Chapter 9

KABAZI II: THE WESTERN CRIMEAN MOUSTERIAN ASSEMBLAGES OF UNIT II, LEVELS II/7-II/8C

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This chapter will provide the description of the artifact assemblages from Kabazi II, Unit II, lower levels, as well as an examination of inter-assemblage variability. The results of the studies indicate that all assemblages belong within the Western Crimean Mousterian (WCM) and, although there is clear evidence for some developmental change, the assemblages, as a group, show strong homogeneity.

THE STRUCTURE OF THE ARTIFACT ASSEMBLAGES

A total of 6,618 artifacts were recovered from Levels II/7 through II/8C of Kabazi II, Unit-II during three field seasons of excavations. In general, flint artifacts include seven major categories: chunks, pre-cores, cores, chips, flakes, blades, and tools. In spite of the same excavated area for each level, and the same mode of distribution of both artifacts and faunal remains, the levels differ in assemblage size and the proportions among the artifact categories. As usual, the most numerous category is the chip, from 60% to 80% of all artifacts, followed by flakes, blades, tools, chunks, cores, and pre-cores (see Table 9-1 for essential counts which exclude chips and chunks).

TABLE 9-1
Kabazi II, Unit II, Artifact Totals

	II/7			*II/7AB*			*II/7C*			*II/7D*		
	N	*%*	*ess %*	*N*	*%*	*ess %*	*N*	*%*	*ess %*	*N*	*%*	*ess %*
Chunks	9	2.8		35	3.7		31	2.5		28	2.6	
Preforms	—	—	—	—	—	—	—	—	—	—	—	—
Pre-cores	2	0.6	1.6	1	0.1	0.3	—	—	—	2	0.2	1.1
Cores	8	2.5	6.3	24	2.5	7.5	11	0.9	4.2	8	0.8	4.3
Chips	186	57.9		590	62.5		965	76.7		847	79.9	
Flakes	107	33.3	84.9	209	22.1	65.5	178	14.1	67.9	124	11.7	67.0
Blades	4	1.2	3.2	49	5.2	15.4	36	2.9	13.7	28	2.6	15.1
Tools	5	1.6	4.0	36	3.8	11.3	37	2.9	14.1	23	2.2	12.4
Total	321			944			1258			1060		

	II/7E			*II/7F8*			*II/8C*		
	N	*%*	*ess %*	*N*	*%*	*ess %*	*N*	*%*	*ess %*
Chunks	21	2.0		38	2.3		11	3.2	
Preforms	—	—	—	—	—	—	—	—	—
Pre-cores	1	0.1	0.4	3	0.2	0.8	—	—	—
Cores	13	1.2	5.3	16	1.0	4.4	—	—	—
Chips	785	74.8		1243	75.5		249	73.5	
Flakes	154	14.7	63.1	247	15.0	67.7	63	18.6	79.8
Blades	59	5.6	24.2	56	3.4	15.3	12	3.5	15.2
Tools	17	1.6	7.0	43	2.6	11.8	4	1.2	5.1
Total	1050			1646			339		

Four types of artifact category configurations, based on essential counts, were defined. The first type, represented by the assemblage from Level II/7, is characterized by low percentages of blades and tools, a normal percentage of cores (ca. 6%), and a somewhat high percentage of flakes when compared to the rest of Unit II (Table 9-1). The second type of artifact patterning, seen in Levels II/7AB, II/7C, II/7D, and II/7F8, has proportionately about four times as many tools and blades as does type 1. The third type of artifact patterning, seen in the assemblage of Level II/7E, is characterized by a high percentage of blades (24.18%), and a somewhat lower percentage of tools than in the assemblages of type 2. The salient feature of the fourth type, seen in the assemblage of Level II/8C, is the complete absence of cores and pre-cores. The percentages of tools and blades in this assemblage type fall between those of types 2 and 3.

All of these levels were excavated over the same horizontal area and had the same kind of artifact and faunal distributions. Taking into account the different densities of both artifacts and fauna per level, it is necessary to explain their differences using a wide range of the typological and technological criteria, and, finally, to study the artifacts from the point of view raw material exploitation.

Level II/7

Pre-cores and Cores

Ten pre-cores and cores were found in Level II/7 (Table 9-2). The Levallois tortoise cores are classic examples: the first is complete, with a triangular flaking surface, and the second is broken. Both Levallois cores are at the stage of exploitation when the main flake was removed. The flaking surfaces of these cores are characterized by centripetal preparation, but only the right supplementary platforms were prepared by a number of removals on the undersurface. In both cases, the width of the supplementary platforms covered no less than 80% of the lateral edges. Levallois flake scars cover most of the flaking surface, removing its whole dorsal convexity. In the case of the complete core, the lengths of Levallois flake scars are about 76% of the length of the flaking surface of the core (Table 9-2).

The parallel core with the ovoid flaking surface is made on a flake (fig. 9-1: *1*). The distal and lateral sides show traces of the convex preparation of the flaking surface, but only on the right side was a supplementary platform prepared along practically its whole length. The main platform is well faceted and distally positioned. Several parallel removals extend practically the whole length of flaking surface (Table 9-2).

The bi-directional rectangular core has two well-faceted opposed platforms without any lateral preparation of the flaking surface. The first platform is more pronounced than the second. It is significantly wider, thicker, and the lengths of the scars from this platform are longer (Table 9-2). Essentially, it is a single platform, parallel core with an opposed supplementary platform used to produce flaking surface convexity.

The discoidal ovoid and the unsystematic cubical cores show several unsuccessful attempts to strike blanks from different directions off unprepared platforms.

Except for the two last pieces, the cores from Level II/7 are characterized by minimal thickness, in comparison to their width and length. The variation in length is from 4.3-6.9 cm, the variation in width is from 4.4-6 cm, while thickness ranges from 0.9-2.6 cm. The lengths of the last scars removed vary from 3.3-5.9 cm.

TABLE 9-2
Kabazi II, Unit II, Cores and Pre-cores

Level	Core Type	Length	Width	Thickness	Plat. 1 Width	Plat. 1 Thickness	Plat. 1 neg. max. Length	Plat. 2 Width	Plat. 2 Thickness	Plat. 2 neg. max. Length	Supplementary Platforms: Left Width	Left Max. Negative Width	Right Width	Right Neg. max. length	Comments	TOTAL
II/7	**DISCOIDAL**															
	Ovoid	6	5	2.3	–	–	–	–	–	–	–	–	–	–		1
	LEVALLOIS TORTOISE															
	Triangular															
	flat	5.5	5	1.2	1.5	1	4.2	–	–	–	–	–	4.1	1.2	FPl	1
	Broken															
	naturally flat	>4.6	>5	0.9	>4	0.9	>4.6	–	–	–			>3.9	2.1	FPl	1
	PARALLEL															
	Ovoid															
	convex	6.9	6	2.2	4	2.1	5.9	–	–	–	–	–	5.5	2.3	FPl, moF	1
	BI-DIRECTIONAL															
	Rectangular															
	convex	4.7	5.1	1.7	4.2	1.2	3.3	3.6	0.1	1.3	–	–	–	–	FPl	1
	UNSYSTEMATIC															
	Cubic															
	multiplatforms	4.3	4.4	2.6	–	–	–	–	–	–	–	–	–	–		1
	UNIDENTIFIABLE															
	exhausted/broken	–	–	–	–	–	–	–	–	–	–	–	–	–		2
	PRE-CORES															
	parallel	6.7	3	4.8	1.3	3	–	–	–	–	–	–	–	–	FPl	1
	single crested ridge	5.8	3.5	5.6	3.9	5.1	–	–	–	–	–	–	–	–		1
	TOTAL:															**10**
II/7AB	**DISCOIDAL**															
	Ovoid	4	3.8	1.7	–	–	–	–	–	–	–	–	–	–		1
	LEVALLOIS TORTOISE															
	Ovoid															
	flat	7.1	6.8	3.1	5	3.1	1.8	5.9	1.8	3.2	–	–	4.6	2.7	unst.,2FPl	1
	Broken															
	flat	>6.4	5.1	1.3	–	–	–	3.3	0.9	1.6	>6.3	4.4	>4.9	2.1	unst.,Fpl	1
	CONVERGENT TRANSVERSE															
	Rectangular															
	flat	5.1	5.9	1.1	5.7	1	4.1	–	–	–	4	1.3	4.4	1.7	FPl.,moF	1
	PARALLEL															
	Rectangular															
	flat	6.5	5.9	3.8	4.2	1.5	5.8	–	–	–	–	–	–	–	FPl	1
	convex	5.2	4.7	3	4.6	2.6	4.6	2.2	0.1	3	2.6	1	–	–		1
	Triangular															
	naturally flat	6.5	5.5	2	4.2	1.7	4.6	1.6	1.5	1.8	4.2	1.6	–	–	Pl.2-sp,FPl	1
	Sub-Cylindrical															
	naturally flat	7.4	5.2	2.3	4.1	2.2	7.4	–	–	–	–	–	–	–	vol.,latFPl.	1
	Narrow Flaked Surface															
	naturally flat	6.4	2.3	4.2	2.6	3.3	3.4	–	–	–	–	–	–	–	CrBpr.,h.f.	1
	Broken															
	flat	>4.6	>4.2	1.8	>4.1	1.6	>4.3	–	–	–	–	–	–	–	FPl	1
	flat	6.3	>5.9	2.8	4.9	2	5.7	–	–	–	–	–	–	–	FPl	1
	PARALLEL TRANSVERSE															
	Rectangular															
	naturally flat	5.6	6.7	2	5.3	1.1	5.6	–	–	–	–	–	–	–		1
	naturally flat	5.5	6.4	1.7	5.1	0.9	5.5	–	–	–	–	–	3.7	0.9		1
	BI-DIRECTIONAL TRANSVERSE															
	Rectangular															
	naturally flat	6.6	7.5	2.3	4.6	1.6	3.7	3	1.6	4.3	–	–	–	–		1
	BI-DIRECTIONAL															
	Rectangular															
	naturally flat	5.5	4.6	1.2	3.3	0.7	3.1	3.6	0.7	3	3.8	1.5	4.7	1.9		1
	naturally flat	6.9	5.6	1	4.7	1.7	3.3	2.6	0.9	4.5	–	–	3.5	0.8	FPl	1
	UNIDENTIFIABLE															
	exhausted/broken	–	–	–	–	–	–	–	–	–	–	–	–	–		8
	PRE-CORES															
	bi-directional	6.2	5.6	2.2	3.4	1.3	2.3	3.3	1.7	–	–	–	–	–	FPl.,moF	1
	TOTAL:															**25**

TABLE 9-2 *continued*

Level	Core Type	Length	Width	Thickness	Plat. 1 Width	Plat. 1 Thickness	Plat. 1 neg. max. Length	Plat. 2 Width	Plat. 2 Thickness	Plat. 2 neg. max. Length	Supplementary Platforms: Left Width	Left Max. Negative Width	Right Width	Right Neg. max. length	Comments	TOTAL
II/7C	**RADIAL**															
	Broken															
	naturally flat	5.5	>4.3	1.9	–	0.1	3.3	–	–	–	–	–	–	–		1
	naturally flat	6.4	>4.9	1.8	–	0.1	3.5	–	–	–	–	–	–	–		1
	LEVALLOIS TORTOISE															
	Ovoid															
	convex	5.4	5.1	1.9	4	1,8	3.5	–	–	–	0.6	2	0.1	2.3	FPl	1
	CONVERGENT TRANSVERSE															
	Rectangular															
	flat	4	6.4	2.3	4.3	1.7	5.2	–	–	–	–	–	–	–	FPl.,moF	1
	PARALLEL															
	Rectangular															
	naturally flat	>5.6	4	2.7	4.2	2.3	>2.7	–	–	–	>3.8	2.7	–	–		1
	naturally flat	>6.9	>6.1	2.8	6	2.8	>5.7	–	–	–	–	–	–	–		1
	BI-DIRECTIONAL															
	Rectangular															
	naturally flat	6.4	7.1	1.7	4.9	1.6	8.8	2.2	0.1	3.5	–	–	–	–	moF	1
	Sub-Cylindrical															
	naturally flat	9.9	5.3	3	4	3.2	9.2	2.4	4	7.1	–	–	–	–	vol.	1
	Narrow Flaked Surface															
	convex	6.3	2,7	3.5	4.3	2.2	3.8	3.3	1.8	2.8	–	–	–	–	FPl	1
	BI-DIRECTIONAL ALTERNATE															
	Rectangular	4.8	4.4	2.5	2.8	2.6	4	3.5	2.2	3.2	>0.1	1.9	>0.1	2.1		1
	ORTHOGONAL															
	Broken															
	naturally flat	>3.9	4.8	1.7	4.8	1.7	>3.6	–	–	>3.3	–	–	–	–	FPl	1
	TOTAL:															**11**
II/7D	**RADIAL**															
	Rectangular															
	convex	4.8	4.9	3.2	–	–	–	–	–	–	–	–	–	–	FPl	1
	LEVALLOIS TORTOISE															
	Ovoid															
	flat	7.1	7.5	2.6	6.4	2	7.2	–	–	–	–	–	–	–	FPl	1
	PARALLEL															
	Sub-Cylindrical															
	convex	4.4	3.5	2.7	3	2.5	4.2	–	–	–	–	–	2.9	1.3	vol.	1
	BI-DIRECTIONAL															
	Rectangular															
	flat	4.4	4.4	1.5	3.3	0.9	3	2.8	1.5	1.9	3.5	2.5	–	–		1
	naturally flat	6	6	1.5	6	1.2	4.1	3.3	0.8	2.8	–	–	2.9	2.1	FPl	1
	BI-DIRECTIONAL CONJOINED															
	Sub-Cylindrical															
	flat	6.1	4	2.4	2.2	1.2	6.1	3.3	2.7	5.3	–	–	–	–	vol.	1
	UNIDENTIFIABLE															
	exhausted/broken	–	–	–	–	–	–	–	–	–	–	–	–	–		2
	PRE-CORES															2
	TOTAL:															**10**
II/7E	**RADIAL**															
	Ovoid															
	convex	5.9	5.7	2	–	1.7	3.5	–	–	–	–	–	–	–	FPl	1
	convex	5	5.1	3.1	–	2	3.9	–	–	–	–	–	–	–	FPl	1
	PARALLEL															
	Rectangular															
	naturally flat	5.2	5.1	1.3	5.1	1.1	5.2	–	–	–	–	–	–	–	FPl.,overp.	1
	Narrow Flaked Surface															
	crested ridge	5.9	2.9	5.4	3.6	4.1	5.4	–	–	–	–	–	–	–		1

TABLE 9-2 *continued*

Level	Core Type	Length	Width	Thickness	Plat. 1 Width	Plat. 1 Thickness	Plat. 1 neg. max. Length	Plat. 2 Width	Plat. 2 Thickness	Plat. 2 neg. max. Length	Supplementary Platforms: Left Width	Left Max. Negative Width	Right Width	Right Neg. max. length	Comments	TOTAL
	Unidentifiable															
	broken	7.8	>2.1	>4.8	>4.8	2.8	7.8	–	–	–	–	–	–	–		1
	broken	>7.8	>4.6	>2.9	–	–	–	–	–	–	–	–	–	–		1
	BI-DIRECTIONAL															
	Rectangular															
	naturally flat	6.7	5.4	1.3	3.9	0.7	4	3.3	1.2	4.6	6.4	1.2	5.6	1.5	FPl	1
	convex	7.8	5.4	2.5	5.4	2.3	5.6	2.5	0.4	4.5	6.6	1.9	–	–	FPl	1
	naturally flat	8.1	5.3	1.7	2.7	1.2	5.8	3.9	1.2	3.7	–	–	–	–	FPl	1
	BI-DIRECTIONAL ALTERNATE															
	Ovoid															
	flat	7.2	7.1	2.7	6	3.3	6.3	4.9	3.2	6.3	5	2.1	–	–	FPl	1
	UNIDENTIFIABLE															
	exhausted/broken	–	–	–	–	–	–	–	–	–	–	–	–	–		3
	PRE-CORES															
	crested ridge/bi-direct.	7.4	2.8	3.5	2.1	4.8	2.4	2.7	3.6	3.8	–	–	–	–		1
	TOTAL:															**14**
II/7F8	**RADIAL**															
	Ovoid															
	convex	5.3	4.4	2.2	–	1.3	3.3	–	–	–	–	–	–	–	FPl	1
	naturally flat	8.7	8.8	1.3	–	0.8	5	–	–	–	–	–	–	–	FPl	1
	LEVALLOIS TORTOISE															
	Rectangular															
	naturally flat	7	6.5	1.6	5.6	2	7	–	–	–	3.8	1.8	6.4	1.8	FPl	1
	flat	5.5	5	1.4	4	1	2.8	–	–	–	4.4	2.3	3.9	2.4	lat.FPl.,h.f.	1
	Triangular															
	naturally flat	7.2	7.8	2.1	7.7	1.5	5.9	–	–	–	6	2	5.8	1.5	FPl.,moF	1
	Broken															
	naturally flat	>4.8	7.2	1.4	4.6	1	>4.8	–	–	–	–	–	–	–	FPl	1
	PARALLEL															
	Rectangular															
	naturally convex	5.3	4.4	1.6	4.1	1.3	3.9	–	–	–	–	–	–	–		1
	Broken															
	naturally flat	>7.3	>4.4	>2.4	4.7	1.2	>7.3	–	–	–	–	–	–	–		1
	BI-DIRECTIONAL															
	Rectangular															
	naturally flat	6.5	5.5	1.1	5.5	0.6	4.4	3.8	0.7	4	4.8	1.1	4.3	1.2		1
	naturally flat	6	5	1.9	4.6	0.8	3.7	3.6	1	3.2	4	–	3.6	1.1		1
	Triangular															
	naturally flat	>4.8	4.1	1.3	4	1.6	4.1	–	–	–	–	–	–	–	moF	1
	UNIDENTIFIABLE															
	exhausted/broken	–	–	–	–	–	–	–	–	–	–	–	–	–		4
	PRE-CORES															
	radial	7.2	6.6	2.7	–	0.8	5	–	–	–	–	–	–	–	unfin.Lev.core	1
	crested ridge	–	–	–	–	–	–	–	–	–	–	–	–	–		3
	TOTAL:															**19**
	UNIT II - TOTALS: 89															

Abbreviations

FPl -	faceted platform
lat.FPl -	lateral faceted platform
2FPl -	two opposite faceted platform
Pl.2-sp. -	two opposite platform, one of them - supplementary
moF -	made on flake
unfin.Lev.core -	unfinished Levallois core
unst -	unstruck Levallois flake
vol -	volumetric flaking surface
CrBpr -	crested blade preparation of the flaking surface
overp -	overpassed removal on the flaking surface
h.f. -	hinge fracture removal on the flaking surface

Blanks

Level II/7 contains 116 blanks. Of that number, 109 are flakes, two of which are retouched. Blades are represented by only 7 pieces (3 retouched, which are also included in the number of blanks). Thus, because of the poor sample, all debitage will be described together.

Dorsal Scar Patterns. There are 10 main types of dorsal scar patterns on flakes and blades from Level II/7 (Table 9-3). The most common, by far, are pieces with converging scar patterns, of which more than 40% have some cortex. 23.5% of pieces with this type of scar pattern are wider than they are long.

The second most common scar pattern is uni-directional-crossed, of which about 70% are partly covered by cortex, but only 3 pieces of this type are wider than long. The third most common pattern is bi-directional, and half of them are partly cortex covered.

Other dorsal scar patterns are represented by only a few pieces each. It must be noted, however, that 9% are wholly cortical. An important factor is the presence of Levallois flakes and *pièces débordantes* (Table 9-3).

The dorsal scar pattern on the *pièces débordantes* (6 pieces) is crested. At the same time, that definition is too generalized. The real crested pattern, seen on three examples, has dorsal scars originating only from the crest. The other three blanks show not only scars from the crest, but also uni-directional (one flake) or bi-directional (one flake and one blade) scars from the removals after the crest formation. Four of the six *pièces débordantes* have at least 25% cortex and all have the lateral steep cross-section at midpoint.

The Levallois pieces include a broken flake with a centripetal dorsal scar pattern and a complete blade with the same scar pattern, but with a small cortical area near the butt (fig. 9-2: *4*).

TABLE 9-3
Kabazi II, Unit II, Flake Dorsal Scar Patterns

	II/7	*II/7AB*	*II/7C*	*II/7D*	*II/7E*	*II/7F8*	*II/8C*	*Total*
Covered by cortex	9.2	16.3	12.2	8.0	9.8	9.0	10.4	11.0
Lateral	3.7	5.7	5.9	5.1	4.3	7.8	—	5.5
Radial	4.6	5.7	5.4	2.2	5.5	7.2	11.9	5.8
Converging	27.5	17.6	18.1	20.3	17.2	20.4	17.9	19.5
Uni-directional	6.4	16.3	22.9	17.4	16.6	15.1	17.9	16.5
Uni-directional-crossed	21.1	13.7	9.8	15.2	17.8	13.6	16.4	14.6
Bi-directional	12.8	11.5	9.8	15.2	12.3	12.2	17.9	12.5
Bi-directional-crossed	7.3	4.0	6.8	5.8	7.4	4.7	4.5	5.6
4-directional	0.9	0.4	—	0.7	—	—	—	0.3
Crested	4.6	5.3	6.2	4.3	6.1	4.3	1.5	5.0
Levallois	0.9	2.6	2.9	2.9	1.8	4.3	—	2.7
Unidentifiable	—	0.9	—	2.9	1.2	1.4	1.5	1.1
N	109	227	205	138	163	279	67	1188

Shape. There are 9 blank shapes (Table 9-4). The most common is rectangular. Other shapes include ovoid, triangular, trapezoidal, elongated trapezoidal, irregular, expanding, and crescent, but which occur only in small numbers. The correlation of shape geometry and axis of blank removal shows that off-axis blanks are most numerous (Table 9-5), in spite of the normal rectangular blank shape.

