Préhistoire Européenne, volume 7, 1995, p. 241 à 264.

CHIPPED-STONE ASSEMBLAGE OF HOTNITSA-VODOPADA* (ENEOLITHIC/EARLY BRONZE AGE TRANSITION IN NORTHERN BULGARIA) AND THE PROBLEM OF THE EARLIEST "STEPPE INVASION" IN BALKANS

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ABSTRACT

In this paper an analysis of the flint assemblage from Hotnitsa-Vodopada is presented. Comparing its typological structure with other sites in Bulgaria and S.E. Europe (Kodzadermen - Gumelnitsa - Karanovo VI and Cucuteni-Tripolie culture complexes), examining some technical traits for obtaining the so-called superblades, some stylistic features of the arrow-heads as well as the raw material procurement patterns, it provides a sufficient base for the following conclusions. It established that Eneolithic/Early Bronze Age flint assemblages are deeply rooted into the autochthonous enaeolithic tradition. There is no discontinuity in the evolution of this tradition which is more stable in Bulgaria than, for example, in Muntenia where it is developed further apart. On this base, an emphasis is put on the internal evolution of the Late Eneolithic/Early Bronze Age communities, contrary to the steppe people invasionist model of explanation of this rather complex culture change.

INTRODUCTION

The assemblage of this site is relatively not numerous. It is important to stress, that the lack of exact horizontal record of small finds and the existing maps of the excavated area do not give an idea of the spatial distribution of the flint material. It may be stated only that the artefacts occurred respectively in the building horizons I, II and I/II. These facts render the task of a serious and detailed study quite difficult. Despite these reasons the diagnostic value of the flint assemblage of this site remain relatively high. We beleive, at least, from our point of view, that this material is of particular interest for the study of the Eneolithic/Early Bronze Age transition in this region because of its almost unique character connected with the following circumstances :

(I) The Eneolithic/Early Bronze Age transition has been very badly investigated in this region. Contrary to the Eneolithic and Bronze Age periods presented by numerous sites with rich and diverse archaeological materials, this period is known in Bulgaria only from few fragments of settlement structures with poor archaeological material and from isolated burials, single findings either with uncertain stratigraphic position or without any stratigraphic context (Todorova, 1986).

(II) If we admit that the data for chipped stone artefacts for the Eneolithic and the Bronze Age are insufficient or unsystematized, it should be stressed, then, that such data for the Eneolithic/Early Bronze Age transition are almost missing and so far they have not been an object of a special study and publication.

(III) The Eneolithic/Early Bronze Age transition presented in Hotnitsa - Vodopada is of exceptional importance because of its nature and state of preservation. It consists of two closely-packed settlement horizons, developed for a relatively short time and thus belonging to the same culture phase. While in other sites where settlement structures corresponding to this period are partly presented and this fact is one of the reasons for bitter arguing among Balkanian prehistorians for differentiation of the Late Eneolithic, the transitional and Early Bronze Age phases, in Hotnitsa - Vodopada with its well-marked archaeological structures settle the problem of culture identification, at least, stratigraphically. So, the two earlier

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settlement horizons from Hotnitsa-Vodopada may be considered to a certain extent as closed complex. No matter how it may be dated, the archaeological findings related to this complex have the exceptional value of "pure" assemblages.

(IV) The period of transition to Early Bronze Age in this region is connected with the problem of the so-called steppe cultures and give rise to the strong debate about the way of participation of these cultures in the cultural process in SE and Central Europe. Some of the arguments in this discussion are based on chipped stone assemblages which constitute a substantial part of the characteristic of this period. Up to now, however, the flint assemblages from Bulgaria, with few exceptions, have not been considered both in foreign investigations because of the lack of primary publications of the known archaeological material and in Bulgarian studies of this period because of the traditional negligence or, at best, of their superficial and marginal treatment. There is no doubt, that the existing bias on this topic is partly due to the above mentioned lack of systematic investigations and, in particular, of studies on chipped stone assemblages. In this study we are far from pretensions to give a satisfactory solution to all problems of this complex cultural process but, at least, to make an attempt to approach the problems from rather different point of view and we think the task worths its effort. Ultimately of more significance than mere presentation of the assemblage may be the possibility of understanding more clearly the process of transition reflected on flint assemblages whereby this category of archaeological source is incorporated in investigations into cultural process as the more reliable criterion to determine continuity or discontinuity of material culture of the Late Eneolithic/Early Bronze Age.

HOTNITSA - VODOPADA SITE

The site is situated in the valley of the Bohot river, right tributary to the Rositsa river. It is located 12 kilometers southwest from Veliko Tarnovo - in the middle part of northern Bulgaria (Fig.l). The materials from Hotnitsa-Vodopada are organized according to the building horizons which have been determined for the site overall from stratigraphic context. The number of building horizons total four with I and II being the object of our interest. They are clearly distinguished from the superimposed Late Bronze Age horizon and remnants of Medieval structures (Ilcheva, 1986, 1987, 1989, 1990). At first, the horizons I and II were assigned to the beginning of the Early Bronze Age (Ilcheva, 1982). Later, this interpretation has been corrected so that the two horizons correspond to the Eneolithic/Early Bronze Age transition (Ilcheva, 1986, 1987, 1989, 1990). Along with other sites from NE Bulgaria with the same characteristics such as Pevets, Ovcharovo-Plateau II etc., they constitute the Pevets culture. The authors synchronized it with the Cverna voda 1 culture pointing out close similarities to ceramics from the Ulmeni variant in Oltenia (Todorova *et ali.*, 1983; Todorova, 1986; Ilcheva, 1986). For those sites the following 14C dates are known :

Site	Non-calibrated 14C dates
Ovcvarovo - Plateau II	2935 + 60 b.c. (Bln 1511) 2960 + 60 b.c. (Bln 1510) 3075 + 60 b.c. (Bln 1547)
Hotnitsa - Vodopada	2880 + 60 b.c. (Bln 3680) cult. level I 2880 + 60 b.c. (Bln 3681) cult. level II 2940 + 60 b.c. (Bln 3685) cult. level II 3000 + 60 b.c. (Bln 3683) cult. level II 3160 + 60 b.c. (Bln 3682) cult. level II

The number of flint artefacts from Hotnitsa - Vodopada total 157. They come from an excavated area of nearly 1300 m^2. The average number o flint artefacts in each horizon is around 75-80. Taking into account the excavation methods as it was mentioned above and the fact that the sediments are not sieved through, these series of artefacts hardly correspond to the real number of artefacts. On the other hand, these series of artefacts harmonize with the number of flint artefacts from the other sites in Bulgaria because of the similar excavation methods applied. For example, the average concentration of flint artefacts within a building horizon of nearly 1500 m^2 in the eneolithic tell Ovcarovo is around 90 items (Todorova *et alli*, 1983) and in the Early Bronze Age tell Ezero for the earlier horizons (XIII-XI) of an excavate area that varies between 1000-1500 m^2 the number of flint artefacts is even lower - 30 - 40 (Georgiev *et alli*, 1979). The stated above number of artefacts renders impossible the analysis of the flint series from the two horizons separately. But if we take into account that the two earlier horizons are too close from chronological point of view, that there is no difference in ceramics and the structures of the two flint series are very similar, we may consider these series of artefacts as a whole assemblage.

During the excavations at Hotnitsa - Vodopada a grid system with 5 x 5 m squares was established. Only the flint artefacts that were connected with archaeological structures (dwellings, pits) were localized horizontally. The rest were collected respectively bearing a sign only from the quadrant where they were found. In this situation, with relatively small number of artefacts, it is impossible to define concentrations of flint artefacts that would have a diagnostic value for location of specific activities.

As it is shown in table 1 - there is a high proportion of tools (> 44%) while the small flakes and fragments (21.02 %) are far less numerous : among them tool spalls are missing.

Table 1 : Hotnica-Vodopada. General structure of the chipped-stone assemblage.

Technical-typological Groups	Horizon I	Horizon II	Horizon I/II	Total	
				f	%
Cores	4			4	2.55
Cortical flakes	1	1	1	3	1.91
Partly cortical flakes	4	2		6	3.82
Flakes > 3 cm	4	18	1	23	14.65
Flakes < 3 cm	10	9	1	20	12.74
Flake fragments	8	5		13	8.28
Blades and blade fragments	11	4	3	18	11.46
Tools	29	30	11	70	44.58
TOTAL	**71**	**69**	**17**	**157**	**99.99**

As a consiquence of the fact that the sediments were not sieved through this leads to a serious systematic error which biased the real structure of the assemblage. Yet, we do believe that despite these disadvantages quite familiar for the archaeological excavations in the region - this assemblage may be included, at least, at an operational level, in a comparative study with other assemblages coming from sites excavated more or less with the same methods.

FLINT ASSEMBLAGE

Pre-cores and cores - (4)

Two of them are pre-cores. One is a pre-core fragment with an initiated bifacial trimming edge. The other is single platform core for blades. The flaking face is narrowed by a lateral trimming edge. The platform is prepared by 2 broad negatives. The process of exploitation of the pre - core was terminated by few unsuccessful blows. Later it was used as a hammer stone.

