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

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Chapter

18

Kabazi V in the Context of the Crimean Middle Palaeolithic

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The variability of the Eastern European Micoquian and the Levallois-Mousterian, and the interpretation thereof, constitute an important part of regional Middle Palaeolithic studies. Indeed, the constantly increasing Crimean data provide the bulk of information regarding the Micoquian and Levallois-Mousterian evolution in Eastern Europe. In spite of the fact that stratified Micoquian sites are widespread in Eastern Europe, the typological variability within the Micoquian was defined on the basis of Crimean material. Whereas the typological variability of the Crimean Micoquian is visible in its three different facies (Ak Kaya, Starosele and Kiik Koba), Levallois-Mousterian variability in the region is represented by the Western Crimean Mousterian facie (WCM). One further variation of the Eastern European Levallois-Mousterian is the so called "Molodova culture" which is represented by numerous assemblages in the Dniester River basin (Sytnyk 2000; Chabai 2004d). Not only the definition of the temporal frames of Micoquian and Levallois-Mousterian in the Crimea, but also the question of their coexistence are presently the most discussed subjects within Crimean Middle Palaeolithic studies.

Kabazi V is the only Middle Palaeolithic site in the Crimea which has a documented inter-stratification of Micoquian and Levallois-Mousterian occupations. At such sites as Shaitan Koba, Kabazi II and Karabi Tamchin the Micoquian occupations always underlie deposits with Levallois-Mousterian artefacts (Kolosov 1972; Chabai 1998a, 2006; Yevtushenko 2004). Some components of Levallois-Mousterian, which are represented by Tortoise cores and Levallois flakes with centripetal dorsal scars, were identified in the palimpsests of Zaskalnaya V, layers II, III, Zaskalnaya VI, layers II, IIIa, IV and Prolom II, layer III (Kolosov 1983, 1986). These were interpreted as Levallois-Mousterian admixture in the otherwise Micoquian occupations (Chabai 2004c). On the other hand, the chronological coexistence of Micoquian and Levallois-Mousterian was suggested by the available radiometric dates for such Levallois-Mousterian complexes as Kabazi II, Unit II, and such Micoquian assemblages as Zaskalnaya V, layers I, II, III, Zaskalnaya VI, layer II, Buran Kaya III, layer B, Prolom II, layer II, Prolom I, and Kiik Koba, upper level. In other terms, the time span from Vytachiv, $vt_{1b2\text{-}b1}$ (Hosselo) until Vytachiv, vt_{3b} (Denekamp) was defined as the time of Micoquian and Levallois-Mousterian coexistence. Moreover, from 36/32 ka BP to 29/28 ka BP the Micoquian and Levallois-Mousterian were accompanied in the Crimean foot-hills by the Early Upper Palaeolithic Eastern Szeletian and Aurignacian (Chabai et al., 1998). Such technological and typological mosaics pose a number of interpretational problems, one of the main problems being: Is their sufficient evidence to differentiate between Crimean Micoquian and Levallois-Mousterian traditions?

Kabazi V: The Micoquian and Levallois-Mousterian Chronology and Environment

The enlistment of different dating techniques for the Kabazi V sequence has brought with it several methodological and interpretational problems (Tables 18-1; 18-2; 18-3). The methodology of dating procedures is described in detail in Chapter 3, this volume. The interpretation of the chronological results is presented below.

The chronology of the Crimean Middle Palaeolithic is based on cross-correlations of radiometric dates and commonly adopted ages of climatic cycles. In the case of such sites as Siuren I, Starosele, Kabazi II, Chokurcha I, Buran Kaya III, Zaskalnaya V, and Karabi Tamchin (Gubonina 1985; Gerasimenko 1999, 2004, 2005; Markova 1999, 2004a, 2005; Mikhailesku 1999, 2004, 2005) climatic characteristics used in dating were defined on the basis of studies of pollen, micro-fauna and molluscs. As always, the main role is played by the biggest stratigraphical sequences, such as Kabazi II (14 m), Zaskalnaya V (4.5 m) and Starosele (4 m). For each stratigraphical sequence the agreement between adopted ages of climatic fluctuations and radiometric dates was recognised as the most reliable basis for the dating of deposits.

The range of dating techniques has included the following methods: AMS, ESR, U-series, OSL, and TL (Hedges et al., 1996; Rink et al., 1998, in press; Pettitt 1998; McKinney 1998; Housley et al., Chapter 3, this volume). Whereas bones have served as samples for the radiocarbon method, ESR and U-series dating methods have dated samples of enamel from horse teeth. In Crimean Middle Palaeolithic investigations OSL and TL methods were used for the first time to date Kabazi V sediments and burnt flint samples, respectively. Also, the AMS date from Kabazi V, III/5-3B2 is the first example in which a charcoal sample has been used for AMS dating in the Crimean Middle Palaeolithic.

Generally speaking, there is good consensus between the ESR and AMS dates and bio-stratigraphical studies. On the other hand, U-series, OSL dates and TL definition agree neither with the results from ESR and AMS studies nor with bio-stratigraphical observations. Thus, for now the Crimean Middle Palaeolithic chronologies are represented by two radiometric scales: AMS and ESR on the one hand, and U-series, OSL and TL on the other (Tables 18-2 and 18-3).

Units / Sub-Units / Levels	Levels	"High chronology"			"Low chronology"				Bio-Statigraphy
		OSL	U-series	TL	ESR, EU, mean	ESR, LU, mean	ESR age	AMS	
Levels II/4A; II/7									
Sub-unit III/1	III/1		73.3±6.0 (4)		24±2 (3)	31±1	26 – 30		Interstadial (Denekamp)
	III/1A			81.0 ± 9.0	41±2 (1)	55±4	<41	OxA-X-2134-45, **30.98±0.22**	
Sub-unit III/2		60.0-100.0							Stadial
Sub-unit III/3									
Sub-unit III/4									Interstadial (Hengelo)
Sub-unit III/5	III/5-3B2							OxA-14726, **38.78±0.36**	
Sub-unit III/6									Stadial
Sub-unit III/7									
Unit IV		about 200.0							

Table 18-1 Kabazi V: chronology & bio-stratigraphy*.

* bio-stratigraphical definitions after A. Markova (1999, Chapter 4, this volume), radiometric dates after J. Rink et al. (1998) and R. Housley et al. (Chapter 3, this volume).

Geochronology	Landscapes	Sites, layers / levels	Radiometric dates		Technocomplexes, facie
			AMS	ESR	
Vytachiv, vt$_{3b}$ (Denekamp Int.)	South-boreal to boreal forest-steppe	Buran Kaya III, B	OxA-6674, 28.52±0.46		Micoquian, Kiik Koba facie
			OxA-6673, 28.84±0.46		
		Siuren I, Fb2	OxA-5155, 29.95±0.70		Aurignacian
		Siuren I, Ga	OxA-5154, 28.45±0.60		
		Siuren I, H	OxA-8249, 28.20±0.44		
		Kabazi V, II/4A – II/7			Micoquian, Ak Kaya facie
		Prolom II, II	Ki-10617, 28.10±0.35		Micoquian, Starosele facie
		Zaskalnaya V, I	Ki-10891, 28.85±0.40		
			Ki-10744, 30.08±0.35		
		Kabazi V, III/1		30.0-26.0	
		Kabazi V, III/1A	OxA-X-2134-45, 30.98±0.22	<41.0	
		Kabazi II, A3A – A4			Levallois-Mousterian, WCM
		Kabazi II, II/1A		30.0±2.0	
Vytachiv, vt$_2$ (Huneborg Stadial)	Boreal xeric grassland	Zaskalnaya VI, II	OxA-4131, 30.11±0.63		Micoquian, Ak Kaya facie
			Ki-10893, 30.70±0.45		
			Ki-10607, 30.22±0.40		
		Zaskalnaya V, II	Ki-10743, 31.60±0.35		
		Kabazi V, III/2, III/2A			
		Prolom I, upper layer	Ki-10896, 29.60±0.55		Micoquian, Kiik Koba facie
			Ki-10614, 30.22±0.45		
			GrA-13917, 30.51±0.58/0.53		
			GrA-13919, 31.30±0.63/0.58		
		Buran Kaya III, C	OxA-6869, 32.20±0.65		Eastern Szeletian
			OxA-6672, 32.35±0.70		
			OxA-6868, 36.70±1.50		
		Kabazi V, III/3-1 – III/3-3A			Levallois-Mousterian, WCM
		Kabazi II, II/1	OxA-4770, 31.55±0.60		
		Kabazi II, II/2	OxA-4771, 35.10±0.85		
		Kabazi II, II/3			
		Kabazi II, II/4	OxA-4858, 32.20±0.90		
		Kabazi II, II/5	OxA-4859, 33.40±1.00		
		Kiik Koba, IV	Ki-8163, 32.30±0.30		Micoquian, Kiik Koba facie
Vytachiv, vt$_{1c}$ (Huneborg Int.)	Boreal to south-boreal forest-steppe	Prolom I, lower layer	Ki-10615, 33.50±0.40		
			Ki-10616, 35.20±0.45		
		Zaskalnaya VI, III	OxA-4772, 35.25±0.90		Micoquian, Ak Kaya facie
			Ki-10609, 38.20±0.40		
			Ki-10894, 36.40±0.45		
		Kabazi II, II/6			Levallois-Mousterian, WCM
		Kabazi II, II/7			
		Zaskalnaya VI, IIIa	OxA-4132, 30.76±0.69		Micoquian, Ak Kaya facie
			OxA-4773, 39.10±1.50		
			Ki-10610, 39.40±0.48		