Profiles and Cross-Sections. In general, lateral profiles from Level II/7 are flat (Table 9-6). Medially incurvate blanks are half as numerous as flat blanks; distally incurvate, twisted, convex, and unidentifiable are rare. Among the distal profiles (Table 9-7) the feathered type

TABLE 9-4
Kabazi II, Unit II, Flake Shape as Percentages of Each Type

	II/7	*II/7AB*	*II/7C*	*II/7D*	*II/7E*	*II/7F8*	*II/8C*	*N*	*ess %*
Rectangular	35.8	23.3	38.5	30.4	40.5	24.0	20.9	360	42.01
Triangular	7.3	6.2	8.8	10.1	6.7	10.0	7.5	98	11.43
Trapezoidal	12.8	21.6	10.2	13.8	19.0	18.6	6.0	190	22.17
Trapezoidal elongated	1.8	—	—	—	—	0.4	—	3	0.35
Ovoid	2.8	3.5	5.9	5.8	4.9	5.7	13.4	64	7.46
Leaf shaped	—	1.8	0.5	—	1.2	1.8	—	12	1.4
Crescent	6.4	0.9	3.4	2.9	2.5	1.8	—	29	3.38
Expanding	3.7	2.2	2.4	5.1	4.9	2.1	1.5	36	4.2
Irregular	10.1	6.2	5.9	2.2	1.8	5.0	11.9	65	7.58
Unidentifiable	19.3	34.4	24.4	29.7	18.4	30.5	38.8	331	—
N	109	227	205	138	163	279	67	1188	857

TABLE 9-5
Kabazi II, Unit II, Flake Axis as Percentages of Each Type

	II/7	*II/7AB*	*II/7C*	*II/7D*	*II/7E*	*II/7F8*	*II/8C*	*N*	*ess %*
On-axis	37.6	32.6	44.4	41.3	39.3	41.6	40.3	470	50.6
Off-axis	49.5	40.5	29.8	33.3	46.0	39.4	29.9	458	49.4
Unknown	12.8	26.9	25.9	25.4	14.7	19.0	29.9	260	
N	109	227	205	138	163	279	67	1188	928

TABLE 9-6
Kabazi II, Unit II, Flake Lateral Profiles as Percentages of Each Type

	II/7	*II/7AB*	*II/7C*	*II/7D*	*II/7E*	*II/7F8*	*II/8C*	*N*	*ess %*
Flat	45.9	36.6	42.4	51.4	58.8	53.1	44.8	564	51.2
Incurvate medial	22.9	20.7	31.2	11.6	22.1	19.0	34.3	264	24.0
Incurvate distal	11.0	15.0	7.3	13.0	6.1	3.9	6.0	104	9.4
Twisted	11.0	11.0	7.8	10.1	8.0	12.5	1.5	116	10.5
Convex	1.8	5.7	6.3	5.1	2.5	3.9	6.0	54	4.9
Unidentifiable	7.3	11.0	4.9	8.7	3.1	7.5	7.5	86	
N	109	227	205	138	163	279	67	1188	1102

TABLE 9-7
Kabazi II, Unit II, Flake Distal Profiles as Percentages of Each Type

	II/7	*II/7AB*	*II/7C*	*II/7D*	*II/7E*	*II/7F8*	*II/8C*	*N*	*ess %*
Feathering	57.8	55.5	58.5	54.3	55.8	45.8	53.7	639	72.1
Hinged	11.0	8.8	11.7	15.9	12.3	10.8	13.4	137	15.5
Overpassed	4.6	6.6	2.4	1.5	1.2	1.8	—	34	3.8
Blunt	10.1	10.0	1.5	2.9	7.4	7.5	4.5	76	8.6
Missing	16.5	19.4	25.9	25.4	23.3	34.1	28.4	302	
N	109	227	205	138	163	279	67	1188	886

TABLE 9-8
Kabazi II, Unit II, Flake Cross-Section at Midpoint as Percentages of Each Type

	II/7	*II/7AB*	*II/7C*	*II/7D*	*II/7E*	*II/7F8*	*II/8C*	*N*	*ess %*
Flat	0.9	5.3	1.0	—	—	2.9	—	23	1.9
Triangular	40.4	39.6	35.1	37.0	39.3	36.2	46.3	453	38.1
Lateral steep	12.8	7.1	9.3	8.7	8.0	9.0	4.5	102	8.6
Trapezoidal	29.4	24.3	34.1	35.5	33.7	32.6	22.4	367	30.9
Bi-convex	—	—	—	1.4	—	—	—	2	0.2
Irregular	3.7	5.7	5.4	4.3	2.5	1.8	7.5	48	4.0
N	109	227	205	138	163	279	67	1188	

prevails; hinged, overpassed, and blunt are uncommon. Triangular and trapezoidal midpoint cross-sections are common (Table 9-8), and half of those with lateral steep cross-section are *pièces débordantes*. Pieces displaying a crescent-shaped cross-section are all wholly cortical flakes.

Platforms. There are 67 identifiable platforms, 23 of which are unfaceted, and 11 of which are dihedral faceted (Table 9-9). Among the multiple faceted platforms, straight faceted platforms are the most representative. There is one lateral multiple faceted and 7 lateral plain platform, as well.

Real lipped platforms are relatively rare: 11 out of 65 identifiable examples. The number of unlipped is approximately double that. At the same time, semi-lipped platforms comprise about one-half of all identifiable butts (Table 9-10).

TABLE 9-9
Kabazi II, Unit II, Flake and Blade Platform Types as Percentages

		cortex	*plain*	*lateral plain*	*dihedral*	*faceted*	*lateral faceted*	*N ident.*	*N crushed*	*N missing*	*miss. by retouch*	*N Total*
	Blades	—	—	—	50.0	50.0	—	2	1	3	1	7
II/7	Flakes	3.1	35.4	10.8	15.4	33.8	1.5	65	8	36	—	109
	Total	*3.0*	*34.3*	*10.4*	*16.4*	*34.3*	*1.5*	*67*	*9*	*39*	*1*	*116*
	Blades	2.9	17.1	8.6	11.4	57.1	2.9	35	4	26	2	67
II/7AB	Flakes	14.0	27.9	15.5	9.3	29.5	3.9	129	23	75	—	227
	Total	*11.6*	*25.6*	*14.0*	*9.8*	*35.4*	*3.7*	*164*	*27*	*101*	*2*	*294*
	Blades	3.6	17.9	7.1	10.7	46.4	14.3	28	6	12	—	46
II/7C	Flakes	15.3	17.5	13.1	16.1	33.6	4.4	137	10	58	—	205
	Total	*13.3*	*17.6*	*12.1*	*15.2*	*35.8*	*6.1*	*165*	*16*	*70*	—	*251*
	Blades	—	58.8	5.9	11.8	23.5	—	17	2	15	3	37
II/7D	Flakes	13.8	14.9	10.6	10.6	44.7	5.3	94	11	32	1	138
	Total	*11.7*	*21.6*	*9.9*	*10.8*	*41.4*	*4.5*	*111*	*13*	*47*	*4*	*175*
	Blades	—	22.0	2.4	7.3	68.3	—	41	6	19	1	67
II/7E	Flakes	11.7	21.7	10.8	7.5	48.3	—	120	10	33	—	163
	Total	*8.7*	*21.7*	*8.7*	*7.5*	*53.4*	—	*161*	*16*	*52*	*1*	*230*
	Blades	—	9.4	—	21.9	65.6	3.1	32	9	24	2	67
II/7F8	Flakes	9.8	28.2	5.7	12.6	43.1	0.6	174	29	76	—	279
	Total	*8.3*	*25.2*	*4.9*	*14.1*	*46.6*	*1.0*	*206*	*38*	*100*	*2*	*346*
	Blades	—	20.0	—	—	80.0	—	5	1	6	—	12
II/8C	Flakes	4.9	29.3	4.9	14.6	41.5	4.9	41	6	20	—	67
	Total	*4.4*	*28.3*	*4.4*	*13.0*	*45.7*	*4.4*	*46*	*7*	*26*	—	*79*
N Blades		0.7	21.4	4.4	12.5	56.9	3.8	160	29	105	9	303
N Flakes		11.4	24.2	10.5	12.0	39.2	2.6	760	97	330	1	1188

TABLE 9-10
Kabazi II, Unit II, Flake and Blade Platform Lipping as Percentages of Each Type

	II/7		*II/7AB*		*II/7C*		*II/7D*		*II/7E*	
	blades	*flakes*	*blades*	*flakes*	*blades*	*flakes*	*blades*	*flakes*	*blades*	*flakes*
Unlipped	14.3	21.1	13.4	20.3	21.8	31.2	18.9	31.9	17.9	29.5
Semi-lipped	14.3	26.6	34.3	23.8	28.3	26.3	24.3	31.9	40.3	36.2
Lipped	14.3	8.3	4.5	6.6	6.5	7.8	—	4.3	3.0	6.7
Unknown	57.2	44.0	47.8	49.4	43.5	34.6	56.8	31.9	38.8	27.6
N	7	109	67	227	46	205	37	138	67	163

	II/7F8		*II/8C*		*Total N*		*Total ess %*	
	blades	*flakes*	*blades*	*flakes*	*blades*	*flakes*	*blades*	*flakes*
Unlipped	22.4	26.2	33.3	38.8	57	324	36.8	44.4
Semi-lipped	19.4	30.5	8.3	11.9	87	333	56.1	45.7
Lipped	3.0	3.9	—	6.0	11	72	7.1	9.9
Unknown	55.2	39.4	58.3	43.3	148	459		
N	67	279	12	67	303	1188	155	729

Thus, the debitage of Level II/7 may be characterized by: (1) a dominance of blanks with convergent and uni-directional-crossed dorsal scar patterns; (2) a high percentage of completely and partly cortical blanks—52.2% of all blanks; (3) a dominance of rectangular shaped blanks; (4) a dominance of off-axis oriented blanks; (5) a dominance of blanks with flat profiles in association with feathered distal ends and either triangular or trapezoidal midpoint cross-sections; (6) a dominance of semi-lipped platforms; (7) an extremely low percentage of blades (Ilam = 6.42%), which is very unusual for a Western Crimean Mousterian assemblage; (8) a moderate level of faceted platforms for a WCM assemblage: IF = 53.8, IFs = 36.9; and, (9) a mean blank length of 4.02 cm, a mean blank width of 3.28 cm, and a mean blank thickness of 0.61 cm.

Tools

Only 5 tools were recovered in Level II/7: a point; two scrapers, one semi-crescent and one sub-triangular; and two laterally retouched flakes (Table 9-11). The point and the scrapers are made on blades. The point is semi-crescent obverse, shaped by marginal and scalar flat retouch (fig. 9-3: *9*). The same types of retouch were used for retouching the semi-crescent obverse sidescraper (fig. 9-4: *1*). The sub-triangular dorsal scraper was shaped by steep scalar and sub-parallel semi-steep retouch. The point of that scraper is made on the proximal end of the blank (fig. 9-5: *3*).

TABLE 9-11
Kabazi II, Unit II, Tool Classification

		II/7	*II/7AB*	*II/7C*	*II/7D*	*II/7E*	*II/7F8*	*II/8C*	*N*	*%*	*ess %*
Points		***1***	***5***	***4***	***2***	***–***	***3***	***–***	***15***	***9.1***	***18.3***
Levallois	dorsal	–	–	1	–	–	–	–	**1**	0.6	**1.2**
Lateral	dorsal	–	1	–	–	–	–	–	**1**	0.6	**1.2**
Distal	dorsal	–	2	–	–	–	–	–	**2**	1.2	**2.4**
	alternate	–	–	1	–	–	–	–	**1**	0.6	**1.2**
Sub-Triangular	dorsal	–	–	–	1	–	1	–	**2**	1.2	**1.2**
Semi-Crescent	dorsal	1	–	1	–	–	–	–	**2**	1.2	**3.7**
Sub-Crescent	dorsal	–	1	–	–	–	–	–	**1**	0.6	**1.2**
Semi-Leaf	dorsal	–	–	1	–	–	–	–	**1**	0.6	**1.2**
Sub-Leaf	dorsal	–	–	–	–	–	2	–	**2**	1.2	**2.4**
Willow Leaf	dorsal	–	1	–	–	–	–	–	**1**	0.6	**1.2**
Unidentifiable	dorsal	–	–	–	1	–	–	–	**1**	0.6	**1.2**

TABLE 9-11 *continued*

		II/7	*II/7AB*	*II/7C*	*II/7D*	*II/7E*	*II/7F8*	*II/8C*	*N*	*%*	*ess %*
Scrapers		***2***	***10***	***11***	***4***	***9***	***16***	***2***	***54***	***32.7***	***65.9***
Transv.-Straight	dorsal	–	–	–	–	–	2	–	**2**	1.2	**2.4**
Straight	dorsal	–	3	3	–	3	3	2	**14**	8.5	**17.1**
	dorsal, *backed*	–	1	–	–	–	–	–	**1**	0.6	**1.2**
	dorsal, *truncated-faceted*	–	1	–	–	–	–	–	**1**	0.6	**1.2**
Convex	dorsal	–	1	4	1	–	5	–	**11**	6.7	**13.4**
	dorsal, *backed*	–	1	–	–	–	1	–	**2**	1.2	**2.4**
	dorsal, *thinned back*	–	–	–	–	–	1	–	**1**	0.6	**1.2**
	dorsal, *truncated-faceted*	–	–	–	–	–	1	–	**1**	0.6	**1.2**
Concave	dorsal	–	–	1	–	–	–	–	**1**	0.6	**1.2**
Double-Straight	dorsal	–	1	1	–	–	–	–	**2**	1.2	**2.4**
Straight-Convex	dorsal	–	1	–	–	2	1	–	**4**	2.4	**4.9**
Bi-Convex	dorsal	–	–	–	–	1	–	–	**1**	0.6	**1.2**
	ventral	–	–	–	–	–	1	–	**1**	0.6	**1.2**
Semi-Rectangular	dorsal	–	–	–	1	1	–	–	**2**	1.2	**2.4**
Sub-Triangular	dorsal	–	–	–	1	2	–	–	**3**	1.8	**3.7**
	dorsal, *backed*	1	–	–	–		–	–	**1**	0.6	**1.2**
	dorsal, *backed/distal thinned*	–	–	1	–	–	–	–	**1**	0.6	**1.2**
Semi-Crescent	dorsal	1	–	–	1	–	–	–	**2**	1.2	**2.4**
Sub-Crescent	dorsal	–	–	1	–	–	–	–	**1**	0.6	**1.2**
Sub-Leaf	dorsal	–	1	–	–	–	–	–	**1**	0.6	**1.2**
Convergent	dorsal	–	–	–	–	–	1	–	**1**	0.6	**1.2**
Denticulates		–	***1***	***1***	–	–	***2***	–	***4***	***2.4***	***4.9***
Straight	dorsal	–	–	1	–	–	–	–	**1**	0.6	**1.2**
	dorsal, *bi-truncated-faceted*	–	–	–	–	–	2	–	**2**	1.2	**2.4**
Concave	dorsal	–	1	–	–	–	–	–	**1**	0.6	**1.2**
Notches		–	–	***1***	***1***	***2***	***1***	–	***5***	***3.0***	***6.1***
Lateral	dorsal	–	–	1	–	1	–	–	**2**	1.2	**2.4**
	alternating	–	–	–	1	–	–	–	**1**	0.6	**1.2**
	ventral	–	–	–	–	1	1	–	**2**	1.2	**2.4**
Burins		–	–	–	–	***1***	–	–	***1***	***0.6***	***1.2***
On Truncation	proximal	–	–	–	–	1	–	–	**1**	0.6	**1.2**
Borers		–	–	–	–	***1***	–	–	***1***	*0.6*	***1.2***
Sub-Triangular	dorsal	–	–	–	–	1	–	–	**1**	0.6	**1.2**
Battered Pieces		–	–	–	***1***	–	–	–	***1***	***0.6***	***1.2***
Lateral	alternating	–	–	–	1	–	–	–	**1**	0.6	**1.2**
Bi-Truncated-Faceted		–	–	–	***1***	–	–	–	***1***	*0.6*	***1.2***
Distal-Proximal	unretouched	–	–	–	1	–	–	–	1	0.6	1.2
Retouched Pieces		***2***	***18***	***20***	***13***	***4***	***19***	***2***	***78***	***47.3***	
Lateral	dorsal	2	17	16	11	3	17	1	**67**	40.6	
	ventral	–	–	–	2	–	–	1	**3**	1.8	
	alternating	–	1	–	–	–	–	–	**1**	0.6	
Bi-Lateral	dorsal	–	–	3	–	1	1	–	**5**	3.0	
	alternate	–	–	1	–	–	–	–	**1**	0.6	
Distal	alternating	–	–	–	–	–	1	–	**1**	0.6	
Unidentifiable		–	***2***	–	***1***	–	***2***	–	***5***	***3.0***	
Lateral	dorsal	–	2	–	1	–	1	–	**4**	2.4	
Distal	dorsal	–	–	–	–	–	1	–	**1**	0.6	
TOOLS TOTAL		***5***	***36***	***37***	***23***	***17***	***43***	***4***	***165***	***1.0***	

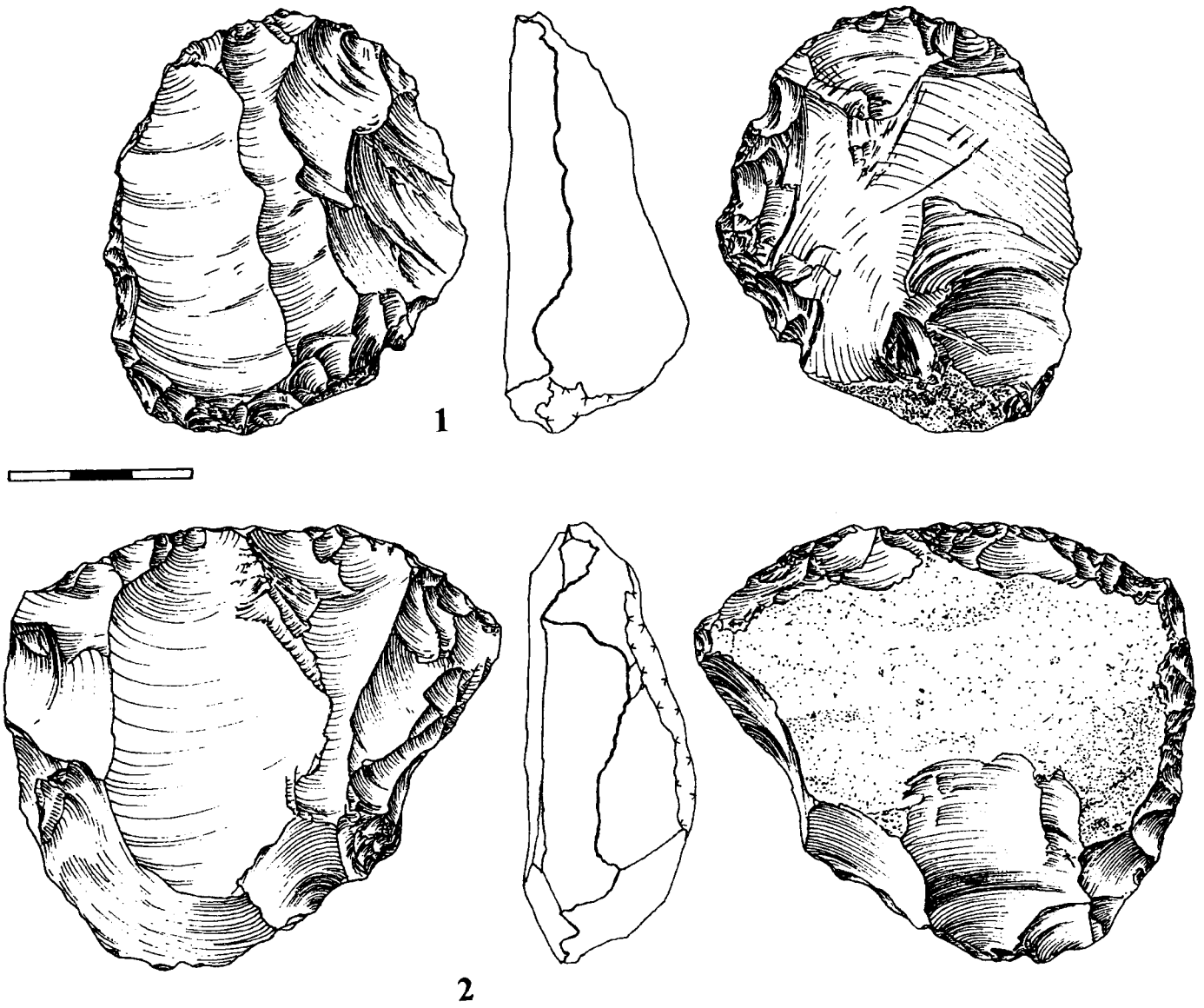

Fig. 9-1—Kabazi II, Unit II, Levels II/7 *(1)* and II/7F8 *(2)*, Cores made on flakes: *1*–parallel ovoid; *2*–Levallois tortoise triangular.

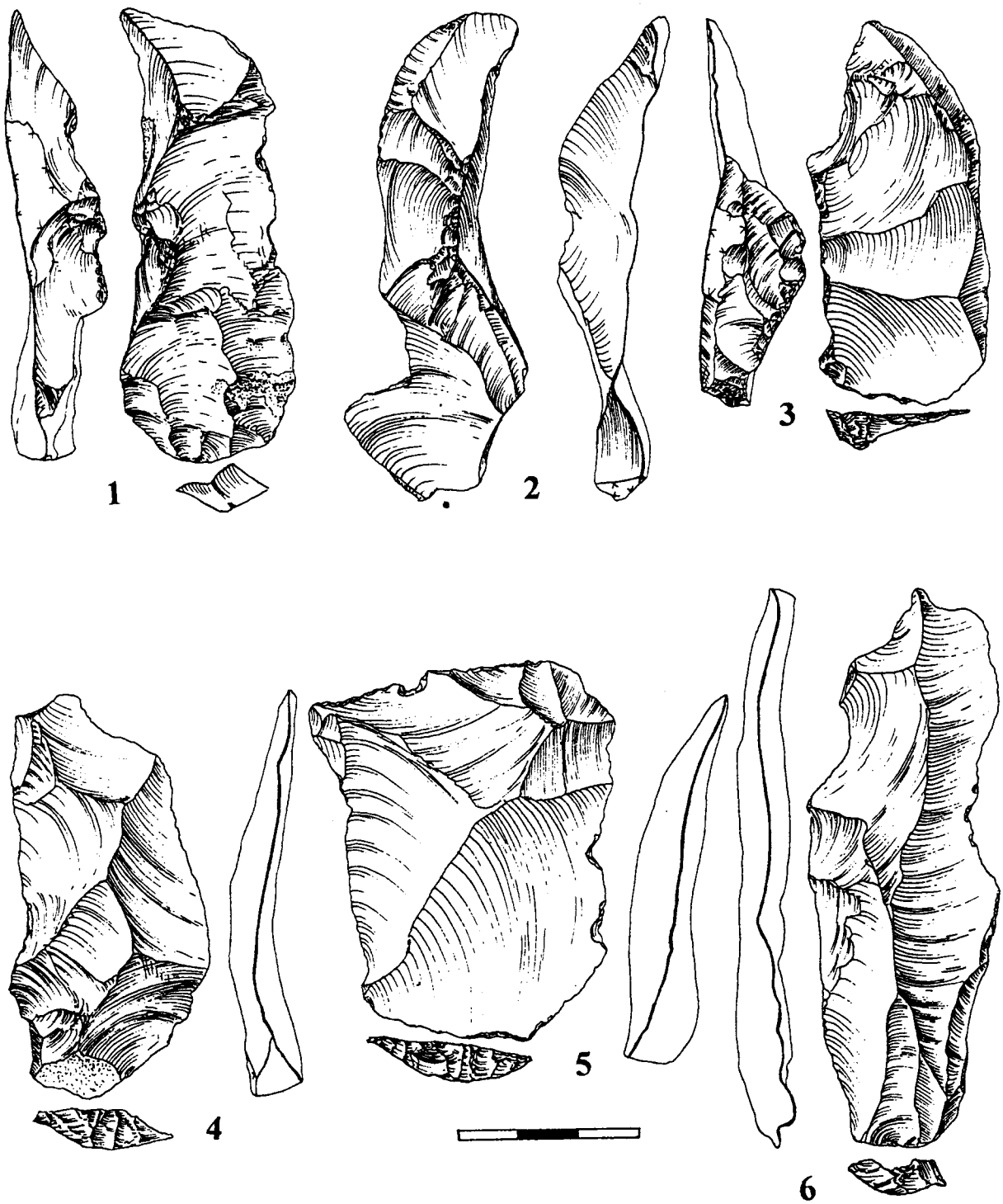

Fig. 9-2—Kabazi II, Unit II, Levels II/7 *(4)*, II/7AB *(6)*, II/7C *(5)*, II/7D *(1, 2)*, and II/7F8 *(3)*, Blanks: *1-3–pièces débordantes*; *4,5*–Levallois pieces; *6–enlèvement deux.*