The cores (Pl. VI, 3, 5) are in a state of not very advanced exploitation. These are blade, single - platform cores of conical and conical - cylindrical shape. Their platforms are prepared by 1 or 2 broad negatives. Their flaking surfaces are narrowed by lateral or bifacial trimming edges extending onto core side or on the back. The blade scars especially on the one core surface are "regular", with relatively long parallel ridges of narrow negatives.

Flakes - (65)

There are 3 cortical and 6 partly cortical flakes. The ratio of cores to decortication flakes is an evidence that the most preliminary manufacturing activities may have been taking place away from the site. There are 23 (14.65%) flakes without cortex which are bigger than 3 cm. Most of them have dorsal pattern which is characteristic for the process of core preparation and rejuvenation. It is worth noting the occurrence of three "siret" - like flakes. We suppose that such flakes usually occur in other assemblages but not properly defined they were assigned to the category of flake fragments or even burins. The small flakes are 20 ex. (12.74%) with length varying close to its upper limit - < 3 cm. As it was mentioned above, smaller flakes with length around 1 - 1.5 cm. are almost missing as well as tool spalls. Taking into account the high proportion of tools this shortage of smaller flakes and the lack of tool spalls is abnormal if we admit that, at least, part of the process of retouching would have been taking place within the site. Furthermore, small flakes and spalls have been detached during the process of preparation, exploitation and especially of rejuvenation of cores.

The characteristics and the number of the flake fragments (13 ex. -8.28%, including undetermined flake fragments i. e. these fragments which cannot be determined whether they are from flakes or blades) lead to the same conclusion. This group, however, is defined not only by the characteristics of the chipped stone techniques but by such factors as pedolitisation, thermal fragmentation, etc.

Blades - (18)

This group which includes fragments of blades accounts for 11.46 % of the total inventory. This low proportion of blades can be expected because most of the tools are made on blades including the non-retouched blades with micro-wear traces. The form of the blades is distributed as follows :

- parallel edges - 11
- convergent edges- 3
- divergent edges - 1
- irregular - 3

If we add to the group of blades the tools made on blade, the blades with parallel edges will dominate more conspicuously. Blades with triangular cross- section predominate (9 ex.) followed by those with trapezoidal (6 ex.) and irregular (6 ex.) ones. If we consider the cross - section of the tools made on blades the proportion of the irregular ones would be far less than this presented above.

Blades with preserved platforms are 9 ex. formed by a single blow. Without exception they have visible percussion point. The profile of the blades including the tools

made on blades is distributed equally between straight and convex ones and only 3 ex. have twisted profiles.

The blades with scars running in the same direction dominate (13 ex.). The rest of the blades have the same dorsal pattern but with cortex situated on their lateral (3 ex.) and distal (2 ex.) parts.

Since the series of blades is not numerous there is no need to present the exact morphometric characteristics. But it should be mentioned the obvious predominance of the elongated (slender) blades i. e. with ratio length/width over 4:1. Among them (including the group of the tools made on blades), at least, 4-6 ex. are superblades (intact or reintegrated) with ratio length/width over 6 : 1.

Tools

Table 2 : Hotnica-Vodopada. Tool typology

Typological groups	Horizon I	Horizon II	Horizon I/II	TOTAL
End-scrapers -(G)	10	3	2	15
Burins - (B)	1			1
Retouched truncations - (Tr)	3	4	1	8
Backed blades - (D)	1	1	1	3
Truncated backed blades	2	1		3
Retouched blades - (LR)	3	3	2	8
Pointed retouched-blades -(LR)	2	2	1	5
Perforators - (P)		2	2	4
Side-scrapers -(R)		1		1
Blades with denticulated retouch and notches - (LR (d-e))	1	3	2	6
Flakes with denticulated retouch and notches - (ER (d-e))	1	3		4
Retouched flakes - (ER)		1		1
Bifacial arrow-heads (FI)	3	4		7
Others	1			1
Unretouched blades with use - wear traces	1	2		3
TOTAL	**29**	**30**	**11**	**70**

End-scrapers - (15)

End-scrapers made on blades are four and one of them is double. The three single end-scrapers (Pl.II, 6; Pl.III, 4) have convex fronts formed by short lamellar or marginal retouch. Only the double end-scraper has one slightly denticulated front and another weakly convex front almost undistinguishable from the group of truncated pieces. Two of these end-scrapers have retouched lateral edges.

The rest end-scrapers are made on flakes. One of them is double (Pl.V, 1). The double one and one single end-scraper have elongated fronts formed by steep or semi-steep, multiserial and partly lamellar retouch. The rest end-scrapers are usual forms with low or not very high fronts formed by uniserial almost marginal retouch, rarely by hardly notable stepped retouch (Pl.I, 8; Pl.III, 2; Pl.IV, 3, 6, 8; Pl.V, 2). Five end-scrapers have lateral edges.

Burin - (1)

This is a transverse burin made on a broken blade. It is atypical which may indicate its accidental occurrence (Pl. II, 3).

Retouched truncations - (8)

These tools are made on blades. Three of them are double (Pl.II, 1) and the rest are single truncated pieces (Pl.I, 3, 9; Pl.III, 6; Pl.V, 4). The most truncations are straight or convex. Only two of them have concave and undulated truncations. All truncated blades bear, at least, on one of their lateral edges micro-wear traces, small notches and gloss typical of sickle implements. Moreover, those blades are often intentionally retouched by semi-steep, microdenticulated retouch. This is bifacial retouch covering the polished surface of the blade probably for resharpening of dull edges.

Backed blades - (3)

Their backs are directly retouched by steep or semi-steep retouch (Pl.IV, 7; Pl.V, 5). One of those retouches is small covering the very margin of a thin edge. As usual, the opposite edges of backed pieces bear micro-wear traces, scars of intentional, small, denticulated, often, bifacial retouch with intensive gloss spots.

Truncated backed blades - (3)

They have similar characteristics as the two previous groups. Their working edges are covered by intentional, denticulated retouch with gloss spots (Pl.VII, 1, 2, 7).

Retouched blades - (8)

Four of these are mesial and proximal parts. Most blades are broken intentionally (Pl.II, 5; Pl.V, 3; Pl.IV, 9; Pl.VI, 1). Retouches are : semi-steep, lamellar, small marginal, slightly denticulated on the ventral side. There is only one complete blade but with morphometric characteristic close to the blade/elongated flake limit. All blades bear traces of gloss superimposed on, or inferior to retouch series that is typical of the sickle implements. There are a fragment of a bigger blade with a partly cortical dorsal pattern; a blade fragment with small semi-steep retouch on the one edge and stepped invasive retouch on the other; a fragment of superblade with semi-steep marginal retouch on the one edge and with micro-wear traces on the other - typical of the so-called blade-knifes (Pl.II, 4).

Pointed retouched blades - (5)

Almost all blades are covered by continuous retouches on both lateral edges that converge into a more or less pointed tip. Of particular interest is the lamellar retouch on three of the blades. It is of rather irregular pattern with nonparallel invasive negatives inclined to the lateral edges (Pl.III, 1, 3; Pl.V, 6; Pl.VI, 4).

Perforators - (4)

Two of them are with asymmetrical weakly developed points formed by notches with small steep retouch respectively on thicker and thinner blades (Pl.II, 2). The two other specimens have end-scraper-like symmetrical points made on massive blades (Pl.III, 5).

Side-scraper - (1)

As it is shown in (Pl.I, 10), the side-scraper is straight with semi-steep, continuous retouch covering one lateral edge of a flake. Probably, it was used as a sickle implement because of the bands of gloss spreading on both sides of the retouched edge

Blades with denticulated retouch and notches - (6)

Four blades are covered by irregular, semi-steep, denticulated retouch. One specimen has notches with tiny, regular retouch (Pl.IV, 4, 5; Pl.VI, 2). The sixth blade differs from the previous ones in its character - it is formed by regular, denticulated retouch partly superimposed by cortex i.e. these features are typical of sickle implements.

Flakes with denticulated retouch and notches - (4)

Usually, the denticulated retouches are irregular while the notches are covered by

fine retouch (Pl.V, 7) but in one case it is of clactonian type.

Retouched flake - (1)

The retouch is alternate, marginal, discontinuous, on some parts - almost lamellar.

Bifacial arrow-heads - (7)

They are distributed into two typological groups :

(I) The first one has a form of an isosceles triangle with concave base (Pl.I, 1, 2, 4, 5, 6). They are of small size - length up to 3.5, width up to 2.5 cm. and have weakly distinguishable plano-convex profile. This type of profile corresponds to the primary blanks - more often blades than flakes whose original surfaces are partly preserved on ventral and proximal parts of the arrow-heads. The retouch is flat, invasive, uniserial, typically lamellar whose scars are predominantly parallel with directions either perpendicular or inclined to the lateral edges. The concave base is formed by bifacial, but not lamellar, simple, mussel-like, semi-steep to flat retouch. Often the concave form is obtained by a single blow just in the middle of the base thus forming a big unidirectional scar parallel to the direction of the tip of the arrow- head. These retouches are fine with superficial scars as a result of the technique of soft hammer percussion applied. Five arrow-heads are of this type.

