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

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Chapter 9

Kabazi V, Sub-Unit III/3: Western Crimean Mousterian Assemblages

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Some Remarks on the Flint Artefact Assemblages: Composition, Classification and Description

Kabazi V, sub-unit III/3 (6 levels from up to bottom – III/3-1, III/3-1A, III/3-2, III/3-2A, III/3-3, and III/3-3A), that is generally characterised by Western Crimean Mousterian (hereafter WCM) flint artefacts, is sandwiched between archaeological sub-units with, on the other hand, basically Micoquian flint artefacts – sub-units III/1 - III/2 above and sub-units III/4 - III/5 below. Due to this situation, it is highly likely that some admixture of Micoquian flints within the sub-unit III/3 levels with its mainly WCM artefacts resulted from either depositional and post-depositional processes, or through disturbance connected with activities at the site by Neanderthals. The Micoquian admixture can be defined through the presence of a few bifacial tools, some clearly morphologically determined bifacial shaping and thinning flakes, as well as some specific unifacial convergent tools. Thus, we can roughly estimate the scale of Micoquian admixture through the identification of peculiar flint items in the assemblages of any given level from sub-unit III/3. At the same time, the WCM basic industrial component is characterised by the presence of artefact types certainly uncommon for the Crimean Micoquian: Levallois and parallel cores with additional supplementary striking platforms, Levallois flakes with prepared butts and centripetal and/or 3-directional scar patterns, some Levallois points with prepared butts and convergent scar pattern, various *débordante*/crested pieces and even some core tablets, and finally, quite a pronounced number of blades that were received not from different bifacial tool reductions, as it is known for Micoquian, but from regular core reduction processes.

Thus, keeping in mind these points, the assemblages from Kabazi V, sub-unit III/3 are described and analysed with regard to the respective technological and typological accents. However, before proceeding, it is necessary to note some classification remarks on the Micoquian and WCM artefact types. Principally, all the required definitions have already been published in the basic classification system that has been developed for Crimean Middle Palaeolithic artefacts analyses (Chabai, Demidenko 1998), while many additional morphological specifications on Micoquian bifacial debitage can be found elsewhere (e.g. Demidenko 2004a; Chabai 2004b). The only artefacts types that require more detailed consideration are core maintenance products (CMP). First, these artefacts must be classified to enable a better understanding of different core reduction processes which occurred at the site. Second, they are not typical for all Crimean Micoquian assemblages and, therefore, their quite specific characteristics will add much to our understanding of the technology behind WCM core reductions. Thus, CMP classifications, particular on the basis of the Kabazi V, sub-unit III/3 assemblages, are elaborated below.

Core Maintenance Products

Débordantes & crested pieces – morphological and technological subdivision

As noted in the classification system adopted for Crimean Middle Palaeolithic flint artefacts (Chabai, Demidenko 1998, p. 48), *"there is considerable variety in the detailed morphology"* of *débordantes* and crested pieces, *"but this has not been studied"* for WCM artefacts from Unit II at Kabazi II. Here, on the basis of the flint artefacts from sub-unit III/3 of Kabazi V, these particular CMP are firstly differentiated into proper pièces *débordantes* and crested pieces and, secondly, are subdivided into several types and sub-types.

Débordantes pieces

1. *Simple natural lateral débordantes.* Such pieces display one pronouncedly steep/abrupt lateral edge that is covered by primary cortex, with scarring on the dorsal surface; cresting treatment is completely lacking. Thus, these pieces are the most simple *débordantes.* From a technological perspective, these pieces served both as longitudinal renovation of a core's flaking surface edges and, at the same time, lifted a core's flaking surface for further primary reduction. These *débordantes* type pieces, as well as all their sub-types, are characterised by a lateral steep profile at midpoint that has resulted from the lateral steep/abrupt edge of the core.

2. *Lateral débordantes.* These pieces are also characterised by one pronouncedly steep/abrupt lateral edge that is covered by primary cortex. Also, cresting treatment is completely lacking. However, additionally, these pieces display a series or several scars oriented perpendicularly to the piece's axis proceeding from its lateral edge, being therefore a supplementary platform, onto the dorsal surface. The occurrence of lateral *débordantes* is indicative of the intentional removal of a core's wasted lateral supplementary platform for the radical re-shaping of its flaking surface. This step facilitates a continuation of regular primary reduction. Let us also recall here that the main technological purpose of supplementary lateral platforms on cores is the *"preparation of flaking surface convexity"* (Chabai, Demidenko 1998, p. 47).

2A. *Lateral débordantes.* These pieces differ from the aforementioned type 2 *débordantes* solely in that their lateral steep/abrupt edge (a supplementary platform) is not covered by primary cortex and, instead, is characterised by a naturally flat core edge / a plain supplementary platform.

Crested pieces

These CMP artefacts can be differentiated from proper *débordantes* owing to cresting treatment on their dorsal surfaces. Depending on the exact treatment, crested pieces can be subdivided into two basic types: lateral crested pieces and central crested pieces (Demidenko, Usik 1993a). Whereas the former are, technologically speaking, more *débordantes*, the latter are mainly products resulting from the application of true *"lame à crête technique"*. A more careful consideration of these CMP characteristics results in the differentiation of the following four variations of crested pieces.

1. *Lateral crested pieces.* Regarding their general form, these are similar to lateral *débordantes* due to their lateral steep profile at midpoint resulting from one steep / abrupt lateral edge. Such pieces resemble real crested blades or flakes. These lateral crested pieces are not especially produced crested ridges. The resulting lateral crested piece is well known for lateral *débordantes* described above. Thus, here we are dealing with lateral crested blades and/or flakes that are not really crested pieces.

2. *Central crested pieces.* These artefacts are products of a *"lame à crête technique"* on cores. They are characterised by a more or less triangular profile at midpoint and by a varying crested treatment that is either unilateral or bilateral. Accordingly, central crested pieces are differentiated into two sub-types, either with unilateral (2A) or bilateral (2B) crested ridges.

3. *Secondary crested pieces*. These are CMP resulting from a very first systematic, mainly parallel, reduction of cores. Morphologically, they are defined by an absence of preserved tops of crested ridges on their dorsal surfaces. The dorsal surfaces of truly secondary crested pieces can already be characteristic of a series of removals from the systematic reduction of cores. One more important thing about the secondary crested pieces is that it is possible to differentiate secondary central crested pieces, showing frontal reduction on a core, and secondary lateral crested pieces, which display evidence of "a semi-volumetric" core reduction.

4. *Re-crested pieces* are products resulting from the preparation (re-cresting) of flaking surfaces on cores. This follows systematic, mostly parallel, reduction which has served to "repair" flaking surfaces, for example, as often occurred after hinge fractures. During such re-preparation processes a new crested ridge is formed partially on a cores' flaking surfaces and, respectively, the related re-crested items display just partial crested treatment on their dorsal sides, while the remaining surface of the dorsal side is marked by regular parallel scars.

Core trimming elements

It is a usual practice when *"all artefacts which exhibit evidence of previous core preparation, except for core tablets"*, are defined as crested pieces (Marks 1976, p. 375). Basically, it is true, but there are always a series of items among CMP in Palaeolithic assemblages which, let us say, do occupy an intermediate morphological position between core tablets and crested pieces. Such artefacts from Kabazi V, sub-unit III/3 are characterised by a transversal location of crested ridges on their dorsal surfaces. These "transversal crested pieces" also display a unilateral partially crested treatment. These pieces seem to reflect the initial formation of pre-cores and a rather radical re-preparation of cores during their reduction processes. This is marked by a change of the core's striking platform and flaking surfaces; at this point, some crested ridges on a core had to be removed. Here it is proposed that we should refer to such "transversal crested pieces" as *core trimming elements*.

Core tablets. This is the well-known sub-category of CMP. They are received through cores' striking platforms radical rejuvenation, when these platforms are usually exhausted. There is a lack of secondary core tablets in Kabazi V assemblages. This indicates that this Upper Palaeolithic core platform rejuvenation technique was not practiced in this Middle Palaeolithic industry.

Following the proposed CMP classification, we have to underline that basically only some lateral crested pieces sporadically occur within Crimean Micoquian assemblages. Their presence is explained by a radical re-preparation of radial cores and "primitive" parallel cores during their multiple reductions. All the other CMP types and sub-types are typical for WCM assemblages and their occurrence in levels of Kabazi V, sub-unit III/3 is strong indicator for WCM artefacts there.

General Flint Artefact Structure

In the course of excavations at Kabazi V in 2002, a total of 10,755 flint artefacts were recovered from six clearly distinguishable archaeological levels in sub-unit III/3. Additionally, there were also identified several special instruments (so-called non-flint archaeological artefacts) – retouchers on pebbles (2 items) and retouchers on animal bones (5 items) (Table 9-1). All flint artefacts have been assigned to seven artefact categories which are, in decreasing order of their frequency in all six levels, as follows: chips, flakes, tools, blades, chunks, core-like pieces, and preforms. Chips are the most dominant category – comprising on average 85.5% of the total assemblage, but ranging from 81.0% to 89.4% in the individual levels. In all six levels, flakes make up the second most common artefact type, on average 7.5%, but fluctuating between 5.9% and 9.5%. Tools comprise an average of 2.5% of the entire sub-unit assemblage; however, whereas they are the third most common type of artefact in 3 levels – III/3-1 (3.1%), III/3-2A (2.8%), and III/3-3A (3.2%), in the remaining levels blades are more common: 2.3% blades *versus* 1.7% tools in level III/3-1A; 1.6% blades *versus* 1.5% tools in level III/3-2; and 2.5% blades *versus* 2.1% tools in level III/3-3. Further, in level III/3-1A chunks are also more frequent than tools (2.1% chunks *versus* 1.7% blades). Again, in level III/3-2A, chunks are more frequent than both tools and blades – (5.8% *versus* 2.8% and 1.5%, respectively). Accordingly, the average ratio for blades (4th position) in the six assemblages is 2.4%, and that of chunks is, on average, 1.6% (5th position). Finally, objects resulting from primary flaking processes (core-like pieces and performs)

	III/3-1	%	ess %	III/3-1A	%	ess %	III/3-2	%	ess %	III/3-2A	%	ess %
Preforms	–	–	–	–	–	–	2	0.1	1.3	–	–	–
Core-like Pieces	11	0.7	4.7	12	0.8	5.7	4	0.2	2.6	2	0.3	2.5
Flakes	136	8.8	58.9	139	9.5	66.5	97	5.9	62.6	52	8.6	65
Blades	35	2.2	15.2	33	2.3	15.8	27	1.6	17.4	9	1.5	11.3
Tools	49	3.1	21.2	25	1.7	12.0	25	1.5	16.1	17	2.8	21.2
Chunks	28	1.8	–	31	2.1	–	21	1.3	–	35	5.8	–
Chips	1,297	83.4	–	1,222	83.6	–	1,480	89.4	–	490	81.0	–
Total:	**1,556**	**100.0**	**100.0**	**1,462**	**100.0**	**100.0**	**1,656**	**100.0**	**100.0**	**605**	**100.0**	**100.0**
Pebble Retouchers	–	–	–	1	–	–	–	–	–	–	–	–
Bone Retouchers	1	–	–	–	–	–	–	–	–	1	–	–

	III/3-3	%	ess %	III/3-3A	%	ess %	Total:	%	ess %
Preforms	–	–	–	1	0.1	0.2	3	0.1	0.2
Core-like Pieces	4	0.2	1.4	11	0.3	2.6	44	0.4	3.2
Flakes	168	7.6	61.1	218	6.7	50.8	810	7.5	58.8
Blades	55	2.5	20	95	2.9	22.2	254	2.4	18.4
Tools	48	2.1	17.5	103	3.2	24.2	267	2.5	19.4
Chunks	18	0.8	–	44	1.3	–	177	1.6	–
Chips	1,925	86.8	–	2,786	85.5	–	9,200	85.5	–
Total:	**2,218**	**100.0**	**100.0**	**3,258**	**100.0**	**100.0**	**10,755**	**100.0**	**100.0**
Pebble Retouchers	–	–	–	1	–	–	2	–	–
Bone Retouchers	2	–	–	1	–	–	5	–	–

Table 9-1 Kabazi V, sub-unit III/3: general structure of artefacts.

are the least common artefacts in all six levels.

Based on the essential calculations of the above date, i.e. without chunks and chips, the assemblages comprise primarily reduction waste. In these calculations (Table 9-1), debitage pieces (flakes and blades) are the most dominant artefact categories. For average accounts of all sub-unit III/3 assemblages, they do compose 77.2% (flakes – 58.8% and blades – 18.4%). Regardless of a very minor prevalence of tools over blades in three levels, we should note that, when taken together, debi-tage pieces dominate over tools in each of the six levels, from 3.0 – 6.9 : 1. On average, in the whole sub-unit III/3, this ratio is 4 : 1. At the same time, the dominance of debitage pieces over core-like pieces is even more pronounced, corresponding to three main ranges – 15.5 – 14.3 : 1 for levels III/3-1 and III/3-1A; 31.0 – 30.5 – 28.5 : 1 for levels III/3-2, III/3-2A and III/3-3A; and finally, 55.7 : 1 for level III/3-3. All these correlative data relating to debitage, tools and core-like pieces definitely imply intensive on-site core reduction processes, but with a given variability within the six levels.

Preforms

Usually, preforms are not distinguished in WCM assemblages (e.g. Chabai 1998b: Table 9-1 on p. 201). This is due to the fact that true WCM assemblages are not characterised by bifacial tool production traditions and, for this reason, bifacial performs are absent in these assemblages. On the other hand, there are so-called simple preforms that are little more than very initially tested flint objects (plaquettes/nodules or big flakes). Therefore, it is difficult to state for certain whether a piece is a pre-core or a bifacial preform (Chabai, Demidenko 1998, p. 39). Again, for the WCM assemblages such pieces are defined as pre-cores, but for the particular materials from sub-unit III/3 of Kabazi V, where some admixture of Micoquian artefacts is supposed, it is better to be on the safe typological side and to define these initially tested flint objects as preforms, as we cannot exclude that they are of "Micoquian origin", although no bifacial preform was recognised here.

Only three preforms were discovered in the analysed assemblages – two from level III/3-2 and one from level III/3-3A.

Preforms from level III/3-2 very closely resemble one another. These comprise heavily fragmented flint plaquettes, lacking both striking platform preparation and retouch, and with just a couple of rough removal negatives on their surfaces. These pieces are 6.4 and 3.6 cm long, 2.5 and 5.1 cm wide, and 1.4 and 1.1 cm thick, respectively. Thus, the items are interpreted as fragmented preforms.

The single preform from level III/3-3A is of a different nature. This comprises a large flint plaquette (11.4 cm long, 8.4 cm wide, 3.3 cm thick) with 4 tested and hinged removals. This might be the preparation of either a bifacial preform or a pre-core.

Core-like pieces

The sub-unit III/3 assemblages have yielded a total of 44 core-like pieces. These are differentiated into pre-cores (N=2 / 4.3%) and proper cores (N=42 / 95.7%).

Pre-cores

Like the preforms, pre-cores are also tested flint objects, but display definite core-like striking platform(s) and a removal of negatives running from the platforms. Therefore, it is logical, from a typological point of view, that these are referred to as pre-cores. Pre-cores were found in only two of the seven levels (Table 9-1): one piece in level III/3-1, and one piece in level III/3-3A. The piece from level III/3-1 is a fragmented item of either a flake or a blade. It is 5.4 cm long, 6.0 cm wide and 2.2 cm thick. The latter piece from level III/3-3A (on a nodule) displays two prepared striking platforms with associated removal negatives. During removals from one of the platforms, the pre-core broke and was not further reduced. Accordingly, the pre-core is not big – 6.1 cm long, 3.5 cm wide, and 2.2 cm thick.

It is worth noting that the existing pre-core sample is represented by only a small number of pieces, and this in spite of the easy access to flint outcrops at nearby Mylnaya Mountain. This rather strange situation can be understood in two ways. On the one hand, flint plaquettes and nodules could be mostly tested at the outcrops and only then, in some prepared state, brought to the site. On the other hand, on several occasions, the numerical prevalence of chunks over core-like pieces (Table 9-2) might also point to the import of some complete flint plaquettes and nodules in an unprepared shape, but which during initial reduction were so dry and of such a bad flaking quality that they simply broke into several chunks each, leaving no cores and/or pre-cores.

Cores

Cores are observed in each level of sub-unit III/3 (Table 9-2). In the following, not only are their typological categories described, but special reference is also made to their occurrence in each of the Kabazi V, sub-unit III/3 levels.

Generally speaking, cores can be affiliated to one of three different categories (parallel, convergent and unsystematic). In total, 84.6% of all typologically definable cores were worked using parallel methods of reduction, while convergent and unsystematic primary reduction methods are represented by only a couple of cores from the entire sub-unit, i.e. – a mere 7.7%, respectively. It is also worth no-ting the presence of a substantial number of core fragments (38.1% out of all cores from the sub-unit), and in each of its levels that is an indisputable indication on the intensity of primary flaking procedures at the site.

Parallel cores

Parallel cores of sub-unit III/3 (N=22) are composed of three unidirectional, ten bi-directional, one orthogonal, one sub-crossed, and seven unidentifiable examples (Table 9-2). If we exclude parallel unidentifiable cores, parallel cores comprise 20.0% unidirectional items, 66.6% bi-directional examples, and 6.7% orthogonal and sub-crossed cores, respectively. Thus, bi-directional cores are the main objects of parallel primary flaking methods. Now let us consider the morphological and metrical data of these parallel cores.

Bi-directional cores (Table 9-2) are observed in each level of Sub-Unit III/3. This once again underlines that they are the most characteristic among the cores in this sub-unit. No further core category has been recorded in all levels of Sub-Unit III/3. Bi-directional cores can be subdivided into three defined typological groups, all of which are characterised by non-volumetric flaking surfaces.

Bi-directional rectangular cores (N=3) are characterised by elongated metrical proportions, whereby length is greater than width. Such pieces have been observed as single items in levels III/3-1, III/3-1A, and III/3-3A. Thus, these pieces occur in the two uppermost and in the one lowermost levels of the Kabazi V, Sub-Unit III/3 sequence.

The item from level III/3-1 displays a naturally flat undersurface (covered by primary cortex), is 5.2 cm long, 3.7 cm wide, and 1.3 cm thick. The core has two opposed striking platforms and one lateral supplementary platform. The first striking platform is finely faceted (3.5 cm wide and 0.7 cm thick) and negatives from removals are quite regular and long (up to 3.8 cm). The second striking platform

	III/3-1	III/3-1A	III/3-2	III/3-2A	III/3-3	III/3-3A	Total:
Parallel							**22**
Unidirectional, sub-cylindrical	·	·	·	·	·	1	1
Unidirectional, rectangular	·	·	·	·	·	1	1
Unidirectional-transverse, rectangular	1	·	·	·	·	·	1
Bi-directional, rectangular	1	1	·	·	·	1	3
Bi-directional-transverse, rectangular	1	2	1	·	1	·	5
Bi-directional, alternate, rectangular	·	·	·	1	·	·	1
Bi-directional-transverse, alternate, ovoid	·	1	·	·	·	·	1
Orthogonal, rectangular	·	·	·	·	·	1	1
Sub-crossed, rectangular	·	·	·	·	1	·	1
Parallel, unidentifiable	1	2	·	·	1	3	7
Convergent							**2**
Convergent-transverse, fan-shaped	1	·	·	·	·	·	1
Convergent-transverse, ovoid	·	1	·	·	·	·	1
Unsystematic	1	·	·	·	·	1	**2**
Core fragments	4	5	3	1	1	2	**16**
Total:	**10**	**12**	**4**	**2**	**4**	**10**	**42**

Table 9-2 Kabazi V, sub-unit III/3: cores by levels, categories and groups.

is crudely faceted (2.6 cm wide and 1.1 cm thick); the only recognisable removal is hinged and short (1.6 cm). The supplementary platform is finely faceted (2.4 cm wide and 1.1 cm thick); negatives (1.1 cm) leading from it are of a quite regular shape. It is high likely that this core was abandoned due to both its limited thickness (just 1.3 cm) and the last hinged removal from the second striking platform.

The item from level III/3-1A (Fig. 9-1, *3*) also displays a naturally flat undersurface covered by primary cortex. Its overall size is, however, larger – 6.8 cm long, 6.2 cm wide, and 1.8 cm thick. This core has two opposed striking platforms and two lateral supplementary platforms. The first striking platform (3.6 cm wide and 1.8 cm thick) is crudely faceted, and a series of associated negatives, although of a regular shape, are short (2.6 cm). The second striking platform (5.9 cm wide and 1.6 cm thick) is also crudely faceted, and the negatives of five removals are heavily hinged (5.4 cm maximum length). Both lateral supplementary platforms are only very weakly pronounced. Accordingly, their features are as follows: the first supplementary platform is crudely faceted (4.3 cm wide and 0.5 cm thick); it is associated with only one short negative (1.2 cm long). The second supplementary platform is plain (1.6 cm wide and 0.9 cm thick); negatives from two removals are, again, only very short (1.2 cm). The core was probably abandoned owing to its reduced thickness (1.0 cm), possibly resulting from the wide and concave removals from the second striking platform.

The last bi-directional rectangular core from level III/3-3A (Fig. 9-1, *1*) is also characterised by a naturally flat undersurface which is covered by primary cortex. This is a classical WCM bi-directional core, with two striking platforms and two clear supplementary platforms. It is 5.9 cm long, 5.0 cm wide and 1.6 cm thick. The first striking platform is finely faceted (3.2 cm wide, 0.6 cm thick) with negatives from hinged removals (1.9 cm long) running from it. The second striking platform is crudely faceted (4.1 cm wide, 0.9 cm thick); removals running from this platform are also hinged (2.0 cm long). Owing to its overall parameters (metrics, thickness of both striking platforms and flaking surface) this core can be described as being in a very exhausted state.

Bi-directional transverse cores (N=5) are certainly more numerous than the above-described bi-directional cores with elongated proportions. They are well represented in the uppermost part of the sub-unit III/3 archaeological sequence:

level III/3-1 – 1 piece, level III/3-1A – 2 pieces, and level III/3-2 – 1 piece.

All five bi-directional transverse cores are characterised by their rectangular shape. More detailed descriptions of these pieces are as follows: The core

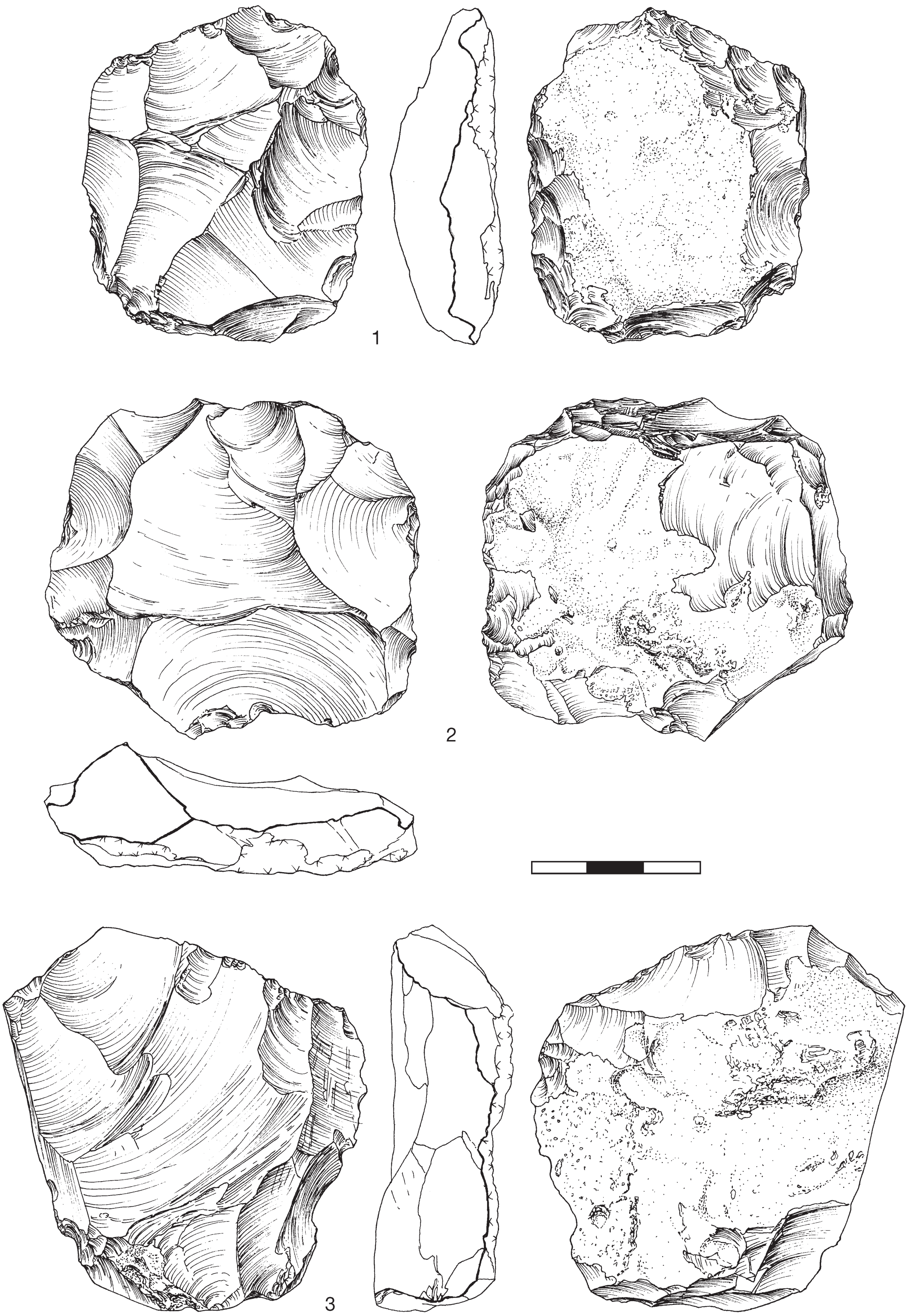

Fig. 9-1 Kabazi V, sub-unit III/3: levels III/3-3A (1); III/3-1A (2, 3). Cores: bi-directional rectangular (1, 3); bi-directional transverse rectangular (2).

from level III/3-1 has a naturally flat undersurface covered by primary cortex. It is 4.1 cm long, 5.5 cm wide, and 2.0 cm thick. The first striking platform is plain (5.3 cm wide and 1.1 cm thick) with negatives from regular removals running from it (3.7 cm long). The second striking platform is crudely faceted (3.1 cm wide, 1.4 cm thick) and is associated with the negatives of mostly hinged removals (1.5 cm long). The peculiar thing about the core is that it displays no negatives resulting from removals from its two lateral supplementary platforms. These are only seen through the presence of their plain and very narrow surfaces. Such are the characteristics of these latter supplementary platforms that it must be concluded that there occurred a radical re-preparation of the core's flaking surface during which the lateral crested pieces were removed, and the supplementary platforms almost completely destroyed. Subsequently, some core reduction on its flaking surface from the second striking platform has led, however, to a serious hinging of the surface that probably led to the abandonment of the core.

The first core from level III/3-1A (5.5 cm long; 5.7 cm wide; 2.8 cm thick; naturally flat undersurface covered by primary cortex) is quite similar to the one from level III/3-1 because of very little data on the left lateral supplementary platform. It is covered by cortex (1.5 cm wide and 0.5 cm thick) with two removals struck (1.0 cm long). Thus, supplementary platforms were removed in the course of the core reduction. The first striking platform is plain (5.6 cm wide and 3.1 cm thick) and associated solely with negatives from hinged removals (2.5 cm long). The second striking platform is also plain (2.4 cm wide, 1.8 cm thick), with just one negative, and otherwise only those from hinged removals running from it (2.0 cm long). These features testify to a series of heavy and unsuccessful reductions which led to the removal of all faceted edges. Accordingly, the core was reduced no further.

The second core from level III/3-1A (Fig. 9-1, *2*) is a very good example for an exhausted WCM bi-directional core. It displays two striking platforms and two lateral supplementary platforms. It is 6.0 cm long, 6.6 cm wide, and 1.4 cm thick and with flat (partially thinned) undersurface. The first striking platform is crudely faceted (6.0 cm wide, 0.8 cm thick); negatives bear witness to regular shaped removals from this platform (2.1 cm). The second striking platform is finely faceted (4.7 cm wide and 1.5 cm thick) and is dominated by the wide negative of a heavily hinged final removal (3.8 cm long), which would have led to this core becoming abandoned. The first supplementary platform is finely faceted (4.3 cm wide, 0.8 cm thick) and from it was struck off a series of regular removals (2.2 cm long). The second supplementary platform is crudely faceted (4.0 cm wide, 1.4 cm thick) and again removals from it are quite regular (1.6 cm long). Such are the characteristics of all four platforms that they allow us some "dynamic technological interpretations". First, it is possible to assume that platforms were used in pairs, i.e. first for striking and then as supplementary. Moreover, such are the technological changes of platforms during core reductions that it is likely that this also leads to some cores becoming exhausted. For example, a core from the WCM assemblage at Kabazi II, Unit II, level II/7F8 (Chabai 1998b: Fig. 9-9 : 1 on p. 224).

The bi-directional transverse core from level III/3-2 is characterised by an absence of supplementary platforms. On the other hand, it is still a real bi-directional core with the same metrical parameters with respect to its length and width (6.8 cm). It is 3.2 cm thick and displays a naturally flat undersurface that is covered by primary cortex. The first striking platform is plain (5.3 cm wide, 2.0 cm thick) with a heavily hinged series of negatives running from it (a single regular removal is 5.2 cm in length, while all remaining removals are really short). The second striking platform is finely faceted (4.4 cm wide, 1.0 cm thick); negatives bear witness to the striking of more regular than hinged removals' from it. The core was abandoned due to a rather concave flaking surface that had resulted from a large number of hinged removals.

The last of the bi-directional transverse rectangular cores from level III/3-3 is partially broken (Fig. 9-2, *2*). This piece is 5.8 cm long, 7.2 cm wide, and 1.7 cm thick. It also displays a naturally flat undersurface that is covered by primary cortex. Part of one striking platform is missing, as it was broken during the original reduction of the core. The preserved striking platform is crudely faceted (7.1 cm long, 1.2 cm thick) with negatives, mostly from regular removals, running from it (4.0 cm long). There is one supplementary platform, too. It is crudely faceted (3.9 cm wide, 0.9 cm thick): negatives of removal struck from this platform (0.9 cm) were intended to raise the flaking surface of the core.

Bi-directional alternate cores are represented by one item in level III/3-1A and one item from level III/3-2A. Main morphological features of bi-directional alternate cores are *"two opposed striking platforms, but on two opposite flaking surfaces"* (Chabai, Demidenko 1998, p. 39). Usually, these cores have a long history of primary flaking.

