Chapter 8

KABAZI II: INTRODUCTION

VICTOR P. CHABAI
(with a contribution by C. R. FERRING)

INTRODUCTION

The first Middle Paleolithic artifacts on Kabazi Mountain were found in 1880 by K. Merejkowski (1881). About 70 years later A. Schepinski discovered the first stratified site on the mountain—the buried rockshelter of Kabazi I—which was excavated by A. Formozov during his 1956 field season (Formozov 1959). Then, at the beginning of the 1960s, geologists V. Petrun and L. Bilokrys (1962) discovered more than 20 areas with Middle Paleolithic surface material at different places along the northern and western slopes of Kabazi Mountain. These investigations encouraged Yu. Kolosov in 1969 to make a new attempt to find stratified sites, but his survey was not successful. During the mid-1970s, the slopes of Kabazi Mountain were cut by a series of artificial terraces and planted with pine trees to prevent slope erosion. These artificial terraces exposed deposits along the whole of both slopes to a depth of about 1.5 meters. Some areas of exposed deposits contained Middle Paleolithic artifacts. In 1983, one of these areas (Kabazi V) was discovered by Yu. Zaitsev. Two years later, a new expedition, headed by Yu. Kolosov, found one more stratified site (Kabazi II), and two areas (Kabazi III, Kabazi IV) of derived deposits, containing the Middle Paleolithic artifacts (Kolosov, Stepanchuk, Chabai 1988) (see fig. 2-9).

EXCAVATION STRATEGY

The topographic situation at Kabazi II (fig. 8-1) was initially thought to be analogous to that at the site of Bakchisaraiskaya. Bakchisaraiskaya, excavated by D. Krainov in 1956-57, is situated along the middle part of the slope of the Bakchisarai valley, some 20 kilometers west of the Alma River Valley. The stratigraphic sequence of that site contains about 2.5 m of deposits (Krainov 1979). In 1986, when the excavations of Kabazi II started, about the same thickness of deposits was expected. No one noticed the limestone block, which lay a few meters down-slope from the excavation area, and no one guessed its true size, nor vertical position. Moreover, it was commonly believed, based on observations of modern rockshelter formation processes, that Kabazi II belonged to the range of rockshelters which had collapsed and been buried by colluvium. Two large limestone blocks exposed at different elevations later during the excavations (fig. 8-2) and attributed to parts of collapsed roofs appeared to be indirect evidence supporting an interpretation of Kabazi II as a buried rockshelter (Kolosov, Stepanchuk, and Chabai 1993).

As a result of this interpretation, during the 1986-1987 field seasons, Sondage 1 and an area of about 40 m^2 above the wall of the artificial terrace were excavated (fig. 8-1, the "lower area"). These excavations demonstrated that the collapsed rockshelter hypothesis was wrong, since, by 1987, the sondage went to a depth of 13 m without reaching bedrock. Thus, in 1987 it was already clear that the main factor in the site's formation process was played by the slab that is situated just down-slope from the site. To clarify the situation, it was necessary to expose about 20 m^2 more of the "lower" excavation area. That was done during the 1993-1995 field seasons. At the same time, to clarify the upper part of the stratigraphic sequence,

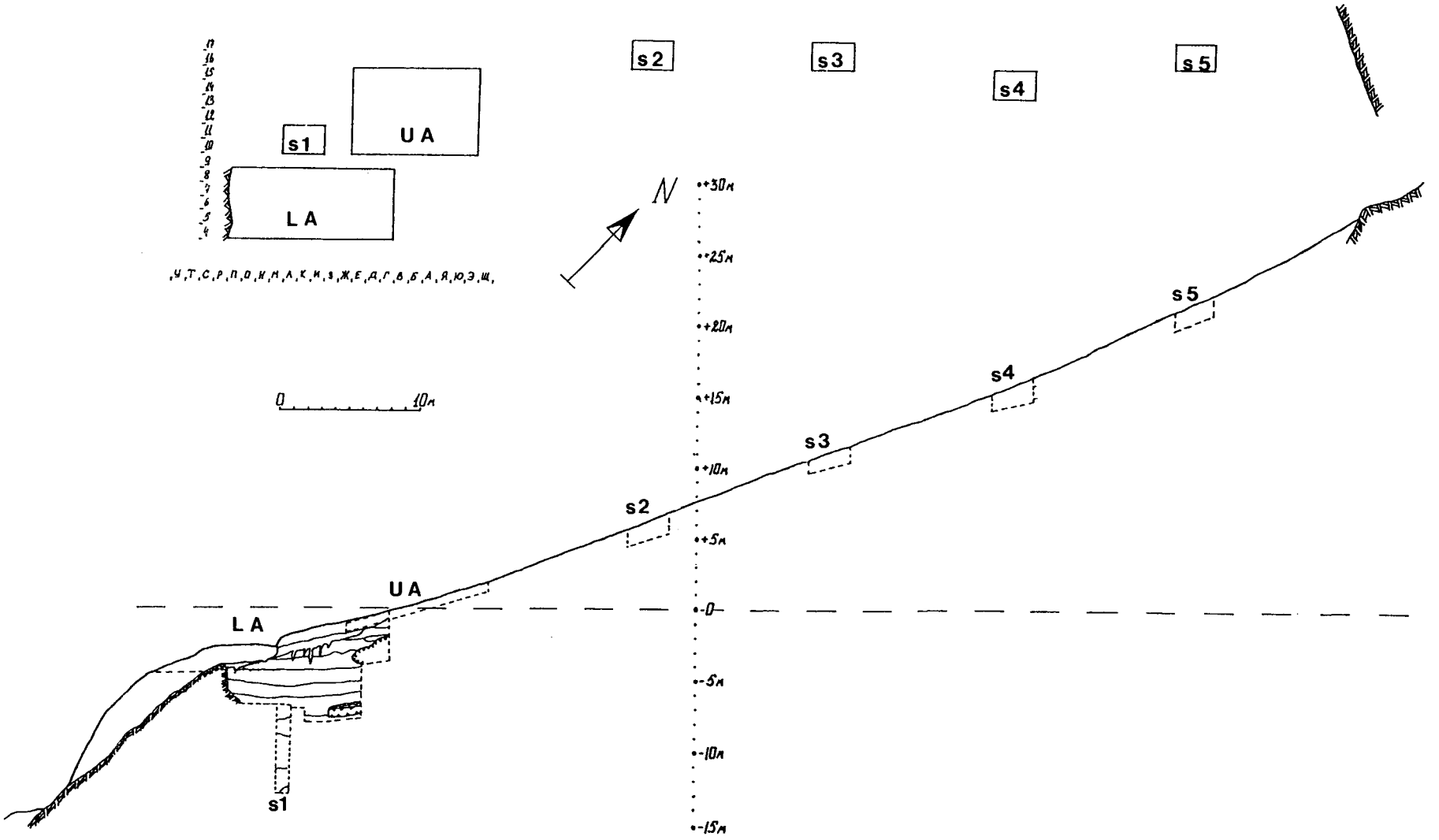

Fig. 8-1—Kabazi II: map of the excavations and the schematic cross-section of the upper part of the Kabazi Mountain slope through the sondages 1-5 (s1-s5), upper excavation area (UA) and lower excavation area (LA).

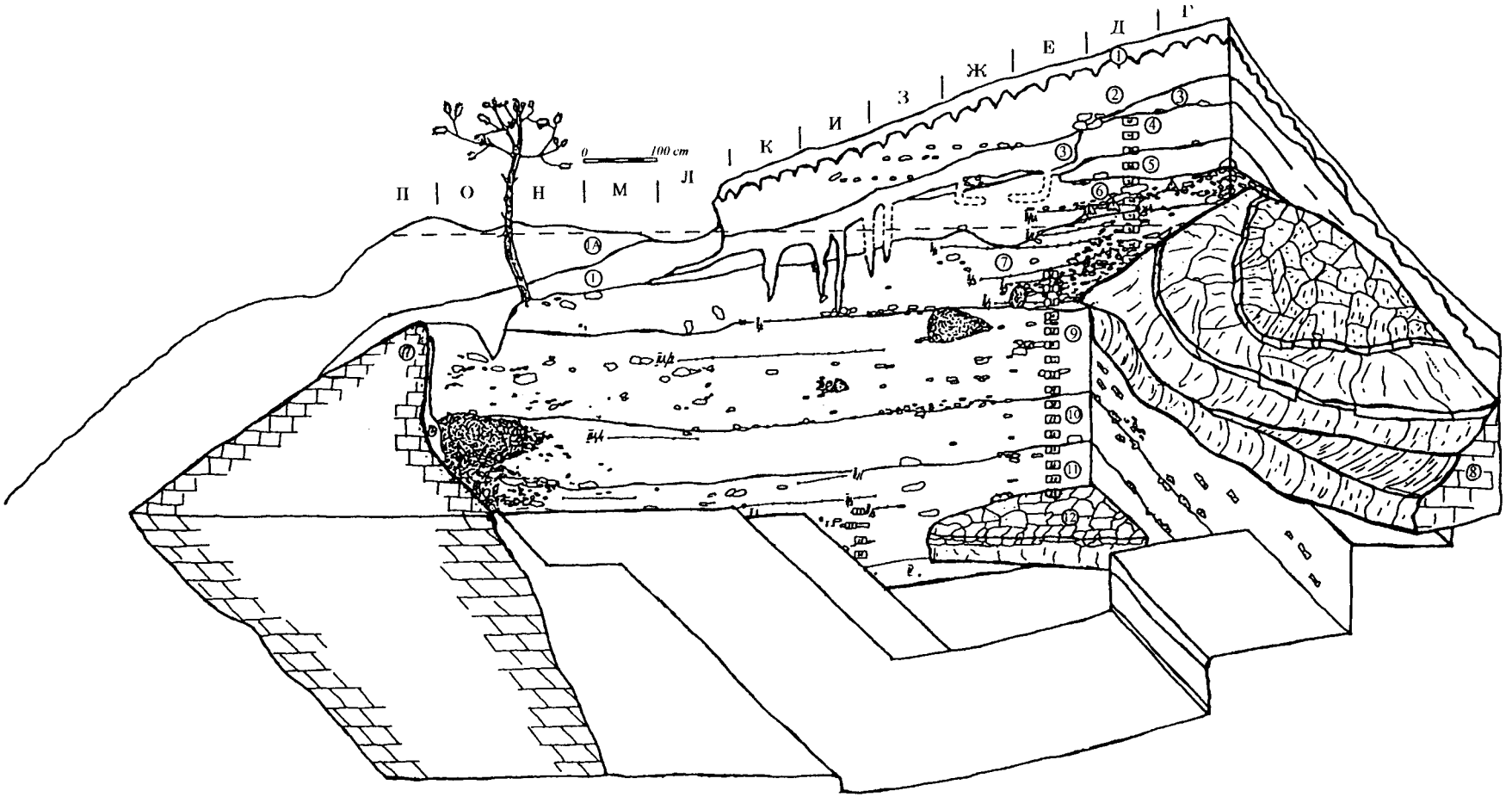

Fig. 8-2—Kabazi II: the lower excavation area showing disposition of: *17*–limestone barrier; *8, 12*–blocks; *1-7, 9-11*–sediments.

the "upper" excavation area and Sondages 2 through 5 were exposed to a depth of about 1 m (fig. 8-1).

Now it appears that Kabazi II formed in the open, along the valley slope, and that the history of sediment accumulation can be summarized as follows:

(1) The site deposits are on a bench of limestone created by the erosion of the overlying clay-marl.

(2) A massive (about 10 m tall) slab of limestone fell onto this bench, creating a barrier that trapped colluvium and filled in behind the massive boulder.

(3) At least two more limestone blocks fell or rolled to the site as the colluvium aggraded. These blocks weathered in place, leaving large amounts of angular eboulis in the sediments enveloping them.

GEOLOGICAL SETTING AND STRATIGRAPHY (by C. R. FERRING)

Setting

Kabazi II is situated on the north valley wall of the Alma River, on the southern slope of Kabazi Mountain. This mountain is part of a line of cuestas of the "second" ridge of the western part of the Crimean Mountains. Kabazi II is located on the back-slope of the cuesta, upstream from the entrance of the river to the Black Sea Plain. The upper-most part of undisturbed deposits at Kabazi II is about 33 m below the limestone cliffs and 90 m above the present river (fig. 8-3a). The north valley wall is of exposed Eocene limestone, chalk, and marl. The cuesta ridge is formed by the thick resistant second nummulites limestone (Ea), which is first underlain by softer limestone (Eb), and then by a thick, 20-25 m bed of marine clay-marl (Ec) that rests on a hard limestone (Ee). The lower two-thirds of the mountain slope exposes thickly bedded chalk.

Alluvial deposits occur mainly along the north side of the valley, as a series of at least three terraces. The highest of these is about 20 m below the upper deposits at Kabazi II, and is 60 m above the Alma River channel (fig. 8-3b).

Kabazi II formed in the open on the valley slope. Its geologic history is a consequence of local rock-fall events, up-slope weathering, and colluvial processes. The site deposits are on a bench on limestone (Ed) created by erosion of the overlying clay-marl (Ec). A massive (>10 m tall) slab of limestone fell to this bench, creating a barrier which trapped colluvium. Colluvial sediments (Table 8-1) episodically filled in behind the massive slab, incorporating the stratified archeological horizons. At least two large (>2 m) limestone blocks fell or rolled to the site as colluvium aggraded; these blocks weathered in place, leaving large amounts of angular eboulis in the sediments enveloping them.

Stratigraphy

An 8 meter section at the site was studied and sampled in 1994. This is the upper part of the 13 m of sediments that were exposed in the deep sondage, located just north of the main excavation block. The studied section extends from Stratum 1, at the surface, to the upper part of Stratum 13, exposed at the base of the main excavation block (fig. 8-4). The stratigraphic nomenclature of the excavator, V. P. Chabai, has been retained, since it recognized the major lithologic-pedogenic changes in the section. Initially, it should be pointed out that Stratum 12, as defined, is actually a large limestone boulder, while Stratum 8 includes a boulder and the eboulis-rich deposits around the boulder.

Field descriptions (Table 8-1) have been augmented by initial laboratory analyses of texture and carbonate content (Table 8-2; fig. 8-5). The upper part of the southeast wall (fig.

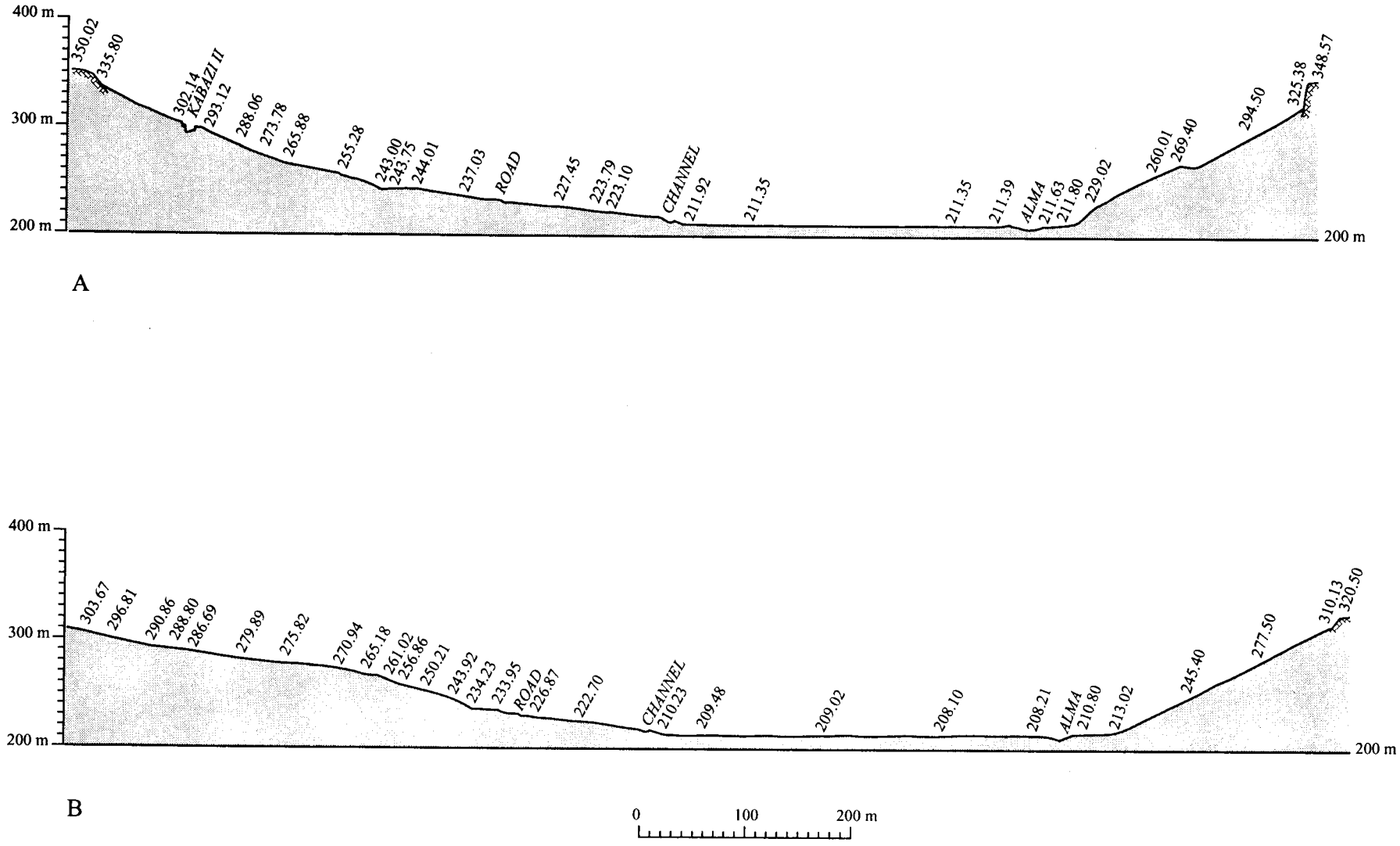

Fig. 8-3—Cross-sections of the Alma River Valley: *A*–cross-section through Kabazi II; *B*–cross-section through cemetary (third terrace).