(II) The second group has also a form of an isoscele triangle but with straight or slightly convex base (Pl.I, 7). They are of bigger size - length varying within 6-7 cm. and width - within 2.5-4 cm. The technique and the style of the retouch are similar to those of the previous group. The only difference comes from their bigger size - the retouch consists of two series : the first one has flat, mussel-like, invasive scars spreading far from the edges; the second one is a lamellar retouch whose scars are relatively short that perfectly straighten the lateral edges and form a sharp, thin point. The rest two arrow-heads belong to this typological group. One of them is a fragment of a complete arrow-head while the other is a fragment of an initiated form with bifacial retouch.

Other - (1)

To this group we assign a fragment of undetermined amorphous tool (probably incomplete end-scraper).

Unretouched blades with micro-wear traces

There is no doubt that blades in such assemblage served not only as blanks for further tool manufacturing but were intensively used as implements. Of course, the difficulty to determine properly the real blades from the blade-like waste material remains. To tackle this problem we propose the following criteria :

(I) mode of fragmentation - in fact, this procedure is a kind of secondary treatment;

(II) the morphometric criterion;

(III) micro-wear traces

By using those criteria which are not complementary to one another, it seems possible to distinguish the unretouched tools even if some of them do not meet all of the above mentioned criteria. Thus in the typological list presented in this paper, in view to facilitate the comparison with another assemblage, this category has been separated from the defined retouched types and takes the position after the category "other" that comes to describe the three possible alternatives : a comparative study can be conducted meeting all criteria mentioned above. The same can be done meeting only part of those criteria. Finally, this category may be omitted, in case, when assemblages where this category has not been distinguished, are included in a comparative study. In Hotnitsa - Vodopada were found one big unretouched blade with spots of gloss and micro-wear traces and two mesial fragments with morphometric characteristics of a sickle implement and one of them bears traces of gloss.

RAW MATERIALS

The chipped stone tools from Hotnitsa-Vodopada were made only of flints. From macroscopic point of view, the following flint varieties has been distinguished (Tabl.3):

* To denote the lithic raw material varieties a code introduces by M. Pawlikowski (1992) is used. It consists of four components : (BG) denotes the country; (Hv) denotes the place (archaeological site, outcrops etc.) where the material is found; (F) denotes the material itself : flint or other petrographic types like; R - radiolarit, Li- limestone, Q-quartzite etc.; numbers : 1, 2, 3... denote the varieties of a given petrographic type.

Table 3. Hotnica-Vodopada. Flint varieties distribution.

TECHNICAL / TYPOLOGICAL GROUPS	FLINT VARIETIES*													
	BG-HV-F1		BG-HV-F2		BG-HV-F3		BG-HV-F4		BG-HV-F5		BG-HV-F6		OTHER	
	f	%	f	%	f	%	f	%	f	%	f	%	f	%
Cores	1	0.64	1	0.64	21	1.27								
Flakes	29	18.47	27	17.20	3	1.91	1	0.64	1	0.64	1	0.64	3	1.91
Blades	10	6.37	5	3.18			1	0.64			2	1.27		
Tools	15	9.55	19	12.10	8	5.09	9	5.72	4	2.54	7	4.46	8	5.09
TOTAL	55	35.03	52	33.12	13	8.28	11	7.00	5	3.18	10	6.37	11	7.00

1. BG - Hv - F1 : Whitish to beige in color with fine-grained mass of weak transparency spotted by rare whitish to almost white inclusions. It has dull, rough fracture and shows good cleavage.

2. BG - Hv - F2 : Wax-yellow in color with white spots. It has fine-grained mass of weak transparency. It exhibits good cleavage and an even, brilliant fracture. Flint nodules of mean and small size (up to 10-15cm.) are covered by thin (up to 1 mm.) whitish- yellow relatively smooth cortex. According to its macroscopic description this variety correspond to BG-Te-F4 (M.Pawlikowski, 1992).

3. BG - Hv - F3 : Dark wax-yellow in color. Its mass, occasionally, shows some diversities within the same nodule : in the middle of the nodule the silica mass is fine-grained without white spots and has weakly transparent, dull, rough cortex; in some parts and marginal zones close to the cortex it become more translucent with white spots having brighter fracture and good cleavage. This macroscopic description shows close similarities to the BG-Te-F5 (Pawlikowski, 1992).

4. BG - Hv - F4 : Light to dark wax-grey in color with white spots. Its body is of fine-grained structure with opaque bright fracture. Almost nontransparent with good cleavage.

5. BG - Hv - F5 : Wax-brownish to grey in color with characteristic reddish strips or zones. Its body is non-transparent of medium-grained to granular structure. The fracture is uneven, opaque. This variety is close to the Kriva reka type and shows similar knapping characteristics : it is useful material for obtaining bigger blades even superblades while it is not so convenient for smaller forms.

6. BG - Hv - F6 : Dark wax-yellow to olive in color with characteristic light-yellowish to darker chocolate bands or zones. The silica mass is fine-grained, poorly transparent. The fracture is opaque, brilliant, sometimes of oily tincture. Excellent cleavage. This variety is similar to the well-known from the eneolithic tell Radingrad flint type.

Basic flint varieties for artefact manufacturing in Hotnitsa-Vodopada are Hv - F1 and Hv - F2 making up over 68% of the total number of the analyzed pieces (tabl. 3). The data available so far (as a result of field survey of the region conducted by N. Sirakov as well as local petrographic collections) are based on macroscopic description. Despite their incompletenesS, they provide enough evidence for the local provenance of the Hv-F1 and Hv-F2 varieties. A possible source of those flint materials is primarily connected with the Lower Cretaceous limestone strata (mainly Urgonian) of the Lovec-Târnovo anticline (Boncev, 1971, Tsankov, 1946). Secondary outcrops occur in the alluvial deposits of the Yantra, Rahovets, Bohot, Negovanka river valleys and on plateaux areas - Bei lakovsko, Pluznensko as well rarely in deposits situated to the north of the limit between Middle Pre-Balkan region and Mizian platform.

The provenance of the Hv-F3 and probably the Hv-F4 varieties, making up 15% of the analyzed pieces despite their good knapping qualities, is also local but covers broader region than the previous ones. Some of the reasons that those varieties are less frequent than the Hv-F1 and Hv-F2 varieties within a radius of 20-30 km are that they usually occur in small nodules with natural cracks. It seems that Hv-F3 and Hv-F4 flint varieties are connected with detritus clays and clastic strata in the region.

The most uncommon flint varieties are the Hv-F5 and Hv-F6 (9.5%). Probably, they have an extralocal origin; Hv-F6 has been identified to flint materials extracted from the well-known eneolithic flint mining area Radingrad - Topcii-Kamenovo situated to the north from Razgrad and Hv-F5 - from Kriva reka - northeast of Sumen. The distance from those outcrops in a direct line to Hotnitsa-Vodopada is nearly 80-130 km.

As it is shown in Table. 3, the crosstabulation between flint varieties and technical groups has the following features :

- All cores and almost all flakes including cortical and partly cortical flakes are made of FI, F2, F3 flint varieties. This fact provides clear evidence that the main bulk of the procurement of raw material has a local origin.

- Most of the tools, some blades and single flakes are made of the F4, F5. F6 flint varieties. This especially concerns the F5 and F6 varieties which reveal a complicated social structure that consists of flint mining using pits in the case of Kriva reka; primary manufacturing of raw materials in the case of Topcii and Kamenovo where traces of Eneolithic outside workshops for elongated conical cores for superblades are found and of developed network for supply of distinct areas with high quality flint materials in the form of ready-made for exploitation conical cores and blades. With few exceptions all blades are made from those flint varieties later retouched and shaped in various types of tools or used directly as inserts, probably, through intentional fragmentation. Moreover, some additional, unfortunately not well recorded data from northeast Bulgaria and Thrace suggest that even blade fragments of high quality flint varieties were a matter of intensive exchange among eneolithic communities.

GENERAL CONSIDERATIONS AND TAXONOMIC POSITION OF THE HOTNITSA - VODOPADA CHIPPED STONE ASSEMBLAGE

The procurement of raw materials during the occupation of Hotnitsa- Vodopada was organized in two complementary to one another strategies :

(I) The main bulk of the necessary supply of raw materials has a local origin (20 km. in radius) and in most cases is confined to the near vicinity of the settlement (up to 2-5 km.). It appears that part of the materials has been brought to the site in a semi-finished state as suggested by traces of workshops for preliminary manufacturing outside the settlement and by the relative shortage of cores and waste products on the site, especially decortication flakes. On the other hand, there is no doubt that the whole process of chipped stone tool manufacturing in a very limited range has also been taking place at the site but the accent has been put by the Hotnitsa-Vodopada knappers on the ready-made for use cores and blanks brought from the outside workshops.

