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# КАБАЗИ II:
# 70 ТЫСЯЧ ЛЕТ ПОСЛЕ ИНТЕРГЛЯЦИАЛА

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# Chapter 1

# The Western Crimean Mousterian and Micoquian at Kabazi II, Units A, II, IIA and III: Environment, Chronology and Artefacts

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The archaeological sequence Kabazi II contains a total of 76 levels comprising Middle Palaeolithic artefacts and faunal remains. Whilst 55 archaeological levels were found in situ, a further 21 were redeposited. Among the 55 in situ levels, 20 contain artefacts characteristic of the Western Crimean Mousterian (WCM), and 35 levels are associated with Micoquian artefacts. The whole stratigraphical and environmental sequence of Kabazi II, as well as the lowest occupations of Units IV, V and VI belonging to the Last Interglacial soil complex of strata 13A, 14A and 14B, were described extensively in the previous volume of the Palaeolithic Sites of Crimea series (Chabai, Richter, Uthmeier, eds., 2005). This chapter provides a brief analysis of the chronology, environmental, occupational and artefact characteristics of the upper part of Kabazi II archaeological sequences: Units A, II, IIA and III.

## Chronology and Environmental Characteristics of Units A, II, IIA and III

The Kabazi II stratigraphical sequence comprises a total of 26 strata stretching a period from the Last Interglacial to the Denekamp (Table 1-1, Fig. 1-1, 1-2), during which time about 14 metres of sediment were deposited. This accumulation is associated with five depositional processes: colluvial, pedogenetic, alluvial, the exfoliation of limestone blocks, and anthropic. Colluvium sediments (rounded / sub-rounded limestone debris, clayish, silty and sandy sediments) were found in each of the strata. Additionally, the large limestone blocks, also known as strata 8, 12 and 17, are attributed to the colluvial accumulations (Fig. 1-1, 1-2, 1-3). Pedogenetic processes were observed in the formation of strata 5, 7, 11 upper part, 14A and 14B, as well as in the formation of the modern soil horizons in strata 1 and 2. Low energy alluvial process was responsible for the alternated sandy and clayish lenses in stratum 13A. The exfoliation of limestone blocks (strata 8, 12 and 17) produced the large amount of angular gravel and boulders found in strata 5, 6, 7, 9, 10, 11, 13, 14A and 14B. Finally, human activity was responsible for the formation of 55 thin lenses of artefacts and faunal material in strata 5 through 14A.

Unit A was found in stratum 5 (Fig. 1-3). Stratum 6 contains the archaeological level II/1A – the uppermost level of Unit II (Fig. 1-1). The environmental conditions of Unit A and level II/1A occupations are characterised by south-boreal forest-steppe vegetation which consists mainly of hornbeam, oak and mesophytic grasses (Gerasimenko 2005). This environment is associated with the Vytachiv, $vt_{3b}$ – Denekamp Interstadial. Furthermore, the ESR date (Table 1-1) from the tooth sample from level II/1A does not contradict the commonly adopted chronology of the Denekamp Interstadial.

Stratum 7 contains a further 12 levels of Unit II (Fig. 1-1, 1-2). The occupations of levels II/1, II/2 and II/3 correspond with cold and dry stadial conditions (Vytachiv, $vt_2$ – Huneborg Stadial). At this time the landscapes were deforested, and the role and diversity of mesophytic grasses drastically reduced. This vegetation type is best described as boreal xeric grassland (Gerasimenko 2005). The AMS dates for levels II/1 and II/2 fall within the chronological range of the Huneborg Interstadial (Table 1-1). Similar AMS dates have also been obtained for levels II/4 and II/5, but here the pollen samples have proved insufficient for analysis. The occupations of levels II/6 and II/7 accumulated during the transitional phase from an interstadial to stadial environment, and are characterised by the south-boreal forest-steppe vegetation (Vytachiv, $vt_{1c}$ – Huneborg Interstadial). At this time the landscape would haven been covered by light pine forests and mesophytic herbs (Gerasimenko 2005). The levels II/7AB, II/7C, II/7D, II/7E, II/8 and II/8C formed during the transition from south-boreal forest-steppe to boreal forest (Vytachiv, $vt1_{b2}$ – Hengelo Interstadial). Although arboreal vegetation was dominated by the pine, other trees such as birch, alder, oak, elm, lime, hazel and spindel-tree are also represented. Additionally, these interstadial conditions attracted a large diversity of mesophytic herbs (Gerasimenko 2005). The ESR chronology of levels II/7AB and II/8 does not contradict the commonly acknowledged dating of these levels to the Hengelo Interstadial (Table 1-1).

Unit IIA was found in strata 9 and 10 (Fig. 1-1, 1-2). The environmental characteristics associated with the uppermost level IIA/1 are the same as described above for the Vytachiv, $vt_{1b2}$ – Hengelo Interstadial (Table 1-1). Levels IIA/2 and IIA/2-3 accumulated under climatic conditions associated with boreal to south-boreal forest-steppe with xerophytes (Vytachiv, $vt_{1b2\text{-}b1}$ – Hosselo Stadial). The increased role of xerophytes, the retreat of broad-leaved trees, and the presence of birch are all indicative of an arid to cold climate (Gerasimenko 2005). The lowermost levels (IIA/3, IIA/3A and IIA/3B) of stratum 9 were formed during a period of south-boreal forest-steppe (Vytachiv, $vt_{1b1}$ – Moershoofd Interstadial). At this time the forest was dominated by pine with hornbeam and oak. Ground cover comprised mesophytic herbs and was dominated by xeric plants.

| Strata | Archaeological levels | Dates | | | Pollen zones |
|---|---|---|---|---|---|
| | | AMS | U-series | ESR | |
| 4 | A, A1, A2, A3 | | | | XIV |
| 5 | | | | | XIV |
| | A3A-A4 | | | | XIII |
| 6 | II/1A | | 32.1±6.5 | 30±2.0 | XIII-XII |
| 7 | II/1 | OxA-4770, 31.55±0.6 | 40.1±5.0 | | XII |
| | II/2 | OxA-4771, 35.1±0.85 | | | |
| | II/3 | | | | |
| | II/4 | OxA-4858, 32.2±0.9 | | | |
| | II/5 | OxA-4859, 33.4±1.0 | | | |
| | II/6 | | | | XI |
| | II/7 | | 46.5±8.0 | | |
| | II/7AB | | | 36±3.0<br>38±4.0 | X |
| | II/7C-II/7E<br>II/8<br>II/8C | | | 44±5.0 | |
| 9 | IIA/1 | | | | |
| | | | | | |
| | IIA/2<br>IIA/2-3 | | | | IX |
| | IIA/3-IIA/3B | | | | VIII |
| 10 | IIA/4 | | | | |
| | IIA/4B | | | | VII |
| 11, upper | III/1A, III/1 | | | | |
| | III/2 | | 54±3.0 | 74–85 | VI |
| 11, lower | III/2A-III/3<br>III/4-III/8 | | | 82±10 | V |
| | III/8A-III/8E | | | | IVC |
| 13 | IV/1 | | | | IVB-D2 |
| | IV/2-IV/5 | | | | IVA-D1 |
| 13A | V/1-V/2A | | | | |
| 14A | V/3-V/6 | | | | C |
| 14B | VI/1-VI/5 | | | | III-B4 |
| | VI/6-VI/9 | | | | III-B3 |
| | | | | | III-B2 |
| | VI/9A-VI/17 | | | | II-B1 |
| | | | | | A |
| 14D | | | | | II |
| 14E | | | | | I |

**Table 1-1** Kabazi II: chronological and environmental sequences.

Stratum 10 contains the levels IIA/4 and IIA/4B (Fig. 1-2). The climatic condition during the formation of level IIA/4 (south-boreal forest-steppe) was the same as during the accumulation of levels IIA/3, IIA/3A and IIA/3B (Table 1-1). Level IIA/4 was formed under cold and dry Pleniglacial conditions (Uday, ud) which are characterised by boreal forest-steppe landscapes (Gerasimenko 2005). The xeric steppe dominated over woodland. The forest was dominated by pine, whilst broad-leaved trees were absent.

| Vegetation | Stratigraphic units | Marine isotopic scale | Industries |
|---|---|---|---|
| Boreal grassland | Bug loess unit $bg_1$, Upper Pleniglacial, Upper Valday | Stage 2 | |
| | Vytachiv soil unit $vt_{3c}$, the end of Middle Pleniglacial, the end of Dniester (Middle Valdai III) Interstadial | Stage 2-3 transition | |
| South-boreal forest-steppe | Vytachiv $vt_{3b}$, Middle Pleniglacial: Denekamp, Dniester (Middle Valdai III) Interstadial | Stage 3 | Western Crimean Mousterian |
| South-boreal to boreal forest-steppe | | | |
| Boreal xeric grassland | Vytachiv $vt_2$, Huneborg Stadial, Middle Valdai Stadial III | | |
| No pollen | | | |
| Boreal to south-boreal forest steppe | Vytachiv $vt_{1c}$, Huneborg Interstadial, the end of Molodova (Middle Valdai II) Interstadial | | |
| South-boreal forest-steppe | Vytachiv $vt_{1b2}$, Hengelo, Molodova (Middle Valdai II) Interstadial | | |
| No pollen | | | |
| Boreal to south-boreal forest-steppe with xerophytes | Vytachiv $vt_{1b2-b1}$, Hosselo, Middle Valdai Stadial II | | Crimean Micoquian |
| South-boreal forest-steppe | Vytachiv $vt_{1b1}$, Moershoofd, Baylovo ( Middle Valdai I) Interstadial | | |
| Boreal forest-steppe | Uday loess unit ud, Early Pleniglacial, Middle Valdai Stadial I | Stage 4 | |
| Boreal to south-boreal forest-steppe | Pryluky soil unit $pl_3$, Ognon Interstadial | Stage 4-5 transition | |
| South-boreal forest-steppe | Pryluky $pl_{1b2}$ ($pl_{1b2+3}$ ?), Early Glacial: Odderade (Brörup-Odderade?), Saint-Germain II, Early Valdai Interstadial II | Stage 5: Substage 5a (5a-b?), GRIP 21 (21+22?) | |
| Boreal to south-boreal forest-steppe | Pryluky $pl_{1b2-b1}$ ($pl_2$?), Rederstall (?), Melisay II, Early Valdai Stadial II | Sub-stage 5b (GRIP 21-22 or 22-23?) | |
| South-boreal forest-steppe | Pryluky $pl_{1b1}$, Brörup, Saint-Germain I, Early Valdai Interstadial I | Substage 5c | |
| Forest-steppe of temperate climate | | | |
| South-boreal forest-steppe | | | |
| Not sampled | Tyasmin loess unit (?), Herning, Melisay I, Early Valdai Stadial I | Substage 5d | |
| Forest-steppe of temperate to south-boreal climate | Kaydaky soil unit: kd $_{3b2+c}$, Eemian (E6b), Mikulino (M8) | | |
| South-boreal forest to forest-steppe | Kaydaky soil unit: kd $_{3b2+c}$, Eemian (E6a), Mikulino (M7) | | |
| South-boreal forest | | | |
| Boreal to south-boreal forest | | | |
| South-boreal forest to forest-steppe | | | |
| Boreal forest-steppe | Kaydaky $kd_{3b2-b1}$, Eemian (E6a), Mikulino (M7) | | |
| South-boreal forest-steppe | Kaydaky $kd_{3b2-b1}$ (?), Eemian (E6a), Mikulino (M7) (?) | Substage 5d (?) | |
| Forest-steppe of temperate climate | Kaydaky $kd_{3b1}$ (?), Eemian (E5), Mikulino (M6) (?) | Substage 5e (?) | |

**Table 1-1** continued.

Unit III was found in the sediments of stratum 11 which is subdivided into two parts: upper and lower (Table 1-1). The upper part of stratum 11 shows the pronounced pedogenetic features reflected in the formation of rendzina type soil, while the lower part of stratum 11 displays a more pronounced colluvial component. Levels III/1A, III/1, III/2 are located in the upper part of stratum 11 (Fig. 1-1). During the accumulation of levels III/1A and III/1 (the final phase of soil formation) the boreal to south-boreal forest-steppe landscapes are indicative of a cool and wet climate (Pryluky, $pl_3$ – Ognon Interstadial). The pine dominates the forest vegetation, while the broad-leaved trees are completely absent. The most characteristic feature of this interstadial was a wide distribution of hydrophilic vegetation: alder and sedges (Gerasimenko 2005). Level III/2 accumulated during the optimum of stratum 11, upper rendzina soil. The landscape was characterised by south-boreal forest-steppe (Pryluky, $pl_{1b2}$ ($pl_{1b2+3}$?) – Odderade) whereby steppe vegetation would have dominated over forest plants. Arboreal vegetation would have comprised a mixture of pine, oak, hornbeam and elm. Common for steppe vegetation would have been a combination of xeric and meadow herbs (Gerasimenko 2005). Thus, the climatic conditions

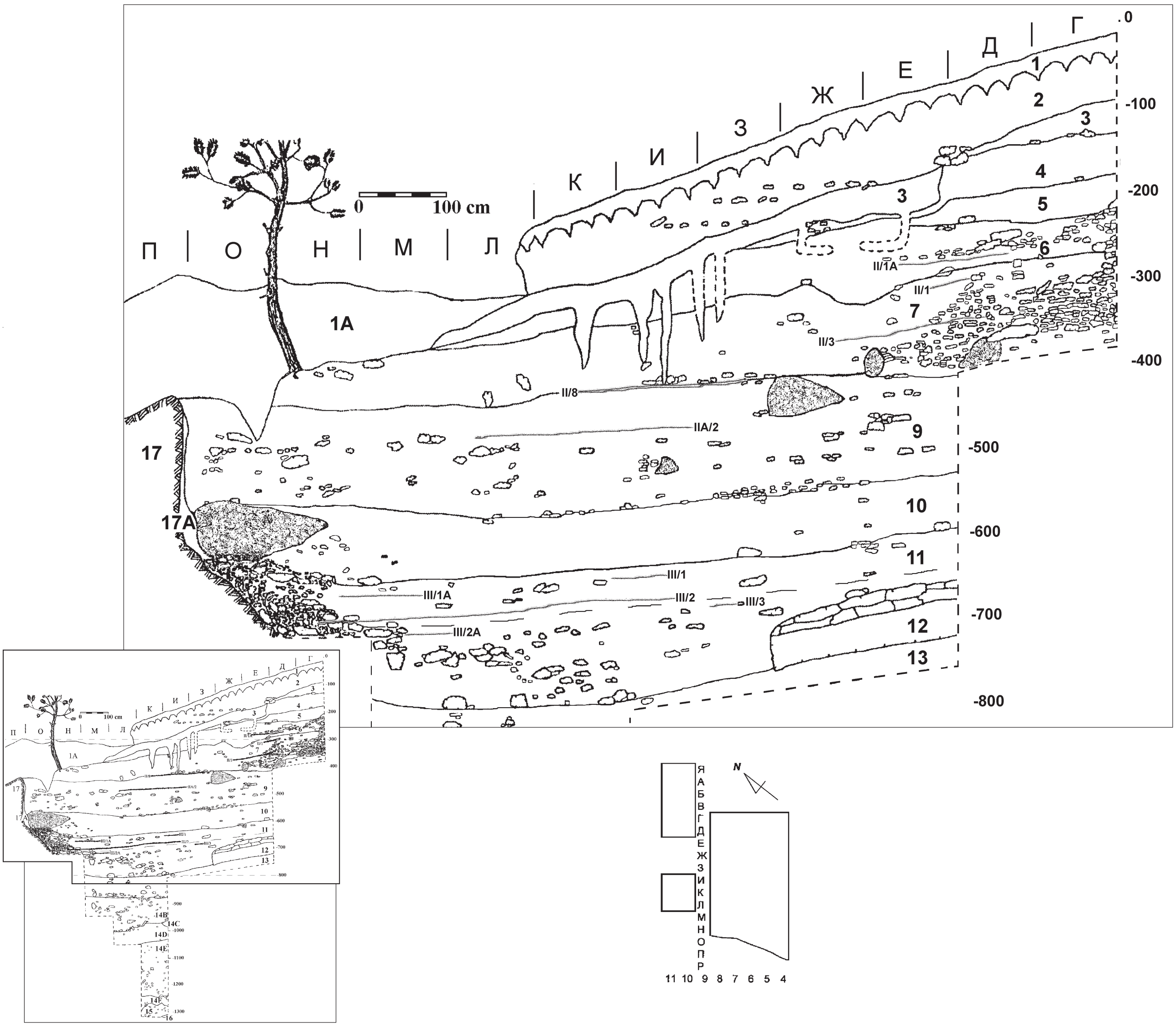


**Fig. 1-1** Kabazi II, section along line of squares 8/9: Arabic numerals indicate strata, combined Roman and Arabic numerals indicate archaeological levels.

during level III/2 formation can be described as dry and warm. This level has been dated by U-series and ESR methods (McKinney 1998, Chabai 2005a, Rink et al., in press). The ESR date corresponds best with the chrono-stratigraphical definition (Table 1-1).