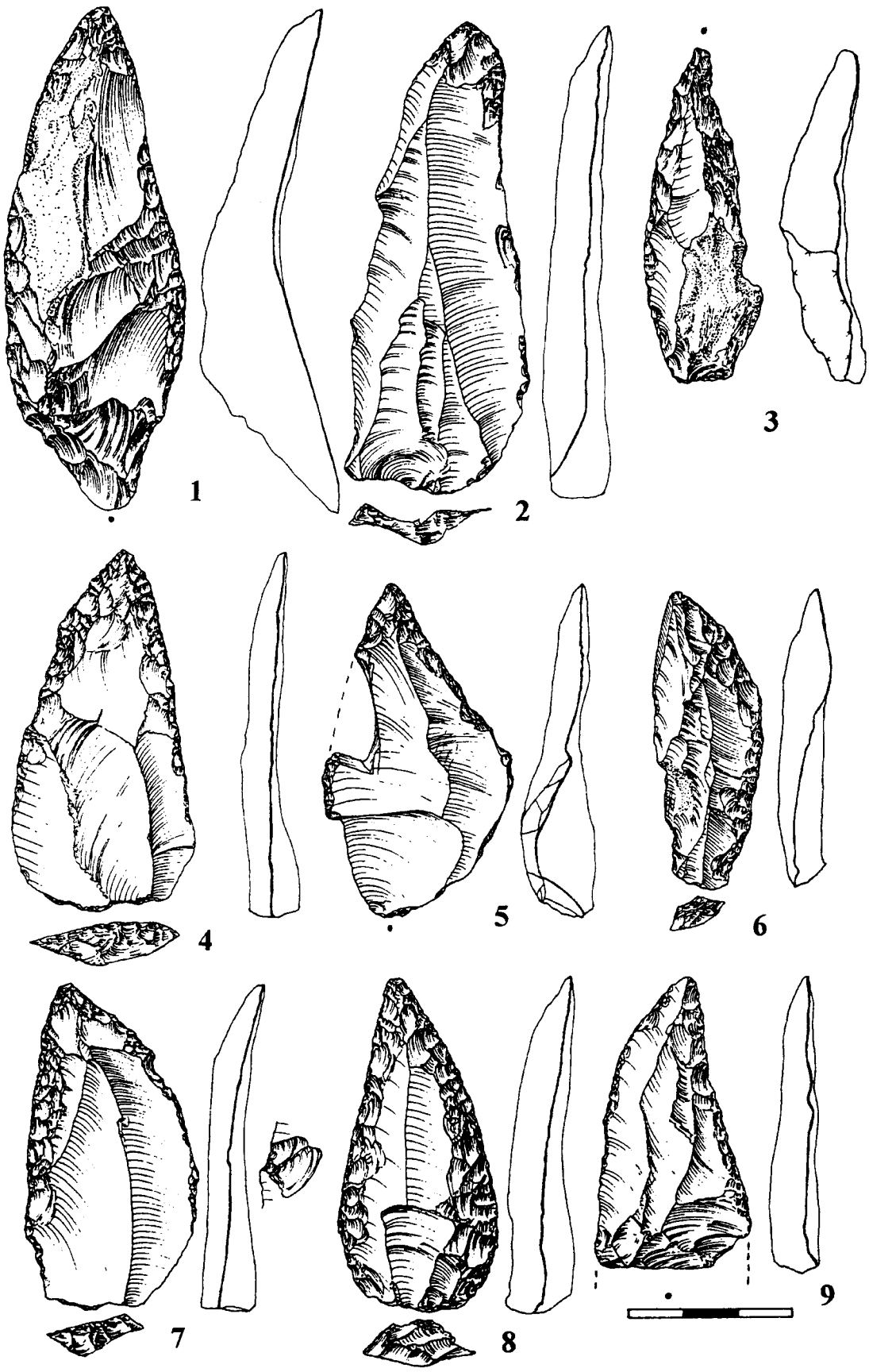

Fig. 9-3—Kabazi II, Unit II, Levels II/7 *(9)*, II/7AB *(1, 2, 6, 8)*, II/7C *(7)*, II/7E *(3)*, and II/8 *(4, 5)*, Tools: *1*–willow-leaf dorsal point; *2*–distal dorsal point; *3*–sub-triangular dorsal borer; *4*–sub-triangular point; *5*–sub-leaf dorsal point; *6*–lateral dorsal point; *7,9*–semi-crescent dorsal points; *8*–sub-crescent dorsal point.

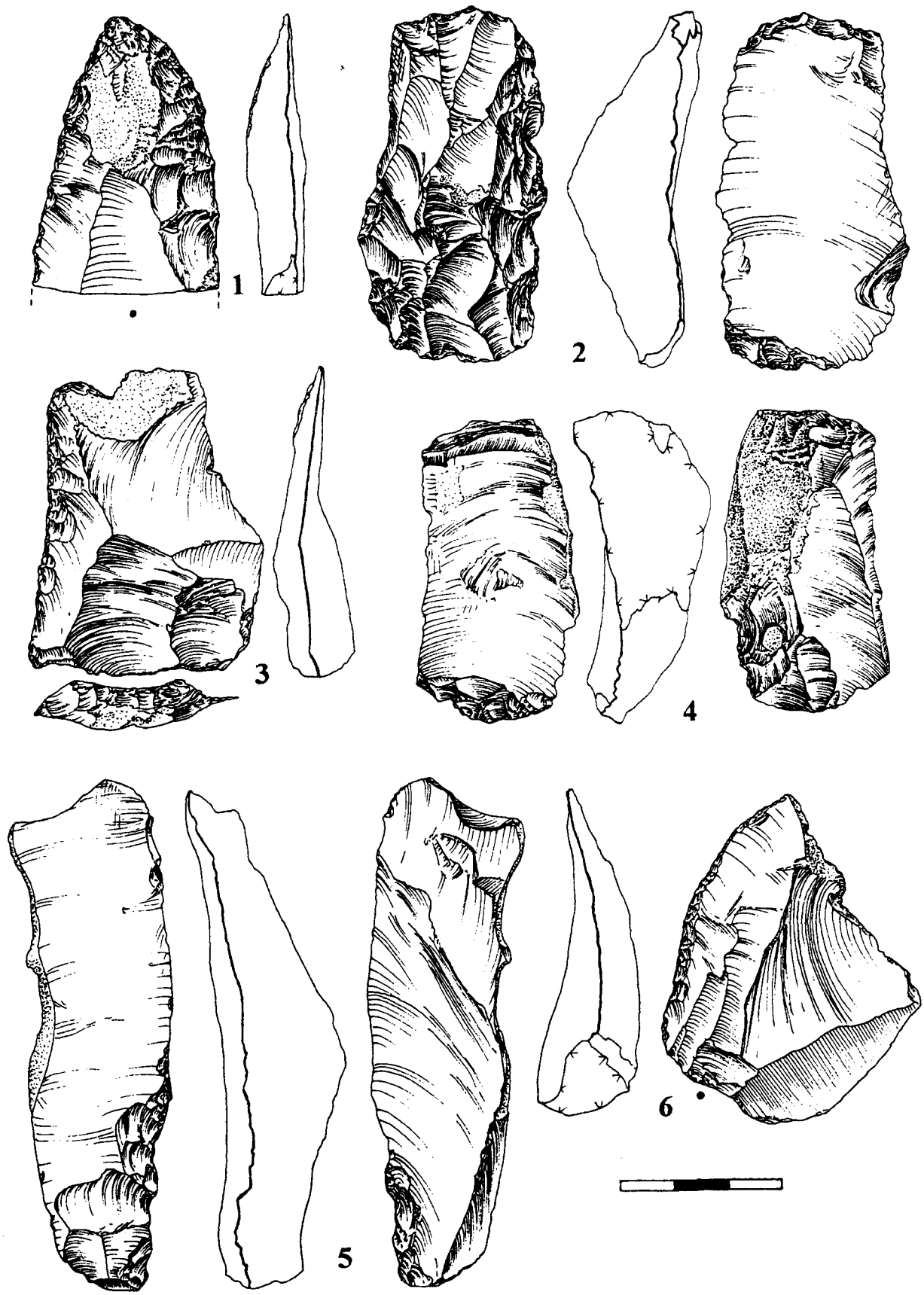

Fig. 9-4—Kabazi II, Unit II, Levels II/7 *(1)*, II/7D *(5)*, II/7F8 *(2, 4, 6)*, and II/8C *(3)*, Tools: *1*–semi-crescent dorsal scraper; *2,4*–straight dorsal bi-truncated-faceted denticulates; *3*–straight dorsal scraper; *5*–lateral alternating notch; *6*–convex dorsal scraper.

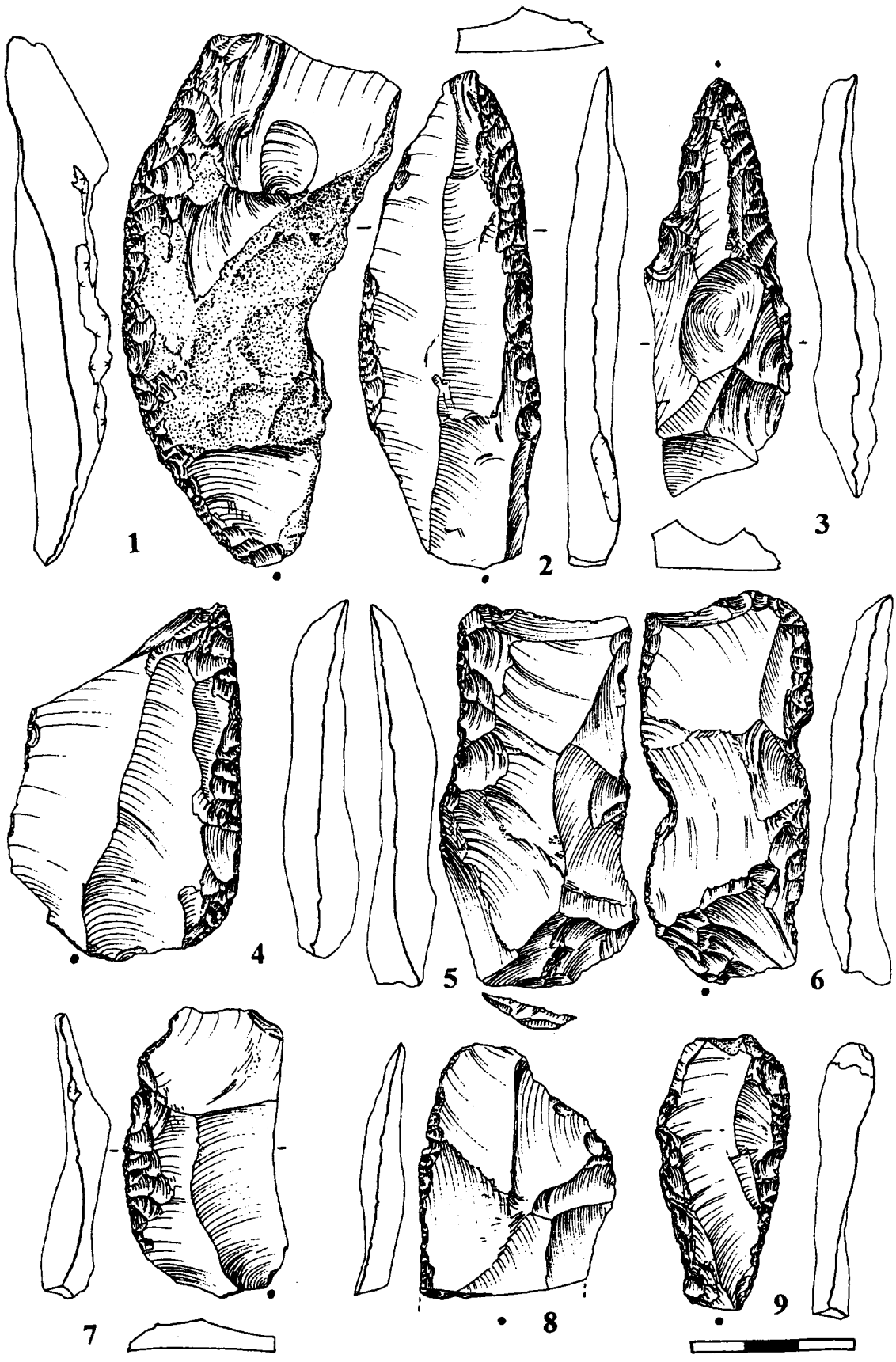

Fig. 9-5—Kabazi II, Unit II, Levels II/7*(3)*, II/7C *(5, 6)*, II/7D *(1)*, II/7E *(2, 9)*, II/7F8 *(7, 8)*, and II/8C *(4)*, Scrapers: *1,7*–convex dorsal scrapers; *2*–straight-convex dorsal scraper; *3*–sub-triangular dorsal scraper; *4*–straight dorsal scraper; *5*–concave dorsal scraper on Levallois blank; *6*–double-straight scraper on Levallois blank; *8*–straight dorsal scraper on Levallois blank; *9*–bi-convex dorsal scraper.

Level II/7AB

Pre-cores and Cores

There are 24 cores and 1 pre-core in Level II/7AB (Table 9-2). The single pre-core is made on a flake with two lateral opposed platforms on the dorsal surface. The flaking surface is unstruck.

Cores are subdivided into 5 main groups: Levallois tortoise, discoidal, uni-directional, bi-directional, and unidentifiable. The Levallois tortoise cores are either unstruck ovoid or broken. The Levallois ovoid example has two opposing wide and thick striking platforms and a single supplementary platform which was prepared on the right side. The retouch for the left side convexity was made directly from a cortical undersurface. The broken Levallois core has, at least, one main faceted platform and two lateral, supplementary platforms, which were prepared on the undersurface (Table 9-2).

The group of uni-directional cores consists of a single convergent transverse and nine parallel pieces. The convergent transverse core is made on a flake. The platforms consist of a main and two opposed supplementary platforms. The latter were prepared from the core undersurface. The flakes struck from the main, well-faceted platform pass through practically the whole flaking surface.

Among the complete parallel cores, most have rectangular flaking surfaces (4 of 7). One of them has a volumetric flaking surface, a laterally faceted platform, and transverse scars on the undersurface (fig. 9-6: *1*). Another has a narrow flaking surface prepared by a crested ridge (fig. 9-6: *2*). Five parallel cores have multiple faceted platforms. Three parallel cores have lateral, supplementary platforms, two of which also have a supplementary platform at the distal extremity. The undersurfaces of the parallel cores are naturally flat or flattened by transverse removals. The range of uni-directional core size is as follows: length, from 5.2-7.4 cm; width, from 4.7-6.7 cm. Only two parallel cores are relatively thick: 3.8 cm and 4.2 cm (Table 9-2).

The bi-directional cores have rectangular flaking surfaces and naturally flat undersurfaces. Both opposed platforms are of the same, or very similar, width and thickness. In addition, the lengths of the removals from the main platforms are the same or very similar, as well. In two cases, the flaking surfaces are supported by the supplementary platforms. Only one core has the main platform faceted. The range of the bi-directional core sizes is close to that described above for the parallel cores (Table 9-2).

Most cores of Level II/7AB are relatively large. Except for a single discoidal core, the range of lengths is 5.1-7.4 cm, and widths 4.6-7.5 cm. The range in thickness is greater, from 1.1-3.8 cm (but 4.2 cm for the narrow flaked surface core). At the same time, only 3 of 16 identifiable pieces are thicker than 3 cm. The maximum scar lengths for uni-directional cores range 4.1-7.4 cm. Only the core with the narrow flaked surface has a scar length of less than 4 cm, because of the series of hinge fractures on the flaking surface (fig. 9-6: *2*). Three bi-directional cores exhibit less than a 4 cm range for maximum scar lengths (Table 9-2).

Blanks

The debitage of Level II/7AB includes 294 artifacts: 209 flakes, 49 blades, 18 tools made on flakes, and 18 tools made on blades.

Blades. The blade assemblage consists of 67 pieces, including the 18 blade tools. Only 18 blades are unbroken.

Dorsal Scar Patterns. Six main types of dorsal scar pattern were distinguished. The most numerous (18) is uni-directional-crossed (Table 9-12). Only two of these are partly covered by cortex. The percentage of blades with bi-directional-crossed dorsal scar patterns in Level II/7AB is much lower than the previous type. Eight of 11 of these are partly covered

TABLE 9-12
Kabazi II, Unit II, Blade Scar Patterns as Percentages of Each Type

	II/7AB	*II/7C*	*II/7D*	*II/7E*	*II/7F8*	*II/8C*	*Total*
Covered by cortex	—	2.2	5.4	3.0	—	—	1.7
Lateral	2.9	2.2	5.4	6.0	1.5	—	3.4
Converging	19.4	15.2	8.1	22.4	22.4	—	17.9
Uni-directional	14.9	19.6	29.7	16.4	17.9	16.7	18.6
Uni-directional-crossed	26.8	23.9	13.5	23.9	14.9	41.6	22.0
Bi-directional	19.4	13.0	13.5	10.4	14.9	33.3	15.2
Bi-directional-crossed	16.4	6.5	10.8	7.5	11.9	—	10.5
4-directional	—	2.2	—	—	—	—	0.3
Crested	—	10.9	8.1	10.4	13.4	8.3	8.4
Levallois	—	4.3	5.4	—	1.5	—	1.7
Unidentifiable	—	—	—	—	1.5	—	0.3
N	67	46	37	67	67	12	296

TABLE 9-13
Kabazi II, Unit II, Blade Shape as Percentages of Each Type

	II/7AB	*II/7C*	*II/7D*	*II/7E*	*II/7F8*	*II/8C*	*N*	*ess %*
Rectangular	29.9	23.9	51.4	37.1	38.8	66.7	109	51.7
Triangular	10.4	15.2	8.1	6.0	3.0	16.7	25	11.8
Trapezoidal elongated	7.5	13.0	13.5	9.0	22.4	—	37	17.5
Ovoid	—	4.3	2.7	—	—	—	3	1.4
Leaf-shaped	4.5	—	—	—	1.5	—	4	1.9
Crescent	9.0	15.2	2.7	4.5	6.0	8.3	22	10.4
Expanding	—	—	—	1.5	—	—	1	0.5
Irregular	7.5	6.5	2.7	4.5	3.0	—	10	4.7
Unidentifiable	31.3	21.7	18.9	37.1	25.4	8.3	85	
N	67	46	37	67	67	12	296	211

TABLE 9-14
Kabazi II, Unit II, Blade Axis as Percentages of Each Type

	II/7AB	*II/7C*	*II/7D*	*II/7E*	*II/7F8*	*II/8C*	*N*	*ess %*
On-axis	73.3	69.6	83.8	68.7	76.1	66.7	217	88.2
Off-axis	10.4	21.7	10.8	4.5	4.5	16.7	29	11.8
Unknown	16.4	8.7	5.4	26.9	19.4	16.7	50	
N	67	46	37	67	67	12	296	246

TABLE 9-15
Kabazi II, Unit II, Blade Lateral Profiles as Percentages of Each Type

	II/7AB	*II/7C*	*II/7D*	*II/7E*	*II/7F8*	*II/8C*	*N*	*ess %*
Flat	47.8	30.4	51.4	44.8	40.4	25.0	113	40.1
Incurvate medial	19.0	26.1	24.3	16.4	19.4	16.6	60	21.3
Incurvate distal	7.5	13.0	—	4.5	16.4	25.0	28	9.9
Twisted	22.4	26.1	24.3	26.9	9.0	25.0	63	22.3
Convex	3.0	2.2	—	1.5	2.9	—	18	6.4
Irregular/unknown	—	2.2	—	6.0	11.9	8.3	14	
N	67	46	37	67	67	12	282	

TABLE 9-16
Kabazi II, Unit II, Blade Distal Profiles as Percentages of Each Type

	II/7AB	*II/7C*	*II/7D*	*II/7E*	*II/7F8*	*II/8C*	*N*	*ess %*
Feathering	46.3	58.6	67.6	35.8	53.7	58.3	150	71.8
Hinged	4.5	4.3	8.1	6.0	17.9	16.7	26	12.4
Overpassed	11.9	6.5	5.4	3.0	3.0	8.3	18	8.6
Blunt	—	2.2	2.7	4.5	14.9	—	15	7.2
Missing	37.3	28.3	16.2	50.7	10.4	16.2	87	
N	67	46	37	67	67	12	296	209

TABLE 9-17
Kabazi II, Unit II, Blade Cross-Section at Midpoint as Percentages of Each Type

	II/7AB	*II/7C*	*II/7D*	*II/7E*	*II/7F8*	*II/8C*	*N*	*ess %*
Flat	—	—	2.7	1.5	—	—	2	0.7
Triangular	55.2	52.2	40.5	49.3	44.8	33.3	143	48.3
Lateral steep	7.5	6.6	10.8	10.4	16.4	8.3	31	10.5
Trapezoidal	37.3	39.1	32.4	32.8	38.8	58.3	110	37.2
Crescent	—	2.2	13.5	6.0	—	—	10	3.4
N	67	46	37	67	67	12	296	296

by cortex. Some of the bi-directional-crossed blades (fig. 9-2: *6*) were identified as "*enlèvement deux*" of the bipolar variant of the Biache method (Boëda, Geneste, and Meignen 1990). Blades with converging and bi-directional scar patterns have about same quantity of partial cortification as the previous type. Both blades with lateral scars are partially cortical.

Shape. Taking into account the great number of broken blades, the shapes were not definable for about one-third of the pieces (Table 9-13). About one-half of these were flaked on-axis (Table 9-14). About 30% of blades are rectangular, of which 18 were flaked on-axis. Other shapes are represented: elongated trapezoidal, triangular, irregular, leaf-shaped, and sub-crescent. Generally, most of the blades were flaked on-axis, only 10.4% being off-axis (Table 9-14).

Profiles and Cross-Sections. About one-half of the blades have a flat lateral profile. The number of medially incurvate and twisted are approximately equal. Distally incurvate and convex profiles are not numerous (Table 9-15).

On more than one-third of the blades, the distal ends were missing (Table 9-16). Among the remainder, feathering prevails. Hinged and overpassed distal ends are not numerous.

The most common midpoint cross-sections are triangular and trapezoidal (Table 9-17). Lateral steep is represented only by a few pieces and not one of them is a *lame débordante.*

Platforms. Only 35 butts were identifiable (Table 9-9) and multiple faceted dominate. Other types are represented by a few examples each: plain, lateral plain, dihedral, and covered by cortex. About half (35) of the blades have platforms (Table 9-10). Of these, 23 are semi-lipped, while the rest are split between lipped and unlipped.

The characteristic features of the blade assemblage from Level II/7AB are: (1) a dominance of blades with uni-directional-crossed dorsal scar patterns; (2) more than one-third of the blades are partly or completely cortical; (3) blades with rectangular shape, removed on-axis, flat in profile, and triangular in cross-section, dominate; (4) a dominance of multiple faceted, semi-lipped platforms; and, (5) a high percentage of blades: Ilam = 22.8.

Flakes. There are 227 flakes, of which 18 are retouched. More than half of the flakes (53%) are broken.

Dorsal Scar Patterns. Five different dorsal scar patterns prevail in approximately equal proportions: converging, uni-directional, completely cortical, uni-directional-crossed, and bi-directional (Table 9-3). Moreover, more than one-half of the flakes with converging and uni-directional scar patterns are partly cortical, as are about half of the uni-directional-crossed and one-third of bi-directional examples. Six flakes with centripetal scar patterns were defined as Levallois. Also, six others were defined as *éclats débordants*, with crested dorsal scar patterns, all of them partly cortical. In general, 56.8% of flakes are completely or partly cortical.

Shape. Because of breakage, about one-third of the flakes could not be classified according to shape (Table 9-4). Rectangular and trapezoidal-shaped pieces are about equally prevalent. More than 75% of the rectangular flakes were removed on-axis (Table 9-5). The opposite is true for the trapezoidal flakes: 75.5% of them were removed off-axis. About one-third of all flakes were removed on-axis, 40.5% off-axis, while the others were unidentifiable (Table 9-5).

