 12

KABAZI V: ASSEMBLAGES FROM SELECTED LEVELS

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INTRODUCTION

During the 1993 and 1995 field seasons, seven living floors were excavated at Kabazi V. Two living floors were uncovered in Unit II (Levels II/4a and II/7) and five in Unit III (Levels III/1, III/1a, III/2, III/3, and III/4). As discussed in the previous chapter, the living floors of Unit II were formed in the open, after the collapse of the rock shelter roof, while the living floors of Unit III were formed within a true rock shelter.

Units and levels of Kabazi V were grouped into several complexes according to their stratigraphic position and similarities in technological and typological characteristics (see Table 11-2). Complex A1 consists of the assemblages from Units I, I-A, and II-A, all of which are disturbed and mixed. Complex A2 consists of assemblages II/1 and II/2 from the top part of Unit II, both of which are partly disturbed. Complex B groups together assemblages II/3 and II/4, while Complex C groups assemblages II/4a and II/7. Complex D includes the assemblages from III/1, III/1a, and III/2, and Complex E groups together the assemblages from III/3 and III/4. The living floors cleared during the 1993 and 1995 field seasons all relate to Complexes C, D, and E.

The assemblages were produced on flints of various colors. Most of the artifacts, ca. 90%, are on a gray flint; small numbers of black, gray-green, white, light brown, and yellow flints also occur. In addition, there are some yellow and brown flinted limestones of very poor quality which are found as only isolated examples. In spite of their rarity, these poor quality materials are always found as retouched tools and were probably imported into Kabazi V. The majority of the gray flint has a thin white or bluish patina, which often forms during the excavations.

The flint artifacts from Kabazi V consist mainly of five categories: tools, blanks, trimming elements, cores, and waste (debris). These categories are also subdivided. Tools include unifacial and bifacial tools. Blanks are subdivided into simple flakes, simple blades, utilized flakes, utilized blades, flakes with retouch, and blades with retouch. Trimming elements (or waste from the production of tools) include trimming flakes and trimming blades. Cores are divided into pre-cores and cores, while waste is subdivided into chips (less than 3 cm) and chunks.

ARTIFACT ANALYSES

The flint assemblages are described by occupation level in the following order: the typology of core-like pieces, debitage, typology of tools, and the typology of blanks with traces of use. Waste is excluded from the attribute analyses, although numerically it is the most representative category in each assemblage. The structure of waste is the same in all studied levels. Chips, which are less than 3 cm, are dominant and were produced as by-products of flaking, faceting, or simple shattering when a core was struck.

Most of the chunks are massive pieces of broken flint plaquettes which come from the unsuccessful testing of flint and the first stages of core production. Some of the chunks have

fresh traces of limestone cortex—possible signs of flint quarrying or its collection from actively eroding sources.

All artifacts struck from cores are considered blanks for the debitage analysis, provided they are larger than 3 cm in either length or width. In this sense, blanks are composed of flakes, blades, flakes and blades with traces of use, as well as unifacial tools made on flakes and blades. Because there are so few blade blanks, it makes no sense to separate them from the flakes in the following description. The large number of broken pieces were used in the analysis, but only for those attributes which are present on each piece.

Trimming elements are specific debitage products resulting from the production of tools. They are therefore treated separately from the blanks in each kind of analysis and are not part of the technological indices.

Apart from the traditional technological indices regarding faceting, blades, etc., there are some special indices used here for the Kabazi V material:

- (1) Index of cortification (Ic) is calculated as the percentage of whole and broken blanks with some dorsal cortex within all broken and unbroken blanks;
- (2) Index of primary flaking (Ip) is calculated as the percentage of blanks with more than 75% of their dorsal surface covered by cortex on all unbroken blanks;
- (3) Index of uni-directional flaking (Id1) is calculated as the percentage of blanks with parallel and converging scar patterns on all blanks with identifiable scar patterns;
- (4) Index of bi-directional flaking (Id2) is calculated as the percentage of blanks with bi-directional and parallel/crossed scar patterns on all blanks with identifiable scar patterns; and,
- (5) Index of poly-directional flaking (Id3) is calculated as the percentage of all blanks with radial and bi-directional-crossed scar patterns on all blanks with identifiable scar patterns.

Tool typology follows the methods described in Chapter 3 of this volume. Bifacial tools are subdivided into finished and unfinished pieces. Finished bifacial tools have clear shapes made by bi-convex, plano-convex, or semi-bifacial methods of secondary treatment and retouched edges. Unfinished bifacial tools are missing the final stages of tool treatment, such as edge retouch. The shapes of unfinished bifacial pieces were recognized more or less conventionally.

The Kabazi V assemblages reported in this chapter are described separately, although they are grouped by complex, as noted above. Comparisons among assemblages will be presented at the end of this chapter.

Complex C

The artifacts of Complex C come from Levels II/4a and II/7. Both are living floors, marked by traces of fireplaces and “carpets” of flint and faunal remains. These living floors are separated from each other by a thin sterile level. All the levels of Complex C occur in the lowest lithological levels of Unit II and are separated from the upper levels of Complex B, as well as from levels of Unit III, by clearly sterile deposits.

Level II/4a was discovered and partly excavated during the 1990 field season. In this report, however, only materials from levels recovered during the 1993-95 field seasons will be described.

Level II/4a

The assemblage from Level II/4a consists of 2,072 artifacts: one core-like piece, 44 tools, 9 flakes and 2 blades with traces of use, 129 flakes, 14 blades, 26 trimming pieces, 18 chunks,

and 1,829 chips (Table 12-1). Detailed proportional distributions of blank attributes are presented in Tables 12-2 through 12-6. The following text will merely identify the general patterns.

TABLE 12-1
Kabazi V, Artifact Totals

<i>Complex C</i>	<i>II/4a</i>		<i>II/7</i>		<i>Total</i>	
	<i>N</i>	<i>e %</i>	<i>N</i>	<i>e %</i>	<i>N</i>	<i>e %</i>
Tools	44	19.5	38	17.5	82	18.6
Flakes	138	61.3	141	65.6	279	63.4
Blades	16	7.1	10	4.7	26	5.9
Cores	1	0.4	2	0.9	3	0.7
Trimmings	26	11.5	24	11.2	50	11.4
Chips	1829		1745		3574	
Chunks	18		31		49	
Total	2072		1991		4063	
†E %	225	100.0	215	100.0	440	100.0

<i>Complex D</i>	<i>III/1</i>		<i>III/1a</i>		<i>III/2</i>		<i>Total</i>	
	<i>N</i>	<i>e %</i>	<i>N</i>	<i>e %</i>	<i>N</i>	<i>e %</i>	<i>N</i>	<i>e %</i>
Tools	46	10.0	57	14.4	77	14.1	180	12.8
Flakes	326	71.0	272	68.5	384	70.3	982	70.0
Blades	26	5.7	22	5.5	31	5.5	79	5.6
Cores	3	0.7	6	1.5	2	0.4	11	0.8
Trimmings	58	12.6	40	10.1	52	9.5	150	10.7
Chips	4224		2746		3651		10621	
Chunks	84		55		49		188	
Total	4767		3198		4246		12211	
E %	459	100.0	397	100.0	546	100.0	1402	100.0

<i>Complex E</i>	<i>III/3</i>		<i>III/4</i>		<i>Total</i>	
	<i>N</i>	<i>e %</i>	<i>N</i>	<i>e %</i>	<i>N</i>	<i>e %</i>
Tools	22	9.7	2	5.1	24	9.0
Flakes	169	74.5	36	92.3	205	77.1
Blades	21	9.3	1	2.6	22	8.3
Cores	3	1.3	—	—	3	1.1
Trimmings	12	5.3	—	—	12	4.5
Chips	2118		297		2415	
Chunks	17		3		20	
Total	2362		339		2701	
E %	227	100.0	39	100.0	266	100.0

†Essential counts.

Core-Like Pieces. The single example of a core-like piece is on a plaquette. It has a rectangular flaking surface on which a series of blanks were struck from a single, unfaceted striking platform. The core is non-volumetric in concept and the removals are parallel to each other. The core is 4.7 cm long, 4.5 cm wide, and 3.0 cm thick. The longest scar is 4.5 cm and, overall, the flaking surface appears exhausted.

Technology (Tables 12-1, 12-8). The analysis sample for Level II/4a is 193 blanks, of which there are 175 flakes and 18 blades. Among the flakes, the majority are unretouched, while small numbers of utilized flakes (5), retouched flakes (4), and tools on flakes (37) were included, as well. Of this total, 74 are broken and, so, could not be used for all observations. Of the 101 complete examples, 35 are transverse, that is, are wider than long. The blades in the sample include mostly debitage, but also one retouched blade, a utilized blade, and a pair of blade tools. All but 4 are complete. Over all, blades are rare ($I_{lam} = 9.3$). A group of 26 trimming elements was analyzed separately.

Dorsal Scar Patterns (Tables 12-2, 12-8). About one-third of the blanks have parallel scar patterns; bi-directional and parallel-crossed are also common. Of the 175 flakes, both broken and unbroken, a majority have some dorsal cortex, while uni-directional and bi-directional patterns are equally represented. For the sample of trimming elements, 37.5% are bi-directional and 20.8% are parallel-crossed. Other patterns occur less frequently: converging, 8.3%; and radial, 8.3%. Cortex occurs on the trimming elements 20.8% of the time.

TABLE 12-2
Kabazi V, Blank Scar Patterns

<i>Complex C</i>	<i>II/4a</i>		<i>II/7</i>		<i>Total</i>	
	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>
Primary (>75% cortex)	6	5.5	8	8.3	14	6.8
Parallel	33	30.3	34	35.4	67	32.7
Converging	8	7.3	8	8.3	16	7.8
Bi-directional	20	18.4	20	20.8	40	19.5
Parallel-crossed	21	19.3	18	18.8	39	19.0
Bi-directional-crossed	15	13.8	7	7.3	22	10.7
Radial	6	5.5	1	1.0	7	3.4
Total	109	100.0	96	100.0	205	100.0

<i>Complex D</i>	<i>III/1</i>		<i>III/1a</i>		<i>III/2</i>		<i>Total</i>	
	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>
Primary (>75% cortex)	18	7.4	16	6.9	31	9.1	65	8.0
Parallel	80	33.1	73	31.6	97	28.5	250	30.8
Converging	22	9.1	32	13.9	51	15.0	105	12.9
Bi-directional	34	14.0	41	17.8	47	13.8	122	15.0
Parallel-crossed	51	21.1	44	19.0	68	20.0	163	20.1
Bi-directional-crossed	25	10.3	15	6.5	29	8.5	69	8.5
Radial	12	5.0	10	4.3	17	5.0	39	4.8
Total	242	100.0	231	100.0	340	100.0	813	100.0

<i>Complex E</i>	<i>III/3</i>		<i>III/4</i>		<i>Total</i>	
	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>
Primary (>75% cortex)	15	9.7	3	9.4	18	9.7
Parallel	43	27.7	10	31.3	53	28.0
Converging	24	15.5	9	28.1	33	17.7
Bi-directional	11	7.1	2	6.3	13	7.0
Parallel-crossed	40	25.8	7	21.9	47	25.3
Bi-directional-crossed	16	10.3	—	—	16	8.6
Radial	6	3.9	1	3.1	7	3.8
Total	155	100.0	32	100.0	187	100.1

Shape (Table 12-3). Only unbroken blanks with clear shapes are used here. Because tool shape is partly determined by retouch, tools are also excluded. In spite of this, almost half have irregular shapes, with rectangular being the most common of the identifiable shapes. Of the trimming elements, 45.8% are irregular, while the other forms occur in equal proportions.

TABLE 12-3
Kabazi V, Blank Shapes

<i>Complex C</i>	<i>II/4a</i>		<i>II/7</i>		<i>Total</i>	
	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>
Rectangular	20	21.3	13	15.1	33	18.3
Trapezoidal	15	16.0	25	29.1	40	22.2
Ovoid	7	7.5	4	4.7	11	6.1
Triangular	8	8.5	15	17.4	23	12.8
Irregular	44	46.8	29	33.7	73	40.6
Total	94	100.0	86	100.0	180	100.0

<i>Complex D</i>	<i>III/1</i>		<i>III/1a</i>		<i>III/2</i>		<i>Total</i>	
	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>
Rectangular	59	24.7	31	16.2	61	21.1	151	21.0
Trapezoidal	65	27.2	55	28.8	77	26.6	197	27.4
Ovoid	15	6.3	13	6.8	22	7.6	50	7.0
Triangular	21	8.8	20	10.5	17	5.9	58	8.1
Irregular	79	33.1	72	37.7	112	38.8	263	36.6
Total	239	100.0	191	100.0	289	100.0	719	100.0

<i>Complex E</i>	<i>III/3</i>		<i>III/4</i>		<i>Total</i>	
	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>
Rectangular	24	16.4	4	14.3	28	16.1
Trapezoidal	37	25.3	6	21.4	43	24.7
Ovoid	16	11.0	3	10.7	19	10.9
Triangular	17	11.6	4	14.3	21	12.1
Irregular	52	35.6	11	39.3	63	36.2
Total	146	100.0	28	100.0	174	100.0

Profiles (Table 12-4). Almost 6 out of 10 blanks have incurvate lateral profiles; other types occur in approximately equal proportions. Two of the incurvate flakes are also overpassed. Of the 24 identifiable trimming elements, 70.8% are incurvate, 54.2% are twisted, 12.5% are flat, and 4.2% are convex.

Platforms (Tables 12-5, 12-8). Almost half of identifiable platforms are unfaceted, but dihedral is also common. The faceting indices for blanks are IF = 49.5 and IFs = 20.8. Among the trimming elements, platforms are usually unfaceted—58.3%, while 12.5% are dihedral and 29.2% are multifaceted.

Lipping. Semi-lipped platforms are most common (54.5%), followed by unlipped (33.6%) and lipped (11.9%). All 24 trimming elements are lipped.

Size (Table 12-6). Excluding debris and broken pieces, almost 80% of the blanks fall between 3.0 cm and 5 cm, with an average greatest dimension of 4.2 cm, and an average thickness of 0.7 cm. Only a single piece exceeds 10.0 cm. Of the 46 blanks less than 4 cm, only one is a tool. For the 44 blanks between 4 and 5 cm, 8 are tools but, of the 18 pieces

between 5 and 6 cm, 8 are tools. While the sample size decreases to only 6 for pieces between 6 cm and 7 cm, half, or 3, are tools, while the single piece 10 cm long is a tool. Thus, it seems clear that blank selection for tool production is heavily biased toward the larger pieces but that smaller pieces may also be used.

TABLE 12-4
Kabazi V, Blank Profiles

<i>Complex C</i>	<i>II/4a</i>		<i>II/7</i>		<i>Total</i>	
	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%
Flat	19	16.5	27	28.1	46	21.8
Incurvate	66	57.4	44	45.8	110	52.1
Twisted	16	13.9	11	11.5	27	12.8
Convex	14	12.2	14	14.6	28	13.3
Total	115	100.0	96	100.0	211	100.0

<i>Complex D</i>	<i>III/1</i>		<i>III/1a</i>		<i>III/2</i>		<i>Total</i>	
	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%
Flat	55	21.4	48	22.2	75	22.9	178	22.2
Incurvate	136	52.9	115	53.2	172	52.4	423	52.8
Twisted	47	18.3	25	11.6	38	11.6	110	13.7
Convex	19	7.4	28	13.0	43	13.1	90	11.2
Total	257	100.0	216	100.0	328	100.0	801	100.0

<i>Complex E</i>	<i>III/3</i>		<i>III/4</i>		<i>Total</i>	
	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%
Flat	46	28.4	6	21.4	52	27.4
Incurvate	80	49.4	15	53.6	95	50.0
Twisted	10	6.2	2	7.1	12	6.3
Convex	26	16.1	5	17.9	31	16.3
Total	162	100.0	28	100.0	190	100.0

Tools (Table 12-7). Forty-four tools were recovered, mostly unifacial. Another group of 11 pieces shows traces of use and these will be described separately.