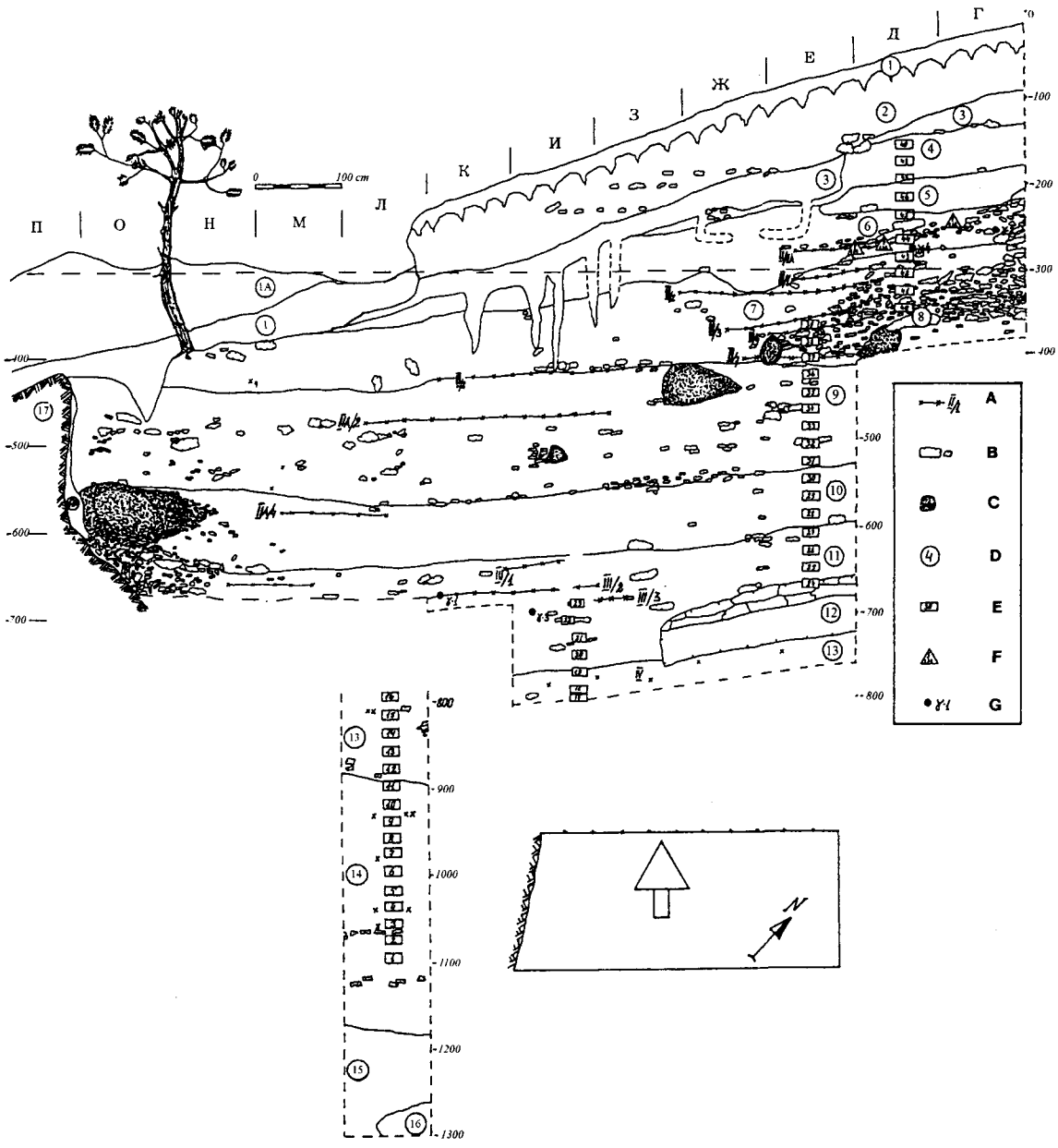

Fig. 8-4—Kabazi II: section along the line of squares "9": *A*–archeological levels; *B*–limestone blocks; *C*–large animal tunnels; *D*–numbers of Strata; *E*–numbers of pollen samples; *F*–ESR samples; *G*–ESR dosimeters.

8-6) was described (Strata 1-7). The north wall of the main excavation block was described in two segments; the "north" segment, located in the eastern part of the wall, and which included Strata 1 through 8. The "northwest" segment was described in the western part of the wall and included Strata 7 through 13 (fig. 8-4).

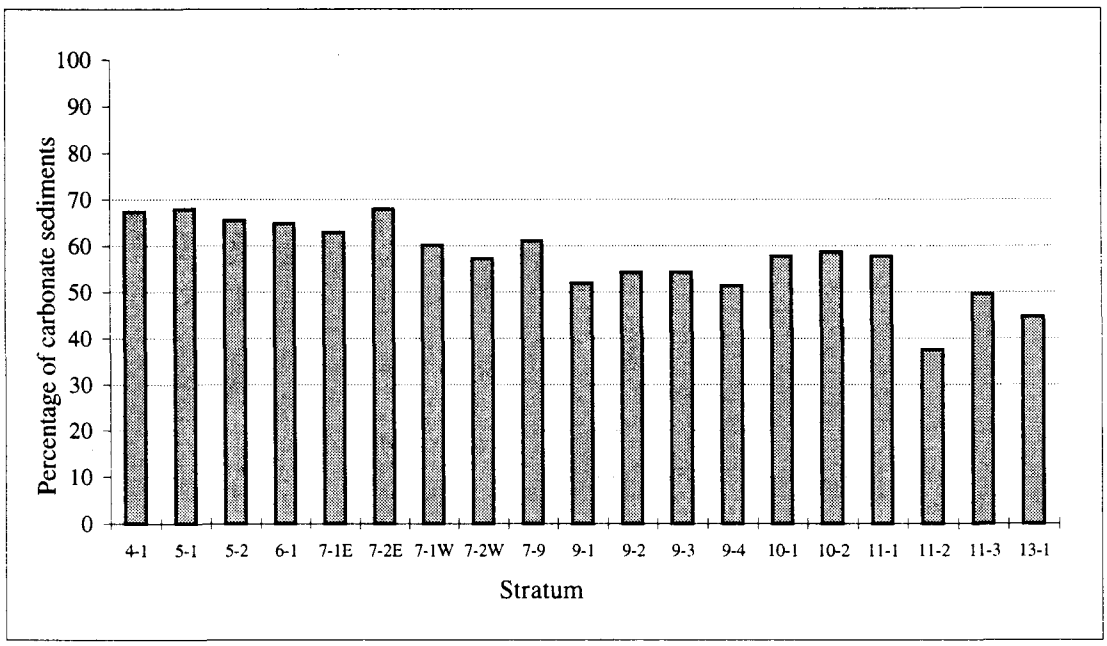

Fig. 8-5—Kabazi II: graph of carbonate sediments.

Particle size and carbonate analyses on the samples from Strata 4 through 13 were conducted at the Center for Environmental Archeology, University of North Texas-Denton, USA. These data pertain only to the <4 mm fractions of the sediments, since it was not possible to transport adequate samples for the larger clast fractions. The sedimentary matrix is the <2 mm fraction, including clay, silt, and sand fractions: these data are presented in Table 8-2, with granule frequencies reported separately. Figure 8-7 shows the particle size frequencies (weight percentages).

Strata 1 and 2 appear to be young colluvial sediments; a modern soil formed in these materials. An erosional break separates Stratum 3 from Stratum 2.

Prolonged weathering of Strata 3 through 6/7 sediments is indicated by pedogenic features in these parent materials. Tongues of carbonate-rich material from Stratum 3 down into Stratum 7 are suggestive of weak cryogenic processes. Pedogenic carbonate filaments and concretions are evidence of dissolution/precipitation in the same soil.

A major erosional disconformity separates Strata 6 and 7. The north and south profiles in the block reveal that Strata 5 and 6 were eroded away; related to this erosion is the very irregular contact between Strata 3/4 and 7 in the southern block wall, compared to the wavy but abrupt contact in the north wall. Likewise, the contact between Strata 7 and 9 is lower and much more irregular in the south wall than in the north wall. Between the north and northwest segments of the profile, marked increase in clay content is evident within Stratum 7 (Table 8-2). These observations indicate that surface erosion in the main block area was towards the southern margin of the large boulder that trapped the sediments, as was recognized by the excavator.

Excepting the effects of the large limestone blocks in Strata 11/13 and 7/8, Strata 11 through 7 represent continuous, rapid colluvial deposition, supplied by apparently rapid

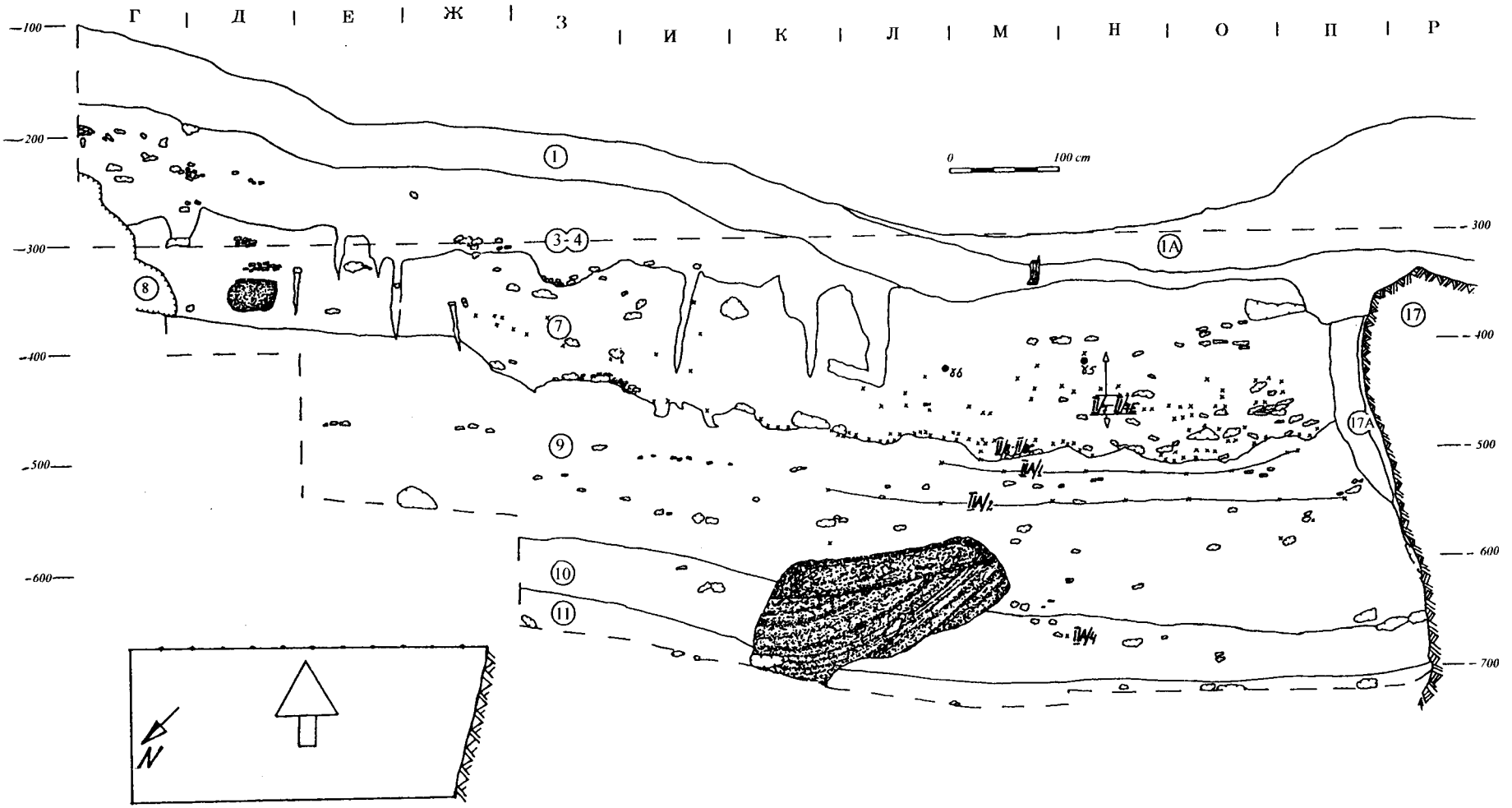

Fig. 8-6—Kabazi II: section along the line of squares "3." See key, figure 8-4.