The ovoid shaped core with transverse proportions from level III/3-1A is a good example. First, it is quite obvious that this core was a mere bi-directional

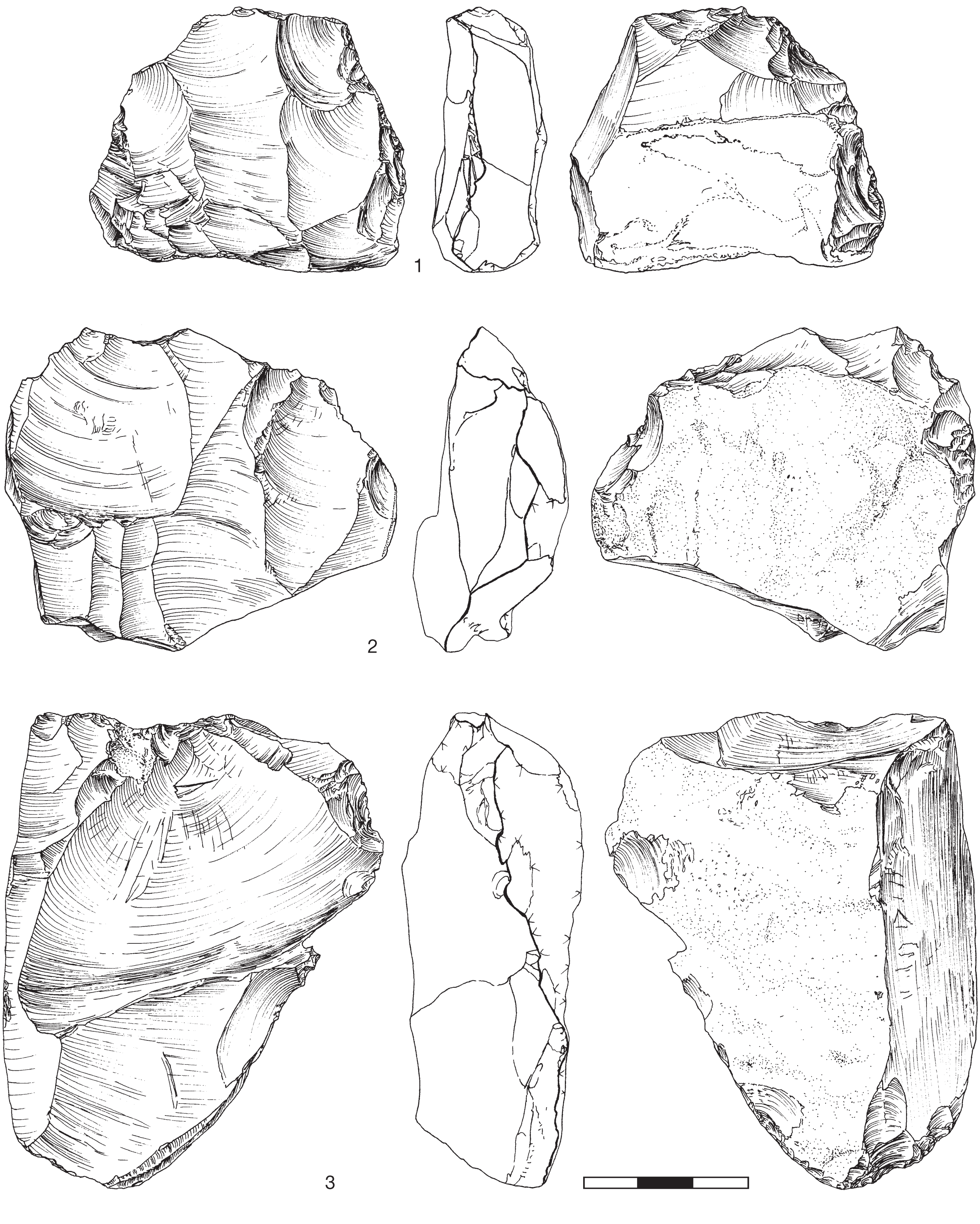

Fig. 9-2 Kabazi V, sub-unit III/3: levels III/3-1 (1); III-3-1A (3); III/3-3 (2). Cores: convergent transverse fan-shaped (1); bi-directional transverse rectangular (2); parallel unidentifiable (3).

core with two opposed striking platforms and one flaking surface. However, due to the negatives from a large number of heavily hinged removals on the flaking surface, a Middle Palaeolithic flintknapper continued primary reduction from one of the already used striking platforms in the direction of the reverse side of the core, thus creating an additional flaking surface. Therefore, the core displays two striking platforms and two flaking surfaces where the reduction on each flaking surface runs in opposite directions. Without doubt, the core is in a very exhausted state (4.2 cm long, 4.7 cm wide, 1.9 cm thick) and it is likely that supplementary platforms are simply not preserved. The characteristics of the striking platforms are as follows: the first is crudely faceted (4.6 cm wide, 0.6 cm thick) and, although the negative from the longest removal is 3.8 cm, the last series of negatives is hinged and just 1.4 cm long. The second striking platform is also crudely faceted (2.6 cm wide, 1.0 cm thick) from which all negatives result from hinged removals (1.9 cm long). The core was discarded due to the heavily hinged state of both its flaking surfaces.

The bi-directional alternate core with a rectangular shape from level III/3-2A is less exhausted and even displays a supplementary platform. Actually, the core might be described as "double unidirectional"; whereas initially a wide striking platform and one flaking surface were used for primary reduction, there then followed, at the narrow end of the flaking surface, the application of a second striking platform, and reduction was continued through one more flaking surface. The core is 4.4 cm long, 3.9 cm wide and 2.5 cm thick. Its first striking platform is crudely faceted (5.3 cm wide, 2.0 cm thick) with a series of regular negatives running from it (3.2 cm long). The second striking platform is also crudely faceted (2.5 cm wide, 2.1 cm thick), again associated with regular negatives (2.7 cm long). The only supplementary platform is connected to the second flaking surface and it is cortical (1.2 cm wide, 1.6 cm thick). Removals struck from this platform (1.2 cm long) were designed to raise the flaking surface. It is unclear why this core was discarded.

Unidirectional cores (Table 9-2) are known from level III/3-1 (N=1) and from level III/3-3A (N=2). Thus, these pieces occur at two opposite edges of the sub-unit III/3 archaeological sequence – at its uppermost part and its lowermost part. Two of the cores are characterised by a non-volumetric flaking surface (rectangular shape), while one core from level III/3-3A has a sub-cylindrical volumetric flaking surface.

In the following section, unidirectional non-volumetric cores are described.

The core from level III/3-1 is unidirectional transverse, of a rectangular shape, and 3.6 cm long, 4.6 cm wide and 1.1 cm thick. Its striking platform is crudely faceted (3.6 cm wide, 1.4 cm thick) with a series of regular negatives (3.6 cm long) which run over the whole length of the flaking surface. The last of these removals was heavily overpassed and practically splinted the core. The peculiar thing about this core is that its reverse side shows a previous, bi-directional stage of reduction. Therefore, this bears witness to the transformation of this core from bi-directional reduction strategies to a unidirectional reduction, thus optimising the potential number of blanks that can be produced from this one core. We can also note that the last striking platform for unidirectional reduction was formed on one of the lateral edges of the bi-directional core, while another lateral was cut off by the last ever flake to be removed. Due to these factors, there are no traces of supplementary platforms for the bi-directional stage of the core.

The unidirectional rectangular core from level III/3-3A (Fig. 9-3, 2) shows a naturally flat undersurface (natural break in the flint with no primary cortex). It is 10.0 cm long, 7.7 cm wide and 2.7 cm thick. The striking platform is finely faceted (4.8 cm wide and 1.1 cm thick) and had a series of regular removals struck from it (up to 9.4 cm long). The core displays one supplementary platform. This is situated at its distal end and is crudely faceted (3.9 cm wide, 2.1 cm thick); once again, short negatives of removals (2.0 cm long) struck from it were meant to raise the flaking surface. The placement of the supplementary platform at the core's distal end is a good indication of WCM technological variability in realisation of intensive parallel flaking methods.

The unidirectional core from level III/3-3A, which features a sub-cylindrical volumetric flaking surface, is 4.6 cm long, 3.0 cm wide and 1.7 cm thick. The only striking platform is crudely faceted (2.9 cm wide, 1.9 cm thick) with some negatives resulting from regular removals running from it. At the same time, some of the finally struck removals were so heavily hinged that the core was discarded. Although the core is the only one with volumetric flaking surface known from the Sub-Unit III/3 assemblages, there are neither actual traces of either core tablets or *lames à crete*, nor are there supplementary platforms.

The final two examples of typologically identifiable cores are orthogonal and sub-crossed cores with non-volumetric flaking surfaces.

The rectangular shaped orthogonal core, with naturally convex undersurface (covered by primary cortex), from level III/3-3A is rather small – 3.9 cm long, 3.4 cm wide, and 2.8 cm thick. The two

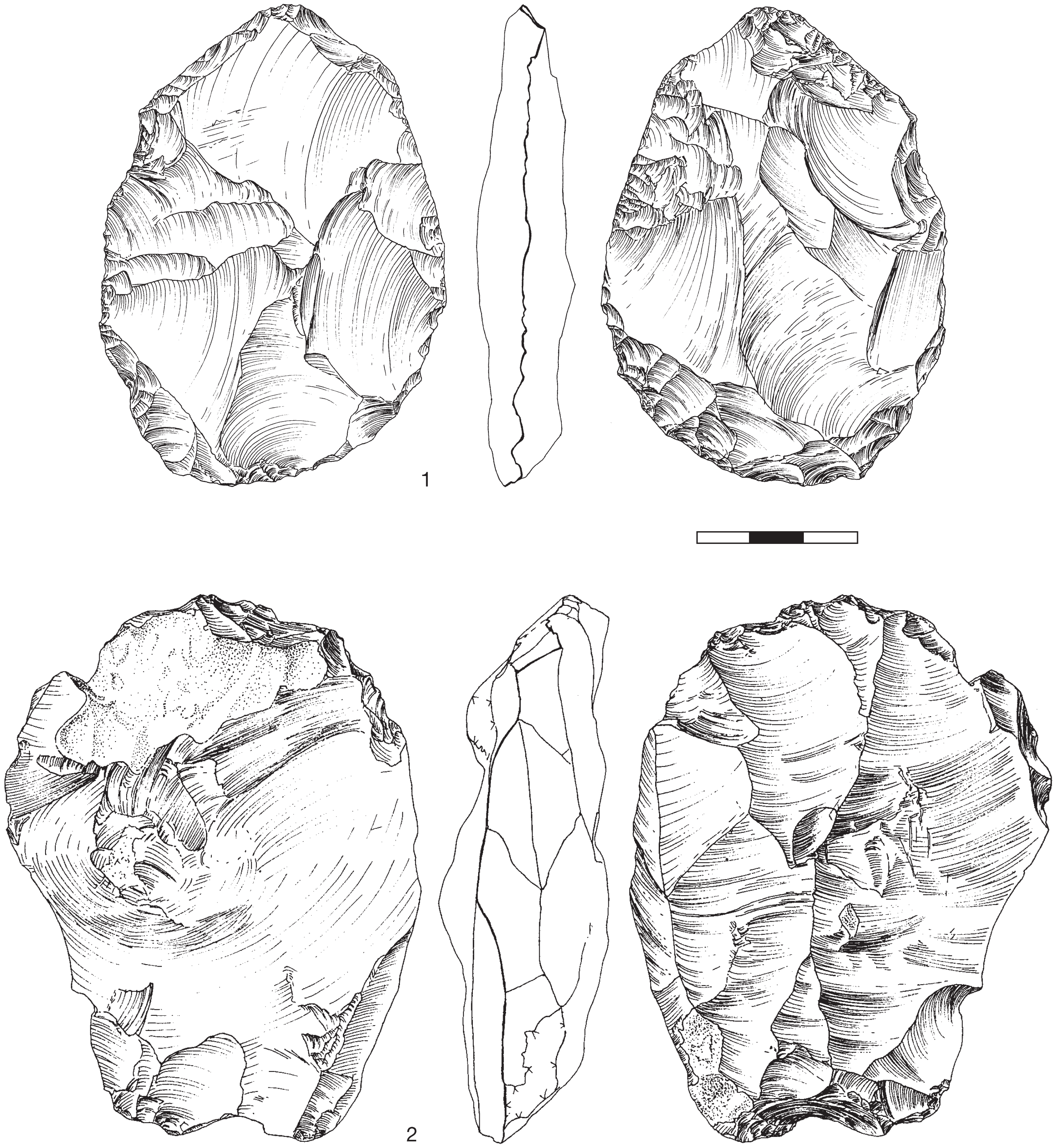

Fig. 9-3 Kabazi V, sub-unit III/3: levels III/3-3 (1); III/3-3A (2). Tools: simple straight scraper on a radial core (1). Cores: uni-directional rectangular (2).

adjacently situated striking platforms, both serving the one flaking surface, are quite similar one to another; both are crudely faceted with similar dimensions (3.5 cm wide, 1.3 cm thick, and 3.3 cm wide and 1.3 cm thick, respectively). Negatives of removals from these platforms are, however, different: whereas the negatives (2.2 cm long) of removals struck from the first platform can be described as regular, those from the second platform (2.5 cm) are heavily hinged. There are no traces of supplementary platform(s) on the core, although taking into consideration its rather small overall size of the piece, and the location of the striking platforms, one might suggest that this was sufficient to exhaust this particular core. The core was discarded because all the last removals from it were small and heavily hinged, further, its small size meant that reduction was no longer possible.

The sub-crossed core with rectangular shape and naturally flat undersurface (from a natural break in the flint) from level III/3-3 is relatively large – 6.4 cm long, 6.6 cm wide, 2.2 cm thick. A clear technological understanding of this core is not possible. Each striking platform is unique. The first striking platform is crudely faceted (6.3 cm wide, 1.6 cm thick) with negatives from hinged removals running from it (3.9 cm long). The second striking platform is plain (4.5 cm wide, 0.7 cm thick) and is also associated with the negatives from hinged removals (3.8 cm long). The third striking platform is finely faceted (6.0 cm wide, 0.7 cm thick); once again negatives stem from (regular) hinged removals (3.4 cm long). Considering the core's size and its obvious history, one might suggest that it is representative of an initial core reduction, somewhere between parallel and radial flaking methods, which, however, was stopped for uncertain reasons.

Finally, the description of the parallel cores ends with the seven parallel unidentifiable pieces. These are subdivided into three groups.

The first group is composed of four heavily fragmented pieces. These stem from levels III/3-1 (N=1), III/3-3 (N=1), and III/3-3A (N=2). A fragmentation of the cores occurred during the removal of a large overpassed flake that not only seriously destroyed the cores' flaking surfaces, but also caused longitudinal and/or transversal breakage.

The second group is composed of two pieces from levels III/3-1A and III/3-3A. These cores are also characterised by the removal of a final, large overpassed flake from a prepared striking platform, and a resulting negative which covers no less than 80 – 90% of the whole flaking surface of the cores. This, however, did not result in the breakage of the cores as happened to those from the first group. It was simply an unfortunate and bad removal that completely damaged the flaking surface. Very similar cores are well known from the Crimean Middle Palaeolithic, and they occur both in assemblages from the Micoquian (e.g. Demidenko 2004a: Fig. 9-3 : 4-5 on p. 118 for Buran Kaya III, layer B) and the Western Crimean Mousterian (Chabai 1998b: Fig. 9-9 : 2 on p. 224 for Kabazi II, Unit II, level II/7F8).

Finally, the third group among parallel unidentifiable cores is represented by one piece from level III/3-1A (Fig. 9-2, *3*). This core demonstrates a very rare attempt to continue primary reduction following the removal of a last overpassed flake. This attempt was, however, unsuccessful as the new flake not only heavily hinged, resulting in a great concavity in the middle of the core's flaking surface, but also reduced considerably the thickness of the flaking surface – from 3.2 cm to 1.6 cm. It also shows that the abandonment by Middle Palaeolithic flintknappers of these parallel unidentifiable cores following the unfortunate removal of an overpassed flake was perfectly legitimate, it proving quite impossible to continue any form of true reduction on them.

Convergent cores

Convergent cores (N=2) occur only in the uppermost part of the Sub-Unit III/3 archaeological sequence, in levels III/3-1 and III/3-1A (Table 9-2). Both pieces display transverse proportions and neither have supplementary platforms.

The convergent core from level III/3-1 is fan-shaped, with a naturally flat undersurface (covered by primary cortex). It is 4.5 cm long, 5.7 cm wide and 1.5 cm thick (Fig. 9-2, *1*). The core's striking platform is finely faceted (5.7 cm wide, 1.3 cm thick) from which a series of very regular convergent removals were struck (4.5 cm long). The reason behind the discard of this particular core is unclear; however, it may be linked to the quite flat flaking surface of the core which would have required a serious re-preparation if a new stage of reduction was to be realised.

The convergent core from level III/3-1A is of an ovoid shape, with a naturally flat undersurface that is covered by primary cortex. It is 4.8 cm long, 6.2 cm wide and 2.9 cm thick. Its striking platform is crudely faceted (6.5 cm wide, 2.0 cm thick) with the negatives of a number of regular convergent removals running from it (4.8 cm long). As above, it is unclear why this core was abandoned.

Unsystematic cores

Unsystematic cores (N=2) are related stratigraphically to the two margins of the Sub-Unit III/3 archaeological sequence; they occur in its uppermost level III/3-1 and in the lowermost level III/3-3A (Table 9-2). These pieces are also worth describing in more detail.

The core from level III/3-1 is characterised by three striking platforms (2 plain and 1 crudely faceted) and three flaking surfaces. This has resulted in the cubical-like shape of this core. Its dimensions are as follows: length – 4.3 cm, width – 3.7 cm, thickness – 5.5 cm. All three flaking surfaces were used in the removal of heavily hinged pieces, resulting ultimately in the discard of this core.

The core from level III/3-3A is in an even more advanced state of exhaustion than that from level III/3-1. It has four striking platforms (3 plain and 1 crudely faceted) and four flaking surfaces, which again give the core a cubical-like shape. This piece is 4.0 cm long, 3.8 cm wide and 4.3 cm thick. The only morphological peculiarity regarding this core is that all four of its flaking surfaces are associated with the negatives from regular (non-hinged) removals. Therefore, one might suggest that the core had been subject to a successful multiple and intensive reduction, which even in the very final and complex stage of reduction was well managed. The only possible reason for discard seems to be connected with a required re-preparation for flaking continuation; this, however, was not possible due to the reduced overall size of this piece.

Core fragments

Core Fragments (N=16) are well distributed throughout the whole archaeological sequence of Sub-Unit III/3, and are observed in each of the individual levels (Table 9-2). This rather large number of core fragments is certainly linked to the intensive character of primary flaking processes performed by Middle Palaeolithic human groups at Kabazi V during the deposition of Sub-Unit III/3 culture bearing sediments. If we add to these the 16 core fragments and four heavily fragmented parallel unidentifiable cores, we must come to the conclusion that almost a half (47.6%) of the overall total of cores from Sub-Unit III/3 are merely fragments (20 of 42 pieces). This figure needs to be compared with some similar core data from the already published materials on Kabazi II, Unit II WCM assemblages (Chabai 1998b), and is discussed further below.

Some considerations on core assemblage structure and features

The typological, morphological and metrical data presented above allow to make some statements regarding core reduction strategies as applied by Middle Palaeolithic human groups at the time of accumulation of the Kabazi V, Sub-Unit III/3 sediments.

For a detailed core summary, and to get a sense of the basic technological trends of the assemblage under discussion, we need to restrict our attention to just a few particular pieces. In this case we must disregard all core fragments, as well as the parallel unidentifiable and unsystematic cores. We are left with three parallel unidirectional cores, ten bi-directional cores, one orthogonal core, one sub-crossed core, and two convergent cores.

First, an overall dominance of parallel primary flaking methods should be noted. This is particularly obvious when considering that there is a complete absence of Levallois and non-Levallois radial / centripetal and discoidal cores. Moreover, most parallel cores are bi-directional cores, although their quantitative prevalence over other parallel core types (ten pieces *versus* five pieces) might be much reduced if we were to consider bi-directional alternate cores as double unidirectional pieces (eight pieces *versus* seven pieces). On the other hand, we also see a kind of transformation from a bi-directional to a unidirectional reduction; this can be observed quite clearly on one of the bi-directional alternate cores (from level III/3-1A) and one of the unidirectional cores (from level III/3-1). Thus, it is reasonable to conclude that there is a combination of unidirectional and bi-directional variations within the general parallel reduction in the core assemblage of sub-unit III/3. In this respect, we may surmise that the unidirectional and bi-directional cores constitute the main body of the definite cores (13 of 17 cores, or 76.5%).

Second, there is also a very distinctive technological feature among the parallel cores; this is the frequent occurrence of supplementary platforms. Among the ten bi-directional cores (including two bi-directional alternate ones) there have been distinguished four cores with two lateral supplementary platforms and four cores with one lateral supplementary platform: The remaining two cores, which have no defined supplementary platform(s), are heavily influenced by their advanced state of exhaustion (a bi-directional alternate core from level III/3-1A and a bi-directional transverse rectangular core from level III/3-2) and therefore we can hardly expect to observe remains of such features. A different situation with regard to supplementary platforms is noted for three unidirectional cores. Only one unidirectional rectangular core from level III/3-3A has a supplementary platform, and this is located at its distal end, and therefore contrary to the usual placement as observed on bi-directional cores where they are applied to the lateral edges. A further unidirectional rectangular, but transverse, core from level III/3-1 was subjected to a very long reduction sequence. Having first been bi-directional in nature, this piece does not display supplementary platform(s). The third unidirectional core has a volumetric flaking surface (level III/3-3A) and, by its "volumetric definition", has no supplementary platform(s).

All the above data on the supplementary platforms and transformation reductions of cores lead us to some conclusions regarding the unified parallel reduction method with its two variations – unidirectional and bi-directional. The latter variation seems to be dominant in combination with non-volumetric flaking surface reduction based on systematic usage of supplementary platforms and good preparation of striking platforms. The unidirectional variation, on the other hand, seems to be used either during initial parallel core primary flaking stages or at the end of core exploitation when bi-directional reduction on one side of the core continues on its reverse side with unidirectional reduction. Additionally, single parallel orthogonal and sub-crossed cores fulfil similar roles to unidirectional cores within unified parallel reduction – these reflect either an early (the sub-crossed core) or a late (the orthogonal core) stage of parallel reduction. Also, it is impossible to define the role of convergent cores in the unidirectional variant of reduction sequence. The only seemingly distinct feature of the convergent cores is that they lack supplementary platforms. However, from a technological perspective, the distinction is not a serious one due to convergent flaking being a sort of unidirectional primary flaking where supplementary platforms are not required – this is due to the fact that the fan-shaped flaking surfaces of convergent cores and the lateral removals (as a rule, simple *débordantes*) raise the flaking surfaces required for a continuous reduction and only a wide striking platform is the main technologically element needed in this process. From here we can observe a technological variability within general parallel flaking. Basically, there are lateral supplementary platforms for bi-directional cores, a distal supplementary platform for one unidirectional core, and convergent cores that do not require supplementary platforms.

Thus, the following final conclusions can be drawn from the typological and morphological data of the cores from Kabazi V, Sub-Unit III/3. There is possibly one basic core reduction strategy – parallel bi-directional reduction with non-volumetric flaking surfaces, but with some variability becoming apparent, for example, in unidirectional and convergent reductions. For the WCM assemblages at Kabazi II, Unit II, the strategy has been defined as *"Biache Method, Bi-Polar Variant"* (Chabai 1998b, pp. 247-249). Also, the occurrence of one unidirectional sub-cylindrical core with a volumetric flaking surface is a possible indication of the *"Volumetric Flaking Method"*, which also features in WCM assemblages at Kabazi II, Unit II (Chabai 1998b, pp. 239-242). More detailed features of primary reduction strategies of Kabazi V, Sub-Unit III/3 will be seen through analyses of debitage and tool blanks.

A summary of the morphological features and overall metrics of striking platforms is listed below.

From a total of 17 cores with 29 striking platforms the following types and ratios of striking platforms have been identified (1 partially broken bi-directional core has just 1 platform):

plain – 5 / 17.3%;
crudely faceted – 17 / 58.6%;
finely faceted – 7 / 24.1%.

The dominance of crudely faceted striking platforms, with some occurrence of plain striking platforms, is linked technologically to the peculiarities of platform preparation. Namely, they are usually faceted only along their edges, leaving mainly unprepared the remaining, thickest parts of the platforms. Further, it should not be forgotten that a hard hammer technique leads to striking off pieces with rather thick butts. Therefore, a series of removed debitage pieces from a finely faceted striking platform often leads to its view as either a crudely faceted or even a plain one. Nevertheless, the combined data on all prepared striking platforms (82.7% – crudely and finely faceted ones together) is very indicative of a consistently applied special preparation during primary reduction processes.

Overall metrics for 16 cores are represented in two ways – by average indices and by individual metrical intervals.

Average metrics are as follows: length – 5.4 cm, width – 5.3 cm, thickness – 2.0 cm.
Metrical intervals are, however, more informative:

Length:	3.0 – 3.9 cm – 2 pieces / 12.5%;
	4.0 – 4.9 cm – 6 pieces / 37.5%;
	5.0 – 5.9 cm – 3 pieces / 18.8%;
	6.0 – 6.9 cm – 4 pieces / 25.0%;
	10.0 cm – 1 piece / 6.2%.
Width:	3.0 – 3.9 cm – 4 pieces / 25.0%;
	4.0 – 4.9 cm – 2 pieces / 12.5%;
	5.0 – 5.9 cm – 4 pieces / 25.0%;
	6.0 – 6.9 cm – 5 pieces / 31.3%;
	7.7 cm – 1 piece / 6.2%.
Thickness:	1.0 – 1.5 cm – 4 pieces / 25.0%;
	1.6 – 1.9 cm – 4 pieces / 25.0%;
	2.0 – 2.5 cm – 3 pieces / 18.8%;
	2.6 – 2.9 cm – 4 pieces / 25.0%;
	3.2 cm – 1 piece / 6.2%.

Both the length and width data show that only single pieces exceed 7 cm. Length indices alone show that 50% of cores do not exceed 5 cm in length, while width indices are larger – only 37.5% of cores are no wider than 5 cm. Data on core thickness shows a subdivision into two categories: rather thin (no more than 2 cm) and rather thick (more than 2 cm).

Thus, according to the metrical data, we can state that the Kabazi V, Sub-Unit III/3 core assemblage is characterised by some quite exhausted cores and some cores that did not go through a multiple and intensive reduction. In the case of the latter, this is probably due to the occurrence of hinged removals on their flaking surfaces, but also to other reasons.

Debitage, including Tools

There follows a review of debitage data from the six levels from Kabazi V, Sub-Unit III/3.

It is stressed that our debitage tables (Tables 9-3 through 9-36) are composed in such a way that, first, data on flakes and blades with no any secondary treatment are presented, followed by data on tool blanks. This has the advantage that morphological and metrical differences can be observed between pure debitage and typologically defined tools.

Flakes

In total, the sample of flakes from all six levels of Sub-Unit III/3 numbers 984 pieces (see Tables 9-3 through 9-19). Aside from 810 flakes with no secondary treatment, this also includes 174 tool blanks of flake metrical proportions. On the basis of this numerical relationship, we see that, on average, at least one out of every 5.7 flakes was selected for tool processing.

Condition

Well over 50% of all flakes from sub-unit III/3 are complete (Table 9-3). Only for level III/3-2A is there a prevalence of fragmented blanks over complete blanks for tools made on flakes. The presence of a large number of flakes broken longitudinally, or broken both longitudinally and latitudally, is a good indicator of a hard hammer technique applied during primary flaking processes.

Dorsal scar patterns

The most dominant scar pattern is unidirectional; this occurs in ca. one third of all ten types defined for a total sample of 903 items (Table 9-4). The second most common scar pattern is the cortical type; except for the lowermost level III/3-3A, its indices lay between ca. 20 and 28%, which is a good signature for a predominantly on-site primary reduction. A comparison of the debitage sample with debitage with tool blanks also shows that a considerably smaller number of primary flakes were selected for tool retouching, with the only exception of level III/3-3. Scar patterning of a unidirectional-crossed type is the third most frequent in the Kabazi V, Sub-Unit III/3 assemblages, comprising ca. 14 – 15% of all recognised types. Of the remaining scar pattern types, only converging, bi-directional and lateral scar-patterning are here worthy of mention, these constituting together a sizable representation. These three types make up between ca. 5-7 and 11% in all levels, with an average value of 8.7% for converging scar patterning, and ca. 2 – 10% (average 5 - 6%) for both bi-directional and lateral scar patterning types. The latter, rather high indices for lateral scar pattern may be associated with intensive re-preparation of flaking surfaces on cores in the course of multiple reductions. Finally, it is worth noting the occurrence of a real rarity, the radial scar pattern, which is a good signature of the Levallois classical method. It accounts for no more than 2% of scar patterns observed in each level, with the exception of the uppermost level III/3-1 where it makes up 3.2% of all observable scar patterns. On the other hand, the presence of ca. 4 – 5% of a 3-directional type, except in the lowermost level III/3-3A (ca. 1%), is also indicative of a complex scar pattern peculiar to Levallois flakes. To sum up, we can observe that the common occurrence of parallel reduction, that was already observed for the core assemblages, is also characteristic among flakes – unidirectional, unidirectional-crossed and bi-directional scar patterning dominate, comprising ca. 55% of the entire flake assemblage, and ca. 75% when not taking into account cortical blanks.

Surface cortex placement & location

In total, non-cortical items are ca. 1.7 – 1.9 more frequent than cortical ones (Table 9-5). Taken together, 351 non-cortical and 181 cortical flakes comprise ca. 54.1% of the whole sample of 984 flakes. Accordingly, the remaining 452 flakes are covered partially by cortex. Of all 14 cortex placement types, around two thirds can be affiliated to just two types: lateral and distal, with the former slightly more numerous than the latter. Two further types (central and proximal) are much less frequent, but occur in similar amounts, between ca. 6 – 8%, respectively. All remaining types are complex variations of lateral and distal types, whereby only two are of any

	III/3-1		III/3-1A		III/3-2		III/3-2A	
	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools
Complete	73 / 53.7%	95 / 55.9%	87 / 62.6%	101 / 62.0%	57 / 58.8%	67 / 58.8%	27 / 51.9%	29 / 46.0%
Broken length	47 / 34.5%	56 / 32.9%	27 / 19.4%	35 / 21.5%	21 / 21.6%	28 / 24.5%	20 / 38.5%	27 / 42.9%
Broken width	6 / 4.4%	8 / 4.7%	10 / 7.2%	10 / 6.1%	10 / 10.3%	10 / 8.8%	3 / 5.8%	4 / 6.3%
Broken both	10 / 7.4%	11 / 6.5%	15 / 10.8%	17 / 10.4%	9 / 9.3%	9 / 7.9%	2 / 3.8%	3 / 4.8%
Total:	**136**	**170**	**139**	**163**	**97**	**114**	**52**	**63**

	III/3-3		III/3-3A		Total	
	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools
Complete	117 / 69.6%	135 / 67.5%	148 / 67.9%	184 / 67.2%	509 / 62.8%	611 / 62.1%
Broken length	40 / 23.8%	50 / 25.0%	55 / 25.2%	72 / 26.3%	210 / 25.9%	268 / 27.2%
Broken width	7 / 4.2%	11 / 5.5%	10 / 4.6%	13 / 4.7%	46 / 5.7%	56 / 5.7%
Broken both	4 / 2.4%	4 / 2.0%	5 / 2.3%	5 / 1.8%	45 / 5.6%	49 / 5.0%
Total:	**168**	**200**	**218**	**274**	**810**	**984**

Table 9-3 Kabazi V, Unit III/3: flake conditions as numbers and percentages of each type.

	III/3-1		III/3-1A		III/3-2		III/3-2A	
	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools
Cortical	26 / 20.6%	30 / 19.1%	31 / 25.2%	31 / 21.7%	20 / 22.0%	21 / 20.0%	13 / 28.3%	13 / 25.5%
Radial	4 / 3.2%	5 / 3.2%	1 / 0.8%	3 / 2.1%	–	1 / 1.0%	1 / 2.2%	1 / 2.0%
Converging	6 / 4.8%	10 / 6.4%	8 / 6.5%	10 / 7.0%	9 / 9.9%	9 / 8.6%	4 / 8.7%	4 / 7.8%
Lateral	7 / 5.6%	8 / 5.1%	9 / 7.3%	10 / 7.0%	3 / 3.3%	3 / 2.8%	5 / 10.9%	5 / 9.8%
Bilateral	1 / 0.8%	1 / 0.6%	–	–	–	–	–	–
Unidirectional	41 / 32.5%	52 / 33.2%	45 / 36.6%	54 / 37.7%	32 / 35.2%	36 / 34.3%	16 / 34.7%	20 / 39.2%
Unidirectional-crossed	17 / 13.5%	23 / 14.6%	16 / 13.0%	19 / 13.3%	11 / 12.1%	16 / 15.2%	3 / 6.5%	4 / 7.8%
3-directional	8 / 6.3%	11 / 7.0%	5 / 4.1%	8 / 5.6%	6 / 6.5%	8 / 7.6%	2 / 4.3%	2 / 3.9%
Bi-directional	7 / 5.6%	8 / 5.1%	3 / 2.4%	3 / 2.1%	5 / 5.5%	5 / 4.8%	1 / 2.2%	1 / 2.0%
Crested	9 / 7.1%	9 / 5.7%	5 / 4.1%	5 / 3.5%	5 / 5.5%	6 / 5.7%	1 / 2.2%	1 / 2.0%
Unidentifiable	10 / -	13 / -	16 / -	20 / -	6 / -	9 / -	6 / -	12 / -
Total:	**136**	**170**	**139**	**163**	**97**	**114**	**52**	**63**

	III/3-3		III/3-3A		Total	
	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools
Cortical	32 / 19.8%	40 / 20.9%	40 / 19.2%	44 / 17.2%	162 / 21.4%	179 / 19.8%
Radial	1 / 0.6%	2 / 1.0%	3 / 1.4%	3 / 1.2%	10 / 1.3%	15 / 1.7%
Converging	19 / 11.7%	20 / 10.5%	21 / 10.1%	27 / 10.5%	67 / 8.9%	80 / 8.9%
Lateral	8 / 4.9%	9 / 4.7%	12 / 5.8%	12 / 4.7%	44 / 5.8%	47 / 5.2%
Bilateral	–	–	1 / 0.5%	1 / 0.4%	2 / 0.3%	2 / 0.2%
Unidirectional	56 / 34.6%	65 / 34.1%	68 / 32.7%	87 / 34.0%	258 / 34.1%	314 / 34.8%
Unidirectional-crossed	22 / 13.6%	26 / 13.6%	38 / 18.3%	49 / 19.1%	107 / 14.2%	137 / 15.2%
3-directional	8 / 4.9%	9 / 4.7%	2 / 1.0%	3 / 1.2%	31 / 4.1%	41 / 4.5%
Bi-directional	9 / 5.6%	11 / 5.8%	14 / 6.7%	21 / 8.2%	39 / 5.1%	49 / 5.4%
Crested	7 / 4.3%	9 / 4.7%	9 / 4.3%	9 / 3.5%	36 / 4.8%	39 / 4.3%
Unidentifiable	6 / -	9 / -	10 / -	18 / -	54 / -	81 / -
Total:	**168**	**200**	**218**	**274**	**810**	**984**

Table 9-4 Kabazi V, sub-unit III/3: flake dorsal scar patterns as numbers and percentages of each type.