(II) The Hotnitsa-Vodopada knappers tended to exploit rather distinct, extralocal sources of raw materials though this activity took second place when compared with the amount of local raw materials used. It should be stressed that the above mentioned functionally specialized flint mining sites (through pits) and workshops for elongated conical cores and blades had already been playing a significant role within an extralocal exchange system in the previous period i.e. the beginning of the middle eneolithic period (according to the chronology of H.Todorova, 1986).

The standardized chipped stone production patterns in Hotnitsa-Vodopada correspond to the heyday of the eneolithic cultures from the Kodzadermen- Gumelnitsa-Karanovo VI complex and can be characterized by the following features :

- occurrence of centers of local and extralocal significance for extraction of high quality raw materials and workshops for preliminary core and blank preparation;

- carefully prepared conical and pyramidal single platform cores;

- knapping technique with moderator;

- blade-oriented production pattern, especially the typical superblades;

- developed exchange system among settlements in the region of the Lower Danube.

By using this broad technological background we try to escape from the danger to slip into comparative studies too often equated with the spectacular and unique : formal comparison of single objects without any stratigraphic or cultural context; nonsystematized or selective data. As an example that may better serve to illustrate such selective and biased studies are those based on burials of Decea Muresului and Casimce type (Popescu, 1941; Paunescu, 1970) in Romania connected with the Srednij stog II culture - a stage of development of the so-called steppe cultures in southern Russia and Ukraine (Telegin, 1973). This biased approach may be summed up in the following scheme :

- those burials are connected with steppe cultures;

- all gifts and artefacts found there are necessary associated with the steppe culture tradition;

- analogies established with part of the artefacts or even with single objects found in the cited graves are unconditionally recognized as philetic relationships with the steppe culture tradition;

- if few analogies with the above mentioned burials were established in a given region, this fact implies that the whole region would have been totally populated by steppe people;

- in case of rapid change of cultures in a given region the ready-made explanation is invasion of steppe people.

If we admit that the first statement in this scheme is true, this does not guarantee the genuineness of the rest. By using examples connected with the topic of the present article we shall examine critically the second, third and partly fourth statement of this scheme. On this base, we shall consider the last one i.e. the invasionist explanation of the rapid change of cultures. It is well known that the analogies with the superblades found in the steppe burials (Garasanin, 1978) tended to be presented as an evidence in favour of the hypothesis of invasion and definite influence of steppe people in the culture process in Central and SE Europe (Merpert 1976, Gimbutas 1977) and, in particular, in Balkans (Todorova, 1986) which took place at the end of the Eneolithic and the beginning of the Early Bronze Age.

We shall stress on two requirements that were not taken into account when the above mentioned analogies had been established :

(I) The problem of cultural and technical background of the assemblages with superblades. In Hotnitsa-Vodopada, it is shown that superblades are deeply rooted in its eneolithic technical and culture tradition prior to the occurrence of first steppe elements to the west of Dniester which is dated in radiocarbon years around 3500-3200 B.C. (Telegin, 1984; Alekseeva, 1976, 1978; Kosko, 1985) and in calibrated dates it would more accurately belong to the first half of the IVth millennium B.C. Thus, this category of findings does not prove any kind of influence from the steppe cultures in assemblages like this from Hotnitsa-Vodopada.

(II) The second requirement is a verification of the statement from the above presented scheme that all artefacts associated with steppe burials necessarily belong to the culture tradition of the steppe people. In particular, this concerns chipped stone assemblages and blades found in steppe burials. In their analysis M. Kaczanowska and J. K. Kozlowski (1973, 1985) reject the assumption that such relationship exists and propose the hypothesis of an increased influence of the Cucuteni-Tripolie technical tradition, especially, during its later phases. We may add to this that according to our own investigations in northern Bulgaria on eneolithic flint assemblages (Durankulak, Radingrad, Ovcarovo, Varna-necropol) there is evidence for common technical tradition of the Kodzadermen - Gumelnitsa - Karanovo VI and Cucuteni-Tripolie complexes. Furthermore, it seems that the earlier, inspiring center is in northeast Bulgaria. Thus, to a certain extent, the philetic relationship between blades from steppe burials and those from Hotnitsa-Vodopada exists but with opposite orientation, indirect and belongs to the prior period.

A part from the technical aspects of the Hotnitsa-Vodopada assemblage presented so far, our further considerations are based on the typological characteristics of the assemblage that are : typological structure and stylistic features.

In view of uniformity, the way of presentation of the typological structure of the Hotnitsa-Vodopada is similar to this used by M. Kaczanowska and J. K. Kozlowski (1983, 1985) with the same abbreviations preserved :

$$G > LR > TR > FI > D = LR(d\text{-}e) > ER + ER(d\text{-}e) > P > R = B$$

where letter symbols indicate the typological groups defined (table 2, in brackets). In view of the possible systematic errors mentioned at the beginning of this paper we would not stick rigidly to the relations in this sequence. Instead, we shall also use relations ">", "≥" which, in this case, would not change essentially the sequence. It may be presented as follows :

$$G > LR > TR \geq FI \geq D = LR(d\text{-}e) \geq ER + ER(d\text{-}e) \geq P > R = B$$

Although its approximate value, this typological structure reflects some substantial characteristics of the Hotnitsa-Vododpada assemblage :

- predominance of the end-crapers over retouched blades;

- these groups are followed by truncated pieces which are two times less than scrapers;

- the next groups which are almost equal to the group of truncated pieces consists of bifacial arrow-heads and backed blades;

- despite that all varieties of retouched flakes are presented as a single group they are not numerous and are approximately equal to perforators;

- burins are almost missing, especially taking into account the atypical character of the above described specimen.

By using the same criteria we may determine analogies with the following assemblages defined by M.Kaczanowska and J.K.Kozlowski (1983) :

Gumelnitsa, phase B : G > LR > ER > TR P > B > OC

where OC = outils composites

Tripolie, phase B : G > LR > ER > P > FI TR > B

As it is shown above, there is a common characteristics in these typological structures - a definite predominance end-scrapers and retouched blades versus rare presentation of burins. There are differences in the order of the smaller typological groups but they can be neglected. Important difficulties would have been if bifacial arrow-heads (F1) were missing in Gumelnitsa and backed blades (D) were missing in Gumelnitsa and Tripolie. We think, however, that in the first case the lack of arrow-heads in the typological structure of this assemblages is due to omission because as far as we know single arrow-heads occur uniformly in the Gumelnitsa assemblages. In the second case, if it was not an omission, than it would have been an incompatible classification of retouched blades. So, there is no doubt that the Hotnitsa-Vodopada flint assemblage is deeply rooted into autochthonous eneolithic tradition without any external influences. The above presented typological structures of the assemblages from Gumelnitsa and Tripolie correspond to the middle and late phases of the culture complexes Kodzadermen-Gumelnitsa-Karanovo VI and Cucuteni-Tripolie. It does not mean that the Hotnitsa-Vodopada assemblage is simultaneous with the eneolithic cultures but we would like to lay special emphasis on the fact that this kind of typological structure is deeply imbedded in the eneolithic technical tradition. Lithic technics and style seem to be more conservative in preserving philetically determined variants of technical tradition than quickly spreading ceramic styles and other culture elements.

Next, some stylistic aspects of the described typological groups with diagnostic value will be considered. They show some differences with the typological structures compared so far. For example, on the bases of similarities of ceramics H.Todorova (1983, 1986) came to the conclusion that Hotnitsa-Vodopada and the Pevets culture are "synchronous and ethnically cognate with the Cerna voda 1 culture in Muntenia". There are also similarities between typological structures of the flint assemblages. At the same time, there is a significant distinction in the way the blunted back of the blades is formed : in Cerna voda I they are convex which is so far thoroughly unknown for the eneolithic tradition in northern Bulgaria (Kaczanowska and Kozlowski, 1983). This features are also absent in the Hothitsa-Vodopada flint assemblage where lateral backs are straight, often formed with a kind of atypical retouch whose origin can be traced back to the technical tradition of the Middle Eneolithic. Hence, Hotnitsa-Vodopada and flint assemblages from the Cerna voda I culture can be assigned to a broader culture tradition embracing in one technocomplex different cultures. It seems that further differentiation of these cultures take place; while in northeast Bulgaria the lithic traditions are almost preserved, in Muntenia they are developed further apart. This is confirmed by the stylistic features of the arrow-heads. If we consider only the basic characteristics of this group such as : form - triangle; base - concave, straight, convex; retouch - bifacial, invasive flat, then this types are common for the eneolithic complexes Kodzadermen-Gumelnista-Karanovo VI and Cucutenu- Tripolie. But when we include new criteria - morphological and stylistic features - into our analysis, then the differentiation would be quite obvious, especially, for the smaller type. The following differences are observed :

- The arrow-heads from Hotnitsa-Vodopada have a form of an isosceles triangle with weakly convex symmetrical lateral edges while those from Cucuteni-Tripolie and Gumelnitsa are shaped in the form of a Gothic arch where 2/3 of the length of their lateral edges are parallel.

- As a rule, in Hotnitsa -Vodopada the base of the arrow-heads is concave. Its concave notch is well marked, curved moderately encircling the whole base. In Cucuteni-Tripolie, Gumelnitsa and Salcutsa the concave bases do not occur so frequently and they are weakly developed, often hardly distinguishable.