Levels III/2A, III/3, III/4, III/5, III/6, III/7, III/8, III/8A, III/8B, III/8C, III/8D and III/8E were found in the lower part of stratum 11 and accumulated under both stadial and interstadial conditions (Table 1-1). Stadial conditions (Pryluky, $pl_{1b2\text{-}b1}$ ($pl_2$?) – Rederstall (?), Melisay II Stadial) prevailed during the accumulations of levels III/2A, III/3, III/4, III/5, III/6, III/7 and III/8. During the formation of these levels the landscapes were of boreal to south-boreal forest-steppe type. The forest vegetation was dominated by pine, and the birch also played a significant role. The steppe vegetation was mostly mesophytic with a high ratio of sedges. This kind of arboreal and herb vegetations corresponds with a relatively cold and wet climate (Gerasimenko 2005). The ESR date for level III/3, 74-85 Kyr BP, does not contradict the proposed chrono-stratigraphical definitions (Chabai 2005a, Rink et al., in press) (Table 1-1). Levels III/8A, III/8B, III/8C, III/8D and III/8E accumulated under warmer, but still wet conditions of Pryluky, $pl_{1b1}$ – Brörup Interstadial. The surrounding landscape

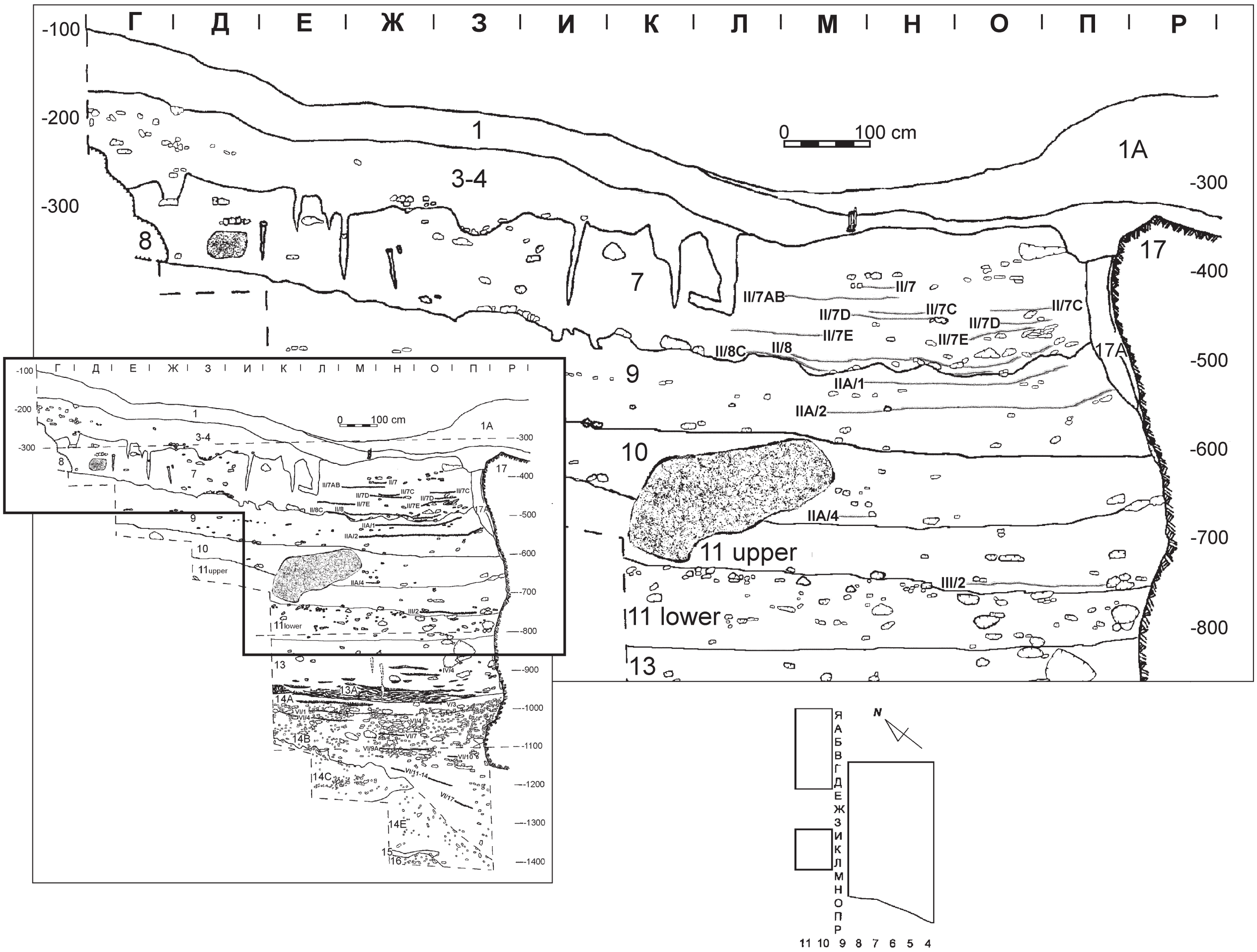


**Fig. 1-2** Kabazi II, section along line of squares 3/4: Arabic numerals indicate strata, combined Roman and Arabic numerals indicate archaeological levels.

was of south-boreal forest-steppe type. The arboreal composition included pine (dominant), oak, elm, spindle, hornbeam, lime and fir. The latter suggests the mountain forest belt spread down to lower altitudes. The herb composition belongs to the meadow steppe vegetation (Gerasimenko 2005).

Thus at Kabazi II the stratigraphical sequence of the Micoquian occupations underlie the WCM levels. Both industries are associated with either south-boreal or boreal forest-steppe landscapes. The only exception is the period Vytachiv, $vt_2$ – Huneborg Stadial when the WCM occupations of levels II/1, II/2 and II/3 coincide with a harsh continental climate reflected in the boreal xeric grassland. In fact, this was the second event to fall within the post Last Interglacial period which led to a change in environmental conditions around the site. The first is connected with the sharp Alma River bed incision dated to the Vytachiv, $vt_{1b1}$ – Moershoofd Interstadial. This incision is evidenced by the drastic disappearance of hydrophilic plants in the pollen spectrum (Gerasimenko 1999, 2005). On a whole, the climate during the Micoquian occupations was more humid than at WCM times. However, these changes and the associated climatic alternations did not affect *Equus hydruntinus*. The *Equus hydruntinus*

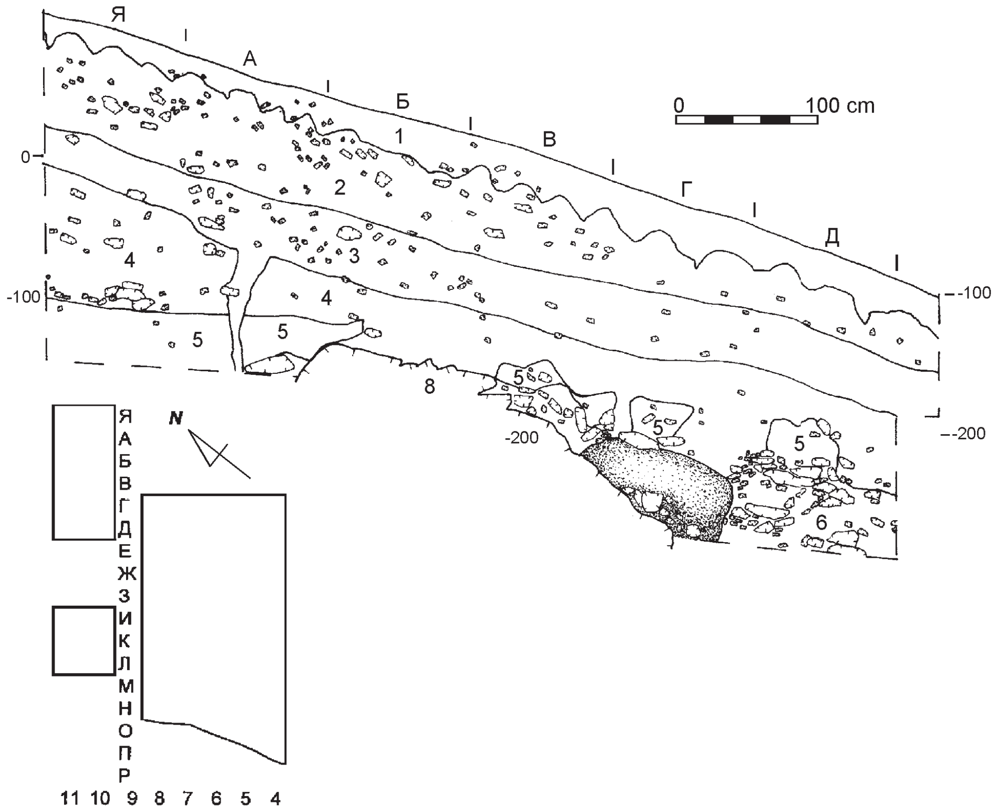


**Fig. 1-3** Kabazi II, section along line of squares 9/10: Arabic numerals indicate strata.

inhabited successfully south-boreal forest-steppe, boreal forest-steppe and boreal xeric grasslands landscapes, being the main, or sometimes even the sole, prey available to Kabazi II hunters.

The shift from Micoquian to WCM in the Kabazi II sequence was documented during the Vytachiv, $vt_{1b2\text{-}b1}$ – Hosselo Stadial (Table 1-1). Both the latest and earliest evidence for WCM have been discovered at Kabazi II. Based on the Kabazi II environmental sequence it might be suggested that the chronological frame of the WCM dates from the Vytachiv, $vt_{1b2\text{-}b1,}$ through the Hosselo Stadial, Vytachiv $vt_{3b}$, and includes the Denekamp Stadial. The lowest, as well as the uppermost WCM occupations at Kabazi II have not been dated by radiometric methods. The available ESR dates show the range from 44±5.0 Kyr BP for level II/8 (Hengelo) to 30±2.0 Kyr BP for level II/1A (Denekamp). The AMS dates for levels II/1, II/2, II/4 and II/5 are in the range of 31–36 Kyr BP (Pettitt 1998). Taken one with another, with the available radiometric control and the chrono-stratigraphical/environmental sequences, the temporal span of WCM at Kabazi II comprises about 15 thousand years. At present, it is the most complete WCM sequence known from the Crimea.

However, the Kabazi II Micoquian sequence is still far from complete. At Kabazi II the Micoquian occupations are limited by the Last Interglacial (MIS 5d) on one side, and by the Vytachiv, $vt_{1b2\text{-}b1}$ – Hosselo Stadial, on the other (Table 1-1). If the earliest Last Interglacial evidence of Micoquian in the Crimea are known only at Kabazi II, the latest manifestations were found at Starosele 1 (Hengelo), Zaskalnaya V, I and Buran Kaya III, B (Denekamp). On the other hand, the majority of Crimean Micoquian occupations are dated to MIS 3. While information about Micoquian from MIS 5d, 5a and 5b are very limited, the Kabazi II sequence fills this hiatus in the Micoquian chronology. Nevertheless, the Micoquian sequence at Kabazi II appears to be the longest among Crimean Middle Palaeolithic sites, covering about 70 thousand years.

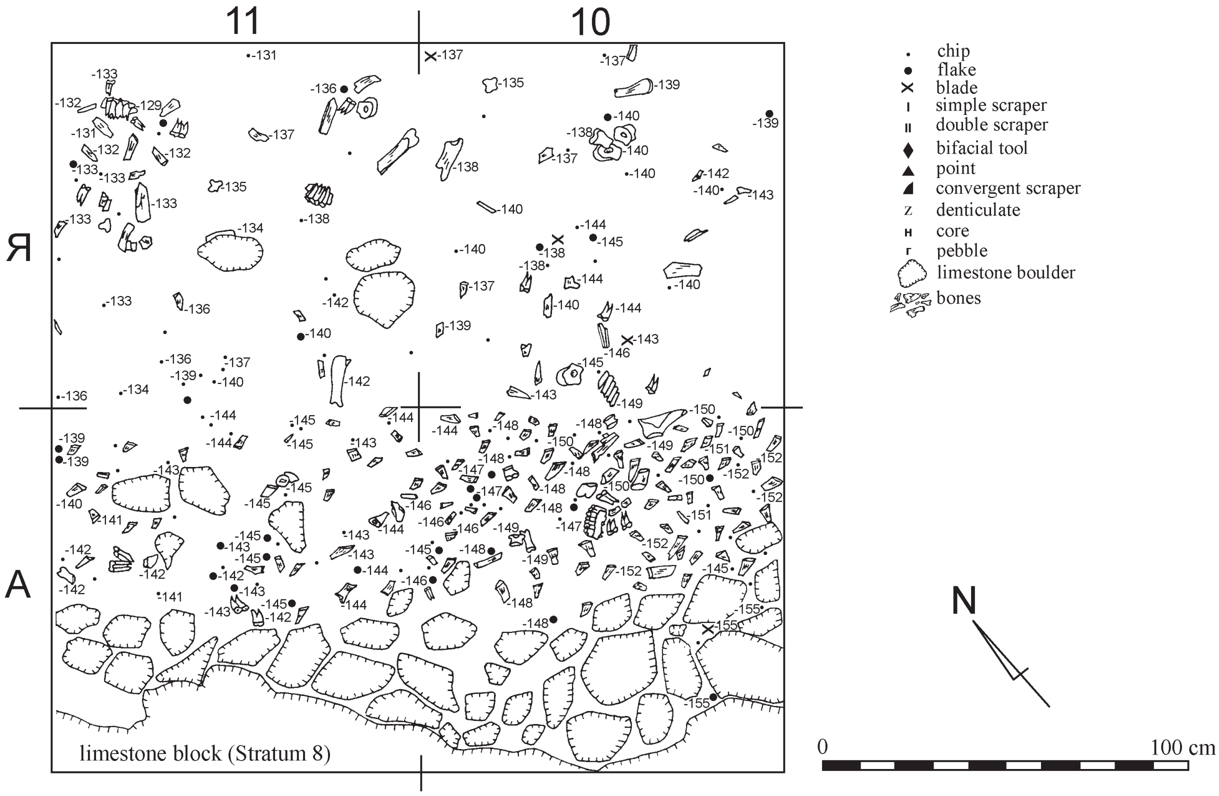


**Fig. 1-4** Kabazi II, level A3A: site plan.

## Occupational Characteristics

The 49 archaeological levels stem from Units A, II, IIA and III: 36 were discovered in situ, and 13 were redeposited.

### Unit A

Unit A comprises of 8 archaeological levels which originate from sediments of stratum 5, and from erosional contact between strata 5 and 4. Levels A, A1, A2 and A3 were found in squares Я10, Я11, A10, A11 and belong to the latter (Fig. 1-3). None of them composes carpets of finds. The few bones retrieved from these levels are heavily eroded, and artefacts exhibit a heavy patina. It appears that the assemblages from levels A, A1, A2 and A3 are the combinaton of a number of occupations all of which were disturbed by slope erosion. At the same time, the artefacts from all mentioned occupations exhibit the characteristic features of WCM, and – from both a technological and typological point of view – are homogeneous.

Levels A3A, A3B, A3C and A4 were found within the same squares as the remains of previous occupations, but in the “cavity” behind the limestone block – stratum 8. This “cavity” contains the sediments of stratum 5. In fact, the upper part of the limestone block (stratum 8) acted as a barrier which protected the lower part of stratum 5 sediments from slope erosion. Levels A3A, A3B, A3C and A4 formed as thin lenses of artefacts and faunal material (Fig. 1-4). The thickness of each lens is equal to the thickness of a single artefact and/or bone. Levels A3A, A3B, A3C and A4 are separated from one another by 3 to 8 cm thick sterile sediments (Table 1-2). The surfaces of levels A3A, A3B, A3C and A4 are roughly horizontal with a little (no more than 5°) gradient angle from north to south. Artefact and bone densities are medium, as for Kabazi II (Table 1-3). The artefacts do not exhibit traces of natural damage. Most artefacts are patinated. Bones surfaces are heavily eroded. Such conditions of artefact and faunal assemblages suggest the absence of sufficient post-depositional

| Levels | Sterile, in cm min | max |
|---|---|---|
| A3A and A3B | 3 | 7 |
| A3B and A3C | 4 | 6 |
| A3C and A4 | 5 | 8 |
| A4 and II/1A | 50 | ? |
| II/1A and II/1 | 25 | 28 |
| II/1 and II/2 | 18 | 22 |
| II/2 and II/3 | 14 | 19 |
| II/3 and II/4 | 3 | 7 |
| II/4 and II/5 | 3 | 5 |
| II/5 and II/6 | 4 | 8 |
| II/6 and II/7 | 3 | 9 |
| II/7 and II/7AB | 10 | 12 |
| II/7AB and II/7C | 18 | 21 |
| II/7C and II/7D | 5 | 19 |
| II/7D and II/7E | 10 | 28 |
| II/7E and II/8 | 22 | 40 |
| II/8 and II/8C | 5 | 8 |
| II/8C and IIA/1 | 9 | 12 |
| IIA/1 and IIA/2 | 35 | 50 |
| IIA/2 and IIA/2-3 | 10 | 15 |
| IIA/2-3 and IIA/3 | not sterile | |
| IIA/3 and IIA/3A | not sterile | |
| IIA/3A and IIA/3B | not sterile | |
| IIA/3B and IIA/4 | 3 | 8 |
| IIA/4 and IIA/4B | 3 | 6 |
| IIA/4B and III/1A | 5 | 9 |
| III/1A and III/1 | 4 | 6 |
| III/1 and III/2 | 29 | 33 |
| III/2 and III/2A | 14 | 19 |
| III/2A and III/3 | 0 | 0 |
| III/3 and III/4 | 3 | 9 |
| III/4 and III/5 | 5 | 14 |
| III/5 and III/6 | 15 | 22 |
| III/6 and III/7 | 8 | 14 |
| III/7 and III/8 | 5 | 9 |
| III/8 and III/8A | 4 | 8 |
| III/8A and III/8B | not sterile | |
| III/8B and III/8C | not sterile | |
| III/8C and III/8D | not sterile | |
| III/8D and III/8E | not sterile | |

**Table 1-2** Kabazi II, Units A, II, IIA and III: thickness of sterile sediments between levels.

transportation, but extensive weathering. Owing to the small excavated area (4 $m^2$) it is difficult to suggest which parts of the occupations have been studied: centre or periphery.

## Unit II

Unit II consists of 14 archaeological levels which originate from sediments belonging to strata 6 and 7 (Fig. 1-1, 1-2). The artefacts and faunal remains from level II/1A correspond with the sediments of stratum 6. This stratum was found in rows 11 to 7 and in squares 6E, 6Ж and 6З. The archaeological material of level II/1A concentrates within the squares 8Г, 8Д, 8E, 8Ж, 7E and 7Ж, and perhaps represents the periphery of larger occupation area which centres on an unexcavated part of the site territory further north. The artefacts and faunal material from level II/1A compose the "carpet" surface of finds, with the thickness equal to the thickness of a single artefact or bone. At least 50 cm of sterile sediments on squares 8Г, 8Д and 8E separate level II/1A from the lowest occupation of Unit A, and 25-28 cm sterile subdivided levels II/1A and II/1 (Table 1-2). The "carpet" surface of level II/1A demonstrates a circa 7° gradient angle from north to south. The artefacts display a light patina, and bone surfaces some erosion. Some 4.5 % of artefacts were transported by colluvium, exhibiting the characteristic deep patina and naturally damaged edges. The sizes of colluvial artefacts rarely exceed 3 cm in maximum dimension. From Kabazi II standards, the density of artefacts is high (Table 1-3). Thus, most of the material from level II/1A does not derive from substantial post-depositional transportation, and shows only some evidence of weathering.

The artefacts and faunal remains from level II/1, II/2, II/3, II/4, II/5, II/6, II/7, II/7AB, II/7C, II/7D, II/7E, II/8 and II/8C were found in stratum 7 (Fig. 1-1, 1-2), square lines 4, 5, 6, 7 and 8 (Fig. 1-5). Each of these levels is represented by a thin (one artefact or one bone) carpet of finds, except for levels II/8 and II/8C. Level II/8 is a c. 10 cm densely packed thick cluster of bones and artefacts. Level II/8C was found in erosional contact between strata 7 and 9 (Fig. 1-2). On the square lines 4, 5, and partly 6 the surface of level II/8C was substantially disturbed by erosional channels. All levels of Unit II are separated by 3-40 cm thick sterile sediments (Table 1-2). The variations of densities of artefacts are not considerable, being in a high / medium range (Table 1-3). Somewhat lower densities of artefacts in levels II/7 and II/8C can be explained by their peripheral position. The distribution of artefacts and faunal remains in the levels of

Unit II demonstrate two patterns:

1. The main concentration of finds is situated on the northern part of excavated area;

2. The main concentration of artefacts and fauna was found in the central/southern part of the excavated area.

The former pattern is seen in levels II/1, II/2, II/3, II/4, II/5, II/6 and II/7. The latter is common for the levels II/7AB, II/7C, II/7D, II/7E, II/8 and II/8C. Moreover, the distribution of artefacts and bones in level II/8 demonstrates clear boundaries to the east and south. The gradient angles vary from 5 to 7° for all of the levels of Unit II. Most artefacts are not patinated and display "fresh" edges. The "colluvial artefacts" rarely exceed 4 % of the total artefacts from each level. Bone surfaces are lightly eroded. Consequently, there is no substantial evidence for post-depositional disturbance of fauna and artefacts from Unit II occupations.

