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ABSTRACT

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1. Introduction

We should express our sincere appreciation to prof. D. Srejović who opened to the authors of the present paper the results of his excavations /1965-68/ in Lepenski Vir, the multilayer Preneolithic and Neolithic site, located at the Yugoslav bank of Danube gorge in Iron Gate. The discovery of the site has become one of the scientific sensations during the past few decades, particular interest have evoked objects of Preneolithic stone art and architecture. The materials from Lepenski Vir have been published in a monography by D. Srejović /1969/ and mentioned in many other articles and studies /D. Srejović 1971, 1972 , 1972a, 1973, 1978/. They have evoked many lively discussions concerning their chronology, taxonomic position / see e.g.J. Nandris 1968, 1970, R. Tringham 1972 and others/ and place in the European Stone Age. An outstanding monography by D. Sreyović /1969/ has not included the full elaboration of such an essential category of artefactes as chipped stone industry. This material was hardly mentioned and only few pieces were illustrated. Since it is a major argument in discusions on the place of the finds from Lepenski Vir in the prehistory of Europe, it seemed purposeful to us to render a publication covering all chipped artefacts from the site. The arrangement and the selection of attributes in the publication resembles an earlier monography of chipped artefacts from Vlasac by J.K. Kozlowski, and S.K. Kozlowski, 1982. The material presented in this paper is divided into two main stratigraphic units: the majority of finds come from Preneolithic dwelling levels /pl. 1-8/ and are integrally connected with trapezoidal dwellings mainly from layer I.

The other part comes from pottery Neolithic layers IIIa, b of Starčevo culture /pl. 9-15/. Moreover, there is a small group of finds /pl. 16/ whose stratigraphic position is not clearly identified. More detailed description of the stratigraphic position of presented artefacts was not possible. Some finds of Proto-Lepenski Vir phase, known solely from D. Srejović's publication /1969, fig. 36/ have not been discussed in this paper either. According to the field notes layer II provided only few chipped stone artefacts. Neither was possible a more precise description of the stratigraphic position of particular artefacts of layers I and III / subdivided into several stratigraphic subunits, Ia-e and IIIab/. This is the reason why only two units: Preneolithic and Starčevo can be quoted in the present study. The position of particular pieces within the exploration units, houses in layer I, is denoted in the appendix 1.

Preneolithic finds from layer I have their point of reference in the material from multilayer Vlasac site (D. Srejović, Z. Letica 1978) whose three layers gave us characteristic of technological and morphological traditions of Preneolithic industry in the region. It was much more difficult to refer Preneolithic stone finds from Lepenski Vir to Mesolithic sites of the Romanian bank of Djerdap, since their monography, especially in relation to Schela Cladovei phase was not comprehensive. Chronological framework of the discussed finds is

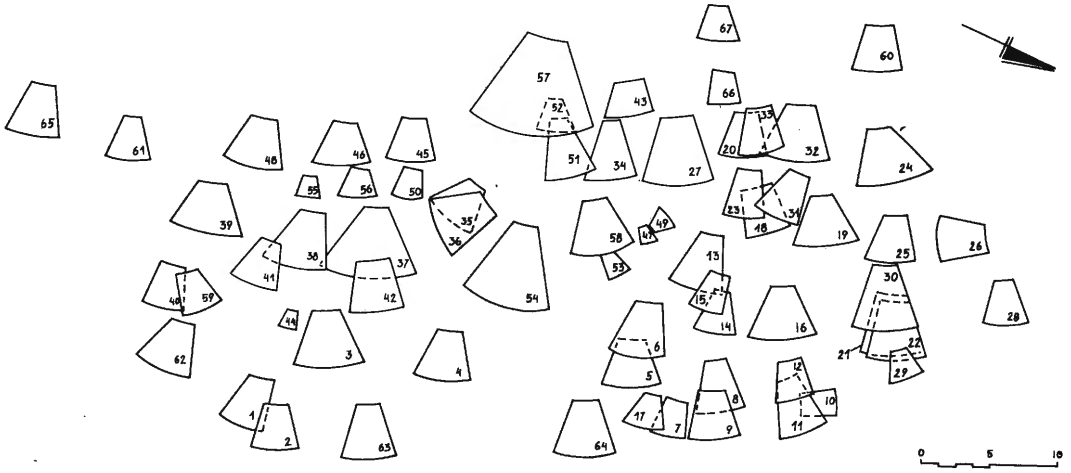

Fig. 1 - Lepenski Vir, layer I. Dwelling structures.

limited by radiocarbon dates which for layer I are 5410-4850 B.C., layer III is not marked by radiocarbon date, however, bearing in mind the presence of monochrome pottery in level IIIa, we may suppose that the beginning of the formation of this layer falls on the end of VIth millenium B.C. This causes the main controversy between radiometric and archaeological arguments on dating Lepenski Vir. Radiometric arguments imply the fact that the Preneolithic layers of Lepenski Vir are partially contemporary to Starčevo settlement in north-eastern Yugoslavia while archaeological arguments on dating layer IIIa /the presence of monochrome pottery of early Starčevo or Proto-Starčevo/ question the value of some radiometric dates for layers I and II and imply shifting their chronology back to VIth millenium B.C.