Typology of Unifacial Tools. These include 7 points, 17 scrapers, 3 denticulates, 2 notches, and 10 unidentifiable fragments. Of these, 37 are on flakes and 2 on blades. Twenty-one of the blanks were on-axis, and 18 were off-axis. The vast majority, 34, have obverse retouch; on 4 pieces, retouch is alternate, and on one it is inverse. Of the 63 retouched edges, parallel retouch is most common (16), followed closely by sub-parallel (14), and heavy sub-parallel (14). Scalar (10), marginal (7), and irregular (2) occur less often. Flat and semi-steep retouch are equally present (26), while 11 have steep retouch.

A number of tools exhibit accommodation elements opposite the retouched edges: 2 with cortex backs, and 3 with perpendicular unretouched edges. In addition, 8 tools show some ventral thinning: 4 basal, 2 distal, and 2 lateral.

There is a wide variety of *point* types: 3 semi-crescent (fig. 12-1: 1) and one each of crescent, semi-leaf (fig. 12-1: 2), trapezoidal, and unidentifiable forms. One of the semi-crescent points has lateral inverse thinning.

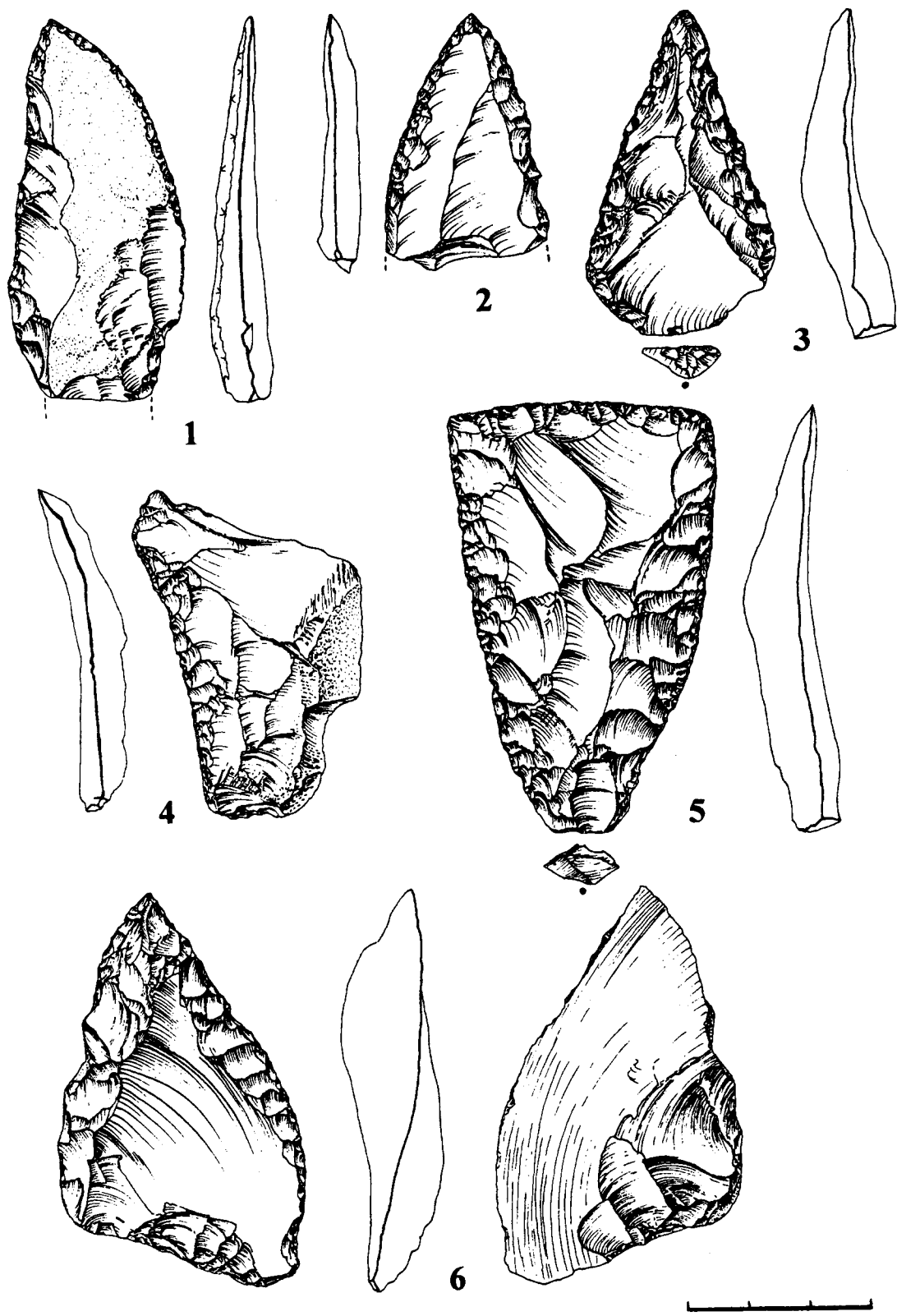


Fig. 12-1—Kabazi-V, Complex C, Levels II/4a (1, 2, 4) and II/7 (3, 5, 6), Points: 1—semi-crescent; 2,3—semi-leaf. Scrapers: 4—concave; 5—sub-trapezoidal; 6—semi-crescent with ventrally thinned base.

The *scrapers* include 10 simple, 3 transverse, 2 double, and 2 convergent forms. Among the simple examples, 6 are convex, 3 are straight, and one is concave (fig. 12-1: 4). One of the convex examples is naturally backed, while another has a perpendicular, unretouched back. One of the straight examples is ventrally thinned. All transverse scrapers, one each of straight, convex, and concave forms, are inversely retouched. Double scrapers include one double convex with a thinned base and one straight-wavy example. Convergent scrapers include one semi-crescent and one irregular example with basal thinning and alternate retouch.

The *denticulates* include two simple straight and one transverse convex. All but one simple denticulate is made by alternating retouch, and the transverse example has a back accommodation. There are two *notched flakes*, one struck off-axis. The *unidentifiable tools* include 9 obversely retouched fragments and one inversely retouched piece.

Typology of Bifacial Tools. There are 6 bifacial tools: two bi-convex, three semi-bifacial, and one plano-convex. Three more pieces are recognized as unfinished bifacial pieces. Of the finished tools, there is one semi-bifacial leaf-point (fig. 12-4: 2), two broken points, one convergent scraper, and two unidentifiable fragments. Both points are distal parts with semi-bifacial preparation. The convergent scraper is plano-convex and ovoid (fig. 12-6: 4).

The unidentifiable pieces are basal fragments with bifacial retouch on a thin plaquette. The unfinished tools are all bi-convex (fig. 12-8: 1).

Blanks with Traces of Use-Wear. There are 11 pieces which show either some retouch or irregularities caused by use. The former consists of 4 flakes and a blade with irregular retouch along short sections of their edges. It is not clear whether this retouch is purposeful or the result of edge damage during use. The utilized blanks (1 flake and 1 blade) have more of each edge retouched but it is "ephemeral" and appears to be the result of use alone.

Level II/7

The assemblage from Level II/7 consists of 1,991 artifacts, of which the vast majority, as usual, are chips and only 38 are tools (Table 12-1).

Core-Like Pieces. There are just two core-like pieces: a pre-core and a core, both made on plaquettes with non-volumetric flaking surfaces. The pre-core has a narrow flaked surface with a single unfaceted platform and two working surfaces on the lateral edges of the plaquette. This core is large: 7.5 cm long, 6.0 cm wide, and 3.3 cm thick. The longest flake scar is 4.5 cm.

Technology (Tables 12-1, 12-8). The blank sample includes 30 flake tools and two blade tools, as well as debitage. Given the small blade sample (Table 12-1), they have been merged with the flakes for analysis. Of the 182 pieces, 86 are broken and could be used only for a subset of observations. In addition, the trimming elements will be treated separately.

Dorsal Scar Patterns (Tables 12-2, 12-8). Pieces with parallel scars are most common, followed by bi-directional and bi-directional crossed. More than half of all blanks have some cortex on their dorsal surfaces. Of those classified, uni-directional flaking and bi-directional flaking are rather evenly represented. In addition, 3 crested flakes were recovered in this level.

Most of the trimming elements have parallel (35.0%) or bi-directional (30.0%) scar patterns. Parallel-crossed, bi-directional-crossed, and radial patterns occur 10% each. More than a third of the trimming flakes have some cortex; primary flakes are absent. In this sample, uni-directional and bi-directional flaking is equal (40.0% each), while flaking from three or more directions accounts for only 20%.

Shape (Table 12-3). Trapezoidal shapes are most common, but triangular and rectangular are also present in reasonable numbers. Of 170 flakes, only 17.7% are wider than long.

Among the blades, 5 of the 9 are triangular. For the trimming elements, trapezoidal and irregular account for 35.0% each.

Profiles (Table 12-4). Incurvate profiles account for almost half of the blanks, with flat following. Most of the trimming elements are incurvate (60.0%) or twisted (30%), while 10% are flat.

Platforms (Tables 12-5, 12-8). Again, only unfaceted and dihedral faceted occur in any significant numbers. Of the 22 identifiable trimming elements, 54.5% are unfaceted, 18.2% are dihedral, 13.6% are multi-faceted, and 9.0% are polyhedral. The faceting indices for tools and blanks only are IF = 56.5, IFs = 27.2.

TABLE 12-5
Kabazi V, Blank Platform Types

<i>Complex C</i>	<i>II/4a</i>		<i>II/7</i>		<i>Total</i>	
	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%
Cortex	8	7.9	9	9.8	17	8.8
Plain	43	42.6	31	33.7	74	38.3
Dihedral	29	28.7	27	29.3	56	29.0
Faceted straight	2	2.0	9	9.8	11	5.7
Faceted convex	14	13.9	11	12.0	25	13.0
Faceted concave	4	4.0	—	—	4	2.1
Faceted lateral	1	1.0	5	5.4	6	3.1
Missing	2		6		8	
Unidentifiable	90		84		174	
Total	193	100.0	182	100.0	375	100.0

<i>Complex D</i>	<i>III/1</i>		<i>III/1a</i>		<i>III/2</i>		<i>Total</i>	
	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%
Cortex	13	6.1	16	8.6	34	11.8	63	9.1
Plain	87	40.8	77	41.2	125	43.3	289	41.9
Dihedral	65	30.5	51	27.3	52	18.0	168	24.4
Faceted straight	20	9.4	14	7.5	30	10.4	64	9.3
Faceted convex	19	8.9	22	11.8	30	10.4	71	10.3
Faceted concave	4	1.9	4	2.1	8	2.8	16	2.3
Faceted lateral	5	2.3	3	1.6	10	3.5	18	2.6
Missing	10		8		4		22	
Unidentifiable	167		142		193		502	
Total	390	100.0	337	100.0	486	100.0	1213	100.0

<i>Complex E</i>	<i>III/3</i>		<i>III/4</i>		<i>Total</i>	
	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%
Cortex	16	11.5	3	14.3	19	11.9
Plain	68	48.9	12	57.1	80	50.0
Dihedral	33	23.7	3	14.3	36	22.5
Faceted straight	11	7.9	—	—	11	6.9
Faceted convex	8	5.8	2	9.5	10	6.3
Faceted concave	1	0.7	1	4.8	2	1.3
Faceted lateral	2	1.4	—	—	2	1.3
Missing	4		1		5	
Unidentifiable	65		17		82	
Total	208	100.0	39	100.0	247	100.0

Lipping. Semi-lipped platforms are the most common (69.4%) followed by unlipped (20.8%) and lipped (9.8%). Most of the trimming elements, 81.8%, are lipped.

Size (Table 12-6). The average maximum blank length is 4.3 cm and thickness 0.6 cm. Again, just over three-quarters fall between 3 and 5 cm. Only one in five is between 5 and 7 cm, while only three pieces exceed 7 cm. In the smallest group, 3 to 4 cm, only one out of 50 is a tool. In the next group, 4 to 5 cm, 4 out of 31 are tools. This changes radically in the 5 to 6 cm group, where 8 out of 13 are tools, and in the 6 to 7 cm group, where 6 of 9 are tools. Two of the three longer than 7 cm are also tools. Thus, the criterion for blank selection parallels that already described for the previous assemblage.

TABLE 12-6
Kabazi V, Blank Size Intervals of Maximum Dimension

<i>Complex C</i>	<i>II/4a</i>		<i>II/7</i>		<i>Total</i>	
	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%
3-4 cm	46	40.0	50	47.2	96	43.4
4-5 cm	44	38.3	31	29.3	75	33.9
5-6 cm	18	15.7	13	12.3	31	14.0
6-7 cm	6	5.2	9	8.5	15	6.8
7-8 cm	—	—	1	0.9	1	0.5
8-9 cm	—	—	2	1.9	2	0.9
9-10 cm	—	—	—	—	—	—
10-11cm	1	0.9	—	—	1	0.5
Total	115	100.0	106	100.0	221	100.0

<i>Complex D</i>	<i>III/1</i>		<i>III/1a</i>		<i>III/2</i>		<i>Total</i>	
	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%
3-4 cm	147	57.0	112	53.3	170	51.8	429	53.9
4-5 cm	63	24.4	71	33.8	99	30.2	233	29.3
5-6 cm	31	12.0	18	8.6	40	12.2	89	11.2
6-7 cm	13	5.0	6	2.9	11	3.4	30	3.8
7-8 cm	4	1.6	3	1.4	6	1.8	13	1.6
8-9 cm	—	—	—	—	1	0.3	1	0.1
9-10 cm	—	—	—	—	1	0.3	1	0.1
10-11cm	—	—	—	—	—	—	—	—
Total	258	100.0	210	100.0	328	100.0	796	100.0

<i>Complex E</i>	<i>III/3</i>		<i>III/4</i>		<i>Total</i>	
	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%
3-4 cm	81	50.6	16	57.1	97	51.6
4-5 cm	52	32.5	8	28.6	60	31.9
5-6 cm	14	8.8	2	7.1	16	8.5
6-7 cm	7	4.4	1	3.6	8	4.3
7-8 cm	3	1.9	1	3.6	4	2.1
8-9 cm	1	0.6	—	—	1	0.5
9-10 cm	1	0.6	—	—	1	0.5
10-11cm	1	0.6	—	—	1	0.5
Total	160	100.0	28	100.0	188	100.0

Tools (Table 12-7). In Level II/7, there are 32 unifacial and 6 bifacial tools, and 11 blanks with traces of use.

Typology of Unifacial Tools. There are 5 points, 18 scrapers, one notch, and 8 unidentifiable tool fragments. Of the unifacial tools, 30 are made on flakes and two on blades. Eighteen of the blanks were struck on-axis, 13 off-axis, while one is made on a chunk. All but one tool (with alternate retouch) have obverse retouch. Of the 55 retouched edges, on 8 it is parallel, on 13 sub-parallel, 15 are heavy sub-parallel, on 10 it is scalar, while 4 are marginal, and 5 irregular. For retouch angle, 22 are flat, 26 are semi-steep, and 7 are steep.

Four of the tools have accommodations opposite the working edge; on two it consists of natural backs, on another two, the backs are faceted. In addition, 9 tools have some inverse thinning: 7 basal, and one each distal and distal/lateral.

There are several types of *points*, including semi-leaf (fig. 12-1: 3) crescent, semi-trapezoidal, amorphous, and unidentifiable forms. In spite of the variety, all are basally thinned. The amorphous example is proximally pointed, and the small fragment appears to have been part of a lateral point. The semi-trapezoidal example is very close to being *déjeté*.

Most of the tools are *scrapers*: 8 simple, one transverse, 2 double, and 7 convergent types. Among the simple examples, all of which are obversely retouched, there are 3 straight, 1 convex, 3 concave and 1 convex/concave. One of the concave examples has a retouched back accommodation, as well as inverse basal thinning. The transverse scraper has a convex/concave retouched edge, prepared by obverse steep scalar retouch, while its back is faceted. This piece approaches a Quina-type scraper. The double scrapers include one straight-convex made with alternate retouch and one straight-convex/concave made by obverse retouch with ventral thinning of the distal end.

The convergent scrapers include 1 sub-crescent, 2 semi-crescent, 2 sub-trapezoidal, and 2 semi-rectangular forms. All have obverse retouch, one of the sub-trapezoidal examples is proximally/laterally thinned (fig. 12-5: 2), and made on an elongated flake (fig. 12-1: 5). The sub-crescent example has a proximal point and one of the semi-crescent examples has a laterally positioned point and basal thinning (fig. 12-1: 6). The semi-rectangular scrapers approach *déjeté* form, while the sub-trapezoidal pieces approach double *déjeté* form.