Table 18-2 AMS and ESR chronology and environment of the Middle Palaeolithic and Early Upper Palaeolithic in Crimea*.
* data after Gubonina 1985; Hedges et al., 1996; Rink et al., 1998, in press; Pettitt 1998; Chabai et al., 1998; Gerasimenko 1999, 2004, 2005, this volume; Markova 1999, 2004a, 2004b, 2005, this volume; Mikhailesku 1999, 2004, 2005; Stepanchuk et al., 2004; Housley et al., this volume.

Geochronology	Landscapes	Sites, layers / levels	Radiometric dates		Technocomplexes, facie
			AMS	ESR	
Vytachiv, vt$_{1b2}$ (Hengelo Int.)	South-boreal forest-steppe	Buran Kaya III, E			Upper Palaeolithic (?)
		Kabazi V, III/5-3B2	OxA-14726, 38.78±0.36		Micoquian, Starosele facie
		Starosele, 1	OxA-4775, 41.20±1.80 OxA-4887, 42.50±3.60	41.2±3.6	
		Starosele, 2		38.0±5.0	Micoquian, ?
		Kabazi II, II/7AB		36.0±3.0	Levallois-Mousterian, WCM
		Kabazi II, II/7C – II/7E			
		Kabazi II, II/8		44.0±5.0	
		Kabazi II, II/8C, IIA/1			
Vytachiv, vt$_{1b2-b1}$ (Hosselo Stadial)	Boreal to south-boreal forest-steppe with xerophytes	**Kabazi V, IV/1 – IV/3**			
		Kabazi II, IIA/2			
		Chokurcha I, IV-I, IV-M			Micoquian, Ak Kaya facie
		Chokurcha I, IV-O	OxA-10877, >45.40		Micoquian, Starosele facie
		Zaskalnaya V, IV	GrA-13916, >46.0		
		Zaskalnaya VI, IV	Ki-10611, >47.0		
Vytachiv, vt$_{1b1}$ (Moershoofd Int.)	South-boreal forest-steppe	Kabazi II, IIA/4			Micoquian, Ak Kaya facie
		Kabazi II, IIA/4B			
Uday,ud; Pryluki, pl$_3$, (Ognon St.& Int.)	Boreal forest-steppe	Kabazi II, III/1A			
		Kabazi II, III/1			
		Starosele, 3			Starosele, level 3
Pryluki, pl$_{1b2}$, (Odderade Int.)	South-boreal forest-steppe	Starosele, 4			Micoquian, ?
		Kabazi II, III/2		74.0-85.0	Micoquian, Ak Kaya facie
Pryluki, pl$_{1b2-b1}$, (Rederstall St.)	Boreal, s.-boreal forest-steppe	Kabazi II, III/2A			
		Kabazi II, III/3		82.0±10.0	
Pryluki, pl$_{1b1}$, (Brörup Int.)	South-boreal forest-steppe	Zaskalnaya V, V			
		Zaskalnaya V, VI			
Tyasmin, ts, (Herning St.)	???				
Kaydaky, kd$_{3b2+c}$, (Eemian Intergl.)	South-boreal forest, forest-st.	Kabazi II, V			
		Kabazi II, VI			

Table 18-2 Continued.

This first scale has been discussed in some detail in a number of earlier publications (Chabai et al., 1998; 2004; Chabai 2004c). The main problem of the first scale lies in the dating of bone samples using the radiocarbon method; it has been stressed several times that the dates presented in Table 18-2 must be understood as the minimum age of these samples, only (Hedges et al., 1996; Pettitt 1998; Chapter 3, this volume). At the same time, the proposed radiocarbon chronology, if not in its entirety, then at least partially, does correspond to the temporal frames of periods of climatic fluctuation which have been defined in the main stratigraphical profiles at such sites as Starosele, Kabazi II, Buran Kaya III, and Zaskalnaya V. Of course, the climatic fluctuations were not very pronounced in the Crimea, with variations in the Upper Pleistocene fluctuating mainly between south-boreal and boreal forest-steppe (Table 18-2). An exception is the climatic condition of Vytachiv, vt$_2$. The deposits associated with this stadial have been studied and dated to about 35/34 – 32/31 ka BP in such stratigraphical sequences as Kabazi II, Buran Kaya III, and Zaskalnaya V (Table 18-2). This stadial was characterised by a harsh continental climate, with landscapes covered by boreal xeric grassland or even semi-desert. Among the inhabitants of these environments is *Pygeretmus pumilio* which is attested twice in the Crimea, but always during stadial conditions, i.e. before Denekamp and after Lascaux (Markova 2004a). An analogy of such environmental conditions was found at Kabazi V, in sub-units III/2 and III/3 (Chapter 4, this volume). The boreal xeric grassland / semi-desert environment studied in Kabazi V, III/2 and III/3 contradicts the "high chronology" hypothesis (Chapter 3, this volume). This hypothesis is based on OSL, TL and U-series dates (Table 18-1; 18-3) and suggests that cultural deposits from Kabazi V might be dated to OIS 4 or even earlier.

Landscapes	Sites, Layers / Levels	Dates			Technocomplexes, facie
		U-series	OSL	TL	
Boreal to south-boreal forest-steppe	Kabazi II, II/8	45.0±7.0 (1)			Levallois-Mousterian, WCM
South-boreal forest-steppe	Kabazi II, III/2	54.0±3.0 (3)			Micoquian, Ak Kaya facie
Boreal to south-boreal forest-steppe	Starosele, 2	60.0 (2)			Micoquian, ?
Boreal forest-steppe	Starosele, 3	67.5 (3)			Starosele, level 3
South-boreal forest-steppe	Starosele, 4	>80.0 (4)			Micoquian, ?
South-boreal to boreal forest-steppe	Kabazi V, III/1	73.3±6.0 (4)	60.0-100.0	81.0±9.0	Micoquian, Starosele facie
	Kabazi V, III/1A				
Boreal xeric grassland	Kabazi V, III/2, III/2A				Micoquian, Ak Kaya facie
	Kabazi V, III/3-1 – III/3-3A				Levallois-Mousterian, WCM
Boreal to south-boreal forest-steppe	Kabazi V, III/5-3B2				Micoquian, Starosele facie
Boreal to south-boreal forest-steppe with xerophytes	Kabazi V, IV/1 – IV/3		about 200.0		Levallois-Mousterian, WCM

Table 18-3 U-series, OSL and TL chronologies and environment of the Crimean Middle Palaeolithic*.
* data after Gerasimenko 1999, 2005, this volume; Markova 1999, 2005, this volume; Mikhailesku 1999, 2005; McKinney 1998; Housley et al., this volume.

In the Crimea the environmental conditions of OIS 4 and OIS 5 vary from boreal to south-boreal forest-steppe. There are no available evidences that a boreal xeric grassland / semi-desert environment existed in the Crimea during OIS 4 and OIS 5, or between 60 and 100 ka BP in OSL terms. In general, the climatic conditions of Vytachiv, vt$_2$ are an important marker for bio-stratigraphical and chronological studies. In fact, if the Vytachiv, vt$_2$ climatic conditions did not exist, we would have no problems with the U-series, OSL and TL chronology (Table 18-3).