	III/3-1		III/3-1A		III/3-2		III/3-2A	
	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools
Non-cortical	47 / -	62 / -	52 / -	65 / -	30 / -	37 / -	11 / -	16 / -
Cortical	26 / -	30 / -	31 / -	31 / -	20 / -	21 / -	14 / -	14 / -
Central	7 / 11.1%	8 / 10.2%	3 / 5.3%	6 / 8.9%	6 / 12.8%	6 / 12.8%	2 / 7.4%	4 / 12.1%
Proximal	5 / 7.9%	7 / 9.0%	1 / 1.8%	1 / 1.5%	3 / 6.4%	5 / 8.9%	1 / 3.7%	2 / 6.1%
Distal	20 / 31.7%	23 / 29.4%	24 / 42.9%	27 / 40.3%	14 / 29.8%	15 / 26.8%	7 / 25.9%	7 / 21.2%
Distal + Proximal	1 / 1.6%	1 / 1.3%	1 / 1.8%	1 / 1.5%	–	–	–	–
Lateral	17 / 27.0%	24 / 30.7%	15 / 26.9%	18 / 26.9%	12 / 25.5%	17 / 30.4%	15 / 55.6%	16 / 48.5%
Bilateral	–	–	3 / 5.3%	3 / 4.5%	–	1 / 1.8%	–	–
Bilateral + Central	1 / 1.6%	1 / 1.3%	–	–	–	–	–	–
Lateral + Central	1 / 1.6%	2 / 2.6%	–	1 / 1.5%	2 / 4.2%	2 / 3.6%	1 / 3.7%	1 / 3.0%
Lateral + Distal	6 / 9.5%	6 / 7.7%	5 / 8.9%	6 / 8.9%	6 / 12.8%	6 / 10.7%	1 / 3.7%	2 / 6.1%
Lateral + Proximal	2 / 3.2%	2 / 2.6%	3 / 5.3%	3 / 4.5%	3 / 6.4%	3 / 5.3%	–	–
Central + Distal	2 / 3.2%	2 / 2.6%	1 / 1.8%	1 / 1.5%	–	–	–	–
Bilateral + Proximal	1 / 1.6%	1 / 1.3%	–	–	1 / 2.1%	1 / 1.8%	–	–
Proximal + Central	–	1 / 1.3%	–	–	–	–	–	1 / 3.0%
Total:	**136**	**170**	**139**	**163**	**97**	**114**	**52**	**63**

	III/3-3		III/3-3A		Total:	
	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools
Non-cortical	64 / -	75 / -	67 / -	96 / -	271 / -	351 / -
Cortical	33 / -	41 / -	40 / -	44 / -	164 / -	181 / -
Central	2 / 2.8%	3 / 3.6%	5 / 4.5%	9 / 6.7%	25 / 6.6%	36 / 8.0%
Proximal	6 / 8.5%	8 / 9.5%	6 / 5.4%	11 / 8.2%	22 / 5.9%	34 / 7.5%
Distal	24 / 33.8%	25 / 29.8%	34 / 30.6%	38 / 28.4%	123 / 32.8%	135 / 29.9%
Distal + Proximal	2 / 2.8%	2 / 2.4%	2 / 1.8%	2 / 1.5%	6 / 1.6%	6 / 1.3%
Lateral	28 / 39.5%	32 / 38.0	43 / 38.8%	51 / 38.2%	130 / 34.7%	158 / 35.0%
Bilateral	–	–	2 / 1.8%	2 / 1.5%	5 / 1.3%	6 / 1.3%
Bilateral + Central	–	–	–	–	1 / 0.3%	1 / 0.2%
Lateral + Central	2 / 2.8%	3 / 3.6%	7 / 6.3%	7 / 5.2%	13 / 3.5%	16 / 3.5%
Lateral + Distal	4 / 5.6%	5 / 5.9%	7 / 6.3%	9 / 6.7%	29 / 7.7%	34 / 7.5%
Lateral + Proximal	1 / 1.4%	3 / 3.6%	3 / 2.7%	3 / 2.2%	12 / 3.2%	14 / 3.1%
Central + Distal	–	1 / 1.2%	–	–	3 / 0.8%	4 / 0.9%
Bilateral + Proximal	–	–	1 / 0.9%	1 / 0.7%	3 / 0.8%	3 / 0.7%
Proximal + Central	2 / 2.8%	2 / 2.4%	1 / 0.9%	1 / 0.7%	3 / 0.8%	5 / 1.1%
Total:	**168**	**200**	**218**	**274**	**810**	**984**

Table 9-5 Kabazi V, sub-unit III/3: flake cortex placement as numbers and percentages of each type.

particular relevance, the lateral + distal type, and lateral + central type make up ca. 7.5% and ca. 3.5% of the total amount, respectively. This cortex data are a good indication for the presence of regular parallel reduction in the core assemblage, e.g. many flakes with lateral cortex. At the same time, fewer flakes with distal cortex might be indicative of more complex processes applied during the preparation and re-preparation of cores.

Cortex surface area data (Table 9-6) are characterised by very stable indices for only unretouched flakes and the sample with added retouched flakes. Accordingly, the area of a flake covered by cortex was not an important factor when selecting flakes for tool processing, although the most numerically representative sample is related to flakes with a minor occurrence of cortex (1 – 25% coverage) which make up ca. 40%, but at the same time, the number of cortical flakes (> 75% coverage) is quite high – ca. 28 – 30%.

Shape & axis

The shape of individual flakes could be identified in 707 cases (Table 9-7). Here, trapezoidal flakes are the predominant type, comprising ca. 31 – 33% of the total. If we were to add to these number flakes of elongated trapezoidal shape, generally trapezoidal flakes would make up together ca. 41% of all

	III/3-1		III/3-1A		III/3-2		III/3-2A	
	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools
1 - 25%	33 / 37.1%	41 / 38.0%	31 / 35.6%	39 / 39.8%	25 / 37.3%	32 / 41.5%	14 / 34.1%	18 / 38.3%
26 - 50%	18 / 20.2%	23 / 21.3%	17 / 19.6%	19 / 19.4%	12 / 17.9%	14 / 18.2%	8 / 19.5%	10 / 21.3%
51 - 75%	12 / 13.5%	14 / 13.0%	8 / 9.2%	9 / 9.2%	10 / 14.9%	10 / 13.0%	5 / 12.3%	5 / 10.6%
> 75%	26 / 29.2%	30 / 27.7%	31 / 35.6%	31 / 31.6%	20 / 29.9%	21 / 27.3%	14 / 34.1%	14 / 29.8%
non-cortical	47 / -	62 / -	52 / -	65 / -	30 / -	37 / -	11 / -	16 / -
Total:	**136**	**170**	**139**	**163**	**97**	**114**	**52**	**63**

	III/3-3		III/3-3A		Total:	
	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools
1 - 25%	41 / 39.5%	50 / 40.0%	66 / 43.7%	82 / 46.0%	210 / 39.0%	262 / 41.4%
26 - 50%	23 / 22.1%	25 / 20.0%	29 / 19.2%	35 / 19.7%	107 / 19.8%	126 / 19.9%
51 - 75%	7 / 6.7%	9 / 7.2%	16 / 10.6%	17 / 9.6%	58 / 10.8%	64 / 10.1%
> 75%	33 / 31.7%	41 / 32.8%	40 / 26.5%	44 / 24.7%	164 / 30.4%	181 / 28.6%
non-cortical	64 / -	75 / -	67 / -	96 / -	271 / -	351 / -
Total:	**168**	**200**	**218**	**274**	**810**	**984**

Table 9-6 Kabazi V, sub-unit III/3: flake cortex surface area as numbers and percentages of each type.

	III/3-1		III/3-1A		III/3-2		III/3-2A	
	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools
Ovoid	14 / 14.7%	18 / 15.1%	14 / 14.3%	19 / 16.7%	6 / 8.6%	9 / 11.2%	7 / 21.2%	9 / 25.7%
Triangular	5 / 5.3%	5 / 4.2%	12 / 12.2%	12 / 10.5%	7 / 10.0%	8 / 10.0%	2 / 6.1%	2 / 5.7%
Rectangular	7 / 7.4%	10 / 8.4%	5 / 5.1%	5 / 4.4%	7 / 10.0%	9 / 11.2%	1 / 3.0%	1 / 2.9%
Trapezoidal	35 / 36.8%	41 / 34.5%	35 / 35.8%	41 / 35.9%	21 / 30.0%	22 / 27.5%	8 / 24.2%	8 / 22.9%
Trapezoidal elongated	7 / 7.4%	11 / 9.2%	7 / 7.1%	9 / 7.9%	9 / 12.8%	10 / 12.5%	2 / 6.1%	2 / 5.7%
Leaf shaped	–	–	1 / 1.0%	1 / 0.9%	–	–	–	–
Crescent	3 / 3.1%	4 / 3.4%	9 / 9.2%	10 / 8.8%	3 / 4.3%	3 / 3.8%	2 / 6.1%	2 / 5.7%
Irregular	24 / 25.3%	30 / 25.2%	15 / 15.3%	17 / 14.9%	17 / 24.3%	19 / 23.8%	11 / 33.3%	11 / 31.4%
Unidentifiable	41 / -	51 / -	41 / -	49 / -	27 / -	34 / -	19 / -	28 / -
Total:	**136**	**170**	**139**	**163**	**97**	**114**	**52**	**63**

	III/3-3		III/3-3A		Total:	
	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools
Ovoid	22 / 16.9%	28 / 18.4%	11 / 6.4%	17 / 8.2%	74 / 12.4%	100 / 14.1%
Triangular	7 / 5.4%	8 / 5.3%	12 / 7.0%	16 / 7.7%	45 / 7.5%	51 / 7.2%
Rectangular	2 / 1.5%	5 / 3.3%	14 / 8.2%	16 / 7.7%	36 / 6.0%	46 / 6.5%
Trapezoidal	35 / 26.9%	41 / 27.0%	60 / 35.1%	67 / 32.4%	194 / 32.5%	220 / 31.2%
Trapezoidal elongated	12 / 9.2%	12 / 7.9%	14 / 8.2%	20 / 9.7%	51 / 8.6%	64 / 9.1%
Leaf shaped	–	–	–	–	1 / 0.2%	1 / 0.1%
Crescent	14 / 10.8%	16 / 10.5%	6 / 3.5%	9 / 4.3%	37 / 6.2%	44 / 6.2%
Irregular	38 / 29.3%	42 / 27.6%	54 / 31.6%	62 / 30.0%	159 / 26.6%	181 / 25.6%
Unidentifiable	38 / -	48 / -	47 / -	67 / -	213 / -	277 / -
Total:	**168**	**200**	**218**	**274**	**810**	**984**

Table 9-7 Kabazi V, sub-unit III/3: flake shapes as numbers and percentages of each type.

pieces. Irregular flakes are the second most common type of flakes, constituting ca. 25 – 27% of the overall amount. These are followed by ovoid flakes (in average ca. 12 – 14% of the total) which, taking into account the already observed rarity of items with radial dorsal scar pattern, is quite notable.

Regarding the axis data, which was identified for a total of 730 artefacts (Table 9-8), it is worth noting a prevalence of off-axis pieces over on-axis pieces for the entire sample from Sub-Unit III/3. On one hand, this is in a good accordance with a dominance of different trapezoidal and irregular flakes. On the other hand, the noted prevalence of off-axis flakes is characteristic for five levels, and only flakes from the uppermost level III/3-1 contain more on-axis items. There is also a general tendency, however, towards the selection of on-axis flakes for tool production.

	III/3-1		III/3-1A		III/3-2		III/3-2A	
	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools
On-axis	59 / 61.5%	75 / 61.5%	35 / 34.0%	42 / 34.7%	28 / 40%	33 / 40.2%	11 / 32.3%	13 / 35.1%
Off-axis	37 / 38.5%	47 / 38.5%	68 / 66.0%	79 / 65.3%	42 / 60%	49 / 59.8%	23 / 67.7%	24 / 64.9%
Unidentifiable	40 / -	48 / -	36 / -	42 / -	27 / -	32 / -	18 / -	26 / -
Total:	**136**	**170**	**139**	**163**	**97**	**114**	**52**	**63**

	III/3-3		III/3-3A		Total:	
	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools
On-axis	52 / 38.5%	64 / 40.5%	63 / 37.3%	86 / 40.9%	248 / 40.9%	313 / 42.9%
Off-axis	83 / 61.5%	94 / 59.5%	106 / 62.7%	124 / 59.1%	359 / 59.1%	417 / 57.1%
Unidentifiable	33 / -	42 / -	49 / -	64 / -	203 / -	254 / -
Total:	**168**	**200**	**218**	**274**	**810**	**984**

Table 9-8 Kabazi V, sub-unit III/3: flake axis as numbers and percentages of each type.

	III/3-1		III/3-1A		III/3-2		III/3-2A	
	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools
Flat	24 / 20.7%	30 / 21.1%	27 / 24.8%	33 / 26.2%	23 / 29.9%	27 / 30.3%	6 / 17.1%	8 / 20.0%
Convex	10 / 8.6%	11 / 7.7%	9 / 8.2%	9 / 7.1%	4 / 5.2%	4 / 4.5%	3 / 8.6%	3 / 7.5%
Incurvate medial	54 / 46.6%	64 / 45.1%	45 / 41.3%	51 / 40.5%	32 / 41.5%	38 / 42.8%	14 / 40.0%	17 / 42.5%
Incurvate distal	16 / 13.8%	21 / 14.8%	17 / 15.6%	19 / 15.1%	5 / 6.5%	6 / 6.7%	4 / 11.4%	4 / 10.0%
Twisted	12 / 10.3%	16 / 11.3%	11 / 10.1%	14 / 11.1%	13 / 16.9%	14 / 15.7%	8 / 22.9%	8 / 20.0%
Unidentifiable	20 / -	28 / -	30 / -	37 / -	20 / -	25 / -	17 / -	23 / -
Total:	**136**	**170**	**139**	**163**	**97**	**114**	**52**	**63**

	III/3-3		III/3-3A		Total:	
	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools
Flat	24 / 16.9%	32 / 19.0%	62 / 34.6%	73 / 32.7%	166 / 25.2%	203 / 25.8%
Convex	12 / 8.5%	12 / 7.1%	7 / 3.9%	7 / 3.1%	45 / 6.8%	46 / 5.8%
Incurvate medial	57 / 40.1%	73 / 43.5%	67 / 37.5%	91 / 40.9%	269 / 40.9%	334 / 42.4%
Incurvate distal	20 / 14.1%	22 / 13.1%	20 / 11.2%	23 / 10.3%	82 / 12.5%	95 / 12.0%
Twisted	29 / 20.4%	29 / 17.3%	23 / 12.8%	29 / 13.0%	96 / 14.6%	110 / 14.0%
Unidentifiable	26 / -	32 / -	39 / -	51 / -	152 / -	196 / -
Total:	**168**	**200**	**218**	**274**	**810**	**984**

Table 9-9 Kabazi V, sub-unit III/3: flake general profiles as numbers and percentages of each type.

	III/3-1		III/3-1A		III/3-2		III/3-2A	
	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools
Feathering	58 / 60.4%	68 / 59.6%	65 / 60.2%	71 / 60.2%	35 / 53.1%	41 / 53.9%	24 / 60.0%	25 / 59.5%
Hinged	27 / 28.1%	31 / 27.2%	30 / 27.8%	32 / 27.1%	22 / 33.3%	23 / 30.3%	9 / 22.5%	10 / 23.8%
Blunt	11 / 11.5%	15 / 13.2%	10 / 9.2%	12 / 10.2%	7 / 10.6%	10 / 13.2%	7 / 17.5%	7 / 16.7%
Overpassed	–	–	3 / 2.8%	3 / 2.5%	2 / 3.0%	2 / 2.6%	–	–
Missing by retouch	–	10 / -	–	9 / -	–	3 / -	–	2 / -
Unidentifiable	40 / -	46 / -	31 / -	36 / -	31 / -	35 / -	12 / -	19 / -
Total:	**136**	**170**	**139**	**163**	**97**	**114**	**52**	**63**

	III/3-3		III/3-3A		Total:	
	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools
Feathering	73 / 55.3%	81 / 54.8%	97 / 53.3%	108 / 53.0%	352 / 56.4%	394 / 56.1%
Hinged	38 / 28.8%	44 / 29.7%	53 / 29.1%	58 / 28.4%	179 / 28.7%	198 / 28.2%
Blunt	17 / 12.9%	19 / 12.8%	31 / 17.0%	37 / 18.1%	83 / 13.3%	100 / 14.3%
Overpassed	4 / 3.0%	4 / 2.7%	1 / 0.6%	1 / 0.5%	10 / 1.6%	10 / 1.4%
Missing by retouch	–	10 / -	–	23 / -	–	57 / -
Unidentifiable	36 / -	42 / -	36 / -	47 / -	186 / -	225 / -
Total:	**168**	**200**	**218**	**274**	**810**	**984**

Table 9-10 Kabazi V, sub-unit III/3: flake profiles at distal end as numbers and percentages of each type.

	III/3-1		III/3-1A		III/3-2		III/3-2A	
	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools
Triangular	18 / 14.7%	22 / 14.5%	20 / 17.7%	21 / 15.9%	18 / 20.9%	19 / 19.0%	7 / 15.6%	9 / 17.6%
Trapezoidal	25 / 20.3%	32 / 21.1%	14 / 12.4%	19 / 14.4%	9 / 10.5%	12 / 12.0%	9 / 20.0%	11 / 21.6%
Multifaceted	20 / 16.3%	20 / 13.1%	17 / 15.0%	24 / 18.2%	10 / 11.6%	13 / 13.0%	5 / 11.1%	5 / 9.8%
Lateral steep	8 / 6.5%	9 / 5.9%	9 / 8.0%	9 / 6.8%	7 / 8.1%	8 / 8.0%	3 / 6.7%	3 / 5.9%
Convex	19 / 15.4%	22 / 14.5%	10 / 8.8%	10 / 7.6%	11 / 12.8%	12 / 12.0%	7 / 15.6%	7 / 13.7%
Flat	8 / 6.5%	10 / 6.6%	21 / 18.6%	21 / 15.9%	6 / 7.0%	6 / 6.0%	6 / 13.3%	6 / 11.8%
Irregular	25 / 20.3%	37 / 24.3%	22 / 19.5%	28 / 21.2%	25 / 29.1%	30 / 30.0%	8 / 17.7%	10 / 19.6%
Unidentifiable	13 / -	18 / -	26 / -	31 / -	11 / -	14 / -	7 / -	12 / -
Total:	**136**	**170**	**139**	**163**	**97**	**114**	**52**	**63**

	III/3-3		III/3-3A		Total:	
	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools
Triangular	20 / 12.6%	24 / 12.7%	29 / 14.3%	37 / 14.8%	112 / 15.4%	132 / 15.1%
Trapezoidal	27 / 17.0%	31 / 16.4%	32 / 15.8%	41 / 16.4%	116 / 15.9%	146 / 16.7%
Multifaceted	22 / 13.8%	25 / 13.2%	27 / 13.3%	35 / 14.0%	101 / 13.8%	122 / 13.9%
Lateral steep	12 / 7.5%	16 / 8.5%	18 / 8.9%	23 / 9.2%	57 / 7.8%	68 / 7.8%
Convex	27 / 17.0%	31 / 16.4%	30 / 14.8%	34 / 13.6%	104 / 14.3%	116 / 13.3%
Flat	14 / 8.8%	17 / 9.0%	10 / 4.9%	10 / 4.0%	65 / 8.9%	70 / 8.0%
Irregular	37 / 23.3%	45 / 23.8%	57 / 28.0%	70 / 28.0%	174 / 23.9%	220 / 25.2%
Unidentifiable	9 / -	11 / -	15 / -	24 / -	81 / -	110 / -
Total:	**168**	**200**	**218**	**274**	**810**	**984**

Table 9-11 Kabazi V, sub-unit III/3: flake profiles at midpoint as numbers and percentages of each type.

	III/3-1		III/3-1A		III/3-2		III/3-2A	
	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools
Cortex	15 / 18.5%	19 / 18.4%	12 / 13.3%	12 / 11.5%	7 / 11.3%	7 / 9.5%	–	–
Plain	29 / 35.9%	34 / 33.0%	42 / 46.7%	43 / 41.4%	30 / 48.5%	32 / 43.2%	10 / 50.0%	12 / 44.5%
Punctiform	1 / 1.2%	1 / 1.0%	–	–	–	–	1 / 5.0%	1 / 3.7%
Dihedral	3 / 3.7%	4 / 3.9%	13 / 14.4%	15 / 14.4%	8 / 12.9%	8 / 10.8%	3 / 15.0%	4 / 14.8%
Crude-multifaceted	19 / 23.5%	23 / 22.3%	15 / 16.7%	18 / 17.3%	11 / 17.7%	15 / 20.3%	6 / 30.0%	8 / 29.6%
Faceted straight	4 / 4.9%	5 / 4.9%	3 / 3.3%	3 / 2.9%	3 / 4.8%	6 / 8.1%	–	–
Faceted convex	10 / 12.3%	17 / 16.5%	5 / 5.6%	13 / 12.5%	3 / 4.8%	6 / 8.1%	–	2 / 7.4%
Missing by retouch	–	1 / -	–	–	–	1 / -	–	–
Crushed	20 / -	23 / -	17 / -	19 / -	18 / -	18 / -	11 / -	11 / -
Missing	35 / -	43 / -	32 / -	40 / -	17 / -	21 / -	21 / -	25 / -
Total:	**136**	**170**	**139**	**163**	**97**	**114**	**52**	**63**

	III/3-3		III/3-3A		Total:	
	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools
Cortex	19 / 17.0%	19 / 14.3%	17 / 13.2%	19 / 11.4%	70 / 14.2%	76 / 12.5%
Plain	50 / 44.7%	58 / 43.6%	57 / 44.1%	68 / 40.6%	218 / 44.1%	247 / 40.6%
Punctiform	1 / 0.9%	2 / 1.5%	–	–	3 / 0.6%	4 / 0.6%
Dihedral	8 / 7.1%	9 / 6.8%	9 / 7.0%	12 / 7.2%	44 / 8.9%	52 / 8.6%
Crude-multifaceted	23 / 20.5%	29 / 21.8%	19 / 14.7%	25 / 15.0%	93 / 18.8%	118 / 19.4%
Faceted straight	3 / 2.7%	4 / 3.0%	9 / 7.0%	13 / 7.8%	22 / 4.5%	31 / 5.1%
Faceted convex	8 / 7.1%	12 / 9.0%	18 / 14.0%	30 / 18.0%	44 / 8.9%	80 / 13.2%
Missing by retouch	–	1 / -	–	2 / -	–	5 / -
Crushed	25 / -	27 / -	42 / -	47 / -	133 / -	145 / -
Missing	31 / -	39 / -	47 / -	58 / -	183 / -	226 / -
Total:	**168**	**200**	**218**	**274**	**810**	**984**

Table 9-12 Kabazi V, sub-unit III/3: flake butt types as numbers and percentages of each type.

General profiles

In total, the general profile of 788 flakes could be identified (Table 9-9). The basic characteristic of this attribute is the poor sample of twisted flakes – on average only ca. 14 – 15%, though there is a marked deviation of between 10 and 23% in all levels. At the same time, the rarity of convex profiles (ca. 3 – 9% for different levels) indicates a rather good reduction control. That is, the convex profiles are of occasional character and mostly originated during final exploitation of the core.

Profiles at distal end

Among 759 flakes (Table 9-10) an average of ca. 56% display feathered profiles at their distal ends. Hinged distal ends make up an average of ca. 29%, or fluctuate between 22 and 33% in any given level. This is in stark contrast to the rare occurrence of convex general profiles as observed above. This might mean that only distal terminations of flakes mostly hinged, and this did not lead to a dramatic change of their general profiles. This hypothesis also finds some substantiation in the rare frequency of overpassed distal ends which occur on average only in ca. 1.5%, and in any given level from 0 to just 3% of cases. Blunt flakes occur in a moderate number, ca. 13 – 14% on average. Therefore, generally speaking, these data are indicative of well controlled primary flaking processes at the site.

Profiles at midpoint

For 874 definable flakes (Table 9-11), there is only one type of profile at midpoint of any significance. The “irregular type” makes up near to ca. 25% of the total. All remaining six types are, however, insignificant. The combined data for trapezoidal and multifaceted types (indicators of an intensive and regular core reduction) constitute no more than 30%.

Platform preparation, lipping & angle

There are 608 flakes with identifiable butts (Table 9-12). Butts can be grouped into 3 basic categories

	III/3-1		III/3-1A		III/3-2		III/3-2A	
	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools
Not lipped	25 / 30.9%	30 / 29.4%	14 / 15.4%	18 / 17.3%	18 / 30.5%	22 / 31.0%	1 / 5.0%	3 / 11.1%
Lipped	3 / 3.7%	4 / 3.9%	2 / 2.2%	4 / 3.8%	1 / 1.7%	1 / 1.4%	–	–
Semi-lipped	53 / 65.4%	68 / 66.7%	75 / 82.4%	82 / 78.9%	40 / 67.8%	48 / 67.6%	19 / 95.0%	24 / 88.9%
Unidentifiable	55 / -	68 / -	48 / -	59 / -	38 / -	43 / -	32 / -	36 / -
Total:	**136**	**170**	**139**	**163**	**97**	**114**	**52**	**63**

	III/3-3		III/3-3A		Total:	
	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools
Not lipped	14 / 12.6%	20 / 15.5%	48 / 37.2%	58 / 34.9%	120 / 24.4%	151 / 25.2%
Lipped	3 / 2.7%	3 / 2.3%	2 / 1.6%	3 / 1.8%	11 / 2.3%	15 / 2.5%
Semi-lipped	94 / 84.7%	106 / 82.2%	79 / 61.2%	105 / 63.3%	360 / 73.3%	433 / 72.3%
Unidentifiable	57 / -	71 / -	89 / -	108 / -	319 / -	385 / -
Total:	**168**	**200**	**218**	**274**	**810**	**984**

Table 9-13 Kabazi V, sub-unit III/3: flake butt lipping as numbers and percentages of each type.

	III/3-1		III/3-1A		III/3-2		III/3-2A	
	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools
Right	69 / 85.2%	85 / 83.3%	81 / 89.0%	91 / 87.5%	52 / 88.1%	63 / 88.7%	16 / 80.0%	23 / 85.2%
Acute	12 / 14.8%	17 / 16.7%	10 / 11.0%	13 / 12.5%	7 / 11.9%	8 / 11.3%	4 / 20.0%	4 / 14.8%
Unidentifiable	55 / -	68 / -	48 / -	59 / -	38 / -	43 / -	32 / -	36 / -
Total:	**136**	**170**	**139**	**163**	**97**	**114**	**52**	**63**

	III/3-3		III/3-3A		Total:	
	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools
Right	95 / 85.6%	113 / 87.6%	114 / 89.1%	146 / 88.6%	427 / 87.1%	521 / 87.1%
Acute	16 / 14.4%	16 / 12.4%	14 / 10.9%	19 / 11.4%	63 / 12.9%	77 / 12.9%
Unidentifiable	57 / -	71 / -	90 / -	109 / -	320 / -	386 / -
Total:	**168**	**200**	**218**	**274**	**810**	**984**

Table 9-14 Kabazi V, sub-unit III/3: flake butt angles as numbers and percentages of each type.

which are as follows: unprepared butts, roughly treated butts, and proper faceted butts. Unprepared butts (cortical, plain, punctiform) predominate, – comprising on average 58.9% of butts on unretouched flakes, and 53.7% of the total sample on tool blanks. With respect to these types of butt two important points should be noted. First, the index decreases with added tool blanks, and second, very few flakes have punctiform butts (3 – 4 pieces / 0.6 %!). Roughly treated butts (dihedral and crudely-multifaceted) occur in moderate and stable frequencies – 27.7% for unretouched flakes and 28.0% for all flakes including tool blanks. Finally, finely faceted butts (straight and convex faceted items) show an increasing tendency from just flakes, to unretouched flakes and tools on flakes taken together – 13.4% and 18.3%, respectively. Accordingly, faceting indices are as follows: IFl = 41.1% and IFst = 13.4% for unretouched flakes, and IFl = 46.3% and IFst = 18.3% for the total flake sample. Thus, we can reasonably state an obvious selection of flakes with finely, and especially convex, varieties of faceted butts for subsequent retouching processes.

Lipping data for 599 butts (Table 9-13) show, with some minor deviations, a pattern where almost three quarters of butts are semi-lipped, and about one quarter have no lip. On the other hand, lipped butts, that are practically direct evidence of bifacial tool production and rejuvenation, are known through a few pieces in each level, although they are absent in level III/3-2A. Respectively, there is very little evidence at all for a Micoquian admixture in WCM levels in sub-unit III/3 through this very important morphological attribute.

Indices for the angles observed on 598 butts (Table 9-14) show that, on average, ca. 13% of butts are characterised by acute angles and ca. 87% by right angles. The index for acute angles is not high and therefore not indicative of a great Micoquian influence.

Returning once more to lipped butts with acute angles in the flake assemblage, it is worth noting a case of such a butt from a core trimming flake from level III/3-3A. This again points to a mainly WCM technology in sub-unit III/3 artefacts.

Butt Sizes

For a sample of 587 butts (Tables 9-15 and 9-16) there is clear pattern for each level, with a clear prevalence of flakes with wider butts for tool production: on average, from 1.70 cm for unretouched flakes to 1.75 cm for the combined flake sample with tool blanks. This pattern is not so obvious at all among butt thickness indices – on average "a drift" from 0.57 cm to 0.58 cm for the respective flake samples. This might indicate that flakes from sub-unit III/3 are not characterised by thick butts.

Flake Dimensions

A total sample of 611 complete flakes was used for flake dimension determinations (Tables 9-17, 9-18 and 9-19). Again, a tendency is observed, this time in all levels of Sub-Unit III/3, for tool processing selection of those flakes with longer and wider metrical data. Average dimensions of unretouched flakes and of the combined flake sample including tool blanks is as follows: length fluctuates between 3.38 and 3.56 cm (Table 9-17); width ranges from 3.23 to 3.32 cm (Table 9-18); and flakes are on average 0.80 to 0.83 cm thick (Table 9-19).

	III/3-1		**III/3-1A**	
	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools
Definable	1.72 cm for 80 pieces	1.75 cm for 100 pieces	1.78 cm for 85 pieces	1.85 cm for 98 pieces
Unidentifiable	56	70	54	65
Total:	**136**	**170**	**139**	**163**

	III/3-2		**III/3-2A**	
	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools
Definable	1.66 cm for 56 pieces	1.69 cm for 67 pieces	1.75 cm for 20 pieces	1.83 cm for 27 pieces
Unidentifiable	41	47	32	36
Total:	**97**	**114**	**52**	**63**

	III/3-3		**III/3-3A**	
	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools
Definable	1.72 cm for 109 pieces	1.76 cm for 127 pieces	1.67 cm for 130 pieces	1.73 cm for 168 pieces
Unidentifiable	59	73	88	106
Total:	**168**	**200**	**218**	**274**

	Total:	
	Flakes	Flakes & Flake Tools
Definable	1.70 cm for 480 pieces	1.75 cm for 587 pieces
Unidentifiable	328	397
Total:	**810**	**984**

Table 9-15 Kabazi V, sub-unit III/3: flake butt width as numbers and average indices.