- In Hotnitsa-Vodopada the base is formed by marginal, flat, overlapping retouch. In Cucuteni-Tripolie and part of the bases of the arrow-heads in Gumelnitsa and Salcutsa are made with lamellar retouch like their lateral edges.

On the other hand, close similarities in their stylistic features were established between the series of arrow-heads from Hotnitsa-Vodopada and from Telis (Gergov, Gatsov, Sirakova, 1985). It should be stressed that part of the analogous arrow-heads in Telis occur in the eneolithic building horizons I and II and another part belong to the superimposed horizon III. On the base of ceramics V. Gergov identifies horizon III as a separate culture corresponding to the Salcutsa IV culture pointing out that its affiliation to Hotnitsa-Vodopada and Pevets culture as a whole is based on less prominent similarities (Gergov *et al.*, 1985).

Close analogies or fully identical arrow-heads to those from Hotnitsa-Vodopada are found in smaller series in the middle and later eneolithic horizons in Radingrad (Ivanov, 1984), Ovcarovo (Todorova *et al.*, 1983), Durankulak (Todorova, ed., in press).

It seems that Hotnitsa-Vodopada has closer links established on a level of cultures with the Telis III culture than with Cerna voda I where links are rather determined on a higher taxonomic position - technocomplex. Thus, the flint assemblages of the above mentioned culture provide strong evidence for the continuity of the autochthonous lithic tradition. There is no doubt that data for a dominant allochthonous influence in the culture process in this region are lacking.

DISCUSSION

It is necessary, in brief, to consider the "interpretive" value of flint assemblages. Moreover, the idea of their "relative conservatism" as they are sometimes called may be used as an evidence that flint assemblages are not sensible enough as other fast spreading culture components. In practice, it is not difficult to find series of artefacts whose sudden change can be used as indicator of transition processes. The difficulty lies rather in selecting artefacts, characters etc. that do not disappear instantaneously with the culture they belong to. For, in the case of organized society - the eneolithic one, for example, there is strong feedback between the subsystems and between variables within the system. Thus, the traditional negligence of flint assemblages which are quite sensitive, for instance, to changes in subsistence strategies, raw material procurement pattern, etc., contributed, among other reasons, to the idea of invasionist culture- formative model.

Yet, the simple explanatory model of steppe invasion taking place during the Late Eneolithic and Early Bronze Age has strongly been criticized. Some judicious articles appeared in the late 70ies and, especially, during the 80ies where the invasionist model was totally abandoned and, in particular, this concerns the territory to the north of the Lower Danube (Escedy, 1979; Telegin, 1984; Kaczanovska and Kozlowski, 1983, 1985; Kosko, 1985). As it is known it was just this territory where traces of the presence of steppe people which indicate the southern steppe way to the central Europe are most numerous. This way passes through the following zones : Black Sea - the interfluve of the Dniester and Prut rivers - to the north of the Danube delta - the left bank of the Lower Danube - Mures-Tisa. Compared with them all traces of steppe population provided as an evidence for invasion of steppe people to the south of the Danube are almost negligible : four graves from Devnia, Kiulevca (two graves), and Ruse respectively, some stone

scepters without any stratigraphic position from the vicinities of Plovdiv and Jambol (Todorova, 1986). Moreover, the interpretation of some of those finds as an evidence for the direct presence of steppe population are quite arguable. Even more controversial is the major indirect proof for steppe invasion -the burnt down upper building horizons of the eneolithic sequences in Bulgaria (Todorova, 1986). But, similarly, burnt down are their middle eneolithic building horizons which has not been interpreted as an evidence for invasion.

If we do assess the facts at its true worth, then these graves give rise to the question whether the steppe presence in Bulgaria consists only of the normal intercommunity contacts and trade, recurrent penetration of small groups etc. as it was accepted for the southern steppe way (Ecsedy, 1979) or the links were even more limited both from the point of view of the territory where they were taking place and their intensity - irregular visits of small groups, sporadic migration. From this point of view, the interpretation of the steppe presence as an "expansion" (Gimbutas, 1977), "invasion" (Zbenocvic, 1973), "main assault of the steppe invasion" (Todorova, 1986) has never been convincing, and now even for some of its supporters. With this, however, the problem has not been explored thoroughly. The apriori origin of the explanatory model of the earliest steppe people invasion is due to various reasons and motivations. Their consideration constitute a distinct topic (for example, see Kosko, 1985) and we'll only mention some of them :

- attempts were made to interpret some gaps of our knowledge of poorly documented periods and connected with them events and processes provided no simple answer and ready-made explanations are possible;

- there is a confusion of similar events; in this region there was a greater migration of steppe people dated around the middle of the IIIrd millennium B.C. The characteristics of this later event were ascribed to the Late Eneolithic/Early Bronze Age period.

- analogies were looked for with later, historical, including medieval events with participation of steppe people, nomads or, in general, people from the East.

As it always happen with apriori theses, at least, part of their evidence are false or biased, but often repeated they take the form of axioms. If the rejection of the theses is not accompanied by reexamination of the connected with it axiomatic statements they would still remain within the frame of the scientific circulations. We think that the abandoned thesis of steppe invasion leaves in Balkan prehistoric archaelogy similar convictions more in the form of biased assertions. In general, they are connected with the hypothetical consequences of an invasion - more or less prominent discontinuity in all aspects of the culture process. Here are presented some of them suplemented by our brief comments :

- Well-marked stratigraphic hiatuses between eneolithic horizons and the Early Bronze Age ones in the Balkanian sequences are interpreted as a collapse of the enaeolithic communities.

In fact, there is abundant evidence that this is not the case. For example, in Telish such hiatus is missing while in other archaeological sequences and tells (Ezero, Iunatsite) the time span of those hiatuses is relatively short or even shorter than the hiatuses within the various enaeolithic horizons.

- Assertion for demographic collapse as a consequence of invasion. The eneolithic population almost died from starvation in the mountains and hills where escaped from the invaders (Todorova, 1986).

In fact, there is rapid change of the settlement pattern during the Bronze Age but this is not necessarily a consequence of external factors as massive invasion of steppe people.

- Assertion for almost instantaneous character of collapse of the enaeolithic cultures in Bulgaria.

But there are more or less pronounced aspects of the autochthonous cultural tradition which occur between the Late

Eeolithic and Early Bronze Age that, in turn, underly the fact that the upper limit of the Eneolithic is not a uniform one.

- The transition period to the Early Bronze Age is also almost uniform both in time and place (in Balkans).

Major characteristic of such investigations is the schematization of the primary synthesis which comes as an inevitable result from the superficial analysis. If such state of investigations was acceptable during the 1970ies, this is not sufficient today. It is becoming clearer now despite those statements, that general insight can offer a new explanation of the nature of such complicated culture process as Late Eneolithic/Early Bronze Age transition. And the answer whether it is a long-term smooth (continuous) transition or short-term discontinuous one is not simple and needs further investigations of various aspects of those phenomena.

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The arrow-heads and the bigger part of the chipped stone assemblage of this site are unpublished. All materials necessary for this article were kindly presented by Mr. V. Gergov whom we owe a special debt.

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The chipped-stone assemblage of Hotnica-Vodopada was kindly offered to us, for anylises, of the Chief Excavator Mrs Vulka Ilcheva. According to our agreement with her, every one of us (Mrs. V. Tcheva, N.Sirakov and Ts.Tsonev) received rights to used all records of these anylises in his own publication and take all responsibility of interpretation of the facts. All finds and excavation's documentation of Hotnica-Vodopada are in depository of Department of Prehistory, District History Museum of V.Tarnovo.

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Figure 1 : Location of the mentioned sites in Bulgaria : 1. Hotnica-Vodopada; 3. Ovcharovo; 4. Ovcharovo-Plateau II; 5. Telish; 6. Radingrad; 7. Kriva reka; 8. Durankulak; 9. Ezero; 10. lunatsite.