The "low chronology" hypothesis based on both radiocarbon and ESR dates was proposed for Kabazi V by R. Housley et al. (Chapter 3, this volume), and is much more reliable (Table 18-1). Nevertheless, several traditional problems still exist, i.e. the difficulty in correlating radiocarbon and ESR ages, and the problem of the minimal age of radiocarbon definitions. At the same time, the "low chronology" of Kabazi V is not in contradiction with the environmental characteristics of the observed climatic cycles, and unlike the "high chronology", the "low chronology" is not in contradiction with the adopted age of the Levallois-Mousterian in Eastern Europe and, in particularly, in the Crimea, (Table 18-2). At least, the "low chronology" does not give reason to claim a Middle Pleistocene age for the Crimean Levallois-Mousterian in Kabazi V, Unit IV (Tables 18-1; 18-2; 18-3).

Accordingly, the "low chronology" and the results of environmental studies place the Kabazi V occupations at the end of OIS 3. The earliest occupations in Unit IV of Kabazi V are associated with stadial conditions of Hosselo. These occupations are attributed to the WCM facie of the Eastern European Levallois-Mousterian. The temporal and environmental analogy for WCM in Kabazi V, unit IV is thought to be level IIA/2 at Kabazi II (Vytachiv, vt$_{1b2-b1}$ Hosselo). These occupations accumulated under the relatively mild environment of boreal to south-boreal forest-steppe with xerophytes, i.e. during the mildest stadial in OIS 3. The next in situ occupations in Kabazi V, sub-units III/5 and III/4 were formed during an interstadial environment. Chronological and environmental analogies for the Starosele facie of the Micoquian in sub-unit III/5 at Kabazi V can be found in Vytachiv, vt$_{1b2}$ (Hengelo) deposits at Kabazi II in levels IIA/1 through II/7AB (WCM), in levels 1 and 2 (Starosele facie) at Starosele, and at Buran Kaya III, layer E (Upper Palaeolithic?). At this time, landscapes would have been covered by south-boreal forest-steppe vegetation. Indeed, it is highly likely that Kabazi V, III/5 and III/4 are associated with the Interstadial Vytachiv, vt$_{1c}$ (Huneborg Interstadial). Unfortunately, however, the pollen preservation at Kabazi V is not sufficient to enable detailed reconstructions of the vegetation at this time. The available radiocarbon date for level III/5-3B2 indicates that both Vytachiv, vt$_{1b2}$ and Vytachiv, vt$_{1c}$ are justifiable (Table. 18-2). If the latter is valid, the temporal and environmental neighbours of Kabazi V, III/5, III/4 would have been located in Zaskalnaya VI, III, IIIa (Ak Kaya Micoquian), Kabazi II, II/6, II/7 (WCM), and Prolom I (Kiik Koba Micoquian). Whereas the cultural deposits from Kabazi V, sub-units III/3 (WCM), III/2 (Ak Kaya Micoquian), Zaskalnaya V, II (Ak Kaya Micoquian), Kabazi II, levels II/5 through II/1 (WCM), and probably Zaskalnaya VI, II (Ak Kaya Micoquian) as well as the upper levels in Prolom I and Kiik Koba (both Kiik Koba Micoquian), all accumulated at a time of harsh continental climate during Vytachiv, vt_2 (Huneborg Stadial). Latest occupations belonging to the Ak Kaya (Kabazi V, II/4A, II/7), Starosele (Kabazi V, III/1, III/1A; Zaskalnaya V, I), and Kiik Koba (Buran Kaya III, B) facies of the Micoquian, to the WCM facie of the Levallois-Mousterian (Kabazi II, II/1A, A3A – A4), as well as to the Aurignacian (Siuren I, F, G, H), all accumulated under relatively mild conditions during Vytachiv, vt_{3b} (Denekamp).

On the whole, the Levallois-Mousterian chronology is much shorter than that of the Micoquian (Table 18-2). The earliest evidence of the Micoquian techno-complex has been identified in OIS 5d, while the earliest manifestation of the Levallois-Mousterian dates to Vytachiv, $vt_{1b2\text{-}b1}$ (Hosselo Stadial). There are no radiometric dates for occupations at this time, and the commonly adopted age for this stadial is about 39-45 ka BP.

With exception of Vytachiv, vt_2, the climatic conditions of the last part of OIS 3 were relatively mild. On the other hand, the alternation of climatic conditions did not affect the main species of hunted fauna. During all of stage OIS 3 this mainly comprised *Equus hydruntinus* and *Saiga tatarica*. In spite of the absence of arcto-boreal rodents, molluscs and flora, the cold adopted mega-fauna is represented by reindeer, mammoth, woolly rhino and polar fox. At the same time, some inhabitants of temperate forest environments, such as red deer, were also found (Chabai, Uthmeier 2006).

Kabazi V: Technological Variability

Kabazi V is situated in the vicinity of flint outcrops. Thus, both Micoquian inhabitants and Levallois-Mousterians would have had access to the same sources of raw material, and the structures of artefact assemblages clearly demonstrate the workshop model of raw material exploitation (Chapters 7, 8, 9, 11, 14, this volume). This to say that both Micoquians and Levallois-Mousterians brought to Kabazi V flint plaquettes and nodules for further flaking. However, the technological approaches to the raw material employed in Micoquian and Levallois-Mousterian occupations are quite different. Whereas the former preferred the elaboration of bifacial preforms and bifacial tool production, the latter concentrated on core reduction with modification of debitage into unifacial tools.

Such a dichotomy is clearly seen in numerous attributes (Chapters 7, 8, 9, 11, 14, this volume). For example, the insignificant role of cores in Micoquian primary flaking is reflected in both a high unifacial tool to core ratio (an average of 26 : 1) and blank to core ratio (an average of 85.6 : 1). For WCM occupations these ratios are characterised by quite different values: no more than 28 flakes and blades were struck from one core and 5 of them were modified into tools. In the case of Micoquian occupations, the majority of flakes and blades stemmed from bifacial tool production. The refitted "cover" of a bifacial tool shows that 44 flakes and 7 blades were struck during the production of this particular tool (Chapter 16, this volume). For Micoquian occupations the ratios of bifacial tools to blanks (flakes and blades) vary from 1 : 33.3 (sub-unit III/2) and up to 1 : 49.8 (sub-unit III/5).

The different origin of debitage in Micoquian and Levallois-Mousterian occupations resulted in blank assemblages with quite different characters. On the whole, blanks from Levallois-Mousterian occupations are longer, wider and thicker (Chapter 14, this volume). The application of a specific core reduction strategy, which is similar to the Biache method, resulted in regularly shaped debitage and high blade indexes (Ilam = 23-24). On the other hand, Micoquian debitage is represented by short, often transversal, flakes with incurvate profiles, low blade indexes (Ilam = 7-14), and irregularly shaped blades (Chapters 7, 8, 11). The bifacial thinning / shaping flakes and blades constitute a minimum of 20 % of the total sum of flakes and blades. Bifacial thinning /shaping chips are about twice as frequent. Often, bifacial thinning / shaping flakes were modified into scrapers and / or retouched pieces.

All bifacial tools from Micoquian occupations were produced in plano-convex manner, and the majority were made from flint plaquettes. Indeed, one might even suggest that the choice of flint plaquettes was a very conscious decision. Plaquettes used for bifacial tool production vary in thickness from between 1.6 and 2.0 cm. The majority of cores from Levallois-Mousterian occupations are of parallel and radial types. The combination of such core types with centripetal Levallois flakes and blades, and *débordantes* and *enlèvement deux* debitage is indicative of a Biache-like core reduction strategy (Chapters 9 and 14, this volume).

Instruments used for flint knapping included bone retouchers, pebble retouchers, and pebble hammerstones. Whereas bone retouchers are characteristic for Micoquian occupations only, pebbles were used by both Micoquian and Levallois-Mousterian knappers (Chapter 15, this volume).

Although no great differences can be observed between the two traditions regarding the types of retouch used in tool production, ventral thinning is only really associated with Micoquian assemblages. About one quarter of scrapers and points exhibit either a thinned back, or thinned terminations. Bifacial scrapers and especially points often have a thinned base.