	III/3-1		III/3-1A	
	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools
Definable	0.62 cm for 80 pieces	0.61 cm for 100 pieces	0.59 cm for 85 pieces	0.60 cm for 98 pieces
Unidentifiable	56	70	54	65
Total:	**136**	**170**	**139**	**163**

	III/3-2		III/3-2A	
	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools
Definable	0.57 cm for 56 pieces	0.58 cm for 67 pieces	0.46 cm for 20 pieces	0.55 cm for 27 pieces
Unidentifiable	41	47	32	36
Total:	**97**	**114**	**52**	**63**

	III/3-3		III/3-3A	
	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools
Definable	0.60 cm for 109 pieces	0.61 cm for 127 pieces	0.53 cm for 130 pieces	0.55 cm for 168 pieces
Unidentifiable	59	73	88	106
Total:	**168**	**200**	**218**	**274**

	Total:	
	Flakes	Flakes & Flake Tools
Definable	0.57 cm for 480 pieces	0.58 cm for 587 pieces
Unidentifiable	328	397
Total:	**810**	**984**

Table 9-16 Kabazi V, sub-unit III/3: flake butt thickness as numbers and average indices.

	III/3-1		III/3-1A	
	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools
Definable	3.21 cm for 73 pieces	3.38 cm for 95 pieces	3.25 cm for 87 pieces	3.37 cm for 101 pieces
Transversal Flakes	40 / 54.8%	45 / 47.4%	48 / 55.2%	55 / 54.5%

	III/3-2		III/3-2A	
	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools
Definable	3.55 cm for 57 pieces	3.65 cm for 66 pieces	3.12 cm for 27 pieces	3.30 cm for 29 pieces
Transversal Flakes	19 / 33.3%	21 / 31.8%	13 / 48.1%	13 / 44.8%

	III/3-3		III/3-3A	
	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools
Definable	3.31 cm for 117 pieces	3.50 cm for 136 pieces	3.58 cm for 148 pieces	3.80 cm for 184 pieces
Transversal Flakes	48 / 41.0%	54 / 39.7%	57 / 38.5%	63 / 34.2%

	Total:	
	Flakes	Flakes & Flake Tools
Definable	3.38 cm for 509 pieces	3.56 cm for 611 pieces
Transversal Flakes	225 / 44.2%	251 / 41.1%

Table 9-17 Kabazi V, sub-unit III/3: flake length as numbers and average indices for complete pieces.

At the same time, we should also note that for the production of tools more elongated flakes were usually selected. The pieces with shortened, transversal proportions for unretouched flakes compose 44.2%, while for the combined sample of all flakes, these pieces is slightly lesser – 41.1%. There is also a pronounced pattern in the occurrence of shortened, transversal pieces in different levels of Sub-Unit III/3. These pieces prevail only in the uppermost two levels (III/3-1 and III/3-1A), while the remaining four levels are clearly dominated by rather elongated flakes.

	III/3-1		III/3-1A	
	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools
Definable	3.28 cm for 73 pieces	3.34 cm for 95 pieces	3.36 cm for 87 pieces	3.44 cm for 101 pieces
Transversal Flakes	40 / 54.8%	45 / 47.4%	48 / 55.2%	55 / 54.5%

	III/3-2		III/3-2A	
	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools
Definable	3.15 cm for 57 pieces	3.19 cm for 66 pieces	3.20 cm for 27 pieces	3.25 cm for 29 pieces
Transversal Flakes	19 / 33.3%	21 / 31.8%	13 / 48.1%	13 / 44.8%

	III/3-3		III/3-3A	
	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools
Definable	3.18 cm for 117 pieces	3.36 cm for 136 pieces	3.19 cm for 148 pieces	3.25 cm for 184 pieces
Transversal Flakes	48 / 41.0%	54 / 39.7%	57 / 38.5%	63 / 34.2%

	Total	
	Flakes	Flakes & Flake Tools
Definable	3.23 cm for 509 pieces	3.32 cm for 611 pieces
Transversal Flakes	225 / 44.2%	251 / 41.1%

Table 9-18 Kabazi V, sub-unit III/3: flake width as numbers and average indices for complete pieces.

	III/3-1		III/3-1A	
	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools
Definable	0.84 cm for 73 pieces	0.87 cm for 95 pieces	0.87 cm for 87 pieces	0.89 cm for 101 pieces

	III/3-2		III/3-2A	
	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools
Definable	0.81 cm for 57 pieces	0.83 cm for 66 pieces	0.72 cm for 27 pieces	0.77 cm for 29 pieces

	III/3-3		III/3-3A	
	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools
Definable	0.84 cm for 117 pieces	0.87 cm for 136 pieces	0.72 cm for 148 pieces	0.76 cm for 184 pieces

	Total:	
	Flakes	Flakes & Flake Tools
Definable	0.80 cm for 509 pieces	0.83 cm for 611 pieces

Table 9-19 Kabazi V, sub-unit III/3: flake thickness as numbers and average indices for complete pieces.

Flakes: some additional notes

In the following, so as to provide a better overview of the composition of the flake assemblages, some of the most indicative morphological types of flake to have been identified in each level of Sub-Unit III/3 are presented. These types can be grouped into three different categories: bifacial treatment pieces, Levallois pieces, and core maintenance products. The respective data, which follows level for level, are given in stratigraphical order and from top to bottom.

Level III/3-1 (16 pieces):
bifacial shaping / thinning flakes (N=2);
Levallois flakes with radial scar pattern (N=1);
Levallois flakes with 3-directional scar pattern (N=3);
Levallois atypical points with converging scar pattern (N=1);
lateral *débordante* (type 2a) (N=1);
lateral crested flakes (type 1) (N=3 + 1);
core trimming elements (N=2);
core tablets (N=2).

Level III/3-1A (17 pieces):
Levallois flakes with radial scar pattern (N=1);
Levallois flakes with 3-directional scar pattern (N=0 + 2) (Fig. 9-4, *1*);
Levallois atypical points with converging scar pattern (N=3 + 1);
lateral *débordante* (type 2) (N=2);
lateral *débordante* (type 2a) (N=1);
lateral crested flakes (type 1) (N=4 + 1);
central crested flakes with unilateral crested ridge (sub-type 2A) (N=1);
secondary crested flakes (N=1).

Level III/3-2 (12 pieces):
Levallois flakes with 3-directional scar pattern (N=1 + 1) (Fig. 9-4, *2*);
Levallois atypical points with converging scar pattern (N=1);
pseudo-Levallois points (N=1);
simple natural lateral *débordante* (type 1) (N=1);
lateral *débordante* (type 2) (N=1);
lateral crested flakes (type 1) (N=2);
central crested flakes with unilateral crested ridge (sub-type 2A) (N=1);
secondary crested flakes (N=1);
core trimming elements (N=2).

Level III/3-2A (3 pieces):
simple natural lateral *débordante* (type 1) (N=1);
lateral crested flakes (type 1) (N=1);
core trimming elements (N=1).

Level III/3-3 (24 pieces):
bifacial shaping / thinning flakes (N=2 + 1);
Levallois flakes with radial scar pattern (N=0 + 1) (Fig. 9-4, *3*);
Levallois flakes with unidirectional-crossed scar pattern (N=1);
Levallois atypical points with converging scar pattern (N=2);
simple natural lateral *débordante* (type 1) (N=7 + 1);
lateral *débordante* (type 2) (N=1);
lateral crested flakes (type 1) (N=4);
secondary crested flakes (N=1);
core trimming elements (N=2);
core tablets (N=1).

Level III/3-3A (31 pieces):
bifacial shaping / thinning flakes (N=2);
Levallois atypical points with converging scar pattern (N=0 + 2);
pseudo-Levallois points (N=1);
simple natural lateral *débordante* (type 1) (N=10 + 2 + 1);
lateral *débordante* (type 2) (N=0 + 1) (Fig. 9-4, *5*);
lateral crested flakes (type 1) (N=6 + 1);
core trimming elements (N=3); core tablets (N=2).

This aforementioned flake sample, which comprises a total 103 pieces, can be broken down as follows:
bifacial treatment pieces (N=7 or 6.9%);
Levallois pieces (N=23 or 21.6%);
core maintenance products (N=73 items or 71.5%).

Bifacial treatment pieces consist of bifacial shaping / thinning flakes (N=7).

Levallois pieces are subdivided into:
Levallois flakes with radial scar pattern (N=4),
Levallois flakes with 3-directional scar pattern (N=6),
Levallois flakes with unidirectional-crossed scar pattern (N=1),
Levallois atypical points with converging scar pattern (N=10),
and pseudo-Levallois points (N=2).

The core maintenance products are represented by:
simple natural lateral *débordante* (type 1) (N=23),
lateral *débordante* (type 2) (N=5),
lateral *débordante* (type 2a) (N=2),
lateral crested flakes (type 1) (N=23),
central crested flakes with unilateral crested ridge (sub-type 2A) (N=2),
secondary crested flakes (N=3),
core trimming elements (N=10),
and core tablets (N=5).

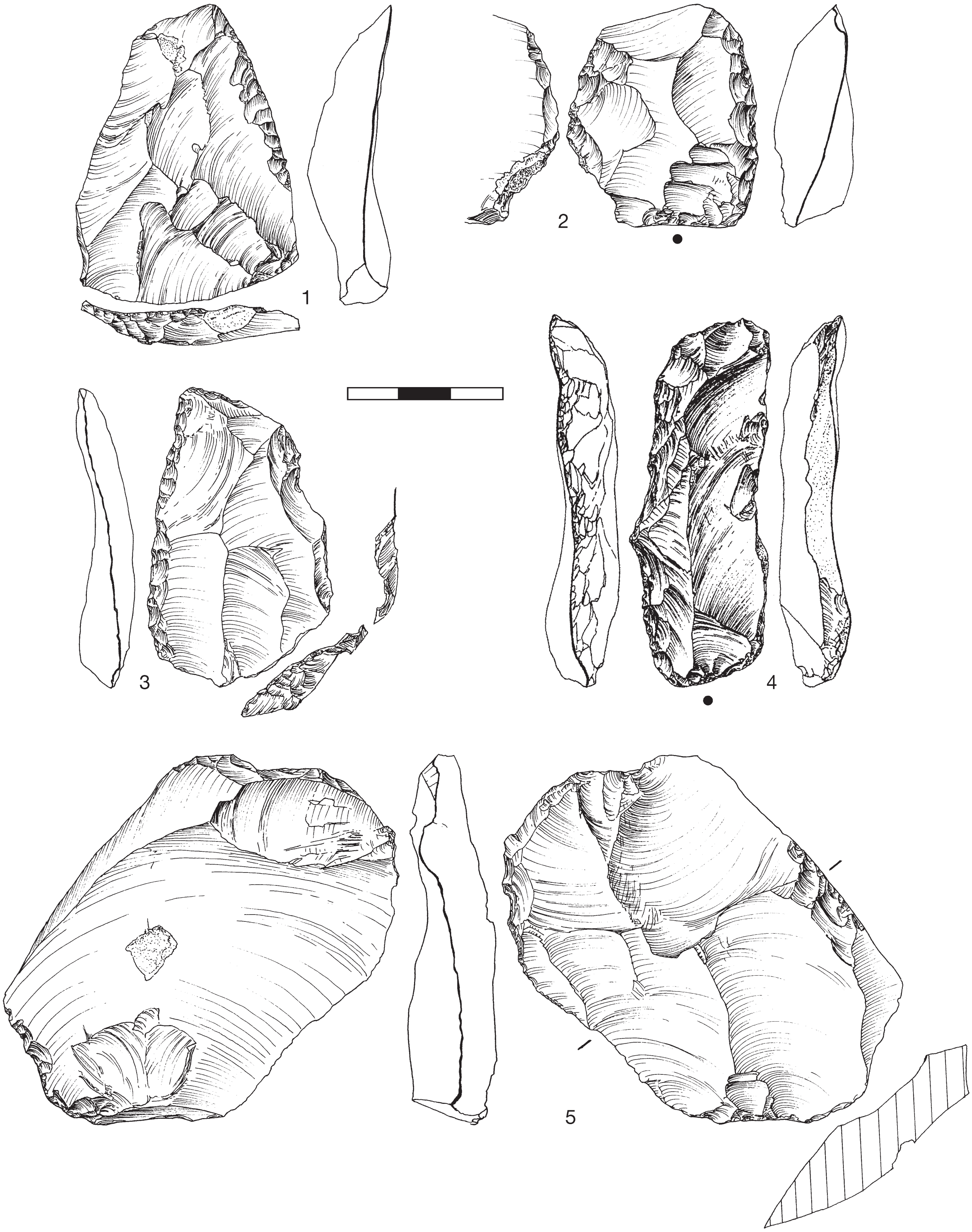

Fig. 9-4 Kabazi V, sub-unit III/3: levels III/3-1A (1); III/3-2 (2); III/3-3 (3); III/3-3A (4-5). Tools: simple convex scraper on Levallois flake with 3-directional scar pattern (1); simple convex scraper with truncated-faceted lateral edge on Levallois flake with 3-directional scar pattern (2); simple convex scraper on Levallois flake with radial scar pattern (3); semi-rectangular scraper, naturally backed on blade simple natural lateral debordante, type 1 (4); retouched flake with irregular retouch on lateral *débordante* flake, type 2 (5).

The following conclusions can be drawn with regard to the occurrence of specific flake type pieces throughout the archaeological sequence of sub-unit III/3.

First, a very minor presence of bifacial shaping / thinning flakes is only noted for the uppermost level III/3-1 and for the two lowermost levels III/3-3 and III/3-3A. This fact can be explained in WCM Sub-Unit III/3 due to admixture from over- und underlying Micoquian occupations (Sub-Units III/2 and III/4). It should also be noted that of all seven bifacial shaping / thinning flakes only one piece was subsequently retouched.

Second, Levallois pieces are characterised by their internal composition and morphological features. Levallois flakes of Levallois centripetal method are the only true Levallois products among the flakes, though numerically they occur only rarely (just 11 pieces from a total of 984 flakes, or 1.1%, from Sub-Unit III/3). Along with this, however, Levallois flakes are only absent in levels III/3-2A and III/3-3A. This absence in level III/3-2A is surely understandable due to the flake sample only comprising 52 items – the smallest flake sample in the whole sequence of sub-unit III/3. On the other hand, their absence in level III/3-3A, this with the most numerous flake sample (218 items) within Sub-Unit III/3, gives cause for concern. We should also note that out of eleven Levallois flakes, five were subsequently retouched. Ten Levallois atypical points were also defined among sub-unit III/3 flakes. Only the sparse flake sample from level III/3-2A is noted for its absence of these Levallois atypical points. This could be an indication of their quite regular occurrence throughout Sub-Unit III/3 levels. Also, three Levallois atypical points are retouched. However, it must be underlined that Levallois points are actually defined here more traditionally than it really reflects any actual purposeful production of Levallois points. The matter is that not one of them is a true Levallois point, they being asymmetrical and irregular, and lacking any sign of triangular configuration. Therefore, it can be stated that Levallois points are only of occasional character, and a coincidental result from a convergent flake resembling a Levallois point. Principally, from a technological perspective, similar conclusions can also be drawn with regard to two pseudo-Levallois points. These pieces, with a rough *déjéte* shape, actually originate from the edge of the flaking surface of a core, and resemble something between a regular flake and a *débordante* piece. Accordingly, at Kabazi V, sub-unit II/3, the pseudo-Levallois points are merely by-products of general parallel core reduction. As such, they should not be related to any radial and/or discoidal core reduction, which, in any case, has not been identified in the sub-unit III/3 archaeological sequence.

Third, the clear numerical dominance of core maintenance products among the specifically defined flakes is also particularly worthy of note. The presence of so many such pieces is suggestive of the existence of a regular and continuous parallel reduction of cores that is a distinct feature of WCM industries. The occurrence of various *débordantes* and lateral crested pieces is an indication of Middle Palaeolithic WCM flake technologies at Kabazi V, Sub-Unit III/3. This conclusion also finds substantiation in the occurrence of only very few Upper Palaeolithic technological features, i.e. rare central crested flakes and core tablets, although the fact that they do occur is also of some significance. However, a closer look at these core maintenance products tells us that they are not representative of true Upper Palaeolithic technological elements. On one hand, the central crested flakes occur only very seldomly, and therefore there are too few pieces in comparison to the much more numerous lateral *débordante* and crested flakes. Further, they display an unilateral crested treatment only. This point is also inferred by the complete absence of re-crested flakes. On the other hand, the five defined core tablets are of so-called initial character, i.e. they were struck from the striking platforms of cores from which only a few flakes had been removed, at least to judge by the removal negatives. Respectively, the core tablet technique was only required for the first steps of parallel reduction, and was not applied regularly during multiple and continuous core reduction, as is well documented among Upper Palaeolithic industries. Finally, let us also mention retouched core maintenance products. There are just eight items with retouch, and all these are *débordantes* and lateral crested flakes, while all the remaining pieces are unretouched CMP types.

Thus, to judge from these specific flakes, it should be acknowledged that there is only a very minor mixture of Micoquian pieces within the flake sample and, at the same time, flakes are fully within the technological frame common to WCM industries.

Blades (Tables 9-20 through 9-36)

The blade sample from all six levels of Sub-Unit III/3 is composed of 296 artefacts which comprise 254 unretouched and 42 retouched pieces. Accordingly, the selection rate for tool selection from blade sample is 7.0, i.e below that noted for flakes (5.7). The total debitage sample in Sub-Unit III/3, including tool blanks, amounts to 1,280 items (984 flakes and 296 blades). Consequently, the blade index (Ilam) is 23.1% for sub-unit III/3. Also, an addition of all debitage pieces used for tool manufacture (174 flakes and 42 blades) leads to a separate blade index for tools of 19.4%.

Condition (Table 9-20)

Blades are characterised by a predominance of complete specimens, on average 57.1% of the total. With the exception of only a very few longitudinally fragmented blades (1.0 – 1.2% of blades are broken latitudinally), all remaining blades are fragmented along their length.

Dorsal scar patterns (Table 9-21)

More than half of all 284 identified blades display unidirectional scar patterns (52.1%). Unidirectional-crossed and converging types are the second and third most frequently occurring scar patterns, with indices of only around 12.0% and 10.0%, respectively. These are followed by cortical and bi-directional types (7.4% and 6.7%, respectively). Generally speaking, other types are represented by single pieces only, with exception of the 3-directional type which occurs in ca. 5% of the 284 pieces. Thus, general parallel core reduction is well attested by dorsal scar pattern types on blades, which taken altogether (unidirectional, unidirectional-crossed, bi-directional and the technologically adjacent convergent type) account for on average ca. 81% of dorsal scar pattern types. At the same time, less than 10% of all blades are cortical/primary blades (7.4%), which is 2.6 times lower than noted previously for cortical flakes (19.6%). Accordingly, we can assume a more intended blade flaking in core reduction than can be supposed for flakes.

Surface cortex (Table 9-22)

There is a dramatic difference between non-cortical and cortical blades within the sub-unit III/3 blade assemblage; this amounts to 5.9 : 1. Also, altogether pieces with no cortex at all and cortical ones account for 49.7% of all blades, which is lower than the respective index among flakes (53.6%). Accordingly, the slightly larger number of more than 50% of partially cortical blades also attests to generally more combined blade and flake reduction during the primary flaking processes. Of the eleven types to have been differentiated on the basis of the extent and position of cortex, the most frequently occurring, on 151 partially cortical blades, is the lateral type with 49.8%, while the distal type, which was almost equally represented among flakes, was observed on just 23.8% of these artefacts. A further important type is the lateral + distal type which is noted on 9.9% of blades. All remaining types are represented with less than 5% each, which accounts for less than ten actual pieces assigned to each of these types. This data is therefore indicative of the role of blades in regular and re-preparation core reduction processes at the site.

	III/3-1		III/3-1A		III/3-2		III/3-2A	
	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools
Complete	18 / 51.4%	22 / 52.4%	21 / 63.6%	21 / 63.6%	17 / 63.0%	19 / 63.4%	7 / 77.8%	9 / 81.8%
Broken length	17 / 48.6%	20 / 47.6%	12 / 36.4%	12 / 36.4%	9 / 33.3%	10 / 33.3%	2 / 22.2%	2 / 18.2%
Broken width	–	–	–	–	1 / 3.7%	1 / 3.3%	–	–
Total:	**35**	**42**	**33**	**33**	**27**	**30**	**9**	**11**

	III/3-3		III/3-3A		Total:	
	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools
Complete	32 / 58.2%	35 / 56.5%	49 / 51.6%	63 / 53.4%	144 / 56.7%	169 / 57.1%
Broken length	23 / 41.8%	27 / 43.5%	44 / 46.3%	53 / 44.9%	107 / 42.1%	124 / 41.9%
Broken width	–	–	2 / 2.1%	2 / 1.7%	3 / 1.2%	3 / 1.0%
Total:	**55**	**62**	**95**	**118**	**254**	**296**

Table 9-20 Kabazi V, sub-unit III/3: blade conditions as numbers and percentages of each type.

Cortex surface area data (Table 9-23) are characterised by a clear trend away from blades, with more blades covered by in excess of 25% cortex preferred for tool processing. At the same time, it should also be noted that roughly the same ratio of blades were covered by minor amounts of cortex (1-25% cortex) (ca. 43 – 45%) as was previously the case among the respective flakes (39 – 42%), while cortical items among blades occur less frequently (12 – 13%) than among flakes (28 – 30%). Thus, once again blades appear to have been more carefully "planned" than was the case for flakes.

Shape & axis (Table 9-24)

Among the various shapes observed among 219 blades, no one form proves predominant. Generally speaking, however, the irregular type, with its ca. 29%, is more indicative of technological problems encountered during core reduction than it is of their purposeful production. Leaving aside the irregular pieces, four other shape types (triangular – ca. 24%, rectangular – ca. 18%, trapezoidal – ca. 14%, and crescent – ca. 11%) should be regarded as the most typical shapes among blades.

The axis data of a total of 231 blades were considered (Table 9-25). In the sample from sub-unit III/3, on-axis pieces (ca. 52%) prevail slightly over off-axis pieces (ca. 48%). At the same time, this attribute is marked by some variability within the different levels. The two uppermost levels III/3-1 to III/3-1A and the lowermost level III/3-3A are all characterised by on-axis blades, while in three so-called inner levels (III/3-2, III/3-2A, III/3-3) off-axis blades are dominant. Here again, blade primary reduction was not very stable. It is also worth noting that not many more on-axis pieces were selected for tool production than is encountered among off-axis pieces. This latter observation might indicate the greater importance of longer pieces, whereby main interest would probably have been directed at the length of the lateral edges of these pieces rather than their axis.

	III/3-1		III/3-1A		III/3-2		III/3-2A	
	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools
Cortical	2 / 6.1%	2 / 5.1%	3 / 9.4%	3 / 9.4%	1 / 3.8%	2 / 7.1%	–	–
Radial	1 / 3.0%	1 / 2.6%	–	–	–	–	–	–
Converging	3 / 9.1%	3 / 7.7%	2 / 6.2%	2 / 6.2%	2 / 7.7%	2 / 7.1%	–	–
Lateral	2 / 6.1%	2 / 5.1%	1 / 3.1%	1 / 3.1%	1 / 3.8%	1 / 3.6%	–	–
Unidirectional	13 / 39.3%	15 / 38.6%	18 / 56.4%	18 / 56.4%	13 / 50.0%	14 / 50.0%	4 / 50%	4 / 40%
Unidirectional-crossed	5 / 15.1%	6 / 15.3%	4 / 12.5%	4 / 12.5%	5 / 19.3%	5 / 17.9%	2 / 25%	4 / 40%
3-directional	1 / 3.0%	1 / 2.6%	3 / 9.4%	3 / 9.4%	1 / 3.8%	1 / 3.6%	2 / 25%	2 / 20%
Bidirectional	4 / 12.1%	6 / 15.3%	1 / 3.1%	1 / 3.1%	2 / 7.7%	2 / 7.1%	–	–
Crested	2 / 6.1%	3 / 7.7%	–	–	1 / 3.8%	1 / 3.6%	–	–
Unidentifiable	2 / -	3 / -	1 / -	1 / -	1 / -	2 / -	1 / -	1 / -
Total:	**35**	**42**	**33**	**33**	**27**	**30**	**9**	**11**

	III/3-3		III/3-3A		Total:	
	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools
Cortical	9 / 16.7%	9 / 15.0%	5 / 5.4%	5 / 4.3%	20 / 8.1%	21 / 7.4%
Radial	–	–	–	–	1 / 0.4%	1 / 0.4%
Converging	6 / 11.1%	6 / 10.0%	13 / 14.0%	16 / 13.9%	26 / 10.6%	29 / 10.2%
Lateral	–	–	–	1 / 0.9%	4 / 1.6%	5 / 1.8%
Unidirectional	28 / 52.0%	32 / 53.4%	51 / 54.8%	65 / 56.6%	127 / 51.6%	148 / 52.1%
Unidirectional-crossed	5 / 9.2%	5 / 8.3%	10 / 10.8%	11 / 9.6%	31 / 12.6%	35 / 12.3%
3-directional	1 / 1.8%	2 / 3.3%	3 / 3.2%	5 / 4.3%	11 / 4.5%	14 / 4.9%
Bidirectional	4 / 7.4%	4 / 6.7%	5 / 5.4%	6 / 5.2%	16 / 6.5%	19 / 6.7%
Crested	1 / 1.8%	2 / 3.3%	6 / 6.4%	6 / 5.2%	10 / 4.1%	12 / 4.2%
Unidentifiable	1 / -	2 / -	2 / -	3 / -	8 / -	12 / -
Total:	**55**	**62**	**95**	**118**	**254**	**296**

Table 9-21 Kabazi V, sub-unit III/3: blade dorsal scar patterns as numbers and percentages of each type.

	III/3-1		III/3-1A		III/3-2		III/3-2A	
	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools
Non-cortical	11 / -	14 / -	14 / -	14 / -	12 / -	12 / -	4 / -	5 / -
Cortical	2 / -	2 / -	3 / -	3 / -	1 / -	2 / -	–	–
Central	2 / 9.1%	3 / 11.5%	–	–	–	1 / 6.2%	–	–
Proximal	2 / 9.1%	2 / 7.7%	–	–	1 / 7.1%	1 / 6.2%	–	–
Distal	3 / 13.6%	4 / 15.5%	4 / 25.0%	4 / 25.0%	6 / 42.9%	6 / 37.5%	2 / 40%	2 / 33.3%
Lateral	10 / 45.4%	12 / 46.2%	6 / 37.5%	6 / 37.5%	7 / 50.0%	7 / 43.9%	2 / 40%	3 / 50.0%
Bilateral	–	–	–	–	–	1 / 6.2%	–	–
Bilateral + Distal	–	–	1 / 6.2%	1 / 6.2%	–	–	–	–
Lateral + Central	1 / 4.6%	1 / 3.8%	–	–	–	–	–	–
Lateral + Distal	3 / 13.6%	3 / 11.5%	4 / 25.0%	4 / 25.0%	–	–	–	–
Lateral + Proximal	–	–	–	–	–	–	1 / 20%	1 / 16.7%
Central + Distal	1 / 4.6%	1 / 3.8%	1 / 6.2%	1 / 6.2%	–	–	–	–
Proximal + Central	–	–	–	–	–	–	–	–
Total:	**35**	**42**	**33**	**33**	**27**	**30**	**9**	**11**

	III/3-3		III/3-3A		Total:	
	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools
Non-cortical	20 / -	25 / -	43 / -	54 / -	104 / -	124 / -
Cortical	9 / -	9 / -	5 / -	5 / -	20 / -	21 / -
Central	–	1 / 3.6%	–	2 / 3.4%	2 / 1.5%	7 / 4.6%
Proximal	–	–	–	–	3 / 2.3%	3 / 2.0%
Distal	6 / 23.1%	6 / 21.4%	9 / 19.2%	14 / 23.7%	30 / 23.2%	36 / 23.8%
Lateral	14 / 53.9%	15 / 53.6%	27 / 57.5%	32 / 54.2%	66 / 50.9%	75 / 49.8%
Bilateral	1 / 3.8%	1 / 3.6%	1 / 2.1%	1 / 1.7%	2 / 1.5%	3 / 2.0%
Bilateral + Distal	–	–	1 / 2.1%	1 / 1.7%	2 / 1.5%	2 / 1.3%
Lateral + Central	–	–	–	–	1 / 0.8%	1 / 0.7%
Lateral + Distal	2 / 7.7%	2 / 7.1%	6 / 12.8%	6 / 10.2%	15 / 11.5%	15 / 9.9%
Lateral + Proximal	–	–	1 / 2.1%	1 / 1.7%	2 / 1.5%	2 / 1.3%
Central + Distal	2 / 7.7%	2 / 7.1%	1 / 2.1%	1 / 1.7%	5 / 3.8%	5 / 3.3%
Proximal + Central	1 / 3.8%	1 / 3.6%	1 / 2.1%	1 / 1.7%	2 / 1.5%	2 / 1.3%
Total:	**55**	**62**	**95**	**118**	**254**	**296**

Table 9-22 Kabazi V, sub-unit III/3: blade cortex placement as numbers and percentages of each type.

General profiles (Table 9-26)

The general profiles of 262 blades could be identified. Peculiar were observations made regarding twisted blades. Contrary to the poor representation of twisted profiles among flakes (in average ca. 14 – 15%), on average, twisted blades compose ca. 32 – 33% of the blade material. Moreover, there is a growing trend throughout the archaeological sequence of sub-unit III/3 for twisted blades – from ca. 24 – 27% in the lowermost level III/3-3A, and rising to ca. 44% in the uppermost level III/3-1. At the same time, we must also note that, with exception of level III/3-2, in all other levels twisted blades are not commonly selected for tool production. Regarding other general profile types, incurvate medial blades are also frequently represented (ca. 42 – 44%), and a significant role is also played by flat blades (almost 20%). The high ratio of incurvate medial blades is additionally confirmed by their frequent selection for tool production at the site. Notable are also the convex and incurvate distal types for blades, which might suggest a good control of flaking surfaces during core reduction processes.

	III/3-1		III/3-1A		III/3-2		III/3-2A	
	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools
1 - 25%	12 / 50.0%	14 / 50.0%	6 / 31.6%	6 / 31.6%	8 / 53.3%	9 / 50.0%	3 / 60%	4 / 66.7%
26 - 50%	7 / 29.2%	9 / 32.2%	7 / 36.8%	7 / 36.8%	4 / 26.7%	5 / 27.8%	2 / 40%	2 / 33.3%
51 - 75%	3 / 12.5%	3 / 10.7%	3 / 15.8%	3 / 15.8%	2 / 13.3%	2 / 11.1%	–	–
> 75%	2 / 8.3%	2 / 7.1%	3 / 15.8%	3 / 15.8%	1 / 6.7%	2 / 11.1%	–	–
Non-cortical	11 / -	14 / -	14 / -	14 / -	12 / -	12 / -	4 / -	5 / -
Total:	**35**	**42**	**33**	**33**	**27**	**30**	**9**	**11**

	III/3-3		III/3-3A		Total:	
	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools
1 - 25%	16 / 45.7%	17 / 46.0%	19 / 36.5%	27 / 42.2%	64 / 42.7%	77 / 44.8%
26 - 50%	5 / 14.3%	5 / 13.5%	21 / 40.4%	23 / 35.9%	46 / 30.7%	51 / 29.6%
51 - 75%	5 / 14.3%	6 / 16.2%	7 / 13.5%	9 / 14.1%	20 / 13.3%	23 / 13.4%
> 75%	9 / 25.7%	9 / 24.3%	5 / 9.6%	5 / 7.8%	20 / 13.3%	21 / 12.2%
Non-cortical	20 / -	25 / -	43 / -	54 / -	104 / -	124 / -
Total:	**55**	**62**	**95**	**118**	**254**	**296**

Table 9-23 Kabazi V, sub-unit III/3: blade cortex surface area as numbers and percentages of each type.