## Unit IIA

Unit IIA contains 8 archaeological levels. Levels IIA/1, IIA/2, IIA/2-3, IIA/3, IIA/3A and IIA/3B were found in the deposits of stratum 9. Levels IIA/4 and IIA/4B are from stratum 10 (Fig. 1-1, 1-2). Whilst the depositional characteristics of levels IIA/1, IIA/2 and IIA/4 are similar to the levels of Unit II described above, the depositional pattern of levels IIA/2-3, IIA/3, IIA/3A and IIA/4B are quite different. The latter were termed "sterile levels", in spite of some artefact and faunal material collected from them. The artefacts and bones from "sterile levels" do not exhibit any vertical or horizontal concentrations and the thickness of each "sterile level" (10 to 15 cm) were defined artificially during excavations. The sterile sediments between these levels are absent. At the same time, the artefacts are not naturally damaged, and bones surfaces are not heavily eroded. Probably, the "sterile levels" represent the extreme peripheries of occupations situated in unexcavated parts of the site.

Levels IIA/1, IIA/2 and IIA/4 comprise "carpet" surfaces of artefacts and bones (Fig. 1-6) separated by sterile sediments from each other, as well as from overlying and underlying occupations (Table 1-2). The gradient angles of levels IIA/1 and IIA/2 are 5-7° from north to south. Level IIA/4 accumulated upon an eroded surface. The traces of two erosional channels (5-10 cm deep) were found on squares 6H and 4K, 4Л, 5K, 5Л, 5M (Fig. 1-6). The thickness of level IIA/2 varies in thickness from one artefact or bone on its periphery, and up to 10 cm in its central part. The thickness of levels IIA/1 and IIA/4 are never more than the thickness of one artefact or bone. The densities of artefacts in all levels of Unit IIA are very low even for Kabazi II standards (Table 1-3). The distribution of artefacts and bones in level IIA/2 displays clear boundaries to both the east and west. The same boundaries are common for levels IIA/1 and IIA/4, but not so pronounced as in the case of level IIA/2.

| Archaeological levels | Densities of artefacts per cubic metre |
|---|---|
| A3A | 218.8 |
| A3B | 106.3 |
| A3C | 231.3 |
| A4 | 168.8 |
| II/1A | 198.4 |
| II/1 | 149.5 |
| II/2 | 101.2 |
| II/3 | 133.4 |
| II/4 | 146.7 |
| II/5 | 166.0 |
| II/6 | 180.1 |
| II/7 | 52.5 |
| II/7AB | 145.0 |
| II/7C | 137.9 |
| II/7D | 80.4 |
| II/7E | 101.7 |
| II/8 | 143.1 |
| II/8C | 43.8 |
| IIA/1 | 40.0 |
| IIA/2 | 19.3 |
| IIA/4 | 27.0 |
| III/1A | 15.7 |
| III/1 | 13.1 |
| III/2 | 13.2 |
| III/2A-III/3 | 10.4 |
| III/4 | 10.5 |
| III/5 | 27.1 |
| III/6 | 19.6 |
| III/7 | 8.3 |
| III/8 | 7.7 |

**Table 1-3** Kabazi II, Units A, II, IIA and III: densities of artefacts, by level.

The artefacts, with the exception of "colluvial noise", show fresh edges and non-patinated surfaces. The ratios of "colluvial assemblages" in all Unit IIA levels never exceed 3%. Bone preservation is good, but not excellent. Bone surfaces often exhibit traces of weathering. There are no doubts as to the primary depositional context of levels IIA/1, IIA/2 and IIA/4. The origin of levels IIA/2-3, IIA/3, IIA/3A and IIA/4B is, however, unclear.

## Unit III

Unit III contains 15 archaeological levels which accumulated in the deposits of stratum 11 (Fig. 1-1, 1-2). Levels III/1A, III/1, III/2, III/2A-III/3, III/4, III/5, III/6, III/7, III/8 were found in primary depositional contexts. All are separated by sterile sediments (Table 1-2) except for levels III/8A, III/8B, III/8C, III/8D and III/8E which comprise mainly redeposited "colluvial artefacts" (Chabai 2005a).

The in situ levels demonstrate quite different patterns in the spatial distribution of artefacts and bones, as well as the different thickness of cultural deposits. Such levels as III/1A, III/1, III/2 and III/4 show pronounced clusters of bone and artefact concentrations. In level III/1 the main concentration of bones were found in rows Л, M and square 8H (Fig. 1-7). The thickness of this concentration is about 6-8 cm. However, in the rest of the occupied area the thickness of cultural deposits is still only equal to the size of one artefact or bone. Most concentrations of bones and artefacts in levels III/2 and III/1A were found within squares 8Л, 8M, 8H, 7M, 7H, 6H, 6O, 5O, 5П, 4O, 4П. Whilst the thickness of bone concentrations in level III/2 reaches about 8-15 cm, in level III/1A it is no more than 10 cm. In level III/4 the bone and artefact cluster was found on the central part of excavated area, within squares 5Л, 5M, 5H, 6Л, 6M, 6H, 7Л, 7M and 7H. The thickness of this cluster is equal to the size of one bone or artefact. The inhabitants of level III/1A settled upon an eroded surface. The 20 cm deep erosional channel was studied in squares M8, M7 and M6.

The III/2A-III/3, III/5, III/6, III/7, III/8 of Unit III shows a more or less uniform scatter of bones and artefacts. The thickness of each of these levels is equal to the size of one bone or artefact. The densities of artefacts in all levels of Unit III are the lowest in the Crimean Middle Palaeolithic (Table 1-3).

The gradient angle of all in situ levels varies from 5° to 6.5° from north to south. The artefacts (except colluvial admixture) are not patinated and have "fresh" edges. Bone surfaces are slightly weathered.

The most peculiar depositional feature of Unit III levels is the constantly increasing role of "colluvial artefacts": from 5.9% at level III/1A up to 44.7% at level III/8. In the underlying Unit IV the ratios of "colluvial artefacts" reach the highest value of the Kabazi II sequence: 75.9 – 84.9% (Chabai 2005a). The increasing amount of "colluvial artefacts" is closely connected with slope erosion induced by the humid conditions of MIS 5c. The "colluvial artefacts" are probably connected with occupations situated on the slope bench above Kabazi II. Despite the large amount of "colluvial artefacts" each of the levels III/5, III/6, III/7 and III/8 also contain carpet-like surfaces of bones and artefacts. The occupational surfaces of these levels are separated by sterile sediments whose thicknesses vary from 5 to 22 cm (Table 1-2). At the same time, the artefacts from the lowermost occupations of Unit III (levels III/8A, III/8B, III/8C, III/8D and III/8E) do not exhibit any real vertical or horizontal clustering. Also, not a single bone was found in the deposits of these levels. Thus, the artefacts from levels III/8A, III/8B, III/8C, III/8D and III/8E are redeposited.

## Summary: Depositional Characteristics

In contrast to Crimean Middle Palaeolithic sites in rock-shelters, the number of cultural deposits in all strata of the Kabazi II stratigraphical sequence is sufficiently lower than the number of lithological sediments. This feature is the reflection of two main factors which play constant roles in the accumulation of cultural and lithological deposits. The first factor is the medium to slow rate of sedimentation. Usually, a slow sedimentation rate cannot prevent prolonged weathering of archaeological material, as well unable to preclude the appearance of palimpsest. Additionally, colluvial, pedogenetic and alluvial processes, as well as the exfoliation of limestone blocks on the site area, were also responsible for deposit formation at Kabazi II. Thus, in theory, the combination of these processes produced a large number of deposits in a relatively short period of time. On the other hand, the rate of sedimentation was not the constant value during the formation of the Kabazi II sequence, and several times it was interrupted by erosional episodes. At least, 2 metres of deposits accumulated during MIS 5d (115-105 Kyr BP): strata 13A, 14A and 14B. A maximum of 1.5 metres of sediment formed during MIS 5c (105-92 Kyr BP): stratum 13 and partly stratum 11, lower; only 0.4 m formed at the time of MIS 5b (92-88 Kyr BP): lower part of stratum 11;

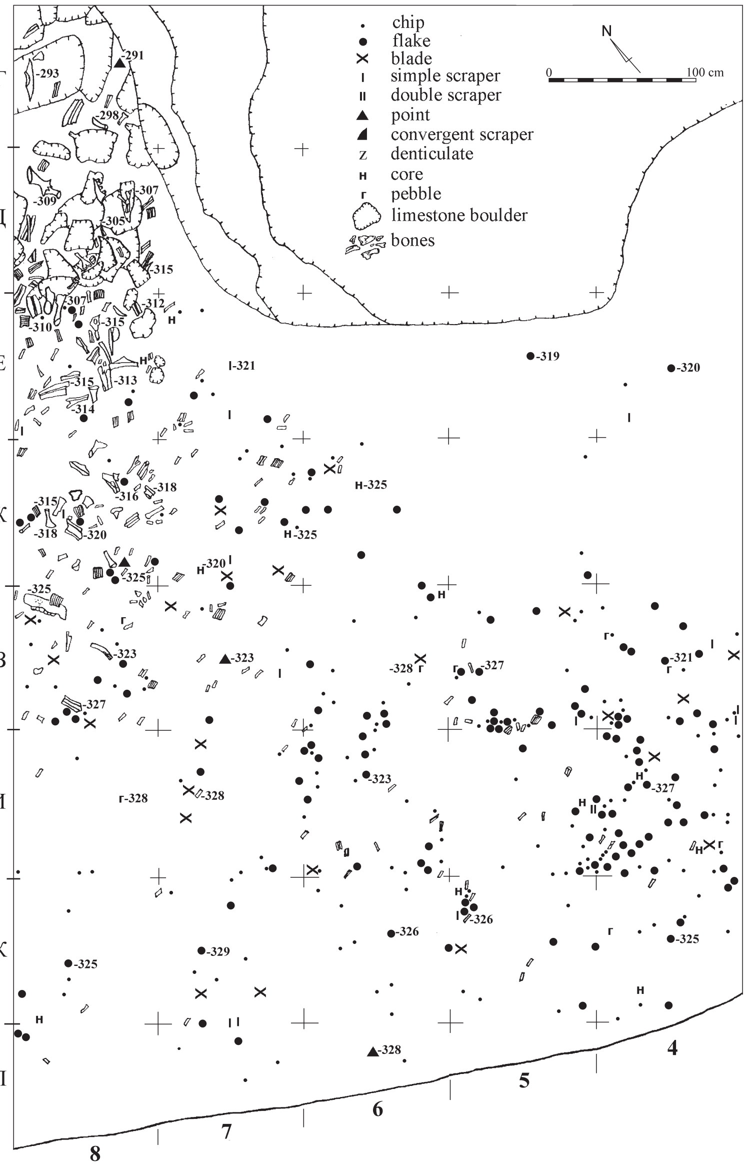


**Fig. 1-5** Kabazi II, level II/1: site plan.

during MIS 5a (88-74 Kyr BP) only 0.2 m of sediment accumulated: the mid part of stratum 11; MIS 4 (74-60 Kyr BP) produced the c. 1 m of sediment of strata 11 and 10; and finally, about 3.5 m of deposits accumulated during MIS 3 (60-28 Kyr BP): strata 10, 9, 7, 6 and 5. Thus, about 8.6 m of in situ sediments built up over a period of about 87 thousands years. The average rate is 0.0988 mm per year. The fastest rate of sedimentation occurred during MIS 5 (0.1 mm per year) and MIS 3 (0.109 mm per year), whilst the lowest sedimentation rate was during MIS 4: 0.07 mm per year. On the other hand, in the Crimean context the Kabazi II sedimentation rate is the fastest among all Palaeolithic sites. For instance, the next longest stratigraphical sequences are those from Starosele and Zaskalnaya V. The four metre long sequence at Starosele accumulated from MIS 5c (105-92 Kyr) to Hengelo (40-38 Kyr BP). The 4.5 metres of sediment at Zaskalnaya V accumulated during a time period dated from MIS 5c (105-92 Kyr) to Denekamp (32-28 Kyr BP). Thus, as for the Crimean standards, the sedimentation processes at Kabazi II were relatively fast.

At the same time, all Kabazi II occupations are very thin, except levels II/8, III/1A, III/1 and III/2, and the densities of artefacts are very low (Table 1-3). All

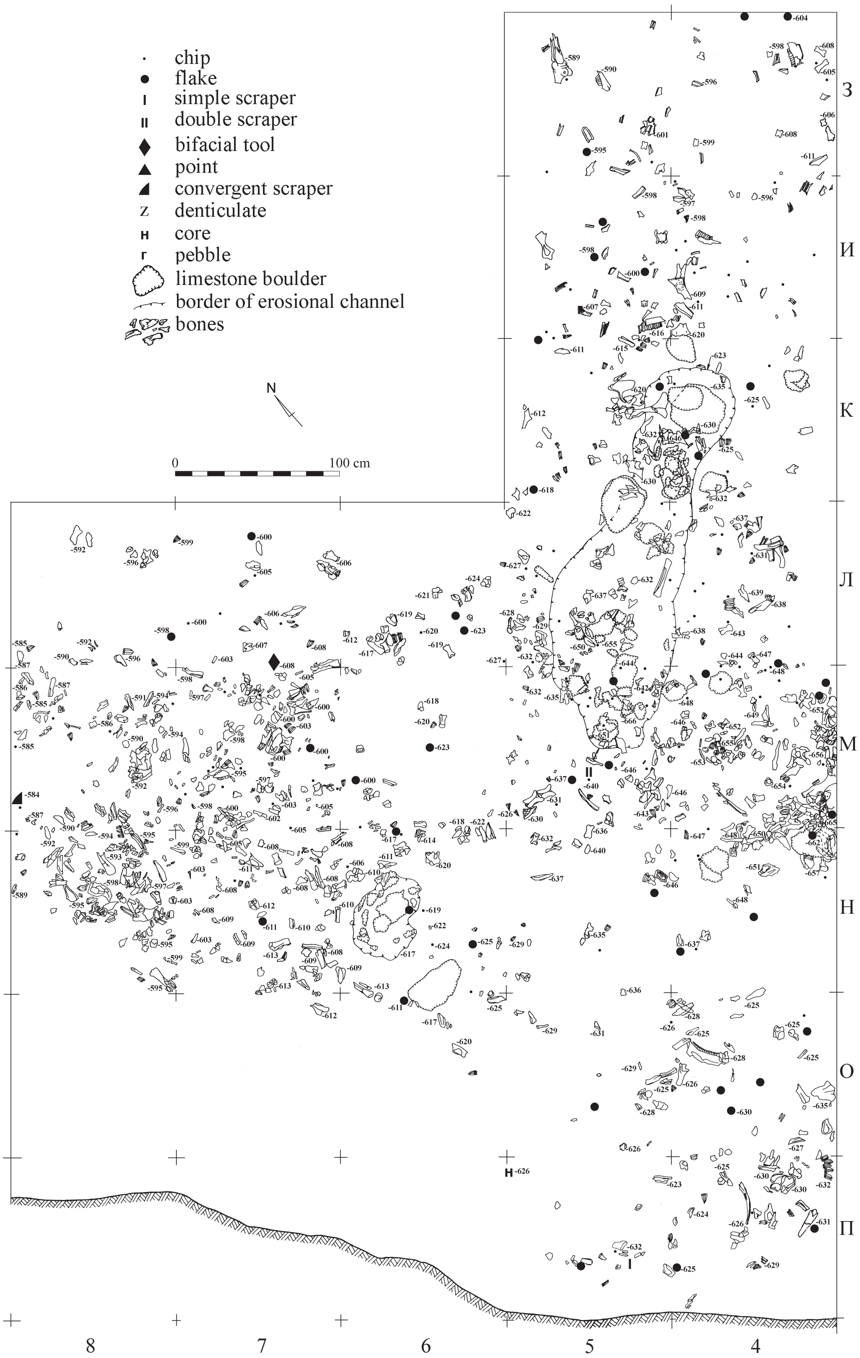


**Fig. 1-6** Kabazi II, level IIA/4: site plan.

occupations are separated by sterile sediments (Table 1-2). Thus, the frequency and intensity of visits was very low. Palimpsests are rare, and each occupation was the result of a single economic episode. This brings us to the second factor which played a constant role in the accumulation of cultural and lithological deposits: the infrequent sporadically made visits on Kabazi II area. These visits were connected with butchering activity, the short-term character of which did not lead to the deposition of large amounts of remains associated with human activity. Thus, the combination of infrequent, non-intensive visits and low / medium rate of sedimentation (at the same time, the fastest in Crimea) resulted in well stratified (55 in situ) occupations at Kabazi II.


**Fig. 1-7** Kabazi II, level III/1: site plan.

## Artefacts

The total number of artefacts recovered from Units A, II, IIA and III is 18,820 pieces. The upper part of the sequence contains the artefacts belonging to the WCM (Units A, II, levels IIA/1 and IIA/2), while the artefacts from the lower part exhibit the characteristic features of the Crimean Micoquian. A description of artefacts by level has already been presented (Kolosov et al., 1993a, Chabai 1998b, 1998c, 1998d, 1999). Thus, there now follows a summary of the most characteristic features of Kabazi II WCM and Micoquian artefact assemblages.

## Western Crimean Mousterian Artefacts from Units A, II, Levels IIA/1 and IIA/2

The composition of artefact assemblages from WCM levels is characterised by a relatively high percentage of cores and *débitage*, and medium amounts of tools (Table 1-4). The tools to core-like artefacts ratio is 3.25 : 1. Such characteristics reflect an intensive core flaking on site. The only WCM level which does not share these characteristics is IIA/2, the composition of its artefact assemblage being characterised by the complete absence of cores and a high percentage of tools: 29.03 %. Such a composition is suggestive of the on-site import of tools, as well as the absence of on-site core reduction.