In summary, whereas Micoquian technology was oriented toward the production of bifacial tools on relatively thin flint plaquettes, the main aim of the Levallois-Mousterian technology was the production of flakes and blades using specific methods of core reduction. Further, Micoquians and Levallois-Mousterians used different knapping instruments to attain their objectives.

Kabazi V: Typological Variability

Detailed typological descriptions of material recovered from Kabazi V in 2002 and 2003 are presented in a number of chapters in this volume (Chapters 7 through 14), and parts of some levels, such as II/4A, II/7, III/1, III/1A, III/2 and III/3 were excavated and published previously by A. Yevtushenko (1998a, 1998b). Yevtushenko's typological definitions were added to the corresponding levels to produce a typological structure of all excavated assemblages (Tables 18-4; 18-5; 18-6).

Kabazi V: Micoquian typological variability

Although technologically homogeneous the Micoquian assemblages from Kabazi V demonstrate some typological variability. Tool-kits are dominated by scrapers, on average 60.9 % of the total number of identifiable tools, with this value fluctuating between 52.2 % in level II/4A – II/7 and up to 62.6 % in sub-unit III/5. The second most frequently observed tool are points, on average 12.7 % of all identifiable tools. The ratio of this tool type does not vary greatly, from 11.5 % in sub-unit III/1 to 16.4 % in levels II/4A – II/7. Bifacial scrapers compose an average of 8.2 % of all tools, ranging from 1.5 % in level II/4A – II/7 and up to 11.3 % in sub-unit III/1. On average, bifacial points comprise 5.5 % of all tools, ranging from 3.4 % in sub-unit III/2 to 10.5 % in levels II/4A – II/7. Reutilised bifacial tools are well represented (2-10 %) in the tool assemblages from levels II/4A – II/7 and sub-units III/1 and III/1A. The sum of denticulates and notches never exceeds 5 %. Scaled pieces, truncated-faceted, end-scrapers, burins, perforators and composite tools are very rare (Table 18-4). Such a typological structure is characteristic for most Crimean Micoquian assemblages, the only exceptions being assemblages with either very small numbers of points (Kabazi II, III, V, VI; Chokurcha I, IV; Sary Kaya) or very high numbers of points (Prolom I; Buran Kaya III, B; Kiik Koba, upper level). In other words, the closest analogies for the Micoquian at Kabazi V are found in Zaskalnaya V and Zaskalnaya VI.

More pronounced variations in the Micoquian assemblage have been observed at the morphological level (Table 18-5). Whereas assemblages from levels II/4A – II/7 and sub-unit III/2 are characterised by a dominance of simple forms (single and double-edge scrapers) over convergent tools (points and convergent scrapers), as well as relatively high amounts of bifacial tools, assemblages from sub-unit III/1 demonstrate a dominance of convergent forms and smaller amount of both bifacial and simple tools. Finally, assemblages from sub-unit III/5 are characterised by a dominance of simple tools and the smallest amount of bifacials (Table 18-5; Fig. 18-1). The differences in ratios of simple, convergent and bifacial tools served as the criteria for the subdivision into different facies of Crimean Micoquian assemblages (Chabai, Marks 1998). Naturally, this subdivision is of a relative character. In some cases Starosele assemblages are more similar to Ak Kaya assemblages than they are to each other. This is the case at Kabazi V, where sub-units III/1 (Starosele) and III/2 (Ak Kaya) display more similarities than the assemblages from sub-units III/1 and III/5 (both belonging to the Starosele facie). At the same time, this subdivision shows quite clearly the tendency of artefact reduction, which in Micoquian industries is expressed in decreasing numbers of simple, bifacial tool forms and overall tool sizes, accompanied by an increasing in convergent tool forms (Fig. 18-1). All of these tendencies together make up the "reduction formula" of Micoquian tool-kits (Chabai 2004c, p. 204; 2005b, p. 128), i.e. the biggest tools are associated

	Levels II/4A, II/7		Sub-Unit III/1				Sub-Unit III/2		Sub-Unit III/5								
	II/4A	**II/7**	**III/1B**	**III/1****	**III/1C**	**III/1A****	**III/2****	**III/2A**	**III/5-1A**	**III/5-1**	**III/5-1B**	**III/5-2**	**III/5-3**	**III/5-3B**	**III/5-3B2**	**Total :**	**esse%**
Points																	
Distal	·	·	1	·	·	1	1	·	·	·	·	·	·	·	·	3	0.33
Lateral	·	·	·	·	·	·	1	·	·	·	·	·	·	·	·	1	0.11
Semi-leaf	1	1	·	9	·	2	3	1	·	·	·	·	·	·	·	17	1.85
Sub-leaf	·	·	·	1	·	3	·	·	1	·	1	·	·	1	·	7	0.76
Leaf-shaped	·	·	·	·	·	·	1	·	·	·	·	·	·	·	·	1	0.11
Sub-triangular	·	·	·	4	·	5	2	·	·	·	·	2	·	·	·	13	1.41
Triangular	·	·	·	1	·	1	·	·	·	·	·	·	·	·	·	2	0.21
Semi-trapezoidal	·	1	1	3	·	3	·	1	1	·	·	2	·	1	·	13	1.41
Sub-trapezoidal	·	·	·	2	·	·	·	·	·	1	·	1	1	·	·	5	0.54
Trapezoidal	1	·	·	·	·	·	·	·	·	·	·	·	·	·	·	1	0.11
Semi-crescent	3	·	·	3	·	3	3	1	·	·	·	2	·	·	·	15	1.63
Sub-crescent	·	·	·	1	1	1	2	·	1	·	·	·	1	1	·	8	0.87
Crescent	·	1	·	·	·	·	·	·	·	·	·	·	·	·	·	1	0.11
Hook-like	1	·	·	·	·	·	1	·	·	·	·	·	·	·	·	2	0.21
Amorphous	·	1	·	·	·	·	·	·	·	·	·	·	·	·	·	1	0.11
Unidentifiable	·	1	·	2	·	4	1	·	1	1	1	5	4	5	2	27	2.93
Scrapers																	
Transverse-straight	1	·	·	1	·	3	2	1	·	·	·	3	1	1	·	13	1.41
Transverse-convex	1	·	2	1	·	4	5	1	1	4	1	·	2	3	1	26	2.83
Transverse-concave	1	·	·	·	·	1	·	·	·	·	·	·	·	1	·	3	0.33
Transverse-wavy	·	1	·	1	·	·	·	·	·	·	·	1	·	·	·	3	0.33
Diagonal straight	·	·	·	·	·	2	·	1	·	·	·	·	·	·	·	3	0.33
Diagonal convex	·	·	·	5	·	4	3	·	·	1	·	2	2	1	1	19	2.06
Diagonal wavy	·	·	·	·	·	1	·	·	·	·	·	3	·	·	·	4	0.43
Straight	3	3	1	11	·	17	9	1	·	3	1	7	4	7	8	75	8.14
Convex	6	1	4	19	·	17	17	·	6	3	1	6	7	7	3	97	10.53
Concave	1	3	1	5	1	5	2	·	·	·	·	5	·	1	·	24	2.61
Wavy	·	1	·	1	·	5	2	·	·	1	·	1	1	3	·	15	1.63
Double straight	·	·	·	4	·	·	2	·	·	·	·	·	2	·	·	8	0.87
Straight-convex	·	1	3	5	·	3	2	·	2	1	·	·	1	1	·	19	2.06
Straight-concave	·	·	·	1	·	·	·	·	·	·	·	·	1	·	·	2	0.21
Straight-wavy	1	1	·	·	·	·	·	·	·	1	·	·	·	·	·	3	0.33
Double convex	1	·	2	2	·	6	2	·	1	·	·	·	2	·	·	16	1.74
Convex-wavy	·	·	·	·	·	3	·	·	·	·	·	·	·	·	·	3	0.33
Convex-concave	·	·	·	2	·	1	·	·	·	·	·	·	·	·	·	3	0.33
Double concave	·	·	·	·	·	·	·	·	·	1	·	·	·	·	·	1	0.11
Concave-wavy	·	·	·	·	·	1	·	·	·	·	·	·	·	·	·	1	0.11
Double wavy	·	·	·	·	·	·	1	·	·	·	·	·	·	·	·	1	0.11
Semi-leaf	·	·	·	5	·	7	9	·	·	·	·	·	·	·	·	21	2.28
Sub-leaf	·	·	·	3	1	1	3	·	·	·	·	·	·	·	2	10	1.09
Leaf-shaped	·	·	·	·	·	1	·	·	·	·	·	·	·	·	·	1	0.11
Sub-triangular	·	·	·	·	·	7	·	·	·	1	·	1	·	2	·	11	1.19
Triangular	·	·	·	2	·	1	·	·	·	·	·	·	·	·	·	3	0.33
Semi-trapezoidal	·	·	2	11	1	5	4	·	1	2	·	2	·	3	·	31	3.37
Sub-trapezoidal	·	2	1	9	·	6	1	·	·	1	·	·	1	2	1	24	2.61
Trapezoidal	·	·	·	1	·	·	·	·	·	·	·	·	·	·	·	1	0.11
Semi-rectangular	·	2	1	2	·	4	6	·	·	·	·	1	3	·	1	20	2.17
Sub-retangular	·	·	1	·	·	5	·	·	·	·	·	1	1	4	·	12	1.30
Rectangular	·	·	·	·	·	1	·	·	·	·	·	·	·	·	·	1	0.11
Semi-crescent	1	2	3	8	·	18	5	·	·	·	·	1	·	1	2	41	4.45
Sub-crescent	·	1	·	2	1	5	·	·	·	·	1	1	·	1	1	13	1.41
Crescent	·	·	·	·	·	2	1	·	·	·	·	·	·	·	·	3	0.33
Hook-like	·	·	·	3	·	·	·	·	1	1	·	·	·	·	·	5	0.54
Semi-ovoid	·	·	·	·	·	·	1	1	·	·	·	·	·	·	·	2	0.21
Convergent amorphous	1	·	·	·	·	·	·	·	·	·	·	1	·	·	·	2	0.21
Convergent unidentifiable	·	·	2	7	·	1	1	·	2	3	·	3	·	·	2	21	2.28