	III/3-1		III/3-1A		III/3-2		III/3-2A	
	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools
Ovoid	–	–	1 / 3.8%	1 / 3.8%	1 / 5%	1 / 4.5%	–	1 / 11.1%
Triangular	8 / 26.6%	8 / 22.9%	6 / 23.2%	6 / 23.2%	2 / 10%	3 / 13.7%	1 / 14.3%	1 / 11.1%
Rectangular	4 / 13.3%	4 / 11.4%	3 / 11.5%	3 / 11.5%	4 / 20%	5 / 22.7%	1 / 14.3%	2 / 22.2%
Trapezoidal	2 / 6.7%	2 / 5.7%	–	–	–	–	–	–
Trapezoidal elongated	2 / 6.7%	2 / 6.7%	4 / 15.4%	4 / 15.4%	4 / 20%	4 / 18.2%	3 / 42.8%	3 / 33.3%
Leaf Shaped	2 / 6.7%	2 / 5.7%	–	–	–	–	–	–
Crescent	–	2 / 5.7%	7 / 26.9%	7 / 26.9%	2 / 10%	2 / 9.1%	–	–
Irregular	12 / 40.0%	15 / 42.9%	5 / 19.2%	5 / 19.2%	7 / 35%	7 / 31.8%	2 / 28.6%	2 / 22.2%
Unidentifiable	5 / -	7 / -	7 / -	7 / -	7 / -	8 / -	2 / -	2 / -
Total:	**35**	**42**	**33**	**33**	**27**	**30**	**9**	**11**

	III/3-3		III/3-3A		Total:	
	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools
Ovoid	1 / 2.6%	1 / 2.3%	3 / 4.4%	3/ 3.6%	6 / 3.2%	7 / 3.2%
Triangular	11 / 28.2%	12 / 27.9%	17 / 25.0%	22 / 26.2%	45 / 23.7%	52 / 23.7%
Rectangular	5 / 12.8%	6 / 13.9%	15 / 22.1%	19 / 22.6%	32 / 16.8%	39 / 17.8%
Trapezoidal	–	–	–	–	2 / 1.1%	2 / 0.9%
Trapezoidal elongated	4 / 10.2%	4 / 9.3%	10 / 14.7%	12 / 14.3%	27 / 14.2%	29 / 13.2%
Leaf Shaped	–	–	–	–	2 / 1.1%	2 / 0.9%
Crescent	9 / 23.1%	10 / 23.3%	3 / 4.4%	4 / 4.8%	21 / 11.0%	25 / 11.4%
Irregular	9 / 23.1%	10 / 23.3%	20 / 29.4%	24 / 28.5%	55 / 28.9%	63 / 28.9%
Unidentifiable	16 / -	19 / -	27 / -	34 / -	64 / -	77 / -
Total:	**55**	**62**	**95**	**118**	**254**	**296**

Table 9-24 Kabazi V, sub-unit III/3: blade shapes as numbers and percentages of each type.

Profiles at distal end (Table 9-27)

Distal end profiles were observed for a total of 190 blades. The distal end profile types identified very much mirror those already noted for flakes; for the blades the types and percentages are as follows: feathering (ca. 57 – 59%), hinged (ca. 23 – 25%,) blunt (ca. 15%), overpassed (less than 2%). Thus, according to this attribute, we see the same success and mistakes in primary reduction for both flakes and blades.

	III/3-1		III/3-1A		III/3-2		III/3-2A	
	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools
On-axis	21 / 70%	22 / 66.7%	19 / 61.3%	19 / 61.3%	9 / 42.8%	10 / 43.5%	2 / 28.6%	3 / 33.3%
Off-axis	9 / 30%	11 / 33.3%	12 / 38.7%	12 / 38.7%	12 / 57.2%	13 / 56.5%	5 / 71.4%	6 / 66.7%
Unidentifiable	5 / -	9 / -	2 / -	2 / -	6 / -	7 / -	2 / -	2 / -
Total:	**35**	**42**	**33**	**33**	**27**	**30**	**9**	**11**

	III/3-3		III/3-3A		Total:	
	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools
On-axis	12 / 30.8%	15 / 34.1%	41 / 56.2%	52 / 57.1%	104 / 51.7%	121 / 52.4%
Off-axis	27 / 69.2%	29 / 65.9%	32 / 43.8%	39 / 42.9%	97 / 48.3%	110 / 47.6%
Unidentifiable	16 / -	18 / -	22 / -	27 / -	53 / -	65 / -
Total:	**55**	**62**	**95**	**118**	**254**	**296**

Table 9-25 Kabazi V, sub-unit III/3: blade axis as numbers and percentages of each type.

	III/3-1		III/3-1A		III/3-2		III/3-2A	
	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools
Flat	3 / 8.8%	3 / 7.6%	6 / 19.4%	6 / 19.4%	7 / 28%	8 / 28.6%	–	–
Convex	1 / 2.9%	1 / 2.6%	1 / 3.2%	1 / 3.2%	2 / 8%	2 / 7.1%	–	–
Incurvate medial	14 / 41.3%	17 / 43.6%	13 / 41.9%	13 / 41.9%	8 / 32%	8 / 28.6%	4 / 50.0%	6 / 60%
Incurvate distal	1 / 2.9%	1 / 2.6%	1 / 3.2%	1 / 3.2%	–	–	1 / 12.5%	1 / 10%
Twisted	15 / 44.1%	17 / 43.6%	10 / 32.3%	10 / 32.3%	8 / 32%	10 / 35.7%	3 / 37.5%	3 / 30%
Unidentifiable	1 / -	3 / -	2 / -	2 / -	2 / -	2 / -	1 / -	1 / -
Total:	**35**	**42**	**33**	**33**	**27**	**30**	**9**	**11**

	III/3-3		III/3-3A		Total:	
	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools
Flat	7 / 15.6%	8 / 15.7%	21 / 25.3%	24 / 23.3%	44 / 19.5%	49 / 18.7%
Convex	–	1 / 2.0%	2 / 2.4%	2 / 1.9%	6 / 2.6%	7 / 2.7%
Incurvate medial	21 / 46.7%	23 / 45.1%	35 / 42.2%	50 / 48.6%	95 / 42.1%	117 / 44.6%
Incurvate distal	1 / 2.2%	1 / 2.0%	2 / 2.4%	2 / 1.9%	6 / 2.6%	6 / 2.3%
Twisted	16 / 35.5%	18 / 35.3%	23 / 27.7%	25 / 24.3%	75 / 33.2%	83 / 31.7%
Unidentifiable	10 / -	11 / -	12 / -	15 / -	28 / -	34 / -
Total:	**55**	**62**	**95**	**118**	**254**	**296**

Table 9-26 Kabazi V, sub-unit III/3: blade general profiles as numbers and percentages of each type.

Profiles at midpoint (Table 9-28)

Profiles at midpoint were observed on 293 blades. Regarding this feature, blades differ quite significantly from flakes. Although the triangular type is the most common to feature among the analysed pieces (ca. 41 – 43%), the sum of trapezoidal and multifaceted types (ca. 31 – 33%) is worthy of mention, it being a clear indication for intensive parallel reduction. Moreover, we see a distinct trend that sees the selection of those blades for secondary treatment processes with these two aforementioned profile at midpoint types (i.e. trapezoidal and multifaceted), as well as of those pieces characterised by the lateral steep type (mostly, *débordantes* and crested pieces). Thus, with regard to this feature, blades make a well organised impression, with the production of desired blanks during core reduction better than that observed for flakes.

Platform preparation, lipping & angle (Table 9-29)

The butts of 149 blades could be attributed to one of three basic groups. An average of 49.3% of unretouched blades display unprepared butts (cortical, plain, punctiform), with 48.4% of the combined sample of all blades, including tool blanks, also belonging to this group. Among this group, butt types with plain butts are predominant, while cortical and punctiform butts are known through only single examples. At the same time, there is a clear trend to a lower involvement of blades with unprepared butts in tool production. Butts with rough preparation (dihedral and crudely-multifaceted) are of a medium significance (26.9% for unretouched blades and 24.8% for the entire blade assemblage considered). Again we see less retouching of blades with dihedral and crudely-multifaceted butts, whereby the latter are slightly more numerous than the former. Finely faceted butts (straight and convex faceted items) occur more or less equally as common as prepared butts (23.8% for unretouched blades and 26.8% for all blades). All in all, the following faceting indices were calculated: IFl = 50.7% and IFst = 23.8% for unretouched blades, and IFl = 51.6% and IFst = 26.8% for the total blade sample. Brief and preliminary comparisons of these data testify to two basic points. First, they indicate that the general preparation of blade butts (IFl) is only ca. 5% higher than for flake butts (51.6% versus 46.3%); here, it is worth remembering that both these indices are higher than 45%. On the other hand, strict and real faceting preparation of blade butts (IFst) is 1.5 times higher than it is for flakes (26.8% versus 18.3%), and only the former of these indices is close to 30%. Thus, we can conclude a more careful general butt preparation, and especially fine faceting, for blades than for flakes. Second, both flakes and blades show undoubtedly a special selection of those blanks for tool production with convex faceted butts.

Finally, there follows the combined indices for butt preparation data for both flakes and blades: IFl = 43.1% and IFst = 15.5% for all unretouched blanks; IFl = 47.3% and IFst = 19.9% for the total blanks sample.

Thus, the final butt preparation calculations leave a twofold impression based on the well known and still valid criteria for faceted and unfaceted Middle Palaeolithic industries established long ago by F. Bordes (1953, p. 459), i.e. that faceted industries are characterised by IFl > 45% and IFst > 30%, and unfaceted industries by IFl < 45% and IFst < 30%. On the one hand, the strict faceting index (IFst) for sub-unit III/3 of Kabazi V is too low for faceted Middle Palaeolithic industries, only ca. 20%, but on the other hand, the large faceting index from Kabazi V exceeds slightly the 45% mark. Accordingly, one questions arise as to the actual core preparation technique applied the assemblages from sub-unit III/3 of Kabazi V; this will be discussed below in more detail.

The observed lipping features for 187 blade butts (Table 9-30) mirror totally the respective lipping data for flake butts. Again, one quarter has no lipped butts, and three quarters comprise semi-lipped butts. There is only one artefact that displays a real lipped butt. These records indicate an absence of bifacial tool processing in the analysed blade collections.

Angle data for 147 butts (Table 9-31) are characterised by a complete dominance of right angles (ca. 95%), while acute angles are known from just seven blade butts (ca. 5%). These data are in a good correspondence with the respective angles of flake butts, acute angles occur slightly more often (ca. 12%).

Butt sizes

On the basis of butt measurements on 149 blades (Tables 9-32 and 9-33), we arrive at the following data: average width – 1.00 cm, average thickness – 0.40 cm. At the same time, no trends among tool blanks with wider and thicker butts could be established. Also, butts on blades are characterised by smaller indices for width and thickness than was observed among butts on flakes – width: 1.75 cm, thickness: 0.58 cm.

	III/3-1		III/3-1A		III/3-2		III/3-2A	
	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools
Feathering	14 / 60.9%	14 / 53.9%	16 / 66.7%	16 / 66.7%	13 / 65%	13 / 61.9%	3 / 50.0%	3 / 42.8%
Hinged	6 / 26.1%	7 / 26.9%	3 / 12.5%	3 / 12.5%	6 / 30%	7 / 33.3%	1 / 16.7%	2 / 28.6%
Blunt	2 / 8.7%	4 / 15.4%	3 / 12.5%	3 / 12.5%	1 / 5.0%	1 / 4.8%	2 / 33.3%	2 / 28.6%
Overpassed	1 / 4.3%	1 / 3.8%	2 / 8.3%	2 / 8.3%	–	–	–	–
Missing by Retouch	–	2 / -	–	–	–	1 / -	–	–
Unidentifiable	12 / -	14 / -	9 / -	9 / -	7 / -	8 / -	3 / -	4 / -
Total:	**35**	**42**	**33**	**33**	**27**	**30**	**9**	**11**

	III/3-3		III/3-3A		Total:	
	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools
Feathering	15 / 53.6%	16 / 53.3%	35 / 57.4%	42 / 57.5%	96 / 59.3%	104 / 57.5%
Hinged	7 / 25.0%	8 / 26.7%	15 / 24.6%	19 / 26.0%	38 / 23.5%	46 / 25.4%
Blunt	6 / 21.4%	6 / 20.0%	11 / 18.0%	12 / 16.5%	25 / 15.4%	28 / 15.5%
Overpassed	–	–	–	–	3 / 1.8%	3 / 1.6%
Missing by Retouch	–	2 / -	–	4 / -	–	9 / -
Unidentifiable	27 / -	30 / -	34 / -	41 / -	92 / -	106 / -
Total:	**55**	**62**	**95**	**118**	**254**	**296**

Table 9-27 Kabazi V, sub-unit III/3: blade profiles at distal end as numbers and percentages of each type.

	III/3-1		III/3-1A		III/3-2		III/3-2A	
	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools
Triangular	15 / 42.8%	17 / 40.5%	19 / 57.6%	19 / 57.6%	15 / 55.6%	15 / 51.8%	3 / 33.3%	3 / 27.3%
Trapezoidal	12 / 34.3%	14 / 33.3%	5 / 15.2%	5 / 15.2%	8 / 29.6%	8 / 27.6%	1 / 11.1%	3 / 27.3%
Multifaceted	1 / 2.9%	1 / 2.4%	4 / 12.1%	4 / 12.1%	–	–	1 / 11.1%	1 / 9.1%
Lateral Steep	2 / 5.7%	4 / 9.5%	–	–	–	1 / 3.4%	3 / 33.3%	3 / 27.3%
Convex	–	–	1 / 3.0%	1 / 3.0%	1 / 3.7%	1 / 3.4%	–	–
Flat	1 / 2.9%	1 / 2.4%	–	–	–	–	–	–
Irregular	4 / 11.4%	5 / 11.9%	4 / 12.1%	4 / 12.1%	3 / 11.1%	4 / 13.8%	1 / 11.1%	1 / 9.1%
Unidentifiable	–	–	–	–	–	1 / -	–	–
Total:	**35**	**42**	**33**	**33**	**27**	**30**	**9**	**11**

	III/3-3		III/3-3A		Total:	
	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools
Triangular	22 / 40.0%	24 / 38.7%	34 / 36.6%	42 / 36.2%	108 / 42.9%	120 / 40.9%
Trapezoidal	10 / 18.2%	12 / 19.3%	25 / 26.9%	32 / 27.6%	61 / 24.2%	74 / 25.3%
Multifaceted	3 / 5.4%	4 / 6.4%	8 / 8.6%	13 / 11.2%	17 / 6.7%	23 / 7.8%
Lateral Steep	11 / 20.0%	12 / 19.4%	10 / 10.8%	13 / 11.2%	26 / 10.3%	33 / 11.3%
Convex	4 / 7.3%	5 / 8.1%	5 / 5.4%	5 / 4.3%	11 / 4.4%	12 / 4.1%
Flat	–	–	2 / 2.1%	2 / 1.7%	3 / 1.2%	3 / 1.0%
Irregular	5 / 9.1%	5 / 8.1%	9 / 9.6%	9 / 7.8%	26 / 10.3%	28 / 9.6%
Unidentifiable	–	–	2 / -	2 / -	2 / -	3 / -
Total:	**55**	**62**	**95**	**118**	**254**	**296**

Table 9-28 Kabazi V, sub-unit III/3: blade profiles at midpoint as numbers and percentages of each type.

	III/3-1		III/3-1A		III/3-2		III/3-2A	
	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools
Cortex	2 / 13.3%	2 / 12.5%	–	–	1 / 6.7%	1 / 6.25%	–	–
Plain	7 / 46.6%	8 / 50.0%	6 / 37.5%	6 / 37.5%	9 / 60.0%	9 / 56.25%	2 / 40%	2 / 33.2%
Punctiform	–	–	–	–	–	–	–	1 / 16.7%
Dihedral	1 / 6.7%	1 / 6.25%	3 / 18.75%	3 / 18.75%	2 / 13.3%	3 / 18.75%	1 / 20%	1 / 16.7%
Crude-multifaceted	1 / 6.7%	1 / 6.25%	6 / 37.5%	6 / 37.5%	1 / 6.7%	1 / 6.25%	1 / 20%	1 / 16.7%
Faceted Straight	–	–	–	–	–	–	1 / 20%	1 / 16.7%
Faceted Convex	4 / 26.7%	4 / 25.0%	1 / 6.25%	1 / 6.25%	2 / 13.3%	2 / 12.5%	–	–
Missing by Retouch	–	1 / -	–	–	–	1 / -	–	–
Crushed	5 / -	9 / -	9 / -	9 / -	6 / -	6 / -	2 / -	3 / -
Missing	15 / -	16 / -	8 / -	8 / -	6 / -	7 / -	2 / -	2 / -
Total:	**35**	**42**	**33**	**33**	**27**	**30**	**9**	**11**

	III/3-3		III/3-3A		Total:	
	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools
Cortex	–	–	–	–	3 / 2.3%	3 / 2.0%
Plain	11 / 36.7%	12 / 36.4%	23 / 46.9%	26 / 41.9%	58 / 44.7%	63 / 42.4%
Punctiform	2 / 6.7%	2 / 6.1%	1 / 2.0%	3 / 4.8%	3 / 2.3%	6 / 4.0%
Dihedral	4 / 13.3%	4 / 12.1%	4 / 8.2%	5 / 8.1%	15 / 11.5%	17 / 11.4%
Crude-multifaceted	7 / 23.3%	7 / 21.2%	4 / 8.2%	4 / 6.5%	20 / 15.4%	20 / 13.4%
Faceted Straight	2 / 6.7%	2 / 6.1%	6 / 12.2%	7 / 11.3%	9 / 6.9%	10 / 6.7%
Faceted Convex	4 / 13.3%	6 / 18.2%	11 / 22.5%	17 / 27.4%	22 / 16.9%	30 / 20.1%
Missing by Retouch	–	–	–	–	–	2 / -
Crushed	8 / -	9 / -	19 / -	22 / -	49 / -	58 / -
Missing	17 / -	20 / -	27 / -	34 / -	75 / -	87 / -
Total:	**55**	**62**	**95**	**118**	**254**	**296**

Table 9-29 Kabazi V, sub-unit III/3: blade butt types as numbers and percentages of each type.

	III/3-1		III/3-1A		III/3-2		III/3-2A	
	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools
Not lipped	3 / 21.4%	4 / 26.7%	3 / 18.7%	3 / 18.7%	2 / 13.3%	2 / 12.5%	–	1 / 16.7%
Lipped	–	–	–	–	–	–	–	–
Semi-lipped	11 / 78.6	11 / 73.3%	13 / 81.3%	13 / 81.3%	13 / 86.7%	14 / 87.5%	5 / 100%	5 / 83.3%
Unidentifiable	21 / -	27 / -	17 / -	17 / -	12 / -	14 / -	4 / -	5 / -
Total:	**35**	**42**	**33**	**33**	**27**	**30**	**9**	**11**

	III/3-3		III/3-3A		Total:	
	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools
Not lipped	5 / 17.2%	5 / 15.6%	18 / 36.0%	22 / 35.5%	31 / 24.0%	37 / 25.2%
Lipped	1 / 3.4%	1 / 3.1%	–	–	1 / 0.8%	1 / 0.7%
Semi-lipped	23 / 79.4%	26 / 81.3%	32 / 64.0%	40 / 64.5%	97 / 75.2%	109 / 74.1%
Unidentifiable	26 / -	30 / -	45 / -	56 / -	125 / -	149 / -
Total:	**55**	**62**	**95**	**118**	**254**	**296**

Table 9-30 Kabazi V, sub-unit III/3: blade butt lipping as numbers and percentages of each type.

	III/3-1		III/3-1A		III/3-2		III/3-2A	
	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools
Right	13 / 92.9%	14 / 93.3%	16 / 100%	16 / 100%	14 / 93.3%	15 / 93.75%	3 / 60%	4 / 66.7%
Acute	1 / 7.1%	1 / 6.7%	–	–	1 / 6.7%	1 / 6.25%	2 / 40%	2 / 33.3%
Unidentifiable	21 / -	27 / -	17 / -	17 / -	12 / -	14 / -	4 / -	5 / -
Total:	**35**	**42**	**33**	**33**	**27**	**30**	**9**	**11**

	III/3-3		III/3-3A		Total:	
	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools
Right	27 / 93.1%	30 / 93.8%	49 / 98%	61 / 98.4%	122 / 94.6%	140 / 95.2%
Acute	2 / 6.9%	2 / 6.2%	1 / 2.0%	1 / 1.6%	7 / 5.4%	7 / 4.8%
Unidentifiable	26 / -	30 / -	45 / -	56 / -	125 / -	149 / -
Total:	**55**	**62**	**95**	**118**	**254**	**296**

Table 9-31 Kabazi V, sub-unit III/3: blade butt angles as numbers and percentages of each type.

	III/3-1		III/3-1A	
	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools
Definable	1.06 cm for 14 pieces	1.03 cm for 15 pieces	1.04 cm for 16 pieces	1.04 cm for 16 pieces
Unidentifiable	21	27	17	17
Total:	**35**	**42**	**33**	**33**

	III/3-2		III/3-2A	
	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools
Definable	0.87 cm for 15 pieces	0.86 cm for 16 pieces	0.86 cm for 5 pieces	0.73 cm for 6 pieces
Unidentifiable	12	14	4	5
Total:	**27**	**30**	**9**	**11**

	III/3-3		III/3-3A	
	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools
Definable	0.89 cm for 30 pieces	0.93 cm for 33 pieces	1.07 cm for 50 pieces	1.07 cm for 63 pieces
Unidentifiable	25	29	45	55
Total:	**55**	**62**	**95**	**118**

	Total:	
	Flakes	Flakes & Flake Tools
Definable	0.99 cm for 130 pieces	1.00 cm for 149 pieces
Unidentifiable	124	147
Total:	**254**	**296**

Table 9-32 Kabazi V, sub-unit III/3: blade butt width as numbers and average indices.

	III/3-1		III/3-1A	
	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools
Definable	0.44 cm for 14 pieces	0.43 cm for 15 pieces	0.46 cm for 16 pieces	0.46 cm for 16 pieces
Unidentifiable	21	27	17	17
Total:	**35**	**42**	**33**	**33**

	III/3-2		III/3-2A	
	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools
Definable	0.34 cm for 15 pieces	0.36 cm for 16 pieces	0.38 cm for 5 pieces	0.33 cm for 6 pieces
Unidentifiable	12	14	4	5
Total:	**27**	**30**	**9**	**11**

	III/3-3		III/3-3A	
	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools
Definable	0.37 cm for 30 pieces	0.38 cm for 33 pieces	0.42 cm for 50 pieces	0.40 cm for 63 pieces
Unidentifiable	25	29	45	55
Total:	**55**	**62**	**95**	**118**

	Total:	
	Flakes	Flakes & Flake Tools
Definable	0.40 cm for 130 pieces	0.40 cm for 149 pieces
Unidentifiable	124	147
Total:	**254**	**296**

Table 9-33 Kabazi V, sub-unit III/3: blade butt thickness as numbers and average indices.

	III/3-1		III/3-1A	
	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools
Definable	4.42 cm for 18 pieces	4.66 cm for 21 pieces	4.90 cm for 21pieces	4.90 cm for 21 pieces

	III/3-2		III/3-2A	
	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools
Definable	4.19 cm for 17 pieces	4.27 cm for 19 pieces	4.16 cm for 7 pieces	4.51 cm for 9 pieces

	III/3-3		III/3-3A	
	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools
Definable	4.33 cm for 32 pieces	4.47 cm for 35 pieces	4.85 cm for 49 pieces	5.18 cm for 63 pieces

	Total:	
	Flakes	Flakes & Flake Tools
Definable	4.57 cm for 144 pieces	4.79 cm for 168 pieces

Table 9-34 Kabazi V, sub-unit III/3: blade length as numbers and average indices for complete pieces.

Blade dimensions

All 144 complete blades were measured and their average length, width and thickness parameters established (Tables 9-34, 9-35 and 9-36). The summarised data for the whole sub-unit III/3 are as follows.

Length: 4.57 cm for unretouched blades and 4.79 cm for the total blade sample (Table 9-34).

Width: 1.80 cm for unretouched blades and 1.90 cm for the total blade sample (Table 9-35).

Thickness: 0.60 cm for unretouched blades and 0.61 cm for the total blade sample (Table 9-36).

The data are very homogeneous for all six levels and show a clear selection of longer and wider items for tool production.

	III/3-1		III/3-1A	
	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools
Definable	1.86 cm for 18 pieces	1.95 cm for 21 pieces	2.02 cm for 21 pieces	2.02 cm for 21 pieces
	III/3-2		**III/3-2A**	
	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools
Definable	1.64 cm for 17 pieces	1.67 cm for 19 pieces	1.77 cm for 7 pieces	1.96 cm for 9 pieces
	III/3-3		**III/3-3A**	
	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools
Definable	1.70 cm for 32 pieces	1.75 cm for 35 pieces	1.84 cm for 49 pieces	2.00 cm for 63 pieces
	Total:			
	Flakes	Flakes & Flake Tools		
Definable	1.80 cm for 144 pieces	1.90 cm for 168 pieces		

Table 9-35 Kabazi V, sub-unit III/3: blade width as numbers and average indices for complete pieces.

	III/3-1		III/3-1A	
	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools
Definable	0.59 cm for 18 pieces	0.60 cm for 21 pieces	0.80 cm for 21 pieces	0.80 cm for 21 pieces
	III/3-2		**III/3-2A**	
	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools
Definable	0.52 cm for 17 pieces	0.55 cm for 19 pieces	0.56 cm for 7 pieces	0.54 cm for 9 pieces
	III/3-3		**III/3-3A**	
	Flakes	Flakes & Flake Tools	Flakes	Flakes & Flake Tools
Definable	0.51 cm for 32 pieces	0.53 cm for 35 pieces	0.64 cm for 49 pieces	0.64 cm for 63 pieces
	Total:			
	Flakes	Flakes & Flake Tools		
Definable	0.60 cm for 144 pieces	0.61 cm for 168 pieces		

Table 9-36 Kabazi V, sub-unit III/3: blade thickness as numbers and average indices for complete pieces.

Blades: Some additional notes

As already shown for flakes, among the blades there were also distinguished various specific pieces. These are as follows for each of the six levels, in stratigraphical order from top to bottom:

Level III/3-1 (N=5):
lateral *débordante* (type 2) – 1 piece;
lateral crested blades (type 1) – 0 + 1 piece;
central crested blades with unilateral crested ridge (sub-type 2A) – 1 piece;
secondary crested blades – 1 piece;
re-crested blades – 1 piece.

Level III/3-1A (N=2):
simple natural lateral *débordante* (type 1) – 2 pieces.

Level III/3-2 (N=3):
simple natural lateral *débordante* (type 1) – 2 pieces;
central crested blades with bilateral crested ridge (sub-type 2B) – 1 piece.

Level III/3-2A (N=3):
simple natural lateral *débordante* (type 1) – 2 pieces;
secondary crested blades – 1 piece.

Level III/3-3 (N=10):
Levallois blades with 3-directional scar pattern – 0 + 1 piece;
simple natural lateral *débordante* (type 1) – 7 pieces;
lateral crested blades (type 1) – 1 + 1 pieces (Fig. 9-5, *8*).

Level III/3-3A (N=19):
Levallois blades with 3-directional scar pattern – 0 + 1 piece;
simple natural lateral *débordante* (type 1) – 9 + 3 pieces (Fig. 9-4, *4*; 9-5, *1, 3*);
lateral *débordante* (type 2) – 1 + 1 pieces;
lateral *débordante* (type 2a) – 1 piece;
lateral crested blades (type 1) – 1 piece;
central crested blades with unilateral crested ridge (sub-type 2A) – 2 pieces.

Thus, the entire sub-unit III/3 specific blade sample (42 pieces) can be represented in the following way:
bifacial treatment pieces – absent;
Levallois pieces – 2 items / 4.8% (these being Levallois blades with 3-directional scar pattern);
core maintenance products – 40 items / 95.2%.

Core maintenance products comprise:
simple natural lateral *débordante* (type 1) – 25 pieces;
lateral *débordante* (type 2) – 3 pieces;
lateral *débordante* (type 2a) – 1 piece;
lateral crested blades (type 1) – 4 pieces;
central crested blades with unilateral crested ridge (sub-type 2A) – 3 pieces;
central crested blades with bilateral crested ridge (sub-type 2B) – 1 piece;
secondary crested blades – 2 pieces;
re-crested blades – 1 piece.

These data on the so-called specific blades bear witness to some similarities and dissimilarities with the already represented respective flake data. Starting with the dissimilarities, these include the complete absence of bifacial shaping / thinning blades among the analysed blades. This is very important, as Crimean Micoquian assemblages are characterised by a very pronounced bifacial debitage where, besides numerous such flakes, there are always some very indicative bifacial treatment blades (e.g. Marks, Monigal 1998: Fig. 7-14 on p. 148 for Starosele site, level 1; Chabai 2004b: Fig. 24-3: 6 on p. 381; Fig. 24-10: 4 on p. 398 for Chokurcha I, Unit IV; Demidenko 2004a: Fig. 9-4: 5-6 on p. 119 for Buran-Kaya III rock-shelter, layer B). Thus, the observed absence of bifacial treatment blades throughout the archaeological sequence of sub-unit III/3 definitely points to only a minor Micoquian admixture within the general WCM artefacts or, at least, a very minimal bifacial tool production and/or rejuvenation processes performed by Middle Palaeolithic Micoquian people at the site.

Then, there are very few Levallois items among the blade sample – only 2 pieces, although, when we take into account the overall number of blades in sub-unit III/3, we arrive at a value of 0.68% for the whole blade sample of 296 items, and about the same index (0.70%) for 284 blades with identifiable dorsal scar pattern. Indeed, this is not too different statistically from Levallois indices for flakes – 1.1 and 1.2%. In having a Levallois blade in level III/3-3A, we are filling the lacuna with no Levallois flakes for the level. The two Levallois blades are, however, peculiar for the following three reasons. First, Levallois blades only display 3-directional dorsal scar patterns, and no one piece has a radial scar pattern. Second, the Levallois blades were only identified in blade samples from the lowermost levels III/3-3 and III/3-3A of sub-unit III/3, although this point should not be over-exaggerated given that these two levels have yielded the highest number of blade samples anyway. Third, the two Levallois blades are retouched. This implies their complete involvement in tool production. Finally, it is necessary to note the absence among Levallois products with blady metrical proportions of both Levallois points

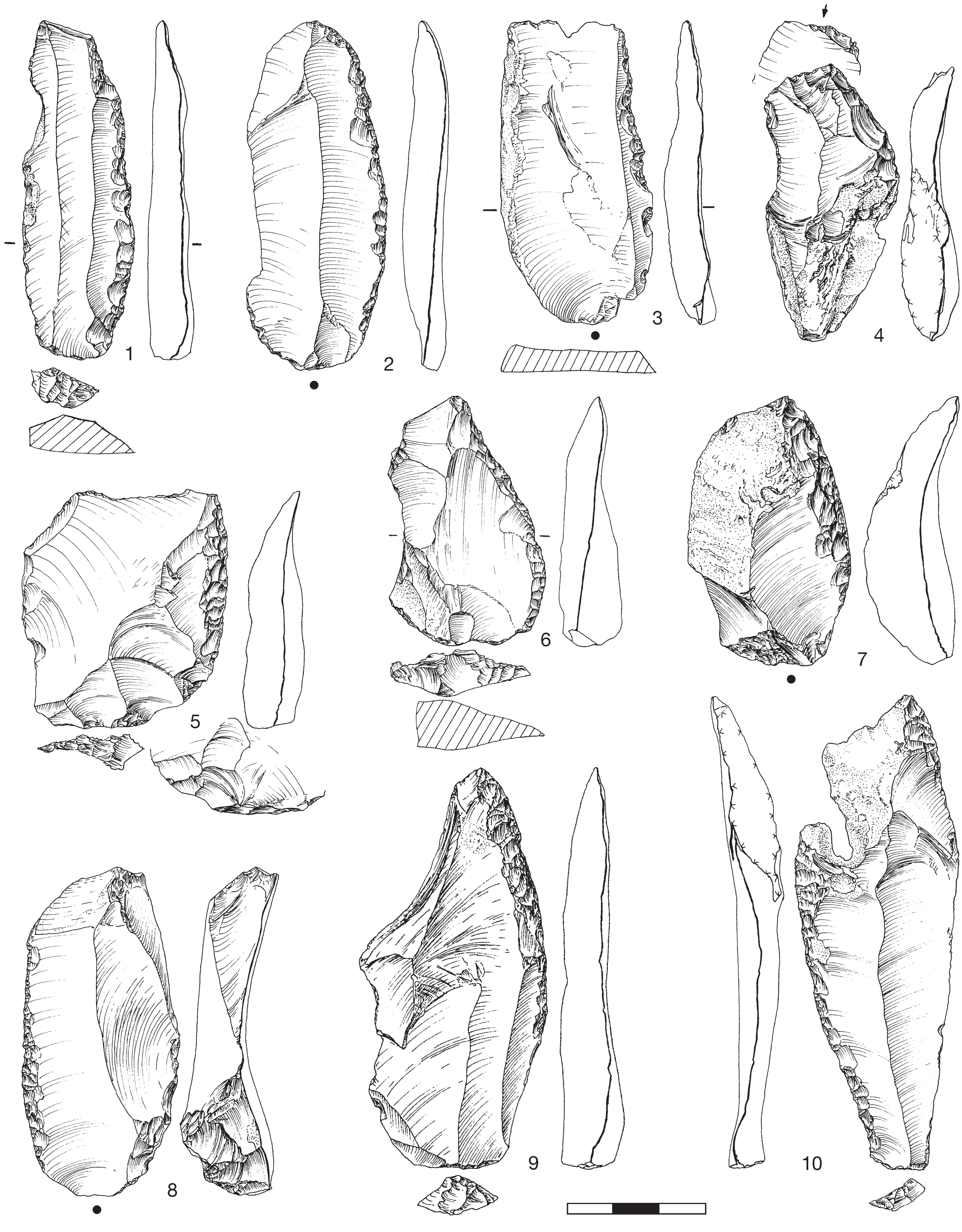

Fig. 9-5 Kabazi V, sub-unit III/3: levels III/3-1 (4); III/3-1A (5-6); III/3-3 (8); III/3-3A (1-2, 3, 7, 9-10). Tools: simple convex scraper on blade simple natural lateral debordante, type 1 (1); simple convex scrapers on complete blades (2, 9-10); simple concave denticulate on blade simple natural lateral debordante, type 1 (3); simple convex scraper with truncated-faceted base on complete blade (4); simple convex scraper with thinned base on complete flake (5); simple wavy scraper on complete flake (6); simple convex scraper on complete flake (7); simple convex scraper on lateral crested blade, type 1 (8).