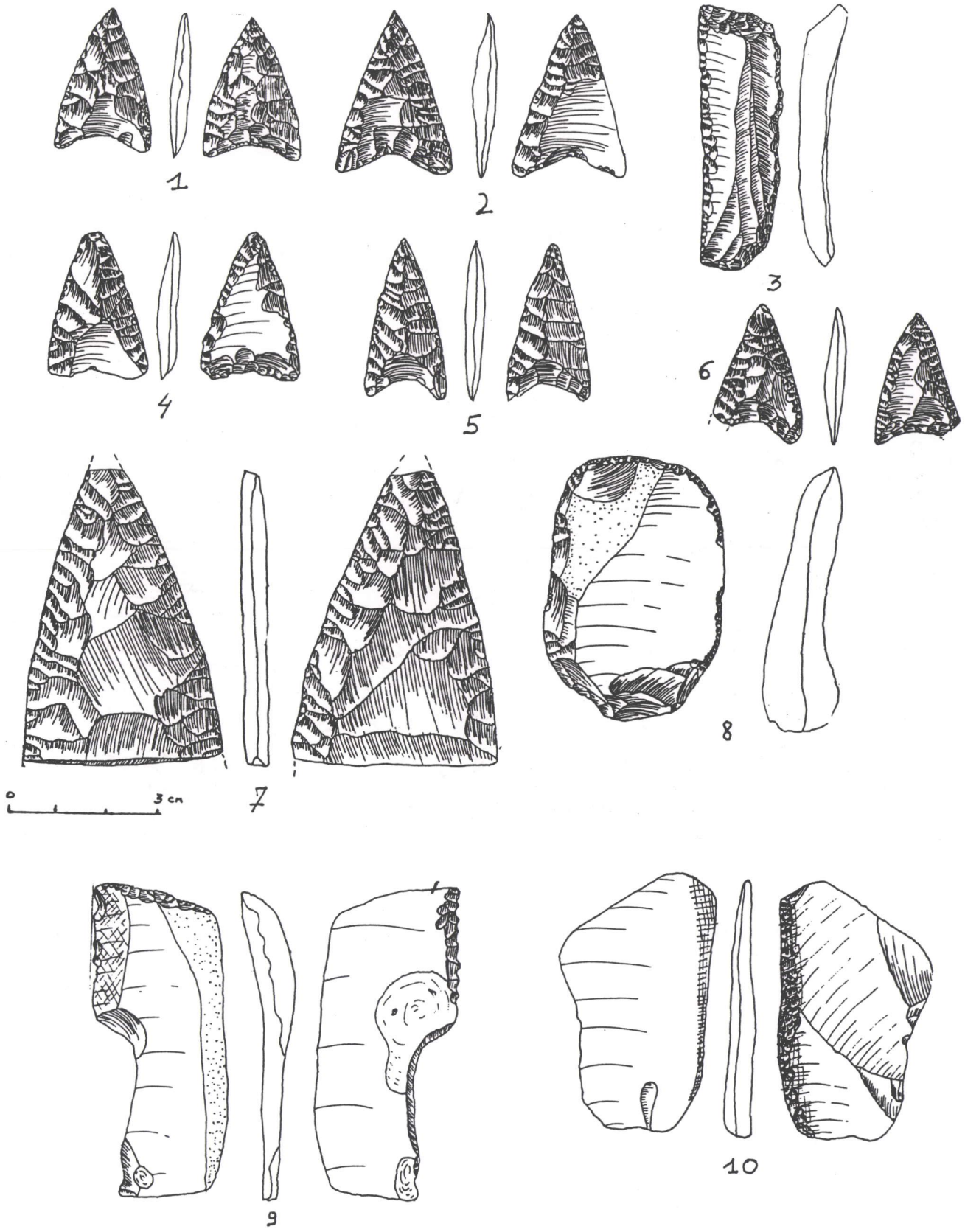

Figure 2 : Pl.I. Hotnica-Vodopada. 1, 2, 4, 5, 6 - bifacial arrow-heads of type 1; 7 - bifacial arrow-head of type 2; 3, 9 - retouched truncations; 8 - end-scraper; 10 - side- scraper.

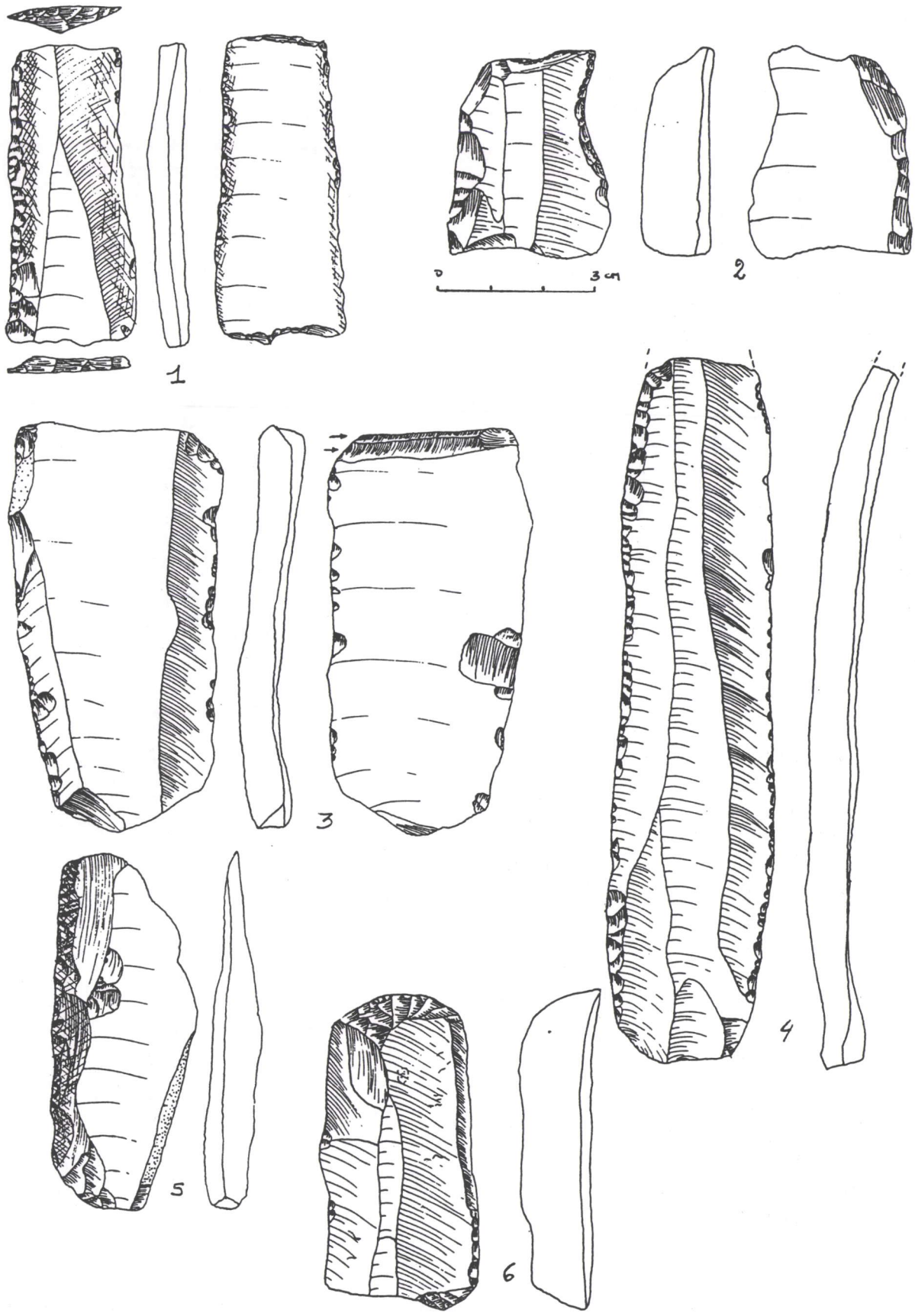

Figure 3 : Pl.II. Hotnica-Vodopada. 1 - double retouched truncation; 2 - perforator; 3 - burin; 4 - blade-knife; 5 - retouched blade; 6 - end-scraper.