	Levels II/4A, II/7		Sub-Unit III/1				Sub-Unit III/2		Sub-Unit III/5								
	II/4A	**II/7**	**III/1B**	**III/1****	**III/1C**	**III/1A****	**III/2****	**III/2A**	**III/5-1A**	**III/5-1**	**III/5-1B**	**III/5-2**	**III/5-3**	**III/5-3B**	**III/5-3B2**	**Total :**	**esse%**
Denticulates	3	·	·	4	·	7	8	·	1	1	·	4	1	·	·	29	3.15
Notches	2	1	·	4	·	4	4	·	1	3	·	1	1	1	·	22	2.39
Scaled pieces	·	·	·	1	·	8	·	·	·	·	·	·	·	·	·	9	0.98
Truncated-faceted	·	·	·	5	·	1	1	·	·	·	1	4	2	1	·	15	1.63
End-scrapers	·	·	·	·	·	1	2	·	·	1	·	·	·	·	1	5	0.54
Burins	·	·	·	·	·	1	·	·	2	2	·	·	·	·	·	5	0.54
Perforators	·	·	·	·	·	·	·	·	1	·	·	·	·	·	·	1	0.11
Composite tools	·	·	·	·	·	3	·	·	·	·	·	·	·	·	·	3	0.33
Bifacial points																	
Semi-leaf	·	·	·	·	·	·	2	·	·	·	·	·	·	·	·	2	0.21
Sub-leaf	1	·	·	5	·	5	·	·	·	·	·	·	·	·	·	11	1.19
Leaf-shaped	·	·	·	1	·	·	·	·	·	·	·	·	3	·	·	4	0.43
Sub-triangular	·	1	1	1	·	·	·	·	·	1	·	·	·	·	·	4	0.43
Trapezoidal	·	·	·	·	·	1	·	·	·	·	·	·	·	·	·	1	0.11
Semi-crescent	·	·	·	4	·	·	2	·	·	·	·	·	·	·	·	6	0.65
Sub-crescent	·	·	·	1	·	·	·	·	·	·	·	·	·	1	1	3	0.33
Unidentifiable	2	3	1	2	·	3	1	·	·	2	·	3	2	·	1	20	2.17
Bifacial scrapers																	
Straight	·	·	·	1	·	1	2	·	·	·	·	1	·	·	·	5	0.54
Convex	·	·	·	1	·	6	·	·	·	·	·	1	·	·	·	8	0.87
Semi-leaf	·	·	·	7	·	4	4	·	·	·	·	1	·	·	·	16	1.74
Sub-leaf	·	·	·	·	·	·	1	·	·	·	·	·	·	·	·	1	0.11
Leaf-shaped	·	·	·	·	·	·	2	·	·	·	·	·	1	·	·	3	0.33
Sub-triangular	·	·	·	1	·	·	·	·	·	·	·	·	·	·	·	1	0.11
Sub-trapezoidal	·	·	·	1	·	·	·	·	·	·	·	·	·	1	·	2	0.21
Semi-crescent	·	·	·	2	·	3	1	1	·	·	·	·	·	·	·	7	0.76
Sub-crescent	·	·	·	9	·	8	2	1	·	·	·	·	·	·	1	21	2.28
Crescent	·	·	·	·	·	4	·	·	·	·	·	·	·	·	·	4	0.43
Ovoid	1	·	·	·	·	·	·	·	·	·	·	·	·	·	·	1	0.11
Unidentifiable	·	·	·	·	·	3	·	·	·	1	·	1	1	·	·	6	0.65
Bifacial reutilized	3	4	·	5	·	5	11	·	·	·	·	·	·	·	·	28	3.04
Retouched Pieces	11	11	18	201	8	144	62	3	10	15	7	29	25	18	22	584	
Unidentifiable																	
Unifacial	10	8	19	153	8	107	44	2	7	8	4	24	12	15	17	438	
Bifacial	2	2	9	60	1	41	16	·	3	4	·	9	2	7	2	158	
Total:	**58**	**53**	**73**	**606**	**22**	**520**	**258**	**15**	**43**	**63**	**18**	**129**	**84**	**90**	**69**	**2,101**	**100.00**

◄▲ **Table 18-4** Kabazi V: tools from Micoquian occupations*.
*after A.I. Yevtushenko (1998b, Chapter 11, this volume), A.P. Veselsky (Chapter 7, this volume) and V.P. Chabai (Chapter 8, this volume).
**summarised data for assemblages excavated in 1993-96 and 2002-03.

with the Ak Kaya facie, while the smallest tools are found in Kiik Koba assemblages. Certainly, it is impossible to group assemblages into clearly separate clusters on the basis of these tendencies (Fig. 18-1). Indeed, a number of tool-kits might be regarded as "transitional" assemblages (Chabai 1999). For example, the tool-kits from sub-units III/1 and III/2 are a transitional group between Ak Kaya and Starosele assemblages (Table 18-5). Artefact reduction in Micoquian occupations at Kabazi V is best explained in the intensity of artefact utilisation. The average density of artefacts for levels with a Starosele morphological structure is 1,176 artefacts per cubic metre, while the density of artefacts in levels with Ak Kaya assemblages hardly exceeds 600 artefacts per cubic metre. Therefore, bearing in mind the palimpsest character of occupations, previously imported and produced artefacts may have been utilised and reutilised several times by the next visitors to the site. Such utilisation and reutilisation