Based on stratigraphy, chronology and technological characteristics of the artefact assemblages from the archaeological levels uncovered in Units II and IIA, it has been proposed that the WCM should be divided into two sub-periods (Chabai 2000). The first or early period includes the assemblages of Kabazi II, level IIA/2 through II/7. The second or late period includes levels II/6 – A3A. The chronological frame of the early period is Vytachiv, $vt_{1b2-b1}$, Hosselo Stadial – Vytachiv, $vt_{1c}$, Huneborg Interstadial. The late period is dated to Vytachiv, $vt_{1c}$, Huneborg Interstadial – Vytachiv, $vt_{3b}$, Denekamp Interstadial. The technological differences between the two periods are seen in the ratios of core types, dorsal scar patterns of blanks, and in the indexes of faceted platforms and blades (Tables 1-5, 1-6). In fact, during both periods the Levallois and blade volumetric core technologies were used. The main difference between proposed stages lies in the ratio to which Levallois or volumetric technologies were applied.

| | A3A-A4 | II/1A-II/4 | II/5-II/7 | II/7AB-II/8C |
|---|---|---|---|---|
| Chips | 329 | 2079 | 2850 | 6332 |
| Pre-cores | 1 | 4 | 2 | 7 |
| Cores | 1 | 45 | 55 | 120 |
| Flakes | 76 | 584 | 911 | 1419 |
| Blades | 36 | 333 | 352 | 380 |
| Tools | 13 | 241 | 196 | 297 |
| **Total:** | **456** | **3286** | **4366** | **8555** |

| | IIA/1-IIA/2 | Total: | % | esse % |
|---|---|---|---|---|
| Chips | 321 | 11911 | 69.69 | · |
| Pre-cores | · | 14 | 0.08 | 0.27 |
| Cores | · | 221 | 1.29 | 4.27 |
| Flakes | 68 | 3058 | 17.89 | 59.01 |
| Blades | 25 | 1126 | 6.59 | 21.73 |
| Tools | 16 | 763 | 4.46 | 14.72 |
| **Total:** | **430** | **17093** | **100.00** | **100.00** |

**Table 1-4** Kabazi II, Western Crimean Mousterian from levels A3A through IIA/2: total artefacts.

| | A3A–II/6 as % | II/7–II/8C as % |
|---|---|---|
| Levallois | · | 13.8 |
| Convergent | · | 2.3 |
| Discoidal | · | 2.3 |
| Radial | 1.8 | 16.1 |
| Uni-directional | 40.4 | 29.9 |
| Bi-directional | 42.1 | 31.0 |
| Orthogonal | 10.5 | 2.3 |
| Unsystematic | 5.2 | 2.3 |
| **Total Number:** | **57** | **87** |

**Table 1-5** Kabazi II, Western Crimean Mousterian from levels A3A through II/8C: cores.

## The Core Reduction Strategies during the Early Period of WCM

Technologically the cores from levels IIA/2 – II/7 can be subdivided into three groups. The first group is represented by Levallois Tortoise and radial cores (Fig. 1-8, 1-9), the second group comprise the bi-directional and uni-directional cores with supplementary striking platforms (Fig. 1-10), and the third group is represented by volumetric narrow flaking surface, uni-/bi-directional cores (Fig. 1-11, 1-12) (Table 1-5). In theory, each of these core groups is technologically connected with the following kinds of blanks: Levallois, crested, *enlèvement deux*, debordant, flakes and blades with uni-directional and bi-directional dorsal scar patterns (Fig. 1-12, *1, 2, 3*; 1-13). Based on refitings and the analysis of technologically meaningful attributes of cores and blanks, the three main core reduction strategies have been reconstructed: Levallois Tortoise, Biache and parallel volumetric (Chabai 1995; Chabai 1998c, pp. 239-250). Despite the presence of a few Levallois points, there is no other reliable evidence for the reconstruction of Levallois point technology.

### The Levallois Tortoise method

This method was defined only for early period assemblages. The application of Levallois Tortoise method led to the production of flakes with centripetal dorsal scar pattern (Fig. 1-5) and Levallois Tortoise cores (Fig. 1-8). In fact, the same results are also characteristic for the Biache method. Thus, the question must be posed: did the Levallois Tortoise cores and centripetal blanks have an independent meaning or are they simply by-products resulting from the Biache method? The independent meaning of Levallois cores and some blanks might be described through its morphological attributes. First, some Levallois Tortoise cores were made on thin pebbles (Fig. 1-8, *1*) and flakes (Fig. 1-8, *2*), which even now exhibit parts of the initial ventral surface. That is, these cores are the result of no more than one stage of reduction. These flakes and thin pebbles have no needed volume for multiple reductions (Chabai 1998c, p. 239). Secondly, according with the metrical proportions, the Levallois flakes are subdivided on short (Fig. 1-13, *5*) and elongated (Fig. 1-13, *8, 9*). Taking into account the proportions of Levallois Tortoise cores, the short Levallois flakes might be the result of their reduction. On the other hand, the short Levallois flakes might also be the result of relatively exhausted multiply reduced cores, which during the initial stages of flaking were exploited using the Biache method. That is, the short Levallois flakes could not be the direct evidence of independent meaning of the Levallois Tortoise method in the assemblages of the early stage of WCM.

Thus, most probably in an early stage of the WCM the Levallois Tortoise method had an independent meaning, and its application resulted in Levallois Tortoise cores made on thin pebbles and flakes, as well as in short Levallois flakes. But for all that, and based on the numbers of such cores and flakes, the use of this method was accidental.

| | I lam | I Fl | I Fs |
|---|---|---|---|
| Kabazi II, A3A-A4 | 32.1 | 54.0 | 24.0 |
| Kabazi II, II/1A-II/1 | 37.2 | 53.5 | 31.3 |
| Kabazi II, II/2 | 38.5 | 60.4 | 36.2 |
| Kabazi II, II/3 | 32.9 | 63.9 | 32.8 |
| Kabazi II, II/4 | 36.3 | 68.9 | 32.0 |
| Kabazi II, II/5 | 31.9 | 68.2 | 43.9 |
| Kabazi II, II/6 | 35.9 | 68.0 | 42.3 |
| Kabazi II, II/7 | 31.5 | 60.0 | 42.1 |
| Kabazi II, II/7AB | 22.8 | 55.5 | 44.4 |
| Kabazi II, II/7C | 18.3 | 54.0 | 38.0 |
| Kabazi II, II/7D | 21.1 | 60.0 | 50.0 |
| Kabazi II, II/7E | 29.1 | 66.6 | 58.5 |
| Kabazi II, II/8 | 19.4 | 69.2 | 51.9 |
| Kabazi II, II/8C | 15.2 | 63.0 | 50.0 |

**Table 1-6** Kabazi II, Western Crimean Mousterian from levels A3A through II/8C: indexes.

### The Biache method

The Biache reduction strategy was described by E. Boëda on a sample of artefacts from Biache-Saint-Vaast, layer IIA (Boëda 1986, 1988a, Boëda et al., 1990). Later, Boëda's description was applied to Kabazi II, Unit II material (Chabai, Sitlivy 1993, Chabai 1998c, see Usik 2003a and Usik this volume for another point of view).

The exploitation of this method results in uni-directional and bi-directional cores with lateral supplementary platforms (Fig. 1-10), Levallois Tortoise and radial cores (Fig. 1-10), blades and flakes with centripetal, uni-directional-crossed, bi-directional-crossed dorsal scar patterns, debordant and *enlèvement deux* blades and flakes (Fig. 1-13, *4, 6, 7, 8, 9*).

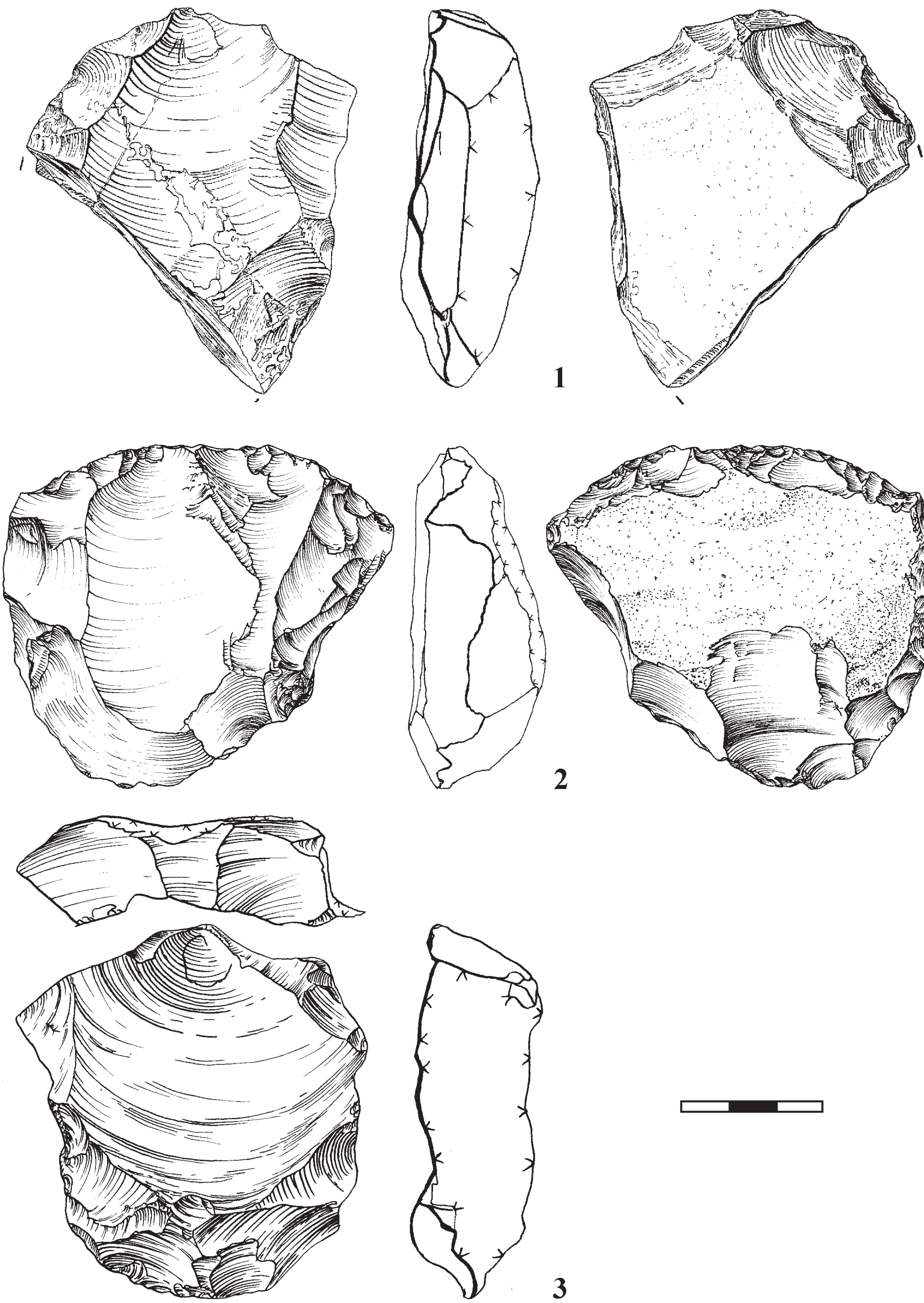


**Fig. 1-8** Kabazi II, level II/8: cores, Levallois Tortoise (1, 2, 3).

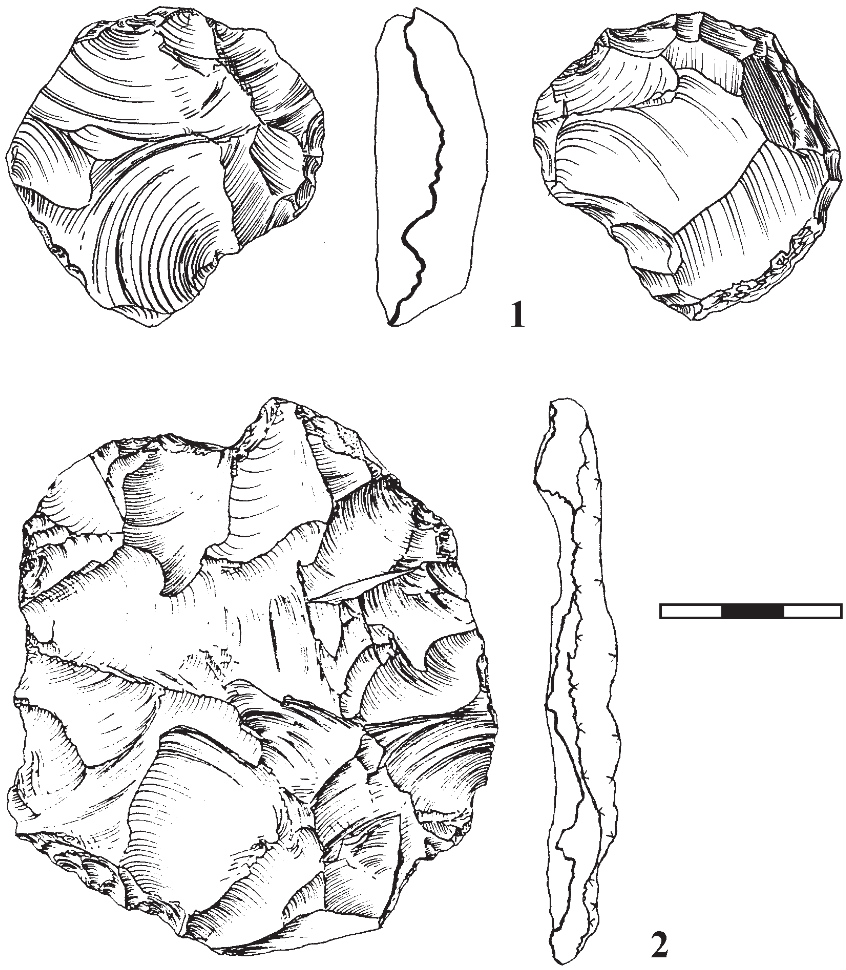

**Fig. 1-9** Kabazi II, level II/8: cores, radial (1, 2).

That is, during this reduction sequence the core undergoes multiple transformations, changing its typological definitions. One of the most peculiar features resulting from the application of the Biache method is the pronounced morphological difference between main and supplementary striking platforms. In contrast to the supplementary platform, the main platform is relatively thick and positioned nearly orthogonally to the flaking surface, whilst the supplementary platforms are narrow and exhibit an obtuse angle to the flaking surface. The supplementary platforms are situated on about the right angle to the main platform. The position of supplementary and main platforms results in a rectangular or sub-rectangular shape of core (Fig. 1-10).

At the first stage of core exploitation the radial or bi-lateral (Usik 2003a) shaping of flaking surfaces is conducted from the lateral supplementary striking platforms. The first stage results in a number of blanks partly or completely covered by cortex, and a radial or bi-lateral core with the pronounced convexity on the central part of the flaking surface. The first stage blanks, as well as all shaping blanks, often exhibit the obtuse angle and lipping from striking. Thus, the beginning of the second stage is predetermined and comprises the removal of central blank (Fig. 1-10, *3*). Usually, this central blank exhibits the blade or elongated flake proportions, rectangular shape, faceted platform and either centripetal or bilateral dorsal scar pattern. Then, it is the turn of a series of *enlèvement deux*, uni-directional-crossed, bi-directional-crossed and debordant blanks. At the end of the second stage the core might be identified typologically as bi-directional or uni-directional, this however depends on whether a single or two opposed striking platforms are exploited. The third stage commences with the reshaping of the flaking surface to achieve the required convexity for the