TABLE 8-1
Kabazi II, Stratigraphic Description (all colors Munsell moist)

Stratum	Description
1a	(Soil A1 horizon): 10YR2/2 granular silt; strong fine sub-angular blocky structure; angular to sub-angular limestone granules and pebbles; few platy pebbles; abundant fine roots; common snails; clear smooth boundary.
1b	(Soil A2 horizon): 10YR3/2 granular silt; strong fine angular and sub-angular blocky structure; poorly sorted angular limestone granules and pebbles; common fine roots; few snails; clear irregular boundary.
2a	(Soil AC horizon): 10YR4/2 granular silt to silt loam; angular limestone granules and pebbles; smaller clasts sub-rounded; carbonate crusts on larger clasts; many fine roots; few snails; gradual smooth boundary.
2b	(Soil C1 horizon): 10YR4/3 granular silt; strong granular structure; poorly sorted rounded limestone granules and few pebbles; 1 mm to 2 mm carbonate crusts on clast bases; few fine woody roots; diffuse smooth boundary.
2c	(Soil C2 horizon): 10YR5/3 granular silt loam; strong granular structure; poorly sorted granule to cobble limestone clasts, sub-angular to angular; carbonate crusts coat larger clasts; erosional boundary in whole section, gradual in profile.
3	(Soil Ck horizon): 10YR6/3 granular silt; few limestone granules and pebbles, sub-angular to sub-rounded with carbonate coats; common carbonate filaments, soft carbonate masses and pores with carbonate linings; clear erosional boundary.
4	(Soil Ck2 horizon): 10YR6/4 granular silt, with increase in carbonate masses and filaments; clear boundary; unit is truncated ca. 2.3 meters from east wall.
5	(Unit inaccessible for description.)
6	10YR7/3 matrix; sub-angular to sub-rounded boulder to cobble eboulis clasts, common at base, on erosional surface, fining up through 6 and probably through 3; eboulis abundant in northern part of block near huge block of limestone fall; common carbonate filaments and carbonate pore linings; base of unit is disconformity with clast-filled, southwest trending shallow gullies.
7-8	10YR6/3 matrix; common granule to cobble clasts; smaller ones sub-rounded, larger ones angular; clasts abundant near large block as above; abundant artifacts and bones in CL II/1-II/7; clear horizontal contact with stratum 9 corresponds with CL II/8.
9	10YR7/4 matrix at top, 8.76YR7/4 at base; unit fines upward from clast supported granule to small pebble zones at base to zones with many fewer large clasts at top; few angular boulders through unit; smaller clasts rounded, larger ones angular; few thin beds of matrix-free granules; matrix is loamy sand-silty sand; no secondary carbonates; gradual boundary with 10.
10	8.75YR7/4 matrix; coarse, usually clast-supported unit; more boulder sized clasts than in 9; larger clasts in beds that dip gently to southwest; most clasts are angular eboulis; granule dominated lenses between coarser stone layers; matrix is silty sand; gradual contact with 11.
11	10YR7/3 matrix at top, 10YR6.5/4 at base; poorly sorted unit, mainly clast-supported; angular pebble eboulis common, few larger angular boulders to 30 cm; more silty matrix than 10; unit is harder than 10, and has few carbonate filaments and thin clast coatings in lower part; gradual contact with 13.
12	Huge limestone block in eastern part of excavation area.
13	10YR5.5/3 granular silt loam-loam; rare larger clast; common carbonate filaments, pore linings and few fine soft concretions; few pressure coats around clasts; base not exposed.

generation of eboulis up-slope. Rapid deposition, in this case, needs to be qualified by the quite small volume of sediment needed to fill the area behind the huge limestone barrier that trapped these sediments. The U-Series ages from the site support the case for rapid sedimentation. If the dates from cultural Levels III/2 and II/2 are assumed to be correct, they

TABLE 8-2
Kabazi II, Granulometry

Stratum	*Clay*	*Silt*	*Sand*	*>2mm*	*>4mm*	*CaCO3*
1				21.3	10.6	
2				25.6	22.6	
3-4				23.5	8.3	
4-1	5.71	28.82	65.47			67.4
5-1	4.74	27.8	67.47			67.9
5-2	5	30.5	64.5			65.5
6-1	4.04	29.38	66.59			64.9
7-1E	3.2	30.57	66.23			63
7-2E	1.45	33.65	64.9			67.9
7-1W	10.43	25.67	63.91	24.1	13	60.1
7-2W	10.51	27.4	62.09	27.5	16.4	57.2
7-9	6.7	29.71	63.59	26.7	18.7	61.1
9-1	5.6	26.6	67.8	30.7	22.9	51.9
9-2	4.18	28.53	67.29	26.6	15.6	54.3
9-3	8.23	29.3	62.47	26.4	20.2	54.3
9-4	11.84	26.22	61.94	33.6	21.6	51.4
10-1	1.05	29.6	69.35	31.1	27.8	57.7
10-2	2.55	28.97	68.48	27.5	26.2	58.7
11-1	11.62	25.81	62.57	28.3	21.7	57.7
11-2	1.45	39.6	58.96	26.2	13.6	37.4
11-3	14.15	24.76	61.09	23.2	22.4	49.5
13-1	18.62	27.31	54.07	24.8	19	44.6

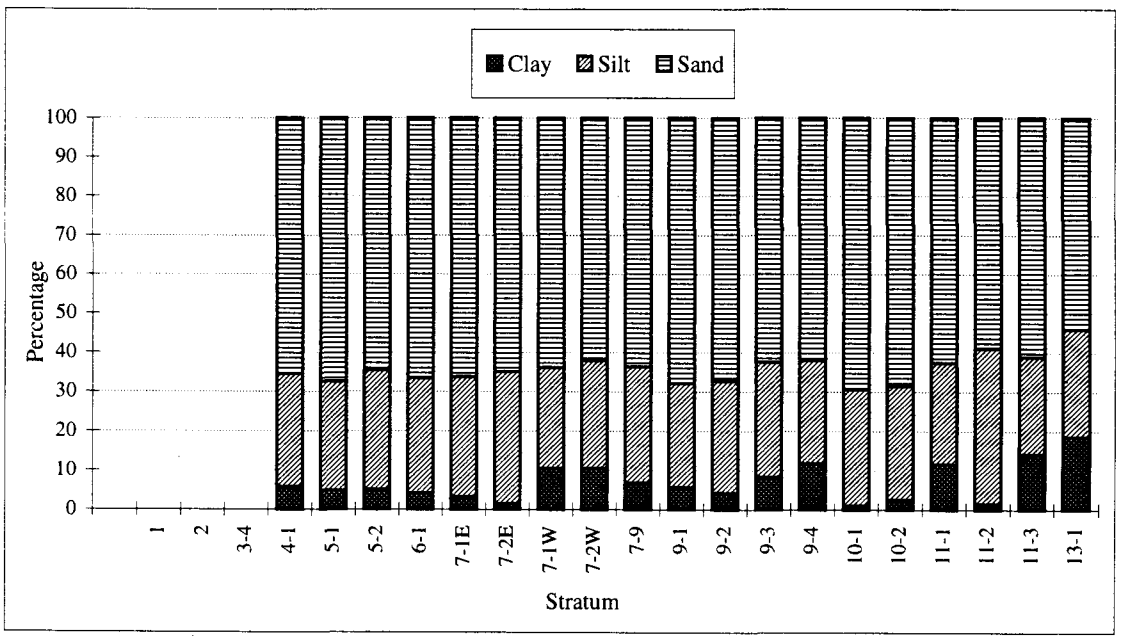

Fig. 8-7—Kabazi II: particle size fragments.

indicate a sedimentation rate for the 3.3 m of deposits of 0.08 cm/year. This rate would be sufficiently high to inhibit, or even to preclude, anything but very weak pedogenesis (Ferring 1986). The rounding of the small clasts in these strata may signify weak, pedogenically related dissolution of carbonate clasts, but these smaller clasts may have been rounded prior to deposition in the site area. Nonetheless, larger angular clasts are present throughout Strata 11 through 7, suggesting persistent cold winters. More frequent occupation of the site is indicated in the upper part of this section (upper Stratum 9 through Stratum 7), although errors in estimating rates of sedimentation are important limits on accurately defining occupational intensity here. Bone taphonomic analysis should assist in evaluating the U-Series dates by providing independent qualitative control on rates of sedimentation/burial.

The sediments of Stratum 13, containing the deepest sediments exposed in this excavation, are quite different from all of the younger deposits in the section. The loamy texture (including the highest clay content in the section), pedogenic features, and very low frequency of larger eboulis suggest greater slope stability above the site, slower deposition on the site, and warmer/moister conditions than those represented in the younger sediments. Pedogenic features in the lower part of Stratum 11 (in contact with Stratum 13) suggest that the slower deposition and increased weathering continued during the transition to rapid deposition of the overlying strata. Carbonate leaching from the middle of Stratum 11 (Table 8-2), as well as the presence of pedogenic clay in lower Stratum 11 and upper Stratum 13, suggest that the large boulder (Stratum 12) was either buried by sediments before weathering took place, or that the weathering occurred under moist and temperate conditions, leading to dissolution rather than to spalling. (By contrast, the boulder in Stratum 8 either arrived in a weathered condition or it spalled under different climatic conditions than those associated with the boulder of Stratum 12.)

In sum, Kabazi II is situated in a unique topographic setting, created through differential erosion of the Eocene bedrock and the fall of a huge boulder that trapped colluvial sediment and provided living surfaces for Middle Paleolithic occupants over a considerable span of late Pleistocene time. Because of its position well down-slope from the source of the eboulis sediments, comparisons of these Kabazi II colluvial deposits with those from normal rockshelters, such as Kabazi V, will be hampered; this is because of potential and probable sorting and alteration of sediment derived from limestone weathering up-slope. Also, microtopographic effects on transportation and deposition can add considerable noise to the sedimentary record of the site. Over short distances some strata (e.g., 7) show changes in texture (fining down slope), or were eroded away altogether. Patterns of rapid eboulis deposition (Strata 7 through 11), contrasting with fine sediments and weathering (Strata 13 and lower Strata 11) appear to have some paleoclimatic basis, as opposed to merely resulting from microtopographic effects. This can be partly or wholly confirmed by the exposure of larger areas to assess spatial aspects of local sedimentation.

Nonetheless, the secluded position behind the massive boulder not only trapped sediment, but, as revealed by the excavations, attracted Middle Paleolithic inhabitants. Rather rapid deposition, interrupted by erosional episodes, led to excellent stratigraphic separation of living surfaces and good bone preservation. From this vantage point, the unique setting of Kabazi II may encumber geologic correlation with other sites, but it fostered preservation of an excellent archeological record that can easily be compared to those of other well-preserved sites.

EXCAVATION METHODOLOGY

The main problem for the excavations at Kabazi II was how to subdivide the lithologically monotonous strata containing the faunal remains and flint artifacts into archeological levels.

Another difficult problem was choosing an appropriate system to record the positions of fauna and artifacts in those archeological levels.

The first week of Kabazi II excavations (Sondage 1, of the 1986 field season) clearly demonstrated that it was impossible to use geological criteria as the sole method of stratigraphic control. In Sondage 1, the thickness of Stratum 7 was about 1.2 m. Also, it was noted that the density of artifact and faunal remains in the upper, middle, and lower parts of Stratum 7 were very different, but that the sediments were homogeneous. That is, in Stratum 7, several different levels of artifacts and fauna were recognized, interspersed by several levels of sterile deposits (Kolosov, Stepanchuk, and Chabai 1988). Thus, it became clear that during the sedimentation of Stratum 7, the site was occupied a number of different times. Distinguishing these occupational levels in lithologically monotonous deposits required different methods.

The "Carpet Method"

This method is useful for the excavation of intensively occupied surfaces (e.g., fig. 8-8*B, C*). These surfaces, with extremely large numbers of bones closely packed together, create a "carpet" of bones. Since, in nature, truly horizontal surfaces exist only on water, these occupational "carpets" follow the angle of inclination of the stratum enveloping them.

The first cleaning of the surfaces usually gives the whole picture of spatial distribution of occupational levels. The excavation procedure for that kind of occupation includes the cleaning of all objects in each 1-m^2 unit, the mapping of each object's position horizontally, with no fewer than ten artifact or bone elevations taken per square meter. Only then are the bones and artifacts removed from the surface and bagged. If the thickness of the occupational level is more than the thickness of the average bone (about 3 to 5 cm), the excavations are carried out in 3 to 5 cm levels. Each excavation level is mapped as described above. For instance, the most intensively occupied level, II/8, was excavated, mapped, and labeled as II/7F, II/8, II/8A, II/8B. The somewhat less intensively occupied Level IIA/2 was divided into IIA/2 and IIA/2A.

The "Inclination Angle Method"

This is the only useful method for the excavation of living surfaces, such as at Kabazi II, which were not intensively occupied. It is also good for sterile levels. After the excavation of any kind of level, the surface of excavation area is mapped by following its angle of inclination, which is the same as the slope of the lithological stratum enveloping it. The excavation of sterile levels is executed by the angle of inclination. Taking into account that bones and artifacts on an occupational surface often do not consist of a "carpet" of finds, it is very important in that kind of excavation to follow the angle of lithological inclination. Besides the numerous elevation readings per square meter, the different-sized limestone blocks abundant in the deposits are of great importance, too. The limestone blocks, falling on an excavation area, appear to be reliable markers of ancient surfaces. For instance, if closely clustered artifacts or bones, on the one hand, and limestone blocks, on the other hand, are at the same or about the same elevations, they are recognized as belonging to a single ancient surface. The excavation of this kind of surface is carried out in 3 to 5 cm-thick levels, as well.

Documentation Procedures

All objects exposed on an excavation area, including limestone blocks more than 5 cm long, were mapped at a scale of 10:1. No fewer than 10 elevations were taken in each 1-m2 area, since a 1 m2 grid has been adopted for Kabazi II. All faunal remains and limestone blocks were mapped reflecting their actual shape, in the adopted scale. Flint artifacts were

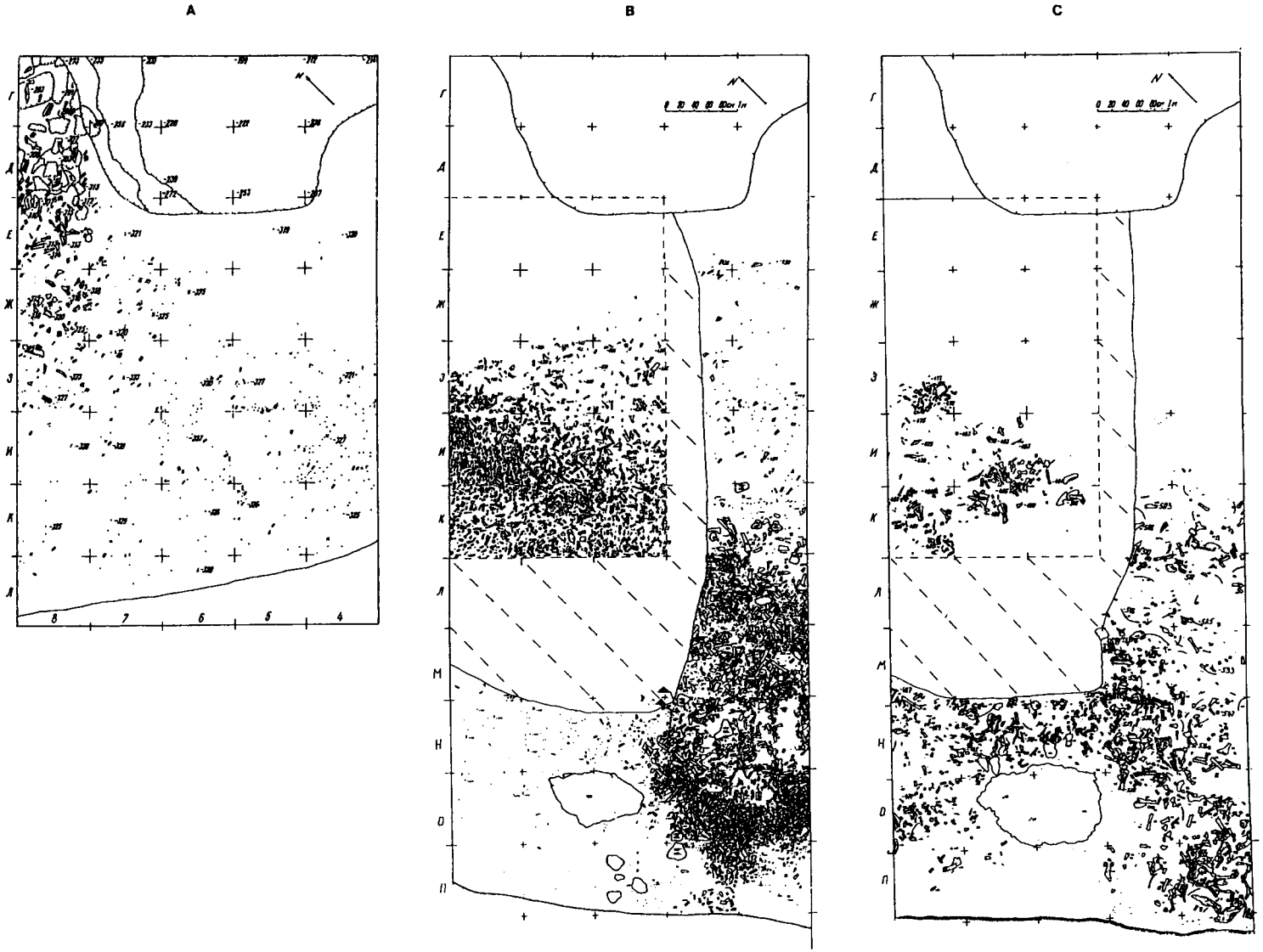

Fig. 8-8—Kabazi II: Horizontal plans showing the patterns of faunal and artifact distributions. The dotted lines show the areas destroyed by the local "amateurs." *A*–Level II/2; *B*–Level II/8; *C*–Level IIA/2.