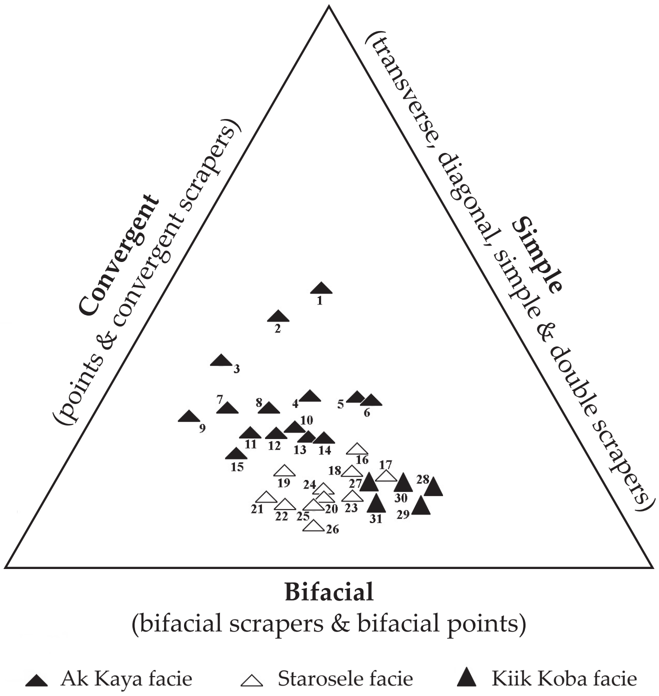

Fig. 18-1 Crimean Micoquian. Tripole graph showing the relationship of tool morphological groups according to different assemblages: 1 – Kabazi II, V-VI; 2 – Sary Kaya, 1986; 3 – Chokurcha I, IV-I; 4 – Zaskalnaya VI, II; 5 – Chokurcha I, IV-M; 6 – Zaskalnaya V, V; 7 – Kabazi II, III; 8 – Chokurcha I, IV; 9 – Sary Kaya, 1977; **10 – Kabazi V, II/4A – II/7**; 11 – Zaskalnaya V, II; 12 – Zaskalnaya V, III; 13 – Zaskalnaya V, VI; **14 – Kabazi V, III/2**; 15 – Zaskalnaya V, III; **16 – Kabazi V, III/1**; 17 – Prolom II, III; 18 – Zaskalnaya VI, V; 19 – Zaskalnaya V, I; 20 – Prolom II, II; 21 – Chokurcha I, IV-O; **22 – Kabazi V, III/5**; 23 – Zaskalnaya V, IV; 24 – Starosele, 1;25 – Zaskalnaya VI, IV; 26 – Prolom II, IV; 27 – Buran Kaya III, B; 28 – Kiik Koba, upper layer; 29 – Prolom I, lower layer; 30 – Prolom I, upper layer; 31 – Buran Kaya III, 7-8.

processes are reflected in the "reduction formula" of the Crimean Micoquian. In fact, it may be stated that the artefacts left on the living surface become the source of raw material for the next visitors.

The way in which tools have been classified in this volume means that some generalisations can be made. For example, leaf, triangular, trapezoidal and crescent shapes dominate point assemblages (Table 18-4). The most frequently observed scraper in scraper assemblages are different types of simple scrapers; transverse scrapers are also important, and convergent scrapers, such as leaf-shaped, trapezoidal and crescent-shaped scrapers, also occur in some number. Therefore, it can be concluded that points and convergent scrapers are represented by similar shapes: leaf, trapezoidal and crescent. An exception are triangular shapes which are well represented among the points, but are rare among scrapers (Table 18-4). Bifacial points and scraper assemblages are dominated by leaf and crescent shapes.

In conclusion, in around 50 % of cases Micoquian tools are represented by simple shapes, in 18 % of cases by crescents, in 13 % of cases by leaf-shaped pieces, and in 11 % of cases by trapezoidal shapes. All remaining shapes (rectangular, triangular and ovoid) play no significant role in Micoquian tools-kits.

Kabazi V: Levallois-Mousterian typological variability

Tool-kits from Kabazi V, sub-unit III/3 and Unit IV, are dominated by scrapers, on average 69 % of all identifiable tools, a value which is characteristic in all associated levels. Points make up an average of 16 % of all tools, though the actual ratios in the different levels of sub-unit III/3 and Unit IV vary greatly. Whereas in levels III/3-1, III/3-1A, III/3-2, III/3-2A and III/3-3 just a few points were found, in levels III/3-3A and Unit IV they constitute 22.9 % and 24.4 % of all tools, respectively. These latter values are similar to those identified in the WCM assemblages from Kabazi II, Unit II (Chabai 1998b). The average percentages of denticulates, notches,

		Simple	Convergent	Bifacial
Ak Kaya facie	Kabazi II, V, VI	26.2	24.6	49.2
	Sary Kaya, 1985-86	35.2	20.2	44.6
	Chokurcha I, IV-I	48.1	15.4	36.5
	Zaskalnaya VI, II	37.8	32.1	30.1
	Chokurcha I, IV-M	30.0	40.0	30.0
	Zaskalnaya V, V	28.2	42.3	29.5
	Kabazi II, III	51.3	20.5	28.2
	Chokurcha I, IV	45.1	26.8	28.1
	Sary Kaya, 1977	58.1	15.3	26.6
	Kabazi V, levels II/4A–II/7	**42.6**	**32.8**	**24.6**
	Zaskalnaya V, II	49.9	26.2	23.9
	Zaskalnaya V, III	46.1	30.4	23.5
	Zaskalnaya V, VI	41.7	35.4	22.9
	Kabazi V, sub-unit III/2	**38.9**	**38.2**	**22.9**
	Zaskalnaya VI, III	53.9	26.1	20.0
Starosele facie	**Kabazi V, sub-unit III/1**	**35.1**	**44.1**	**20.8**
	Prolom II, III	48.3	34.8	16.9
	Zaskalnaya VI, V	37.9	45.4	16.7
	Zaskalnaya V, I	33.3	50.8	15.9
	Prolom II, II	43.6	42.6	13.8
	Chokurcha I, IV-O	53.1	34.4	12.5
	Kabazi V, sub-unit III/5	**51.2**	**37.8**	**11.0**
	Zaskalnaya V, IV	39.9	47.7	12.4
	Starosele, 1	44.3	43.4	12.3
	Zaskalnaya VI, IV	46.9	42.5	10.6
	Prolom II, IV	48.6	44.3	7.10
Kiik Koba facie	Buran Kaya III, B	36.5	49.1	14.4
	Kiik Koba, верх.	26.9	59.3	13.8
	Prolom I, низ.	30.2	59.1	10.7
	Prolom I, верх.	30.9	54.4	14.7
	Buran Kaya III, 7-8	37.0	51.9	11.1

Table 18-5 Crimean Micoquian: morphological tool groups.

end-scrapers, burins, truncated-faceted and composite tools listed in Table 18-6 reflect the real value of these tools in each level. Bifacial tools are not characteristic for the WCM, and those found in Unit IV were imported to the site (Chapter 14, this volume).

Distal and lateral points are the most characteristic tools in the WCM. The "atypical Levallois points", defined by Yu. Demidenko (Chapter 9, this volume) in levels III/3-1A and III/3-3A, are typologically closely related. The distal, lateral and "atypical Levallois points" are characterised by only limited amounts of retouch, i.e. at the tip or both at the tip and along a part of one edge. Distal, lateral and "atypical Levallois points" are referred to as "simple points". The second most important shape among points is the crescent-shaped pieces. All remaining shapes are represented by only insignificant numbers of points. About two thirds of scrapers are represented by simple – one-edged shapes. Also, in most levels trapezoidal-shaped scrapers are important. On average, trapezoidal shapes make up 7.5% of the total number of morphologically identified scrapers. As in the WCM there is a very high percentage of trapezoidal shapes. In the assemblage from Kabazi II, Unit II there were found no trapezoidal-shaped scrapers. The high amount of trapezoidal scrapers,

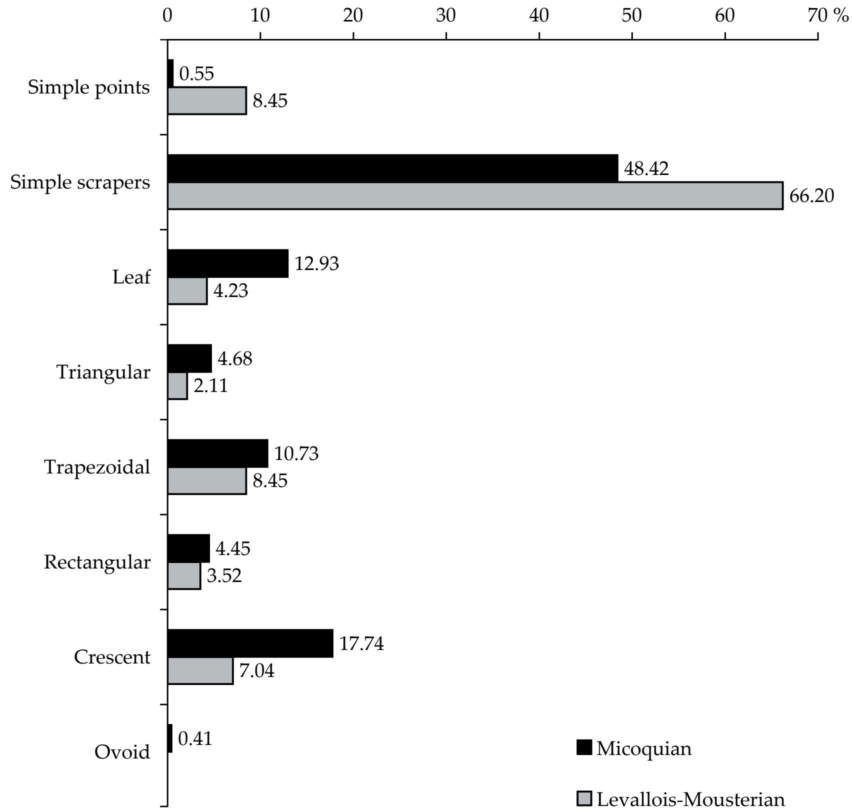

Fig. 18-2 Kabazi V: tool shapes in Micoquian and Levallois-Mousterian assemblages.