(even in any atypical form) and pseudo-Levallois points. The absence of such pieces is fully understandable considering the occasional technological character of Levallois atypical points on flakes and on pseudo-Levallois points, which occurred only on flakes as technological waste. Thus, it is possible to state that Levallois blades have actually more similarities than dissimilarities with the respective data from Levallois products on flakes.

Turning to core maintenance products on blades, we see some changes in the occurrence of their types in comparison to flakes. Of course, core trimming elements are "rare guests" on blades, because various core maintenance products on blades are usually easily discernible morphologically and, at the same time, serial core tablets on blades only occur in Upper Palaeolithic industries with pronounced bladelet core and/or carinated piece (mostly, tools typologically) reduction (e.g. Unit F Evolved Aurignacian of Krems-Dufour type materials from Siuren I rock-shelter in Crimea – Demidenko et al. 1998; Demidenko, Otte 2000-2001), and this is certainly not the case for WCM materials from Kabazi V, sub-unit III/3. On the other hand, simple natural lateral *débordantes* absolutely prevail among *débordantes* and crested items on blades – 25 out of 40 pieces (62.5%). Adding to these some other *débordantes* and lateral crested blades (8 more items), we arrive at a total of 33 core maintenance product types that are, technologically speaking, wholly in the range of Middle Palaeolithic technologies. There are also some other crested items that are usually associated with Upper Palaeolithic technological features – central crested blades, secondary and re-crested blades. However, these occur only in very small numbers and, therefore, central crested pieces can be considered as occasional items, especially considering the presence of just three secondary and re-crested blades, which in a case of real *"lame à crête technique"* application would be much more numerous.

Thus, we should state that in spite of some technological differences, flakes and blades from sub-unit III/3 still share much in common.

Now, this data on debitage and tool blanks, together with information on core-like pieces, allows us to draw some conclusions with regard to core reduction strategies in sub-unit III/3at Kabazi V.

Core Reduction Strategies

Core-like pieces are an important source for the recognition of core reduction strategies. It has already been assumed that there existed one main core reduction strategy – parallel bi-directional with non-volumetric flaking surface exploitation and the application of regular supplementary platforms, the so-called *"Biache Method, Bi-Polar Variant"*, which is well attested for Unit II WCM materials at Kabazi II. Additionally, the presence of some unidirectional and convergent cores was considered as expressing some technological variability within the bi-directional method. It was also supposed that the so-called *"Volumetric Flaking Method"* was a feature of the Kabazi V materials, which according to V. P. Chabai's data is also observed in the Unit II WCM assemblage from Kabazi II. In sub-unit III/3 at Kabazi V, this method was implied through the presence of a unidirectional sub-cylindrical core.

However, following the analysis of the debitage and tool blanks, the aforementioned conclusions concerning core reduction strategies, must be revised. First, the single unidirectional sub-cylindrical core cannot be considered as really representing a true *"Volumetric Flaking Method"*, as related data on central crested pieces and core tablets are far too poor to make such a conclusion. Therefore, it is better to be on the safe side in this regard and to consider the core as an incidental piece within the basic parallel core reduction. Second, a consideration of the debitage data, and especially its dorsal scar pattern indices, means that we cannot conclude that the bi-directional *"Biache Method, Bi-Polar Variant"* of core reduction was predominant. Therefore, it is reasonable to suggest that the basic core reduction strategy is characterised by implication of a parallel unidirectional *"Biache Method, Uni-Polar Variant"*. After the exhaustion of either a striking platform or a flaking surface of a unidirectional core these were then visually transformed into a bi-directional core with exploitation of an opposite striking platform with further debitage reduction through the same flaking surface. These now double unidirectional cores might then be subjected to one further unidirectional flaking stage. Moreover, sometimes the reduction of Levallois flakes and blades with mostly 3-directional (not classical!) dorsal scar pattern is incorporated into the *"Biache Method"*. For this reason, this method and not a different parallel one is applied. At the same time, also morphologically defined Levallois atypical points and pseudo-Levallois points are products and by-products of the parallel unidirectional reduction *"Biache Method, Uni-Polar Variant"*.

In conclusion the core reduction strategy in sub-unit III/3 at Kabazi V is parallel unidirectional, with some variability, as expressed by some bi-directional and convergent cores. Core exploitation was directed at producing unidirectional flakes and blades which involved the fine and rough faceting of striking platforms and the regular application of both supplementary striking platforms and *débordantes* and/or lateral crested pieces. Removals were also made in order to raise flaking surfaces on cores during intensive and multiple parallel core reduction processes. Within the frame of this *"Biache Method"* of core reduction, a few Levallois flakes and blades were produced, as well as a few conventionally defined atypical Levallois points and an even smaller number of pseudo-Levallois points. This testifies to an obvious complexity of blank types produced during this parallel core reduction strategy.

Finally, it should once again be noted that the rare bifacial shaping / thinning flakes from the assemblage are only associated with the uppermost level III/3-1 and two lowermost levels III/3-3 and III/3-3A. Their occurrence in these levels is most probably due to a minor admixture from stratigraphically overlying and underlying Micoquian sub-units III/2 and III/4, respectively. Therefore, we believe that the flint artefact assemblages from sub-unit III/3 at Kabazi V site are of a rather homogeneous industrial character that is definitely related to the Western Crimean Mousterian.

Tools

A total of 267 pieces with secondary treatment and/or use traces were recovered from the six levels of sub-unit III/3. The lowermost level III/3-3A yielded the most tools (N= 103), followed by two levels with almost fifty tools (uppermost level III/3-1: 49 pieces; second from bottom level III/3-3: 48 pieces). At the same time, the middle part of the sub-unit III/3 sequence is characterised by very low numbers of tools: – 25 pieces in each of the levels III/3-1A and III/3-2 , and 17 pieces in level III/3-2A (see Tables 9-1 and 9-37). Nevertheless, the proportional occurrence of tools within the assemblages of the particular levels varies from 1.5 to 3.2% for all finds included and from 12.0 to 24.2% for essential calculations. Considering the stark variation observed in the tool numbers in each particular level, in the following, tool assemblages will be discussed in reference to both the total for the Unit, as well as to the individual levels.

Tool data are presented in detail in Table 9-37. The whole sub-unit III/3 tool assemblage comprises the following ten categories: points, scrapers, denticulates, notches, end-scrapers, burins, truncated pieces, truncated-faceted pieces, retouched pieces, and unidentifiable tools. Of the total 267 pieces with secondary treatment and/or use traces, more than a half have been assigned to retouched pieces (items with marginal and/or irregular retouch) and unidentifiable tools (significantly fragmented pieces) – 41.2% and 18.7%, respectively. In other words, 59.9% of the total tool assemblages comprise items that are not tools in the strictest sense, although they do provide information on tool use at the site. Thus, we have to deal with a twofold tool structure, firstly a structure with all 267 tools, and alternatively, a more restricted structure which disregards retouched pieces and unidentifiable tools.

Let us first start with the restricted tool sample with just the typologically well defined tools – in total 107 pieces. This restricted assemblage is characterised by a great prevalence of scrapers (68.3%), a moderate number of points (15.9%), a representative sample of denticulates (9.4%), a couple of notches (2.8%), and the single occurrence of end-scrapers, burins, truncated and truncated-faceted pieces, respectively (0.9% each). However, there is some variability among the individual levels. That is why each tool class, along with its categories and groups, will be analysed both for the total sub-unit III/3 and for each particular level.

Scrapers

The 73 scrapers are divided into the following four basic categories: 39 simple scrapers (53.4%), seven transverse scrapers (9.6%), seven double scrapers (9.6%), and 20 various convergent scrapers (27.4%). This subdivision clearly testifies to the dominance of simple forms, a significant share of convergent forms, and the minor representation of both transverse and double types.

Simple scrapers

These 39 scrapers are subdivided into four types accor-ding to the shape of their retouched edges: straight type – 3 artefacts, convex type – 32 artefacts, concave type – 2 artefacts, and wavy type – also 2 artefacts. Thus, the simple convex type is the most dominant, while all remaining types are known through an insignificant number of pieces. It should be underlined that all simple scrapers, except for one straight ventral piece, bear retouch on their dorsal sides.

	III/3-1	III/3-1A	III/3-2	III/3-2A	III/3-3	III/3-3A	Total:	%	ess %
Points							**17**	**6.4**	**15.9**
Levallois atypical retouched	·	1	·	·	·	2	3		
Lateral	·	·	·	·	1	·	1		
Distal	·	·	·	·	·	1	1		
Semi-trapezoidal	1	·	$\boxed{1}$	·	·	$\boxed{1}$	3		
Semi-crescent	·	·		·	·	3	3		
Sub-leaf	·	·	1	·	·	1	2		
Unidentifiable	1	·	·	1	·	2	4		
Scrapers							**73**	**27.3**	**68.3**
Simple-straight	·	·	·	·	1	·	1		
Simple-straight-ventral	·	·	1	·	·	·	1		
Simple-straight (on core)	·	·	·	·	1	·	1		
Simple-convex	7	5	1	2	6	11	32		
Simple-concave	·	1	·	·	1	·	2		
Simple-wavy	1	1	·	·	·	·	2		
Transverse-convex	·	·	·	·	2	·	2		
Transverse-oblique-straight	2	1	·	·	·	1	4		
Transverse-oblique-convex	·	·	·	·	·	1	1		
Double-straight	·	·	·	·	·	1	1		
Double-convex	·	·	·	·	2	·	2		
Straight-concave	·	·	1	·	·	·	1		
Convex-concave	3	·	·	·	·	·	3		
Semi-trapezoidal	2	·	1	·	·	$\boxed{1}$	4		
Sub-trapezoidal	·	$\boxed{2}$	·	·	·	·	2		
Trapezoidal	·	·	·	·	·	$\boxed{1}$	1		
Semi-rectangular	·	·	·	·	·	2	2		
Sub-rectangular	1	1	·	·	·	·	2		
Semi-crescent	·	1	·	·	·	·	1		
Sub-crescent	·	·	·	·	·	2	2		
Sub-triangular	·	·	·	·	·	1	1		
Triangular	·	·	1	·	·	·	1		
Semi-leaf	·	·	1	·	·	·	1		
Sub-leaf	·	·	·	·	·	1	1		
Convergent (unidentifiable)	·	·	·	·	1	1	2		
Denticulates	·	·	1	·	5	4	10	3.7	9.4
Notches	1	·	·	·	1	1	3	1.1	2.8
End-scrapers	·	·	·	·	·	1	1	0.4	0.9
Burins	·	1	·	·	·	·	1	0.4	0.9
Truncated pieces	·	·	·	·	·	1	1	0.4	0.9
Truncated-faceted	·	·	·	·	·	1	1	0.4	0.9
Sub-Total:	**19**	**14**	**9**	**3**	**21**	**41**	**107**		**100.0** %
Retouched pieces	23	10	11	7	20	39	110	41.2	
Unidentifiable tools	7	1	5	7	7	23	50	18.7	
Total:	**49**	**25**	**25**	**17**	**48**	**103**	**267**	**100.0** %	

$\boxed{}$ marks tool attribution to Crimean Micoquian industrial component

Table 9-37 Kabazi V, sub-unit III/3: tool assemblages by levels.

Simple straight scrapers

These have been observed in only two levels. The single ventral example stems from level III/3-2 and is made on a proximal part of a flake with scalar and semi-steep retouch. Two other straight scrapers were found in level III/3-3. Whereas one of these is a "regular" dorsal scraper made on the distal part of a blade with stepped and steep retouch, the other tool is made on a quite flat radial core which displays a clear strip of sub-parallel and flat retouch along part of one of its edges (Fig. 9-3, *1*). So-called accommodation elements (various thinnings and/or backing) were absent. Therefore, simple straight scrapers are a heterogeneous tool category, and might be considered as *ad hoc*-like scrapers.

Simple convex scrapers

This scraper type is the most dominant in sub-unit III/3, they having been identified in each level of sub-unit III/3, and is in fact the only tool type to do so (Table 9-37).

Blank types are:
flakes – 9 (Fig. 9-5, *5, 7*);
Levallois flakes – 4 (Fig. 9-4, *1, 2, 3*);
débordante / crested flakes – 1;
flake fragments – 4;
blades – 6 (Fig. 9-5, *2, 4, 9, 10*);
Levallois blades – 2;
débordante / crested blades – 2 (Fig. 9-5, *1, 8*);
blade fragments – 3;
core fragments – 1.

Thus, according to their metrical dimensions, these blanks have flaky general proportions (18/56.3%) and blady metrical proportions (13/40.6%). One further piece is fabricated on a core fragment (3.1%). This assemblage has revealed a very significant ratio of blady blanks for the Middle Palaeolithic.

Retouch types and angles are also very demonstrative.

Identified types show both a great dominance of scalar retouch and a minor presence of a heavy stepped retouch:

scalar – 23 / 71.9%;
sub-parallel – 4 / 12.5%;
parallel – 1 / 3.1%;
stepped – 4 / 12.5%.

Angles confirm the aforementioned retouch types, with again the infrequent occurrence of steep angle, usually independent of stepped retouch (just 1 such case is known):

flat – 13 / 40.6%;
semi-steep – 16 / 50.0%;
steep – 3 / 9.4%.

Finally, accommodation elements are not a frequent element among the simple convex scrapers. There is one naturally backed scraper (Fig. 9-5, *1*) and six scrapers with the following thinnings: one item with a truncated-faceted base (Fig. 9-5, *4*), one item with a truncated-faceted lateral edge (Fig. 9-4, *2*), one item with a truncated-faceted terminal part, one item with a thinned base (Fig. 9-5, *5*), one item with a thinned back and one item with biterminally thinned ends. Thus, only 18.75% of simple convex scrapers are characterised by various thinnings, although, as will be seen below, all remaining tool classes and categories, except for convergent scrapers, are cha-racterised by less frequent occurrence of accommodation elements.

Simple concave scrapers

Two such scrapers have been recognised in levels III/3-1A and III/3-3. The scraper from level III/3-1A is on a Levallois flake with scalar and semi-steep retouch, while the piece from level III/3-3 is on a flake with sub-parallel and steep retouch. Accommodation elements are not noted for these two scrapers.

Simple wavy scrapers

Two such scrapers were distinguished in the two uppermost levels III/3-1 and III/3-1A. The artefact from level III/3-1 is on a blade with scalar and semi-steep retouch, and that from level III/3-1A is on a flake (Fig. 9-5, *6*), also with scalar and semi-steep retouch. Again, no accommodation elements were recognised.

There follows a summary of all data for all 39 simple scrapers.

Blank types:
flakes (N=11);
Levallois flakes (N=5);
débordante / crested flakes (N=1);
flake fragments (N=5);
blades (N=7);
Levallois blades (N=2);
débordante / crested blades (N=2);
blade fragments (N=4);
cores (N=1);
core fragments (N=1).

Thus, all 39 simple scrapers were made on blanks with metrics characteristic of flakes (22 / 56.4%), on blanks with metrics characteristic of blades (15 / 38.5%), and on a couple of cores (2 / 5.1%). Thus, this data is very similar to that for simple convex scrapers.

Average metrical indices for 16 complete pieces with flake-like proportions and 11 complete pieces with blade-like proportions are given below.

Flaky blanks. Length – 4.66 cm; width – 3.56 cm, with only two flakes with shortened, transversal metrics where L ≤ W; thickness – 1.04 cm. All these metrical data are considerably higher than those noted for unretouched flakes (see Tables 9-17, 9-18 and 9-19).

Blady blanks. Length – 6.70 cm; width – 2.66 cm; thickness – 0.78 cm. Again, the given metrics are greater than those for unretouched blades (see Tables 9-34, 9-35 and 9-36).

Retouch types and angles for the working edges of all 39 simple scrapers are as follows:

scalar – 27 / 69.2%;
sub-parallel – 6 / 15.4%;
parallel – 1 / 2.6%;
stepped – 5 / 12.8%;
flat – 14 / 35.9%;
semi-steep – 20 / 51.3%;
and steep – 5 / 12.8%.

Once again, these retouch indices mirror the aforementioned data for simple convex scarpers, with only a minor role played by both stepped and steep retouch (only two tools).

Accommodation elements also remain quantitatively the same as observed for simple convex scrapers. No such element is observed for any straight, concave and wavy simple scraper. In this case, six thinnings for all 39 simple scrapers only constitute 15.4%.

All in all, simple scrapers are basically convex ones, while a few straight, concave and wavy types can be interpreted as *ad hoc*-like types. In spite of the fact that many of these scrapers are made on flaky blanks, a significant proportion of them (almost ca. 40%) was produced on blady blanks. Scalar retouch with semi-steep and flat angles are predominant, whereas stepped and steep retouch is insignificant. Also, ca. 15% of simple scrapers display various thinnings, whereby half of them (3 out of 6) show truncated-faceted elements, with just a single naturally backed piece among them.

Transverse scrapers

The seven items constituting this scraper category are characterised by retouch placement at the distal wide edge of blanks, and can be subdivided into either proper transverse scrapers (2 items) or transverse oblique scrapers (5 items).

Both transverse scrapers have convex working edges, and were identified only in level III/3-3. Both tools were produced on complete flakes. Whereas one of them displays a stepped and semi-steep retouch (Fig. 9-6, *7*), the other has a scalar and steep retouch.

Transverse oblique scrapers (see Table 9-37) occur at two extremities of the sub-unit III/3 sequence – in its upper part (levels III/3-1 and III/3-1A) and in its lowermost part (level III/3-3A). There are four such scrapers with straight working edges (Fig. 9-6, *1, 2*) and only a single example with a convex working edge (Fig. 9-6, *3*).

In total, according to their blank types, retouch data and accommodation characteristics, these five scrapers are, morphologically speaking, roughly identical to the two proper transverse scrapers; therefore, the combined characteristics for all seven scrapers is as follows.

Blank types: flakes – 6 / 85.7%; flake fragment – 1 / 14.3% (Fig. 9-6, *1*).

Average metrical dimensions of all six complete flake blanks are as follows: length – 4.70 cm, width – 4.53 cm, thickness – 0.97 cm. There are two flake blanks among them (2 transverse convex scrapers) with shortened, transversal metrics where L ≤ W. The transverse scrapers on flakes have greater dimensions than unretouched flakes (see Tables 9-17, 9-18 and 9-19).

Retouch types and angles for the working edges of these seven scrapers are as follows:

scalar – 6 / 85.7%;
stepped – 1 / 14.3% and
flat – 1 / 14.3%;
semi-steep – 5 / 71.4%;
steep – 1 / 14.3%.

These retouch data signify that the most characteristic retouch for all the transverse scrapers is scalar and semi-steep. The single occurrence of stepped retouch for a transverse convex scraper from level III/3-3 is not of a great importance, because it too is associated with semi-steep retouch. Thus, indices for transverse retouch on scrapers are similar to the respective indices for simple scrapers. It should also be noted that some transverse oblique scrapers resemble truncated pieces (Fig. 9-6, *1, 2*), although their retouch angles only approach semi-steep, and not one of them displays a true steep / abrupt retouch. For this reason, these pieces are classified as transverse oblique scrapers.

Accommodation elements are not noted among the transverse scrapers.

Thus, we are dealing with a group of regular transverse scrapers that is practically lacking any specific features. It is only left to underline that they are fabricated on flakes, and without the application of Quina retouch.

Double scrapers

These seven scrapers show different configurations with regard to their working edges and no regularity in level distribution; nevertheless, they represent an interesting tool category.

First of all, concerning blank types, there is a single complete flake, five flake fragments (comprising

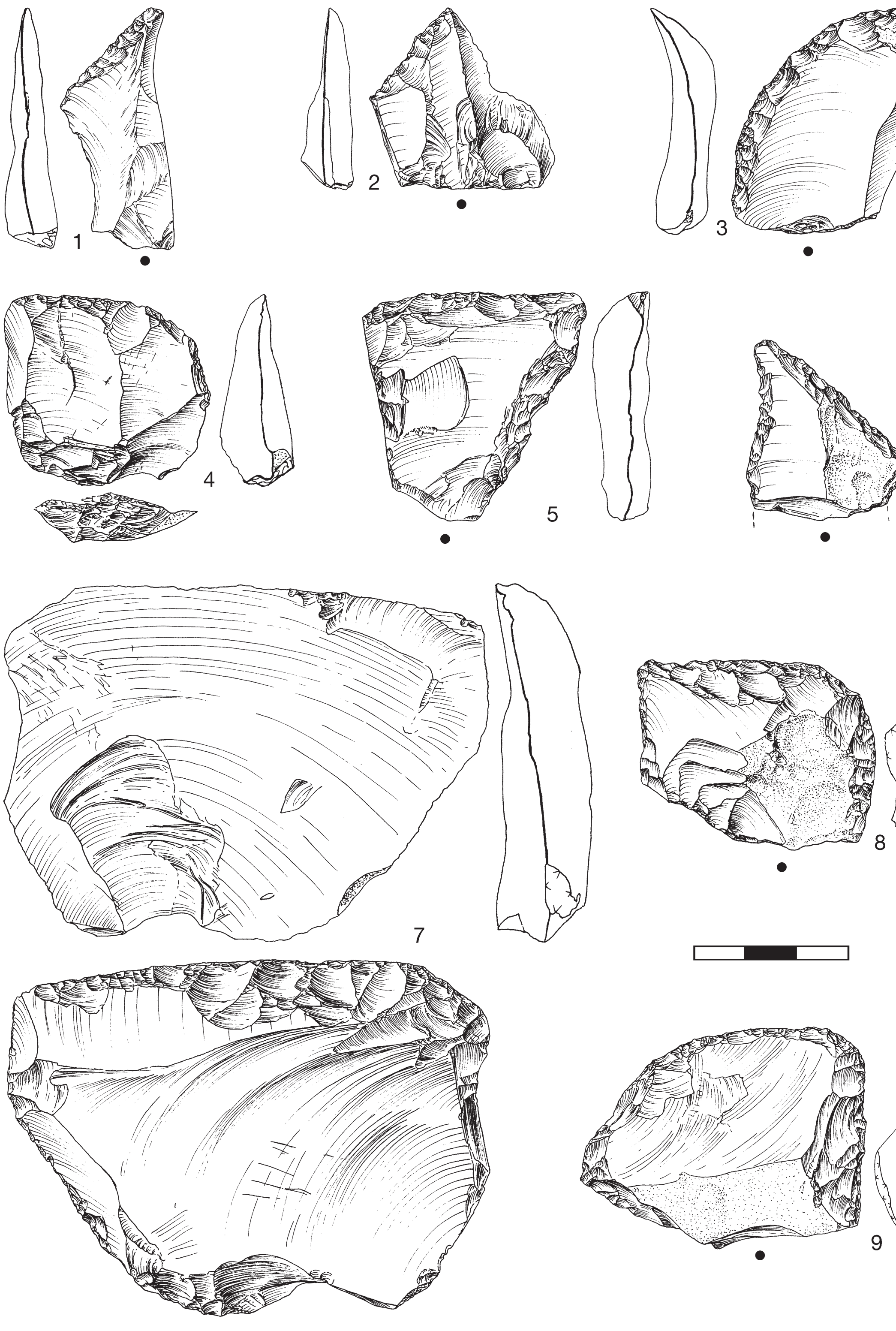

Fig. 9-6 Kabazi V, sub-unit III/3: levels III/3-1 (1, 4, 6); III/3-1A (8-9); III/3-3 (7); III/3-3A (2-3, 5). Tools: transverse oblique scraper with straight working edge on longitudinally fragmented flake (1); transverse oblique scraper with straight working edge on complete flake (2); transverse oblique scraper with convex working edge on complete (3); semi-trapezoidal scraper on complete flake (4); semi-trapezoidal scraper with retouched back on complete flake (5); semi-trapezoidal scraper on flake fragment (6); transverse convex scraper on complete flake (7); sub-trapezoidal scrapers on complete flakes (8-9).

3 proximal parts, 1 medial part and 1 distal part), and one blade fragment (a medial part). The pieces on a complete flake and on a flake's distal parts can be considered as double scrapers (Chabai, Demidemko 1998). The remaining pieces, referred to as double scrapers, should perhaps better be affiliated to the unidentifiable tools, because missing distal parts of these tools possibly represent convergent scrapers and/or points. The fragmented double scrapers identified here are quite sizable, and it is actually suspected that they are true to this scraper type.

Now let us consider the retouch data of these scrapers on the basis of their 14 working edges:

scalar – 11 / 78.6%;
sub-parallel – 2 / 14.3%;
stepped – 1 / 7.1% and
flat – 6 / 42.9%;
semi-steep – 5 / 35.7%;
steep – 3 / 21.4%.

The data again show a dominance of scalar retouch with a flat and/or semi-steep angle. There is only a single case in which there occurs stepped and steep retouch type with an angle; this is known from one of the working edges of a double scraper on a complete flake.

Finally, the metric measurements of the only complete flake blank is again comparable to the data for simple and transverse scrapers: length – 5.1 cm, width – 3.9 cm, thickness – 1.3 cm.

Thus, the characteristics of the double scrapers do not contradict the already observed data for simple and transverse scrapers, and one might argue that when considered together, they all compose a homogeneous set of scrapers.

Convergent scrapers

This scraper category comprises a good sample of 20 pieces which are only absent in level III/3-2A (the level within sub-unit III/3 with the least tools), and with only a single such scraper from level III/3-3 (see Table 9-37). There is nothing simple in the classification of these scrapers, particularly considering the problem of possible Micoquian admixture within the WCM levels of sub-unit III/3; in fact this category of scraper is the best possible candidate for revealing "Micoquian influence".

The convergent scrapers will be described below in line with listings in Table 9-37.

"Trapezoidal" scrapers

These seven scrapers stem from four different levels of sub-unit III/3 (see Table 9-37) and comprise four semi-trapezoidal, two sub-trapezoidal and one trapezoidal item.

Semi-Trapezoidal scrapers with two retouched working edges are as follows:

Blanks: flakes – 2 (Fig. 9-6, *4, 5*) and flake fragments – 2 (Fig. 9-6, *6*).

By their metric measurements: 2 complete flakes are regular, with L > W: length – 4.6 cm, width – 4.0 cm, thickness – 0.7 cm (Fig. 9-6, *5*); and 1 item is shortened, transversal, with L < W: length – 3.2 cm, width – 3.7 cm, thickness – 1.2cm (Fig. 9-6, *4*).

Regarding accommodation elements, two of the four semi-trapezoidal scrapers have additional treatment: one semi-trapezoidal scraper on a flake fragment displays terminal thinning, and one on a complete flake has a retouched back (Fig. 9-6, *5*).

Eight retouched edges are as follows: scalar (N=5), sub-parallel (N=1), stepped (N=2), flat (N=2), semi-steep (N=3), steep (N=3). There is one association of a stepped and a steep retouch for a distal edge of a semi-trapezoidal scraper with retouched back from level III/3-3A (Fig. 9-6, *5*). These characteristics are seriously indicative of Micoquian admixture in this lowermost level of sub-unit III/3.

Sub-trapezoidal scrapers (2 items) with 3 retouched working edges were only identified in level III/3-1A (Fig. 9-6, *8, 9*). Both are on complete flakes with shortened, transversal proportions: length – 3.9 and 3.3 cm, width – 5.9 and 4.5 cm, thickness – 1.7 and 1.5 cm. The following are their retouch types and angles: scalar – 3, sub-parallel – 1, stepped – 2 and flat – 2, semi-steep – 4. No accommodation elements were observed.

Considering the complete absence of sub-trapezoidal scrapers for the WCM from Unit II at Kabazi II (see Chabai 2004c: Table II-5 on p. 62), their presence here on shortened, transversal, ra-ther thick flakes, with 3 well retouched edges, from the uppermost levels of sub-unit III/3 is indicative of Micoquian origins.

The single trapezoidal scraper stems from the lowermost level III/3-3A; this artefact is also regarded as Micoquian. It is on the distal part of a flake that was reused after breakage, it being retouched to produce a tool with four working edges. Its overall size is 3.8 cm long (the preserved length), 3.9 cm wide and 1.0 cm thick. The re-utilised basal part and both laterals display scalar and flat retouch, while the distal edge has a stepped and semi-steep retouch. With exception of the re-utilisation of the proximal end, no other accommodations are evident.

All in all, the seemingly well represented series of seven "trapezoidal" scrapers turned out to be not so good. Four of these artefacts are considered by us to be Micoquian, and stem either from one of the uppermost levels (III/3-1A) or the lowermost level III/3-3A (1 semi-trapezoidal, 2 sub-trapezoidal and 1 trapezoidal scrapers), leaving only three semi-tra-pezoidal scrapers as possibly WCM in origin.

"Rectangular" scrapers (Table 9-37)

The four "rectangular" scrapers occur only in the two uppermost levels III/3-1 and III/3-1A, and in the lowermost level III/3-3A .

The two scrapers from level III/3-3A are semi-rectangular. One of these pieces (Fig. 9-7, *7*) is made on a large, elongated flake (length – 7.2 cm, width – 4.7 cm, thickness – 1.0 cm) that morphologically combines features of both a lateral crested flake and a specific *enlèvement deux* flake, i.e. characteristic for WCM debitage. Its retouch types and angles are scalar and steep, and stepped and semi-steep. The second piece (Fig. 9-4, *4*) is again on a typical WCM debitage – a simple lateral *débordante* blade (length – 7.0 cm, width – 2.4 cm, thickness – 0.8 cm). The scraper has scalar and steep retouch, and stepped and steep retouch. This semi-rectangular scraper is also naturally backed.

Sub-rectangular scrapers (2 items) with three retouched working edges occur in levels III/3-1 and III/3-1A. The piece from level III/3-1 (Fig. 9-7, *9*) is on a primary flake (4.3 cm long, 3.9 cm wide, 1.2 cm thick) with a variety of retouch types and angles: scalar and steep, stepped and semi-steep, scalar and semi-steep. This piece would be equally at home in both a WCM and a Crimean Micoquian tool-kit. However, considering the clear absence of features common to Micoquian unifacial scrapers (e.g. often invasive retouch and accommodation thinning), the piece is probably better assigned to the WCM. The item from level III/3-1A (Fig. 9-7, *5*) certainly belongs to the WCM tool-kit. It is a distal part of an elongated flake with a pronounced parallel scar pattern – a feature that is not at all typical for the Crimean Micoquian. Its retouch types and angles are as follows: stepped and steep, scalar and flat, stepped and flat.