There is a single *distal notch* on a transverse flake and 8 small *tool fragments* which have obverse, unifacial retouch. Two of the latter also exhibit cortex backs.

Typology of Bifacial Tools. There are 6 finished and 4 unfinished bifacial pieces. Among the finished tools, there are 4 points and two basal fragments; three of the points are only distal parts made with plano-convex retouch. The fourth is sub-triangular with semi-bifacial retouch on a large transverse flake. The basal fragments have semi-bifacial retouch as well.

Blanks with Traces of Use-Wear. These include 3 retouched flakes, 6 utilized flakes, and 2 utilized blades. One of the retouched flakes has alternate irregular retouch, while another has inverse irregular retouch. One of the utilized flakes is inversely treated, while one blade has signs of bilateral, ephemeral retouch.

Complex D

This complex includes the assemblages from Levels III/1, III/1a, and III/2. All of these are living floors, marked by fireplaces and "carpets" of artifacts and fauna. The sterile breaks between these levels are clear in only part of the excavations, near the rocky bottom steps. In other areas, they are missing completely. However, these three levels were deposited separately from the lower Levels III/3 and III/4: this is clearly visible in all excavated units.

TABLE 12-7
Kabazi V, Tool Classification

	Complex C				Complex D					Complex E			
	II/4a	II/7	Total		III/1	III/1a	III/2	Total		III/3	III/4	Total	
	N	N	N	e%	N	N	N	N	e%	N	N	N	e%
Points	6	5	11	18.3	8	2	9	19	13.7				
Triangular	-	-	-	-	1	-	-	1	0.7	-	-	-	-
Sub-Triangular	-	-	-	-	-	-	1	1	0.7	-	-	-	-
Leaf-Shaped	-	-	-	-	-	-	1	1	0.7	-	-	-	-
Sub-Leaf	-	-	-	-	-	-	-	-	-	-	-	-	-
Semi-Leaf	1	1	2	3.3	2	-	2	4	2.9	-	-	-	-
Crescent	-	1	1	1.7	-	-	-	-	-	-	-	-	-
Sub-Crescent	-	-	-	-	-	-	2	2	1.4	-	-	-	-
Semi-Crescent	3	-	3	5.0	2	1	1	4	2.9	-	-	-	-
Trapezoidal	1	-	1	1.7	-	-	-	-	-	-	-	-	-
Sub-Trapezoidal	-	-	-	-	1	-	-	1	0.7	-	-	-	-
Semi-Trapezoidal	-	1	1	1.7	-	-	-	-	-	-	-	-	-
Hook-Like	-	-	-	-	-	-	1	1	0.7	-	-	-	-
Amorphous	-	1	1	1.7	-	-	-	-	-	-	-	-	-
Unidentifiable	1	1	2	3.3	2	1	1	4	2.9	-	-	-	-
Scrapers	17	18	35	58.3	16	29	40	85	61.2	18	1	19	90.5
Transverse-Straight	1	-	1	1.7	-	2	1	3	2.2	1	-	1	4.8
Transverse-Convex	1	-	1	1.7	-	-	2	2	1.4	2	-	2	9.5
Transverse-Concave	1	-	1	1.7	-	1	-	1	0.7	-	-	-	-
Transverse-Convex-Concave	-	1	1	1.7	1	-	-	1	0.7	-	-	-	-
Straight	3	3	6	10.0	2	7	5	14	10.1	2	1	3	14.3
Convex	6	1	7	11.7	3	5	13	21	15.1	6	-	6	28.6
Concave	1	3	4	6.7	3	2	2	7	5.0	-	-	-	-
Wavy	-	1	1	1.7	1	1	1	3	2.2	1	-	1	4.8
Double-Convex	1	-	1	1.7	-	1	-	1	0.7	-	-	-	-
Straight-Convex	-	1	1	1.7	-	1	-	1	0.7	2	-	2	9.5
Straight-Wavy	1	1	2	3.3	-	-	-	-	-	-	-	-	-
Sub-Triangular	-	-	-	-	-	1	-	1	0.7	-	-	-	-
Sub-Leaf	-	-	-	-	1	-	2	3	2.2	-	-	-	-
Semi-Leaf	-	-	-	-	-	3	3	6	4.3	1	-	1	4.8
Sub-Crescent	-	1	1	1.7	-	-	-	-	-	1	-	1	4.8
Semi-Crescent	1	2	3	5.0	-	2	3	5	3.6	-	-	-	-
Sub-Trapezoidal	-	2	2	3.3	-	2	1	3	2.2	-	-	-	-
Semi-Trapezoidal	-	-	-	-	-	-	2	2	1.4	-	-	-	-
Semi-Rectangular	-	2	2	3.3	1	-	3	4	2.9	-	-	-	-
Semi-Ovoid	-	-	-	-	-	-	1	1	0.7	-	-	-	-
Hook-Like	-	-	-	-	2	-	-	2	1.4	-	-	-	-
Bi-Concave	-	-	-	-	-	-	-	-	-	2	-	2	9.5
Amorphous	1	-	1	1.7	-	-	-	-	-	-	-	-	-
Unidentifiable	-	-	-	-	2	1	1	4	2.9	-	-	-	-
Denticulates	3	-	3	5.0	1	2	7	10	7.2	1	-	1	4.8
Transverse-Convex	1	-	1	1.7	-	-	-	-	-	-	-	-	-
Transverse-Wavy	-	-	-	-	-	-	1	1	0.7	-	-	-	-
Straight	2	-	2	3.3	1	2	-	3	2.2	1	-	1	4.8
Convex-Concave	-	-	-	-	-	-	1	1	0.7	-	-	-	-
Straight-Wavy	-	-	-	-	-	-	1	1	0.7	-	-	-	-
Semi-Trapezoidal	-	-	-	-	-	-	1	1	0.7	-	-	-	-
Semi-Rectangular	-	-	-	-	-	-	1	1	0.7	-	-	-	-
Unidentifiable	-	-	-	-	-	-	2	2	1.4	-	-	-	-
Notches	2	1	3	5.0	1	-	1	2	1.4	-	-	-	-
Lateral	2	-	2	3.3	-	-	1	1	0.7	-	-	-	-
Transverse	-	1	1	1.7	1	-	-	1	0.7	-	-	-	-
Combination Tools	-	-	-	-	-	3	-	3	2.2	1	-	1	4.8
Scraper-Denticulate	-	-	-	-	-	1	-	1	0.7	-	-	-	-
Scraper-Notch	-	-	-	-	-	1	-	1	0.7	-	-	-	-
Scraper-Burin	-	-	-	-	-	1	-	1	0.7	-	-	-	-
Denticulate-Notch	-	-	-	-	-	-	-	-	-	1	-	1	4.8
Endscrapers	-	-	-	-	-	1	1	2	1.4	-	-	-	-
Atypical	-	-	-	-	-	1	1	2	1.4	-	-	-	-
Unidentifiable Unifacial	10	8	18		9	10	16	35		2	1	3	
Total Unifacial	38	32	70		35	47	74	156		22	2	24	
Total Essential	28	24	52	86.7	26	37	58	121	87.1	20	1	21	100.0

TABLE 12-7 continued

	Complex C				Complex D					Complex E			
	II/4a	II/7	Total	e%	III/1	III/1a	III/2	Total	e%	III/3	III/4	Total	e%
	N	N	N		N	N	N	N		N	N	N	
<i>Bifacial Points</i>	3	4	7	11.7	4	5	1	10	7.2	-	-	-	-
Sub-Triangular	-	1	1	1.7	-	-	-	-	-	-	-	-	-
Sub-Leaf	1	-	1	1.0	2	2	-	4	2.2	-	-	-	-
Semi-Leaf	-	-	-	-	-	-	-	-	-	-	-	-	-
Unidentifiable	2	3	5	8.3	2	3	1	6	4.3	-	-	-	-
<i>Bifacial Scrapers</i>	1	-	1	1.7	2	5	1	8	5.8	-	-	-	-
Simple-Straight	-	-	-	-	-	1	-	1	0.7	-	-	-	-
Sub-Leaf	-	-	-	-	-	-	1	1	0.7	-	-	-	-
Sub-Crescent	-	-	-	-	-	1	-	1	0.7	-	-	-	-
Semi-Crescent	-	-	-	-	2	-	-	2	1.4	-	-	-	-
Ovoid	1	-	1	1.7	-	-	-	-	-	-	-	-	-
Unidentifiable	-	-	-	-	-	3	-	3	2.2	-	-	-	-
<i>Unidentifiable Bifacial</i>	2	2	4		5	-	1	6		-	-	-	-
<i>Total Bifacial Tools</i>	6	6	12		11	10	3	24		-	-	-	-
<i>Essential Bifacial Tools</i>	4	4	8	13.3	5	10	2	17	12.2	-	-	-	-
<i>Total Tools</i>	44	38	82		46	57	77	180		22	2	24	
<i>Total Essential Tools</i>	32	28	60	100.0	32	47	60	139	100.0	20	1	21	100.0
<i>Unfinished Bifacial</i>	3	4	7		5	4	9	18		-	-	-	-

Level III/1

The assemblage from Level III/1 is composed of 4,767 artifacts, of which 3 are cores, 46 are tools, and 13 flakes and 1 blade which have signs of utilization. The other pieces are debitage and debris (Table 12-1).

Core-Like Pieces. There are 3 cores: 2 multiple platform and 1 unidentifiable broken. One of the multiple platform cores has three main striking platforms and two opposed flaking surfaces. The platform serving the obverse flaking surface has polyhedral preparation. One striking platform for the inverse surface is straight faceted, while the other is dihedral. Both of the flaking surfaces have irregular shapes. The core is 4.8 cm long, 4.5 cm wide, and 1.7 cm thick and appears to be exhausted.

The other core has 4 main striking platforms and 2 opposed flaking surfaces. All platforms have polyhedral preparation. The shapes of both flaking surfaces are oval, exhibiting bi-directional flaking. The flaking axes of the two surfaces are at right angles to each other. The core is 5.6 cm long, 5.0 cm wide, and 1.3 cm thick. Again, the core is clearly exhausted.

Technology (Tables 12-1, 12-8). The sample includes 390 artifacts, including 313 flakes, 25 blades, 13 flakes and 1 blade with utilization, 33 flake tools and 12 blade tools. More than half of these pieces are broken and could be used only for some observations. There are only 213 flake blanks and 26 blade blades which are complete. The trimming elements include 52 flakes and 6 blades. As usual, they will be considered separately.

Dorsal Scar Patterns (Tables 12-2, 12-8). Again, parallel scar patterns are most common. More than half of the blanks have traces of dorsal cortex. Of the analyzed sample, uni-directional and bi-directional patterns are almost equally represented (Table 12-8). Of the 57 identifiable trimming elements, bi-directional is most common (29.8%), followed by parallel and uni-directional with 19.3% each. Converging scars occur on 15.8%, bi-directional-crossed on 10.5%, and radial on 5.3% of the blanks. About one-third of the trimming elements have some cortex, and 35.1% have uni-directional scars, 49.1% have bi-directional scars, and 15.8% have scars coming from more than two directions.

Shape (Table 12-3). Irregular, trapezoidal, and rectangular shapes are common. More than one-third of the flake blanks are wider than long. Most of the blade blanks are

rectangular (34.6%) and triangular (30.8%), while 23.1% are irregular and 11.5% are ovoid. The shapes of the trimming elements include trapezoidal (31.4%), rectangular (25.5%), irregular (21.6%), ovoid (11.8%), and triangular (9.8%). One-third of the trimming elements are wider than long.

Profiles (Table 12-4). Incurvate lateral profiles dominate, with flat and twisted each accounting for about 1 in 5 pieces. For the trimming elements, 69.2% are incurvate, 17.3% flat, 9.6% twisted, and only 3.9% convex.

Platforms (Tables 12-5, 12-8). Unfaceted platforms account for almost half of all identifiable pieces; no other type stands out. Of the trimming elements, 39.7% have cortex or unfaceted platforms, 27.6% are dihedral, and 32.8% are faceted. The faceting indices for blanks only (excluding trimming elements) are IF = 53.1 and IFs = 22.5.

TABLE 12-8
Kabazi V, Indices

	<i>Complex C</i>	<i>Complex D</i>	<i>Complex E</i>
Ilam	7.9	7.6	9.2
IF	52.6	48.9	38.1
IFs	23.8	24.5	15.6
Ic	58.9	59.2	53.1
Ip	6.8	8.0	9.7
Id1	40.5	43.7	45.7
Id2	38.5	35.1	32.3
Id3	14.1	13.3	12.4
IB	11.6	11.5	—

Lipping. Only 2.8% of identifiable platforms were lipped, while 19.7% were semi-lipped and 77.5% were unlipped. Only a single unlipped platform is present among the trimming elements, the rest are lipped.

Size (Table 12-6). The average maximum dimension is 4.1 cm and average thickness is 0.7 cm. Again, more than half of the blanks fall between 3 and 4 cm in maximum dimension, while only 4 pieces exceed 7 cm. Of 147 pieces in the 3 to 4 cm range, only 3 are tools. Of 63 in the 4 to 5 cm group, again, only three were retouched. From there on, however, each of the size groups has about 25% tools. Most of the trimming elements (73.3%) fall between 3 and 4 cm in maximum dimension; all the others are between 4 and 5 cm.

Tools (Table 12-7). In Level III/1, there are 35 unifacial and 11 bifacial tools, as well as 14 pieces with traces of use, and 5 unfinished bifacial pieces.

Typology of Unifacial Tools. There are 8 points, 16 scrapers, 1 denticulate, 1 notched tool, and 9 unidentifiable fragments. In toto, 33 were made on flakes and 2 on blades. Twenty-one are on blanks struck on-axis, 8 on off-axis blanks, while 6 were not identifiable in this sense. Retouch is overwhelming obverse: 32 pieces, as opposed to 3 with alternate retouch. Of the 58 retouched edges present, 13 have parallel retouch, on 22 it is sub-parallel, on 9 it is heavy sub-parallel, 8 scalar, 4 marginal, and 1 edge with irregular retouch. The retouch angle is mainly divided between flat (21) and semi-steep (21), with steep retouch occurring on 9 edges.

Five of the tools have accommodation preparation: 1 naturally backed, 3 with plain backs, and 1 with a faceted back. Ventral thinning occurs on 5 tools; in 4 cases it is basally positioned and on one it is proximal/ bilateral.

Again, *points* exhibit considerable morphological variability, and include 1 triangular, 2 semi-leaf, 2 semi-crescent, 1 sub-trapezoidal, and 2 distal fragments too small to be recognized. The triangular point is on a transverse flake and is laterally pointed. One of the semi-crescent points has ventral basal thinning. The sub-triangular point and one of the broken distal parts approach *déjeté* form.

There are 9 simple *scrapers*, 1 transverse scraper, and 6 convergent scrapers. The simple forms include 2 straight, 3 convex, 3 concave and 1 convex/concave. One of the straight scrapers is thinned by a burin blow from the distal end. The convex scrapers include a normal example, one inversely basally thinned, and one with a natural back opposite the working edge. The concave scrapers include one simple example and two with plain backing. The convex/concave scraper is alternately retouched and has a faceted back. The transverse scraper is convex/concave and obversely retouched.

The convergent scrapers include 1 sub-leaf, 1 semi-rectangular, 2 hook-like, and 2 unidentifiable types. The sub-leaf is proximally pointed and has a plain/unfaceted accommodation at its back. The semi-rectangular scraper approaches the *déjeté* type. One of the hook-like scrapers is alternately retouched, the other is proximally pointed and has inverse basal thinning. The unidentifiable examples are distal parts with converging scraper retouch.

There is a single *denticulate* with a straight worked edge and notches formed by alternating retouch. A single *notch* occurs on a transverse flake. Nine obversely *retouched fragments* are too small to classify; 5 have single edge retouch and 4 have retouch on more than one edge. One of each group shows inverse thinning of the proximal end of the fragment.