as well as the presence of some bifacials, has been interpreted as Micoquian admixture (Chapters 9 and 14, this volume).

In sum, the Levallois-Mousterian tool-kits from Kabazi V are represented by three main shapes: simple shapes make up about 75 % of pieces; crescent-shaped artefacts, about 7 %; and trapezoidal shapes, about 8.5 % of pieces. Triangular, leaf-shaped and rectangular pieces constitute just 2 % to 4 % of tool-kits.

Kabazi V: a comparison of Micoquian and Levallois-Mousterian tool shapes

The morphological structures of Kabazi V Micoquian and Levallois-Mousterian assemblages are shown in Figure 18-2. The main differences can be noted in the occurrence of simple shapes in general, and simple points in particularly, as well as in the frequency of leaf-shaped and crescent-shaped pieces. The triangular, rectangular and ovoid shapes are just as rare in both assemblages, while the similarity in the ratios of trapezoidal shapes is somewhat unexpected.

Levallois-Mousterian tool shapes from Kabazi V and in the archetype WCM assemblage from Kabazi II, Unit II are nearly identical, except in the recorded ratios of trapezoidal shapes. This distinction might be interpreted in two ways: trapezoids are Micoquian admixture (Chapter 9, this volume) or trapezoidal scrapers are more characteristic at camp-sites than they are at killing-butchering stations. The former interpretation appears to be more reliable. Also, it is necessary to note that, in spite of the functional difference between Kabazi II

Table 18-6 Kabazi V: tools from Levallois-Mousterian occupations*. ▶
* after A.I. Yevtushenko (1998b), Yu.E. Demidenko (Chapter 9, this volume) and V.P. Chabai (Chapter 14, this volume).

	Sub-Unit III/3							Unit IV				
	III/3,1994	**III/3-1**	**III/3-1A**	**III/3-2**	**III/3-2A**	**III/3-3**	**III/3-3A**	**IV/1**	**IV/2**	**IV/3**	**Total:**	**esse %**
Points												
Levallois, atypical	·	·	1	·	·	·	2	·	·	·	3	1.71
Distal	·	·	·	·	·	·	1	3	·	2	6	3.43
Lateral	·	·	·	·	·	1	·	1	·	1	3	1.71
Semi-trapezoidal	·	1	·	1	·	·	1	·	·	·	3	1.71
Semi-crescent	·	·	·	·	·	·	3	·	·	·	3	1.71
Sub-crescent	·	·	·	·	·	·	·	1	·	·	1	0.57
Hook-like	·	·	·	·	·	·	·	·	·	1	1	0.57
Sub-leaf	·	·	·	1	·	·	1	·	1	·	3	1.71
Amorphous	·	·	·	·	·	·	·	1	·	·	1	0.57
Unidentifiable	·	1	·	·	1	·	2	·	·	·	4	2.30
Scrapers												
Transverse-straight	1	·	·	·	·	·	·	1	1	·	3	1.71
Transverse-convex	2	·	·	·	·	2	·	1	2	·	7	4.00
Transverse-wavy	·	·	·	·	·	·	·	1	·	·	1	0.57
Diagonal straight	·	2	1	·	·	·	1	·	·	·	4	2.30
Diagonal convex	·	·	·	·	·	·	1	2	2	·	5	2.86
Straight	2	·	·	1	·	2	·	1	2	·	8	4.57
Convex	6	7	5	1	2	6	11	3	1	1	43	24.57
Concave	·	·	1	·	·	1	·	·	·	·	2	1.14
Wavy	1	1	1	·	·	·	·	2	·	·	5	2.86
Double straight	·	·	·	·	·	·	1	·	·	·	1	0.57
Straight-convex	2	·	·	·	·	·	·	2	1	·	5	2.86
Straight-concave	·	·	·	1	·	·	·	·	·	·	1	0.57
Double convex	·	·	·	·	·	2	·	·	1	·	3	1.71
Convex-concave	·	3	·	·	·	·	·	1	·	·	4	2.30
Double concave	2	·	·	·	·	·	·	·	·	·	2	1.14
Sub-triangular	·	·	·	·	·	·	1	·	·	·	1	0.57
Triangular	·	·	·	1	·	·	·	·	·	1	2	1.14
Semi-trapezoidal	·	2	·	1	·	·	1	1	·	1	6	3.43
Sub-trapezoidal	·	·	2	·	·	·	·	·	·	·	2	1.14
Trapezoidal	·	·	·	·	·	·	1	·	·	·	1	0.57
Semi-rectangular	·	·	·	·	·	·	2	1	·	·	3	1.71
Sub-rectangular	·	1	1	·	·	·	·	·	·	·	2	1.14
Semi-crescent	·	·	1	·	·	·	·	·	·	·	1	0.57
Sub-crescent	1	·	·	·	·	·	2	·	1	·	4	2.30
Semi-leaf	1	·	·	1	·	·	·	·	·	·	2	1.14
Sub-leaf	·	·	·	·	·	·	1	·	·	·	1	0.57
Convergent, unidentifiable	·	·	·	·	·	1	1	·	·	·	2	1.14
Denticulates	1	·	·	1	·	5	4	·	·	·	11	6.29
Notches	·	1	·	·	·	1	1	·	1	·	4	2.30
End-scrapers	·	·	·	·	·	·	1	·	·	·	1	0.57
Burins	·	·	1	·	·	·	·	1	·	·	2	1.14
Truncated-faceted	·	·	·	·	·	·	2	·	1	·	3	1.71
Composite tools	1	·	·	·	·	·	·	·	·	·	1	0.57
Bifacial scrapers												
Semi-crescent	·	·	·	·	·	·	·	1	·	·	1	0.57
Sub-crescent	·	·	·	·	·	·	·	1	·	·	1	0.57
Leaf-shaped	·	·	·	·	·	·	·	1	·	·	1	0.57
Bifacial reutilized	·	·	·	·	·	·	·	·	1	·	1	0.57
Retouched pieces	22	23	10	11	7	20	39	15	8	5	160	
Thinned pieces	·	·	·	·	·	·	·	2	·	·	2	
Unidentifiable, unifacial	2	7	1	5	7	7	23	4	3	6	65	
Total:	**44**	**49**	**25**	**25**	**17**	**48**	**103**	**47**	**26**	**18**	**402**	**100.00**

		Kabazi V	Kabazi II
Micoquian	Simple, points	0.55	·
	Simple	48.42	72.22
	Leaf	12.93	5.56
	Triangular	4.68	·
	Trapezoidal	10.73	3.70
	Rectangular	4.54	5.56
	Crescent	17.74	12.96
	Ovoid	0.41	·
	Total:	100.00	100.00
Levallois-Mousterian	Simple, points	8.45	7.52
	Simple	66.20	66.58
	Leaf	4.23	6.96
	Triangular	2.11	6.96
	Trapezoidal	8.45	·
	Rectangular	3.52	1.39
	Crescent	7.04	10.59
	Ovoid	·	·
	Total:	100.00	100.00

◄ **Table 18-7** Kabazi V and Kabazi II: Micoquian and Levallois-Mousterian tool shapes.

and Kabazi V, the Levallois-Mousterians used the workshop model of flint exploitation at both sites.