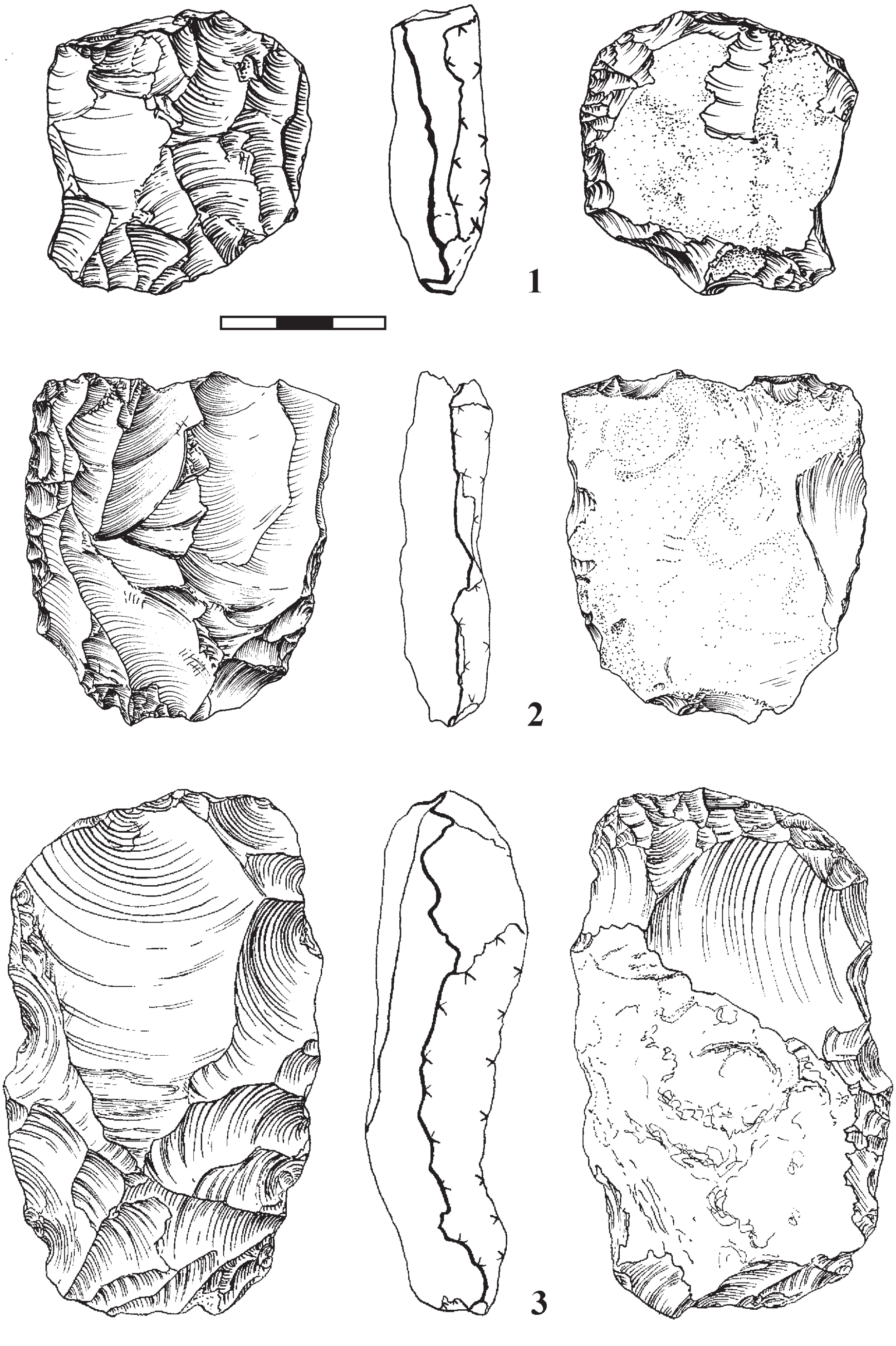


**Fig. 1-10** Kabazi II, levels II/7 (1) and II/8 (2, 3): cores, bi-directional (1, 2, 3).

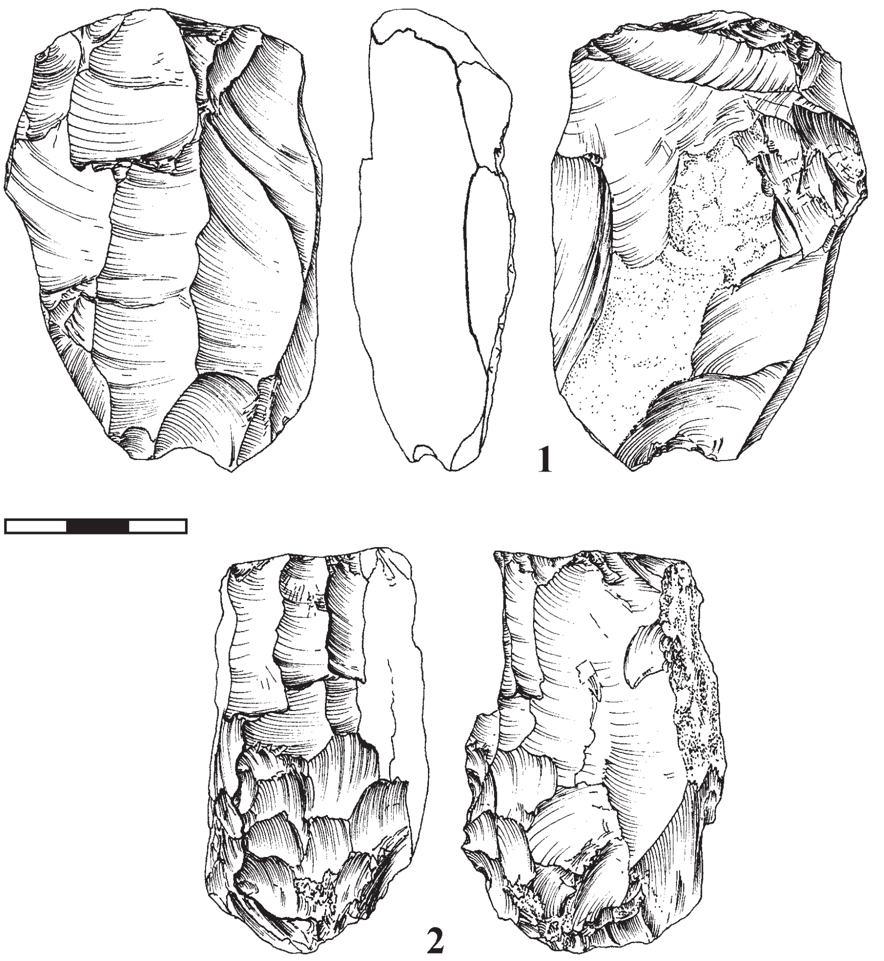


**Fig. 1-11** Kabazi II, level II/7AB: cores, unidirectional sub-cylindrical (1) and narrow flaked surface (2).

next removals. Depending on the situation, this reshaping might not cover the entire flaking surface. The sequence of the detachments of the third stage is analogical to the mode of removals of the second stage. Typologically the exhausted core might be identified as radial or Levallois. This idealized scheme is, however, rarely reflected in reality. At the same time, the main idea of the Biache method is the increase in the number of blanks from specially prepared flaking surface in the frames of Levallois concept. For the realization of this idea, the detachment of debordant, *enlèvement deux* blanks, as well as multiple reshaping of flaking surface are applied. At Kabazi II, the Biache method was used in both uni-polar and bi-polar variants during the early period of the WCM. See Usik (this volume) for alternative approach for the interpretation of level II/8 technology.

## The volumetric core reduction strategy

This method is reflected in a narrow flaked surface, uni-directional, bi-directional cores with volumetric flaking surfaces, as well as in the number of crested, uni-directional and bi-directional blades (Fig. 1-11, 1-14, 1-13, *1, 2, 3*). The initial stage of volumetric core reduction comprises the preparation of the crested ridge and the detachment of the crested blank. The flaking surface convexity was supported by the special order of blanks detachment. Lateral supplementary platforms did not exist. Often, the striking platform(s) was prepared by the removal of core tablets (Fig. 1-12, *3*). At the same time, the most peculiar feature of this method at Kabazi II is the extensive *façetage* of core striking platforms. Perhaps, it is only in this feature that the volumetric method at Kabazi II, Unit II differs from its Upper Palaeolithic analogies. The volumetric flaking at Kabazi II, Unit II was used in both uni-polar and bi-polar variants.

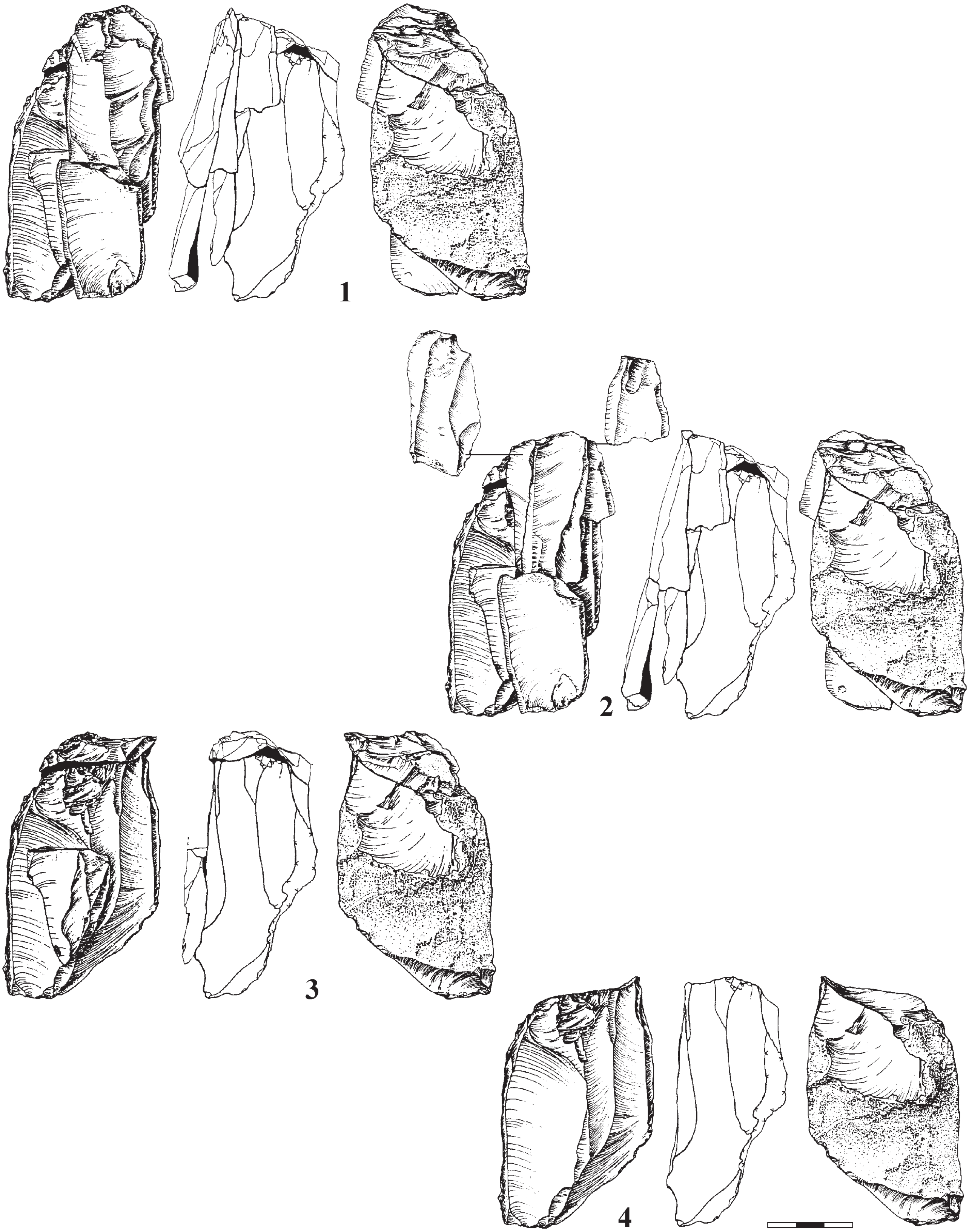

**Fig. 1-12** Kabazi II, level II/7C: the bi-directional variant of the volumetric method of core reduction. Step-by-step reconstruction of refitted core and blanks.

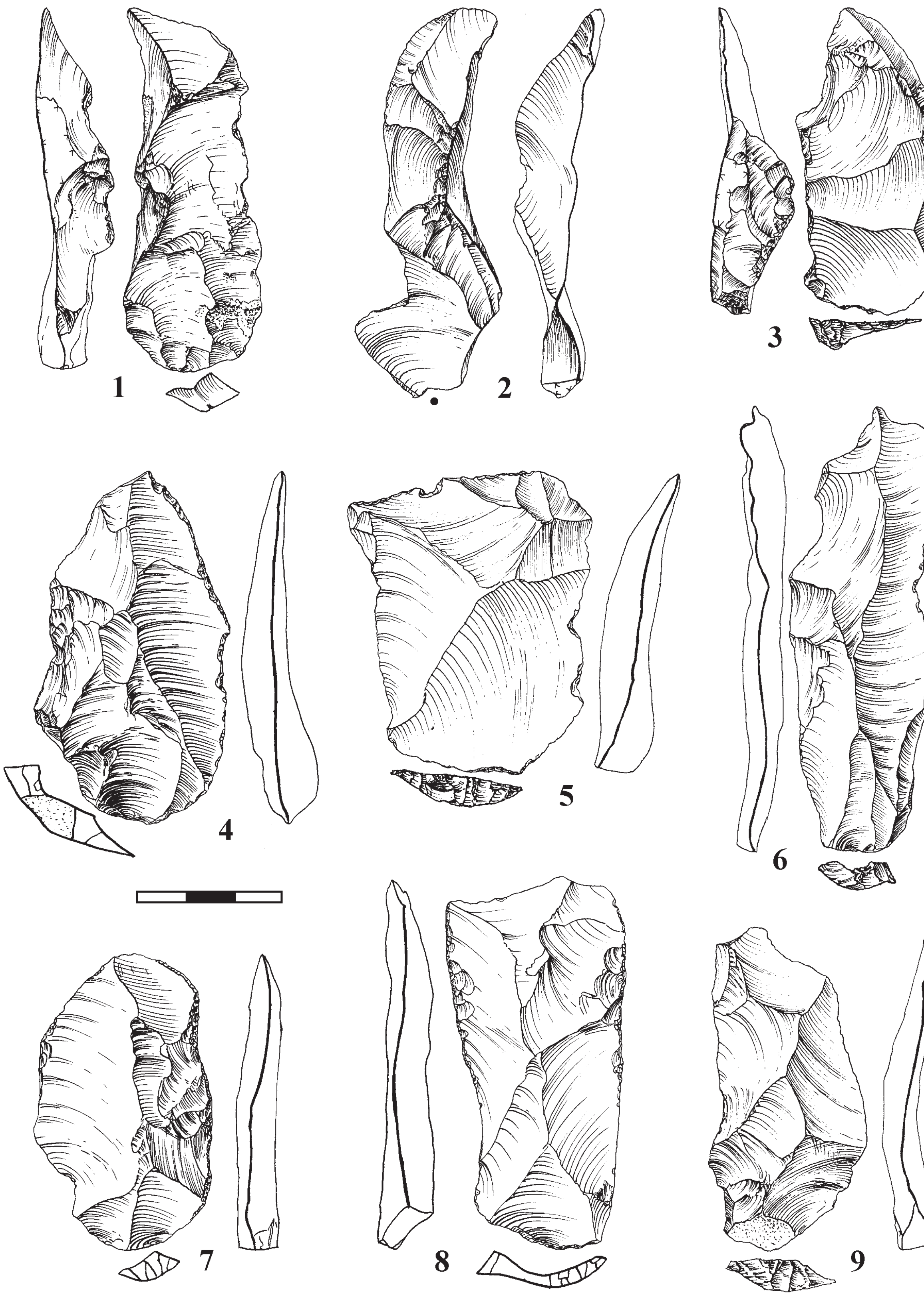



**Fig. 1-13** Kabazi II, Levels II/6 (8), II/7 (9), II/7AB (6), II/7C (5), II/7D (1, 2) and II/8 (3, 4, 7): Levallois flakes (5, 8, 9); *éclat enlèvement deux/uni-polaire* (4, 7); *lame enlèvement deux/bi-polaire* (6), crested blades (1, 2) and crested flake (3).

## The Core Reduction Strategies during the Late Period of WCM

The cores of the late WCM are represented mainly by uni-directional and bi-directional pieces, both in volumetric (Fig. 1-14) and flat (Fig. 1-15) flaking surface modifications. Usually, the latter exhibit lateral supplementary striking platforms (Fig. 1-15, *3*). Although Levallois Tortoise cores have not been found (Table 1-5) Levallois blanks with centripetal dorsal scars are rare but still occur (Fig. 1-13, *8*). Whilst the number of blades (Ilam)increases up to 38.5, faceted platforms represent about the same value as in underlying levels (Table 1-6). The only exceptions are level II/1A and Unit A in which the faceted platforms are less common than in the rest of the WCM assemblages.

Thus, the late period of the WCM is characterised by the application of both volumetric flaking and the Biache method. Traces of the accidental use of the Levallois Tortoise method were not observed. To summarise, the technological difference between the early and late period of the WCM is a more intensive production of blades during the late period using the volumetric core reduction strategy, which was, however, already known and applied during the early stage of the WCM.

## The Tool Assemblages of Western Crimean Mousterian

There are no essential differences in tool typologies between early and late periods of the WCM. The only distinction comprises a more intensive use of blades for tool production in the assemblages of the late stage.

Scrapers dominate the tool-kit, accounting for 53 % to 67 % of an assembalge, and are followed by points (17 – 25 %), denticulates (7 – 11 %), and notches (up to 10 %). Upper Palaeolithic types, which never make up more than 2 % of an assemblage, do not play an important role in the WCM (Table 1-7).

### *Points*

Typologically speaking, points can vary (Table 1-7). Leaf forms, which include semi-leaf, sub-leaf and leaf shapes, dominate point assemblages (Fig. 1-16, 1, 10, 11). These are followed by distal (Fig. 1-17, *1, 4, 5, 6*) and crescent forms, the latter being represented by semi-crescent and sub-crescent pieces (Fig. 1-16, *2, 3, 5, 6, 7*). Also relatively numerous are sub-triangular points. Specific forms are obliquely retouched points (Fig. 1-16, *4, 8, 9*) which, however, are not numerous. Levallois points are represented by a few items, as are hook-like and lateral points. During the late stage the vast majority of points were made on blades, whereas in the early stage points made on flakes, including Levallois, dominated.

Points are elaborated by non-invasive, obverse, scalar and / or marginal, flat retouch. Ventral thinnings are rare. Types such as distal, lateral, obliquely retouched and semi-leaf points were produced on blades, whilst other types were produced on both flakes and blades.

### *Scrapers*

In general, scrapers are represented by simple shapes: straight, convex and concave. Transversal, double and convergent shapes are not numerous (Table 1-7). Often, during the early period, scrapers were produced on Levallois flakes (Fig. 1-18, *2, 3, 6, 7, 8;* 1-19, *4*). Scrapers made on blades (Fig. 1-19, *2, 3, 6, 7, 9*) are more characteristic of the late WCM. Also, crested and debordant blanks were used for scraper production, which resulted in the appearance of backed scrapers (Fig. 1-19, *2, 5, 7, 9*), the latter are, however, not numerous. Ventral thinnings occur only rarely. The obverse non-invasive, scalar, flat retouch was used in scraper production.

Transverse scrapers (about 4 % of the total scraper number) are more or less equally represented by straight and convex types (Table 1-7). Simple scrapers (straight, convex, concave and wavy) are the most numerous, and are indeed the most frequent tool. Simple scrapers make up 62 % of the total number of scrapers, and 36 % of the entire tool assemblage. Straight (Fig. 1-18, *4, 5*) and convex (Fig. 1-18, *1, 7*; 1-19, *3*) scrapers are present in about the same number, and dominate over the concave (Fig. 1-18, *2*) and wavy scrapers. The straight backed (Fig. 1-19, *1, 9*) and convex backed (Fig. 1-19, *5, 7*) scrapers are rare: no more than 5 % of the total number of simple scrapers. Also, simple scrapers with ventral thinnings occur only rarely. As a rule, the simple scrapers are elaborated by non-invasive obverse, scalar, flat retouch. Very few pieces display invasive retouch.

The totality of double scrapers is represented at about 20 % of the total number of scrapers (Fig. 1-18, *3, 4, 5*; 1-19, *4, 6, 8*). The vast majority of double scrapers are represented by double straight and double convex types (Table 1-7). Other types of double scrapers are not numerous. Double scrapers with ventral thinnings are rare. Double scrapers were elaborated by using the same types of retouch used in the production of simple scrapers.

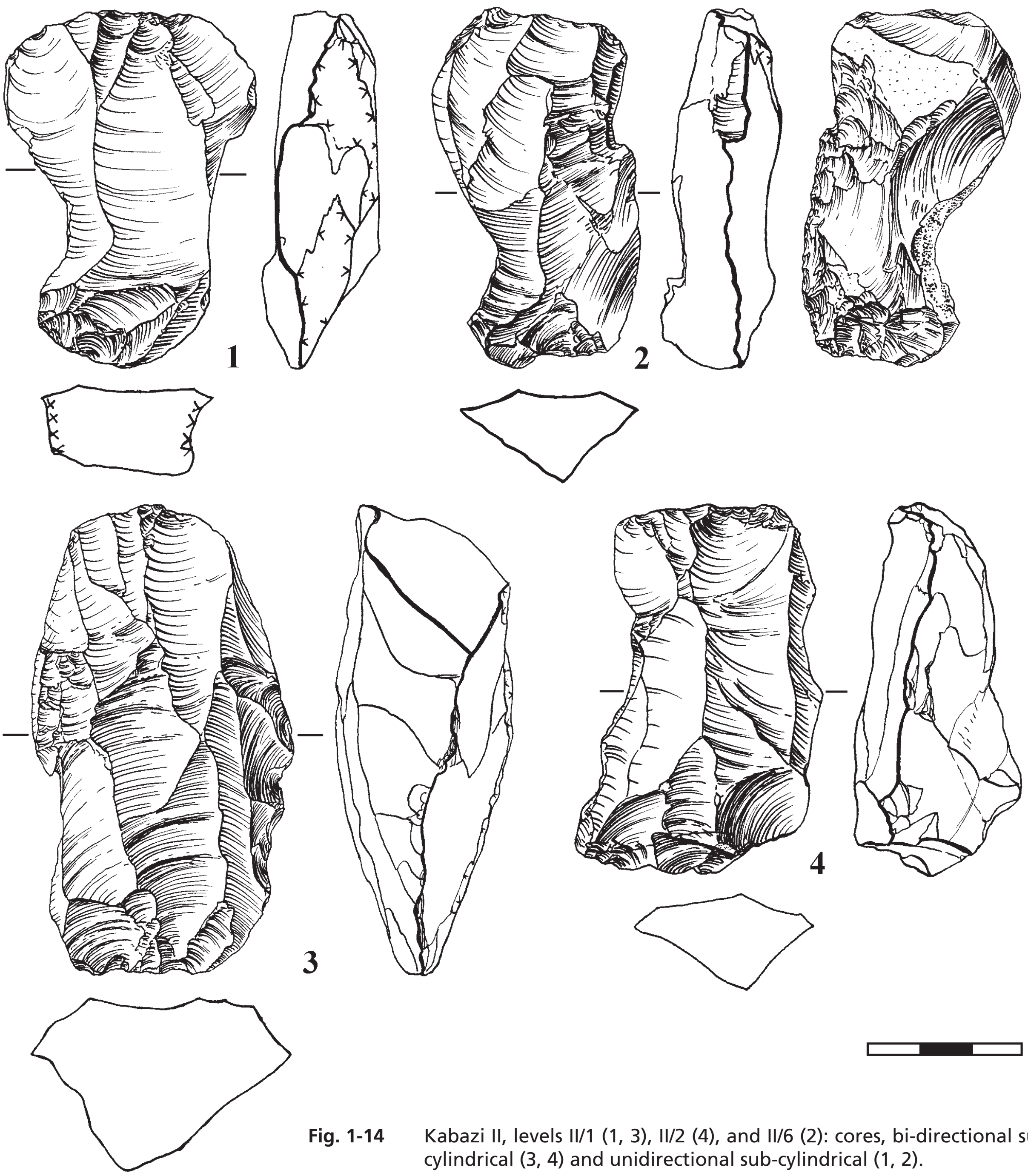


**Fig. 1-14** Kabazi II, levels II/1 (1, 3), II/2 (4), and II/6 (2): cores, bi-directional sub-cylindrical (3, 4) and unidirectional sub-cylindrical (1, 2).