Profiles and Cross-Sections. Flat lateral profiles dominate (Table 9-6). Mainly, flat profiles are associated with feathered distal ends and both triangular and trapezoidal cross-sections. The medially incurvate, distally incurvate, and twisted profiles occur in more or less equal proportions (Table 9-6). Hinged, overpassed, blunt, and missing distal ends combined do not match the number of feathered ends (Table 9-7). The percentage of crescent-shaped cross-sections approximately reflect the number of cortical flakes (Table 9-8).

Platforms. Ninety-eight flakes have crushed or missing platforms. Multiple faceted and plain platforms prevail over other platform types (Table 9-9). The percentage of laterally prepared platforms, 19.4% (including lateral plain and lateral multiple faceted), is surprisingly high.

About one-half of the flakes, 112 pieces, are not identifiable for lipping. The flakes with unlipped and semi-lipped platforms occur in approximately equal proportions (Table 9-10). As always, lipped platforms are not numerous.

In sum, the flake assemblage of Level II/7AB is characterized by: (1) an equal proportion of five different dorsal scar patterns: converging, uni-directional, uni-directional-crossed, bi-directional, and covered by cortex; (2) a high percentage (more than one-half) of cortical and partially cortical flakes; (3) a dominance of rectangular and trapezoidal-shaped flakes; (4) a dominance of flat profiles, feathered distal ends, and triangular or trapezoidal cross-sections; and, (5) approximately equal proportions of plain and multiple faceted platforms, and a relatively high percentage of laterally prepared platforms, in association with a dominance of semi-lipped and unlipped butts.

It is obvious that there are some differences between blade and flake morphology, beyond length/width proportions. The features which are found both on the flakes and on the blades include flat profiles, in association with feathered distal ends and either triangular or trapezoidal cross-sections and both have a majority of unlipped and semi-lipped butts. In general, these similarities are correlated to blank profiles. The differences between the flakes and blades, however, cover a wider range of their morphology: dorsal scar patterns differ among the two groups; blades are less cortical; only rectangular blades are common, as opposed to the dominance of both rectangular and trapezoidal-shaped flakes; and multiple faceted platforms are more common among blades.

Unfortunately, the faceting indices, especially for blades, mean little because of very small sample sizes (there are only 34 identifiable platforms). For the flakes, the indices are IF = 49.5; IFs = 38.7, as opposed to the same indices for both blades and flakes combined: IF = 55.5; IFs = 44.4.

Tools

Thirty-six tools were recovered from Level II/7AB (Table 9-11). One-half of them (18) are simple retouched pieces. All of them have discontinuous retouch on one of their lateral edges. In 17 cases this is obverse, either on the right or on the left edge; on two it is scalar retouch; on eight it is marginal; and on nine it is irregular. A single retouched piece has alternating retouch: scalar and marginal.

Among the tools with continuous retouch, scrapers (10) are most common (Table 9-11). Seven of them are one-edged, simple scrapers, either convex (2) or straight (5). All have obverse scalar and/or stepped retouch, usually with flat or semi-steep retouched edges. One of the straight obverse scrapers has a truncated-faceted proximal end. Two-edged scrapers include a double-straight obverse (fig. 9-7: *2*), as well as a straight-convex obverse example. Both have flat marginal and steep scalar retouch. Only one convergent scraper, a sub-leaf obverse example, was found, and it has scalar and stepped semi-steep retouch.

The points include a willow-leaf (fig. 9-3: *1*), a sub-crescent (fig. 9-3: *8*), a lateral (fig. 9-3: *6*), and 2 distal points (fig. 9-3: *2*). All have obverse scalar and/or sub-parallel flat retouch. The single denticulate is a piece with a concave edge retouched by steep scalar, obverse retouch. Two tiny obversely retouched fragments of blanks were categorized as unidentifiable.

Level II/7C

Pre-cores and Cores

A total of 11 cores came from Level II/7C; there are no pre-cores (Table 9-2). Typologically, the core assemblage is subdivided into several types: radial, Levallois tortoise, convergent transverse, parallel, bi-directional, and orthogonal.

Both radial cores are broken; they have unfaceted platforms and are approximately the same size (Table 9-2). The maximum scar lengths do not exceed 3.5 cm.

The Levallois tortoise core appears to be classic, with a multiple faceted main platform and two supplementary lateral platforms prepared from the undersurface. The main removal, from the central part of the flaking surface, was not successful. The Levallois flake was no more than 3.5 cm of the total 5.0 cm length of flaking surface.

The convergent transverse core was made on a flake with a single main multiple faceted platform. Several converging removals from that platform almost cover the whole flaking surface. The maximum scar length is 5.2 cm of the 6.4 cm flaking surface.

Most bi-directional cores have rectangular flaking surfaces. The three examples have no supplementary platforms. Two of them have volumetric flaking surfaces with rectangular, naturally flat and narrow flaked surfaces. Both still retain several transverse scars on the flaking surface and the undersurface from the crested ridge preparation. The maximum scar lengths exceed 4.0 cm. Only in the case of the narrow flaked surface core, where hinge-fracturing was present, did the scars cover only 3.8 cm of its 6.3 cm flaking surface.

The orthogonal core is broken, with two flaking surfaces on one side of the core, which created the core flaking surface. That pattern of scars on the flaking surface is evidence for two adjacent striking platforms, arranged at right angles to each other.

Cores range in length from 4.0-9.9 cm, in width from 4.0-7.1 cm (except the core with a narrow flaked surface), and in thickness from 1.7-2.8 cm (except for the narrow flaked surface core).

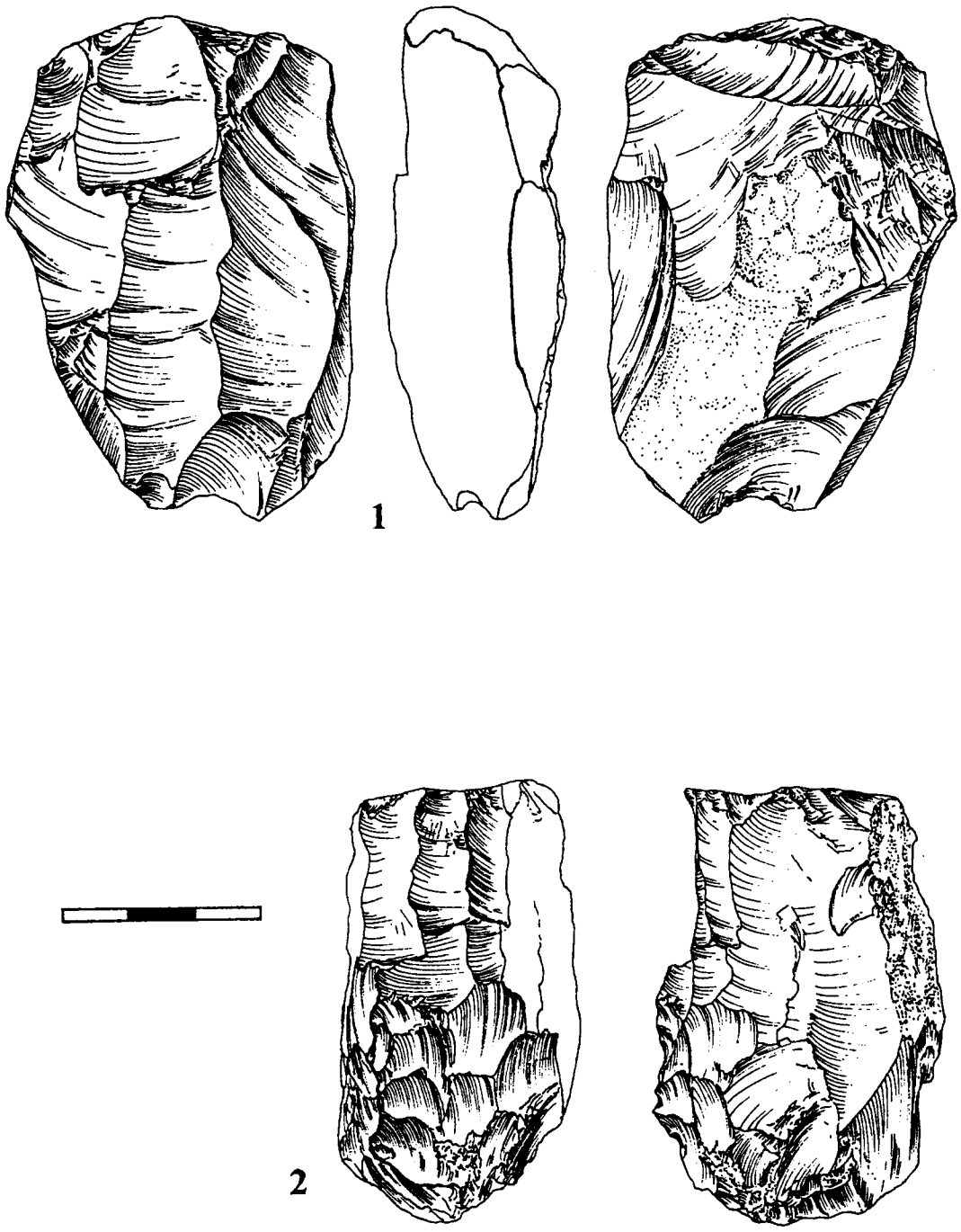

Fig. 9-6—Kabazi II, Unit II, Level II/7AB, Cores: *1*–parallel sub-cylindrical; 2–narrow flaked surface.

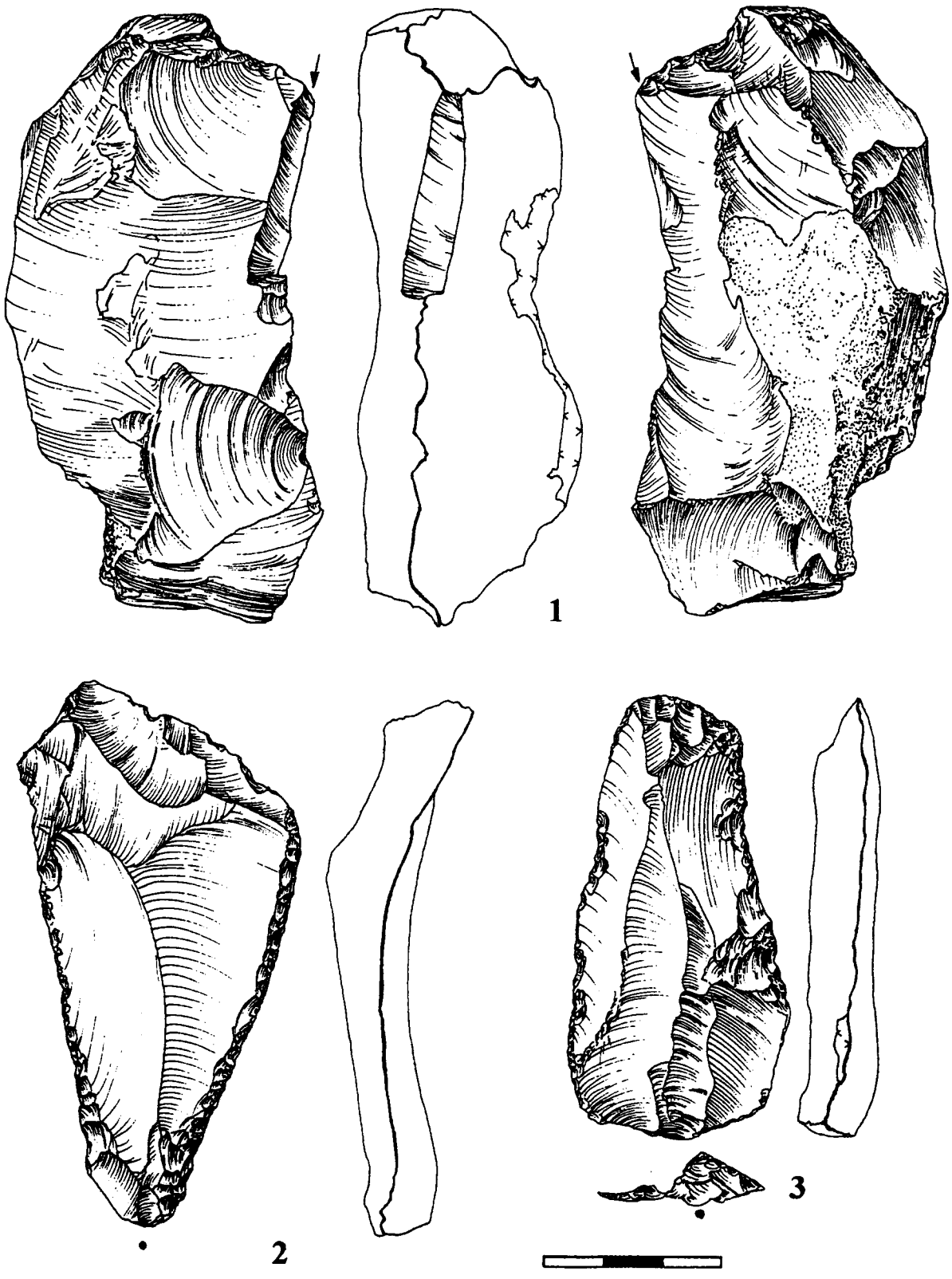

Fig. 9-7—Kabazi II, Unit II, Levels II/7AB *(2)* and II/7E *(1, 3)*, Tools: *1*–burin on truncation, proximal; *2*–double-straight dorsal scraper; *3*–semi-rectangular dorsal scraper.

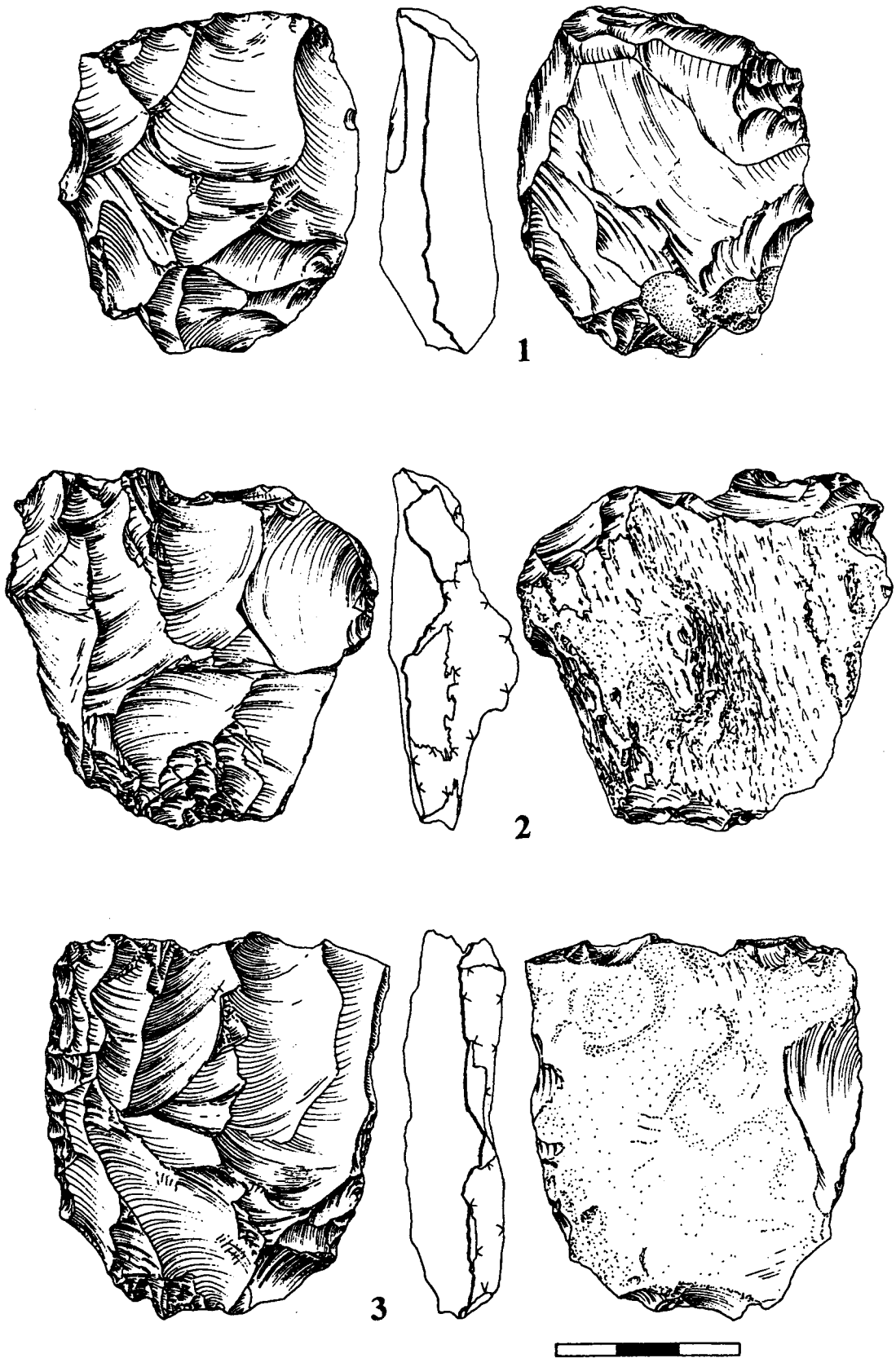

Fig. 9-8—Kabazi II, Unit II, Levels II/7D *(2)* and II/8 *(1, 3)*, Cores: *1*–Levallois tortoise rectangular; *2,3*–bi-directional rectangular.

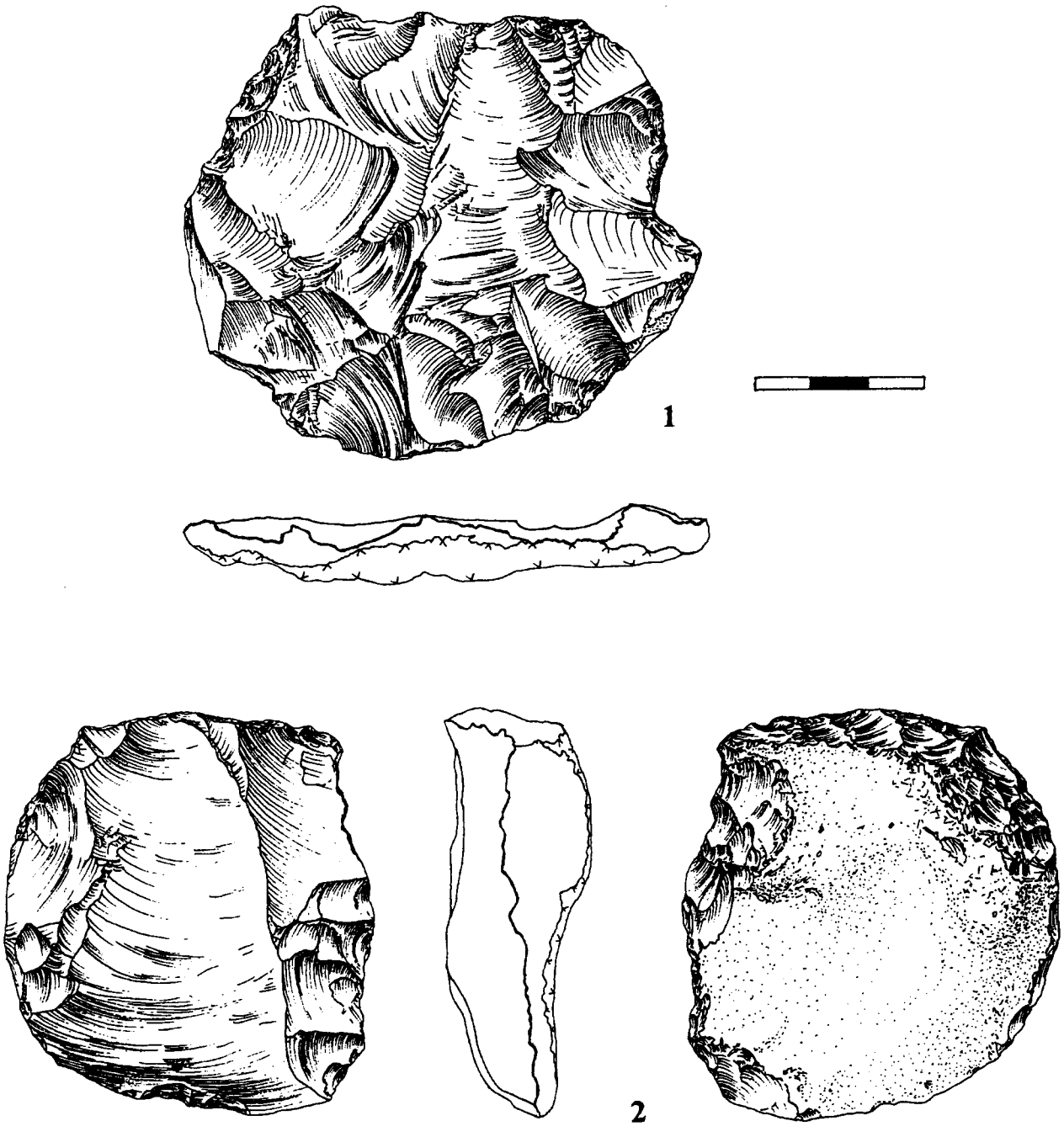

Fig. 9-9—Kabazi II, Unit II, Level II/7F8 *(1, 2)*, Cores: *1*–radial ovoid; *2*–Levallois tortoise rectangular.

Blanks

The blanks from Level II/7C include 36 unretouched blades, 10 tools on blades, 178 flakes, and 27 tools on flakes. The total number of retouched and unretouched blanks is 251 (Table 9-1).

Blades. There are 46 blades, more than half of which are complete (24): six retouched and eighteen unretouched. Their technological attributes are as follows:

Dorsal Scar Patterns. The most common dorsal scar pattern is uni-directional-crossed (Table 9-12). About 25% of them are partially cortical. Somewhat less numerous are the blades with uni-directional dorsal scar patterns. One-third of them are partly cortical. Two blades with centripetal dorsal scar patterns were identified as Levallois. Generally, about 30% of all blades are partly covered by cortex.

Shape. Ten blades were too broken to identify. Three more were identified as irregular (Table 9-13). About 24% of the blades are rectangular. Practically all of them were struck on-axis. Only one triangular and the sub-crescent blades are oriented off-axis samples. At the same time, most of the trapezoidal elongated blades were removed off-axis. On the whole, however, about 70% of all blades were removed on-axis (Table 9-14).

Profiles and Cross-Sections. Flat, medially incurvate, and twisted lateral profiles on blades occur in approximately equal proportions (Table 9-15). These three types are associated with feathered distal ends and either triangular or trapezoidal midpoint cross-sections (Table 9-17). Finally, it must be noted that about 30% distal ends of blades are missing (Table 9-16).

Platforms. Thirteen out of the 28 identifiable platforms are multifaceted (Table 9-9). Covered by cortex and laterally prepared plain are rare. Semi-lipped and unlipped butts occur in approximately equal numbers (Table 9-10).

The main characteristic features of the Level II/7C blade assemblage are: (1) a dominance of blades with uni-directional and uni-directional-crossed dorsal scar patterns—these blades are usually completely decorticated; (2) fewer than one-third of blades are partly covered by cortex; (3) most blades were removed on-axis; (4) there are equal proportions of flat, medially incurvate and twisted blades, which usually have feathered distal ends and triangular or trapezoidal cross-sections; (5) a dominance of multiple faceted platforms, which are, in general, either semi-lipped or not lipped at all; and, (6) an expected Ilam of 18.3.