"Crescent" scrapers

These are encountered in levels III/3-1A (one semi-crescent scraper) and III/3-3A (two 2 sub-crescent scrapers).

The semi-crescent is on the distal part of a flake and displays two scalar and two semi-steep retouched working edges.

The two sub-crescent pieces are on complete flakes. The first flake blank is of shortened, transversal proportions (length – 3.5 cm, width – 3.9 cm, thickness – 1.0 cm), whereas the second flake blank is regular – 3.8 cm long, 2.2 cm wide, 1.0 cm thick. The first sub-crescent scraper has a truncated-faceted base and its two other secondary treated edges both show sub-parallel and semi-steep retouch characteristics. The second sub-crescent scraper displays no accommodation elements, but was subjected to a heavy secondary treatment – all three edges have a stepped and semi-steep retouch.

This scraper group is well attested in both Crimean Middle Palaeolithic industries (WCM and Crimean Micoquian), but considering their rather infrequent occurrence within the Kabazi V, sub-unit III/3 tool-kit, we may actually relate them to the WCM assemblage.

"Triangular" scrapers

There are only two convergent scrapers from sub-unit III/3. The first stems from level III/3-3A (sub-triangular) and the second from level III/3-2 (triangular).

The sub-triangular piece (Fig. 9-7, 8) is made on an almost complete flake (5.5 cm long, 4.1 cm wide, 1.6 cm thick) and bears scalar and semi-steep, and stepped and semi-steep retouch types.

The triangular piece (Fig. 9-7, 2) is on a complete blade (5.4 cm long, 2.6 cm wide, 0.9 cm thick), is basally thinned, and its three retouched edges are as follows: stepped and steep, sub-parallel and semi-steep, stepped and flat.

The affiliation of these two "triangular" scrapers to the WCM tool-kit follows along the same line of argumentation as noted for the "crescent" scrapers.

"Leaf shaped" scrapers

A semi-leaf scraper comes from level III/3-2, and a sub-leaf scraper is from level III/3-3A.

The semi-leaf piece (Fig. 9-7, 3) is on a small complete flake (length – 3.2 cm, width – 2.4 cm, thickness – 0.4 cm) and was treated using scalar and semi-steep, and stepped and steep retouch.

The sub-leaf scraper with a notched base is again on a small flake (3.5 cm long, 2.4 cm wide, 0.9 cm thick) and has three working edges which show the following retouch: 2 sub-parallel and 2 semi-steep, and sub-parallel and steep.

Such small "leaf shaped" scrapers can appear in both WCM and Crimean Micoquian tool-kits and once again, due to their small number we rather connect them with the WCM industry.

Convergent (unidentifiable) scrapers

These scrapers were identified in the two lowermost levels III/3-3 and III/3-3A. Both pieces take the form of just the small distal parts of flakes. Their tips, although convergent, are not sharp and pointed, and for this reason these pieces are identified as scrapers and not as points. The scraper from level III/3-3 displays scalar and semi-steep, and scalar and flat retouch. The item from level III/3-3A has scalar and semi-steep retouch.
To summarise, the are 16 WCM convergent scrapers from sub-unit III/3 at Kabazi V; this number excludes from the overall total of 20 pieces the one semi-trapezoidal, two sub-trapezoidal and one trapezoidal

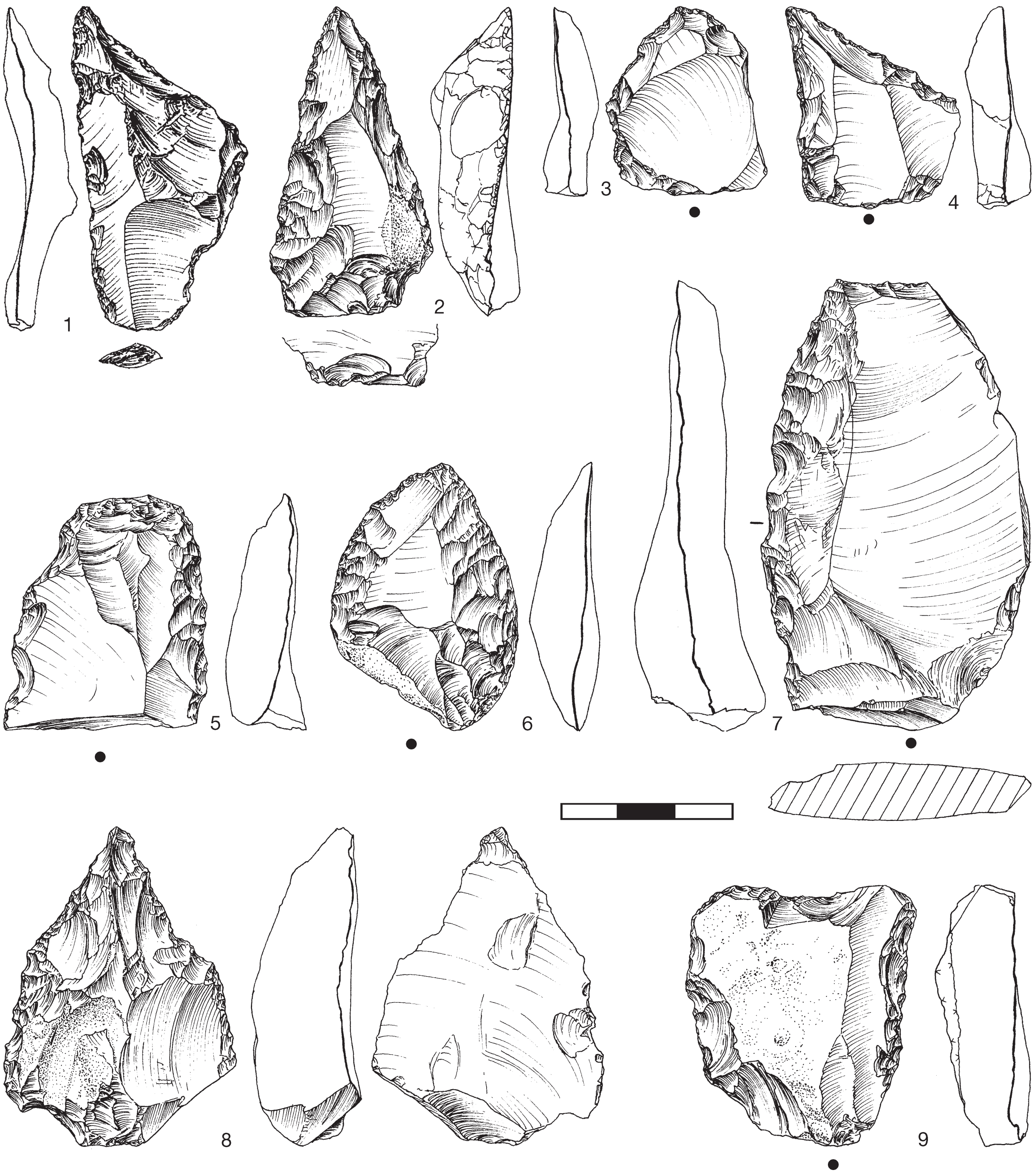

Fig. 9-7 Kabazi V, sub-unit III/3: levels III/3-1 (4, 9); III/3-1A (5); III/3-2 (2-3, 6); III/3-3A (1, 7-8). Tools: distal point on complete blade (1); triangular scraper on complete blade (2); semi-leaf scraper on complete flake (3); semi-trapezoidal point on complete flake (4); sub-rectangular scraper on flake fragment (5); sub-leaf point on complete flake (6); semi-rectangular scraper on complete flake (7); sub-triangular scraper on complete flake (8); sub-rectangular scraper on complete primary flake (9).

scraper assigned to the Crimean Micoquian.

Blank types: flakes – 8; flake fragments – 6; blades – 1; *débordante* / crested blades – 1.

Accordingly, the 16 convergent scrapers were made on 87.5% of blanks with flaky metrical proportions and only on 12.5% of blanks with blady metrical proportions.

Average metrics for 8 complete flakes and 2 complete blades are as follows:

Flaky blanks. Length – 4.28 cm; width – 3.41 cm with two flakes with shortened, transversal metrics where L ≤ W; thickness – 1.04 cm. The metrical measurements are higher than those for unretouched flakes (see Tables 9-17, 9-18 and 9-19), as it is for each scraper category in the tool-kit.

Blady blanks. Length – 6.20 cm; width – 2.50 cm; thickness – 0.85 cm. Again, the measurements are larger than for unretouched blades (see Tables 9-34, 9-35 and 9-36), as it is also true for each scraper category produced on blades.

Retouch types and angles for the 16 convergent scrapers with their 37 working edges are as follows:

scalar – 18 / 48.7%;
sub-parallel – 7 / 18.9%;
stepped – 12 / 32.4% and
flat – 6 / 16.2%;
semi-steep – 21 / 56.8%;
steep – 10 / 27.0%.

On the one hand, the retouch indices show a dominance of scalar retouch (however, with about one third of stepped retouch), and, on the other hand, a great dominance of the semi-steep retouch angle, which is followed by the steep retouch angle. At the same time, of all 37 retouch types and angle combinations, only 10.8% (4 cases) show the common occurrence of stepped and steep retouch.

Accommodation elements are registered for five convergent scrapers. These are one naturally backed example and four different thinnings and/or truncations: one truncated-faceted base, one terminally truncated, one basally thinned, and one notched base. Thus, four of these thinnings and/or truncations constitute 25% for the sample of 16 convergent scrapers; this is the highest ratio among all scraper categories.

On the whole, the convergent scrapers are characterised by a variety of forms ("trapezoidal", "rectangular", "crescent", "triangular" and "leaf shaped") with no prevalence of any one or two types. They are mostly secondary treated by scalar and semi-steep retouch, although the occurrence of stepped and steep retouch (not very often in combination) is notable, with the highest ratio of all scraper categories. The same also applies to the application of accommodation elements which is once more the highest for all the defined scraper categories. Therefore, we can conclude that the convergent scrapers represent the scraper category that underwent the most significant secondary modification.

Returning back to the ratios of the four scraper categories, these should be re-calculated, this time keeping in mind the four convergent scrapers from the Crimean Micoquian admixture component. Thus, we have in total 69 scrapers in the sub-unit III/3 WCM tool-kit from Kabazi V. There are 39 simple scrapers (56.6%), seven transverse scrapers (10.1%), seven double scrapers (10.1%), and 16 various convergent scrapers (23.2%).

Points

The 17 points represent a sample of various such tools; no particular type or series of points dominates (see Table 9-37). They occur randomly in each of first six levels (III/3-1 – III/3-3), being more numerically but not by type(s) in the lowermost level III/3-3A. It should be noted that all points bear retouch on the dorsal surface of the debitage blanks.

Levallois atypical retouched points

Rather conventionally, these three artefacts have been assigned to the points, as firstly they are not typical Levallois points, and secondly, they were not transformed into real points following retouch. They can be referred to as atypical Levallois points with some retouch. Whereas one of these pieces stems from level III/3-1A, the remaining two items were recovered from level III/3-3A (see Table 9-37).

The piece from level III/3-1A is a quite large distal part of a point (length – 6.1 cm, width – 4.6 cm, thickness – 0.8 cm) with a bilateral irregular continuous retouch.

One of the pieces from level III/3-3A is very similar to the one described above in its retouch characteristics. It is, however, a complete but smaller item (length – 3.7 cm, width – 2.5 cm, thickness – 0.5 cm) with a *chapeau de gendarme* butt and an irregular discontinuous retouch on its right lateral edge.

The third Levallois atypical point (also with a *chapeau de gendarme* butt on a complete item – 3.7 cm long, 2.5 cm wide and 0.5 cm thick) bears a regular scalar and semi-steep retouch at its distal edge, making it a transverse oblique convex scraper. In spite of this, it was decided to assign the object to the Levallois atypical retouched points.

Lateral points

The only lateral point stems from level III/3-3. It is a small distal part of a flake or a blade (2.8 cm long, 1.4 cm wide, 0.2 cm thick) with scalar and semi-steep lateral retouch.

Distal points

The only distal point comes from level III/3-3A (Fig. 9-7, 1). It bears a regular scalar and semi-steep retouch at the distal tip of the blank – a blade (5.6 cm long, 2.7 cm wide, 0.8 cm thick).

Semi-trapezoidal points

This point type is known through single examples from three levels of sub-unit III/3 – III/3-1, III/3-2, and III/3-3A. The piece from level III/3-2 is on the fragment of a flake, while the remaining two pieces are made on complete flakes. The fragmented item from level III/3-2 has a scalar and steep, and scalar and semi-steep retouch. In light of its fragmentation, we attribute this point to the WCM materials from sub-unit III/3. However, this is not the case with the two complete points which are believed to be Micoquian in origin. The point from level III/3-1 (Fig. 9-7, 4) is on a regular flake (3.3 cm long, 2.7 cm wide, 0.7 cm thick), with scalar and steep, and stepped and steep retouch. The point from level III/3-3A is on a shortened, transversal flake (3.0 cm long, 4.3 cm wide, 0.9 cm thick), with stepped and semi-steep, and scalar and semi-steep retouch.

Thus, the semi-trapezoidal points are made up of a significant Crimean Micoquian component.

Semi-crescent points

These are only observed in the lowermost level III/3-3A with three pieces. All three are made on quite similar debitage blanks of similar sizes and proportions. Two pieces are on rather elongated primary flakes (length – 6.0 cm, width – 3.1 cm, thickness – 0.6 cm; Fig. 9-8, 1, 3), while the third is made on a shortened (6.5 cm long, 3.2 cm wide and 0.9 cm thick) blade (Fig. 9-8, 2). Secondary treatment of all six working edges of these points are as follows: 3 stepped, 2 scalars, 1 sub-parallel retouch types, 4 flat, and 2 semi-steep retouch angles. We are inclined to assign all these semi-crescent points to the WCM tool-kit, due to their quite elongated proportions, overall similarity, and prevalence of a flat retouch angle.

Sub-leaf points

Two sub-leaf points were recovered from levels III/3-2 (Fig. 9-7, 6) and III/3-3A. Their flake blanks are practically identical (length – both 4.6 cm, width – both 3.2, thickness 1.0 and 1.5 cm), although there are some differences concerning retouch: sub-parallel and semi-steep, and scalar and flat for the thicker point, 2 stepped and 2 semi-steep for the thinner point. The points are assigned to the WCM tool-kit based on their frequency in the Unit II assemblages at Kabazi II (see Chabai 1998b; 2004c).

Unidentifiable points

These points are represented by just heavily fragmented examples: small distal parts and/or even tiny distal tips, and therefore cannot be classified in any objective way. They occur in 3 levels of sub-unit III/3: III/3-1 (N=1), III/3-2A (N=1), and III/3-3A (N=2).

There follows a short summary of the basic characteristics of points from sub-unit III/3. Disregarding the two presumably Micoquian semi-trapezoidal pieces, the total point sample amounts to 15 points for sub-unit III/3. Once again, it should be stressed that three retouched atypical Levallois points were also attributed to the points. Further, it should not be forgotten that four points were heavily fragmented. Thus, from a typological perspective, we have only eight pieces. This rather poor overall representation of points is an important factor when discussing the WCM status of the tool-kit; it is well known that points within various WCM assemblages account for ca. 20% of tools, excluding retouched pieces and unidentifiable tools. In sub-unit III/3 we have 15 points out of 101 identifiable tools, i.e. 14.85%, again recalling the inclusion of retouched atypical Levallois points and unidentifiable points. Morphologically, the eight points are characterised by the following data.

Blanks: flakes – 3, flake fragments – 2, blades – 1, blade fragments – 1, unidentifiable blank – 1.

In spite of the small number of artefacts we observe a notable ratio of blady blanks for points, and also, it should not be forgotten, an elongated flake and an elongated flake fragment for sub-leaf points.

Metrical data is even poorer and based on just three complete flakes and one blade. On average, flakes are 5.07 cm long, 3.17 cm wide, and 1.03 cm thick, although with respect to their length and thickness, they are larger than unretouched flakes. The only blade blank is 6.5 cm long, 3.2 cm wide and 0.9 cm thick that, in all three respects larger than unretouched blades. This testifies to the selection of longer, wider and thicker debitage blanks for tool production processes in sub-unit III/3.

Retouch types and angles for the eight points with 15 working edges are:

scalar – 18 / 48.7%;
sub-parallel – 7 / 18.9%;
stepped – 12 / 32.4% and
flat – 6 / 16.2%;
semi-steep – 21 / 56.8%;
steep – 10 / 27.0%.

These are very much similar to the retouch types

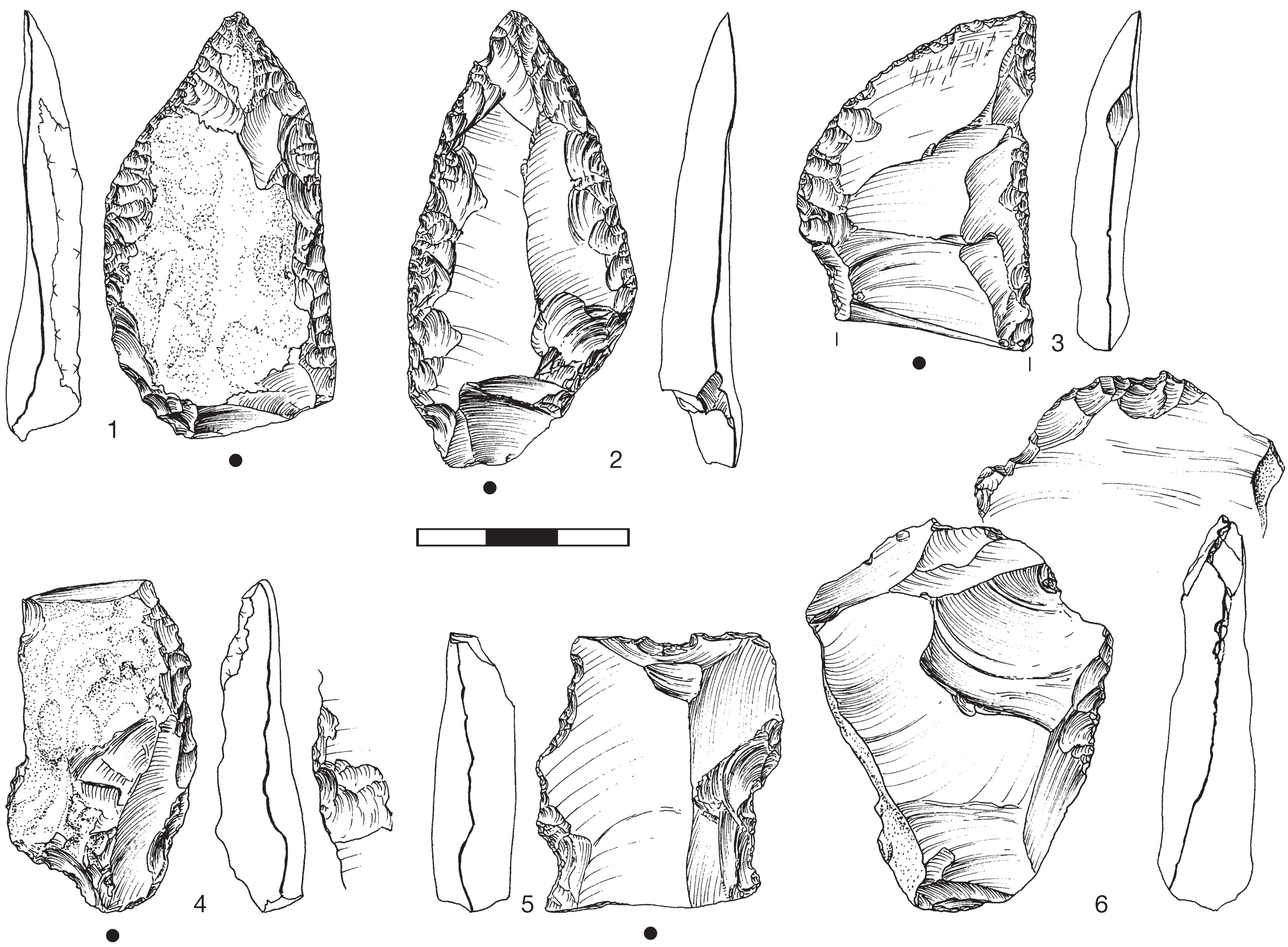

Fig. 9-8 Kabazi V, sub-unit III/3: levels III/3-1 (6); III/3-3 (4); III/3-3A (1-3, 5). Tools: semi-crescent point on complete primary flake (1); semi-crescent point on complete blade (2); semi-crescent point on flake fragment (3); simple convex denticulate on complete flake (4); sub-rectangular denticulate on flake fragment (5); retouched flake with irregular retouch and terminal truncated-faceted terminal part (6).

and angles noted for convergent scrapers, but with one exception – the share of steep retouch angle is five times higher for convergent scrapers than it is for the points. At the same time, none of the five edges with stepped retouch is associated with a steep angle for the points.

Further, no one point is backed or anyway thinned.

Denticulates

There are ten such tools which are irregularly distributed throughout the archaeological sequence of sub-unit III/3: one piece from level III/3-2, five pieces from level III/3-3, and four pieces from level III/3-3A (see Table 9-37). Basically, sub-unit III/3 denticulates are very much the same as scrapers.

In view of the single ventral scraper among all 68 WCM scrapers, the presence should be noted of a simple convex denticulate with alternating retouch placement and naturally backed accommodation element from level III/3-2. It is made on a rather big flake (6.3 cm long, 4.3 cm wide, 2.1 cm thick) with scalar and semi-steep retouch. All remaining nine denticulates from levels III/3-3 and III/3-3A are also made on flakes and flake fragments, are dorsally secondary treated tools, and are subdivided, as were the scrapers, into three categories: simple lateral (5 items), transversal (3 items) and convergent (1 item). No double denticulates were observed. The data for the combined denticulates sample from levels III/3-3 and III/3-3A are as follows:

Simple denticulates are made up of four convex pieces and one concave piece. The convex items (Fig. 9-8, *4*) are made on three complete flakes (length – 4.6 – 4.0 – 3.3 cm; width – 2.5 – 3.2 – 3.8 cm; thickness – 1.0 – 1.0 – 1.4 cm, respectively; the second of the artefacts is characterised by shortened, transversal metrical proportions) and a flake fragment. The concave item is on a complete simple lateral *débordante* blade (Fig. 9-5, 3) that is 6.6 cm long, 3.2 cm wide, and 0.5 cm thick. All five simple denticulates show the following retouch types and angles: 3 scalars, 2 stepped, and 1 flat, 3 semi-steep, 1 steep. Stepped and steep retouch occur together on one simple convex denticulate, only (Fig. 9-8, 4).

Transverse denticulates comprise two convex and one oblique convex pieces. Whereas one transverse denticulate is on a flake fragment, the two remaining items are on complete flakes (length – 3.9 – 5.9 cm; width – 5.4 – 3.4 cm; thickness – 0.6 – 0.7 cm, respectively), the first of which has shortened, transversal metric proportions. All three transverse denticulates display scalar and semi-steep retouch, only.

The single convergent denticulate (sub-rectangular) is on a flake fragment with scalar and steep, scalar and flat, and stepped and steep retouch of its three working edges (Fig. 9-8, *5*).

A notable feature of these nine denticulates is a complete absence of any accommodation elements.

The summary on all ten denticulates is given below.

Blanks: flakes – 6; flake fragments – 3; blades – 1.

As already seen, most denticulates are produced on flaky blanks.

The average metrical parameters for the six complete flakes are as follows: length – 4.67 cm, width – 3.77 cm, thickness – 1.13 cm. Again, this shows that denticulated tools are larger than unretouched flakes. The only blade is 6.6 cm long, 3.2 cm wide and 0.5 cm thick.

Retouch types and angles for the ten denticulates, with twelve working edges, are:

scalar – 9 / 75.0%;
stepped – 3 / 25.0% and
flat – 2 / 16.7%;
semi-steep – 7 / 58.3%;
steep – 3 / 25.0%.

Thus, scalar retouch clearly predominates among denticulates, although of three stepped retouched angles, two are associated with a steep angle.

The only accommodation element noticed among the ten denticulates is the naturally backed element of the alternating piece.

Notches

These three tools comprise single examples from three different levels of sub-unit III/3: III/3-1, III/3-3, and III/3-3A. All notches are characterised by dorsal retouch. On the other hand, notches are made on very different type blanks, with variable retouch disposal – a small complete flake (3.0 cm long, 2.4 cm wide, 1.0 cm thick) with distal scalar and steep retouch from level III/3-1; a pre-core with scalar and semi-steep retouch from level III/3-3; and a chip (2.5 cm long, 2.3 cm wide, 0.9 cm thick) with lateral scalar and semi-steep retouch from level III/3-3A. The characteristics of these notches testify to an occasional selection of various blanks for the manufacture and usage of notches. At the same time, the absence of stepped retouch on notches is suggestive of only short-term usage. No so-called "Clactonian notches" were distinguished. All in all, we may conclude that notches played only a very minor role in the tool-kit from sub-unit III/3 at Kabazi V.

Upper Palaeolithic Tool Types

These tool classes are represented by single pieces from throughout the sub-unit III/3 archaeological sequence. They include an end-scraper from level III/3-3A, a burin from level III/3-1a, and a truncated piece, again from level III/3-3A (see Table 9-37). The occurrence of such pieces shows how incidental their presence in sub-unit III/3 is.

End-scraper

The end-scraper is quite atypical. Its working edge displays sub-parallel and steep convergent retouch, and is situated not on one of the narrow edges of a debitage blank, as is usual for end-scrapers, but instead is upon the left lateral edge of a flake (length – 4.2 cm, width – 3.5 cm, thickness – 1.6 cm) At the same time, the flake's distal edge bears only an irregular partial dorsal retouch.

Burin

This tool is a regular angle burin. It was made on a shortened, transversal flake (length – 4.3 cm, width – 5.1 cm, thickness – 2.1 cm) from which a single burin facet had been struck from a natural terminal edge.

Truncated piece

This is a flake (4.1 cm long, 2.3 cm wide, 0.5 cm thick), the distal edge of which was treated obliquely by a scalar and steep retouch. Morphologically, the piece is similar to some transverse oblique straight scrapers (Fig, 9-6, *1, 2*), but with a single important exception – the truncated piece displays a steep angle retouch, while the transverse oblique straight scrapers are characterised by a semi-steep angle of retouch. Therefore, from a strictly typological perspective, this piece, which is unique for the whole sub-unit III/3 levels, is an example for a truncated piece.

Truncated-faceted piece

As noted above, truncated-faceted thinning is one of the most common features on scrapers. There is, however, one further artefact, a truncated-faceted piece from the lowermost level III/3-3A, which displays such treatment, but with no additional retouch. The piece is on a rather big flake (6.2 cm long, 3.7 cm wide and 1.0 cm thick) and displays a truncated-faceted modification at its (terminal) distal part. Whether the piece is an unfinished tool or must be classed as "an independent" tool is still unclear.

Some Considerations on the Structure & Typologically Indicative Features of the Tool Assemblage

There follows a brief summary of the aforementioned data on characteristic tools from Kabazi V, sub-unit III/3.

First, this involves a re-calculation of the composition of tool-kits, taking into account the exclusion from the WCM tool-list of some Micoquian scrapers and points, i.e. a total of six pieces. In this way, one arrives at a total of 101 tools. Accordingly, the representation of the tool classes is as follows:

scrapers – 69 / 68.3%,
points – 15 / 14.8%,
denticulates – 10 / 9.9%,
notches – 3 / 3.0%,
end-scrapers – 1 / 1.0%,
burins – 1 / 1.0%,
truncated pieces – 1 / 1.0%,
truncated-faceted pieces – 1 / 1.0%.

This general tool structure seems to be very similar to WCM tool-kits that are known from Unit II of Kabazi II, and from layers II/2 and III at Karabi Tamchin (see Chabai 2004c: Table II-5 on p. 62). Therefore, there is no doubt that the very basic body of tools from Kabazi V, sub-unit III/3 is affiliated to the WCM, in spite of a small number of Crimean Micoquian tools.

At this point, it is also useful to provide a summary on blanks, metrics, retouch and accommodation elements for the whole of this tool sample of 101 pieces.

Blanks:
flaky blanks – 72 / 75.0%,
blady blanks – 20 / 20.9%,
chips – 1 / 1.0%,
core-like pieces – 3 / 3.1%,
unidentifiable debitage pieces – 5 / – .

This structure testifies to the important role of blady blanks within the tool-kit. Here it should also be noted that the blady blanks (15 of 20 / 75.0%) are blanks mainly for simple scrapers.

Average metrical indices of debitage blanks for 47 complete flaky pieces and 15 complete blady pieces are given below.

Flaky pieces: *length* – 4.56 cm; *width* – 3.61 cm; thickness – 0.90 cm.
Blady pieces: *length* – 4.29 cm; *width* – 3.76 cm; thickness – 1.05 cm.

These general tool metrical data are larger than those known for just unretouched debitage (see Tables 9-17, 9-18 and 9-19): length – 3.38 cm, width – 3.23 cm, thickness – 0.80 cm. The share of flakes with shortened, transversal metrical proportions among these 47 flaky blanks among tools is not high – nine pieces (19.1%).

Blady pieces: *length* – 6.61 cm; *width* – 2.71 cm; thickness – 0.78 cm. Again, when taken as a whole, and upon comparison with unretouched blades, blady blanks are much larger in all three metrical parameters (see Tables 9-34, 9-35 and 9-36): length – 4.57 cm, width – 1.80 cm, thickness – 0.60 cm.

Retouch types and angles for all 151 working edges on 92 tools (69 scrapers, 8 points, 10 denticulates, 3 notches, 1 end-scraper, 1 truncated piece) are as follows:

scalar – 93 / 61.6%;
sub-parallel – 23 / 15.2%;
parallel – 1 / 0.7%;
stepped – 34 / 22.5% and
flat – 35 / 23.2%;
semi-steep – 81 / 53.6%;
steep – 35 / 23.2%.

Accordingly, these permit some general remarks on the retouch data.

Retouch types are characterised by a dominance of scalar type. Although the stepped type is the second most common, it is more than 2.5 times less frequent than the scalar type. Sub-parallel and parallel types together comprise the third most frequent retouch group.

Retouch angles are mostly semi-steep, while flat and stepped angles are equally represented, but even when combined are less frequent than the semi-steep angle. Only nine working edges were observed with a combination of stepped and steep retouch (ca. 25 – 26%).

Finally, accommodation elements are noted in the following variety and frequency for the 101 tools:

naturally backed (N=3) (1 simple scraper, 1 convergent scraper, 1 denticulate);
truncated-faceted (N=5) (3 simple scrapers, 1 convergent scraper, 1 proper truncated-faceted piece);
thinned base or back (N=3) (2 simple scrapers; 1 convergent scraper);
bi-terminally thinned ends (N=1) (1 simple scraper);
terminally truncated (N=1) (1 convergent scraper);
and notched base (N=1) (1 convergent scraper).

Therefore, only three tool categories (7 simple scrapers, 5 convergent scrapers and 1 denticulate) display accommodation elements. Thus, only simple and convergent scrapers are characterised by various thinnings; from twelve thinning cases, five are truncated-faceted. One further tool is just a truncated-faceted piece. This picture testifies to the typological link between simple and convergent scrapers. At the same time, a distinct typological position of points in relation to convergent scrapers is evident.

Retouched pieces

Numerically, this tool class (110 pieces) is even more numerous than all previously defined tool classes (107 pieces) from the Kabazi V, sub-unit III/3 toolkit. Moreover, retouched pieces occur in each level of sub-unit III/3. In the different levels of this sub-unit they comprise from between 37.9 and 46.9% of assemblages. Their classification is based on marginal retouch and irregular retouch, with complete and fragmented items analysed separately. Additionally, for each of these two categories retouch placement, type, possible accommodation elements and overall shape characteristics are noted.

Retouched pieces with marginal retouch (complete)

On the basis of retouch placement and type, together with the consideration of additional accommodation elements , these pieces are subdivided into the following groups:

dorsal lateral continuous (N=8),
dorsal lateral discontinuous (N=1),
dorsal lateral partial (N=2),
dorsal bilateral continuous (N=2),
dorsal distal continuous (N=2),
dorsal distal discontinuous (N=2),
ventral lateral continuous (N=1),
ventral lateral + distal continuous (N=1).