Convergent scrapers account for 14 % of the total number of scrapers. The sub-triangular (Fig. 1-20, *1*) and semi-crescent (Fig. 1-20, *4, 5*) shapes dominate among the convergent scrapers (Table 1-7). The remaining types of convergent scrapers are not numerous. Ventral thinnings are rare. Retouch types are the same as observed for simple and double scraper production.

## *Denticulates and Notches*

The percentage of denticulates in relation to other tool classes is no more than 11 % in each level (Table 1-7). The morphological structure of denticulates is analogous to the class of scrapers. The only peculiar type is denticulates made on truncated-faceted pieces (Fig. 1-20, *7, 8*). However, tools of this type are not numerous.

| | A3A-A4 | II/1A--II/1 | II/2-II/4 | II/5-II/7 | II/7AB-II/8C | IIA/1-IIA/2 | Total %: |
|---|---|---|---|---|---|---|---|
| *Points* | | | | | | | |
| Levallois | · | · | · | 1 | 3 | · | 0.89 |
| Lateral | · | 1 | · | · | 1 | · | 0.44 |
| Distal | · | 4 | 4 | 2 | 5 | · | 3.33 |
| Oblique | 1 | 1 | 1 | 3 | · | · | 1.33 |
| Sub-triangular | · | 3 | 3 | 5 | 2 | · | 2.89 |
| Semi-crescent | · | 4 | · | 5 | 5 | · | 3.11 |
| Sub-crescent | · | · | · | · | 1 | · | 0.22 |
| Hook-like | · | · | · | 2 | · | · | 0.44 |
| Semi-leaf | · | · | 1 | · | 1 | · | 0.44 |
| Sub-leaf | 1 | 3 | 1 | 3 | 12 | · | 4.44 |
| Leaf | · | · | · | · | 1 | · | 0.22 |
| Unidentifiable | · | 5 | 3 | 3 | 4 | · | 3.33 |
| *Scrapers* | | | | | | | |
| Transverse-straight | · | 1 | · | 1 | 3 | · | 1.11 |
| Transverse-convex | · | 2 | 2 | 1 | 1 | · | 1.33 |
| Straight | 3 | 11 | 12 | 18 | 29 | 1 | 16.44 |
| Convex | 1 | 15 | 6 | 30 | 28 | · | 17.78 |
| Concave | · | 3 | 1 | 3 | 3 | · | 2.22 |
| Wavy | · | · | · | 3 | 8 | · | 2.44 |
| Double-straight | · | · | 2 | 7 | 8 | · | 3.78 |
| Double-convex | · | · | 2 | · | · | · | 0.44 |
| Staright-convex | · | 4 | · | 3 | 11 | 1 | 4.22 |
| Straight-concave | · | 1 | · | · | 1 | · | 0.44 |
| Convex-concave | · | · | 4 | 1 | · | · | 1.11 |
| Double-convex | · | · | · | · | 3 | · | 0.66 |
| Double-wavy | · | 1 | 1 | 1 | 2 | · | 1.11 |
| Semi-rectangular | · | · | · | · | 2 | · | 0.44 |
| Sub-rectangular | · | · | · | 1 | 1 | 1 | 0.66 |
| Sub-triangular | · | 3 | · | 1 | 8 | · | 2.67 |
| Semi-crescent | · | 3 | 3 | 5 | 5 | · | 3.56 |
| Sub-crescent | · | · | · | · | 5 | · | 1.11 |
| Sub-leaf | · | · | · | · | 1 | · | 0.22 |
| Leaf-shaped | · | · | 1 | · | · | · | 0.22 |
| Amorphous convergent | · | · | · | · | 1 | · | 0.22 |
| *Denticulates* | 1 | 7 | 6 | 9 | 18 | · | 9.11 |
| *Notches* | · | 7 | · | 2 | 11 | · | 4.44 |
| *End-scrapers* | · | · | 1 | 1 | · | · | 0.44 |
| *Burins* | · | · | · | · | 1 | · | 0.22 |
| *Borers* | · | · | · | 1 | 3 | 1 | 1.11 |
| *Truncated Blades* | · | 2 | · | · | 1 | · | 0.66 |
| *Backed Blades* | · | 2 | · | · | · | · | 0.44 |
| *Various* | · | · | · | · | 1 | · | 0.22 |
| **Total:** | **7** | **83** | **54** | **112** | **190** | **4** | **100.00%** |
| Retouched pieces | 3 | 12 | 13 | 47 | 106 | 11 | |
| Unidentifiable | 3 | 64 | 39 | 7 | 7 | 1 | |

**Table 1-7** Kabazi II, Western Crimean Mousterian from levels A3A through IIA/2: tools.

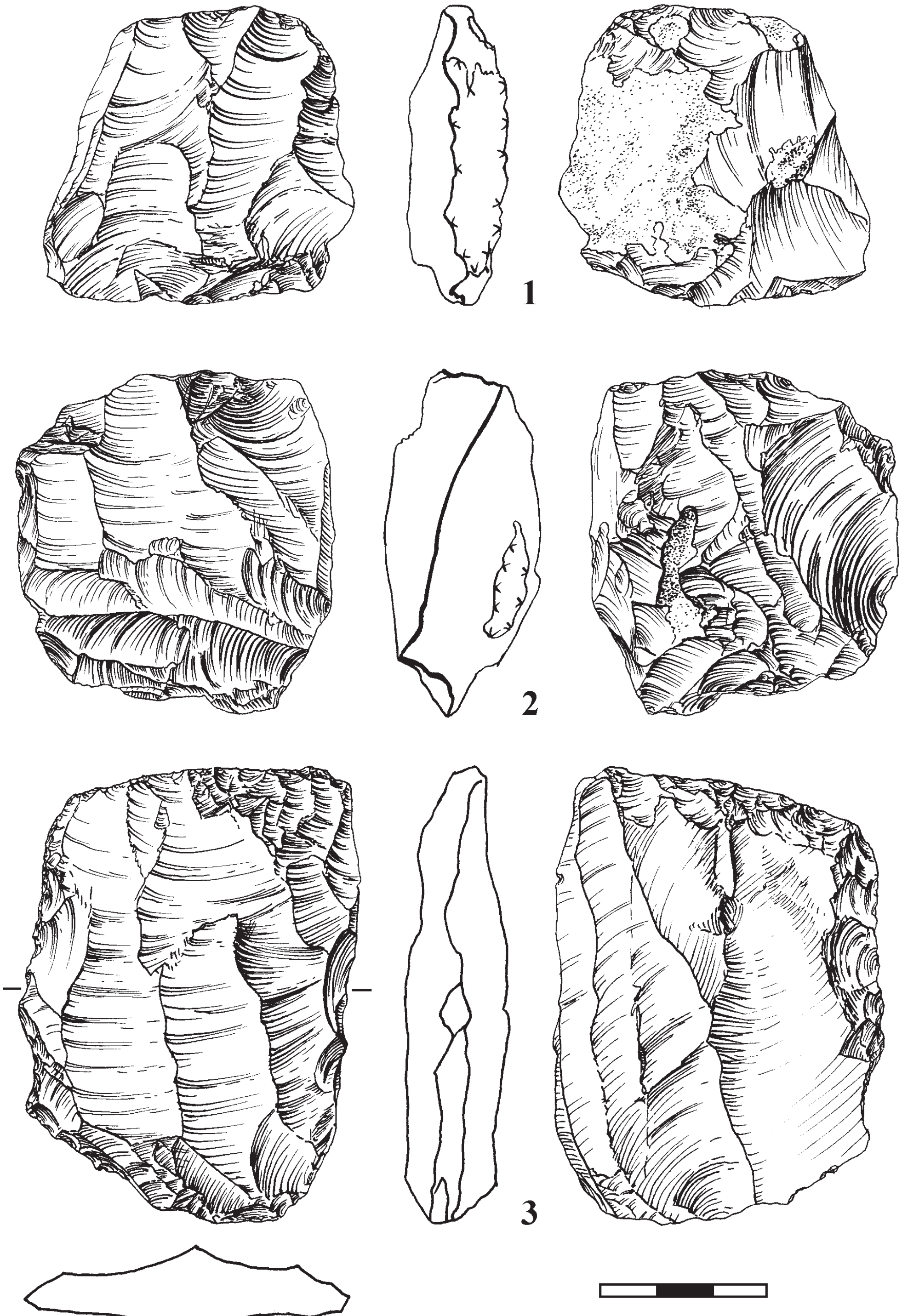


**Fig. 1-15** Kabazi II, levels II/1 (3), II/3 (2), and II/6 (1): cores, bi-directional (1), orthogonal (2), and bi-directional alternating (3).

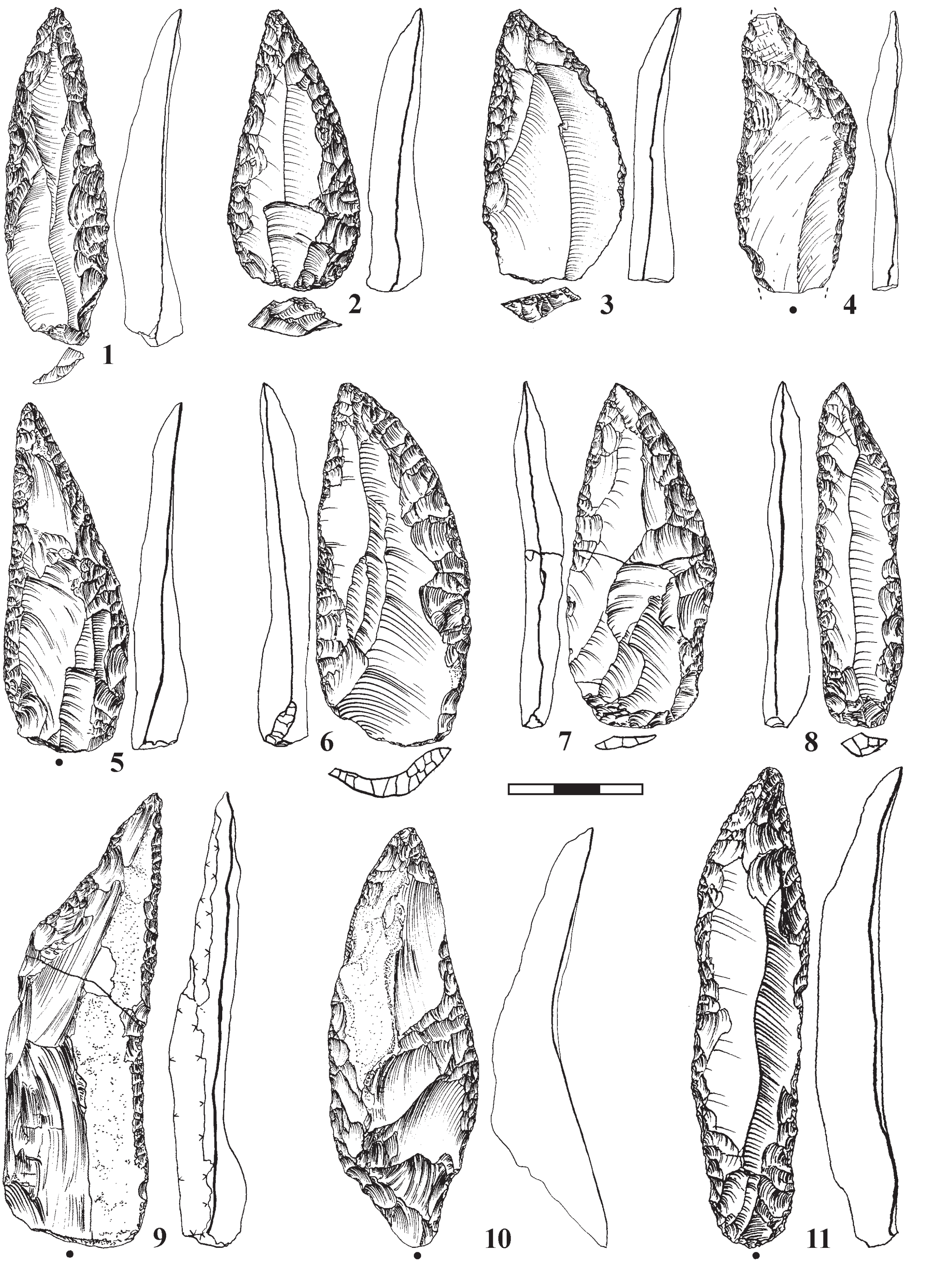


**Fig. 1-16** Kabazi II, levels A3A (1), A3C (4), II/1 (5, 9, 11), II/6 (6, 7, 8), II/7AB (2, 10), II/7C (3): points, sub-leaf (1, 11), leaf-shaped (10), obliquely retouched (4, 8, 9), semi-crescent (3, 7), sub-crescent (2, 5, 6).

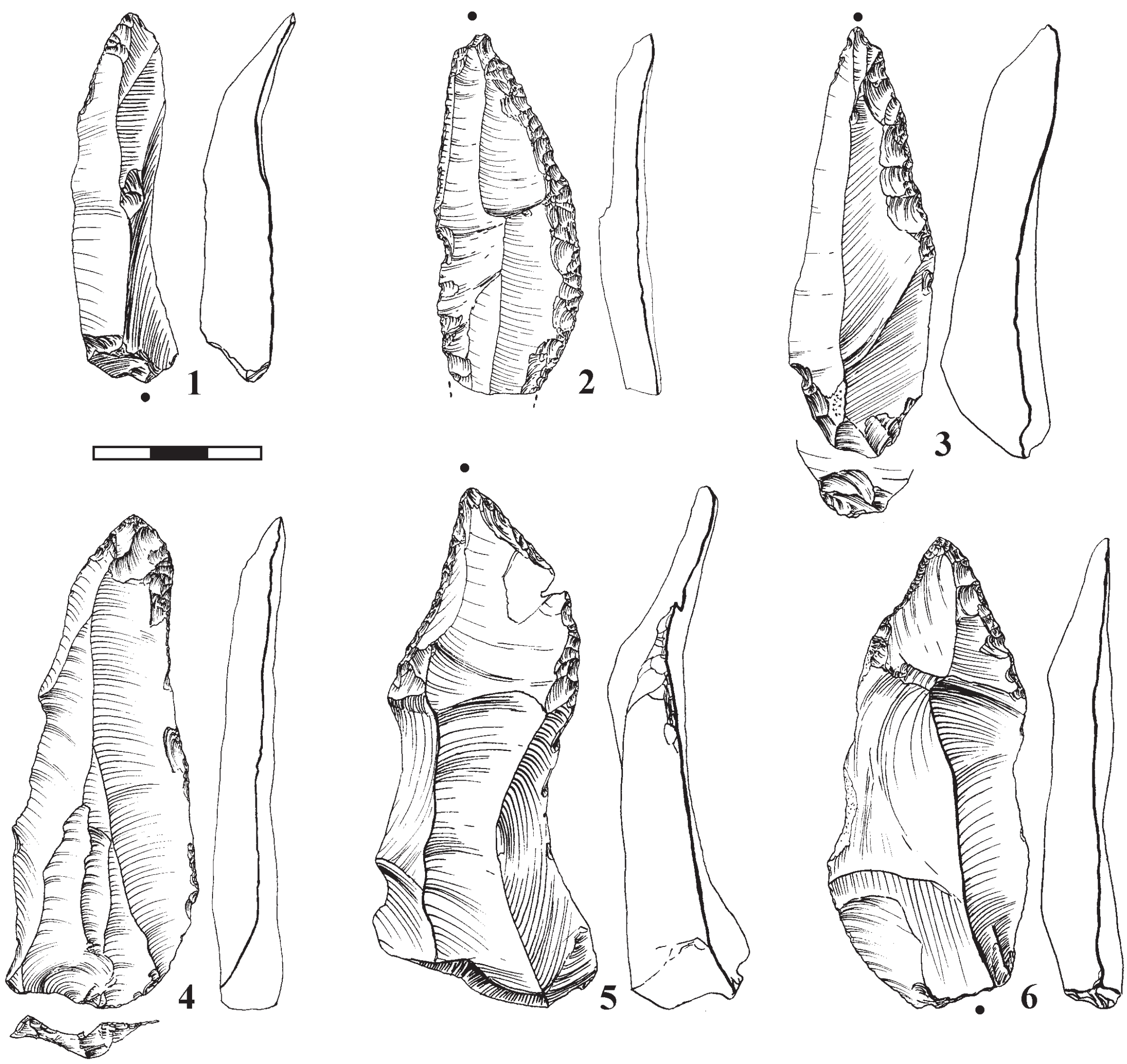


**Fig. 1-17** Kabazi II, levels A3A (2), II/1 (6), II/2 (1), II/4 (5), II/7AB (4), II/8 (3): points, distal (1, 4, 5, 6), lateral (2), and lateral with thinned base (3).

The number of notches rarely exceeds 10% in each level. The ventral and dorsal types of notches were made on both flakes and blades.