Flakes. A total of 205 flakes, including retouched, were recovered, of which only 89 are complete. Their attributes are, as follows:

Dorsal Scar Patterns. The most common dorsal scar patterns are uni-directional and converging (Table 9-3), of which 44.1% are partly covered by cortex. On bi-directional and uni-directional-crossed examples only 20% have some cortex on the dorsal surface. It must be noted that flakes with lateral and bi-directional-crossed dorsal scar patterns are two times as likely to have some cortex on them than are the radial and *débordant* types. Six pieces with radial dorsal scar patterns were identified as Levallois (figs. 9-2: *5*; 9-5: *5,6*) The percentage of completely cortical pieces is still very high (12.2%). The percentage of completely and partially cortical flakes combined accounts for 50.2% of all flakes.

Shape. Flake shape is strongly dominated by rectangular pieces (Table 9-4). In an essential count (without unidentifiable), the rectangular flakes account for ca. 50% of all shapes. Moreover, 87.3% of the rectangular flakes were struck on-axis. In Level II/7C this specific feature of rectangular flakes is notable because, as a general rule, flakes displaying other shapes tend to be struck off-axis. Overall, the percentage of flakes removed on-axis is 44.4%, mainly due to the rectangular flakes (Table 9-5).

Profiles and Cross-Sections. In Level II/7C, flat and medially incurvate flakes dominate (Table 9-6). They are usually associated with feathered distal ends and either

triangular or trapezoidal cross-sections. Other types of flake profiles, distal ends, and cross-sections occur only in small amounts (Tables 9-6, 9-7, 9-8). An exception is flakes with crescent cross-sections (15.1%), which generally correlate with primary flakes.

Platforms. Only 137 flake platforms are identifiable (Table 9-9). Many are covered by cortex. Multiple faceted platforms are relatively common; about one-third of all identifiable platforms. As described above, a high percentage of laterally prepared platforms occurs. About one-half of identifiable butts are unlipped, while real lipped platforms are rare (Table 9-10).

So, the main characteristic features of the flake assemblage from Level II/7C are the following: (1) uni-directional and converging dorsal scar patterns dominate and about half of them are partly covered by cortex; (2) there are Levallois flakes and *éclats débordants* present; (3) there is a very high percentage of rectangular shaped flakes struck on-axis; (4) flakes with either flat or medially incurvate profiles, associated with feathered distal ends and either triangular or trapezoidal cross-sections, are most common; (5) faceted platforms are common (IF = 54.0, IFs = 38.0); and, (6) there are equal proportions of semi-lipped and unlipped butts.

There are a number of similarities, as well as differences, between the flake and blade morphology. The differences which stand out include different dorsal scar patterns and a greater percentage of flakes with dorsal cortex (over 50%), compared with fewer than one-third of the blades. The similarities include the presence of Levallois and *pièces débordantes* in both, a shared dominance of rectangular blanks, and, in general, the same distribution of blank profiles, distal ends, and cross-sections, with only a higher occurrence of twisted lateral profiles among the blades. On the other hand, semi-lipped blades and flakes are equally prevalent, while unlipped butts are more common for flakes.

Tools

A total of 37 tools came from Level II/7C; 10 of them were made on blades, the rest on flakes (Table 9-11). Of these, 17 were broken.

Retouched pieces are the most common class of tools (20 pieces). They are subdivided into two groups: laterally retouched (16) and bi-laterally retouched (4). Retouch is either marginal and/or irregular, but practically always discontinuous and obverse. In only a single case was there a piece alternately retouched.

Scrapers (11) include a number of types: straight (3 pieces), convex (4), concave (fig. 9-5: *5*), double-straight (fig. 9-5: *6*), sub-crescent, and sub-triangular (1 each). Most scrapers have scalar and sub-parallel obverse flat or semi-steep retouch. Only the sub-triangular scraper exhibits stepped steep obverse retouch. The same scraper has traces of both back and distal thinning.

There are only four points in the tool-kit of Level II/7C: one Levallois point with retouched edges and tip, a distal point, a semi-leaf point, and a semi-crescent point (fig. 9-3: *7*). Only the distal point has alternate retouch: the other points have obverse retouch which is either scalar or marginal flat. There is a single denticulate and a single notched tool, both on flakes.

Level II/7D

Pre-cores and Cores

There are 2 pre-cores and 8 cores from this floor (Table 9-2). One of the pre-cores has a striking platform oriented for flaking across the narrow side of the flint plaquette, from which a few testing removals were struck. The other pre-core is unidentifiable because of fragmentation.

Bi-directional cores are most common (3). Two of them have a rectangular-shaped working surface and exhibit a single prepared lateral supplementary platform on the

undersurface. Both of these cores have relatively wide and well prepared opposed main striking platforms (fig. 9-8: *2*). A bi-directional sub-cylindrical core has two conjoined flaking surfaces, worked from opposed, unfaceted striking platforms. The scars of the removals from both platforms cover the whole flaking surface.

Morphologically close to the previous type is the single parallel, sub-cylindrical core. The difference between them involves the number and arrangement of the striking platforms. The parallel, sub-cylindrical core has a single main unfaceted striking platform and another platform which appears to be supplementary and arranged on the right side of the core. The scars of the removals from the main striking platform cover the whole flaking surface.

The Levallois tortoise core is a classic, struck example. The scar from the Levallois flake covers about 90% of the flaking surface. The lateral and distal preparation of the flaking surface were done from unprepared supplementary platforms. The main platform is wide and well-faceted. The single radial core is typical.

The length variation of cores ranges from 4.4-7.1 cm. Approximately the same range characterizes width: from 4.0-7.5 cm. In general, the cores from Level II/7D are not thick. The variation in thickness is only 1.5-2.7 cm. Only the radial core is relatively thick (3.2 cm).

Blanks

There are 175 blanks, of which 37 are blades (9 retouched) and 138 are flakes (14 retouched).

Blades. The number of blades is low, only 37 pieces. Moreover, 20 of them are broken. Their index is typical for this unit at Kabazi II; Ilam = 21.1. Their attributes are as follows:

Dorsal Scar Patterns. Uni-directional is the most common, of which about one-half are partially covered by cortex. The other types are represented by approximately equal quantities, including *lames débordantes* (fig. 9-2: *1,2*). There are two Levallois blades with centripetal dorsal scar patterns. One of them has a cortical area on the central part of dorsal surface. In general, 15 of the 37 blades are partly cortical.

Shape. More than one-half of blades (19) are rectangular (Table 9-13), of which only one was removed off-axis. In general, on-axis blades dominate; only 4 were removed off-axis (Table 9-14).

Profiles and Cross-Sections. Flat lateral profiles are predominant (Table 9-15), and, in general, correlate with feathered distal ends (Table 9-16) and triangular or trapezoidal midpoint cross-sections (Table 9-17). Medially incurvate and twisted blades occur in equal numbers (Table 9-15).

Platforms. Twenty of 37 blade platforms are either crushed, missing, or missing by retouch (Table 9-9). Among those identifiable, plain, unfaceted butts prevail. A single piece has a laterally prepared, plain platform. Only 16 pieces are identifiable in relation to lipping (7 unlipped and 9 semi-lipped) (Table 9-10).

The main technological features of the blade assemblage of Level II/7D appear to be similar to those from Levels II/7AB and II/7C. At the same time, it must be noted that among the blades with uni-directional scar patterns, about half are partly cortical, as are 40% of all blades.

Flakes. There are 138 flakes, of which 50 are broken. Their technological attributes are as follows:

Dorsal Scar Patterns. Four dorsal scar patterns prevail in approximately equal proportions: converging, uni-directional, bi-directional, and uni-directional-crossed (Table 9-3). About one-half of the last three types are partly covered by cortex. Four Levallois flakes are present; two are partly cortical. In total, the partly cortical pieces account for less than half of all flakes, 45.7%.

Shape. About 30% of the flakes are too broken to identify by shape (Table 9-4). Of the remainder, more than 30% are rectangular and are usually removed on-axis (Table 9-5).

Profiles and Cross-Sections. As is usual for the Unit II assemblages, most flakes are flat (Table 9-6), feathered at the distal end (Table 9-7), and triangular or trapezoidal in cross-section (Table 9-8).

Platforms. About one-third of the platforms are unidentifiable: crushed, missing, or missing by retouch. Among identifiable platforms, multiple faceted are common, which, together with laterally prepared multiple faceted platforms, account for one-half of all identifiable butts (Table 9-9). The percentage of faceted platforms is very high: IF = 60.6; IFs = 50.0. Only six butts are truly lipped (Table 9-10).

In summary, the flake assemblage of Level II/7D is characterized by: (1) a dominance, in equal proportions, of uni-directional, uni-directional-crossed, bi-directional, and converging dorsal scar patterns; (2) a high percentage of partially cortical and cortical flakes; (3) a dominance of rectangular flakes removed on-axis; and, (4) a very high percentage of faceted platforms.

In general, these technological features are identical for flakes and blades. The differences are only significant for dorsal scar patterns—where the blades are dominated by uni-directional preparation and the flakes are not.

Tools

Twenty-three tools were excavated from Level II/7D, 10 of them were made on blades. As usual for Unit II assemblages (Table 9-18) most tools (13) are laterally retouched pieces, of which 4 are on blades. Mainly, the retouched pieces have either marginal or irregular obverse retouch; in all cases it is flat. Only two have inverse retouch.

Four scrapers were found; 3 were made on blades and one on a flake. All have scalar sub-parallel either flat or semi-steep obverse retouch. Each scraper is a different type: convex (fig. 9-5: *1*), sub-triangular, semi-rectangular, and semi-crescent. Even given this small sample, it is unusual for a WCM assemblage to have converging scrapers.

Only two points were found: one sub-triangular dorsal and the other a tip of a broken point. One example each of a notch (fig. 9-4: *5*), a bi-truncated-faceted piece, a battered piece, and an unidentifiable fragment were recovered.

Level II/7E

Pre-cores and Cores

Level II/7E contained only a single pre-core and 13 cores (Table 9-2). The pre-core is a piece of flint plaquette with two opposite platforms arranged on the ends of a crested ridge, which was positioned on the narrow side of the plaquette.

There are two main groups of cores in Level II/7E: bi-directional, parallel, and radial (Table 9-2). Among the parallel cores, there are only two cores where the shape of the flaking surface is identifiable: one is rectangular and the other is a narrow flaked surface core. The first has a wide multiple faceted main platform without any supplementary platforms. The second core is unusual even for the upper levels of Unit II. Its undersurface was prepared as a crested ridge. It clearly shows that the method of crested ridge preparation during the initial stage of flaking was used. The utilization of that core, however, was not successful. A series of hinge-fractures stopped the flaking.

The opposed platform cores include bi-directional rectangular (3) and bi-directional alternate (1). The last has two opposed flaking surfaces on opposite sides of a plaquette. Except for a single bi-directional alternate core, all others of this group have supplementary

unfaceted platforms. The radial cores are both ovoid and typologically typical: only the multiple faceted platforms are unusual.

On the whole, core lengths are relatively standardized: from 8.1-5.2 cm. The same is true for widths which range 5.1-7.1 cm (excepting the narrow flaked surface core and the pre-core with the crested ridge). Thus, the cores from Level II/7E are as long as they are wide. The average thickness is not so great: half of the identifiable cores are less than 3.1 cm thick. At the same time, the length of flake scars removed from the main platforms are not less than 4.0 cm long.

Blanks

Two hundred thirty blanks were recovered from Level II/7E, of which 154 are unretouched flakes, 59 are unretouched blades, 9 are flake tools, and 8 are blade tools. Their attributes are as follows:

Blades. More than two-thirds of the blades (45) are broken. In any case, it is one largest blade samples in Unit II.

Dorsal Scar Patterns. Uni-directional-crossed, converging, and uni-directional scar patterns are best represented (Table 9-12). Only 19.0% of these three types are also cortical. It must be noted that *débordant* blades are common, 10.4%. Half of them are partly cortical. On the whole, the percentage of partly cortical blades is low in comparison with other assemblages of Unit II.

Shape. There are 25 blades whose shape is unidentifiable, but among the identifiable, the most common shape is rectangular, ca. 60% (Table 9-13). Not one of them was removed off-axis. Taking into account 18 pieces (26.9%) which are not identifiable as to axis, it must be noted that only 3 blades were removed off-axis, while 46 blades were removed on-axis (Table 9-14).

Profiles and Cross-Sections. Flat blades represent about one-half of the identifiable pieces (Table 9-15). The flat blades, as a rule, are associated with feathered distal profiles (Table 9-16), as well as with triangular and trapezoidal midpoint cross-sections (Table 9-17).

Platforms. More than one-half of blade platforms (41) are identifiable. Among them, two-thirds are multiple faceted (Table 9-9). About two-thirds of the identifiable butts are semi-lipped, while real lipped platforms are rare (Table 9-10).

The main characteristic features of this blade assemblage include the following: (1) a dominance, in approximately equal proportions, of blades with uni-directional crossed, converging, and uni-directional scar patterns; (2) a relatively low number of partly cortical pieces; (3) the usual dominance of rectangular-shaped blades removed on-axis; (4) a dominance of flat blades in association with feathered distal ends and either triangular or trapezoidal cross-sections; (5) a dominance of multiple faceted platforms, usually with semi-lipped profiles; and, (6) a very high percentage of blades: Ilam = 29.1.

Flakes. A total of 163 flakes were found, of which 67 were broken. As a group, they may be characterized, as follows:

Dorsal Scar Patterns. The dorsal scar patterns are those which are usual for Unit II assemblages (Table 9-3). Three types predominate in approximately equal proportions: uni-directional-crossed, uni-directional, and converging. Somewhat less than one-third of these flakes are partially cortical. Only three Levallois flakes were recognized. The percentage of completely and partly cortical flakes is 35.7%, which is the lowest among flakes in Unit II.

Shape. One hundred thirty-three flakes were identifiable to shape: about half are rectangular and, in general, were removed on-axis. The second more or less common type is triangular (Table 9-4). Of the 139 flakes identifiable as to axis, more than half were off-axis (Table 9-5).

Profiles and Cross-Sections. The situation with flake lateral profiles is usual for the Unit II assemblages, meaning a pronounced dominance of flat flakes (Table 9-6) associated with feathered distal ends and either triangular or trapezoidal distal cross-sections (Table 9-7). Nevertheless, it must be noted that there are similar percentages of lateral steep midpoint cross-sections (Table 9-8), which are, in general, associated with *éclats débordants*. Also, there are relatively high percentages of medially incurvate flakes and those with hinged distal ends (Table 9-7).

Platforms. About one-half of all identifiable platforms are multiple faceted (Table 9-9). The lipped platforms are not numerous and, as is usual, semi-lipped platforms are most common (Table 9-10).

In summary, the flake assemblage from Level II/7E is characterized by the following features: (1) a dominance, in equal proportions, of three dorsal scar patterns: uni-directional, uni-directional-crossed, and converging; (2) a low percentage of cortical and partly cortical flakes; (3) the usual Unit II association between shape and flake orientation, as well as the usual range of flake profiles; and, (4) a very high percentage of faceted platforms (IF = 66.6; IFs = 58.5). This is the only example where the technological attributes of blades and flakes are so similar.

Tools

Seventeen tools were defined in Level II/7E, nine of which are broken, but not so heavily as to be unidentifiable (Table 9-11). The eight tools were made on blades. Scrapers account for more than one-half of all tools. All scrapers were retouched by obverse scalar, either flat or semi-steep, retouch. The scrapers are subdivided into three main groups of types: simple, double (fig. 9-5: *2,9*), and convergent (fig. 9-7: *3*). Also among the tools are two notches, a borer (fig. 9-3: *3*), and a burin on proximal truncation (fig. 9-7: *1*). The retouched pieces (four) include three flakes and a blade. The edges of the retouched pieces are retouched by either marginal or irregular obverse retouch which is always discontinuous.

Level II/7F8

Pre-cores and Cores

There are 19 core-like pieces (Table 9-2). Among the pre-cores there is a single unfinished Levallois tortoise and three pieces with prepared crested ridges. The first has a centripetally prepared flaking surface and an unprepared main striking platform. The single crested ridge pre-cores also lack main striking platforms.

The most numerous core type is the Levallois tortoise (four). All are classic examples with multiple faceted main platforms, and the scars for the centripetal preparation of the flaking surface were struck from lateral and distal supplementary platforms (figs. 9-1: *2*; 9-8: *1*; 9-9: *2*). Two of these cores differ from the others by being either on a flint pebble flake (fig. 9-1: *2*) or on a flint pebble (fig. 9-9: *2*), rather than on plaquettes.

The other common core type is bi-directional (three), two of which are intensively utilized with supplementary platforms made on both sides of the cores (fig. 9-8: *3*). The third bi-directional core was made on a flake without supplementary platforms. Both parallel cores also lack supplementary platforms.

The radial cores (two) are unusual for Unit II assemblages in terms of their dimensions (Table 9-2). Even taking into account that, on the whole, the cores of Unit II are very thin, it is really unusual when a core is about 9 cm in diameter and only 0.9 cm thick (fig. 9-9: *1*). Moreover, complete cores from Level II/7F8 are relatively long, wide and, at the same time, very thin. The length ranges from 5.3-8.7 cm and width ranges 4.1-8.8 cm. The variation in thickness, however, is only from 1.1-2.2 cm. The scars on the flaking surfaces are usually

longer than 4 cm, except on one radial and one Levallois core. In the last case, the central flake scar hinge-fractured at the midpoint of the core (fig. 9-8: *1*; Table 9-2).

Blanks

Level II/7F8 produced 346 pieces, of which 247 are unretouched flakes, 32 are flake tools, 56 are unretouched blades, and 11 are blade tools.

Blades. A total of 67 blades were found, 34 of which were broken.

Dorsal Scar Patterns. The most common dorsal scar pattern is converging. Uni-directional-crossed, bi-directional, bi-directional-crossed, uni-directional, converging, and crested (*débordant*) (fig. 9-2: *3*) are represented in approximately equal amounts (Table 9-12). Only Levallois and lateral patterns are rare. About 28% of the blades are partially cortical.

Shape. Nearly one-half of the blades are rectangular (Table 9-13) and they were all removed on-axis. The second most common form is elongated trapezoidal: only one of those was removed off-axis. On the whole, almost all the blades in this assemblage were struck on-axis (51 out of 54 identifiable pieces) (Table 9-14).

Profiles and Cross-Sections. Flat lateral profiles account for 40% of the sample (Table 9-15). Feathered distal ends are most common, again, accounting for more than half of all identifiable distal ends, although hinged and blunt distal ends are fairly numerous (Table 9-16). Triangular and trapezoidal midpoint cross-sections occur in approximately equal amounts (Table 9-17). The number of lateral steep cross-sections, as always, reflects the presence of *lames débordantes.*

Platforms. The number of multiple faceted platforms is really impressive (21 out of 32 identifiable butts). The remaining identifiable platforms are subdivided into plain and dihedral (Table 9-9). As usual, lipped butts are rare, while unlipped and semi-lipped are represented in approximately equal numbers (Table 9-10).

The blade assemblage of Level II/7F8 exhibits several characteristic features: (1) a relatively proportional distribution of dorsal scar pattern types; (2) a moderate number of partly cortical blades; (3) a pronounced dominance of rectangular and elongated trapezoidal blades; (4) a high variability in blade profile, but mainly feathered distal ends in association with the trapezoidal and triangular cross-sections; (5) a high percentage of multiple faceted butts, which are either unlipped or semi-lipped; and, (6) the usual percentage of blades in the assemblage, Ilam = 19.4.

Flakes. Two hundred seventy-nine flakes were recovered, of which 118 were broken and 30 retouched.

Dorsal Scar Patterns. The most prevalent dorsal scar pattern is converging, about half (47.3%) of which are covered by some cortex. Uni-directional-crossed, bi-directional, and uni-directional dorsal scar patterns are represented by lower percentages, but they are still significant (Table 9-3) and have about the same ratio of partly cortical flakes (41.2%) to non-cortical flakes, as do those which are converging. About half of the *pièces débordantes* are partly cortical, as are a quarter of the Levallois flakes. On the whole, about one-half of all flakes (45.5%) are partly or completely covered by cortex.

Shape. There are 194 flakes which are identifiable by shape. Rectangular and trapezoidal shapes predominate (Table 9-4). The percentage of flakes removed on-axis and off-axis are approximately equal (Table 9-5).

Profiles and Cross-Sections. The range of different lateral profiles is similar to the other assemblages described above. Flat flakes account for about half (Table 9-6). Again, as usual, flat profiles are often associated with feathered distal ends (Table 9-7) and either triangular or trapezoidal cross-sections (Table 9-8). While not numerous, there are some lateral steep cross-sections, which are usually associated with *pièces débordantes.*

Platforms. There are 174 identifiable platforms, about 10% of which are covered by cortex (Table 9-9). Multiple faceting accounts for about one-half of all identifiable platforms, resulting in high faceting indices: IF = 62.5, IFs = 48.4. The unlipped and semi-lipped platforms are approximately of equal proportions. The lipped butts are not numerous, but more than one-third of all platforms could not be identified in relation to this attribute (Table 9-10).

The flake assemblage of Level II/7F8 is characterized by: (1) a great variety of types of dorsal scar patterns: uni-directional-crossed, bi-directional, uni-directional, and converging; (2) a moderate and average percentage of cortical and partly cortical flakes; (3) a dominance, in equal proportions, of trapezoidal and rectangular-shaped flakes, of which the former, in general, were removed off-axis, while the latter were removed on-axis; (4) a dominance of flakes with flat lateral profiles in association with feathered distal ends and triangular or trapezoidal cross-sections; and, (5) a great number of multiple faceted platforms associated with either unlipped or semi-lipped butts.

The flake and blade assemblages share a similar distribution of dorsal scar patterns, shapes, proportions of partially and completely cortical pieces, midpoint cross-section shapes, distal end profiles, faceted and unfaceted platforms, as well as lipped and unlipped butts. At the same time, some differences are present, too: the proportions of lateral profile curvature are different (blades are twice as likely to be incurvate than flakes) and there are proportionately significantly more faceted platforms among the blades, as compared to the flakes. The total percentage of faceted platforms for blades and flakes combined, IF = 69.2; IFs = 51.9, is somewhat higher than for flakes alone: IF = 62.5; IFs = 48.4.

Tools

Forty-three tools came from Level II/7F8, 14 of which are on blades and 32 on flakes. More than one-half of the tools (24) are broken. The tool assemblage includes points, scrapers, notches, denticulates, retouched pieces, and unidentifiable fragments (Table 9-11).

The points consist of two sub-leaf (fig. 9-3: *5*), and one sub-triangular (fig. 9-3: *4*). All but one point was retouched with flat scalar obverse retouch; on the other, retouch is obverse semi-steep.

Scrapers (16) include transverse-straight, straight (fig. 9-5: *8*), convex (figs. 9-4: *6*; 9-5: *7*), straight-convex, bi-convex, and convergent. Only obverse retouch was used in scraper production. In general, most scrapers have either flat or semi-steep scalar retouch, although some sub-parallel and stepped obverse retouch occurs, as well. These last two types of retouch are usually associated with semi-steep retouched angles.

Both denticulates are straight obverse with bi-truncated-faceted extremities (fig. 9-4: *2,4*). The single straight denticulated edge in both cases was formed by obverse scalar steep retouch. The single notched tool has inverse scalar steep retouch. The retouched pieces are subdivided into lateral—which are the most common—bilateral, and distal, which are each represented by a single piece. The distally retouched example is the only case of alternate scalar semi-steep retouch in Level II/7F8. The other retouched pieces were manufactured by either marginal or irregular discontinuous flat obverse retouch.