Typology of Bifacial Tools. There are 11 finished and 6 unfinished bifacial tools (Table 12-7). The finished examples include 4 points, 2 scrapers, and 5 unidentifiable fragments. Two of the points are broken plano-convex distal fragments. The third point is plano-convex sub-leaf on a massive flake (fig. 12-6: 1). The fourth point is plano-convex sub-leaf with an impact fracture (fig. 12-9: 1). Both scrapers are semi-crescent and truly bifacial. One has a natural basal accommodation. Of the fragments, three are bifacial, one plano-convex, and one semi-bifacial. One of the bifacial fragments has a cortex base.

Blanks with Traces of Use-Wear. Fourteen pieces show traces of use: 8 retouched flakes, 5 utilized flakes, and one utilized blade. One of the retouched flakes has alternating irregular retouch. One of the utilized flakes has light inverse retouch, while on two the retouch is alternating. The utilized blade has bilateral light obverse retouch.

Level III/1a

This assemblage comprises 3,198 artifacts of which 6 are cores, 57 are tools, 14 are flakes with utilization, 2 are blades with utilization, and the rest are debitage or debris (Table 12-1).

Core-Like Pieces. There are five complete and one broken core. The broken example has a faceted platform but the other attributes are unidentifiable. The complete cores include one bi-orthogonal, one radial, one uni-directional parallel, one uni-directional parallel transverse, and one sub-crossed. All are exhausted and two are on plaquettes, the others are unidentifiable in that sense.

The uni-directional parallel core is 6.1 cm long, 5.9 cm wide, and 2.5 cm thick. The single non-volumetric flaking surface is rectangular and the flaking follows the long axis of the piece. The striking platform is acute and faceted. The uni-directional parallel transverse core is 5.1 cm long, 4.0 cm wide, and 2.3 cm thick. Its single non-volumetric surface is semi-ovoid and the parallel flaking is oriented transverse to the long axis. The striking platform is convex faceted and covers about one-third of the core perimeter. There are three unfaceted supplementary platforms opposite the main platform.

The bi-orthogonal core is 7.2 cm long, 7.1 cm wide, and 1.5 cm thick. There are 4 main platforms and 2 opposed ovoid flaking surfaces. One surface has orthogonal removals from

two adjacent faceted platforms. The length of both of these striking platforms is about two-thirds of the core perimeter. The inverse surface has the same type of flaking from two other adjacent platforms which are on the opposite core edge. The length of these platforms combined is about one-third of the perimeter.

The radial core is 5.5 cm long, 4.7 cm wide, and 3.0 cm thick. The single ovoid flaking surface exhibits centripetal removals. The faceted striking platform covers about 90% of the perimeter.

Technology (Tables 12-1, 12-8). There are 342 artifacts in this sample: 14 flakes and 2 blades with use wear, 42 flake tools, 6 blade tools, and the remainder is debitage. About one-third of these are broken and are used for only some of the observations. There are 172 flakes and 19 blades which are complete. The trimming elements consist of 37 flakes and 3 blades.

Dorsal Scar Patterns (Tables 12-2, 12-8). Only parallel scar patterns occur in a high percentage; all other types account for no more than 1 in 5 pieces. More than three-fourths of the blanks have some dorsal cortex; few are primary (Table 12-2). Uni-directional and bi-directional flaking dominate (Table 12-2). About half (44.4%) of the trimming flakes have some dorsal cortex, but there are no true primary pieces among them. Of the trimming elements, 62.5% have uni-directional scars, 12.8% have scars from two different directions, and 18.8% have scars originating from more than two directions.

Shape (Table 12-3). Irregular and trapezoidal shapes are common; other forms occur in low percentages. About one-fourth of the sample is wider than long. Most of the blade blanks are rectangular (47.4%) or triangular (21.1 %); other types are single examples. The most common shapes of trimming elements are trapezoidal (42.9%), irregular (37.1%), and rectangular (14.3%); other types are very rare. Of 32 trimming flakes, more than one-third are wider than long.

Profiles (Table 12-4). Over half of the pieces have incurvate profiles, with flat accounting for 20%. Among the trimming elements, incurvate dominates with 60.0%, and twisted is common at 31.4%. Other types are only single examples.

Platforms (Tables 12-5, 12-8). Almost one-half of the platforms are unfaceted; no other type is common. Of the 40 identifiable trimming elements, 45% have unfaceted platforms, while 22.5% are dihedral, 5% are polyhedral, and 27.5% are faceted. The faceting indices for blanks are: IF = 50.3, IFs = 22.9.

Lipping. Unlipped platforms account for 54% of the pieces, followed closely by semi-lipped (40.1%). Lipped platforms occur only 5.9% of the time. Only a single trimming element is unlipped, the remainder are lipped.

Size (Table 12-6). The average maximum dimension is 4.2 cm and the average thickness is 0.6 cm. This assemblage is much like the others already described: over half are less than 4 cm in greatest dimension, about one-third fall between 4 and 5 cm, while fewer than 1 in 10 are between 5 cm and 6 cm. Only three pieces exceed 7 cm. Of 112 blanks less than 4 cm, only 5 are tools. Between 4 and 5 cm, 12 of 71 are tools. This ratio increases in the 5 to 6 cm grouping to ca. 25%, and to 50% in the 6 to 7 cm interval. Only one of the three pieces over 7 cm is a tool. Again, size appears to be a major factor in blank selection.

Among the trimming elements, 82.5% fall into the lowest group, 3 to 4 cm, while the others are in the 4 to 5 cm interval.

Tools (Table 12-7). There are 47 unifacial and 10 bifacial tools, as well as 16 blanks with traces of use and 4 unfinished bifacial pieces.

Typology of Unifacial Tools. There are 2 points, 29 scrapers, 2 denticulates, 3 combination tools, 1 endscraper, and 10 unidentifiable tool fragments. Of these, 42 are made on flakes, 6 on blades, and one on a chunk. Twenty-five are on pieces struck on-axis, 19 are on pieces struck off-axis, and 5 are unidentifiable. Retouch is obverse on 41 examples,

inverse on 3, and alternating on another 3. Of the 74 retouched edges, parallel retouch occurs on 15, sub-parallel on 20, heavy sub-parallel on 21, scalar on 10, marginal on 6, and irregular on 2. Retouch angle by retouched edge is dominated by semi-steep with 40 examples, followed by flat with 24, and by steep with 10.

Five tools have accommodation preparation: one with natural backing, three with plain backs, and one with a faceted back. Eight tools have been thinned by inverse retouch: four basally, two distally, one laterally, and one with both lateral and basal thinning. Two others are thinned by burin blows: one distal and one distal/proximal.

Only 2 *points* were recovered: semi-crescent and unidentifiable. The semi-crescent point is regular (fig. 12-2: 2). The second is a broken distal part with signs of distal thinning.

There are 15 simple *scrapers*: 3 transverse, 2 double, and 9 convergent. The simple examples include 7 straight, 5 convex, 2 concave, and 1 convex/concave forms. Two of the straight examples are on blades. One straight scraper has its retouched edge off-axis to the blank, as well as having lateral backing retouch and inverse distal thinning. Only one convex scraper is made on a blade; the rest are on flakes modified by Quina retouch (fig. 12-2: 7). One of the latter is off-axis and has a plain accommodation and inverse basal thinning. Both concave scrapers are on flakes; one is off-axis. The other piece is inversely retouched and has basal thinning. The convex/concave scraper is typical.

The transverse scrapers include 2 straight and 1 concave. One double scraper is double convex; both edges are inversely retouched, with lateral thinning, and part of the lateral edge has a plain accommodation. The straight-convex example is naturally backed.

There is considerable morphological variability among the convergent scrapers: 1 sub-triangular, 3 semi-leaf, 2 semi-crescent, 2 sub-trapezoidal, and 1 unidentifiable fragment. Most of these are regular forms. There are some varieties, however: one semi-leaf is on a blade blank with basal thinning; both semi-crescent scrapers are on blades, one of which has inverse basal thinning; and the sub-trapezoidal scrapers are on transverse flakes, one of which has a plain accommodation.

Both *denticulates* are made on straight edges; one is inversely retouched, the other alternatingly. The *combination tools* include 1 scraper/denticulate, 1 scraper with a notch, and 1 scraper/burin. The scraper/denticulate is alternately retouched with an inverse denticulated edge and thinned by a burin blow. The scraper/notch combines alternating retouch for the scraper edge and an obverse lateral notch. The scraper/burin combines a simple obversely retouched straight scraper on one lateral edge and two burin facets on the other lateral edge, one distal and the other proximal. The *endscraper* is ovoid and is on a chunk. The *unidentifiable tools* include 10 obversely retouched and 1 alternatingly retouched fragments. There are 5 with a single edge retouched and 5 with two edges retouched.

Typology of Bifacial Tools. There are 10 finished (5 points and 5 scrapers) and 4 unfinished bifacial tools. The finished points include 1 plano-convex sub-leaf with basal thinning (fig. 12-6: 2), 1 semi-bifacial sub-leaf (fig. 12-4: 1), and 3 broken plano-convex distal parts. The 5 finished scrapers include 1 bi-convex simple straight example with a plain back, 1 plano-convex sub-crescent (fig. 12-8: 2), and 3 broken distal parts of convergent scrapers (2 plano-convex and 1 bi-convex).

Blanks with Traces of Use-Wear. There are 8 retouched flakes, 5 utilized flakes, and 1 utilized blade. All have very light, generally irregular retouch on one edge. A single example has alternating irregular retouch, and another has light inverse retouch. The blade has bilateral "ephemeral" retouch.

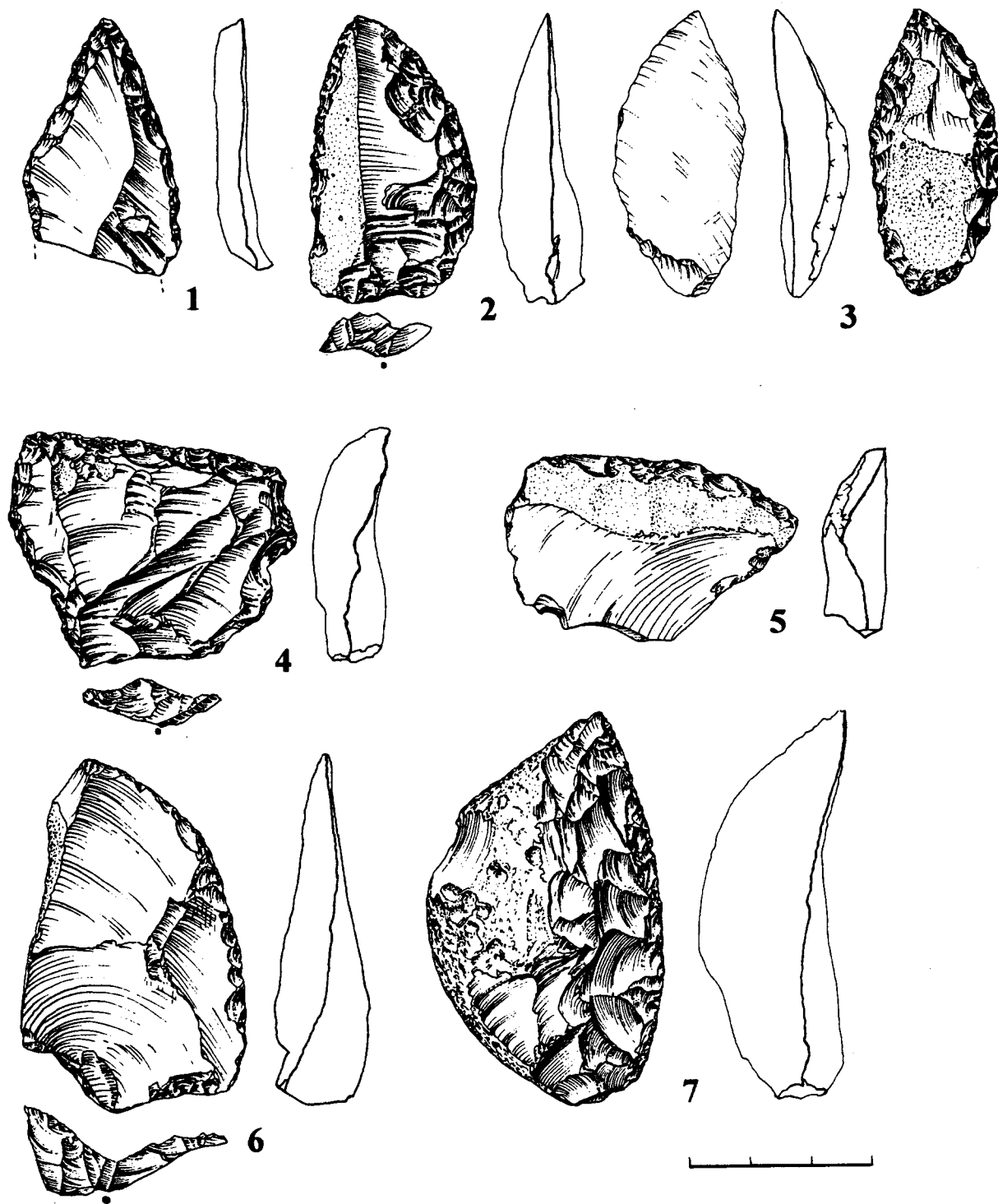


Fig. 12-2—Kabazi-V, Complex D, Levels III/1a (2, 7) and III/2 (1, 3-6), Scrapers: 1—semi-leaf; 4—sub-trapezoidal; 5—transversal convex; 6—convex naturally backed; 7—convex naturally backed with Quina retouch. Points: 2—semi-crescent; 3—leaf.

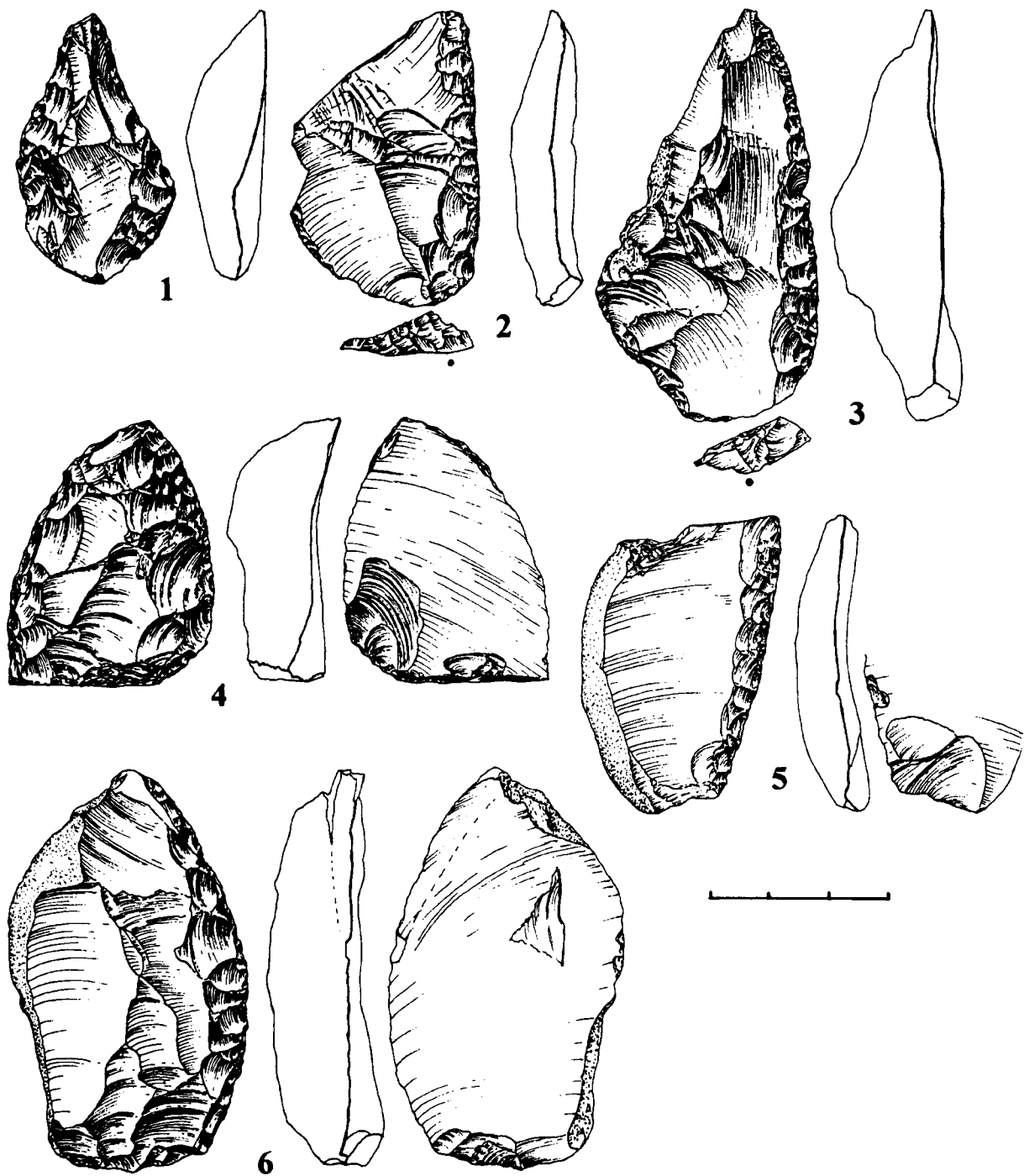


Fig. 12-3—Kabazi-V, Complex E, Level III/3, Scrapers: 1—hook-like; 2—straight-convex; 3—convex; 4—semi-leaf with thinned base; 5—straight naturally backed; 6—convex naturally backed with proximal truncation.