### *The Upper Palaeolithic types*

Rare Upper Palaeolithic types (about 2%) were discovered in the assemblages belonging to both the early and late periods of the WCM (Table 1-7). Upper Palaeolithic types are represented by atypical end-scrapers, borers, burins, obliquely truncated blades (Fig. 1-20, *2, 3*), and atypical backed blades (Fig. 1-20, *6*).

### *Retouched pieces*

The ratio of retouched pieces to other identifiable tools is 1:2.3. Morphologically the retouched pieces are similar to simple scrapers, and differ from the latter only by the intensity of retouch (Fig. 1-18, *6, 9*; 1-19, *2*). By definition, retouched pieces were made by either marginal or partial scalar retouch. The vast majority of retouched pieces were made by obverse retouch. The pieces with ventral, alternative and alternating retouch are extremely rare. In early period assemblages retouched pieces are mainly made on flakes, including Levallois, whereas during the occupations of the late period the majority of retouched pieces are made on blades.

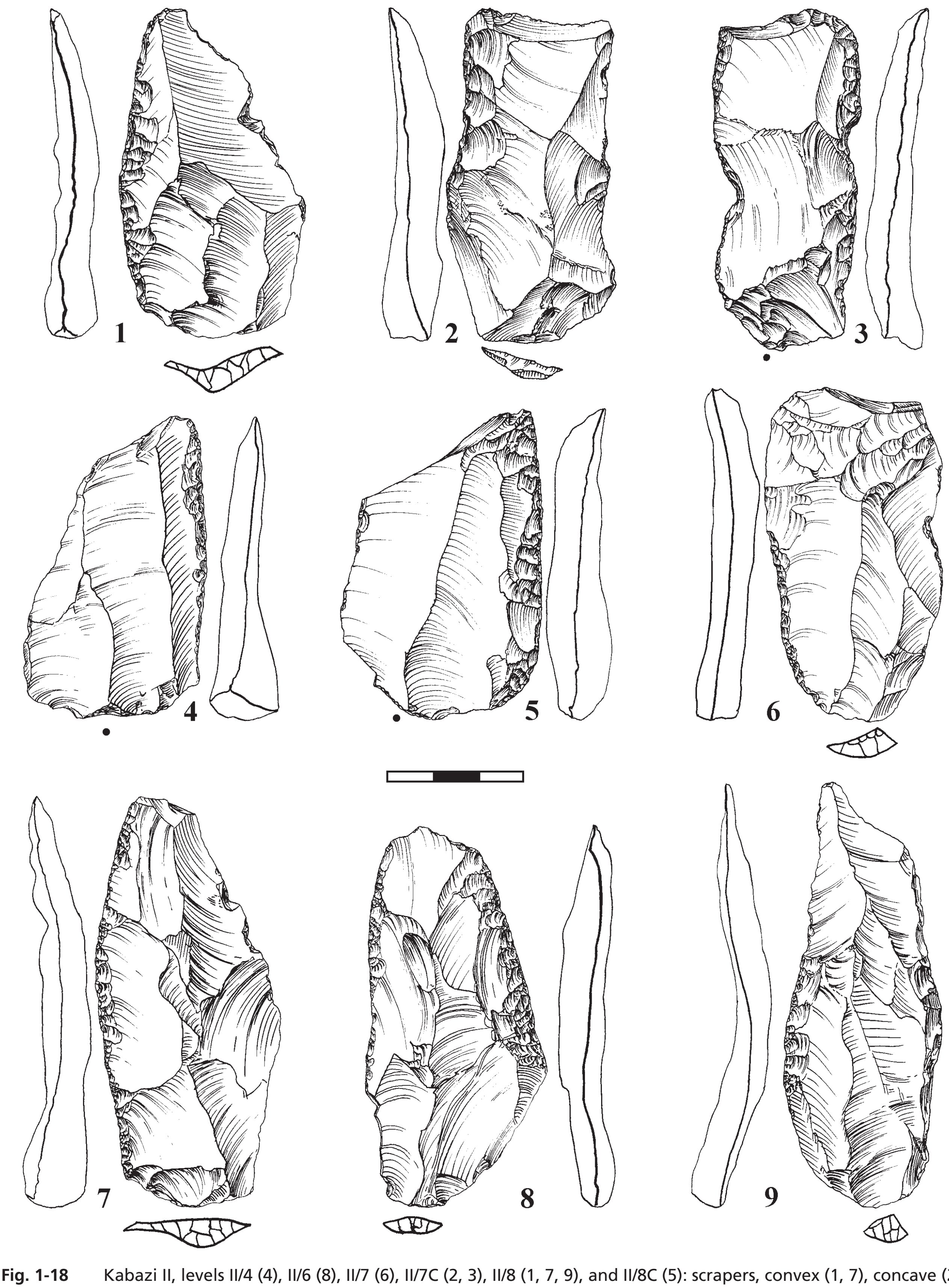


**Fig. 1-18** Kabazi II, levels II/4 (4), II/6 (8), II/7 (6), II/7C (2, 3), II/8 (1, 7, 9), and II/8C (5): scrapers, convex (1, 7), concave (2), straight (4, 5), double wavy (3), double straight (8); retouched pieces, on flake (6) and on blade (9). Tools on Levallois blanks (2, 3, 6, 7, 8). Tool on *enlèvement deux* (1).

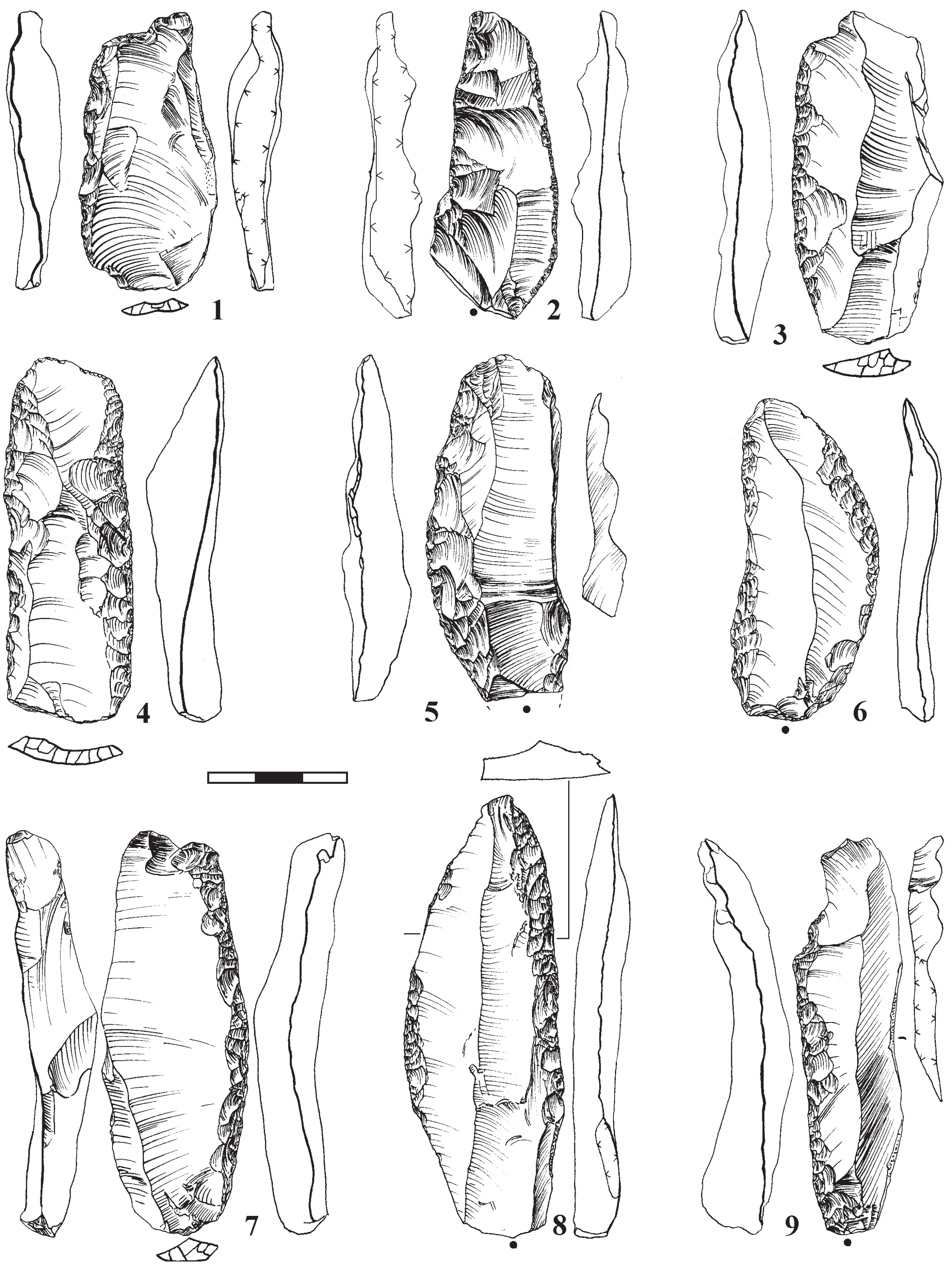


**Fig. 1-19** Kabazi II, levels II/2 (6), II/5 (3), II/6 (1, 2, 7, 9), II/7 (4), II/7AB (5), II/7E (8): scrapers, straight backed (1, 9), convex (3), convex backed (5, 7), double-straight (4), double-convex, backed (8), convex-concave (6); retouched piece on blade (2). Tools on Levallois blank (4), on debordant blades (5, 9), on crested blade (2), on secondary crested blade (7).

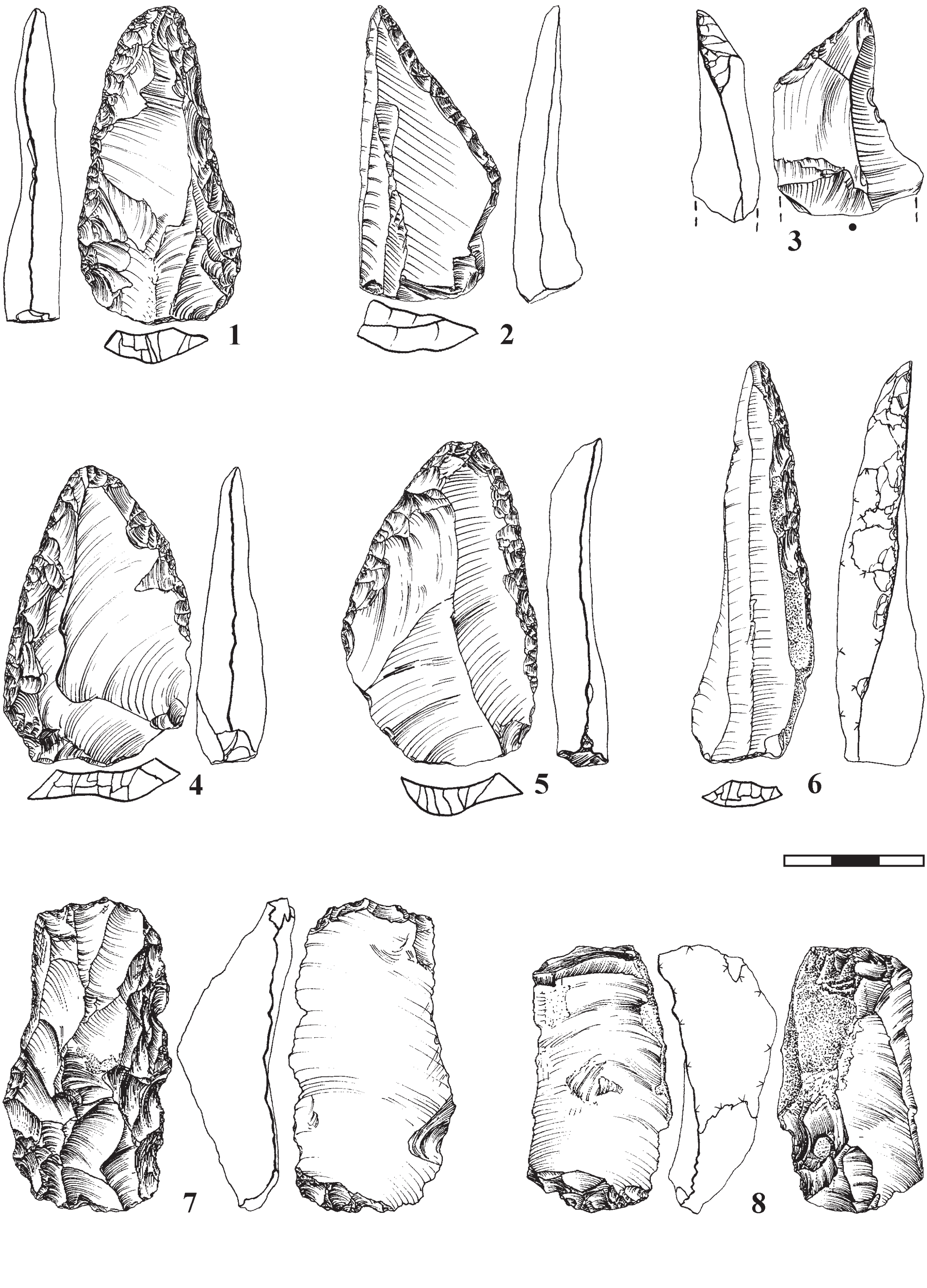


**Fig. 1-20** Kabazi II, levels II/1 (2, 3, 6), II/8 (4, 5, 7, 8), IIA/1 (1): scrapers: sub-triangular (1), semi-crescent (4, 5); obliquely truncated blades (2, 3), atypical backed blade (6); denticulate tools, bi-truncated-faceted (7, 8).

# The Western Crimean Mousterian: Concluding Remarks

Despite the chronologically late occurrence of the WCM industry there are no pronounced Upper Palaeolithic typological components. Typologically, the WCM is representative of the ordinary Middle Palaeolithic industry based on simple scrapers and points made by obverse, and not invasive retouch. Technologically, the WCM is based on Levallois and volumetric core blade production. Both typological and technological backgrounds are common for the Levallois-Mousterian techno-complex of Eastern Europe (Chabai 2003b, Chabai et al. 2004). The assemblages of the Eastern European Levallois-Mousterian techno-complex are concentrated in two geographical regions: the Prut and Dnestr river basins, and in the Crimea. Other Crimean assemblages also demonstrate the above mentioned technological and typological features: Shaitan- Koba, upper level, and Karabi Tamchin, layers II and III (Kolosov 1972, Yevtushenko 2003, 2004).

The Levallois-Mousterian of the Prut/Dnestr region has been termed "Molodova culture" (Sytnyk 2000). The "Molodova culture" is represented by such sites as Yezupil, III, Igrovitsa I, II, Proniatin, Ripiceni Izvor, I, II, III, Molodova I, 4, Molodova V, 11 and 12. The temporal frames of these sites cover the time span from the beginning of stage OIS 5 until the beginning of stage OIS 3 (Sytnik 2000, Pãunescu 1993, Haesaerts et al., 2003). The WCM is securely dated to OIS 3. It is likely that the WCM is the continuation of the "Molodova culture" Levallois-Mousterian traditions on the territory of Crimea (Chabai 2004d).

| | "sterile levels" IIA/2-3, IIA/3, IIA/3A, IIA/3B | IIA/4 | IIA/4B | III/1A | III/1 | III/2 | III/2A | III/1-III/2-III/3 |
|---|---|---|---|---|---|---|---|---|
| Chunks | 11 | 10 | 5 | 12 | 9 | 30 | 3 | 1 |
| Chips | 200 | 186 | 43 | 109 | 106 | 221 | 56 | 61 |
| Preforms | · | 3 | · | 4 | 7 | · | 2 | 2 |
| Cores | 2 | · | · | · | · | 1 | · | 1 |
| Flakes | 29 | 36 | 13 | 21 | 21 | 26 | 5 | 16 |
| Blades | 9 | 3 | 2 | 3 | · | 4 | 1 | · |
| Unfinished bifacial tools | · | 1 | · | · | 3 | 1 | · | · |
| Tools | 21 | 22 | 2 | 8 | 12 | 12 | 5 | 25 |
| **Total:** | **272** | **261** | **65** | **157** | **158** | **295** | **72** | **106** |

| | III/4 | III/5 | III/6 | III/7 | III/8 | Total: | % | essential count % |
|---|---|---|---|---|---|---|---|---|
| Chunks | 4 | 4 | 5 | 3 | 1 | 98 | 5.68 | · |
| Chips | 37 | 53 | 75 | 73 | 51 | 1271 | 73.59 | · |
| Preforms | 1 | · | · | · | 1 | 20 | 1.17 | 5.59 |
| Cores | · | 1 | · | · | · | 5 | 0.29 | 1.39 |
| Flakes | 2 | 8 | 4 | · | 2 | 183 | 10.59 | 51.12 |
| Blades | · | 1 | · | · | · | 23 | 1.33 | 6.43 |
| Unfinished bifacial tools | · | · | · | · | · | 5 | 0.29 | 1.39 |
| Tools | 3 | 3 | 6 | 3 | · | 122 | 7.06 | 34.08 |
| **Total:** | **47** | **70** | **90** | **79** | **55** | **1727** | **100.00** | **100.00** |

**Table 1-8** Kabazi II, Crimean Micoquian from levels IIA/2-3 through III/8: total artefacts.

## The Micoquian Artefacts from the Lower Part of Unit IIA and Unit III

The total number of artefacts from the Micoquian levels of Units IIA and III is 1,727 pieces. Generally speaking, the artefact assemblage is characterised by a high amount of tools, it being practically void of core-like pieces (Table 1-8).

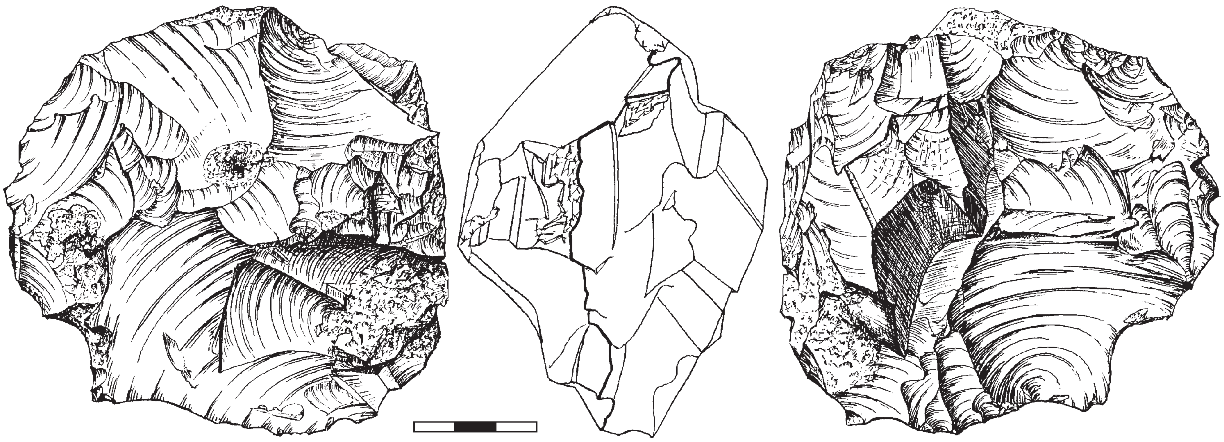

**Fig 1-21** Kabazi II, Level III/5: core, discoid.

## The Core Reduction and Bifacial Tools Production

One of the main problems in reconstructing Micoquian technology at Kabazi II is the incompleteness of artefact assemblages. This incompleteness is a reflection of the model of raw material exploitation used at Kabazi II Micoquian occupations. This model was based on the transportation onto the site of previously selected artefacts, predominantly tools. In fact, nothing was produced at the site, but was instead used, reshaped and discarded there (Bataille, Uthmeier, Kurbjuhn, Maier, this volume). The role of core reduction was minimal, with those rare cores belong to such types as unidirectional, radial and discoid (Fig. 1-21). Unidirectional cores do not exhibit the supplementary striking platforms. Striking platforms are not faceted (Ifl=48.4; Ifs=12.6), and there is no evidence for the implication of Levallois and blade (Ilam=6.2) technologies. Two thirds of blanks exhibit obtuse, lipped and semi-lipped platforms and originate from bifacial reshaping. The vast majority of blanks are not longer than 4 cm.