On the other hand, the shape structures of Micoquian tool-kits from Kabazi II and Kabazi V are very different (Table 18-7), with these differences reflecting the selected character of Kabazi II tool-kits. In other words, such differences might be interpreted as indicating two different models of raw material exploitation: the workshop model at Kabazi V, and the tool-users model at Kabazi II. “Tool-users” tool-kits are characterised by shape structures of a restricted character, i.e. 5 out of 8 potential shapes are represented and about three quarters of identifiable shapes constitute simple shapes. In a certain sense, the morphological structure of Micoquian “users” tool-kits are more similar to Levallois-Mousterian workshop ones. However, such a similarity is feigned, because Micoquian tool-kits comprise about 30 % bifacial tools.

Kabazi V: Fauna Exploitation Model

Only one model of fauna exploitation has been applied to Kabazi V, the consumption of previously dismembered ungulates (Chapter 6, this volume). The main species hunted were *Saiga tatarica* and *Equus hydruntinus*. The role of scavenging was insignificant. In levels III/1A and III/2, which are associated with Micoquian assemblages, mammoth bones were collected as fuel for hearths. The combination of the consumption model of fauna exploitation and the workshop model of flint exploitation is characteristic for camps of type A. This type of camp has been defined for the Levallois-Mousterian occupation at Shaitan Koba and for the Micoquian occupations at Zaskalnaya V and Zaskalnaya VI (Chabai, Uthmeier 2006).

Kabazi V: Hearths and Pits

Hearths are common features for both Micoquian and Levallois-Mousterian occupations (Chapter 2, this volume). Both Micoquians and Levallois-Mousterians preferred to use simple hearths. At the same time, at such sites as Prolom II, II (Micoquian) and Kabazi I (mixed assemblage) hearths surrounded by stones were used (Kolosov 1986; Formosov 1959b). There is no evidence of long-term usage of hearths or hearth renewal in association with Micoquian and Levallois-Mousterian assemblages.

At Kabazi V pits are associated with Micoquian assemblages. Moreover, all pits found from the Crimean Middle Palaeolithic (Kabazi V, III/1A, III/4-2; Zaskalnaya VI, II; Zaskalnaya V, III; Kiik Koba, upper level) are associated with Micoquian assemblages. Nowadays it can be concluded that artificial pits are a characteristic attribute of Micoquian living surfaces.

Discussion

The Levallois-Mousterian and Micoquian assemblages, which coexisted under similar environmental conditions and using similar models of raw material and fauna exploitation, can be differentiated from one another at five different levels. First, regarding the strategy of primary flaking, i.e. core reduction versus bifacial flaking, or in other words, Levallois and blade technologies opposed to bifacial plano-convex tool production. Second, there are the methods of tool elaboration: while ventral thinnings are characteristic for the Micoquian, they are rare in Levallois-Mousterian assemblages. Third, there are the instruments of flaking: hammerstones and pebble retouchers are common for both Levallois-Mousterian and the Micoquian, while bone retouchers were used in Micoquian assemblages only. Fourth, tool shapes and typology are closely connected with a distinction made in primary flaking: whereas unifacial tools of simple and crescent shapes occur in the Levallois-Mousterian, the Micoquian assemblages are characterised by simple-shaped, leaf-shaped, trapezoidal and crescent-shaped unifacial and bifacial tools. Finally, the living surfaces of Micoquian occupations were organised with hearths and pits, while hearths are the only structures associated with living surfaces of Levallois-Mousterian occupations. Also, mammoth bones served to fuel some hearths in Micoquian levels, while there is no evidence for this practice in Levallois-Mousterian occupations.

In fact, four of the five distinctions noted between Micoquian and Levallois-Mousterian are of technological significance, which is undoubtedly related to quite different styles of living. The manner in which living space was organised might reflect the range of economic activity (pit in level III/4-2). Further, the significance of the "digging activity" undertaken by the Micoquians is still unclear. In the Crimean Middle Palaeolithic they left three caches; two of these contained the waste from bifacial tool and core/bifacial tool production (Kabazi V, III/4-2; Zaskalnaya V, III), and one was a hiding place for bifacial tools (Zaskalnaya VI, II).

On the other hand, both Micoquian and Levallois-Mousterian camps at Kabazi V appear to be links in a chain of relatively complicated settlement systems connected with kill and butchering stations (Chabai, Uthmeier 2006). In theory, the Levallois-Mousterian camps at Kabazi V, Unit IV and sub-unit III/3 might have been supplied with *Equus hydruntinus* meat from contemporaneous kill and butchering stations at Kabazi II, levels IIA/2 through II/1. The saiga kill and butchering stations are unknown, as are Micoquian kill and butchering stations that are contemporaneous with Kabazi V, sub-units III/1, III/2 and III/5. In spite of the technological differences and distinctions in the organisation of living floors, the Crimean Micoquian and Levallois-Mousterian show nearly identical models of land use (Chabai, Uthmeier 2006). Therefore, it is likely that the land use models depend rather on the environmental characteristics than on the technological parameters of Micoquian and Levallois-Mousterian techno-complexes. Thus, from both technological and typological points of view, the Crimean Micoquian and the Levallois-Mousterian appear to be stylistically distinct Middle Palaeolithic entities, while the definition of peculiarities in subsistence strategies requires additional studies.

Abstract

КАБАЗИ V В КОНТЕКСТЕ СРЕДНЕГО ПАЛЕОЛИТА КРЫМА

ЧАБАЙ В.П.

Кабази V – это первая стоянка в среднем палеолите Крыма, в отложениях которой обнаружена интерстратификация микокских и леваллуа-мустьерских горизонтов. Хроностратиграфическая позиция культурных отложений Кабази V, а также их корреляция с другими стоянками, приведены в Таблицах 18-1 и 18-2.

На основании комплексных археологических, радиометрических и палеоклиматических исследований Кабази V удалось установить, что леваллуа-мустьерские и микокские поселения сосуществовали в сходных климатических условиях и практиковали сходные модели эксплуатации кремневого сырья. Вместе с тем, между микокскими и леваллуа-мустьерскими комплексами Кабази V существуют пять основных различий. Во-первых, технология первичного расщепления леваллуа-мустье основана на специфических леваллуазских и пластинчатых методах нуклеусного скалывания, тогда как для микока характерно использование плоско-выпуклого метода производства двусторонних орудий. Во-вторых, для микока присуще использование разнообразных приемов вентральных утончений для односторонних орудий и базального утончения для двусторонних орудий, тогда как в леваллуа-мустье вентрально-утонченные орудия встречаются крайне редко. В-третьих, инструменты первичного расщепления в микокских и леваллуа-мустьерских комплексах представлены отбойниками и ретушерами на гальках, тогда как костяные ретушеры использовались только в микоке. В-четвертых, существенные различия в орудийных наборах представлены не только наличием / отсутствием двусторонних орудий, но и морфологической структурой орудийных наборов. Для леваллуа-мустье характерно преобладание простых форм остроконечников и скребел при достаточно существенной роли сегментовидных форм (Fig. 18-2). Морфологическая структура микока представлена: простыми, листовидными, трапециевидными и сегментовидными формами. В-пятых, в микоке жилые поверхности гротов оборудовались при помощи очагов и ям, тогда как в леваллуа-мустье использовались только очаги. Для микокских очагов в виде топлива заготавливались кости мамонтов, тогда как свидетельства преднамеренной заготовки костей в виде топлива для леваллуа-мустьерских очагов не обнаружены.

Микокские и леваллуа-мустьерские поселения Кабази V являются лагерями типа A. На этих лагерях производился полный цикл обработки кремня, включая изготовление и реутилизацию орудий, а также происходило потребление импортированных частей туш сайги и гидрунтинусов. Лагеря типа A являются частью системы поселений, в которой предполагается наличие специализированных стоянок по первичной разделке охотничьей добычи.

Таким образом, носители микокских и леваллуа-мустьерских комплексов, сосуществовали в сходных климатических и сырьевых условиях, использовали одинаковые модели эксплуатации сырьевых и фаунистических ресурсов, но производили технологически и типологически различные артефакты и разными способами обустраивали жилые поверхности. Иными словами, крымский микок и леваллуа-мустье являются примером сосуществующих во времени и пространстве стилистически дискретных традиций.