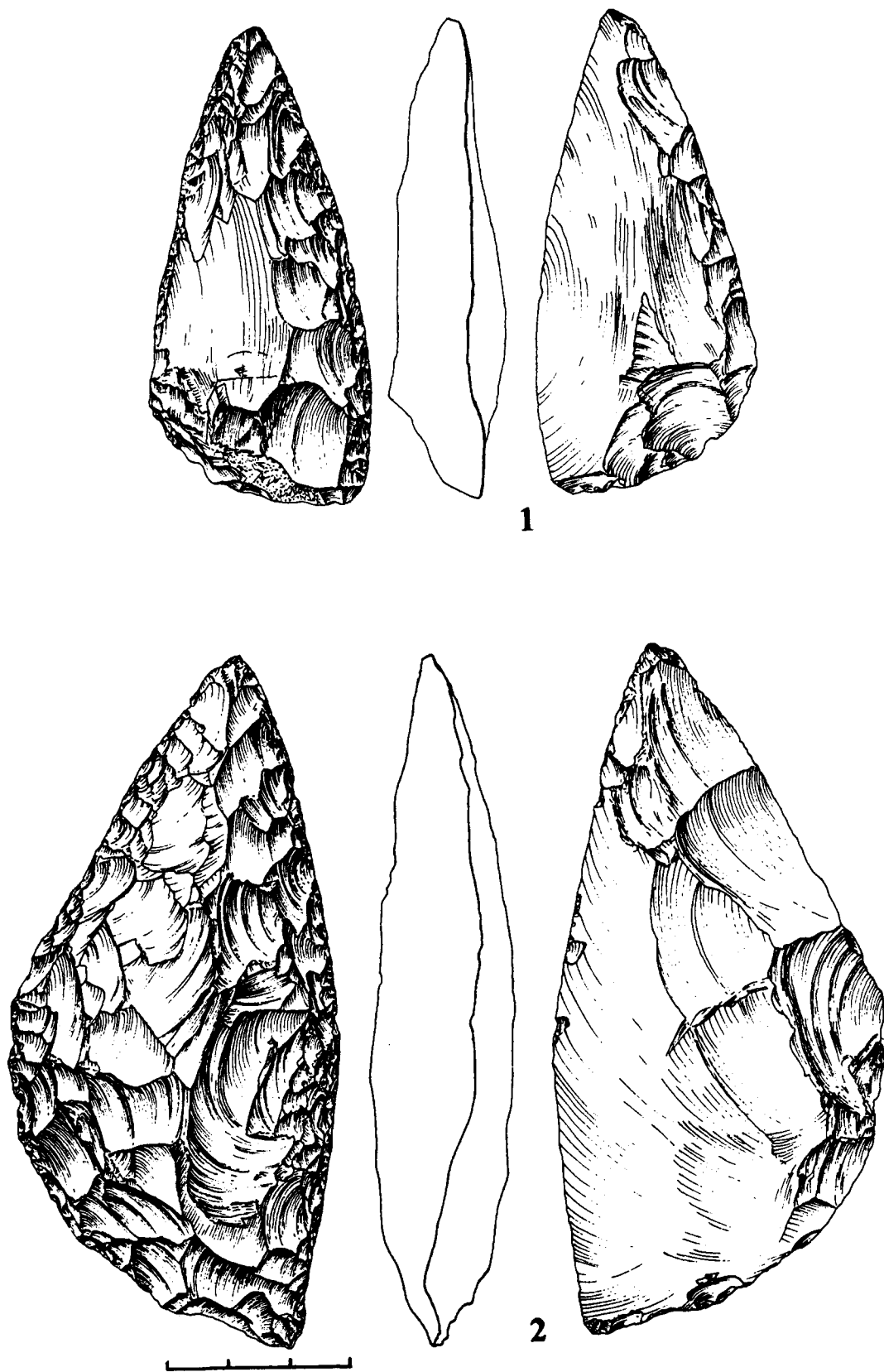


Fig. 12-4—Kabazi-V, Complexes C and D, Levels II/4a (2) and III/1a (1), Tools: 1-2—Semi-bifacial leaf-points made on transverse flakes.

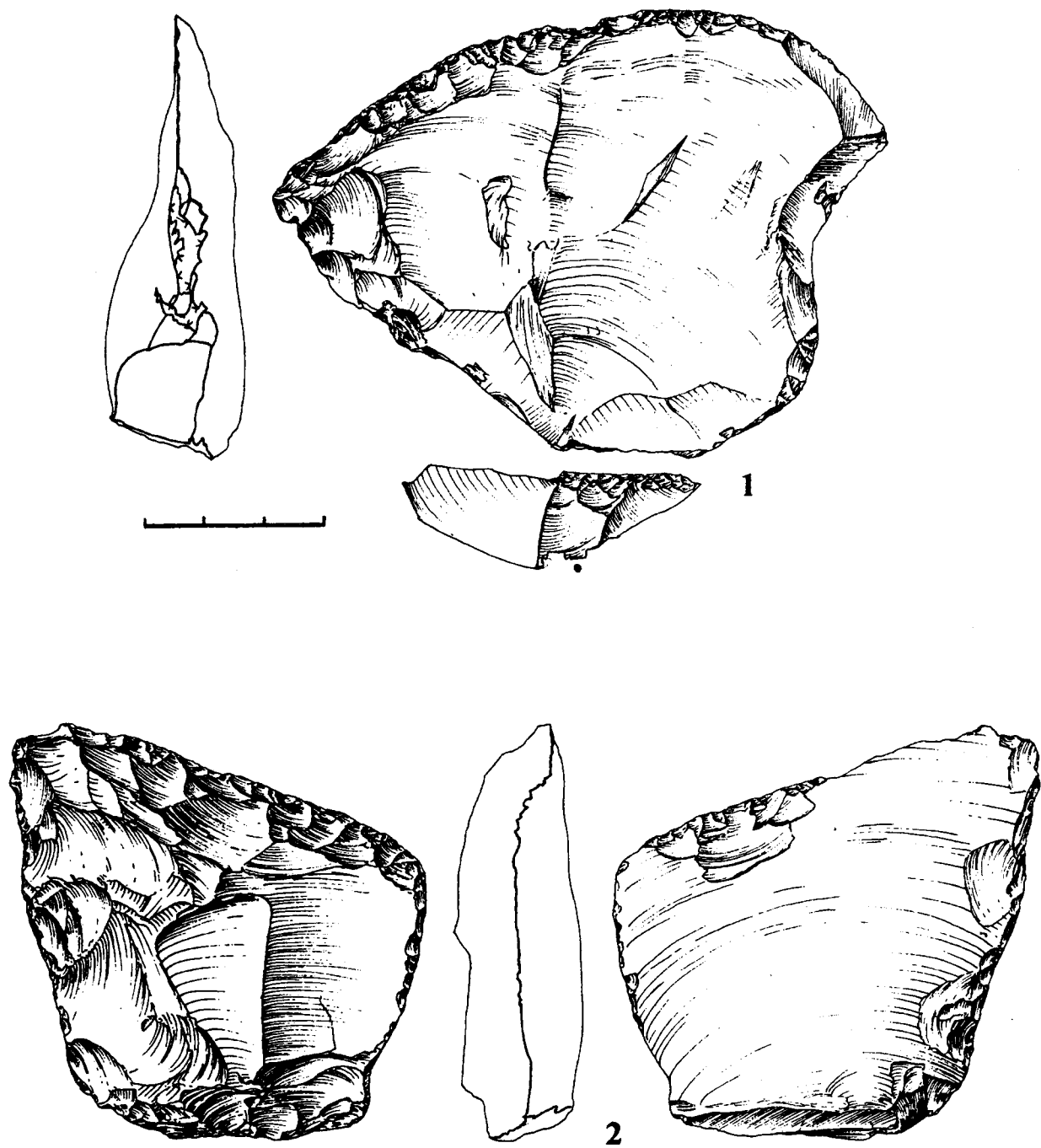


Fig. 12-5—Kabazi-V, Complexes C and E, Levels II/7 (2) and III/3 (1), Scrapers: 1—transversal convex; 2—convergent sub-trapezoidal.

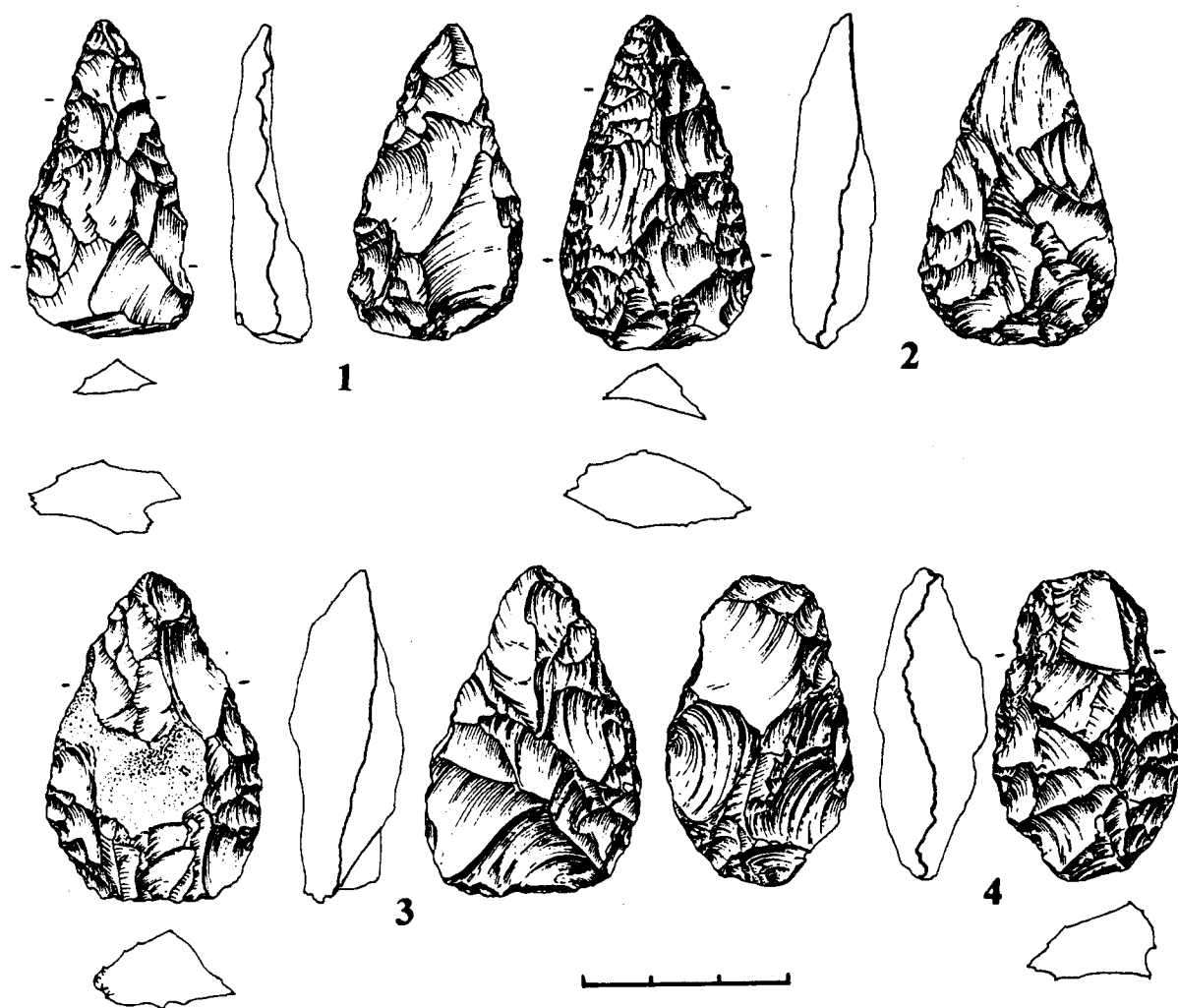


Fig. 12-6—Kabazi-V, Complexes C and D, Levels II/4a (4), III/1 (1), III/1a (2), and III/2 (3), Bifacial Tools: 1-2-bifacial sub-leaf points; 3-bifacial sub-leaf scraper; 4-bifacial ovoid scraper.

Level III/2

This assemblage has 4,246 artifacts, of which 2 are cores, 77 are tools, 31 are flakes with use wear, 1 blade with use wear, and the rest are debitage or debris (Table 12-1).

Core-Like Pieces. There are two cores; one complete and the other broken. The broken example is merely a fragment with a faceted platform. The complete example is uni-directional-parallel on a plaquette with the following dimensions: length, 6.8 cm; width, 4.3 cm; and thickness, 3.1 cm. A single scar takes up almost the whole of the rectangular flaking surface. The core platform is polyhedral, with fine faceting around the point of percussion. There are no supplementary platforms.

Technology (Tables 12-1, 12-8). A sample of 486 blanks was used here; essentially the assemblage excluding the trimming elements, chips, chunks, and 18 tool fragments. Of this sample, 450 are flakes and 36 blades. More than a third are broken and so can be used for only part of the observations. In addition, the 52 trimming elements (49 flakes and 3 blades) are treated separately.

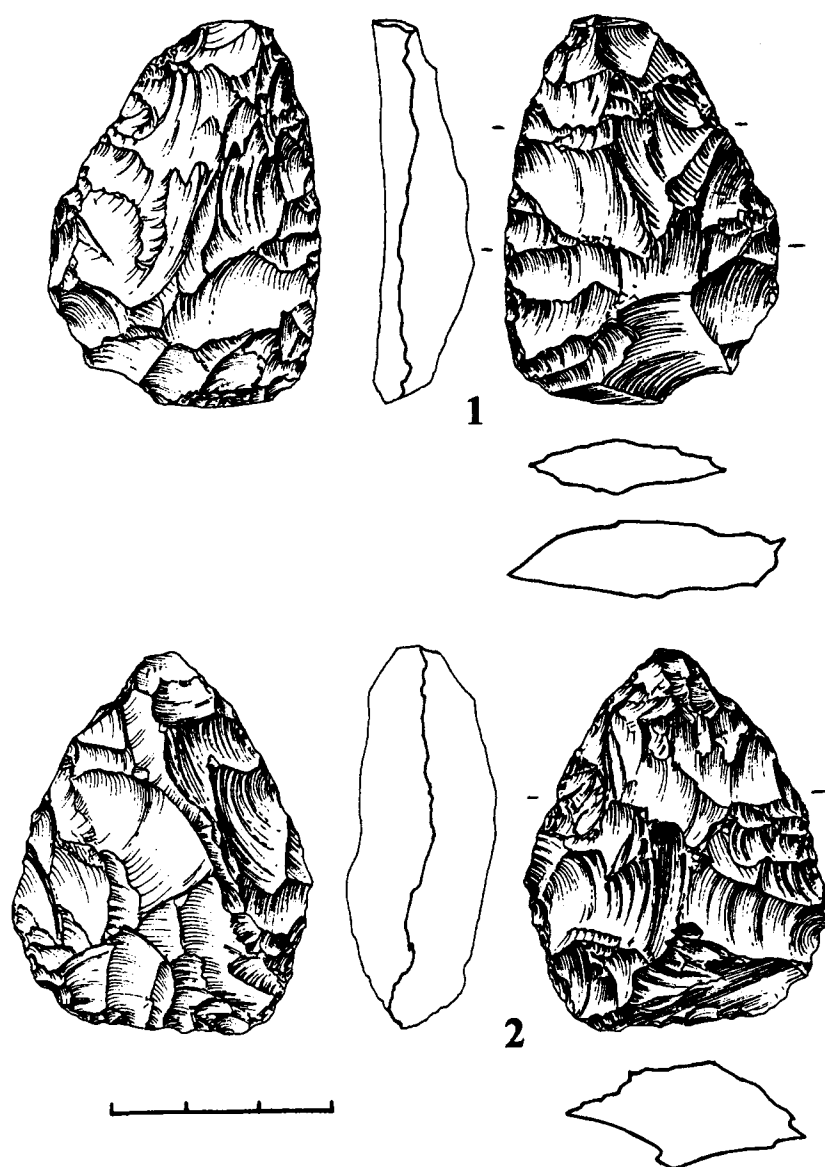


Fig. 12-7—Kabazi-V, Complex D, Level III/2, 1-2—unfinished bifacial tools.