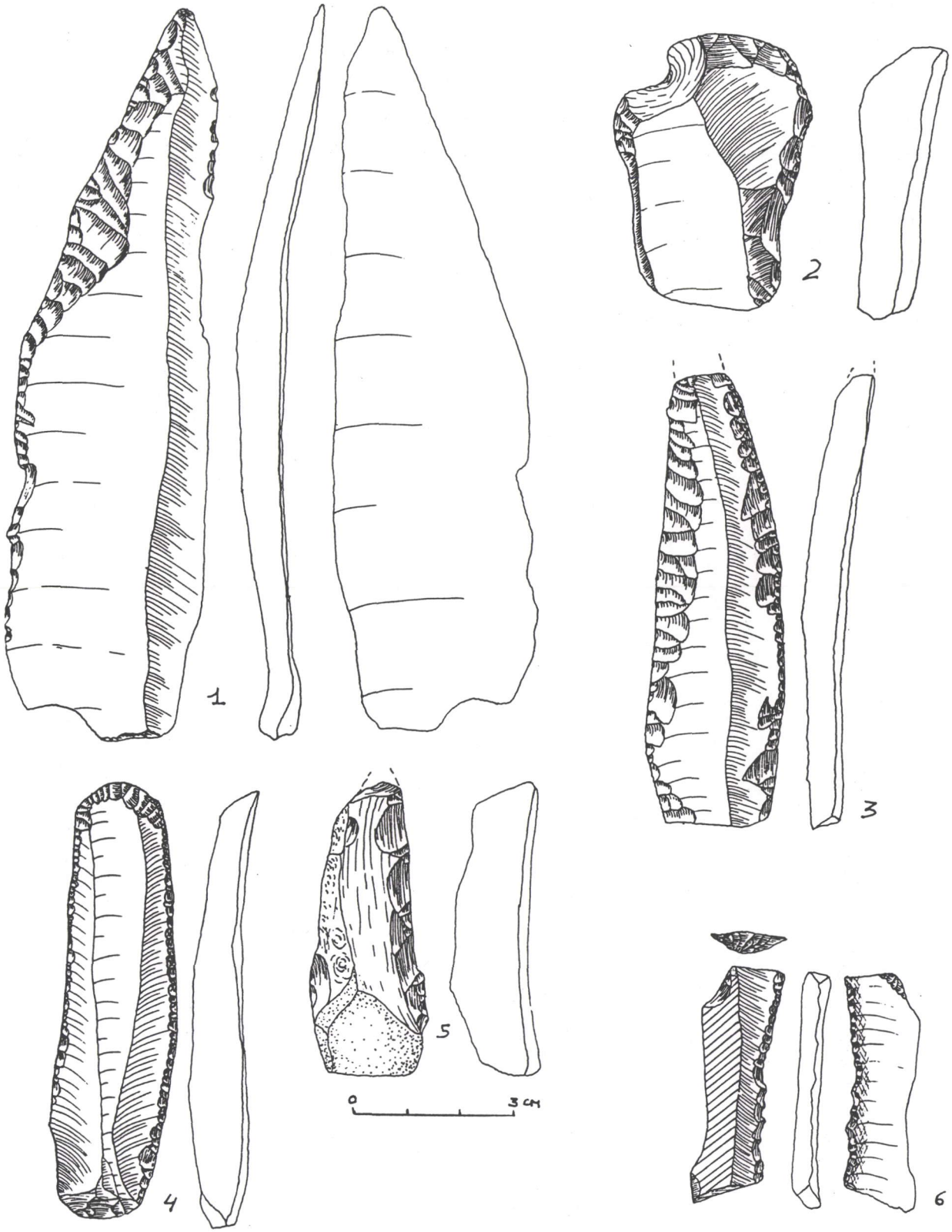

Figure 4 : Pl.III. Hotnica-Vodopada. 1, 3 - pointed retouched blade; 2, 4 - end-scraper; 5 - perforator; 6 - retouched truncation.

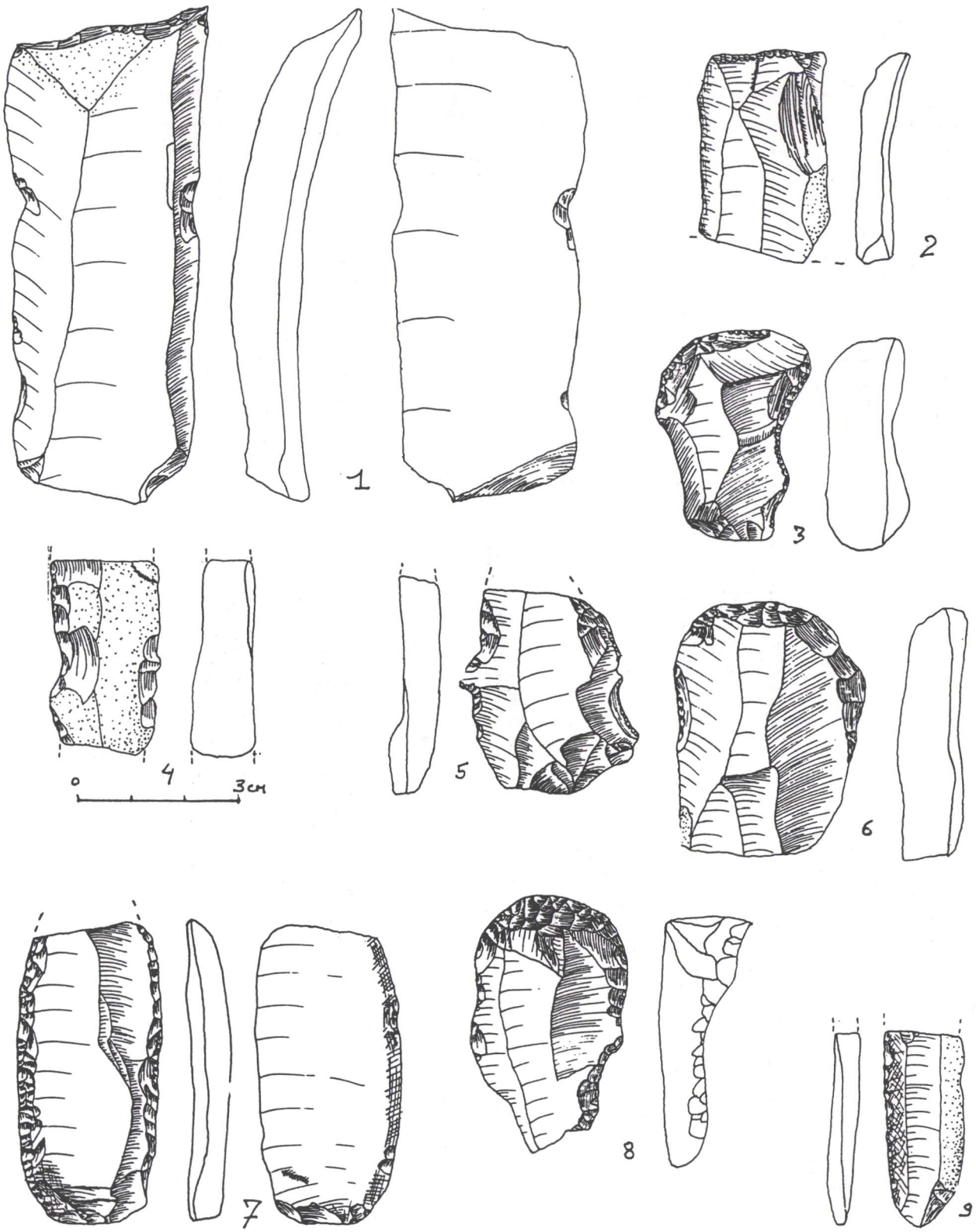

Figure 5 : Pl.IV. Hotnica-Vodopada. 1, 2 - transversaly retouched blades; 3, 6, 8 - end- scrapers; 4, 5 - blades with denticulated retouch and notches; 7 - backed blade; 6 - pointed retouched blade; 7 - flake with notches.

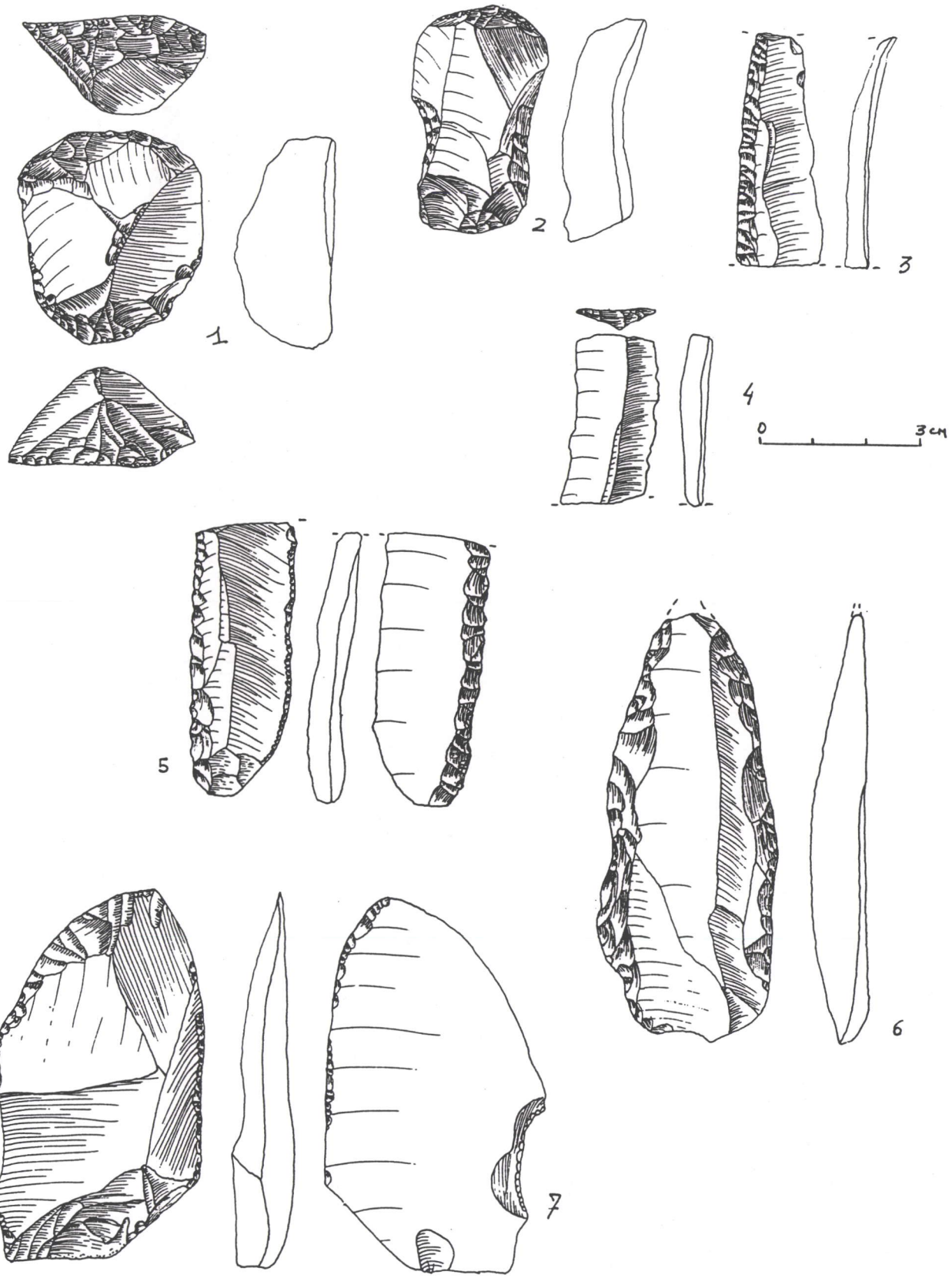

Figure 6 : Pl.V. Hotnica-Vodopada. 1 - double end-scraper; 2 - end-scraper; 3 - retouched blade; 4 - retouched truncation; 5 - backed blade; 6 - pointed retouched blade; 7 - lake with notches.