Level II/8C

Pre-cores and Cores

No pre-cores or cores were recovered in this level.

Blanks

The debitage consists of 79 pieces, including: 63 flakes, 12 blades, and 4 retouched flakes. Owing to the small blade sample, blade attributes will be only briefly summarized.

Blades. Even for such a small sample, their dorsal scar patterns are usual for the blade assemblages of Unit II: uni-directional-crossed, bi-directional, uni-directional, and crested (Table 9-12). Half of the blades are covered by cortex.

Usually, blades are rectangular-shaped (Table 9-13) and were removed on-axis (Table 9-14). The number of flat lateral profiles on blades (Table 9-15) is not high; most have feathered distal ends (Table 9-16), and either triangular or trapezoidal midpoint cross-sections (Table 9-17). Among the identifiable platforms, the most numerous ones are multiple-faceted (Table 9-9), and most are unlipped (Table 9-10).

Flakes. Of the 67 flakes, 37 are broken. While the sample is small, it can be described in normal fashion.

Dorsal Scar Patterns. As described above, the uni-directional-crossed, bi-directional, uni-directional, and converging scar patterns are equally prevalent (Table 9-3). About 40% of flakes with those scar patterns also are covered by cortex to some degree, while 43.3% of all flakes have some cortex.

Shape. Because of breakage, 26 flakes are not identifiable by shape. The most common identifiable shape is rectangular (Table 9-4). Ovoid flakes are relatively numerous, as are irregularly shaped ones. Those flakes struck on-axis are more numerous than those struck off-axis, although about one-third could be identified in this way (Table 9-5).

Profiles and Cross-Sections. Flat and medially incurvate flakes are equally represented (Table 9-6). The other flake profiles are not as numerous. Feathered distal ends dominate (Table 9-7). Taking into account the number of missing distal ends, it is obvious that feathered distal ends are the most representative form. About half of the flake cross-sections are triangular, although trapezoidal and crescent cross-sections are relatively numerous (Table 9-8).

Platforms. There are 41 identifiable platforms; about half are multiple faceted (Table 9-9). Even for such a small number of platforms, the indices are usual for Unit II: IF = 69.6, IFs = 46.3.

In general, the debitage assemblage of Level II/8C is characterized by (1) equally prevalent uni-directional-crossed, uni-directional, bi-directional, and converging dorsal scar patterns; (2) 40% of flakes which are partly or completely covered by cortex; (3) a dominance of rectangular-shaped flakes removed on-axis; (4) a dominance of flat flakes associated with feathered distal ends and either triangular or trapezoidal cross-sections; (5) a high percentage of multiple faceted platforms (for flakes and blades): IF = 63.0, IFs = 50; and, (6) a moderate proportion of blades: Ilam = 15.2.

Tools

The tool-kit from Level II/8C consists of two obversely retouched straight scrapers (figs. 9-4: *3*; 9-5: *4*) and two retouched pieces (Table 9-11).

INTER-LEVEL COMPARATIVE ANALYSIS

The recovered assemblages from Unit II at Kabazi II all seem to belong within the same industry—the Western Crimean Mousterian (WCM). In fact, in spite of the often small samples sizes, the degree of inter-level homogeneity is striking, although not universal. This section will pull together the separate level samples to elucidate where homogeneity and variability are found.

Pre-cores

Pre-cores were recovered in all but Levels II/7C and II/8C (Table 9-2). In Levels II/7, II/7E, and II/7F8, the pre-cores are crested ridge pieces made on the narrow side of a plaquette

and/or the narrow side of a rectangular chunk. The pre-cores with narrow flaked surfaces from Level II/7D are morphologically similar to the crested ridge pieces. At the same time, a rather different morphology exists for the parallel (II/7) and bi-directional pre-cores made on flakes (II/7AB). Unlike the crested ridge and narrow flaked surface cores, where the narrow flaking surfaces were established at the pre-core stage, the flaking surfaces of parallel and bi-directional pre-cores, even at this stage of core organization, are significantly wide. Mainly, these differences are technological. Typologically, these pre-core types are found together in Level II/7 and individually in other levels. Thus, it is likely that the absence of one or the other type in any one level is merely the result of small sample size.

Cores

In accordance with the number and arrangement of striking platforms and scar position on core flaking surfaces, cores have been subdivided into four main groups: radial and discoidal; Levallois tortoise; parallel and convergent; and, bi-directional and orthogonal. Cores from all these groups occur in all levels, except II/7E, where Levallois tortoise cores were missing, and Level II/8C which had no cores, at all (Table 9-2). A common feature of these core assemblages is the presence of supplementary platforms that were used during the preparation of distal/lateral flaking surface convexities. The supplementary platforms occur on Levallois tortoise, parallel, and bi-directional cores.

Although there are a number of different cores types in each level, most cores, regardless of type, have rectangular-shaped flaking surfaces. In addition, different core types with naturally flat undersurfaces are found in each level. The crested ridge pre-cores correspond well with the series of narrow flaked surface and sub-cylindrical cores from Levels II/7AB, II/7C, II/7D, and II/7E. Another common feature of all core assemblages is the frequent use of faceted platform preparation. All of these features comprise the basic typological attributes of the WCM core assemblages. Thus, the pre-core and core assemblages of all of these levels are technologically and typologically homogeneous.

Blades

There are 303 blades from all assemblages, and about 36% of tools were made on blades. There is no doubt that the blade production was an integral part of the technology which produced these assemblages. The average percentage of blades among all blank types is 20.32%, clearly indicating that blades were positively selected for modification into tools.

Dorsal Scar Patterns

In every level of Unit II, four dorsal scar patterns occur in more or less significant numbers on blades: uni-directional-crossed, bi-directional, uni-directional, and converging (Table 9-3). These four account for 70% of the scar patterns on blades. Blades with uni-directional-crossed dorsal scar patterns are most common, and are less cortical (about 23%) than blades with other types of dorsal scar patterns. At least 30%, and often as much as 45%, of blades with bi-directional, bi-directional-crossed, and converging dorsal scar patterns are partly covered with cortex. The blade assemblages of Levels II/7AB, II/7D, and II/7F8 have a significant number of bi-directional-crossed scar patterns (Table 9-12).

Blades with crested/débordant dorsal scar patterns are reasonably represented, not surprisingly, given the core shapes. About half of them are partly covered with cortex. There are Levallois blades in three of the seven levels (II/7C, II/7D, II/7F8) but the total number of Levallois blades is very small (Table 9-12). On average, the number of partly cortical blades is very high at ca. 32%.

Shape

More than one-half of the blades are rectangular-shaped (Table 9-13). At the same time, the variation in the percentages of rectangular blades among the assemblages is very high: from ca. 24% in Level II/7C to ca. 67% in Level II/8C. The explanation of such a high range most likely lies in the small sample sizes. For example, in the assemblages containing large samples, such as II/7AB, II/7E, and II/7F8, the range is not so impressive (Table 9-13). The next most common blade shapes are triangular, elongated trapezoidal, and crescent. The proportional ranges of these types among the levels are high. In all cases, however, each of these types is more common in each level than types such as ovoid, leaf-shaped, and expanding. It must be noted that the rectangular blades are always associated with on-axis blank orientation. Moreover, even taking into account the poor sample sizes, the range of on-axis and off-axis orientation is not significant: as a whole, more than 88% of identifiable blades are struck on-axis (Table 9-14).

Profiles and Cross-Sections

Blades with flat lateral profiles predominate on average, and also in each assemblage (Table 9-15). These are followed by medially incurvate and twisted blades, each of which is represented by approximately equal numbers not only overall, but also in each assemblage. Feathered distal ends occur over 50% of the time in each blade assemblage (Table 9-16), while, overall, feathered ends (essential counts) are ca. 70% of all distal ends. Triangular, lateral steep, and trapezoidal midpoint cross-sections are represented by about the same percentages in all but one assemblage; only in Level II/8C, with 12 blades, is there another pattern of occurrence (Table 9-17).

Platforms

Faceted platforms are really predominant in each assemblage, except for Level II/7D, where plain platforms are most common (Table 9-9). Overall, they account for ca. 60% of all identifiable butts. Laterally prepared plain and faceted butts are not numerous, but are present in each assemblage.

Semi-lipped butts are the most common type of lipping in Levels II/7 through II/7E, while unlipped platforms dominate in the blade assemblages of Levels II/7F8 and II/8C (Table 9-10).

Thus, the blade assemblages of Levels II/7 through II/8C are homogeneous in the following attributes: (1) proportions of different dorsal scar patterns; (2) the percentage of partly cortical blades; (3) the predominance of rectangular blades; (4) the predominance of on-axis blades; (5) the predominance of flat, medially incurvate, and twisted pieces; (6) predominance of feathered distal ends and a paucity of other forms; (7) equal proportions of the same cross-sections (triangular and trapezoidal); (8) a predominance of multiple faceted platforms: IF = 73.3, IFs = 60.6; and, (9) a paucity of true lipped platforms.

The inter-assemblage differences are connected to the variable presence of Levallois blades and *lames débordantes*, which are few and do not occur in all levels. These types are not consistent, with different proportions of dorsal scar patterns (Level II/7D) and platform types. It is felt, however, that these differences result from statistically small samples.

On the other hand, there are some real differences among levels. For instance, the extremely low blade index of Level II/7, excavated in 1987 and covering an area of about 30 m^2. Another 24 m^2 were excavated during the 1993 field season. The 1987 flint assemblage consisted of 126 unretouched and retouched blades and 274 flakes and flake tools. Therefore, the amount of debitage from the 1987 field season is about four times larger than the amount of debitage from the 1993 season, where only 116 pieces of debitage were recovered. The same pattern applies to the bone assemblages. Thus, the 1987 and 1993 excavated areas differ

both in density of artifacts and faunal remains, and ratios of flint categories. Those differences could be explained by the intra-site variability of fauna and raw material exploitation. Then, it must be noted a relatively lower percentage of semi-lipped butts in Level II/7F8, than in the uppermost assemblages of Levels II/7E through II/7AB.

Flakes

Combined, a total 1188 flakes were recovered from Levels II/7 through II/8C. This sample is considerably larger than that of the blades, and, not surprisingly, the majority of retouched tools were produced on flakes.

Dorsal Scar Patterns

Five types of dorsal scar patterns commonly occur in each level: converging (17% to 27%), uni-directional (15% to 23%, but 6.4% in II/7), uni-directional-crossed (9.7% to 21.1%), bi-directional (9% to 15%, but 4.5% in II/7), and covered by cortex (7% to 16%). Levallois flakes were found in every level except II/8C. The percentage of partially cortical flakes among those flakes with lateral, uni-directional-crossed, uni-directional, converging, and crested dorsal scar patterns is from 40% to 55%. The percentage of partly and completely cortical flakes, regardless of dorsal scar pattern, is ca. 48%.

Shape

Rectangular-shaped flakes dominate in all the levels (Table 9-4). They range in percentage from 20% to 40%. More than 80% of rectangular-shaped flakes were removed on-axis. The same is not true for the trapezoidal and triangular flakes, where the majority were removed off-axis. On average, flakes removed on-axis and flakes removed off-axis show a 50/50 split (Table 9-5).

Profiles and Cross-Sections

As noted above, flat lateral profiles dominate among the flakes (36% to 58%). Feathered at distal end (45% to 58%), and either triangular (35% to 46%) or trapezoidal (23% to 35%) in cross-section are most common (Tables 9-6, 9-7, 9-8).

Platforms

Multiple faceted platforms are more representative of the lower part of Unit II in Levels II/8C, II/7F8, II/7E, II/7D, than of the upper levels (Table 9-9). In the lower levels, multiple faceted platforms vary from 41% to 48% of all identifiable butts. The percentages of multiple faceted platforms in Levels II/7C, II/7AB, II/7 are only from 29% to 35%. The percentages of unfaceted platforms are relatively stable and, on average, account for more than one-third of all identifiable flakes. Semi-lipped and unlipped platforms in all levels have approximately the same percentages and, combined, make up about 90% of identifiable butts (Table 9-10). Truly lipped platforms are rare (3% to 8%).

Thus, there are no significant differences among the flake assemblages of Levels II/7 through II/8C which need to be explained from the point of view of different typological structures. All types of attributes adopted for the present study are present in all flake assemblages. The only difference is poorly represented: the different percentages of faceted platforms in the flake assemblages of Levels II/8C-II/7D, on the one hand, and in the assemblages of Levels II/7C-II/7, on the other. At the same time, taking into account this poorly characterized difference and the "absolute" similarity of all other typological attributes, it must be concluded that there is complete typological similarity of the flakes assemblages from Levels II/7-II/8C.

This conclusion is correct for the blade and flake assemblage comparisons, as well. The differences result from the proportional distribution of the same dominant types more than

from the presence or absence of some quantitatively significant attributes. The different proportional distributions are displayed in the dorsal scar patterns, shape types, lateral profiles, cross-sections at midpoint, occurrence of faceted platforms, and lipping.

The blades with uni-directional-crossed dorsal scar patterns are dominant, whereas in the flake assemblages, a converging pattern is most common. At the same time, both types of dorsal scar patterns are represented in each level's assemblage by a significant number of artifacts. The percentage of rectangular-shaped blades is higher than for rectangular-shaped flakes. At the same time, the trapezoidal elongated blades are much more common than are trapezoidal elongated flakes.

The differences between blade and flake lateral profiles appear to be correlated with the length/width proportions of blades and flakes. The percentage of twisted blades is twice that of twisted flakes. The variations in midpoint cross-section shapes of blades differ from those of flakes because of the rarity of crescent type blades (fully cortical), while that type ranges from 12% to 18% of all flake cross-sections. Since this attribute state, on both flakes and blades, is associated with primary blanks, it is not surprising that few are blades. Finally, the blade assemblages are different from those of flakes in having significantly higher percentages of multiple faceted platforms and relatively lower percentages of unlipped butts.

The majority of differences between the flake and blade assemblages are correlated with metrical attributes, which are traditionally used to distinguish between flakes and blades. Exceptions to this are seen in the lack of significant differences between flake and blade dorsal scar pattern distributions, and by the significantly greater percentage of multiple faceted platform on blades, among others.

Tools

A total of 165 tools were recovered from Levels II/7 through II/8C. In spite of often small sample sizes, it is still valid to note that the main typological feature of all the assemblages is the total absence of bifacial tools, as well as of bifacial treatment elements (Table 9-11). While statistical comparison of tool assemblages by level is not possible because of the small samples, strong similarities are obvious, from the first glance. Only two classes of tools are always present in each level: scrapers and retouched pieces. Points are absent in the assemblages of Levels II/7E and II/8C and not a single denticulate was found in Levels II/7, II/7D, II/7E, and II/8C. Notched tools are present only in Levels II/7C, II/7D, II/7E, II/7F8, while battered pieces (II/7D), borers (II/7E), and burins (II/7E) were present as isolated items.

While each level sample is small, the homogeneity of the tools, as well as the debitage, makes it possible to combine the various levels' tool samples into a single group for discussion. In the combined sample, simple retouched pieces are the most numerous and occur in all levels: there are 78, of which 67 have lateral, obverse retouch. Other types of seldom-seen retouched pieces include lateral alternate, bilateral obverse, lateral inverse, bilateral alternate, and distal alternate. The main feature of all the retouched pieces was the method of their manufacture; mainly by lateral discontinuous obverse (either marginal or irregular) retouch. Given the weak retouch on most of these pieces, it is possible that this edge modification frequently resulted from use, rather than purposeful retouch, and even those with continuous retouch present no evidence that they were ever resharpened.

The scrapers were subdivided into four main groups: simple (32), transverse (2), double (7), and converging (13). One-half of the simple scrapers have straight scraping edges and this type is present in all levels, except for Levels II/7 and II/7D. Simple convex scrapers are only a bit less common, being present in Levels II/7AB, II/7C, II/7D, and II/7F8. There is only a single concave scraper (II/7C). Simple scrapers were mainly manufactured by obverse

scalar flat retouch. Sub-parallel, stepped retouch, as well as steep and semi-steep retouch are very rare. Inverse and alternate retouch were present in a single case each.

The double-edged scrapers are subdivided into double-straight, straight-convex, and bi-convex types and were recovered in Levels II/7AB, II/7C, II/7E, and II/7F8. Overall, the retouch on double-edged scrapers is the same as on simple scrapers, as is the case for the two straight transverse scrapers (Level II/7F8). The simple, double, and transverse scrapers are not very different from the lateral, bilateral, and distally retouched pieces. The main difference is a kind of retouch used for the manufacturing of each class of tools. In the case of scrapers, the retouch is continuous (scalar, sub-parallel, irregular), while in the case of the retouched pieces it is discontinuous and/or marginal.

The convergent scrapers are subdivided into sub-triangular, semi-crescent, sub-crescent, sub-leaf, semi-rectangular, and unidentifiable types. Convergent scrapers are present in all levels, except in II/8C, where only four tools were found. Convergent scrapers were made by obverse scalar flat and sometimes semi-steep retouch.

A total of 15 points were recovered. Some points have the same shapes as the convergent scrapers. They are subdivided as follow: sub-triangular in Level II/7D; sub-crescent in II/7AB; one semi-crescent each in Levels II/7, II/7C, and II/7F8; and sub-leaf in Levels II/7AB, II/7C, and II/7F8. The rest are distal points in Levels II/7AB and II/7C, a lateral point in Level II/7AB, and a Levallois dorsal point in Level II/7C. The difference between the first group of points (the shapes of which are close to convergent scrapers) and the second group lies in the character of retouch. Usually, the lateral edges of the first group are retouched along almost their entire length, while the distal and Levallois points are retouched only at the tip. The lateral point has only a single retouched edge, as well as a retouched tip. Both groups of points are found together and in association with the same type of other tools. Scalar obverse retouch was used to manufacture points of both groups.

Four denticulates were in the tool-kits of Levels II/7AB, II/7C, and II/7F8. Two, both from Level II/F8, are straight-obverse-bi-truncated-faceted types. The others are subdivided into concave obverse (II/7AB) and straight obverse (II/7C) types. The straight-dorsal-bi-truncated-faceted denticulates were made by obverse, scalar steep retouch. The production of the denticulated edge on the straight obverse tools was carried out with scalar flat retouch. The denticulated bi-truncated-faceted tools, which were well known from the previous excavations of Unit II, appear to be a pronounced typological feature of the Western Crimean Mousterian industry. Moreover, the single bi-truncated-faceted unretouched piece (Level II/7D), which was classified under the class truncated-faceted, could represent an unfinished denticulated tool, because the method of distal/proximal treatment in the Unit II is currently only known to be associated with denticulated tools.

The five notched tools come from four levels: II/7C, II/7D, II/7E, and II/7F8. They exhibit lateral notches, formed by scalar retouch. The retouch types and retouch angles are subdivided into obverse flat, alternate semi-steep, inverse-flat, and inverse steep. The notched tools are not numerous enough to be a distinctive typological feature of Unit II. The same applies for the tool classes such as burins, borers, and battered pieces.

The tool-kits of Levels II/7 through II/8C are typologically similar, mainly in relation to scraper morphology. The other tool classes are not numerous enough to elucidate important typological differences. The most prevalent tool class is retouched pieces which are morphologically close to scrapers. The high percentage of simple obverse scrapers, the presence of distal, lateral, and sub-crescent points made on blades, plus the presence of bi-truncated-faceted obverse straight denticulates appear to be the main characteristic typological features of the WCM industry tool-kit.

In conclusion, two main points should be emphasized from the comparative study of pre-cores, cores, flakes, blades, and tools from Levels II/7 through II/8C. First, there are no typologically significant differences in pre-cores, cores, flakes, blades, and tools among those levels. Second, the typological structure of pre-cores, cores, flakes, blades, and tools from those levels is virtually identical to the Shaitan-Koba type of the WCM industry evolution (Chabai 1990, 1991, 1996). Finally, in spite of the described homogeneity, there are some changes from Levels II/8C and II/7F8 to the Levels II/7E -II/7AB which must be noted. Those changes, from bottom to top, are mainly seen on the blades as increasing lipping and semi-lipping, as well as increasing laterally prepared butts but, also, overall, in the decrease of faceted platforms. In spite of this, the proportional occurrences of Levallois flakes and blades remains stable throughout the sequence. Thus, these changes would seem to reflect changes within blade production itself, rather than indicating an increase in the production of blades, which is documented only in the upper levels (II/1 and II/1A) of Unit II (see Chapter 8).

CORE REDUCTION STRATEGIES

The reconstruction of core reduction strategies is based on both refittings and analyses of technologically meaningful attributes described above. A number of reduction strategies were used at Kabazi II, Unit II: the Levallois tortoise method, the volumetric flaking method, the uni-polar variant of the Biache method, and the bi-polar variant of the Biache method.

Levallois Tortoise Method

Even taking into account the real possibility that both core morphology and size changed during the reduction process, it is difficult to imagine that the production of Levallois tortoise cores made on flakes differed from that which is traditionally called the Tortoise method (Gladilin 1976, 1989; Chabai and Sitlivy 1993) or *Levallois préférentiel* (Boëda, Geneste, and Meignen 1990). The further utilization of such cores could transform them into other core types, such as parallel (II/7), convergent (II/7C), or bi-directional (II/7C). It is impossible, however, to start with parallel or converging removals and finish with the removal of a central flake which was prepared by centripetal blows from supplementary platforms. Finally, after this procedure, part of the ventral surface of the primary flake is seen on the flaking surface of the core (fig. 9-1: *2*). It seems obvious that the Levallois tortoise core made on a flake exhibits both the first and the last stages of that specific type of core reduction. Although it is difficult to either exclude or prove further reduction patterns for this type of core, some of them could be explained in the following way: use of the same striking platform or preparation of an opposite one and the removal of several blanks in one or opposite directions. This effort would result in a uni-directional or bi-directional core on flake. Some parallel (II/7), convergent (II/7AB, II/7C), and bi-directional (II/7C) cores made on flake cores are present and might represent transformed Levallois tortoise cores (Table 9-2).

Volumetric Flaking Method

A significant number of pre-cores (5) have well-prepared crested ridges. Other types of pre-cores, which are morphologically close to the above, have a narrow flaked surface. The main metrical attribute of those types is the width to thickness proportion: thickness is much greater than width. The narrow flaked surface cores have the same metrical attributes (Table 9-2). All of the narrow flaked surface cores show several scars on one side from the formerly made crested ridge (fig. 9-6: *2*). The same kind of scars on sides and undersurfaces are seen on some sub-cylindrical cores in Levels II/7AB (fig. 9-6: *1*) and II/7C. Thus, the evidence for crested ridge preparation is seen on the narrow surface pre-cores, narrow flaked surface cores, and sub-cylindrical cores. The relationship between the width/thickness ratio of crested ridge

pre-cores, narrow surface pre-cores, and sub-cylindrical cores clearly demonstrate that they and their pre-cores are much thicker than are the other types. The dimensions of thickness and width for crested ridge pre-cores, narrow surface pre-cores and cores, and sub-cylindrical cores are very close, while the other types of cores are significantly wider than they are thick (Table 9-2). The same is true for the refitted bi-directional sub-cylindrical core from II/7C (figs. 9-10 and 9-11). Before the refitting, the width/thickness ratio was 5.3:3 cm, and its length was 9.9 cm. After refitting six blanks and one flake core tablet onto the flaking surface and striking platform, the dimensions changed significantly: the width/thickness ratio became 5.3:5.5 cm, while the length expanded to only 10.3 cm. Moreover, the refitted blades are very far from the beginning of the initial stage of flaking (stage 1); there is no evidence of primary core preparation blanks on the refitted blades (fig. 9-10: *1*). Thus, this core changed morphologically during its reduction from a narrow flaked surface type (fig. 9-10: *1*) to a sub-cylindrical core (fig. 9-11: *2*). It is possible to suggest that the first stage of that core exploitation started with the crested ridge formation. That particular preparation resulted in a rectangular shape for the core flaking surface and the necessity of a volumetric exploitation. The evidence of that stage appears on the pre-cores with crested ridges. At the same time, one platform, or two opposed platforms, were prepared and placed at the ends of the crested ridge.