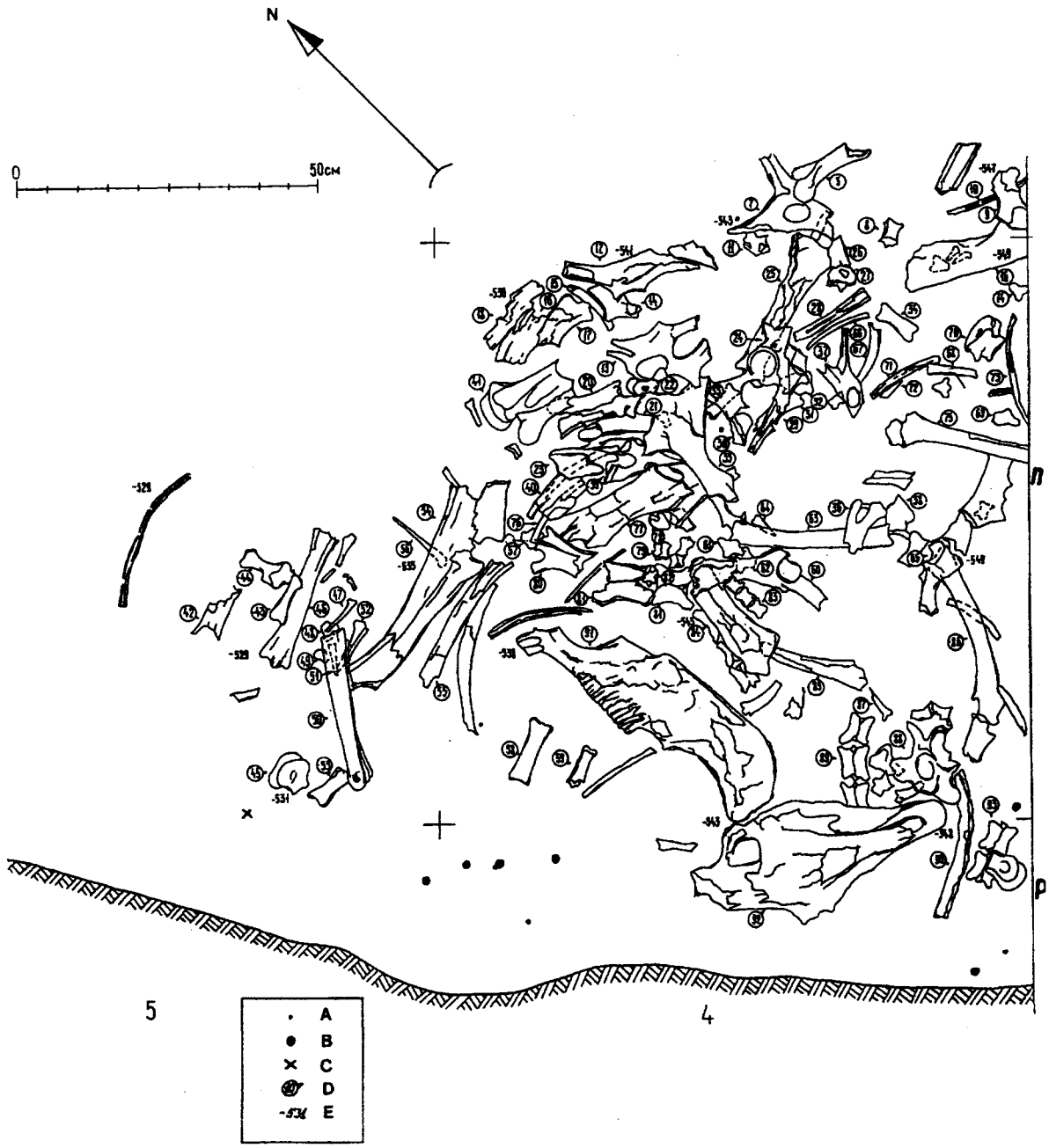

Fig. 8-9—Kabazi II, Level IIA/2: cluster of bones. *A*-chips; *B*-flakes; *C*-blades; *D*-bones; *E*-elevations.

mapped in conventional signs, by artifact class or tool type. For the bone clusters, separate maps at a scale of 5:1 were drawn with sequential numbering of each bone by 1-m2 area (fig. 8-9). In addition, the artifacts from each square of each level were labeled by unit, level, square, and elevation.

The sediments around the main clusters of bones and/or artifacts were sieved, using 1.5 mm screen, in order to recover the smallest fragments and chips. Also, selected squares were screened, in order to recover snails and/or microfauna.

ARCHEOLOGICAL SEQUENCE

The archeological sequence of Kabazi II consists of five main archeological units in which are found 21 occupational levels and 4 horizons with archeological material. In addition, there are 7 more separate horizons where some in situ artifacts and faunal remains were recognized. The archeological units are designated by Roman numerals and the levels are numbered consecutively in Arabic numerals within each unit, with subdivisions indicated by uppercase Latin letters. Horizons, which tend to be ephemeral in nature, are simply indicated by their elevation.

Archeological Unit I was discovered in derived deposits of Strata 2 through 4 (fig. 8-4). Unit I was subdivided into four archeological horizons, in accordance with the stratigraphic sequence. The first and second horizons of that unit are in Stratum 2, the third horizon is in Stratum 4. Archeological material from Stratum 3 was distinguished as the "carbonate" horizon of Unit I. Neither faunal remains, nor charcoal were found in Unit I. A few bones found in Horizon 3 of Unit I could be intrusive from the lower Stratum 5. Usually, flint artifacts of Unit I are patinated and exhibit natural breakage along their edges. Without doubt, the whole Unit 1 artifact assemblage was moved onto the excavation area by colluviation from farther up the slope, along with the sediments of Strata 1 through 4, which enveloped that unit (Chabai and Zhuk 1994).

Archeological Horizon "-195" consists of a very few artifacts and bones which were uncovered in Stratum 5 (fig. 8-4). This horizon, "-195," as well as Stratum 5, covered less than 1.5 m^2 of the excavated area. Thus, it is difficult to determine the origin of both the archeological horizon and geological stratum. Considering the unknown origin of sediments, Horizon "-195" was identified as a separate archeological occurrence.

Archeological Unit II consists of 14 occupational surfaces. The uppermost, Level II/1A was defined in Stratum 6. The other 13 occupational surfaces, from Levels II/1 through II/8C, were in Stratum 7 (figs. 8-4, 8-6). Level II/8C is on the contact between Strata 7 and Strata 9 (fig. 8-6). Usually, the thickness of each of these levels was limited to the maximum thickness of the largest horizontally positioned artifact or bone. An exception is found in some areas of Level II/8, and its analog of the 1994 field season, Level II/7F8, which are filled with numerous faunal fragments. Even in this case, the thickness of Levels II/8-II/7F8 is less than 15 cm in any one square. At the same time, the usual thickness of the rest of the levels was about 3 to 8 cm in any one square. All of the levels of Unit II are separated by sterile deposits. The thickness of the sterile deposits separating the occupational surfaces is not very different; their usual thickness ranges from about 8 cm to 15 cm.

Artifacts and faunal remains in the levels of Unit II were horizontally deposited, but are differently distributed on their surfaces. Except for those artifacts from Level II/1A, the flints of other levels exhibit both excellent edge preservation and an absence of patina. The fauna preservation is good but not fine; usually, the bone surfaces are significantly weathered.

According to the horizontal distribution of artifacts and faunal remains, the levels of Unit II have been subdivided into two patterns. The first includes Levels II/1A, II/1, II/2, II/3, II/4, II/5, II/6, II/7. The main concentrations of fauna and flints in these levels are distributed

across the northern part of excavation area (fig. 8-8*A*). Usually, the levels of the first pattern show a clear border around artifact clusters toward the south. The lower part of the Unit II levels shows a quite different pattern of artifact distribution. Levels II/7AB, II/7C, II/7D, II/7E, II/7F8-II/8, II/8C are distributed across the southern part of the excavation area (fig. 8-8*B*). Also, the second pattern exhibits at least two clear borders of fauna and artifact spread to the north: straight in the middle of excavation area and near the vertical slab of limestone. The time of the shift from one distribution pattern to the other correlates with the appearance of the limestone block (Stratum 8) in the excavated area (figs. 8-2, 8-6); that is, before the collapse of that block, the second pattern of artifact and fauna distribution pertained. So, the disposition of large limestone blocks on the site played a significant role in the spatial organization of the occupations. Each of the occupations covered an area about 20 to 30 m^2. Only Levels II/1A and II/1 were excavated over an area of about 12 to 16 m^2, because the occupational surfaces of these levels apparently extend to the north, beyond the excavated area.

No fireplaces, charcoal, or burned bone concentrations were defined. Only occasionally were small fragments of burned bone, as well as tiny pieces of burnt flints, recovered.

Archeological Unit IIA was found in Strata 9 and 10 (fig. 8-4). Unit IIA is subdivided into eight levels: IIA/1, IIA/2 (Level II/9 of the 1987 excavations), IIA/2-3, IIA/3, IIA/3A, IIA/3B, IIA/4, IIA/4B. During the excavations of the 1986-1988 field seasons, only parts of Levels IIA/2 and IIA/4 were found in the excavated area. As a result, during the 1986-1988 field seasons, it was noticed that Level IIA/2 was separated by about 0.5 m of sterile sediments from the uppermost Level II/8, as well as by about 1 m of sterile deposits from the lower Level IIA/4. During the 1993-1996 excavations, several new levels were exposed.

Level IIA/1 was found in the upper part of Stratum 9 and was separated by about 10-15 cm of sterile deposits from the uppermost Level II/8, and by the same thickness of sterile deposits from Level IIA/2 below. As already reported, below Level IIA/2 there was about 1 m of sterile deposits. In the southern part of excavation area, during 1995 field season, four more levels were found (IIA/2-3, IIA/3, IIA/3A, IIA/3B) which fell stratigraphically below the Level IIA/2 occupational surface. At the same time, all levels differ very much in several ways. Levels IIA/1, IIA/2, IIA/4 are composed of surfaces mainly covered by bones and only some artifacts. These surfaces include relatively horizontally disposed and differently oriented artifacts. The thickness of each of these levels is about 5-10 cm. The pattern of artifact distribution of Levels IIA/1, IIA/2, IIA/4 is close to the southern pattern seen in Unit II (fig. 8-8*C*). Like the levels of Unit II, these occupational surfaces also lack charcoal and/or burnt bone concentrations. The bone surface and artifact edge conditions are excellent. The post-depositional damage is minimal, if it exists at all.

The artifact and faunal remains in Levels IIA/2-3, IIA/3, IIA/3A, IIA/3B, and IIA/4B exhibit no vertical or horizontal concentrations. The vertical spread of bones and artifacts fluctuate about 15-20 cm in each level. The preservation of bone surfaces and flint edges is comparable to that described for the upper levels. The number of bones from these levels is very limited and is not comparable to the density of faunal remains on true occupational surfaces. For instance, one square of Level IIA/4 contains from 80 to 100 bone fragments. The same is true for Levels IIA/1 and IIA/2. A quite different picture is seen in Levels IIA/2-3, IIA/3, IIA/3B, IIA/4B where the number of bones per square with a thickness of 15-20 cm is no more than 20 small fragments. The number of artifacts in these levels is about one-third fewer than in Levels IIA/1, IIA/2, IIA/4. At the same time, it must be noted that there is no evidence of post-depositional transport of artifacts and fauna in Levels IIA/2-3, IIA/3, IIA/3B, and IIA/4B. Thus, during the excavations, Levels IIA/2-3, IIA/3, IIA/3B, and IIA/4B were considered "sterile," while Levels IIA/1, IIA/2, IIA/4 were considered "living floors." As

much as the differences between "sterile" and "living floor" are obvious, the origin of the "sterile" levels is completely unclear. Taking into account the absence of post-depositional artifact transportation in the "sterile levels," it is difficult to suggest a natural origin for the artifacts in these levels. Thus, in terms of human activity, two possible explanations can be proposed. The "sterile" levels are parts of peripheries of occupational surfaces somewhere beyond the excavated area. The other possibility is that the "sterile levels" reflect episodic visits of unclear purpose. Neither of these explanations can be tested at this time. Thus, a vague explanation for the origin of these "sterile" levels has been adopted; that is, "sterile" levels reflect indirect human activity.

Archeological Unit III occurred in the upper part of Stratum 11 (fig. 8-4). This unit is subdivided into four levels: III/1A, III/1, III/2, and III/3. Levels III/1A and III/1 are separated by no more than 10 cm of sterile deposits. At the same time, Levels III/1, III/2, and III/3 are separated from each other by no less than 20 cm of sterile deposits. The other attributes, including thickness of the levels, pattern of artifact distribution, and preservation of both artifacts and faunal remains are as described above for the "living floor" of Unit IIA.

Archeological Unit IV, with a thickness of about 15 cm, was found in the upper part of Stratum 13 (fig. 8-4). The vertical distribution of Unit IV artifacts is chaotic, or, in other words, numbers of flints are spread throughout the whole thickness of Unit IV and do not form any kind of cluster or clusters, or one or more horizontal surfaces. The finds of Unit IV consist only of flint artifacts. Some of the flints show post-depositional damage to their edges, as well as being patinated. At the same time, the deposits in which the unit lies are undoubtedly in situ. It must be noted that there is a complete absence of faunal material in the undisturbed deposits of Unit IV.

Six more archeological horizons were distinguished in the 2 m^2 sondage in Stratum 14, at depths of 930; 980; 1037–1050; 1080; 1100; and 1135-1145 cm below datum (fig. 8-4). All of them contain flint artifacts and faunal remains in excellent preservation. Neither flint artifacts, nor faunal remains were found in Strata 15 and 16.

FAUNAL REMAINS

The fauna from the 1986-1988 excavations of Unit II was studied by N. G. Belan. The most representative species is *Equus hydruntinus* (Table 8-3). This Equid averages 80-90% of all fauna in each level. Moreover, each *E. hydruntinus* individual is represented by about 60 to 70 bones. Bones of other species are represented only by a few bones each.

TABLE 8-3

Kabazi-II, Units II & IIA: Fauna Remains from 1986-1988 Excavations[1]

	II/1		*II/2*		*II/3*		*II/4*		*II/5*		*II/6*		*II/8*		*IIA/2*		*Total*	
	NISP	*MNI*	*NISP*	*MNI*	*NISP*	*MNI*	*NISP*	*MNI*	*NISP*	*MNI*	*NISP*	*MNI*	*NISP*	*MNI*	*NISP*	*MNI*	*NISP*	*MNI*
Equus hydruntinus	756	3a[2], 4j[3]	362	5a, 1j	450	4a, 1j	309	5a	345	9a, 1j	382	4a, 1j	2565	28a, 2j	292	4a	5464	73a, 10j
Equus latipes	1	1											4	1			5	2
Bison priscus mediator	1	1			1	1							3	1a	5	3		
Saiga tatarica					1	1	1	1	2	1	1	1	1	1	1	1	7	5
Cervus elaphus									1	1			1	1			2	2
Carnivors ?													2	2			2	2
Lepus sp.													1	1			1	1
Marmota bobac									1	1	1	1					2	2
Rodent ?									2	1			1	1	1	1	2	2
Unidentifiable	1112		425		554		212		386		344		2765		253		6051	

[1] identifications by N. G. Belan.
[2] a - adult.
[3] j - juvenile.

The brief analysis of faunal material from Unit II led V. P. Chabai, A. E. Marks, and A. Yevtushenko (1995) to a conclusion about the pattern of faunal exploitation in Unit II. That pattern seemed to represent repeated ephemeral butchering episodes, linked to seasonal hunting. Taking into account the presence of young individuals, which appear in practically every level, it becomes clear that this season is likely to be the end of summer or beginning of autumn.

The faunal analysis of Units IIA and III are in process now, as are the faunal remains from Levels II/7-II/8C excavated in the 1993-1995 field seasons.

ARTIFACT DESCRIPTIONS: THE 1986-1988 FIELD SEASONS

The following section briefly summarizes the results of the first stage of excavations at Kabazi II, which took place during the 1986-1988 field seasons, and which provided the initial view of the stratigraphy and the superposition of assemblages at the site. Chapters 9 and 10 describe the results of excavations which took place under the current project and focus on Units II, IIA, and III.