Dorsal Scar Patterns (Tables 12-2, 12-8). While parallel scar patterns are most common, a number of other patterns occur in low frequencies. More than half of this sample has some dorsal cortex, while uni-directional and bi-directional flaking are, again, rather evenly represented. Among the trimming elements, bi-directional is most common (40.4%), with parallel and parallel-crossed at 17% each, and with bi-directional-crossed at 10.6%. Other types are rare. About half of the trimming elements have some cortex but there are no primary pieces among them.

Shape (Table 12-3). This sample from Level III/2 includes 266 flakes and 23 blades. Irregular shapes are most common, followed by trapezoidal (28.9%) and rectangular. About one-third of the flakes are wider than long. The blades are mainly rectangular in shape (39.1%), trapezoidal (26.1%), and triangular (21.7%). Other shapes are rare. Of the 45 identifiable trimming elements, shapes are irregular (33.3%), trapezoidal (31.1%), ovoid and triangular (13.3% each), and rectangular (8.9%). About one quarter of the trimming elements are wider than long.

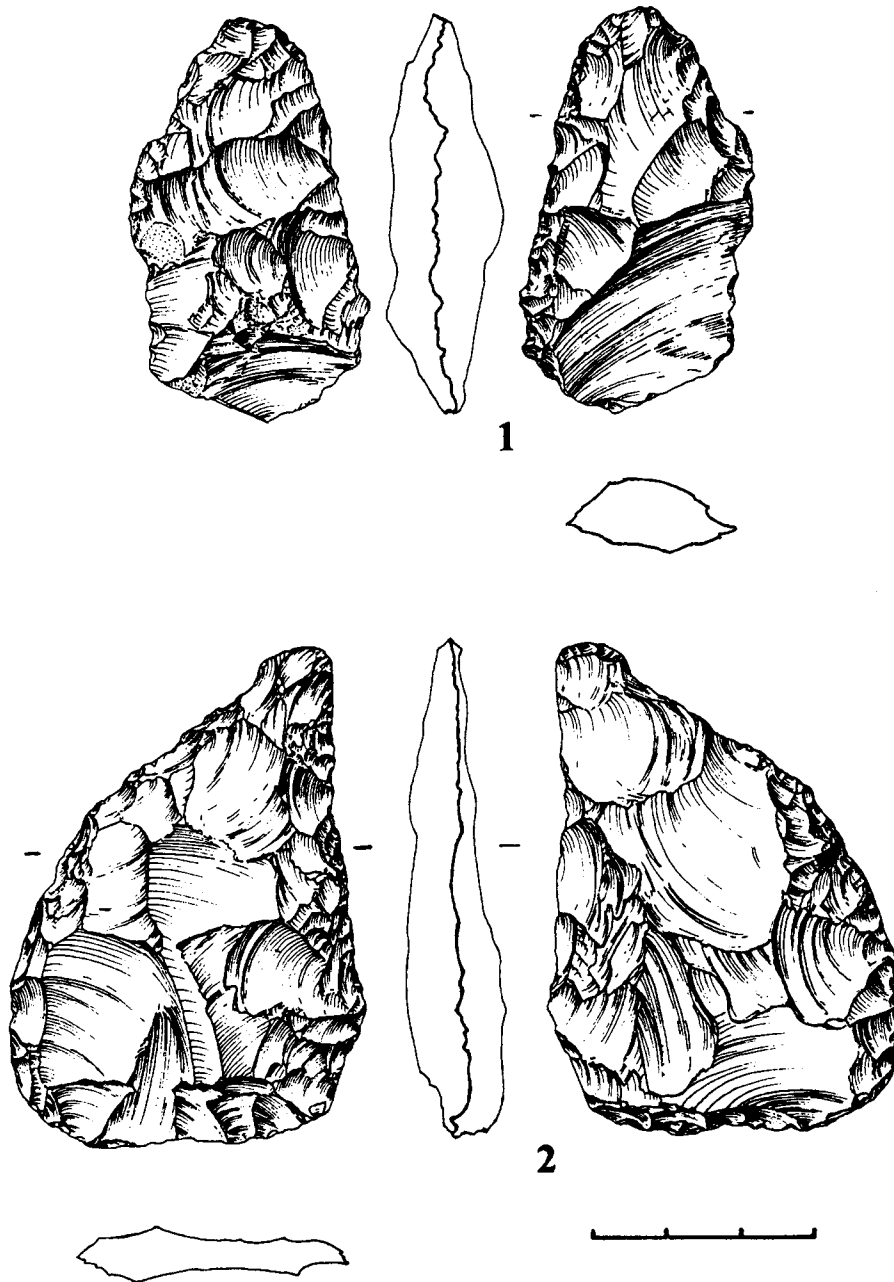


Fig. 12-8—Kabazi-V, Complexes C and D, Levels II/4a (1) and III/1a (2), Tools: 1—unfinished bifacial tool; 2—bifacial sub-crescent scraper.

Profiles (Table 12-4). As usual, incurvate and flat are the only two types of lateral profiles significantly represented. About two-thirds, 65.9%, of the trimming elements have incurvate profiles, and 25% are flat. Twisted and convex occur in very small proportions.

Platforms (Tables 12-5, 12-8). While unfaceted accounts for nearly half of the platforms, faceted now accounts for almost one in three (27.0%), followed in lesser amounts by dihedral (10.7%) and polyhedral (7.3%). Of the 50 identifiable trimming flakes, 58% are unfaceted, 4% are dihedral, 36% are faceted, and 2% are polyhedral. The faceting indices for the blanks are IF = 44.9 and IFs = 26.9.

Lipping. Unlipped platforms are most common (57.0%), followed by semi-lipped (39.5%) and lipped (3.5%). One trimming element is semi-lipped, all the others are lipped.

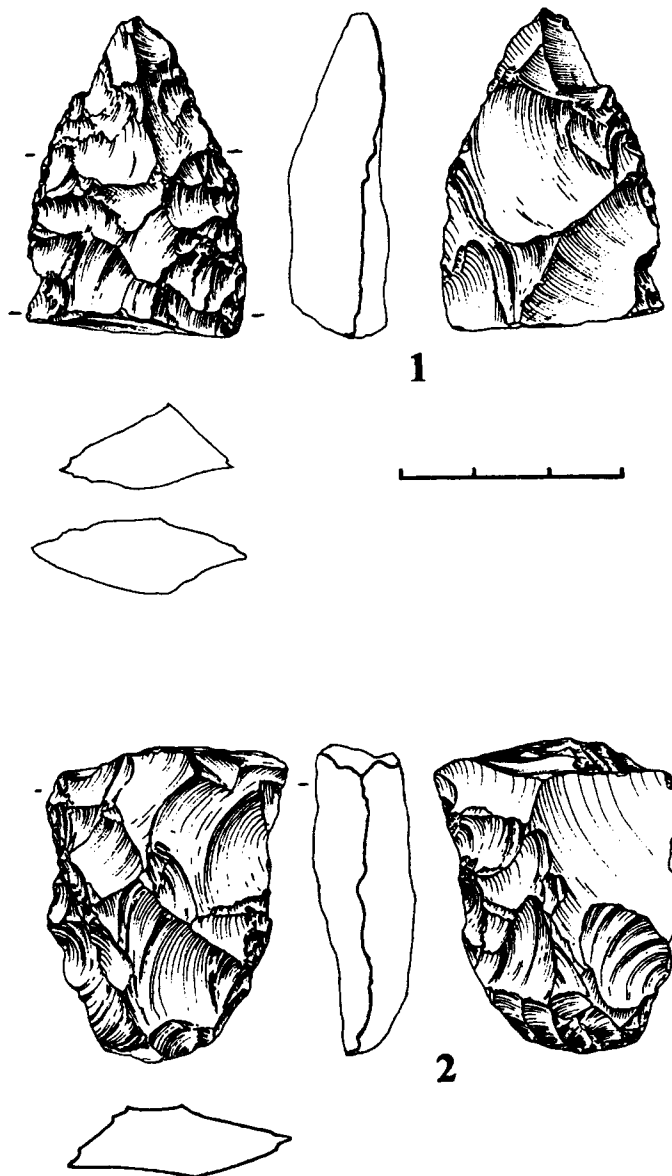


Fig. 12-9—Kabazi-V, Complexes C and D, Levels II/7 (2) and III/1 (1), Tool fragments: 1—bifacial sub-leaf point; 2—sub-leaf bifacial tool.

Size (Table 12-6). The average maximum dimension of blanks is 4.1 cm, and the average thickness is 0.6 cm. Yet again, more than one-half fall into the 3 to 4 cm category, one-third into the 4 to 5 cm group, one in eight into the 5 to 6 cm interval, and one in thirty into the 6 to 7 cm group. Single examples fall between 8 and 9 cm and 9 and 10 cm. The pattern for tool selection remains as before: 7 out of 170 below 4 cm, 16 out of 99 from 4 to 5 cm, about one-third between 5 and 6 cm, but only one out of 6 is a tool in the 7 to 8 cm interval. Both of the largest blanks have been retouched into tools.

Tools (Table 12-7). In Level III/2, there are 74 unifacial and 3 bifacial tools, as well as 32 pieces with traces of use-wear and 9 unfinished bifacial pieces.

Typology of Unifacial Tools. There are 9 points, 40 scrapers, 7 denticulates, one notch, one end-scraper and 16 unidentifiable fragments. Of these, 66 were made on flakes, 5

on blades, and 4 on chunks. Fifty-nine are on blanks struck on-axis, 10 on off-axis blanks, and 6 cannot be identified to axis. Retouch placement is overwhelmingly obverse (66), with a few examples each of inverse (2), alternate (3), and unidentifiable (4). Of the 112 retouched edges, there are 14 which have parallel/sub-parallel retouch, 41 where the retouch is scalar, and 46 where it is invasively scalar. On another 10 edges it is marginal, and on a single piece it is irregular. Retouch angle is rather evenly divided between flat (46) and semi-steep (49), with only 17 having steep retouch.

Tools with accommodations include 4 with naturally backed edges, 6 with plain-backed edges, while on 1 the backed edge is faceted. There are 6 inversely thinned tools; (2 basal, 1 lateral, 1 bi-lateral, and 2 proximal/distal). In two cases, the thinning was achieved by burin blows from the distal end.

Among the *points*, there are 2 semi-leaf, 1 sub-crescent, as well as 1 each sub-triangular, leaf, semi-crescent, hook-like, and unidentifiable forms. The sub-triangular point has obverse retouch. The leaf point is obversely retouched on a blade blank, has basal thinning and a retouched/backed lateral accommodation (fig. 12-2: 3). Both semi-leaf points have obverse retouch, one is made on a blade. Both sub-crescent points are off-axis, one has obverse, the other inverse retouch, as well as a proximal point and bilateral thinning. The semi-crescent point is obversely retouched on a blade. The hook-like point is also obversely retouched. The unidentifiable example is a broken, pointed distal part.

There are 21 simple, 3 transverse, and 16 convergent *scrapers*. The simple scrapers include 5 straight, 13 convex, 2 concave, and 1 convex/concave. Among the straight examples, one is on a blade and another on a chunk. One on a flake is naturally backed. All convex scrapers are obverse and made on flakes (fig. 12-2: 2); four of them have lateral, backed accommodations (2 natural and 2 plain), and one also has inverse, lateral thinning. One of the simple concave scrapers is on a fragment of a naturally backed plaquette, while the other is on a flake which has been thinned by a burin blow. The single convex/concave example has obverse retouch and is on a flake. There are two convex (fig. 12-2: 5) and one straight transverse scrapers, all of which are obversely retouched on flakes.

Convergent scrapers include 2 sub-leaf, 3 semi-leaf, 3 semi-crescent, one sub-trapezoidal, 2 semi-trapezoidal, 3 semi-rectangular, 1 semi-ovoid, as well as a single unidentifiable fragment. Both sub-leaf scrapers are obverse and proximally pointed on flakes. One of them is proximally and distally thinned. Two of the semi-leaf scrapers have obverse retouch (fig. 12-2: 1) and one has alternate retouch: all are on flakes. One of the obversely retouched pieces is proximally and distally thinned. The semi-crescent scrapers include 2 on flakes and one on a blade. One of the former has alternate retouch, the other is laterally pointed. The sub-trapezoidal scraper is obversely retouched on a transverse flake (fig. 12-2: 4). Both semi-trapezoidal pieces are obversely retouched flakes. The semi-rectangular scrapers include two on flakes and one each on a blade and a chunk. One of those on a flake has alternate retouch, the other has obverse retouch and a plain-backed proximal edge. The semi-ovoid scraper has obversely retouched, markedly convex edges which are transverse to the flake axis. The unidentifiable fragment is a broken pointed distal part of a convergent tool.

There are 2 simple, 3 convergent, and one each of double and transverse *denticulates*. All are obversely retouched and made on flakes. Of the simple denticulates, there is one each of straight and convex/concave forms. The transverse denticulate has a wavy edge. The double denticulate has one straight and one convex/concave edge. The convergent pieces include one which is semi-trapezoidal, one semi-rectangular, and one which is only a broken pointed distal part.

A single transversely notched piece is on a chunk with one naturally backed edge and distal thinning made by a burin blow. A single sub-ogival endscraper on a chunk was recovered.

The retouch is restricted to the working edge. There are 16 unidentifiable tool fragments; 15 are obversely retouched and one has inverse treatment. All but two exhibit a single retouched edge; the others have two. A single fragment also shows some basal thinning.

Typology of Bifacial Tools. Three are finished and nine are unfinished (fig. 12-7: 1,2). Among the finished tools, there is 1 *point*, 1 *scraper*, and 1 *unidentifiable fragment* (Table 12-7). The point is unidentifiable, being a broken plano-convex point distal part. The scraper is sub-leaf, also plano-convex (fig. 12-6: 3). The unidentifiable piece is a basal part of bifacial tool, prepared in bi-convex manner.

Blanks with Traces of Use-Wear. There are 32 blanks with traces of use: 24 retouched flakes, 7 utilized flakes, and a utilized blade. The retouched flakes include 14 obverse, 2 inverse, and 8 with alternately irregular retouch. Only 3 dorsal and 6 alternate flakes have double edges, all the others have a single retouched edge. The utilized flakes include 5 obverse and 2 alternately "damaged" pieces. One obverse piece and one of the alternately "damaged" flakes are double-edged, all the others are one-edged. The utilized blade has alternate modification on both edges.

Complex E

The assemblages of Complex E come from Levels III/3 and III/4. Both levels are true living floors with traces of ash and clusters of artifacts and faunal remains. The levels occur in the middle Unit III and are separated from the upper levels by clear sterile levels 5 cm to 10 cm thick. Given their stratigraphic positions, as well as their typological traits, there is ample justification for grouping them together.