The second stage of this exploitation started with the removal of the crested ridge and continued with a number of blade and/or flake removals. The orientation of the removals on the core flaking surface depended upon the orientation of the striking platform angle, which initially was oriented along the crested ridge scar. In the case of exhaustion or the crushing of the striking platform, resharpening and reorientation of the striking platform followed. The reorientation of the platform led to the exploitation of a new part of the nodule/plaquette. In other words, it led to the appearance of a new flaking surface, which conjoined with the previous flaking surface.

The second stage of this method of core exploitation led to sub-cylindrical cores with one platform or two opposed platforms. There are three main groups of blanks which resulted from using this flaking method: (1) small flakes covered by cortex or partially cortical, showing mainly uni-directional and converging dorsal scar patterns (stage 1, with preparation of crested ridge and striking platform); (2) blades or flakes partly covered by cortex (beginning of the second stage), one or two with the crested dorsal scar pattern; (3) a series of blades or elongated flakes with uni-directional or bi-directional dorsal scar patterns. All of those blank groups are associated with crested ridge pre-cores, narrow flaked surface pre-cores and cores, and sub-cylindrical cores. At the same time, these kinds of blanks could have been produced by other methods of core reduction also found in these assemblages. The closest analogy to the method described above is that found with the Rocourt industry (Otte, Boëda, and Haesaerts 1990; Chabai and Sitlivy 1993; Chabai 1995).

Biache Method, Uni-Polar Variant

Reconstruction of the Levallois tortoise and the crested ridge reduction methods was obvious, even typologically. At the same time, it is impossible to explain, within the frameworks of either method, the presence of elongated Levallois flakes, Levallois blades, a great number of uni-directional-crossed or bi-directional-crossed flakes and blades, non-cortical-crested *pièces débordantes*, as well as the abundance of parallel and bi-directional cores with supplementary platforms. A few years ago (Chabai and Sitlivy 1993; Chabai 1995), the reconstruction of the core reduction process was proposed for Levels II/5 through II/8, and was based on E. Boëda's description of the Biache method (Boëda, Geneste, and Meignen 1990). Later, H. Dibble (1995) tried to demonstrate that Boëda's early description (1988) of this method for Level IIa of Biache-St.-Vaast was not correct. Therefore, does the

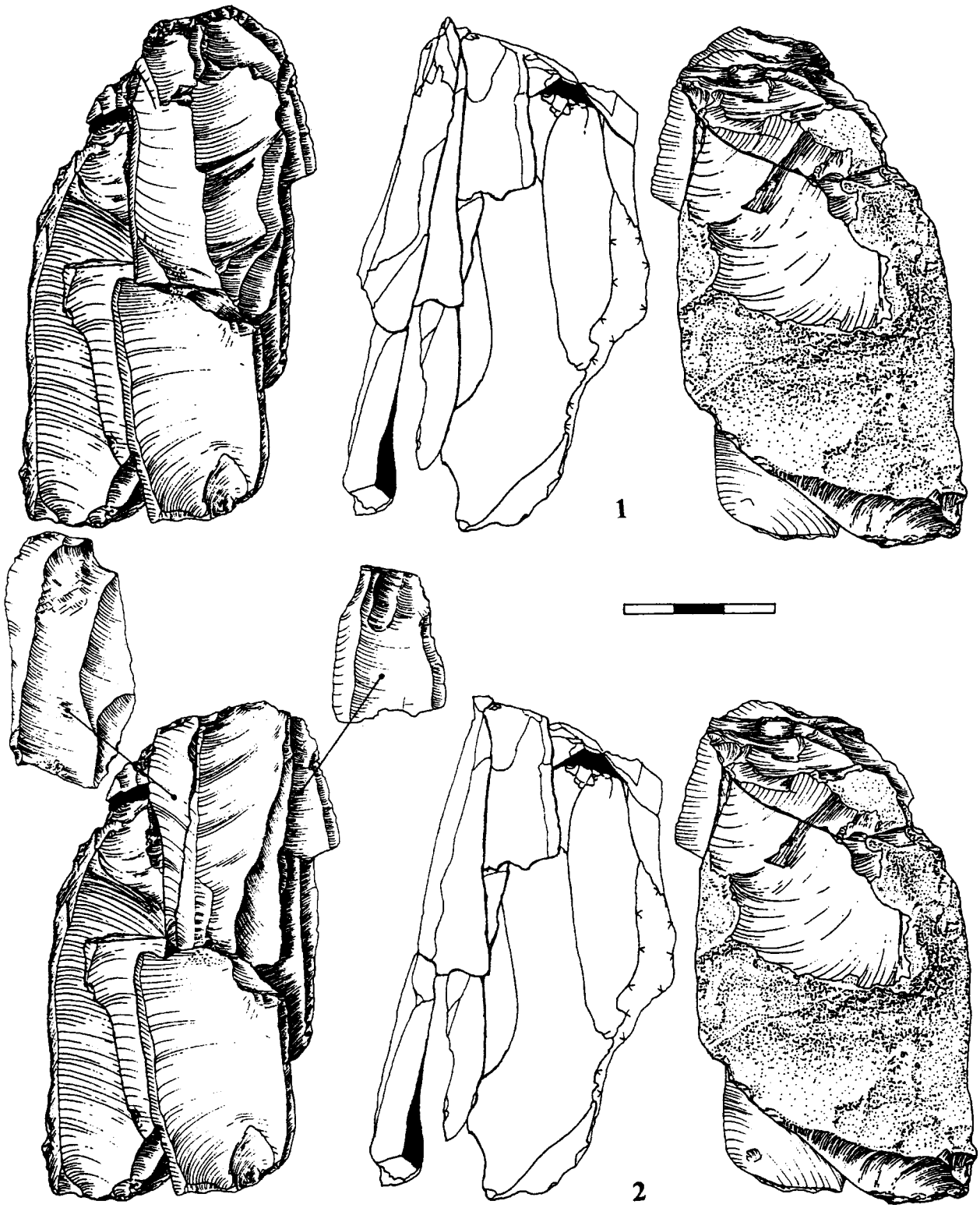

Fig. 9-10—Kabazi II, Unit II, Level II/7C, Refitted bi-directional core with volumetric flaking surface.

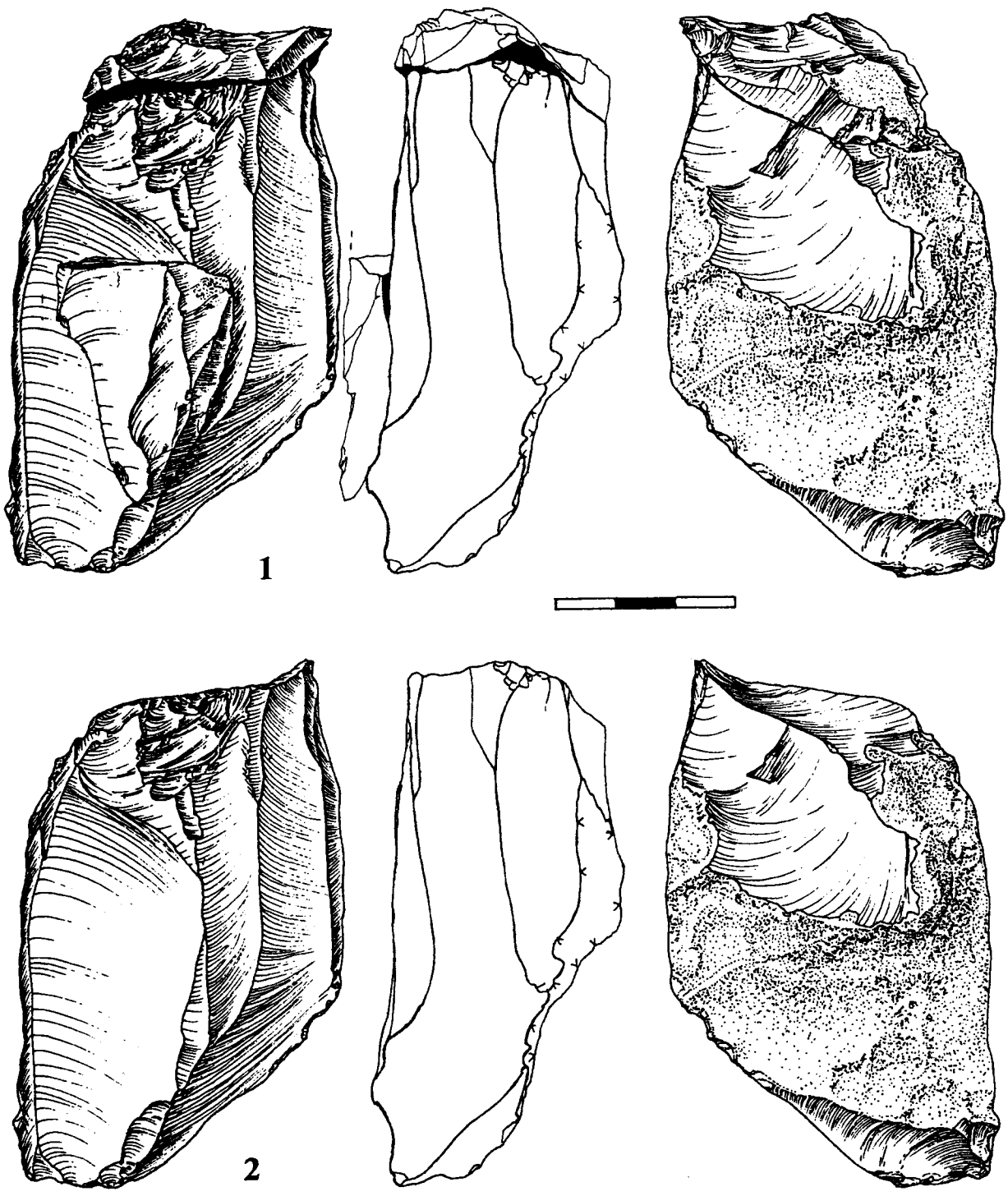

Fig. 9-11—Kabazi II, Unit II, Level II/7C, Refitted bi-directional core with volumetric flaking surface.

Biache-St.-Vaast method really exist, if not at the type-site? The "trump card" of the present study is the reconstruction of the reduction sequence, based on a single refitting and the dimensional attributes of different types of blanks and Levallois tortoise, bi-directional, uni-directional, and radial cores.

The refitting consists of four flakes and one core (figs. 9-12 and 9-13). Based on that refitting, it is possible to reconstruct the following reduction sequence.

Stage 1. At this stage, the main striking and supplementary platforms were prepared. The differences in the platforms are both metric and functional. Both kinds of platforms cover about the entire core perimeter. The thickness of the main striking platform is no less than 2.5 cm. The exact thickness of the supplementary platforms is not available because they have sharp angles which are closer to that of an edge of a bifacial tool, than of a core platform. It is obvious that the removal of large blanks from those platforms is impossible. Therefore, the purpose of the supplementary platforms is the removal of excess flint volume from the sides and distal end of the core and, in that way, produce the necessary flaking surface convexity. Using the supplementary and main platforms, the flaking surface was shaped by a series of flakes removed from all sides of the core toward the center (fig. 9-13*A*). Looking at existing scars, it is clear that each of the "*A*" removals was not longer than 5 cm, while the core length was ca. 10.8 cm, width ca. 11.9 cm, and thickness ca. 3.8 cm. Again, based on the available scars, it is reasonable to assume that about three removals were struck from the main striking platform, while the supplementary platforms have about 11 pieces struck from them. There is no doubt that these numbers are only approximations, but they demonstrate the minimal number and average size (length) of the core sharpening removals.

Typologically, stage 1 of flaking resulted in a radial, ovoid, naturally flat core and a series of blanks (n = 14+) with supposed converging, uni-directional, uni-directional-crossed, and covered by cortex dorsal scar patterns. All of these dorsal scar patterns were determined by the centripetal mode of flaking, when the removed blanks covered only half of the core flaking surface. The majority of blanks with these dorsal scar patterns would have been partly covered by cortex, and none of them would be longer than 5 cm. Technologically, stage 1 resulted in a core with a centripetally prepared, domed flaking surface.

Stage 2. The centripetally-shaped domed flaking surface predetermined the removal of a rectangular-shaped blade with a radial dorsal scar pattern. Unfortunately, the proximal end of that blade is broken. The distal end is truncated but, looking at the remaining portion of that blank, as well as the scars on the dorsal surface of the next blank, it is obvious that the length of the Levallois blade was ca. 10 cm, its width ca. 4.5 cm, and its thickness ca. 0.8 cm (fig. 9-13: *1*). After that removal, the core appears to be a classic example of a Levallois tortoise core. This Levallois tortoise core is 0.8 cm less thick than the previous radial core. The attempt to strike another blank from the same part of the main striking platform, in the same direction, hinge-fractured: there may not have been enough convexity of the flaking surface to make a successful removal possible. The length of this assumed blank is no more than 3 cm; the dorsal scar pattern would have been uni-directional-crossed. This last removal was reconstructed, based on the scars of the next flake's dorsal surface (fig. 9-13: *2*). Blank 3 was removed at a 55 degree angle to the axes of previous blanks. Its dimensions are: length, 6.5 cm; width, 7.5 cm; and thickness, 1.0 cm. The dorsal scar pattern appears to have been the uni-directional-crossed type (fig. 9-13: *3*). After removal of flake 3, the core could be described as being converging, transversal, ovoid, and naturally flat.

The next removal (4) was reconstructed on the basis of both of the scars on the core, and possible scars resulting from the removal of flakes 1 and 3. Looking at the scars of the previous Levallois blade (1), the dorsal scar pattern of flake 4 most probably was uni-directional-crossed (fig. 9-13: *4*). The metric characteristics of flake 4 are: length, ca. 8 cm;

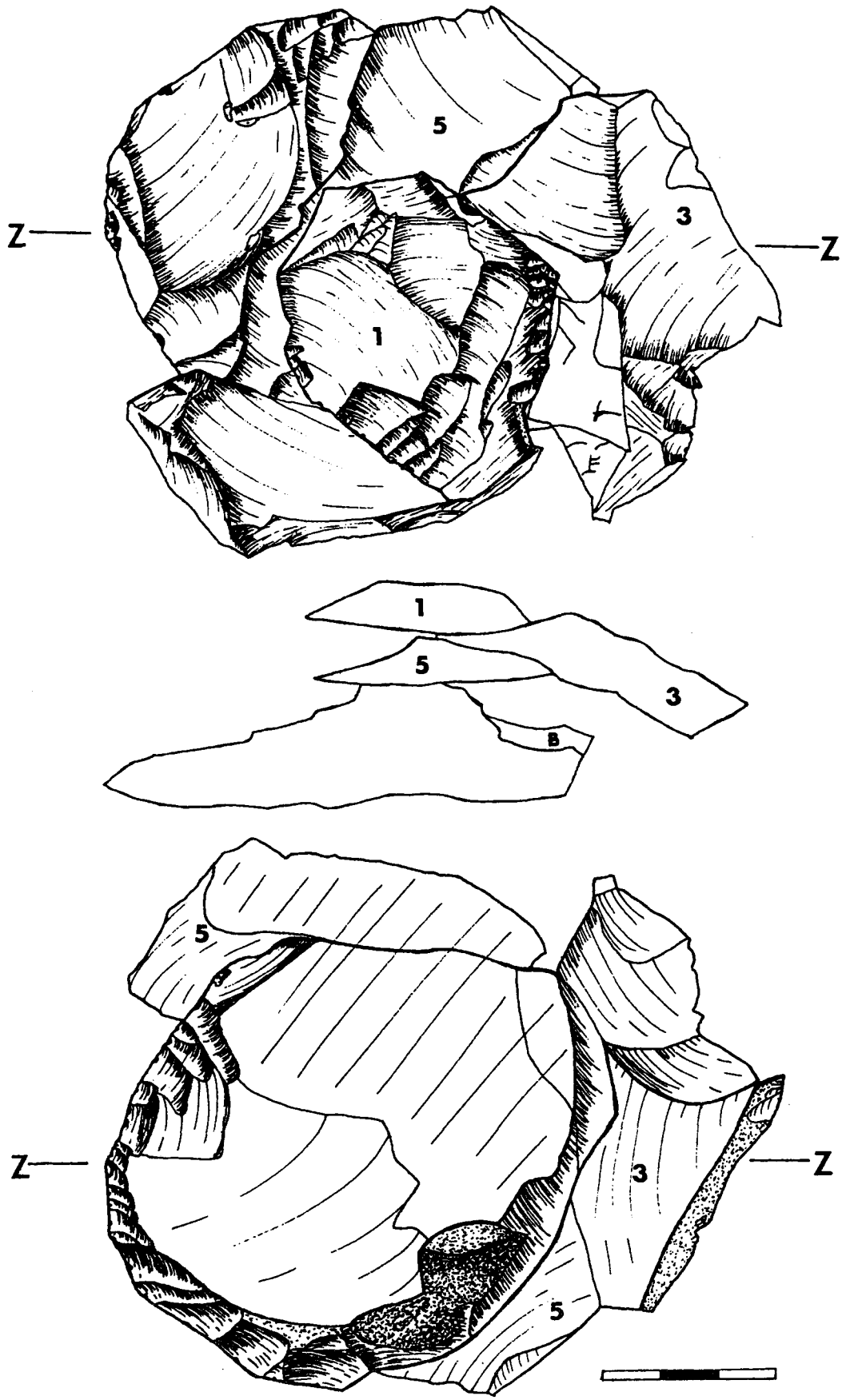

Fig. 9-12—Kabazi II, Unit II, Level II/7F8, Refitted Levallois tortoise core.

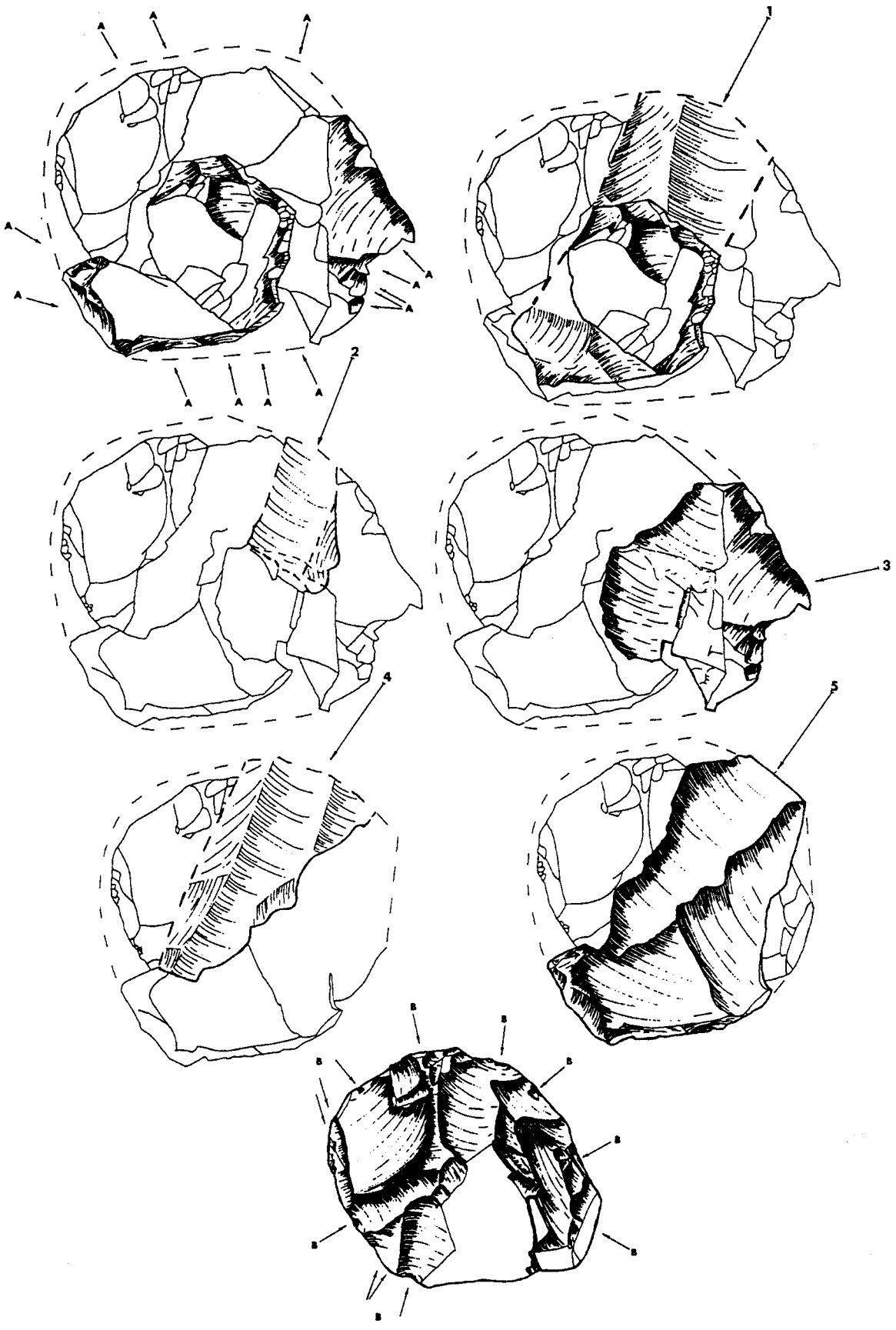

Fig. 9-13—Kabazi II, Unit II, Level II/7F8, Reduction sequence of the refitted Levallois tortoise core: *A*–stage 1 shaping flakes; *B*–stage 3 radially directed preparatory flakes; *1-5*–succession of blank removals.