Artifacts of Unit I

The flint assemblage of Unit I consists of 52 cores, 366 chips, 132 flakes, 32 blades, and 109 tools. Among the cores, parallel examples with single or two opposite platforms dominate, as do uni-directional and bi-directional types of dorsal scar patterns among the blanks. Neither Levallois nor radial cores are present, and Levallois blanks with centripetal dorsal scar pattern are absent, as well. The percentage of faceted platforms is moderate (IF = 43.8, IFs = 23.5). At the same time, blades represent about 20% of all blanks.

About 13% of the tool kit is represented by points. Among these, semi-crescent (fig. 8-10: *5*) and sub-triangular (fig. 8-10: *3,7*) dominate. Also, a single Levallois point was found (fig. 8-10: *6*). Scrapers are the most abundant class of tools; about 53% of the total number of retouched pieces. The most representative types of scrapers are simple straight (fig. 8-11: *6*) and simple convex. A less significant number is comprised of double (fig. 8-11: *2*) and transverse scrapers (figs. 8-11: *1,3-5*; 8-12: *2*). The latter usually exhibit different kinds of proximal thinning (figs. 8-11: *1,4,5*; 8-12: *2*). About one third of the scrapers are different types of convergent forms; sub-triangular (figs. 8-10: *1*; 8-12: *1*), sub-crescent (figs. 8-10: *2,4*; 8-12: *6*), sub-laurel (fig. 8-10: *8*), semi-rectangular (fig. 8-12: *4*), and sub-trapezoidal (fig. 8-12: *5*). The same shapes are common for the bifacial scrapers, all made in the plano-convex manner (fig. 8-12: *3*). These bifacial scrapers account for about 11% of the tool kit.

Taking into account the tool kit's typological structure, such as the presence of transverse scrapers with thinned bases, rectangular scrapers, unifacial and bifacial sub-triangular and sub-crescent scrapers, the flint industry was identified as Staroselian. The closest analogy to the Unit I assemblage was recognized in the material excavated by A. Formozov (1958) in the 1955-1956 excavations at Starosele (Chabai 1991; Yevtushenko 1995).

Artifacts of Unit II

Based on technological and stratigraphical peculiarities, the levels of Unit II were grouped into three complexes: (1) Levels II/8-II/9; (2) Levels II/5-II/7; (3) Levels II/1A-II/4. As a technological development is evident in the flint assemblages in Unit II (Chabai 1991; Chabai and Sitlivy 1994), the description will proceed from the lowest to the uppermost grouped levels.

The flint assemblage of the lower Levels II/8-II/9 consists of 48 cores, 444 flakes, 140 blades, 137 tools, and 1553 chips. About the half of all cores are bi-directional and uni-directional, often with supplementary platforms (fig. 8-13). Levallois (fig. 8-14: *1,2*) and

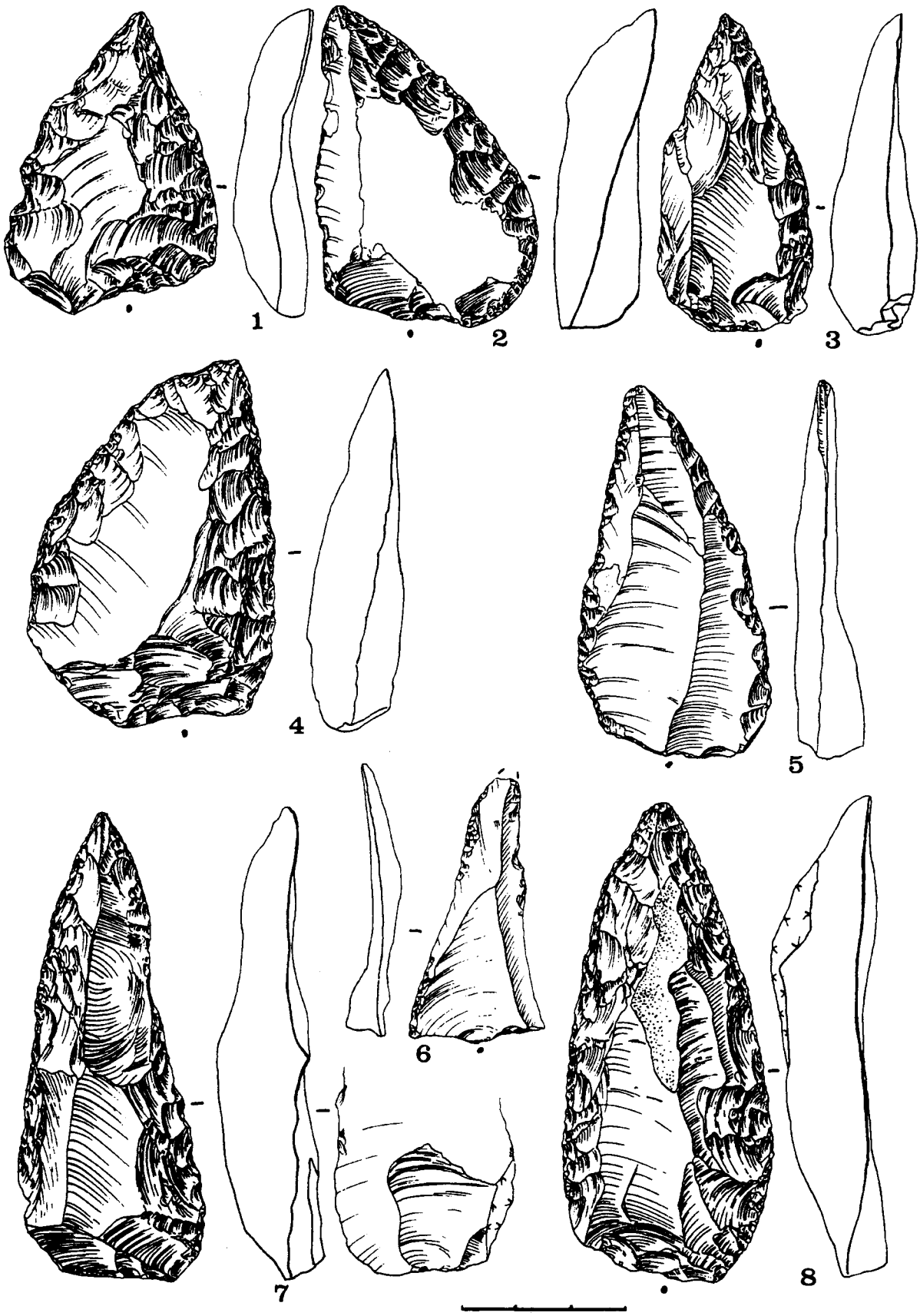

Fig. 8-10—Kabazi II, Unit I Tools: *1*–sub-triangular scraper; *2,4*–sub-crescent scrapers; *3,7*–sub-triangular points; *5*–semi-crescent point; *6*–Levallois point; *8*–sub-laurel scraper.

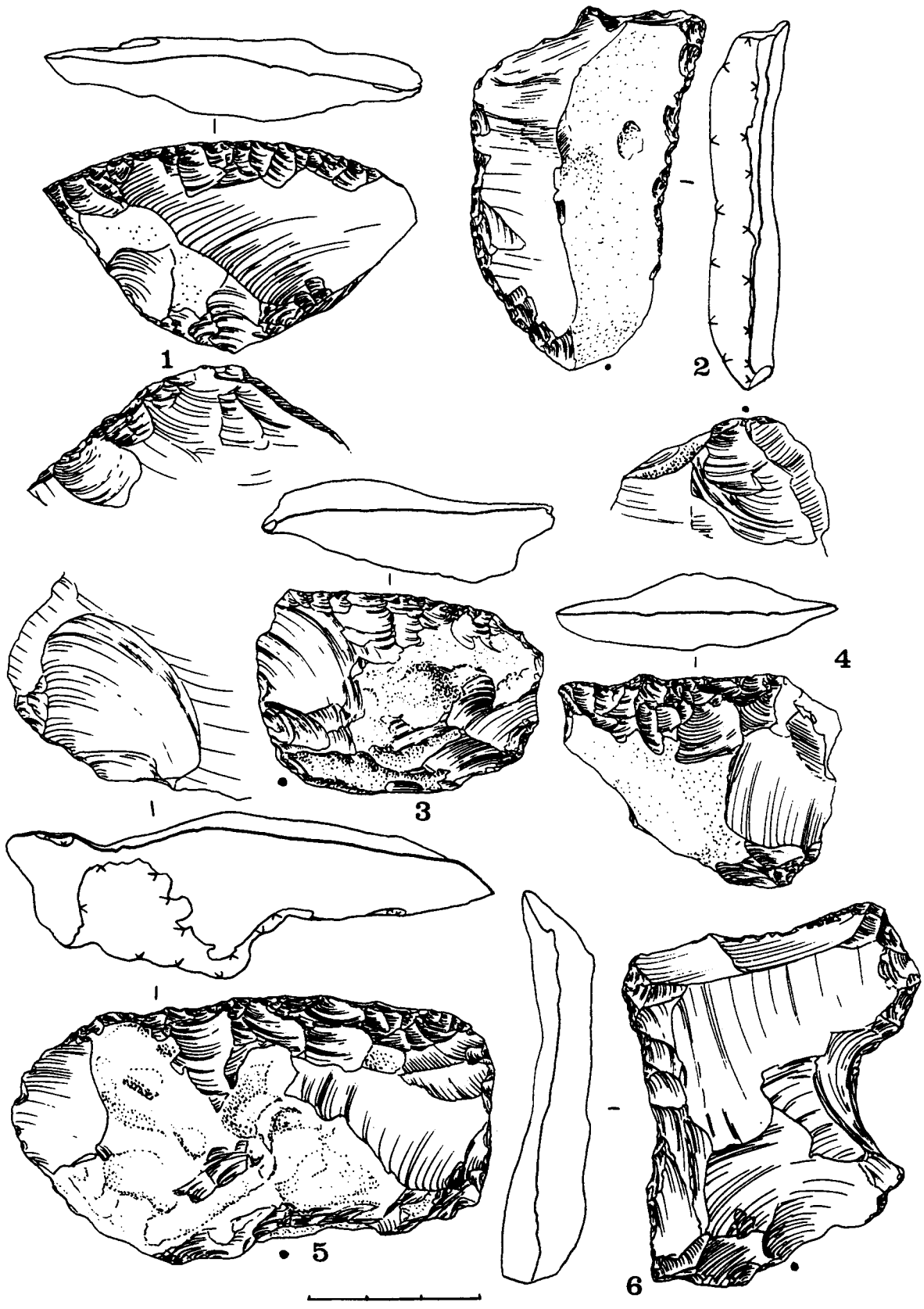

Fig. 8-11—Kabazi II, Unit I Scrapers: *1*–transverse-convex, thinned base; *2*–double straight-convex; *3*–transverse-straight; *4,5*–transverse-straight, thinned base; *6*–simple straight.

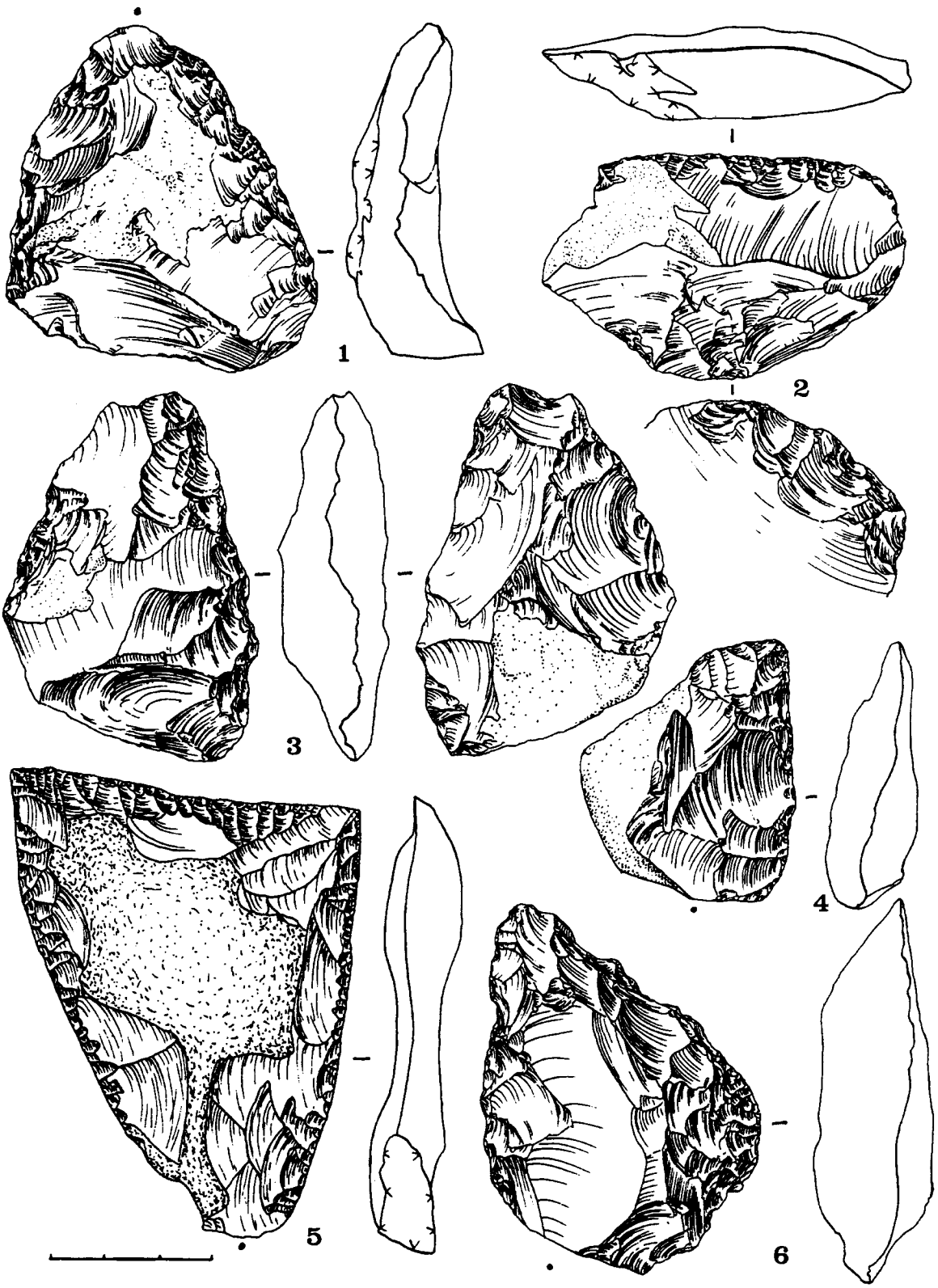

Fig. 8-12—Kabazi II, Unit I Scrapers: *1*–sub-triangular; *2*–transverse-straight, thinned base; *3*–bifacial; *4*–semi-rectangular; *5*–sub-trapezoidal; *6*–sub-crescent.