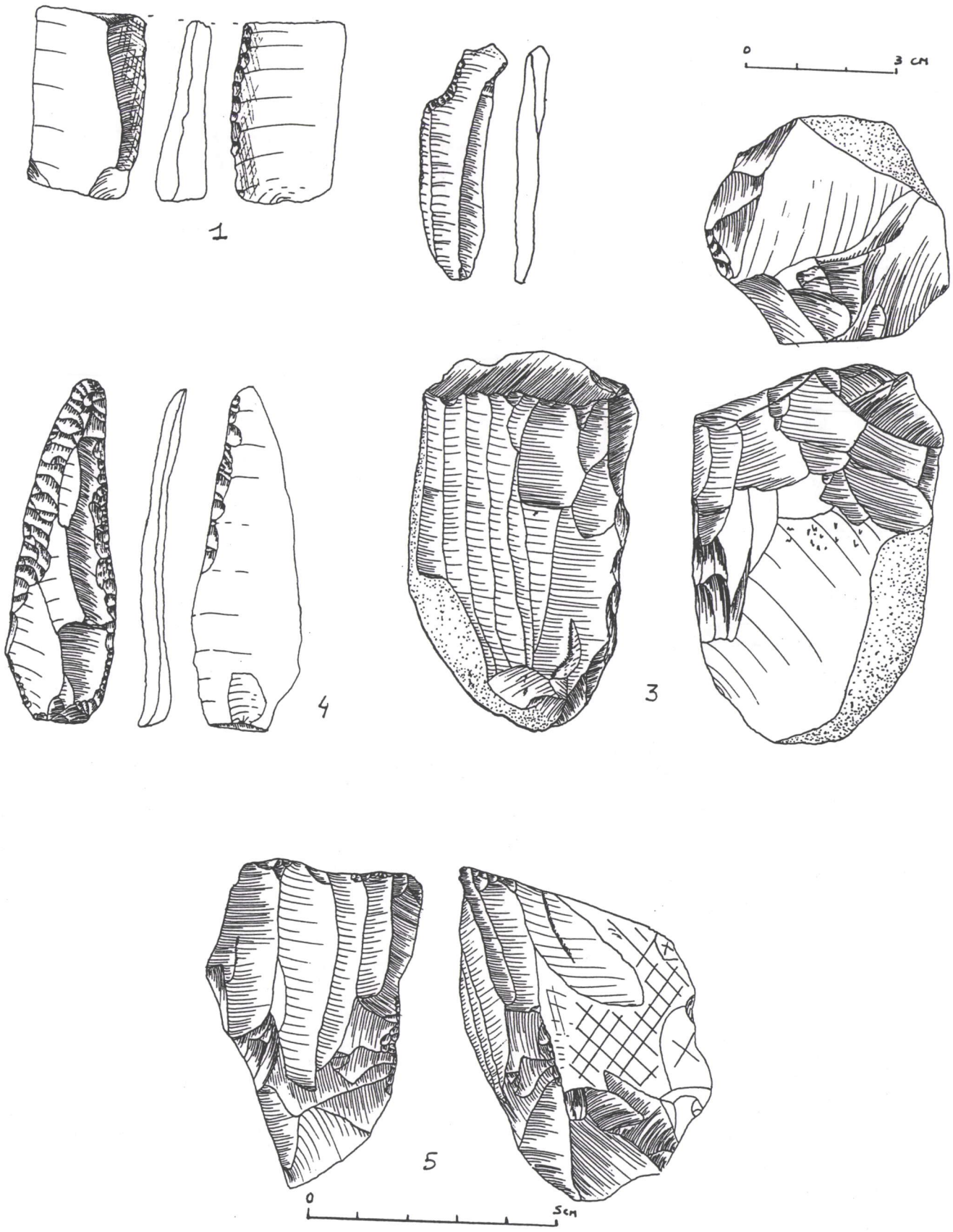

Figure 7 : Pl.VI. Hotnica-Vodopada. 1 - retouched blade; 2 - blade with a notch; 3, 5 - cores (more reduced sizes); 4 - pointed retouched blade.

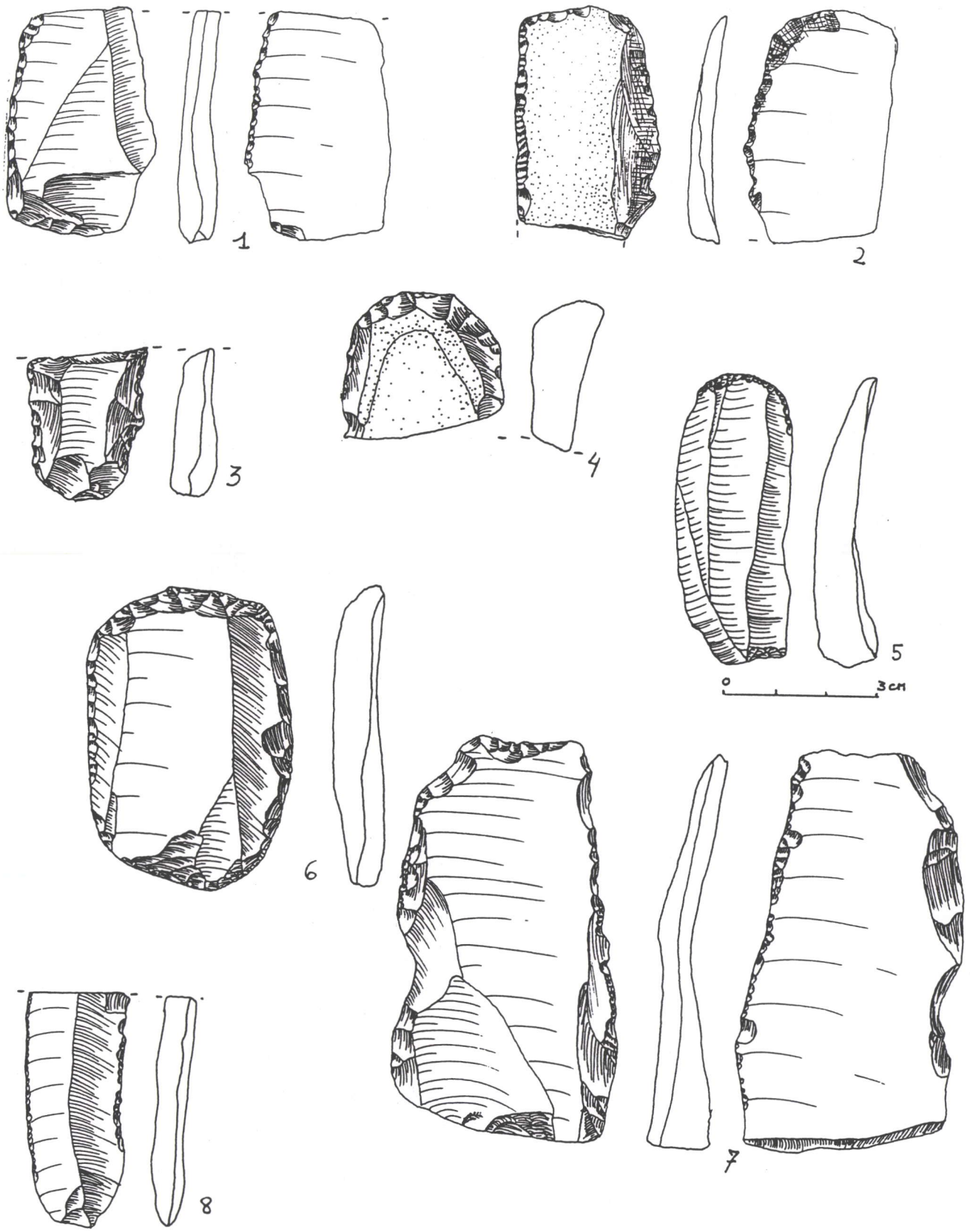

Figure 8 : Pl.VII. Hotnica-Vodopada. 1, 2 - backed blades; 3 - retouched flake; 4, 5, 6 - end- scrapers; 7 - backed blade; 8 - retouched blade.