The assemblages of Complex E were discovered during the 1995 field season in the northwestern section of the excavations. These new levels were uncovered over only a small area (6 m² for Level III/3, and 4 m² for Level III/4). Additional excavations are needed across the site before significant samples are obtained. Thus, the description and analyses of these levels are preliminary.

Level III/3

This assemblage consists of 2,362 artifacts, of which 3 are cores, 22 are tools, 10 are flakes and 2 blades with traces of use, while the rest is either debitage or debris (Table 12-1).

Core-Like Pieces. There are only 3 cores, one of which is broken and unidentifiable. The two others include a bi-directional-parallel core on a pebble and a sub-crossed bifacial core. The former has a single sub-ovoid flaking surface and two opposed striking platforms. The opposed platforms, one polyhedral and one faceted, are oriented transverse to the long axis of the core. The core is 6.1 cm long, 5.2 cm wide, and 2.7 cm thick. It is exhausted.

The other core has two alternate flaking surfaces and three adjacent striking platforms. Both flaking surfaces are ovoid. The obverse flaking surface has scars of previous removals which come from two adjacent platforms in parallel-crossed directions. There is a supplementary removal to maintain the distal flaking convexity. The main platform is faceted, but the supplementary one was prepared by single blow from the side. The inverse flaking surface has scars of previous removals in one direction from the faceted main platform, which is situated at the opposite core edge from one obverse platform and is adjacent to the other. The core is 4.5 cm long, 4.3 cm wide, and 1.9 cm thick. This core, too, is exhausted.

Technology (Tables 12-1, 12-8). A sample of 212 blanks was used here. This includes all artifacts, minus the debris and the trimming elements. It includes 21 blades ($\text{Ilam} = 9.9$) but given the small number, they have been included with the flakes for most technological observations. About one quarter of the sample is broken. The special debitage group of 13 trimming elements (12 flakes and one blade) is analyzed separately.

Dorsal Scar Patterns (Tables 12-2, 12-8). Only parallel and parallel-crossed occur in any numbers; other types are generally seen on fewer than 1 in 10 pieces. More than half have some trace of dorsal cortex. Flaking direction include 43.2% along a single axis, 32.9% along two axes, and only 14.2% where scars indicate more than two flaking directions. Primary flakes are relatively rare (9.7%). There are only 12 trimming elements, so detailed observations would be meaningless, except that, as with the blanks, about half of them have some dorsal cortex.

Shape (Table 12-3). This sample includes 130 flake and 16 blade blanks with identifiable shapes. As usual, the most common shape is irregular, followed by trapezoidal. About one-third of flakes are wider than long. Most blades are triangular (37.5%) or rectangular (31.3%), but quite a few are irregular (25.0%). A single example was ovoid (6.3%). Of the trimming elements, one-third are trapezoidal, one-third ovoid, while other shapes occur as single examples. More than a quarter are wider than long.

Profiles (Table 12-4). Incurvate profiles dominate, with flat and convex accounting for about 1 in 5 each. The trimming elements follow a similar pattern, with incurvate accounting for 66.7% and the other types occurring in just a few cases.

Platforms (Tables 12-5, 12-8). Over half of the platforms are unfaceted, no other type comes even close. Among the trimming elements, all but three are unfaceted. The faceting indices for the blanks are: IF = 39.6; IFs = 15.8.

Lipping. True lipping is rare, accounting for only 2.1%, as compared with semi-lipped at 36.7% and unlipped at 61.2%.

Size (Table 12-6). The average maximum dimension of blanks is 4.4 cm and the average thickness is 0.7 cm. More than half of the blanks fall into the 3 to 4 cm interval, with a third included in the 4 to 5 cm grouping. Only 1 in 9 falls into the next largest category, 5 to 6 cm, and only isolated examples are larger. One massive blade is 12.3 cm long. The main selection criterion for tool blanks, yet again, is size. Only a single piece from the 81 in the 3 to 4 cm group is a tool. This increases to 7 out of 52 in the 4 to 5 cm group, and increases slightly in the 5 to 6 cm category to 2 out of 14. There are 3 tools out of the 7 pieces in the 6 to 7 cm group, one out of three in the 7 to 8 cm interval, and the single piece in the 9 to 10 cm interval is a tool.

Tools (Table 12-7). There are 22 unifacial and no bifacial tools in the assemblage from Level III/3.

Typology of Unifacial Tools. There are 18 scrapers, one denticulate, one combination tool, and 2 unidentifiable tools, all made on flakes. Of them, 10 are on-axis and 11 off-axis, while one was unidentifiable. Retouch is obverse on 16, inverse on 3, and alternate on 3. Of the 33 retouched edges, most (14) have invasive scalar retouch, followed by scalar (11), and 2 each of parallel, sub-parallel, marginal, and irregular. Retouch angle is evenly divided between flat (16) and semi-steep (16), with only a single steeply retouched edge found.

Seven tools exhibit accommodations: three are naturally backed and 4 have plain backs. Inverse thinning occurs on eight tools: 4 basally, 2 distally, and 1 each lateral and proximal/distal.

There are 9 simple, 3 transverse, 2 double, and 4 convergent *scrapers*. Simple types include 2 straight, 6 convex, and 1 convex/concave. One straight scraper is obversely retouched and has inverse basal thinning and a naturally backed lateral accommodation (fig. 12-3: 5). The other is inversely retouched. All convex scrapers have obverse retouch and all but two have either backed accommodation or inverse thinning. Two just have laterally backed edges (natural and plain). One has a natural lateral backing, as well as a proximal truncation (fig. 12-3: 6). Another is laterally backed (fig. 12-3: 3). The convex/concave

example is obversely retouched without any other elaboration. Most of simple scrapers are close to semi-Quina types.

There are one straight and 2 convex transverse scrapers. The straight one has ventral retouch, while the convex examples are obversely retouched (fig. 12-5: 1). The double scrapers are both straight-convex. One is obversely retouched (fig. 12-3: 2), while the other is alternately retouched.

The convergent scrapers include one semi-leaf, one sub-crescent, and 2 bi-concave forms. The semi-leaf is obverse and has an inversely thinned base (fig. 12-3: 4). The sub-crescent is also obversely retouched and has inverse distal thinning. One of the bi-concave examples is obversely retouched (fig. 12-3: 1). The other is inversely retouched, is laterally pointed and has inverse lateral thinning. The alternately retouched piece also has proximal/distal thinning.

There is a single straight *denticulate* with alternating retouch and a plain lateral backing. The *combination tool* is a lateral denticulate with a notch on an adjacent edge. The *unidentifiable tools* include 2 obversely retouched fragments: on one the retouch is limited to a single edge, while on the other, two edges are retouched. The latter piece also shows evidence of inverse basal thinning.

Blanks with Traces of Use-Wear. Of the 12 blanks with use wear, 9 are retouched flakes, one is a retouched blade, and the others are a utilized flake and blade. Among the retouched flakes, 7 have obverse, 1 has inverse and 1 has alternatingly irregular retouch. Only 3 obversely retouched pieces are bi-lateral; all others have only a single edge modified. Both utilized pieces show edge damage along two edges.

Level III/4

This assemblage consists of 339 artifacts, including 2 tools and 4 pieces with evidence of use. The remaining artifacts are either debitage or debris (Table 12-1).

Technology (Tables 12-1, 12-8). The sample consists of 32 flakes, 1 blade, 4 flakes with traces of use, 1 flake tool, and 1 blade tool. Thus, there are 37 flake blanks and 2 blade blanks.

Dorsal Scar Patterns (Tables 12-2, 12-8). Only 32 blanks have identifiable scar patterns: parallel and converging dominate. More than half (20 of 39) have the traces of cortex on dorsal their surfaces. The small sample size makes any indices meaningless (Table 12-2).

Shape (Table 12-3). As usual, irregular and trapezoidal shapes are most common. Blade shape is rectangular (1) and triangular (1).

Profiles (Table 12-4). Most of the identifiable pieces have incurvate profiles.

Platforms (Tables 12-5, 12-8). Over half are unfaceted, other forms occur in small percentages. The faceting indices are IF = 28.6 and IFs = 14.3.

Lipping. Semi-lipped, 25%; unlipped, 75%.

Size (Table 12-6). Of the 28 blanks, the average maximum dimension is 4.3 cm and the average thickness is 0.7 cm. Most (57.1%) fall between 3 and 4 cm, while another 28.9% are between 4 and 5 cm. Only 2 pieces (7.2%) are between 5 and 6 cm, and only one each (3.6%) fall between 6 and 7 cm and 7 and 8 cm. The single unbroken tool measures 7.2 cm.

Tools (Table 12-7). There are only 2 tools in Level III/4: a simple, straight scraper and an unidentifiable piece. The straight *scraper* is inversely retouched on an overpassed flake. It has a combination of semi-steep sub-parallel and scalar retouch. The *unidentifiable tool* is a blade fragment with sub-parallel flat and semi-steep retouch, as well as some evidence for inverse basal thinning.

Blanks with Traces of Use-Wear. There are 4 blanks with traces of use-wear: 2 retouched and 2 utilized flakes. The retouched flakes have bi-lateral retouch; one obverse and the other

alternatingly irregular. The utilized flakes both show inverse modification along a single edge.

Bone and Sandstone Artifacts

In addition to the flint artifacts from the occupation levels, occasional finds were made of broken bones with surface traces of use as "retouchers." This type of retoucher was first described by H. Martin from La Quina in France (Martin 1907-1910). They were studied later by S. A. Semenov (1953, 1957), as well as by P. Chase (1990). These tools are always found with heavily retouched flint tools in Charentian and, often, in Micoquian assemblages. They were recognized by Bonch-Osmolowski (1940) at Kiik-Koba, by Formozov (1958) at Starosele, by Filippov and Liubine (1993, 1994) at Barakayevskaya, and by Kolosov (1986) at some sites of the Ak-Kaya industry, all in contexts which are similar to Kabazi V. While these tools may have served either as retouchers or as anvils, in both cases they were associated with tool production.

In the Kabazi V assemblages discussed here, there were 23 retouchers: 3 in II/4a, 3 in II/7, 11 in III/1, 3 in III/1a, 2 in III/2, and a single example in III/3 (figs. 12-10 through 12-13). Retouchers consist of massive fragments of tubular bone, most are 5 to 8 cm long and from 2 to 3 cm wide. The bone tends to be about 1 cm thick. Only two pieces are longer than 10 cm: 10.8 cm from II/4a and 12 cm from III/1 (fig. 12-10). Two pieces are less than 5 cm in length (4.7 cm from III/1 and 4.0 cm from III/1a).

Traces of use tend to be situated near the ends of the bones (figs. 12-10; 12-11) and are seen as short and deep cuts, perpendicular to the long axis of the bone fragment, which are clustered in small, oval zones 10 to 15 mm in diameter. At times, these short cuts are accompanied by long, shallow scratches along the long axis of the bone (fig. 12-12). These traces do not parallel the types of scratches and grooves made by carnivores or by butchering processes.

In addition to the bone retouchers, there are a few retouchers made of sandstone. A flat pebble of tuff-sandstone from II/3 and two of fine grained sandstone were recovered from III/3. One is a flattish, ovoid pebble 6.3 cm long, 3 cm wide, and 1 cm thick. It has three areas of battering; one each at the ends one surface and one on the opposite face near one end (fig. 12-13). The other is less elongated oval and not as flat. It is 3.9 cm long, 3.2 cm wide, and 1.7 cm thick. One lateral edge and one end exhibit traces of flaking.

Both the sandstone and the bone are of similar hardness and the traces of use are very similar on both materials. The flat limestone pebbles are found often in the occupation levels of Kabazi V but, as a rule, their surfaces are badly preserved and any traces of use would have been lost. Therefore, these sandstone retouchers may have been more common than it appears by the number of identifiable examples.

Although some researchers (Filippov and Liubine 1994: 144) believe that these are used for pressure flaking, this was not the case in Middle Paleolithic contexts. Rather, the large number of short and wide chips with acute and lipped platforms in the lithic assemblages suggest that these were soft hammer-retouchers.

INTER-COMPLEX COMPARISONS

Inter-complex comparisons include both consideration of the internal homogeneity of the complexes, as well as variability across complexes. These may be seen on a number of different levels: assemblage composition by artifact class; raw material selection and core reduction; basic reduction patterns and styles; technological traits, as seen through specific and clustered attributes; tool-kit configurations; as well as types within tool classes. There is

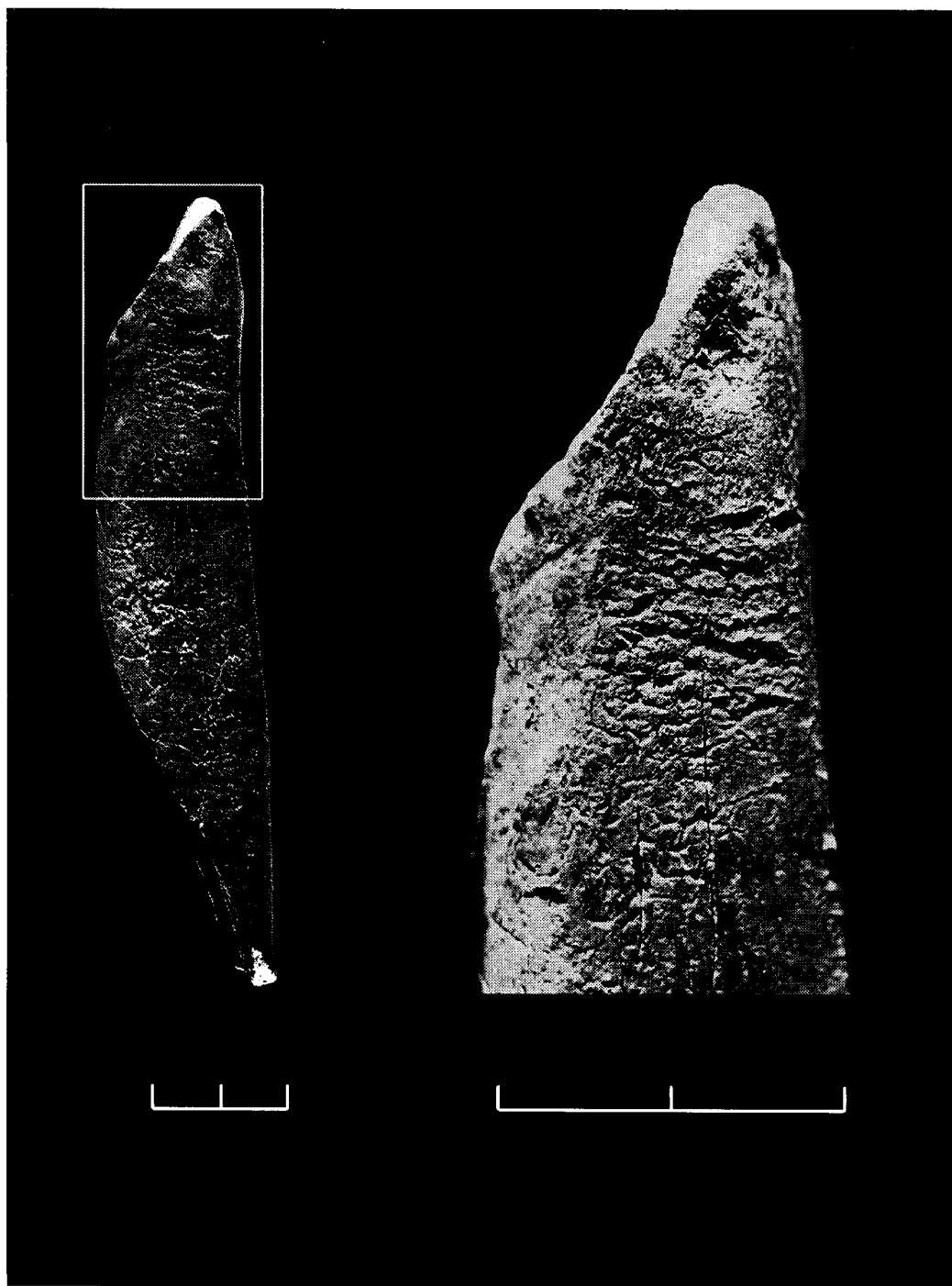


Fig. 12-10—Kabazi-V, Complex D, Level III/1, Bone hammer-retoucher. Photographed by A. Parhomenko.