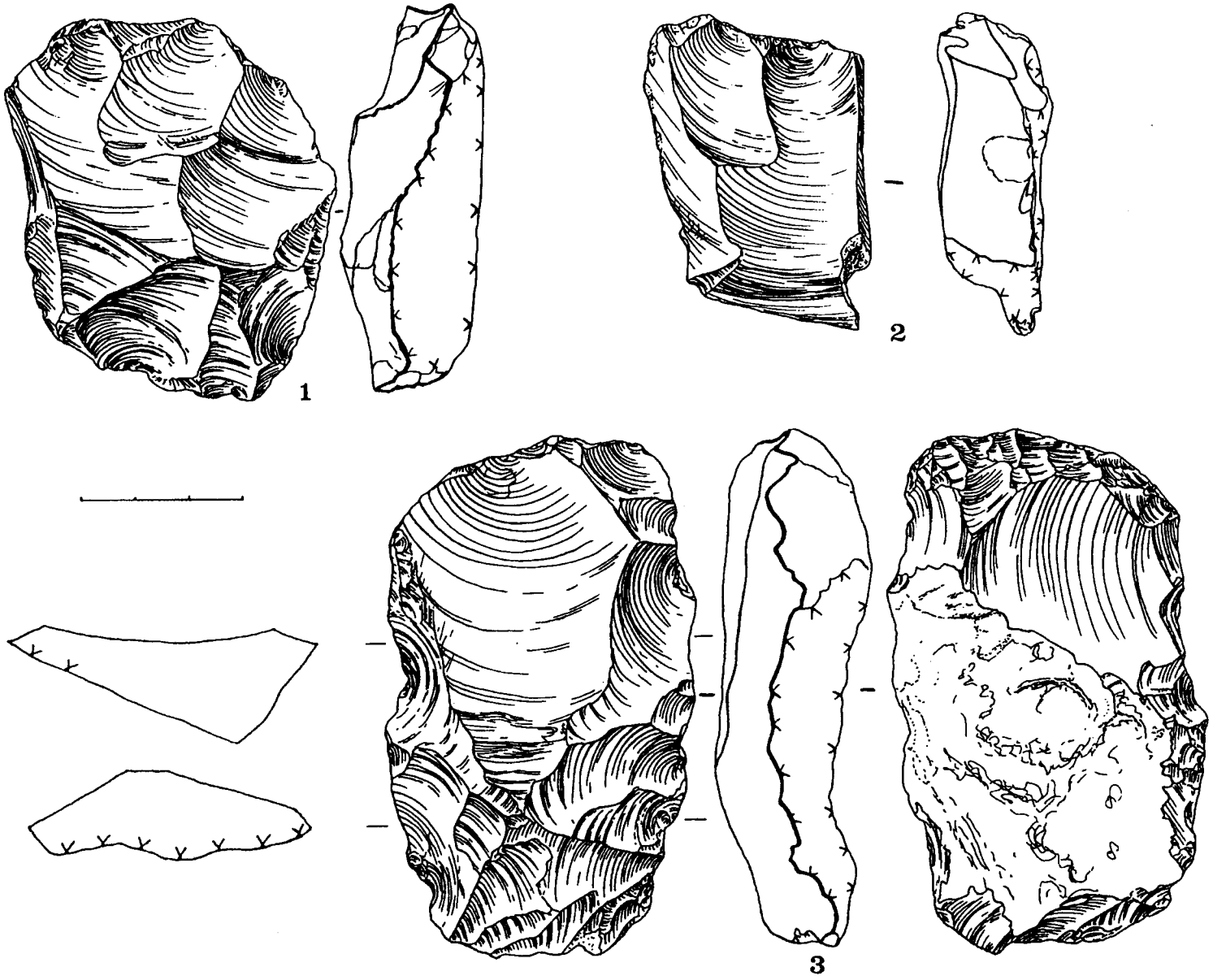

Fig. 8-13—Kabazi II, Unit II, Level II/8 Cores: *1,3*–bidirectional; *2*–unidirectional.

radial cores are not so numerous, but are present, too. The dorsal scar patterns of blanks correlated with core morphology, as well. Uni-directional and bi-directional scars dominate, uni-directional-crossed and bi-directional-crossed are also numerous. Levallois blanks (fig. 8-15: *1*) comprise about 5% of all blades and flakes. The percentage of faceted platforms (IF = 69.9, IFs = 47.6) is the highest among the Crimean Middle Paleolithic industries. Blades, with an index of 23.9, are common, too.

Mainly, the tool assemblage is represented by scrapers (about 60%); the main types are simple convex (fig. 8-15: *1*) and straight, amounting to more than a half of all scrapers. Double scrapers are half as numerous. The percentage of convergent scrapers is about 15% of all scrapers, about half of which are of semi/sub-crescent types. Generally, the scrapers are made on blades or elongated flakes, including Levallois, and have obverse scalar flat retouch.

Points account for about 20% of all tools. About one-half of all points are of semi-laurel shape (fig. 8-16: *5,8*). Other shapes are represented by single examples, including lateral (fig. 8-19: *2*), which will become important in the upper levels of Unit II. Mainly, the points have obverse scalar or flat retouch.

The denticulates have the same shapes as the majority of scrapers. The classes of notches, borers, etc., are represented by a single piece each.

The flint assemblage of Levels II/5-II/7 consists of 36 cores, 642 flakes, 315 blades, 1662 chips, and 160 tools. The cores are only bi-directional and uni-directional (fig. 8-17: *1*). No Levallois or radial cores were found. At the same time, a few Levallois blanks were recovered in the assemblages of Levels II/7 and II/6 (fig. 8-15: *2-5*). Not one Levallois blank was found in Level II/5. Uni-directional and bi-directional dorsal scar patterns are common, as are *débordante* blades (fig. 8-18: *2,6*). Also, the number of blades is significantly higher (Ilam = 33), while the percentage of faceted platforms is the same as in the underlying levels (IF = 67.3; IFs = 44.5).

Among the tools, the scrapers are most common (about 67%). The simple, single-edged scrapers (fig. 8-18: *2,6*) comprise about 80% of all scrapers. Double and converging scrapers account for no more than 10% each. Mainly, the scrapers are formed by obverse flat scalar retouch.

Points comprise about 21% of the tool assemblage. Half of them are sub-triangular and semi-crescent (fig. 8-16: *6*). More or less representative are types with obliquely retouched and distally retouched tips. Usually, the points are made on blades and have obverse scalar and/or sub-parallel, flat retouch. The other tool classes, such as denticulates, notches, borers and atypical end-scrapers, are represented by a few pieces each.

The flint assemblage of Levels II/1A-II/4 consists of: 4 precores, 45 cores, 584 flakes, 333 blades, 2,079 chips, and 241 tools. The cores are only uni-directional (fig. 8-17: *2*) and bi-directional (fig. 8-17: *3*). Some of them, such as those with a narrow flaked surface and those which are sub-cylindrical (fig. 8-17: *3*) exhibit volumetric flaking surfaces. Not a single Levallois blank was identified. At the same time, crested blades and flakes, often partly covered by cortex, are present, as well as secondary crested blanks (figs. 8-18: *4*; 8-19: *3,5*). On the whole, the flint assemblage of Levels II/1A-II/4 is characterized by the increasing percentage of blades (Ilam = 36.5) and the somewhat decreasing faceted platforms, which fall to IF = 53.5, IFs = 31.3.

As usual, the scrapers are the most representative tool class, about 55%. More than two-thirds of the scrapers are of simple straight and simple convex types (fig. 8-18: *1,3,4*). Double and converging scrapers are not numerous. All scrapers have obverse flat scalar and/or sub-parallel retouch.

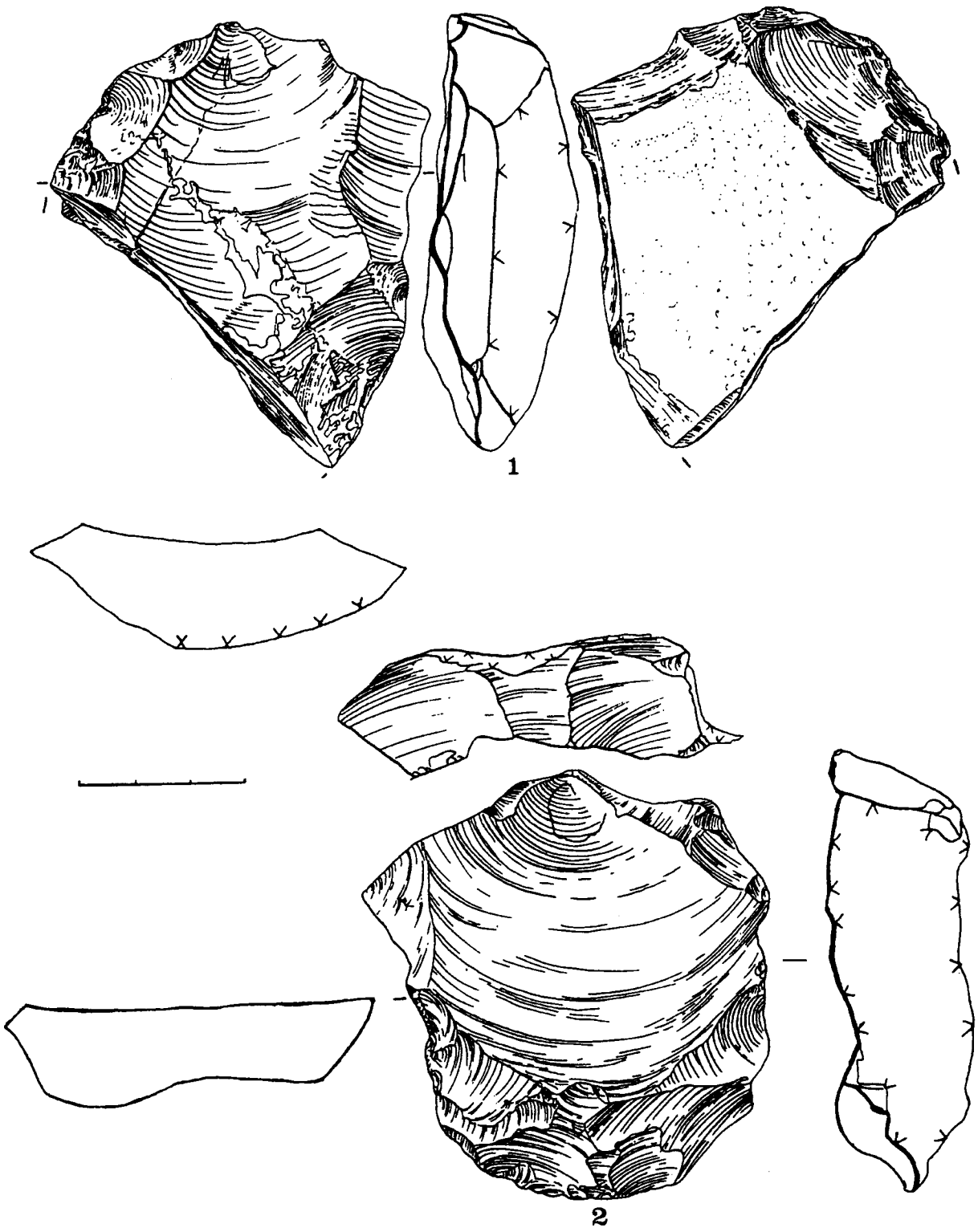

Fig. 8-14—Kabazi II, Unit II, Level II/8 Cores: *1,2*–Levallois tortoise.

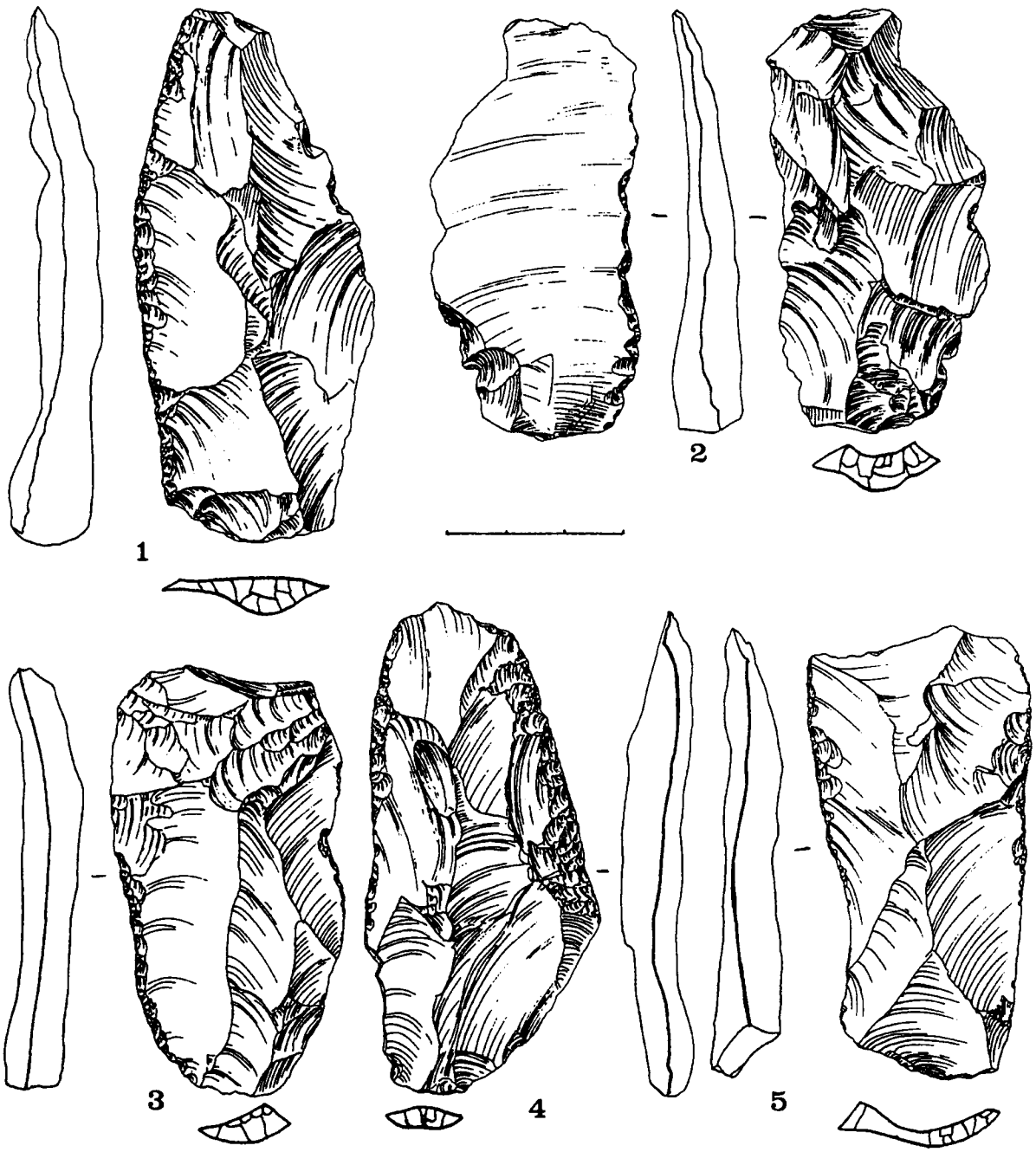

Fig. 8-15—Kabazi II, Unit II, Level II/8 *(1)*, Level II/7 *(2-4)*, Level II/6 *(5)* Tools on Levallois blanks: *1,3*–convex scrapers; *2*–inversely retouched piece; *4*–double-straight scraper; *5*–obversely retouched piece.

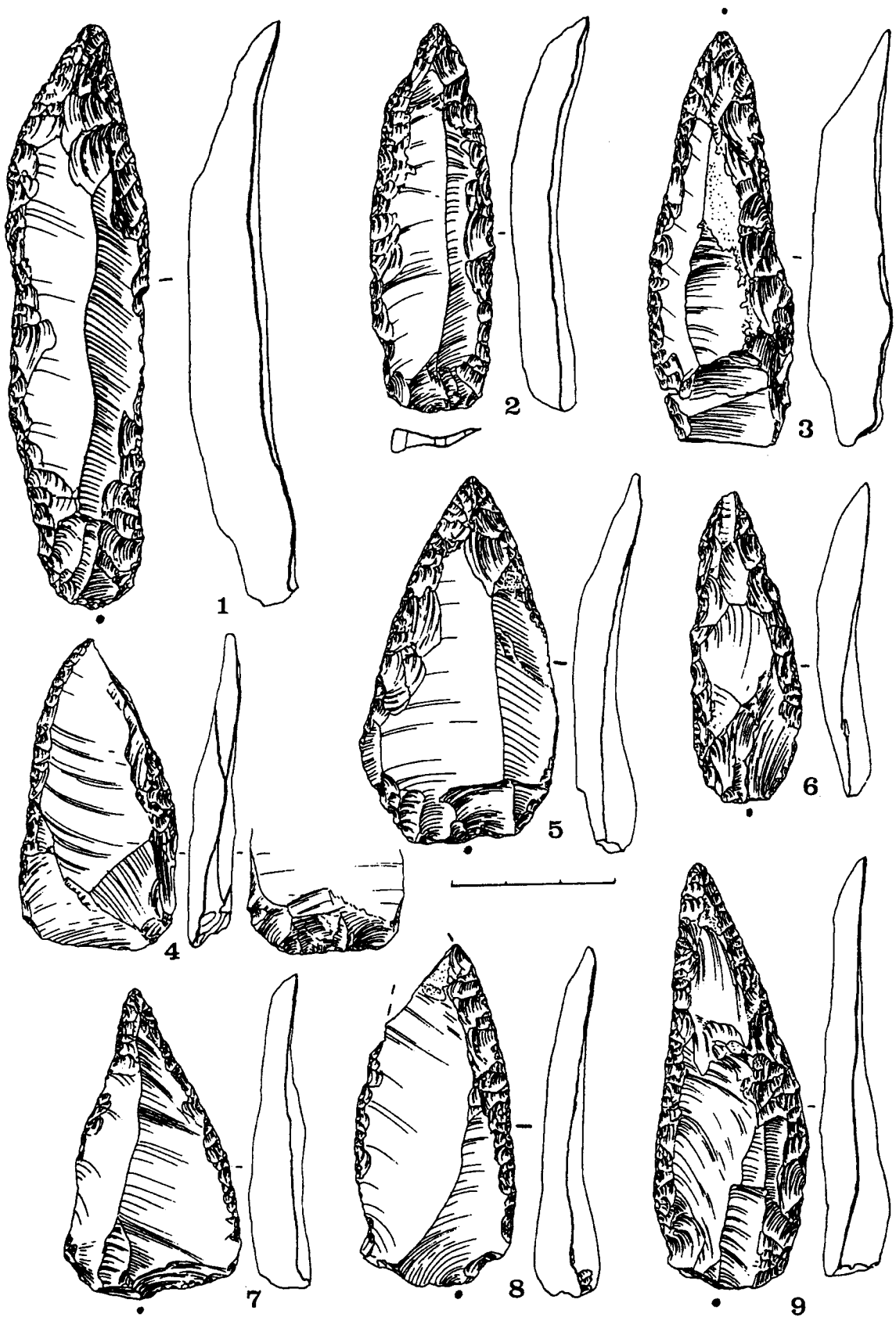

Fig. 8-16—Kabazi II, Unit II, Level II/8 *(5, 8)*, Level II/2 *(6)*, and Level II/1 *(1-4, 7, 9)* Points: *1*–sub-willow point; *2,3*–semi-willow points; *4,7*–sub-triangular points; *5,8*–semi-laurel points; *6,9*–semi-crescent points.