These data allow us to “construct” the shapes of these pieces according to the traditional typological subdivision for scrapers. In this way, the 19 complete retouched pieces with marginal retouch can be listed as follows: simple (N=12), transverse (N=4), double (N=2), convergent (N=1).

Blanks are 14 flaky items and five blady items. No distinction was made between proper flakes/blades and CMP with flake and blade metrical proportions.

The same classification approach is also applied to the rest of the retouched pieces.

Retouched pieces with marginal retouch (fragmented)

Type and accommodation elements of retouch placement comprise:

dorsal lateral continuous (N=6) (one piece displays a terminal truncated-faceted part),
dorsal lateral discontinuous (N=3),
dorsal lateral partial (N=3),
dorsal bilateral continuous (N=1),
dorsal lateral + distal continuous (N=1),
ventral lateral partial (N=1).

Observed shapes are: simple (N=13), double (N=1), convergent (N=1).

Blanks are ten flaky fragments and five blady fragments. Also, the single occurrence of a truncated-faceted accommodation element on one of the fragmented retouched pieces with dorsal lateral continuous marginal retouch is worthy of mention.

Retouched pieces with irregular retouch (complete)

According to retouch placement and type, as well as accommodation elements, these comprise:

dorsal lateral discontinuous (N=3),
dorsal lateral partial (N=20) (Fig. 9-4, *5*)
(2 with a terminal truncated-faceted part – Fig. 9-8, *6* and one piece is with basal truncated-faceting),
dorsal bilateral continuous (N=1),
dorsal bilateral discontinuous (N=1),
dorsal bilateral partial (N=3),
dorsal distal discontinuous (N=2),
dorsal distal partial (N=6),
dorsal lateral + distal discontinuous (N=2),
dorsal lateral + distal partial (N=2),
ventral lateral partial (N=2),
alternate bilateral partial (N=1) (this artefact displays a lateral truncated-faceted part),
alternating distal continuous (N=1).

Observed shapes are: simple – 25 pieces, transverse – 9 pieces, double (N=6), convergent (N=4).

Among the blank types there are 37 flaky items, four blady items and three chunks. Of particular not is the presence of four truncated-faceted elements on laterally and bilaterally irregularly retouched pieces, only.

Retouched pieces with irregular retouch (fragmented)

Consideration of retouch placement, type, and accommodation elements leads to the identification of the following:

dorsal lateral continuous (N=3),
dorsal lateral discontinuous (N=1),
dorsal lateral partial (N=13),
dorsal bilateral continuous (N=1),
dorsal bilateral partial (N=1) (this piece has a basal truncated-faceted part),
dorsal distal partial (N=3),
dorsal lateral + distal partial (N=1),
dorsal sub-rectangular partial (N=1),
ventral lateral continuous – 1 piece,
ventral lateral partial – (N=2),
ventral distal partial (N=4),
alternating lateral continuous (N=1).

Identified shapes are: simple (N=21), transverse – (N=7), double (N=2), convergent (N=2).

Blank types comprise 24 flaky fragments, 5 blady fragments, 1 chip, 1 core fragment, and 1 unidentifiable debitage piece. The truncated-faceted element was made on an obverse bilateral retouched piece.

The above data, with some additions, can be summarised in the following way.

Combined information for all 110 retouched pieces regarding shape:

simple – 71 / 64.5%,
transverse – 20 / 18.2%,
double – 11 / 10.0%,
convergent – 8 / 7.3%.

At the same time, this is confirmed by the data for the 63 complete retouched pieces:

simple – 37 / 58.7%,
transverse – 13 / 20.6%,
double – 8 / 12.7%,
convergent – 5 / 7.9%.

Thus, the shapes of retouched pieces show not only some similarty, but also some dissimilarity to scrapers from sub-unit III/3. One similarity is the ratio for the simple shape group (58.7 – 64.5% for retouched pieces and 56.6% for scrapers) and the double group (10.0 – 12.7% for retouched pieces and 10.1% for scrapers). On the other hand, they are shown to differ with respect to the ratio of transverse items among retouched pieces (18.2 – 20.6%) in comparison to transverse scrapers (10.1%) and, otherwise, in the prevalence of convergent scrapers (23.2%) over convergent retouched pieces (7.3 – 7.9%).

Regarding the retouch placement, dorsally elaborated specimens are the most dominant (95 pieces / 86.4%), while ventrally retouched items approach only 10.9% (12 pieces). There occur only very few items with alternating (2 pieces / 1.8%) and alternate retouch (1 piece / 0.9%).

Regarding blanks, all 110 retouched pieces can be affiliated to the following types:

flaky blanks – 85 / 78.0%,
blady blanks – 19 / 17.4%,
chips – 1 / 0.9%,
chunks – 3 / 2.8%,
core fragments – 1 / 0.9%,
unidentifiable debitage pieces – 1 /– 0.9%.

The blanks of the retouched pieces allow us to make some valuable statements. The complete absence of chips is strong evidence for the absence of Micoquian admixture, as tool-kits from many Crimean Micoquian assemblages are full of tools on chips. Moreover, these data are highly supported by the fact that no one retouched piece is made on a bifacial tool treatment flake or blade, while a series of the sub-unit III/3 retouched pieces were produced on various CMP. Thus, we do not see any “visible” Micoquian influence within the analysed retouched pieces and instead we can claim their proper WCM affinity.

Average metrical parameters of debitage blanks for 51 complete flaky pieces and 9 complete blady pieces are given below.

Flaky pieces: *length* – 4.29 cm; *width* – 3.76 cm; thickness – 0.90 cm. These data, as other tool classes and categories, are bigger than those observed among unretouched debitage (see Tables 9-17, 9-18 and 9-19). At the same time, it is worth noting that a share of shortened, transversal flakes among flaky blanks for retouched pieces is the highest among all tool classes and categories – 27.5% (14 of all 51 items).

Blady pieces: *length* – 5.19 cm; *width* – 1.99 cm; thickness – 0.48 cm. A comparison of these data with the unretouched blady pieces (see Tables 9-34, 9-35 and 9-36) shows that retouched blady blanks have higher indices for length and width, but not for thickness.

Accommodation elements do not occur very frequently among the 110 retouched tools, although these do have one peculiar feature; among the 110 retouched pieces, thinning elements were noted in only six cases (just 5.5%). However, all of these are truncated-faceted pieces and no other thinning type is noted. Taking into consideration a general prevalence of a truncated-faceted element among tools (primarily scrapers), there is no other conclusion than that at least some retouched pieces may represent half-finished scrapers.

Generally speaking, all the above data on retouched pieces point to their "mixed tool properties". On one hand, many of these items are flints used in an *ad hoc* fashion by humans at the site. This is suggested not only by the "bad retouch" of these pieces, but also by flakes with shortened, transversal metrical proportions being much less common among tools. On the other hand, some of the pieces are "big enough" or have elongated metrical proportions with truncated-faceted thinnings. These may be interpreted as half-finished scrapers.

Unidentifiable tools

Unidentifiable tools occur throughout the sub-unit III/3 archaeological sequence, comprising from 14.3% in level III/3-1 to 14.6 – 41.2% in levels III/2 through III/3-3A, the only exception being level III/3-1A (1 item / 4.0%) (Table 9-37). Thus, for the majority of sub-unit III/3 levels unidentifiable tools constitute a very significant ratio of tools. However, these specimens are mostly heavily fragmented and additionally a few of them are heavily burnt.

Chips

Numerous chips were recovered from all levels of sub-unit III/3 (more than 80% of all recovered flint artefacts from each level – see Table 9-1). These artefacts indicate intensive flint treatment processes at the site. However, in this chapter the morphological and metrical attributes of chips are not presented as, for example, has been done for some Crimean Micoquian flint assemblages – e.g. Buran-Kaya III, layer B (Demidenko 2004a). This is explained by the fact that the chips from sub-unit III/3 at Kabazi V do not contain specific bifacial tool treatment pieces. In other words, these artefacts do not provide evidence for on-site bifacial tool production and rejuvenation. This is one further indication for the absence of any true Crimean Micoquian occupation within the sub-unit III/3 WCM archaeological sequence. For this reason, the previously mentioned, rare Micoquian flints are obviously a foreign occurrence in the sequence, probably caused by natural depositional processes with infiltration from the overlying and underlying Micoquian sub-units III/2 and III/4. Here, the only exception relates to four rejuvenation chips from the tips of unifacial convergent tools (see Demidenko 2004a: Figure 9-13: 1, 3 – 4, 8 on p. 140 for Buran-Kaya III, layer B materials) – one from level III/3-1A, two from level III/3-3, and one from level III/3-3A. On the other hand, these very specific rejuvenation chips for unifacial tools are indeed well known and numerous in Crimean Micoquian assemblages, and there are a couple of such pieces from Unit II WCM assemblages at Kabazi II. Keeping in mind the discussed Micoquian admixture problem for sub-unit III/3 WCM materials, we cannot exclude that these peculiar chips are related to a Micoquian component, although their WCM affinity is not excluded either. This problem might only be resolved through future serial findings of such specific chips in new *in situ* cultural bearing sediments with undoubtedly homogeneous WCM materials.

Chunks

Chunks have been identified in all six levels of sub-unit III/3 (see Table 9-1). The four upper levels (from III/3-1 to III/3-2A) contain just small pieces (less than 4 cm in maximum dimension). Therefore, these chunks are probably only fragments of rather dry and bad conditioned flint nodules or plaquettes that had been brought to the site for primary flaking. Two lowermost levels (III/3-3 and III/3-3A) have each yielded two chunks, these exceed 5 cm in length and might be considered as a kind of raw material supply for further primary flaking processes at the site.

Non-flint archaeological artefacts

This artefact category comprises 2 retouchers on pebbles and 5 retouchers on animal bones. These stem from various levels in sub-unit III/3 (see Table 9-1). For a more detailed description of retouchers see Chapter 16, this volume.

Kabazi V, Sub-Unit III/3 in the Context of the Western Crimean Mousterian

There are two basic aspects that need to be analysed in order to better comprehend the position of Kabazi V, sub-unit III/3 within the frame of other WCM sites and assemblages. The first aspect, which is traditional for Palaeolithic archaeology, must be the consideration of techno-typological features of the WCM industry. Only then can the position of Kabazi V, sub-unit III/3 within the functional varia-bility system of WCM sites, which in the course of the last decade has been intensively studied by V. P. Chabai (e.g. Chabai, Marks 1988; Chabai 2004c: 212-222), be elucidated. This measure requires two successive analytical steps.

According to the basic technological and typological characteristics of both the Kabazi V, sub-unit III/3 artefacts and the three *in situ* series of levels from Kabazi II, Karabi Tamchin and Shaitan-Koba sites, there is doubt that in all general terms the Kabazi V, III/3 materials fit well into the early stage of WCM industry dated to a time period from the Hosselo Stadial to the Huneborg Interstadial (ca. 45-40 – 35 000 BP). In brief, its industrial characteristics are as follows (cf. Chabai, Marks 1988; Chabai 2000; Chabai 2004c). Technologically speaking, primary flaking processes are generally based upon three different core reduction strategies: Levallois Tortoise, parallel Biache, and parallel volumetric. These core reduction strategies are characterised by the following: production of elongated blanks, often blades (Ilam – ca. 20 – 25%); high faceting indices (IFl and IFstr – ca. 55 – 70%); cores with one main and supplementary platform (Parallel Biache method); core tablet technique (Parallel volumetric method); and the application of *débordante* and/or the crested technique. All these technological features do not occur within Crimean Micoquian technological approaches. Typologically, the tool-kits are generally characterised by a dominance of scrapers (ca. 60%) with a predominance of simple types made on elongated blanks, including blades and some Levallois pieces, a moderate number of points (ca. around 20%), as well as denticulates and notches (ca. 15% together), and a small number of mostly atypical Upper Palaeolithic tool classes (end-scrapers, burins, perforators).

Returning to the Kabazi V, sub-unit III/3 assemblages, we also see some variability within this early WCM industry. From a technological point of view, the Kabazi V materials are peculiar for early WCM assemblage, as they are characterised by the parallel Biache method, featuring a mainly uni-polar reduction strategy, and comprising some Levallois elements. At the same time, independent Levallois Tortoise and parallel volumetric methods are absent. Typologically, however, if we were to dismiss the few Micoquian scrapers and points from the tool-kits recovered from the sub-unit III/3 levels, Kabazi V implements would correlate well with the etalon-like tool assemblages discovered in levels II/7 – II/8C at Kabazi II (Chabai 1998b). This is also very evident if we consider Chabai's typological and structural observations for the early WCM which is based on *in situ* materials recovered from the three aforementioned sites (Chabai 2004c: 69-76), which is characterised by *"the complete absence of bifacial tools"*, *"a dominance of scrapers … from 53% to 67% of all the tool-kit"*, *"17 – 25.3% of points"*, and *"not numerous denticulates (7.9 – 11.3%), notches (0 – 10%) and Upper Palaeolithic tools (0 – 3.6%)"*. In comparison, here the related Kabazi V, sub-unit III/3 data: no bifacial tools; 68.3% scrapers, 15.9% points, 9.4% denticulates, 2.8% notches, 2.7% Upper Palaeolithic tool types. Thus, the only difference is a smaller ratio of points and a slightly higher percentage of scrapers. Then, we add some peculiarities of WCM typology noted by V. P. Chabai. *"Morphological base of point classification in WCM industries is based on three morphological groups: semi-, sub- and leaf shaped ones; semi- and sub-crescent ones; distal and lateral ones"*. These are mostly made on flakes, with just a very few Levallois points. At the same time, points were mostly subjected to a secondary treatment, i.e. by dorsal scalar and flat retouch, and *"ventral thinnings were used rarely"*. *"Basically, scrapers are represented by simple … types… Transverse, double … and convergent … scrapers are rare and/or not numerous. Frequently, scrapers of the early WCM industry stage are made on flakes, including Levallois ones… There are a few scrapers with various ventral thinnings … and naturally backed scrapers are also rare. As a rule, simple scrapers are made by flat* *and semi-steep scalar dorsal retouch"*. Simple scrapers account for ca. 62% of tool assemblages, while there are also ca. 4% transverse scrapers, ca. 20% double scrapers and ca. 14% convergent scrapers, with the dominance among the latter of sub-triangular and semi-crescent items. There are a rather high percentage of points, *"a share of convergent tools (points and convergent scrapers) is quite high and within 24 – 38% in relation to all numbers of scrapers and points"*. Therefore, the typological features of the WCM, as summarised by V. P. Chabai, again very much resemble those tool assemblages recovered from the sub-unit III/3 levels at Kabazi V (see Table 9-37). In fact, the only difference lies in the smaller number of points in the Kabazi V tool-kit.

Although the Kabazi V, sub-unit III/3 artefacts are clearly of WCM origin, it is nevertheless difficult to overlook some evident differences between these and most of the already known WCM assemblages. Aside from the already noted absence of Levallois Tortoise and parallel volumetric methods in core reduction processes at Kabazi V, its debitage, including tool blanks, has some clear distinctions. While the blade index (23.1%) for Kabazi V, sub-unit III/3 correlates well with all other WCM debitage assemblages (see Chabai 2000: Table 6 on p. 202; Chabai 2004c: Table II-4 on p. 56), its faceting indices are very distinct, they being characterised by very low values – IFl = 47.3% and IFstr = 19.9%, which are 1.5 times lower for large faceting, and in excess of twice as low for strict faceting.

What could be the reasons behind these technological differences? Of course, the first explanation that comes to mind is a possible admixture of Crimean Micoquian influence as evidenced through reduced faceting indices. However, this hypothesis does not seem very realistic. In general, it is difficult to distinguish one industrial component from another for any mixed debitage sample. On the other hand, the debitage from Kabazi V, sub-unit III/3 does not have sufficient enough Micoquian admixture within the WCM debitage. Let us not forget that no one bifacial reduction blade was identified among the analysed debitage, and only seven bifacial reduction flakes were observed. At the same time, the blade sample has yielded a few Levallois blades and numerous *débordante*/crested pieces, also observed in the flake sample. Therefore, it is a valid conclusion that the debitage from sub-unit III/3 levels at Kabazi V attest to the early WCM character of this assemblage, with a very minor Micoquian admixture. Moreover, at 23.1%, the Kabazi V, sub-unit III/3 blade index is typical of the early WCM. However, were there a significant Micoquian flake component here, we would expect a much reduced blade index, which is not the case.

One might also compare the Kabazi V, sub-unit III/3 blade and faceting indices with respective indices from other Crimean sites with mixed Micoquian and WCM flints (see Chabai 2004c: Table II-6 on p. 73). Chabai's study of ten mixed assemblages resulted in the distinction of a total of five groups of blade and faceting indices, all of which contain in various proportions Micoquian (e.g. bifacial) tool types. The first group is characterised by low blade indices (ca. 5 – 10%) and rather high faceting indices – IFl = ca. 40 – 50% and IFstr = 25 – 30% with also either a high (20 – 30%) or medium (10%) ratio of bifacial tools, e.g. Zaskalnaya V, layers II and III; Zaskalnaya VI, layer II and IV, Aleshin Grotto, layer 2. A second group displays about the same blade and faceting indices as known from the first group, but with a lower number of bifacial tools (less than 5%), e.g. GABO, upper layer. The third group resembles the second in its few bifacial tools (less than 5%) and high large faceting (50%), however, strict faceting is low (18%), and the blade index is higher (12%), e.g. Bakhchisaraiskaya. The forth group is characterised by a moderate number of blades (10%) and low faceting indices (IFl = 27% and IFstr = 12%), and again only few bifacial tools (less than 5%), e.g. Kabazi I. Finally, the fifth group closely resembles the Kabazi V, sub-unit III/3 levels. It is characterised by blade indices of between ca. 19 and 21%, but with varying faceting indices: high ones for Shaitan-Koba, slope finds (IFl = 51.9% and IFstr = 33.9%) and moderate ones for Kholodnaya Balka (IFl = 37.7% and IFstr = 14.2%). A few bifacial tools also occur. Thus, the mixing of Micoquian and WCM finds and traditions takes on many different forms and structures. Accordingly, a number of hypotheses can be put forward to explain the development of such assemblages.

The first group is composed of assemblages with mostly Micoquian finds, as indicated by the high percentage of bifacial tools (10 – 30%), that in turn explain the moderate faceting indices (bifacial reduction debitage often features prepared butts) and low blade indices for these sites, which are situated in close proximity to flint outcrops. Core reduction at these sites also displays some true Micoquian techniques. Respectively, a few possible WCM occupations with only a small number of artefacts incorporated within these thick and artefact-rich layers at Zaskalnaya V did not actually change Micoquian technical indices. There is also a peculiar collection from the Aleshin Grotto, where cultural bearing sediments from Zaskalnaya V were washed down the slope and became deposited (Chabai 2004c, pp. 76-79). Therefore, the identification of the WCM component there was realised on strictly typological grounds, i.e. through the presence of some specific WCM artefacts: Levallois Tortoise and parallel bi-directional Biache cores, Levallois flakes and atypical points, as well as distal and lateral points. The second assemblage group is characterised by finds from the redeposited GABO site, where a dominance of WCM technological elements is reflected by respective cores and high faceting indices. The low number of bifacial tools there might be explained by a small Micoquian component, while the low blade index perhaps reflects a WCM workshop situation, seeing as the site itself is situated at a flint source. The third assemblage group is represented by the site Bakhchisaraiskaya. Here it is highly likely that in the course of old excavations (1930s and 1950s) archaeological levels were excavated which contained more or less equal proportions of Micoquian and WCM flint artefacts. On the one hand, this hypothesis is based on the occurrence of only a small number of bifacial tools, a situation also comparable to the nearby site of Starosele, level 1 (both these sites are situated at a quite substantial distance from high quality flint outcrops), and the low strict faceting index, i.e. Micoquian features. On the other hand, the high faceting index is indicative of WCM traditions. Further, the equal mixture of these two industrial components is also suggested by the medium blade index and the low strict faceting index. The fourth assemblage type, as attested at Kabazi I, excavated in 1950s, can be similarly explained as was the case for the third group, but in light of the lower blade index and much lower faceting indices, it may be argued that the Micoquian Staroselian (?) industrial component prevails over that from the WCM one here. The latter industrial component was identified here again on a purely typological basis (Chabai 2004c, pp. 78-79). The fifth assemblages vary. On the one hand, the Shaitan-Koba slope finds (redeposited following the cleaning of the upper cultural bearing sediments from the rock shelter in Medieval times) which are characterised by typical early WCM technical indices, contains just a minor number of Micoquian artefacts which did not alter the overall WCM character. However, we cannot compare directly the Shaitan-Koba assemblage with the ones from Kabazi V, sub-unit III/3, as the former does not stem from cultural bearing deposits. On the other hand, the Kholodnaya Balka assemblage, with its ca. 19% of blades and moderate faceting indices (IFl = 37.7% and IFstr = 14.2%), is very close to the blade index from Kabazi V, sub-unit III/3, while faceting indices are lower at the former than at Kabazi V.

All in all, with exception of the finds from Shaitan-Koba, no single Crimean Middle Palaeolithic assemblage with attested mixed Micoquian and WCM flints does mirror debitage technical indices observed at Kabazi V, sub-unit III/3. Does this mean that we are faced with one more mixing variant, or is it a technical variation of the early WCM industry? Most likely, it is a combination of both these factors, but with a clear prevalence of the latter. Of course, there is a minor Micoquian component within the Kabazi V, sub-unit III/3 archaeological sequence that is seen through a few bifacial reduction flakes and "trapezoidal" scrapers and points, but no bifacial tools. Clearly, the most evident admixture was recognised in the uppermost and the lowermost archaeological levels. At the same time, the minimal Micoquian admixture was not sufficient to seriously influence and cause change to technical indices. And it did not happen for the blade index and only would relate to the faceting indices. Thus, it is perhaps more appropriate to suppose some special characteristics of the Kabazi V, sub-unit III/3 flint assemblage within the WCM industry, as suggested, for example, by:

- the dominance of primary flaking processes linked to the Biache method in its uni-polar variant, while the Biache method in its bi-polar variant and ca. 22% of bi-directional debitage are characteristic for the etalon-like early WCM materials from levels II/7 – II/8C at Kabazi II (see Chabai 2000: Table 6 on p. 202; Chabai 2004c: Table II-3 on p. 52);

- the absence in primary flaking processes of Levallois Tortoise and parallel volumetric methods, which are well represented in the etalon-like early WCM materials from levels II/7 – II/8C at Kabazi II;

- the relative paucity of points in Kabazi V in comparison to other early WCM assemblages.

In light of these peculiarities, it may be assumed that due to obvious technological differences in the assemblage, faceting indices for the Kabazi V, sub-unit III/3 debitage are low. There is no Levallois Tortoise core method that certainly would have led to higher indices, as would have the systematic application of the Parallel Biache method in its bi-polar variant. Finally, the observed infrequency of true retouched points, which are usually produced on "well made blanks" with prepared butts, also resulted in lower indices.

Now, after having established the special status of the Kabazi V materials within the WCM techno-typological ranges, we should turn to the functional variability system of WCM sites, and compare this to the WCM assemblages from Kabazi V.

We should not forget that when comparing the Kabazi V, sub-unit III/3 WCM assemblage with those from other WCM sites we are, in fact, dealing with functionally variable sites. Thus, whereas the Western Crimean, early WCM levels at Kabazi II have been defined as *"primary butchering stations, type A "* (Chabai 2004c, pp. 213- 216), layers II/2 and III at Karabi Tamchin site in the Eastern Crimea are termed *"short term camps, type B"* (Chabai 2004c, pp. 218- 221). At the same time, Shaitan-Koba site upper layer (Western Crimea) is associated with *"short term camps, type A"* (Chabai 2004c, pp. 217- 218). Considering the absence of primary butchering activity at Kabazi V site and its location near the Mylnaya mountain flint outcrop, and prior to the report on the archeozoological data, we might compare Kabazi V, sub-unit III/3 assemblages with those from the upper layers of Shaitan-Koba. These Shaitan-Koba materials are characterised by the following on-site flint exploitation data:

tools – 12.4%;
debitage : core-like pieces – 29.8 : 1;
tools : core-like pieces – 3.8 : 1;
density of artefacts per cubic metre – 313.3 (Chabai 2004c: Table VI-3 on p. 218).

The respective Kabazi V, sub-unit III/3 data are as follows:

tools – 19.4%;
debitage: core-like pieces – 24.2 : 1;
tools : core-like pieces – 6.1 : 1;
average density of artefacts is 1,479.1 items per cubic metre.

So, although not identical, the data from Kabazi V are similar, with the greatest correlation evident between this material and that from levels II/7 – II/8C at Kabazi II, and layers II/2 and III at Karabi Tamchin. The Karabi Tamchin flint exploitation data are the most distinct within the WCM, and the site's location, far removed from flint sources, with the supposed import of mainly finished tools to the site, and its proposed function as a secondary butchering station (see Chabai 2004c, p. 221), explains this fact. On the other hand, the Shaitan-Koba, Kabazi V and Kabazi II data do not vary greatly; this can perhaps be explained by the close proximity of these three sites to flint outcrops. However, some very obvious differences should not be overlooked. For example, only two levels from Kabazi II (II/7D and II/7C) even approach the tool ratio noted for the Shaitan-Koba and Kabazi V assemblages – 12.4 and 14.1%, respectively, while four other levels are characterised by much lower ratios: 5.1 – 11.8%. The ratio of debitage to core-like pieces, tools to core-like pieces, and the indices for artefact density are always lower for the Kabazi II assemblages. Therefore, there exist greater similarities between the WCM materials from Shaitan-Koba and Kabazi V materials than between the Kabazi II and Karabi Tamchin data. At the same time, there is a methodological problem to our comparisons that should also be mentioned. In these comparisons, we have always compared the overall assemblage data from Kabazi V, and not the respective data from each of the individual affiliated levels. This is because the Shaitan-Koba site is characterised by a very slow sedimentation rate for its cultural bearing deposits and, with certainty, the so-called upper layer is composed of a number of human occupations, while the six levels of Kabazi V, sub-unit III/3 accumulated at much greater rates, and can be considered as traces of 1 to 3 (presumably) human occupations per level. Accordingly, the Kabazi V, sub-unit III/3 data were artificially lumped together for the corresponding comparisons with the Shaitan-Koba data. Nevertheless, the levels from Kabazi V, sub-unit III/3 are characterised by the following data:

tools – 12.0 – 24.2%;
debitage : core-like pieces ratio – 14.3 – 55.8 : 1;
tools : core-like pieces ratio – 2.1 – 12.0 : 1;
density of artefacts per cubic metre – 926.1 – 2,230.4 (see Table 9-1).

At Kabazi V, sub-unit III/3, assemblages can be subdivided into six levels according to the ratios of debitage to core-like pieces and of tools to core-like pieces. The two levels III/3-1 and III/3-1A fall within the ranges for the early WCM as observed at Kabazi II:

debitage : core-like pieces ratio – 14.3 – 15.5 : 1;
tools : core-like pieces ratio – 2.1 – 4.5 : 1,

while the respective data for the remaining 4 levels from Kabazi V are much different. For these reasons, it may be assumed that this picture is indicative of significant variability among human occupations within Kabazi V, sub-unit III/3. Whereas 2 levels are similar to the Kabazi II, II, the 4 other levels are more comparable to the Shaitan-Koba data.

All in all, in line with the human occupation data expected for short-term camps of type A, established by V. P. Chabai (2004c, pp. 218), we see four basic characteristics: transportation of parts of ungulate carcasses of to the site; a fireplace construction; primary and secondary flint treatment processes on material from nearby flint sources; se-condary processing of ungulates at the site. In contrast to Kabazi II site levels which are interpreted as primary butchering stations, camps of type A are characterised by ungulate hunting activities; transportation of the killed ungulates and of flint objects from the nearby flint outcrop; primary processing of ungulates; transportation of some the best meat-bearing parts of animals to other locations. Thus, in the light of the comparison between Shaitan-Koba and Kabazi V assemblage data, and in consideration of the basic human occupation data, as well as the close proximity of Kabazi II to Kabazi V, we can presume that from (killing – butchering) sites such as Kabazi II, WCM human groups were carrying ungulate parts to short-term sites like Kabazi V. Here, there followed a secondary processing of the carcasses and intensive flint treatment processes. Further, we cannot exclude that the relative paucity of true retouched points (8 classifiable and 4 unclassifiable fragments) within Kabazi V, sub-unit III/3 tool-kits is connected to the export of these pieces from the site. Namely, points might be considered so-called curated tools in the WCM.

Abstract

КАБАЗИ V: ЗАПАДНОКРЫМСКИЕ ИНДУСТРИИ ПАЧКИ ГОРИЗОНТОВ III/3

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Стратиграфически пачка археологических горизонтов III/3 залегает между пачками горизонтов III/2 и III/4, которые характеризуются доминированием микокских артефактов. Соответственно, в пачке горизонтов III/3 не исключена микокская примесь и это притом, что в ходе раскопок данного культурно-хронологического подразделения стоянки была определена его индустриальная составляющая в виде западнокрымского мустье. Поэтому под углом зрения наличия в этой части отложений памятника двух данных среднепалеолитических индустриальных компонентов были проанализированы обнаруженные находки.

Раскопками 2002 года в пачке горизонтов III/3 найдено 10755 кремневых артефактов, 2 каменных и 5 костяных ретушеров. Общий список кремней: преформы 3 экз. / 0,1%; нуклевидные изделия – 44 экз. / 0,4%; отщепы – 810 экз. / 7,5%; пластины – 254 экз. / 2,4%; орудия – 267 экз. / 2,5%; обломки – 177 экз. / 1,6%; чешуйки – 9200 экз. / 85,5%. В отдельности 6 горизонтов характеризуются следующими количественно вариабельными коллекциями кремней: III/3-1 – 1556 экз., III/3-1A – 1462 экз., III/3-2 – 1656 экз., III/3-2A – 605 экз., III/3-3 – 2218 экз. и III/3-3A – 3258 экз. Детальный технико-типологический анализ кремней показал абсолютное доминирование в каждом из горизонтов артефактов западнокрымского мустье. Одновременно микокский компонент представлен среди дебитажа только 7 отщепами обработки двусторонних орудий, а среди односторонних орудий к микокским отнесены 2 полу-трапециевидных остроконечника, 1 полу-трапециевидное скребло, 2 под-трапециевидных скребла и 1 трапециевидное скребло. Двусторонние орудия в пачке горизонтов III/3 зафиксированы не были. В то же время западнокрымское мустье типологически проявляется в следующих признаках: серийности продольных и бипродольных нуклеусов со вспомогательными ударными площадками параллельного метода первичного расщепления Биаш; многочисленных реберчатых и débordantes сколах; многочисленных пластинах; присутствии леваллуазских сколов и леваллуазских атипичных

острий; доминировании простых скребел и специфических типах остроконечников.

Обобщающие технические и типологические индексы кремней пачки горизонтов III/3 следующие. Индекс пластин (ILam) составляет 23,1. Фасетаж ударных площадок сколов и сколов-заготовок орудий: IFl = 47,3, IFs = 19,9. Усредненные параметры отщепов: длина – 3,56 см; ширина – 3,32 см; толщина – 0,83 см. Усредненные параметры пластин: длина – 4,79 см; ширина – 1,90 см; толщина – 0,61 см. Причем четко определена тенденция отбора для орудий сколов с большей длиной и шириной. В инструментарии доминируют сколы с ретушью (110 экз. / 41,2%) и многочисленны неопределимые (значительно фрагментированные) орудия (50 экз. / 18,7%). Среди типологически индикативных орудий (101 экз.), без учета 6 микокских изделий, выделены такие классы: скребла – 69 экз. / 68,3%; остроконечники – 15 экз. / 14,8%; зубчатые – 10 экз. / 9,9%; выемчатые – 3 экз. / 3,0%; скребки, резцы, тронкированные изделия, тронкированно-фасетированные изделия – по 1 экз. каждый / 1,0%.

Анализ индустриальных показателей находок пачки горизонтов III/3 Кабази V в контексте известных комплексов находок западнокрымского мустье показал ряд их отличий – некоторую заниженность индексов фасетажа и остроконечников, отсутствие свидетельств леваллуазского черепаховидного и параллельного объемного методов первичного расщепления. В целом это без сомнений коллекция западнокрымского мустье лишь с очень незначительной микокской примесью и ее некоторая особость может заключаться в специфике жизнедеятельности людей среднего палеолита на стоянке, которая может быть одним из функциональных проявлений кратковременных лагерей по вторичной утилизации частей туш копытных животных.