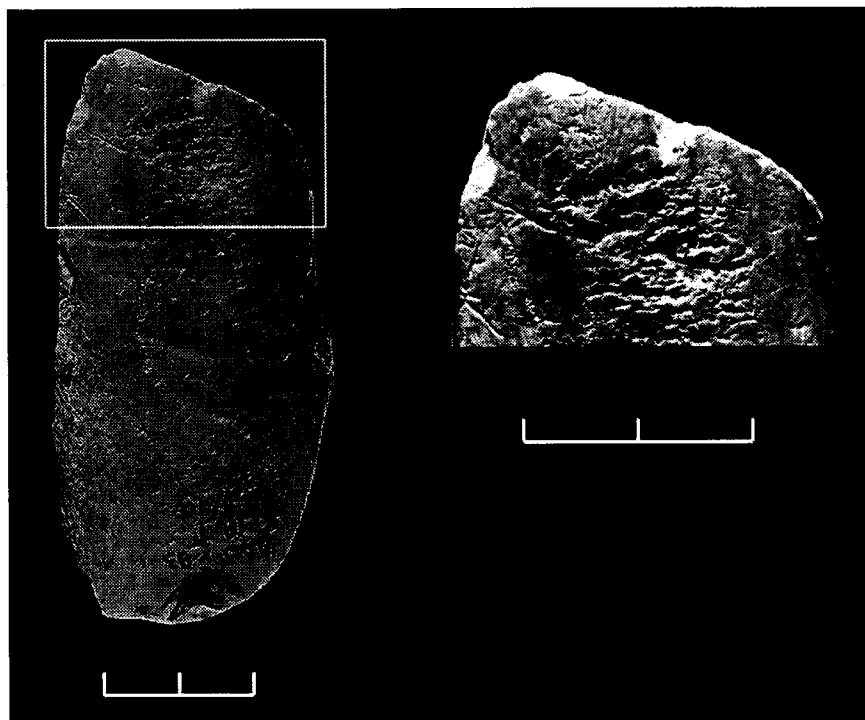


Fig. 12-11—Kabazi-V, Complex C, Level II/4a, Bone hammer-retoucher. Photographed by A. Parhomenko.

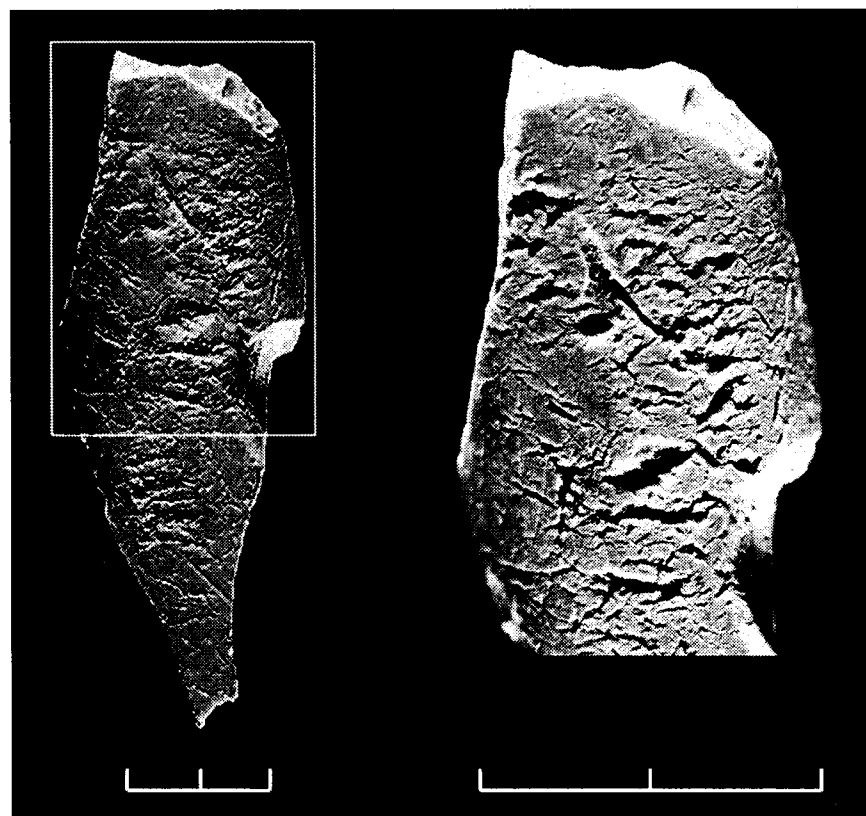


Fig. 12-12—Kabazi-V, Complex D, Level III/1, Bone hammer-retoucher. Photographed by A. Parhomenko.

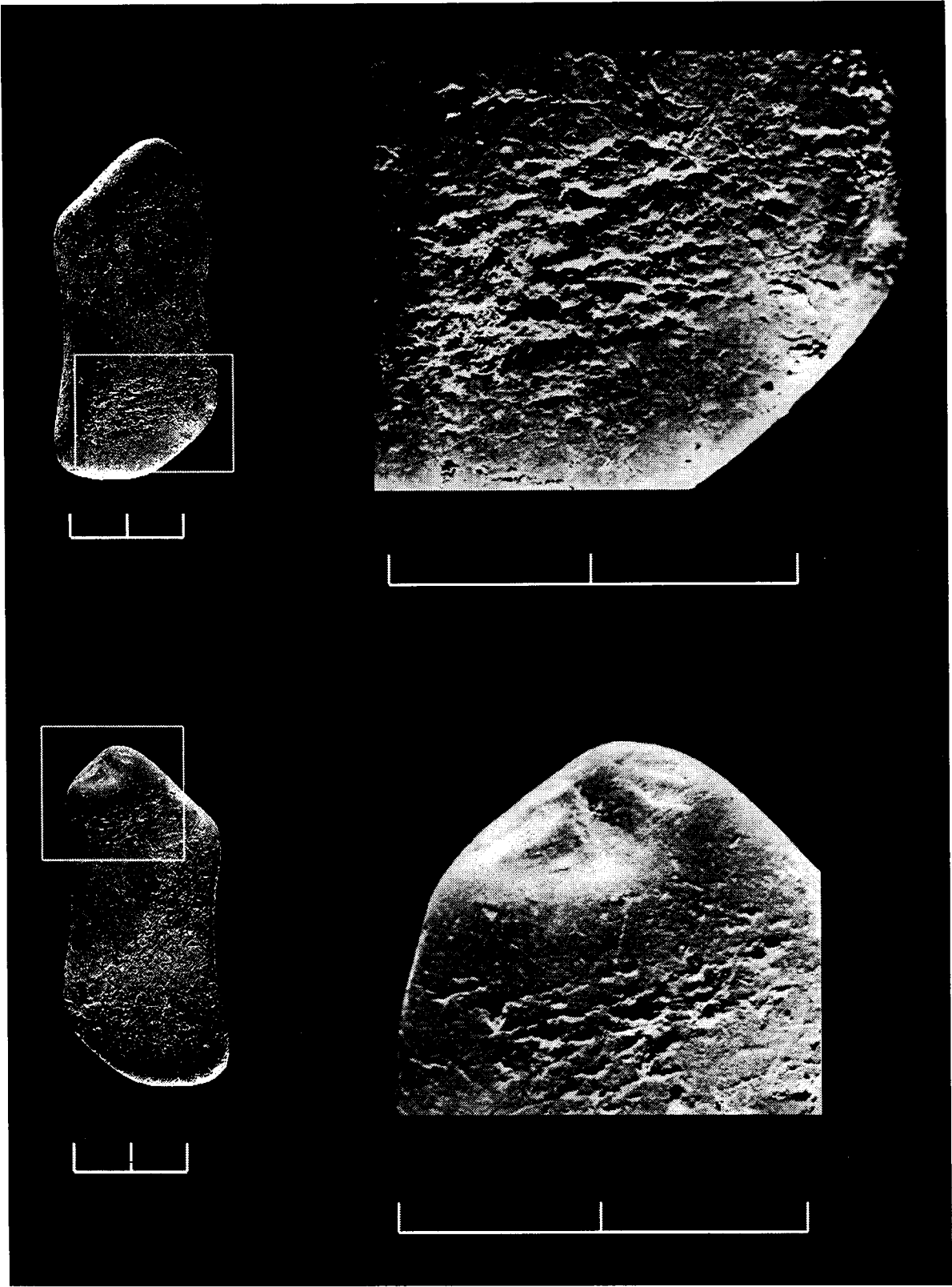


Fig. 12-13—Kabazi-V, Complex D, Level III/1, Stone hammer-retoucher. Photographed by A. Parhomenko.

almost no end of possible comparisons; those chosen are felt to best reflect significant similarities and differences in these specific assemblages.

Assemblage Composition

Even taking into account the different extent of the excavated areas (Complex E was excavated over only 6 m², while Complexes C and D were excavated over between 12 to 15 m²), the numbers of artifacts in each of the complexes are very similar. As is normal at in situ sites, except under the most special circumstances, the vast majority of recovered pieces are chips (Table 12-1). Beyond that, the paucity of cores and precores in all assemblages must be noted (Table 12-1). The number of blades is low in all cases (Tables 12-1 and 12-8). The distribution of scar patterns is characterized by a dominance of bi-directional and poly-directional scars, as well as by considerable numbers of completely and partly cortical blanks (Tables 12-2 and 12-8). The majority of blanks are irregularly shaped; among those with regular shapes, trapezoidal and rectangular dominate (Table 12-3). A high percentage of flakes are wider than long: 20%-25% in each of the complexes. The majority of blanks are not longer than 3-4 cm (Table 12-6). The dominant types of blank profiles are incurvate and flat (Table 12-4). Those differences seen between Complexes C and D, on the one hand, and E, on the other, such as platform preparation (Tables 12-5 and 12-8), the number of trimming pieces (Table 12-1), and the structure of the tool-kits (Table 12-7), may be explained by the different sample sizes for each of the complexes.

Typology

The tool-kit configurations indicate that there are close similarities among tool classes as well as among tool types in Complexes C and D (Table 12-7). At the tool class level, unifacial points account for 20% of tools in Complex C, but only 14.5% in Complex D, both falling within the normal range of the Staroselian. The unifacial scrapers account for very similar proportions in Complexes C and D, reaching somewhat more than half of all tools (ca. 60%). Denticulates also occur in similar amounts (ca. 6%). While notched pieces are rare in Complex D, they reach ca. 5% in the others. Combination tools and endscrapers are always rare, and are absent entirely in Complex C.

There are pronounced differences between the proportions of bifacial points and bifacial scrapers in Complexes C and D. Complex C is characterized by a predominance of bifacial points over scrapers (6:1), while Complex D has almost equal proportions of these tools (9:8). The percentage of identifiable bifacial tools is almost equal in both of these complexes (Table 12-7).

From the point of view of tool shape, unifacial points in both Complexes C and D are equally rare; leaf-shaped pieces (e.g., semi-leaf, sub-leaf, and leaf) account for 3.3% in Complex C and 2.9% in Complex D. The crescent and trapezoidal-shaped points in each complex have similar proportions, as well. Some types of points, such as triangular and hook-like are absent from Complex C, while amorphous points are absent in Complex D.

Unifacial scrapers in Complexes C and D have similar shapes within the transverse and simple forms. The double scrapers also have comparable shapes, although the percentage of this group is higher in Complex C (6.7%) than in Complex D (1.4%). The unifacial convergent scrapers have a predominance of crescent-shaped and canted pieces, but leaf-shaped, triangular-shaped, and hook-like scrapers are absent in Complex C, while the amorphous convergent scrapers are missing from Complex D.

The denticulates and notches in Complexes C and D are commonly simple types (Table 12-7); the absence of more complex forms in Complex C should be noted. Combination tools and endscrapers are represented by a few pieces each in Complex D, and do not significantly

affect the general composition of the tool-kit. The similarities between Complexes C and D can also be seen in the morphological analysis of the combined unifacial points/scrapers/denticulates (Table 12-9). The sample of bifacial tools is too small for morphological analysis. Nevertheless, the presence of leaf points and scrapers in each of the complexes must be noted (Table 12-7).

TABLE 12-9
Kabazi V, Tool Morphology

	<i>Complex C</i> %	<i>Complex D</i> %	<i>Complex E</i> %
One-edge tools	51.1	53.9	73.7
Double-edge tools	8.5	2.9	10.5
Convergent tools	40.4	43.1	15.8

The sample from Complex E was recovered from a significantly smaller area than were the samples of the other complexes. Perhaps because of this, the number of tools is very low: only 24 pieces. This is obviously not enough for meaningful comparisons with Complexes C and D.

The apparent absence of bifacial reduction in Complex E (no bifacial tools were recovered) is probably only a matter of sample size, since there is a relatively high number of trimming elements (Table 12-1). The semi-leaf and sub-crescent scrapers are similar to those from Complexes C and D. Tool retouch in Complex E is the same as used in the other complexes: combinations of scalar, sub-parallel semi-steep, and steep obverse and inverse retouch.

Tool Production

The largest blanks were selected for tool production, an approach which was common for the Middle Paleolithic, and has been noted in many works (e.g., Rolland 1981; Weber 1982; Geneste 1985; Stepanchuk and Chabai 1986; Dibble 1987, 1991; Freeman 1992; Dibble and Holdaway 1993; Demidenko 1996). Most tools from Kabazi V are made on blanks more than 5 cm in greatest dimension, while a majority of flakes and blades fall between 3 and 5 cm. The presence of a relatively high amount of scalar and invasive scalar retouch in tool preparation indicates the use of soft hammers. It should be noted as well that some tools made from specific kinds of raw material were imported into the site. Usually, these imported tools were relatively larger than the others (figs. 12-1, 12-2, 12-5).

As a rule, the longest edge of a blank was retouched without consideration of blank axis. This explains why there are relatively high numbers of “off-axis” tools. Most of the numerous convergent tools have heavy retouch. Points and convergent scrapers were made with both heavy invasive retouch and light marginal retouch. On the other hand, a large number of one-edged scrapers have heavy retouch. A specific feature of the Kabazi V unifacial tool-kits is the small number of double scrapers. Thus, the opinion of M. Baumler and J. Speth (1993) that the “reduction model” proposed by H. Dibble (e.g., 1984) is not a paradigm for the Middle Paleolithic: it merely reflects particular cases in the process of tool production.

The high percentage of bifacial tools in most assemblages is a characteristic feature at Kabazi V. Also, unfinished bifacial pieces are present in significant numbers (Table 12-7). Bifacial tool production included bi-convex, plano-convex, and semi-bifacial techniques, with plano-convex the most common. The use of flint plaquettes as raw material permitted the immediate production of bifacial tools without an initial shaping stage of the nodule. Nonetheless, massive flakes were used for bifacial tool production, too. As mentioned above,

cores were utilized intensively: the last removal scars, for the most part, fall into a 3 cm to 5 cm interval. Such scars are smaller than the blanks used for tool production, where pieces more than 5 cm in length were preferred. In other words, core exploitation was prolonged, even when it produced products too short to be used as blanks for tools. A large percentage of the cores are bifacial and multi-platformed, indicating that they many have been in the process of being transformed into bifacial tools. Perhaps, this explains the small number of cores in the assemblages. Such transformations were noted by G. A. Bonch-Osmolowski in the assemblages of the Kiik-Koba rockshelter (1940: 111-112). Thus, bi-convex and plano-convex bifacial tool production followed several paths: immediately from plaquettes, from massive flakes, and from re-utilized cores.

Most of the semi-bifacial tools were prepared by thinning the ventral surface of unifacial convergent tools with the aim of rejuvenating/resharpening their working edges. In a few cases, where the ventral surface was fully exhausted by thinning, the tool looks as if it had been prepared by a plano-convex technique. The difference between these two techniques can be seen in the preparation sequences: for plano-convex, it is typical to first prepare a flat surface, while for semi-bifacial, the first preparation is on the convex dorsal surface.

The tool typologies of Complexes C, D, and E reflect the character of the reduction processes used in the assemblages. The high percentage of cortical and primary flakes, the small size of most blanks, the high frequency of trimming elements, and the paucity of cores, indicate that the reduction systems of these assemblages emphasized the reduction of flint plaquettes to produce blanks for both bifacial and unifacial tool manufacture.