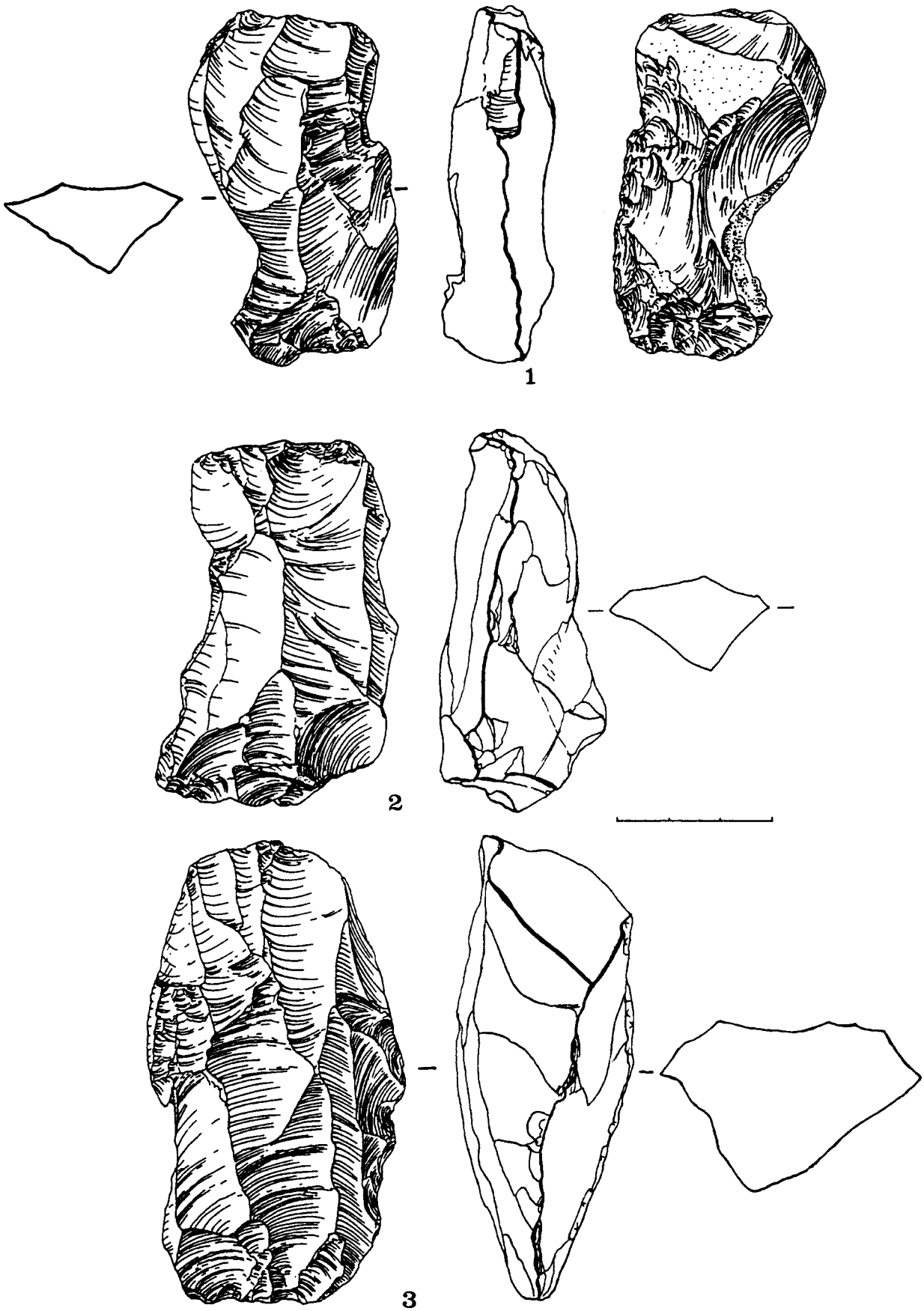

Fig. 8-17—Kabazi II, Unit II, Level II/6 *(1)*, Level 2 *(2)*, and Level 1 *(3)* Cores: *1,2*–unidirectional; *3*–bidirectional.

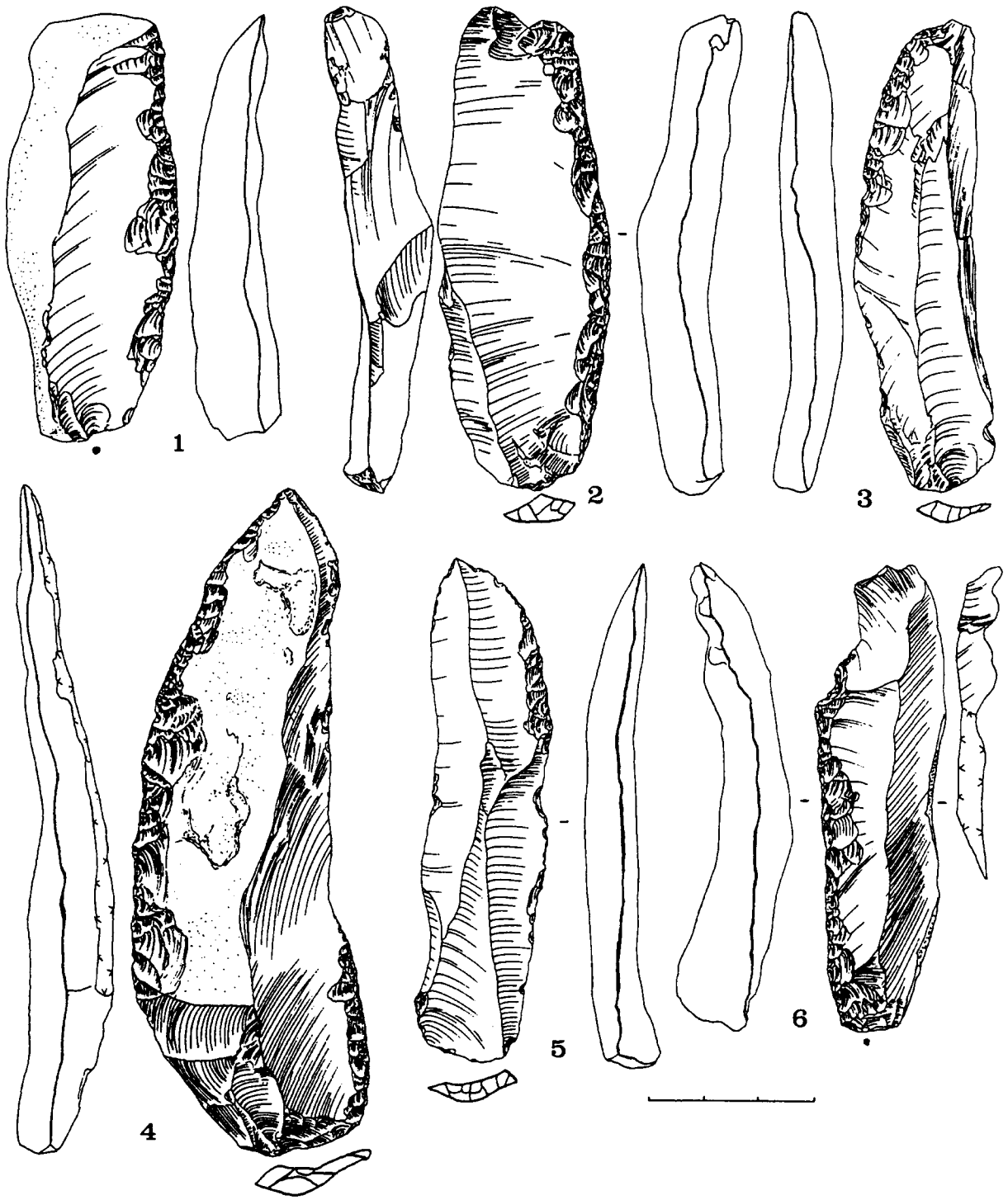

Fig. 8-18—Kabazi II, Unit II, Level II/7 *(5)*, Level II/6 *(2, 6)*, and Level II/1 *(1, 3, 4)* Tools: *1-4*–simple convex scrapers; *5*–retouched blade; *6*–simple straight scraper.

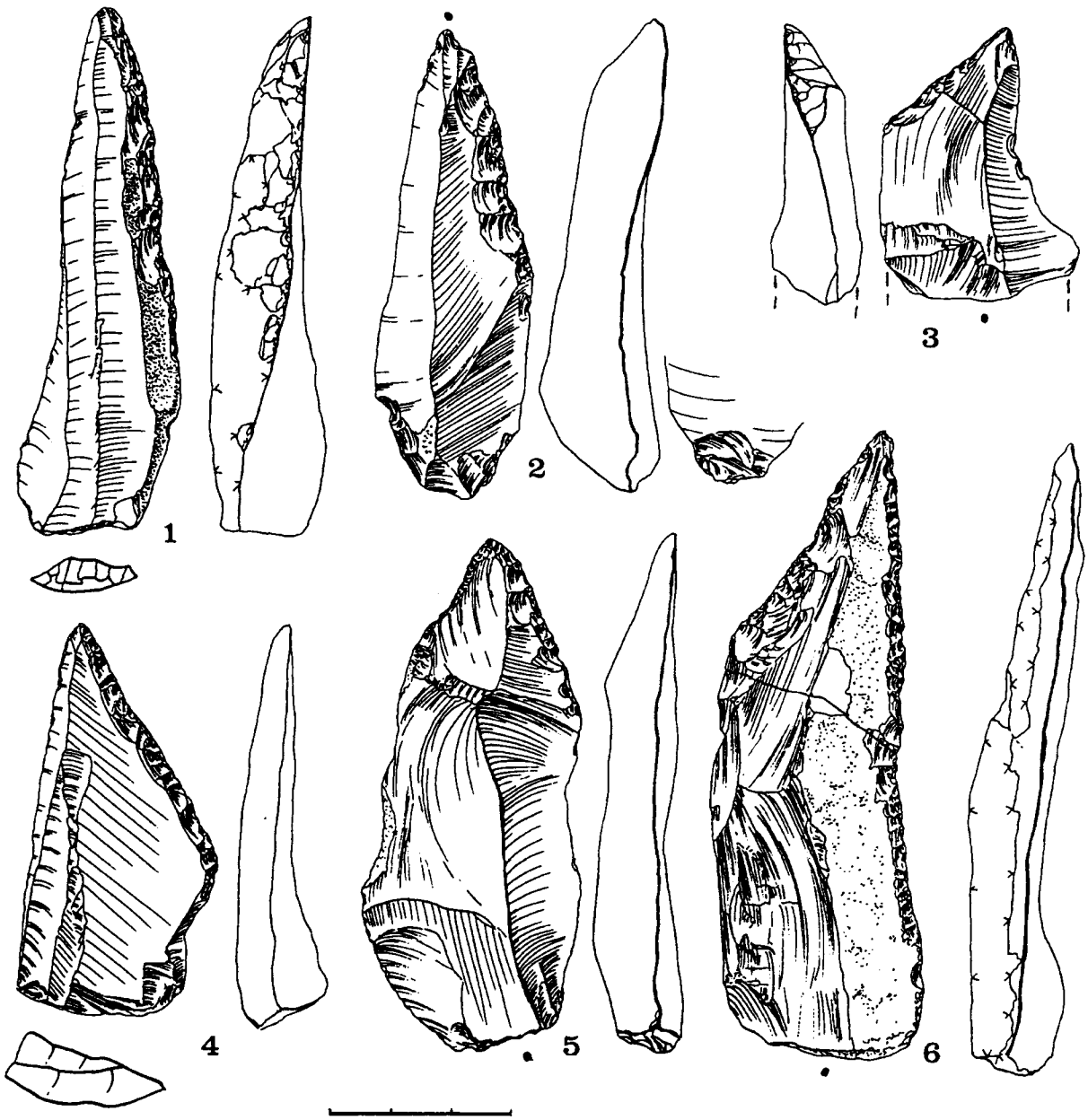

Fig. 8-19—Kabazi II, Unit II, Level II/8 *(2)* and Level II/1 *(1, 3-6)* Tools: *1*–backed blade; *2*–lateral point; *3,4*–obliquely truncated blades; *5*–distal point; *6*–obliquely retouched point.

Points account for about 28% of all tools. The most representative types are those with only distal retouch (fig. 8-19: *5*) and those which are willow-shaped (fig. 8-16: *1-3*) and sub-triangular (fig. 8-16: *4,7*). Also important are lateral, obliquely retouched (fig. 8-19: *6*), and semi-crescent (fig. 8-16: *9*). Most points, as well as the majority of scrapers, are made on blades. Points exhibit obverse, scalar flat, subparallel, and marginal retouch. The denticulates, as usual, are uncommon; about 10 %, and their forms closely parallel the scrapers. Two new tool classes appear in the assemblage of Levels II/1A-II/4: obliquely truncated blades (fig. 8-19: *3,4*) and backed blades (fig. 8-19: *1*). Each type is represented by only few pieces each.

It was recognized that the typological structure of all Unit II levels is more or less stable; the changes in tool kit and in the methods of tool retouch are not significant. On the other hand, the changes through time in the methods of core reduction are significant and obvious. The core reduction strategy of Level II/8 was recognized to be similar to the Biache method, as described by E. Boëda (1988). At the same time, the core reduction strategy in the upper levels is close to the Rocourt method (Otte, Boëda, and Haesaerts 1990; Chabai and Sitlivy 1993, 1994; Chabai 1995).

The flint assemblages of Kabazi II, Unit II, have been described within the context of the Western Crimean Mousterian. On the basis of technological and typological comparisons, a similarity with Shaitan-Koba, upper horizon and Kabazi II, Unit II, Level II/8 is clear. Then, taking into account the techno-typological characteristics and stratigraphic position of the lower horizon at Shaitan-Koba, an early stage of the Western Crimean Mousterian (WCM) was proposed. That stage, based on radial and parallel primitive flaking, includes the assemblages of Shaitan-Koba, lower horizon and Bakchisaraiskaya, lower layer. Taking into account technological peculiarities and stratigraphic sequences, the following scheme for the WCM evolution was adopted: Stage 1, based on radial and parallel primitive flaking, includes Bakchisaraiskaya, lower layer and Shaitan-Koba, lower layer; Stage 2, where the Biache method was used (Shaitan-Koba, upper layer and Kabazi II, Unit II, Level 8); Stage 3, the assemblages of Levels II/7-II/1A at Kabazi II, Unit II, based on the Rocourt method of core reduction (Chabai 1991; Chabai and Sitlivy 1994). Unfortunately, that attractive evolutionary picture was confused to some extent by the question about the technological content of all these described shifts. The abrupt disappearance of Levallois cores and blanks in Level II/5 and the absence of volumetrically reduced cores in Level II/6 posed the problem of understanding the specific transitions from one flaking method to another. A possible solution to this problem was proposed within the framework of Biache flaking (Chabai 1994). In any case, it is obvious that for the solution of this problem, new materials from the lower levels of Unit II are required.