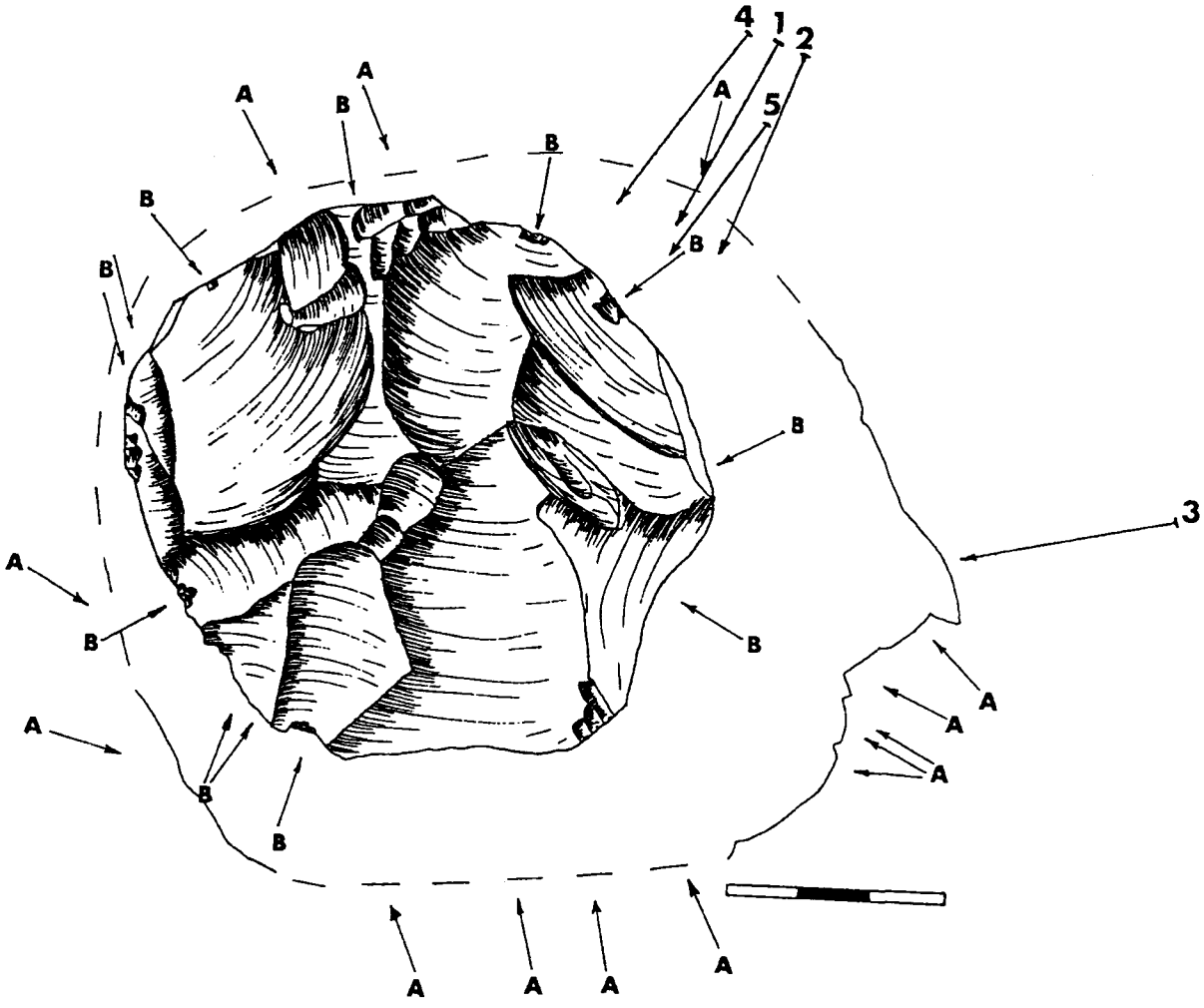

Fig. 9-14—Kabazi II, Unit II, Level II/7F8, Generalized scheme of the reduction sequence of the refitted Levallois tortoise core shown in figure 9-13: *A*–stage 1 shaping flakes; *B*–stage 3 radially directed preparatory flakes; *1-5*–succession of blank removals.

width, ca. 4.5 cm; and thickness, ca. 1.0 cm. The removal of flakes 3 and 4 produced the pronounced convexity at the central part of the core. That convexity made it possible to remove the next flake (fig. 9-13: *5*). At the same time, the absence of distal shaping of the core before that removal predetermined the overpassed distal end of flake 5, which appears to have had a converging dorsal scar pattern (length 10.3 cm; width 5.6 cm; thickness 0.8 cm). After the removal of flake 5, the core was identifiable as either parallel or convergent. The thickness of the parallel/convergent core is only about 2.0 cm. After the removal of flake 5, the flaking surface convexity was completely exhausted. Theoretically, there are two ways to rejuvenate such a core: the first, by removing *débordant* blanks from both sides of the core; or by the centripetal shaping of the surface to establish the flaking surface convexities. The latter was used.

Stage 3. The centripetal preparation (fig. 9-13*B*) of the flaking surface resulted in the appearance of a radially prepared core with pronounced convexity on the central part of the

dorsal flaking surface. Thus, the flaking surface was prepared again to strike a Levallois blank. Taking into account the visible scars, at least 12 preparation flakes were removed, the longest of which was only 3.5 cm. This process reduced core width by ca. 1.5 cm. After rejuvenation, the core was 7.8 cm long, 7.3 cm wide, and 2.0 cm thick. The next Levallois blank was not removed because of two natural holes on the main striking platform and several hinged fractures on the flaking surface.

This reduction process may be summarized as follows:

(1) Typologically, during the reduction sequence, the core changed from radial/unstruck Levallois, to Levallois tortoise, to converging, parallel/converging, and, again, to radial/unstruck Levallois, always with supplementary platforms.

(2) The results of flaking produced five blanks from the main striking platform (one Levallois blade, three flakes with uni-directional-crossed scar patterns, and one flake with a converging scar pattern), as well as, at least, 26 flakes from flaking surface preparation, removed mainly from the supplementary platforms (fig. 9-14). These latter flakes are subdivided into shaping and rejuvenating pieces. The shaping flakes from stage 1 are assumed to have converging, uni-directional, and uni-directional-crossed dorsal scar patterns. Moreover, many of them are partly or completely covered by cortex. The length of the largest of them is less than 5.0 cm (fig. 9-14).

The rejuvenating blanks are assumed to have the same types of dorsal scar patterns as the sharpening blanks, but without cortex. The length of the rejuvenating flakes is less than 3.5 cm. At the same time, the range in length of the flakes removed from the main platform appears to be from 6.5 cm to 10.3 cm. There are no doubts that the presented reconstruction does not exhaust all the possible variability of the Biache method used in Unit II of Kabazi II.

Biache Method, Bi-Polar Variant

It is clear that all types of blanks produced on the above core did not result solely from a Biache method, as seen by the presence of narrow/crested ridge technology and the Levallois tortoise core on flake. Yet, the idealized picture of the Biache reduction sequence, based on the described refittings, shows that it is very difficult to imagine the removal of partly cortical flakes from the flaking surface after the striking of the first Levallois blank. It is difficult to account for the partly cortical crested blades in the framework of that method, as well as the narrow flaked surface and sub-cylindrical cores. Even taking into account these exceptions, it is impossible to define a "Biache" assemblage, versus one without the Biache method for non-cortical, uni-directional and bi-directional blanks, single platform, and opposed platform cores. Levallois blanks, uni-directional-crossed and bi-directional-crossed scar patterns are supposed to be a distinctive feature of core exploitation utilizing supplementary platforms, even as heavily, partly cortical, and lateral flakes are associated with shaping flakes only. All of these types of blanks and cores are well-represented in the assemblages of Unit II (Tables 9-2, 9-3, 9-12). As proposed above, the uni-polar variant of the Biache method was added to the bi-polar variant of the same method in the assemblages of Unit II (Chabai and Sitlivy 1993). At the same time, taking into account the absence of refitted bi-directional cores, the implication of the bi-polar Biache method requires a more precise definition.

As was seen, large and small flakes are produced at all stages of the Biache method of core exploitation. Moreover, the metric structure of the blanks, of all types of dorsal scar patterns, are not significantly different, as is true for the amount of cortical blanks among the different metric classes (fig. 9-15*A-J*). The only exceptions to this rule are the Levallois blanks, which are usually not less than 4.0 cm long (fig. 9-15*J*). Both the size of blanks and the amount of cortical pieces are traditionally considered important evidence of core reduction sequences.

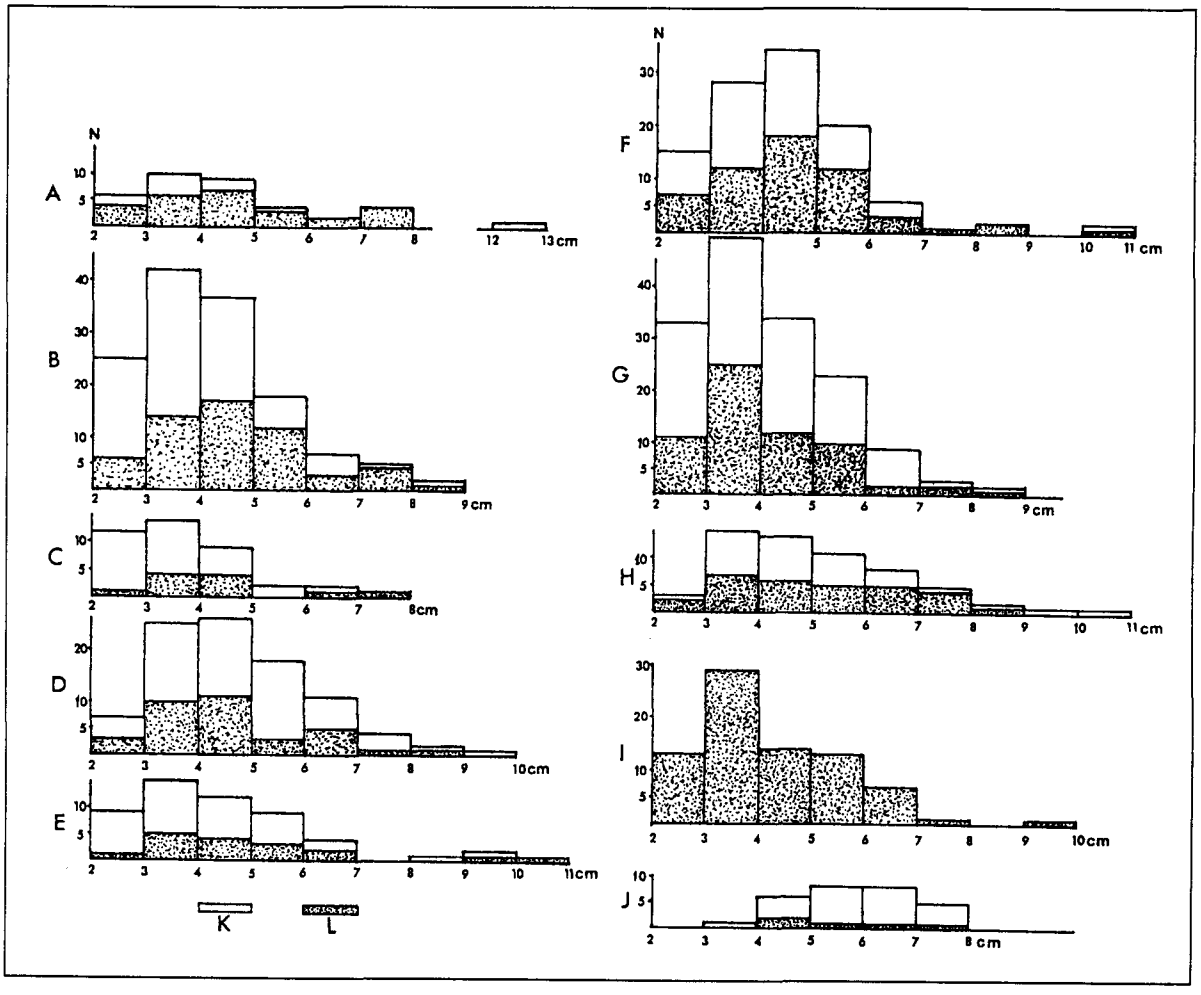

Fig. 9-15—Kabazi II, Unit II, Levels II/7-II/8C, Distributions of different types of blank scar patterns by metric groups: *A*–lateral; *B*–uni-directional-crossed; *C*–radial; *D*–bi-directional; *E*–bi-directional-crossed; *F*–uni-directional; *G*–converging; *H*–crested; *I*–covered by cortex; *J*–Levallois; *K*–blanks without cortex; *L*–partly covered by cortex. The metric group 2-3 centimeters includes transversal flakes only; the width of these flakes is more than 3 centimeters.

There is no doubt, however, that there is a technological difference between large, presumably desired, blanks and small shaping/rejuvenating flakes and blades.

The elaboration of criteria to permit more precise definitions and technological comparative analysis of both core and debitage assemblages should help to elucidate variations in the Biache method. The main danger of this kind of study is that some assumptions may not be well-grounded. However, in this particular case, several observations could be presented to support these assumptions.

The supplementary platform, as has been noted many times, is the main characteristic feature of the Unit II core assemblage. It is obvious that Levallois tortoise cores, by definition, must have lateral/distal supplementary platforms. At the same time, all converging orthogonal and almost all bi-directional cores also have supplementary platforms, as do about half of the parallel cores (Table 9-2). The largest scars of blanks struck from supplementary platforms are no more than 3.0 cm, while the length of discarded Levallois, uni-directional, bi-directional, converging, and orthogonal cores is usually more than 5.0 cm. Only the lengths of three bi-directional cores are less than 5.0 cm. The average thickness of all cores noted above is ca. 2.0 cm. The cores were reduced more in their thickness than in length/width dimensions. There are few Levallois and parallel cores with scar lengths from blanks

removed from the main striking platform which are less than 5.0 cm long, and no more than one-third of the bi-directional cores show scar lengths less than 5.0 cm. Taking into account the discarded character of cores, it is possible to assume that the lower metric boundary for blanks removed from a main striking platform is no less than 4.0 cm, while the upper metric boundary for shaping/rejuvenating flakes is no more than 3.0 cm. The other possible assumptions are that "desired" blanks were always removed from the main striking platform and/or platforms, as well as the Levallois blanks—which are always considered to be "desired." It must be noted that the upper boundary for shaping/rejuvenating flakes is valid only for the last stage of core exploitation, when the cores are becoming exhausted.

To estimate the possible lengths of shaping/rejuvenating flakes, as demonstrated by the above refitted core, it is necessary to increase the average length for the shaping/rejuvenating flakes. The maximum length of shaping/rejuvenating flakes could be up to 5.0 cm. Furthermore, estimating the sizes of Levallois blanks (fig. 9-15*J*), even those partly covered by cortex, it is necessary to reduce the lower metric boundary of "desired" blanks. There is no doubt that the "desired" blanks exist in the 4-5 cm range and even, perhaps, in the 3-4 cm range. Thus, if there are no "desired" blanks below 3 cm, and only heavily cortical flakes from core shaping blanks over 5 cm, the metric classes 3-4 cm and 4-5 cm include both shaping/rejuvenating and "desired" blanks. The upper boundary of the non-cortical flake distribution consists of Levallois blanks. None of them is longer than 8 cm, meaning that the chance of finding any kind of stage 1 blank from the Biache method, except shaping blanks, from 8 cm to 13 cm long, is very unlikely. Therefore, a relatively "pure" assemblage of blanks struck from the main platform, using the Biache method, would include blanks from 5 cm to 8 cm in length. Still, it must be noted that looking at the lengths of volumetric narrow flaked surface cores, the range mentioned above also could well include numerous blanks produced in a crested/ridge-volumetric technology.

Twenty-one complete Levallois blanks, 11 uni-directional-crossed, 12 uni-directional, 21 bi-directional, 8 bi-directional-crossed, 20 converging, and 10 non-cortical *débordant* blanks are between 5 cm and 8 cm in length (fig. 9-15*A-J*). This ratio of one Levallois blank to four non-Levallois pieces, is very close to that which was described for the refitted core. Yet, it is difficult to imagine that the uni-directional-crossed and/or bi-directional-crossed blanks were obtained through the exploitation of a narrow flaked surface/crested ridge core reduction or some other method, which did not result in any core in the Unit II assemblages. Taking into account the refitted core, the correlation between parallel and Levallois cores, on the one hand, and Levallois cores and flakes with uni-directional-crossed dorsal scar patterns, on the other, is obvious. The correlation between Levallois and bi-directional-crossed blanks, as well as the correlation between bi-directional cores and Levallois blanks is supported by the presence of two opposed platform, unstruck Levallois cores with centripetally prepared flaking surfaces (II/7A), and the entire number of bi-directional cores flaked after the shaping/rejuvenation of the flaking surface from the supplementary platforms. This latter correlation was well described in the *méthode Levallois récurrente bipolaire, schéma B*, from Biache-Saint-Vaast, Level IIa (Boëda, Geneste, and Meignen 1990). Undoubtedly, the Biache method was present in Unit II in its bi-directional variant. That variant differs from uni-directional only by the presence of a second, as opposed to only a main, striking platform.

In summary, the three methods of flaking in the assemblages of Unit II, Levels II/7 through II/8C include: Levallois tortoise cores made on flakes, a volumetric method, and, the Biache method. The first and last are very similar, in terms of the reduction strategy (centripetal preparation of the flaking surface, the removal of several bi-directional or uni-directional Levallois blanks, and, again, repreparation). The use of both Levallois tortoise and the Biache method led to the manufacture of Levallois blanks. The possible scenarios of further

exploitation of Levallois tortoise cores made on flakes result in the presence of a limited number of flakes with uni-directional-crossed, bi-directional-crossed, uni-directional, and bi-directional scar patterns, on the one hand, and uni-directional and bi-directional cores on flakes on the other. These results are very similar to the Biache method. At the same time, the total number of blanks obtained in the Biache method, especially cortical pieces, are very numerous. It is possible to view the Levallois tortoise cores made on flakes as a variant of the Biache method, but the peculiarity of the initial blanks for core preparation and the quantitative attributes of flaking indicate significant differences.

Thus, the assemblages of Levels II/8C through II/7C appear to contain one more example of the coexistence of Levallois and volumetric methods of flaking. The same was seen in the European assemblages of Riencourt-les-Bapaume, Level CA and Saint-Germain-des-Vaux/Port-Racine (Cliquet 1992; Ameloot-Van der Heijden 1993; Ameloot-Van der Heijden and Tuffreau 1993; Révillion 1993), as well as in the Levant at Rosh Ein Mor (Marks and Monigal 1995).

TOOL RETOUCH

It is very difficult to find any heavily retouched tool in the assemblages of Levels II/7 through II/8C. Usually, retouch covers no more than 0.5 cm of treated edge. About 40% of the left/right lateral and proximal/distal ends were modified by scalar retouch. This is the most common type of retouch for the different kinds of scrapers and points. Marginal (16.9%) and irregular (23.7%) retouch were used mainly for the edges of simple retouched pieces and some points. Sub-parallel (8.5%), parallel (0.8%), and stepped (5.9%) retouch are not well-represented. Flat retouch angles dominate (67.3%), followed by semi-steep (23.5%), and steep (9.1%). The method of bi-truncation/faceting is not well-represented either; there are four examples, but two of them are associated with straight-edge denticulates, and one piece is not retouched, at all. In spite of the small number of truncated-faceted pieces, the bi-truncated-faceted denticulates, although rare, are found in a number of Kabazi II, Unit II levels and at Shaitan-Koba, and appear to be one of the diagnostic tools of the WCM.

On the whole, it is clear that retouch in these assemblages does not significantly modify blank shape. The number of retouched tools is only about 11% of all potential blanks. Even Levallois blanks were only rarely selected for retouch (6 of 37). The main attribute for blank selection appears to be length. The inhabitants of Unit II did not pay very much attention to blanks smaller than 4 cm. The tools commonly have lengths between 4-7 cm, with most falling between 5-7 cm. Debitage with lengths from 2-4 cm account for ca. 45% of the combined assemblage, yet, only 2.6% of those between 3-4 cm were selected for retouch. At the same time, 7.9% of the blanks in the 4-5 cm range were chosen; 18.1% in the 5-6 cm range, 31.7% in the 6-7 cm range, 10.3% in the 7-8 cm range, 45.5% in the 8-9 cm range, and 50.0% in the 9-10 cm range. Seventy-five percent of blanks between 10-11 cm were retouched. It is clear that there was no direct selection of blanks in relation to the presence of cortex. Cortical blanks were selected for retouch in their proportional occurrence in the assemblages of Unit II, ca. 36%.

It is difficult to prove a positive selection based on shape, blank profile, or distal end profile. The retouched pieces are dominated by rectangular blanks, which are flat in profile and feathered at the distal ends. Flakes and blades with the same attributes dominate among the unretouched blanks.

The single indication of selection, which does not correspond to regular blank distribution, is the preference for elongated blanks. This conclusion is supported by the number of tools on blades in relation to tools on flakes. The percentage of tools made on blades is 37.7%, while the average percentage of blades among all blanks is ca. 20%.

The abundant bones were never used as retouchers. The different types of retouch are assumed to have been produced by flat ovoid relatively small sandstone pebbles which are present in each level.

PATTERN OF RAW MATERIAL EXPLOITATION

Taking into account the number of cores, primary blanks, partly cortical blanks, sandstone pebbles/hammerstones/retouchers, as well as the core and blank refitting, there is an obvious on-site pattern of primary flaking and tool production. Only Level II/8C has an absence of cores, while Level II/7 shows an unusually low level of blade production (Table 9-1). At the beginning of this chapter, these cases, and the high percentage of blades in Level II/7E, were described as four types of artifact patterning: type 1, from Level II/7 (a low percentage of tools); type 2, from Levels II/7AB, II/7C, II/7D, and II/7F8 (the normal artifact patterning); type 3, from Level II/7E (an unusually high percentage of blades); and, type 4, from Level II/8C (an absence of cores and pre-cores). The "unusual" first, third, and fourth types could be explained as representing different activity intensities on the excavated parts of the "living floor" occupations. On the western part of Level II/7, some 30 m^2 of which were excavated during the 1987 field season, 126 retouched and unretouched blades were found, while the total number of blanks was only 400 (Ilam = 31.5). At the same time, 24 m^2 of the southeastern part of the same occupation level, excavated in 1993, produced only a few blades (Ilam = 6.0), as well as overall few artifacts and fauna. Several occupations, for example, Level II/7F8, exhibit three kinds of artifact and faunal distributions on their occupation surfaces. The first is the central part of the occupation which has an extremely high density of bones. This is where the majority of artifacts are situated. The second zone of artifact and faunal distribution is characterized by significantly smaller numbers of bones and flint. This zone is usually found around the first zone. The third zone is distribution is characterized by the complete absence of bones and tools. So, the number of artifacts and fauna decreased, at times, from the center to the periphery of occupation (see Figure 8-8). Since it is sheer chance what part of an occupation surface an excavation will expose, the likely differences in artifact category distributions among excavated assemblages are probably caused by differences in the portions of the occupations exposed. Along with Levels II/7 and II/8C, it seems that a peripheral part of an occupation was excavated in Level IIA/1, as well. The peripheral character of Levels II/7 and II/8C is proven by the extremely low density of artifacts per square meter, unusual even for the Unit II levels (Table 9-18). In spite of the absence of pre-cores and cores, the core treatment elements in the assemblage of Level II/8C are present in the usual numbers for Unit II assemblages (Tables 9-3 and 9-12). This means that regular core reduction processes could have taken place somewhere in the unexcavated parts of the occupational surfaces of Levels II/8C and IIA/1.

TABLE 9-18
Kabazi II, Unit II, Lithic Variability by Occupation Level

	pre-cores %	*cores %*	*blanks:cores*	*tools:cores*	*primary blanks %*	*crested blanks %*	*blanks:tools*	*density of artifacts per sq.m.*
II/7	1.6	6.4	14.5 : 1	0.6 : 1	8.6	4.3	22.2 : 1	52.5
II/7AB	0.3	7.5	12.5 : 1	1.5 : 1	12.6	4.1	7.2 : 1	145.0
II/7C	—	4.2	22.8 : 1	3.4 : 1	10.4	7.2	5.8 : 1	137.9
II/7D	1.1	4.3	21.8 : 1	2.9 : 1	7.4	5.1	6.6 : 1	80.4
II/7E	0.4	5.3	17.7 : 1	1.3 : 1	7.8	7.3	12.5 : 1	101.7
II/7F8	0.8	4.4	21.6 : 1	2.7 : 1	7.2	6.1	7.0 : 1	143.1
II/8C	—	—	—	—	8.9	2.5	18.8 : 1	43.8

The analysis of the structural relationships among the artifacts of Levels II/7 through II/8C leads to the conclusion that there are no significant differences between the newly derived data and those presented for the Kabazi II, Unit II assemblages in 1995 (Chabai, Marks, and Yevtushenko 1995). These conclusions may be summarized, as follows: (1) a low occupational intensity which is reflected by low blank to core and tool to core ratios; (2) both primary flaking and tool production took place on the site; (3) considering the types of retouch and retouch angles, it appears that there was little, if any, tool rejuvenation; and, (4) flint sources and instruments of flaking were available nearby.