Most probably, the available preforms are the blanks for the production of bifacial tools. At the same time, there is no evidence for bifacial tool production on site. Bifacial tools were made in plano-convex manner (Kurbjuhn, this volume).

## The Micoquian Tool Assemblages from the Lower Part of Unit IIA and Unit III

This tool assemblage is characterised by the dominance of scrapers (59.13 %), a rarity of points (4.23 %), denticulates (5.64 %), notches (8.45 %), and a relatively high percentage of bifacials (22.55 %). Points are represented by semi-crescent, semi-leaf items (Fig. 1-22, *1*). Simple scrapers: straight (Fig. 1-22, *5*), convex (Fig. 1-22, *4*), concave (Fig. 1-22, 3) dominate the scraper assemblage (Table 1-9). On the other hand, these scrapers are not as “simple” as in the WCM. Nearly all display different kinds of ventral thinning. Transverse and double scrapers are represented in about the same number (Table 1-9).

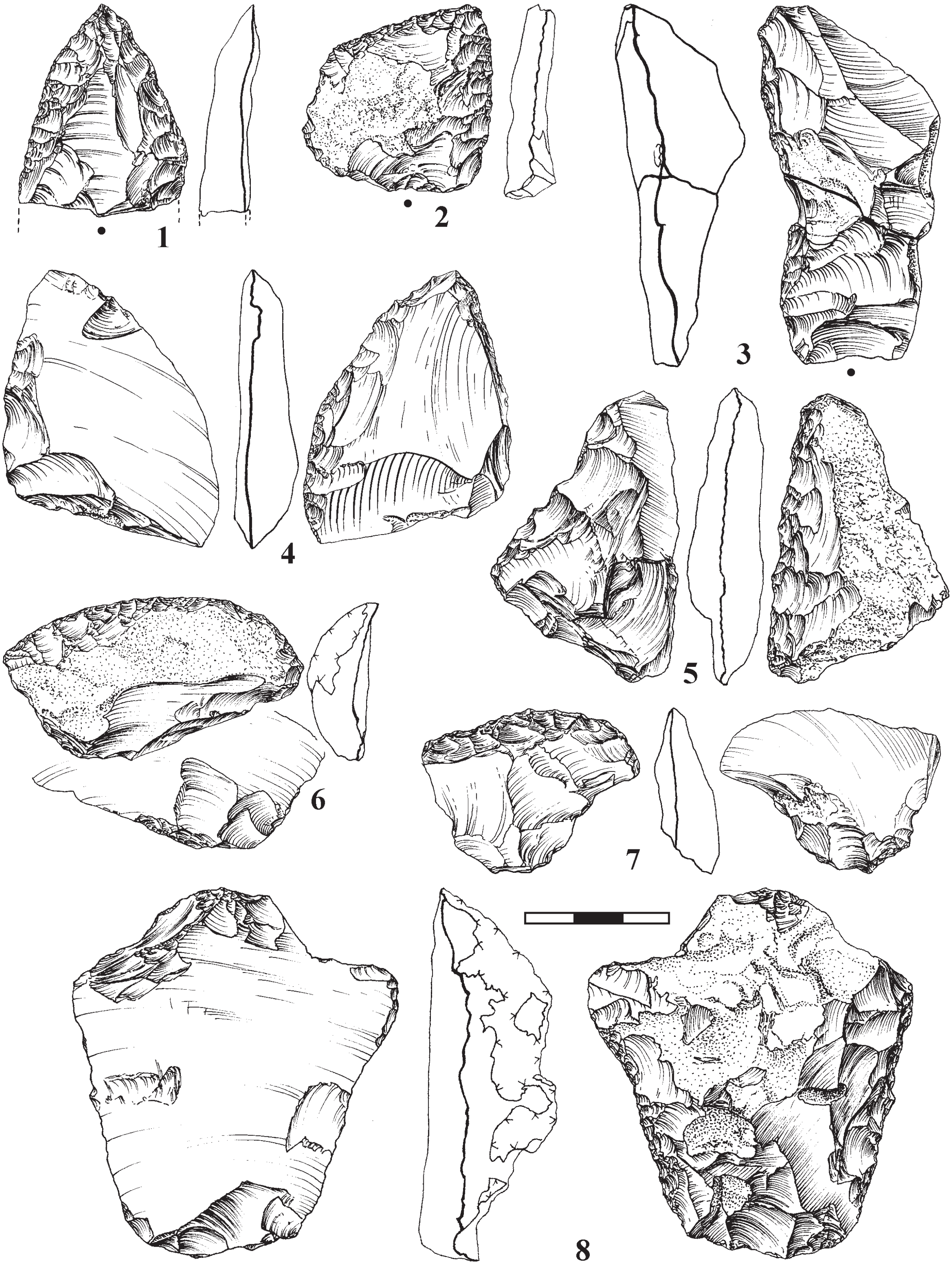


**Fig. 1-22** Kabazi II, levels IIA/4 (1, 5, 6, 8) and III/2 (1, 3, 4, 7): point, semi-leaf (1); scrapers, semi-trapezoidal (2), concave (3), convex, thinned back (4), straight, thinned back (5), transverse-convex, thinned base (6, 7), straight-concave with distal thinning and truncated-faceted base (8).

| | "sterile levels"* | IIA/4 | IIA/4B | III/1A | III/1 | III/2 | III/2A | III/1-III/2-III/3 | III/4 | III/5 | III/6 | III/7 | Total: | Total %: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Points* | | | | | | | | | | | | | | |
| Semi-crescent | · | · | · | · | · | · | · | 1 | · | · | · | · | 1 | 1.41 |
| Semi-leaf | · | · | · | · | · | · | · | 1 | · | · | · | · | 1 | 1.41 |
| Unidentifiable | · | · | · | · | · | · | · | 1 | · | · | · | · | 1 | 1.41 |
| *Scrapers* | | | | | | | | | | | | | | |
| Transverse-straight | · | 2 | · | · | · | · | · | · | · | · | · | · | 2 | 2.82 |
| Transverse-convex | 1 | 2 | · | · | 1 | · | · | 2 | · | · | · | · | 6 | 8.45 |
| Straight | 1 | · | · | · | · | 2 | 2 | 1 | · | · | · | · | 6 | 8.45 |
| Convex | 1 | 4 | · | · | · | 3 | · | 1 | 1 | · | 1 | · | 11 | 15.45 |
| Concave | · | · | · | · | · | 1 | 1 | · | · | · | · | · | 2 | 2.82 |
| Straight-convex | · | 1 | · | 2 | · | · | 1 | · | · | · | 2 | · | 6 | 8.45 |
| Straight-concave | · | 1 | · | · | · | · | · | · | · | · | · | · | 1 | 1.41 |
| Double-convex | · | · | · | · | · | · | · | 1 | · | · | · | · | 1 | 1.41 |
| Double-wavy | · | · | · | · | 1 | · | · | · | · | · | · | · | 1 | 1.41 |
| Convex-concave | · | · | · | 1 | · | · | · | · | · | · | · | · | 1 | 1.41 |
| Sub-triangular | · | · | · | · | · | 1 | · | 2 | · | · | · | · | 3 | 4.23 |
| Semi-trapezoidal | · | 1 | · | · | · | · | · | · | · | · | · | · | 1 | 1.41 |
| Sub-trapezoidal | · | · | · | · | · | 1 | · | · | · | · | · | · | 1 | 1.41 |
| *Denticulates* | | | | | | | | | | | | | | |
| Transverse-straight | · | · | · | · | · | · | · | 1 | · | · | · | · | 1 | 1.41 |
| Straight | 1 | · | · | · | · | · | · | · | · | · | · | · | 1 | 1.41 |
| Convex | · | 1 | · | · | · | 1 | · | · | · | · | · | · | 2 | 2.82 |
| *Notches* | | | | | | | | | | | | | | |
| Lateral | · | · | 1 | · | · | · | · | 3 | 1 | · | 1 | · | 6 | 8.45 |
| *Bifacial Points* | | | | | | | | | | | | | | |
| Semi-leaf | · | · | · | · | · | 1 | · | · | · | · | · | · | 1 | 1.41 |
| Leaf-shaped | · | · | · | · | · | · | · | 2 | · | · | · | · | 2 | 2.82 |
| *Bifacial Scrapers* | | | | | | | | | | | | | | |
| Convex, backed | · | · | · | 1 | 1 | · | · | · | · | · | · | · | 2 | 2.82 |
| Semi-leaf | · | · | · | · | 2 | · | · | · | · | · | · | · | 2 | 2.82 |
| Semi-crescent | 1 | · | · | · | · | · | · | · | · | · | · | · | 1 | 1.41 |
| Sub-crescent | · | · | · | · | 1 | · | · | 1 | · | · | · | · | 2 | 2.82 |
| Convergent, unidentifiable | 2 | · | · | 1 | 1 | · | · | · | · | 2 | · | · | 6 | 8.45 |
| **Total:** | **7** | **12** | **1** | **5** | **7** | **10** | **4** | **17** | **2** | **2** | **4** | **·** | **71** | **100.00** |
| Retouched pieces | 10 | 8 | 1 | 2 | 4 | 2 | 1 | 5 | · | 1 | 1 | 3 | 38 | |
| Unidentifiable | 4 | 2 | · | 1 | 1 | · | · | 3 | 1 | · | 1 | · | 13 | |

* "Sterile levels" IIA/2-3, IIA/3, IIA/3A, IIA/3B

**Table 1-9** Kabazi II, Crimean Micoquian from levels IIA/2-3 through III/7: tools.

A specific type of transverse scraper is convex with a thinned base (Fig. 1-22, *6, 7*). Ventral thinning and truncations are common to double-scraper production (Fig. 1-22, *8*). In sum, about half of the simple, transverse and double scrapers exhibit different kinds of ventral thinning. Convergent scrapers are not numerous, and are represented by sub-triangular, semi-trapezoidal (Fig. 1-22, *2*) and sub-trapezoidal shapes.

Denticulated tools are represented by one-edge obversely retouched pieces. Notches were made on the lateral obverse sides of flakes.

The semi-leaf and leaf-shaped items dominate the bifacial point and bifacial scraper assemblages (Fig. 1-23, *5, 6*) (Table 1-9). Also important are the semi- and sub-crescent bifacial scrapers (Fig. 1-23, *1, 2, 4*). Two further bifacial scrapers are naturally backed (Fig. 1-23, *3, 7*).

Such a tool assemblage is characteristic of the Ak-Kaya facie of the Crimean Micoquian.

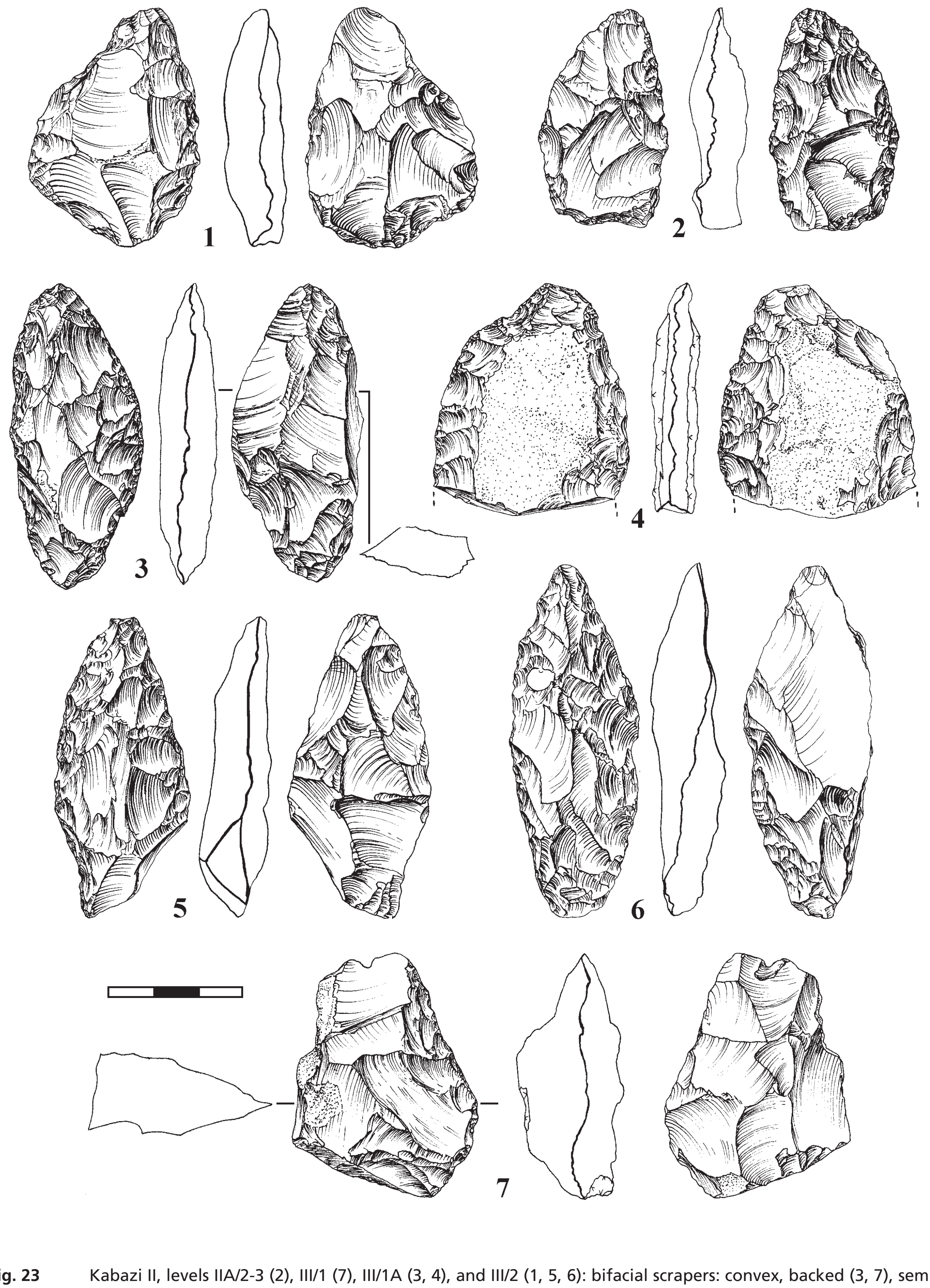

**Fig. 23** Kabazi II, levels IIA/2-3 (2), III/1 (7), III/1A (3, 4), and III/2 (1, 5, 6): bifacial scrapers: convex, backed (3, 7), semi-crescent (1, 4), sub-crescent, thinned base (2); bifacial points, sub-leaf, thinned base (5, 6).

## Discussion

The technological and typological differences between Micoquian and WCM assemblages at Kabazi II are obvious. In general terms, it might be expressed as the differences between bifacial plano-convex reduction and Levallois and blade core flaking. The Kabazi II sequence demonstrates very clearly both stratigraphical and temporal differences between Micoquian and WCM occupations. There is no interstratification of Micoquian and WCM at Kabazi II. The Vytachiv, $vt_{1b2\text{-}b1}$ (Hosselo Stadial) is the demarcation line between WCM and Micoquian in the Kabazi II sequence. In fact, such a strict temporal demarcation reflects the incompleteness of the Micoquian sequence at Kabazi II. Other Crimean sites, such as Starosele, Zaskalnaya V and Buran Kaya III, extend the Micoquian chronology until Denekamp. This is to say that Micoquian and Levallois Mousterian technologies co-existed during at least 15 kyr.

At Kabazi II both Micoquian and WCM assemblages were found in an identical type of sedimentation, and both Micoquian and WCM artefacts are associated with an identical model of faunal exploitation (Patou-Mathis, this volume). Taking into account this chronological co-existence the stylistic differences between the Crimean Micoquian and the WCM might be suggested.

## Abstract


# ЗАПАДНОКРЫМСКОЕ МУСТЬЕ И МИКОК В КАБАЗИ II, КУЛЬТУРНО-ХРОНОЛОГИЧЕСКИЕ СЛОИ А, II, IIА И III: ОКРУЖАЮЩАЯ СРЕДА, ХРОНОЛОГИЯ И АРТЕФАКТЫ

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Отложения Кабази II содержат 76 археологических горизонтов. Пятьдесят пять горизонтов обнаружено в первичном залегании и 21 горизонт был в той или иной степени переотложен. В 20 горизонтах обнаружены западнокрымские материалы, а 35 горизонтов содержат микокские артефакты. Хронологические рамки микока Кабази II определяются временем от последнего интергляциала, Кайдаки, $kd_{3b2+c}$ (MIS 5d) до Витачив, $vt_{1b2\text{-}b1}$, стадиала Хоссело (MIS 3). Хронология западнокрымского мустье не столь продолжительна и ограничивается рамками MIS 3: Витачив, $vt_{1b2\text{-}b1}$, стадиал Хоссело – Витачив, $vt_{3b}$, интерстадиал Денекамп. На протяжении всего времени аккумуляции отложений Кабази II окружающие ландшафты, варьировали от южно/северо-бореальной лесостепи до южно/северо-бореальной степи. Исключения составляют время последнего интергляциала, Кайдаки, $kd_{3b2+c}$ (южно-бореальный лес) и Витачив, $vt_2$, стадиала Хунеборг (ксерофитная степь).

Технологическая основа западнокрымского мустье – леваллуазское и пластинчатое нуклеусное расщепление. Технологическая основа микока – двусторонняя плоско-выпуклая технология. Для типологической структуры западнокрымского мустье характерны: простые скребла, изготовленные на пластинах и удлиненных отщепах, в том числе, леваллуазских; дистальные, листовидные и полусегментовидные остроконечники на пластинах. Типологическая структура микокских горизонтов более разнообразна и определяется, в первую очередь, наличием двусторонних острий и скребел, часто с обушками, а также морфологически разнообразными конвергентными скреблами с базальными и тыльными утончениями.