Artifacts of Unit III

The flint assemblages of this Unit consist of 2 preforms, 2 cores, 61 chips, 23 flakes, and 25 tools. The preforms appear to be no more than lightly tested flint plaquettes. It is impossible, therefore, to define their typological status more precisely, or to define them even as unfinished bifacial tools or as precores. One of the cores is very exhausted; another broken example appears to be of parallel type. On the other hand, the flake sizes are very small, and the flake sample is too limited to study fruitfully. Nine of the tools are tiny retouched fragments. The others include points (fig. 8-21: *1*), single edge scrapers (fig. 8-21: *2,3*), transverse scrapers with thinned base (fig. 8-20: *6*), a proximal transverse scraper with thinned back (fig. 8-21: *5*), a convex scraper with thinned back (fig. 8-20: *5*), a semi-rectangular scraper (fig. 8-20: *4*), a bifacial scraper (fig. 8-20: *3*), and a few bifacial leaf-points (fig. 8-20: *1,2*). Even taking into account the statistically insignificant character of the Unit III sample, it

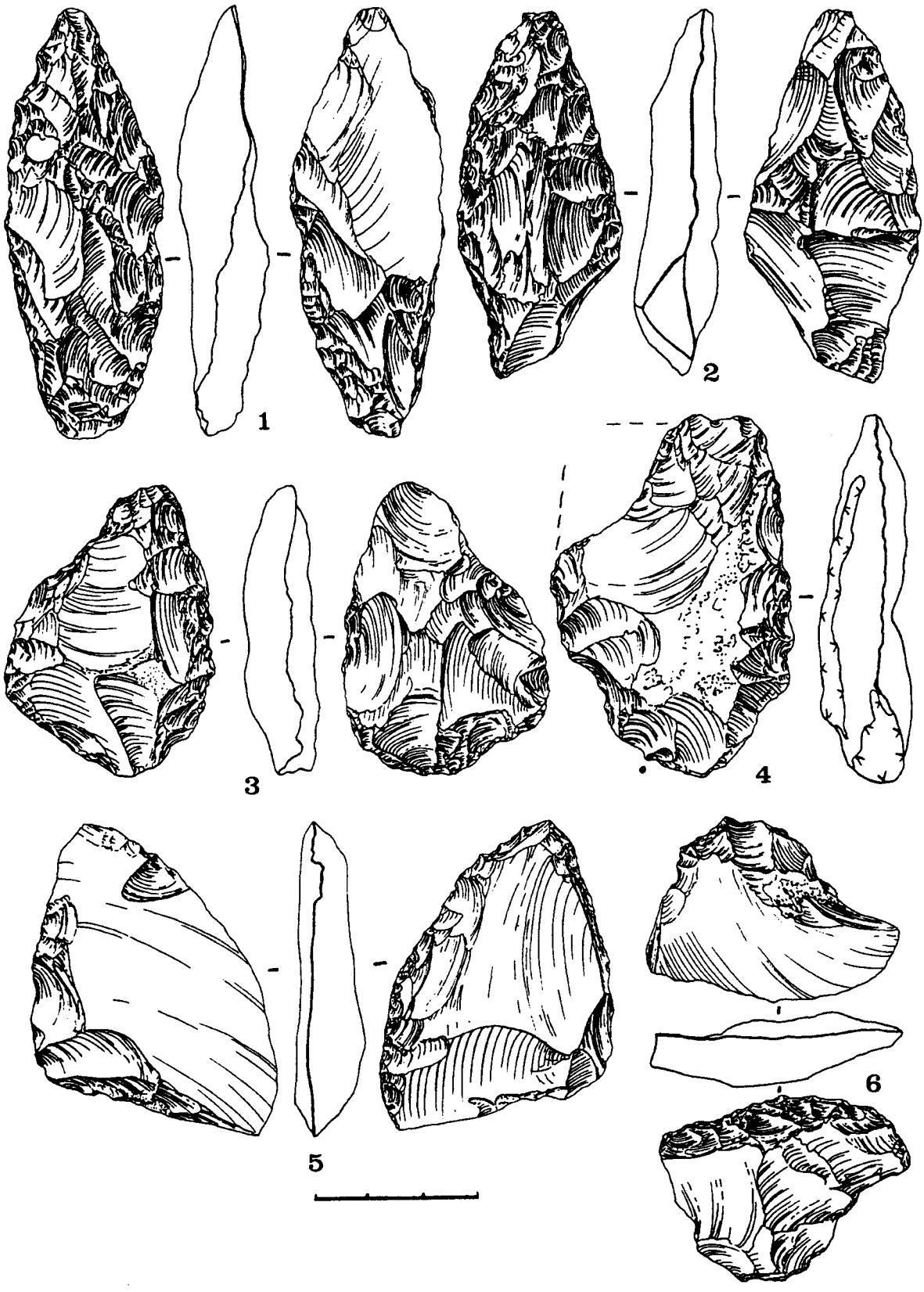

Fig. 8-20—Kabazi II, Unit III, Level III/2 Tools: *1,2*–Bifacial leaf points; *3*–bifacial scraper; *4*–semi-rectangular scraper; *5*–convex thinned back scraper; *6*–transverse-convex thinned base scraper.

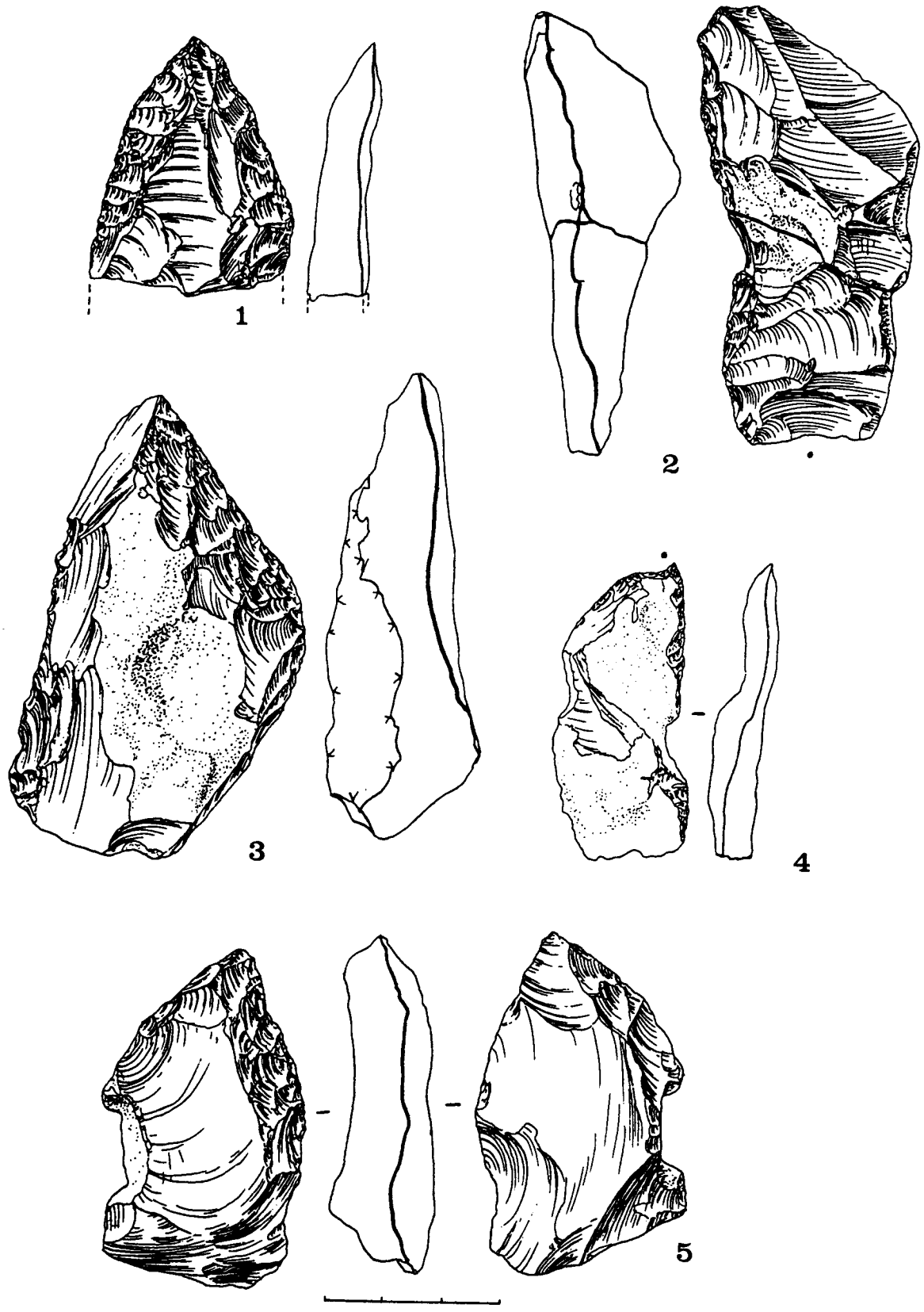

Fig. 8-21—Kabazi II, Unit III, Level III/2 Tools: *1*–point; *2*–simple concave scraper; *3*–simple convex scraper; *4*–retouched piece; *5*–transverse-convex thinned back scraper.

is possible to state that it is similar to Staroselian assemblages. This conclusion is based on the presence of tool types which appear to be characteristic of the Staroselian (Chabai 1991). This assemblage was used to define the lower chronological border of the Staroselian.

The following subdivision of the Staroselian was proposed, based on the stratigraphies of Kabazi II and Kabazi V, as well as on the techno-typological characteristics of their flint assemblages, including the Starosele 1955-56 materials: Stage 1, the flint assemblages of Kabazi V, Unit III and Kabazi II, Unit III; Stage 2, the assemblages of the lower and upper units of Starosele from A. Formozov's 1955-56 excavations; and the derived materials from the Kabazi II, Unit I. The main difference between those two stages was seen in the use of different flaking methods: radial flaking in the Kabazi V, Unit III and parallel flaking at Starosele (Chabai 1991; Chabai and Yevtushenko in press). The recent excavations at Starosele and Kabazi II (see Chapters 7, 9, and 10), indicate that this simple dichotomy needs revision.

Artifacts of Unit IV

More than 700 artifacts were recovered from excavations of 12 m^2. About 100 of them are small flakes with discontinuous, marginal retouch. About 40 more flakes exhibit different types of continuous retouch, mainly marginal. A few pieces have scalar retouch, but even these pieces are hard to define as scrapers, because of the small size and irregular shapes of the blanks (fig. 8-22: *2,4,9,10*). Bifacial tools are represented by three broken pieces (fig. 8-22: *7,13*), as well as by a single complete tool which is less than 4 cm long, but could be called a bifacial converging scraper (fig. 8-22: *3*).

Typologically, this flint assemblage is similar to that of the lower layer of Kiik-Koba (Chabai 1991), but, at the same time, the unclear character of the processes undermines the possible significance of the proposed typological similarity. In any case, based on the stratigraphic position of Unit IV, a Last Interglacial date was proposed, similar to that proposed for Kiik-Koba, lower layer.

The lower horizons at Kabazi II, from -930 to -1145 below datum, have a few flints and bones each. That fact alone suggests the possibility of older occupational surfaces than any so far uncovered.

In sum, Kabazi II appears to contain the longest Paleolithic stratigraphic sequence in Crimea and one of the more significant ones in Eastern Europe. The fact that one profile contains at least three typologically different industries, makes Kabazi II, to date, a unique site in the Crimean Middle Paleolithic. The present study is the continuation of previous investigations and it is still far from completion. In the framework of the present investigation, several problems can be resolved. The most important is establishing the absolute chronology of the Kabazi II archeological sequence. Also important are the definitions of typological and technological variability and patterns of raw material exploitation. The results of the extensive investigations at Kabazi II during last three years and the study of artifacts from recently discovered levels are presented in the following chapters.

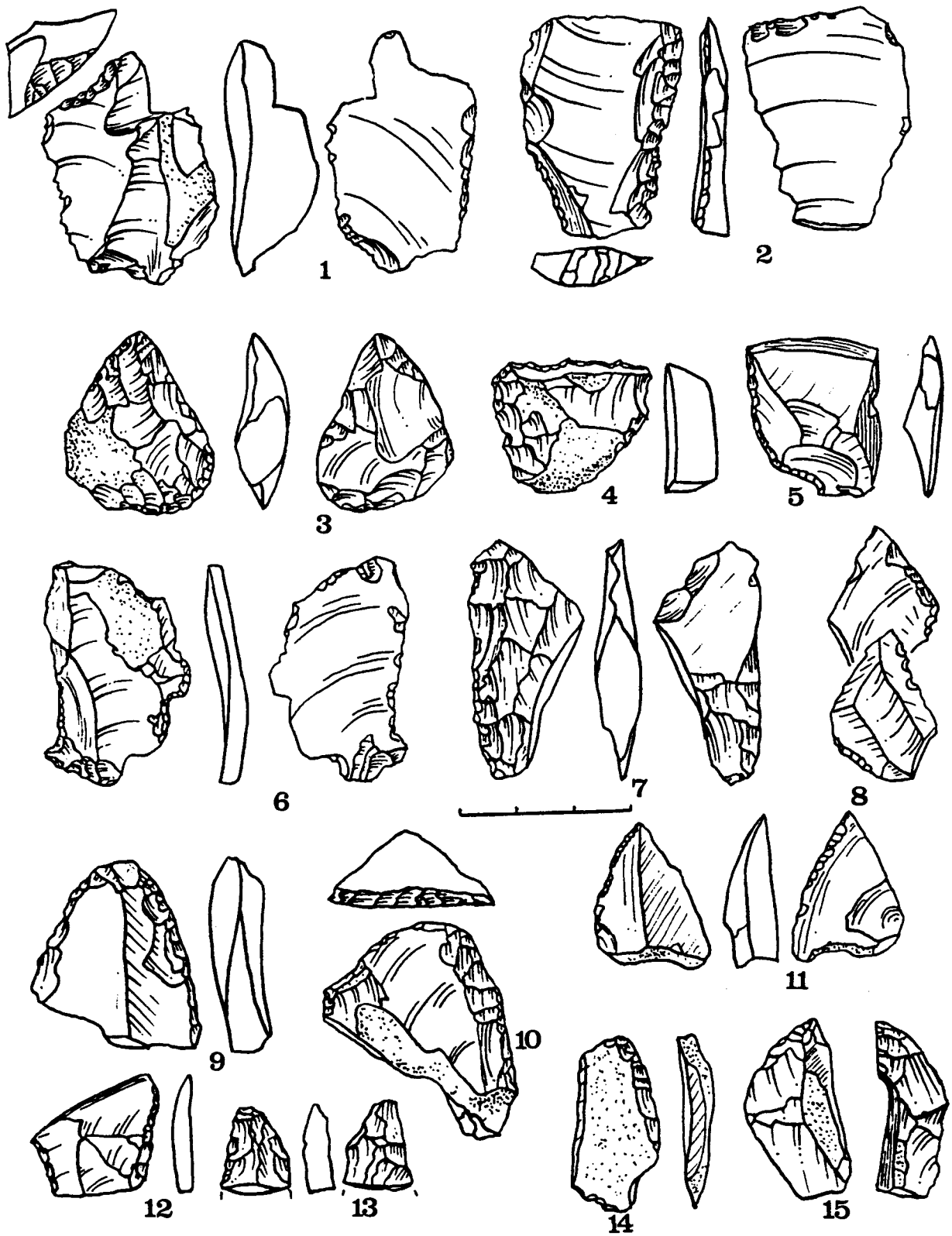

Fig. 8-22—Kabazi II, Unit IV Tools: *1,2,4-6,8-12,14,15*–retouched pieces; *3*–bifacial scraper; *7,13*–fragments of bifacial tools.