Following the detailed cross-section of the western part of the site, published by D. Srejović /1969, fig. 6/, Starčevo layers /III/ are distinctly separated from Preneolithic layers in their border lines as well as in lithological and sedimentological characteristic. Preneolithic layers, in turn, contain dwelling structures at some levels with the floors covered by remains of these structures. This is why materials of different ages could not have been mixed up. The profile shows that there were no younger pits in Preneolithic layer. The above observations correlate with the detailed analysis of stone pieces from two basic stratigraphic complexes. The authors of the present paper would like to express their gratitude to the Serbian Academy of Sciences and a special and sincere word of thanks to its scientific secretary, Prof. dr M. Garašanin, for facilitating the work on this study in Yugoslavia.

2. Preneolithic Finds from Layer I

2.1 *Raw-materials*

Preneolithic inventory from layer I contains pieces of 18 different kinds of raw-materials. Since the majority of raw-materials occured among Vlasac site /except 5/, they did not undergo special mineralogic and petrographic examination. The details on mineralogic and petrogaphic and geochemical characteristic of all the raw-materials /table I/ are in Vlasac site monography with identical denotation.

The most numerous in Lepenski Vir I is grey radiolarite /B2 - 27.11%/, grey flint /A1 - 21.59%/ and quartz /18.66%/. All of them are local in Djerdap area - the first two appear in Mesozoic limestone and the third one in alluvial deposits of Danube.

A smaller group consists of: grey non-transparent flint /A3-9.38%/, grey transparent flint /A4-5.51%/, wax coloured Balkan flint and eventually black flint /A9 - 3.99%/. All these materials are of top quality brought from different regions. Deposits of flint A3, A4, and A9 appeared most likely at the western side of Iron Gate while Balkan flint /A11/ far east of Djerdap in the region of Mesozoic sediments of pre-Balkan Platform.

The remain raw-materials are in small quantities from 2.58% /yellow flint/ to 0.11% /some igneous rocks and silificated limestone/. In the same group are rocks appearing in Iron Gate region: radiolarite and other kinds of flint, quarzite and mudstone; west and north-west of Iron Gate /green, red and purple igneous rocks/ and rocks brought from the distance of about 250 km (obsidian from Tokaj-Prešov Plateau).

The most frequent raw-material - grey radiolari-

TABLE I

Raw - material structure of layer I

The kind of raw material	Denot. in the public. on Vlasac site	Cores and splintered pieces		Flakes		Blades		Tools	Total	
		N°	%	N°	%	N°	%	N°	N°	%
Balkan flint	A11	2	2.73	15	2.48	16	13.55	13	46	5.39
Grey radiolarite	B2	26	35.61	165	27.31	25	21.18	15	231	27.11
Red radiolarite	B1	–	–	3	0.49	–	–	1	4	0.46
Grey flint	A1	10	13.69	145	24.0	18	15.25	11	184	21.59
Brown transparent flint	A4	6	8.21	24	3.97	13	11.0	4	47	5.51
Brown non transparent flint	A3	7	9.58	51	8.44	18	15.25	4	80	9.38
White flint	A7	–	–	–	–	3	2.54	1	4	0.46
Striped flint	A6	–	–	3	0.49	1	0.84	–	4	0.46
Black flint	A9	4	5.47	24	3.97	5	4.53	1	34	3.99
Yellow flint	A5	3	4.10	6	0.99	11	9.32	2	22	2.58
Greenish igneous rock	C1	–	–	1	0.16	–	–	–	1	0.11
Reddish igneous rock	C3	–	–	6	0.99	4	3.38	–	10	1.17
Purple igneous rock	C4	–	–	3	0.64	1	0.84	–	4	0.46
Quartz	D	12	16.43	147	24.33	–	–	–	159	18.66
Quartzite	E	–	–	8	1.32	2	1.69	1	11	1.29
Mudstone	–	1	1.36	2	0.33	1	0.84	1	5	0.58
Silificated limestone	–	–	–	1	0.16	–	–	–	1	0.11
Obsidian	–	–	–	–	–	–	–	1	1	0.11
Burnt pieces	–	2	2.73	–	–	–	–	4	6	0.46
Total		73		604		118		59	854	

te /B2/ is the most popular among cores but less frequent among blades. Its frequency in a group of flakes and tools accounts for an average for the whole inventory. Grey flint /A1/ occurs most frequently in flakes while in a group of cores, splintered pieces and blades its frequency is smaller than the average in the whole inventory. And finally quartzite appears entirely as cores, splintered pieces and flakes and not as blades or tools.

In this group of frequently occurring raw-materials, radiolarite and flint were most often used for the production of blanks which was subsequently transformed into retouched tools. Splintered technique dominated only in chipping quartz.

Raw-materials of medium frequency were essential for the production of blades and retouched tools which was resulted by the quality of flint. It is particularly connected with flint A11 which, with the frequency of 5.39% accounts for 13.55% in a group of blades and for 22.80% in a group of tools. In a group of cores and splintered pieces it accounts for 2.73% and in a group of flakes - for 2.48%. High frequency in a group of blades may be observed for A3 and A4 raw-materials though their ratio in tool production is smaller. These preferences can be explained by extremely high quality of these kinds of flint which were the most suitable for the production of blades.

Comparing the structure of the inventory of Lepenski Vir layer I with the three layers of Vlasac site, we may notice that raw-materials A2 and A8 imported by Vlasac inhabitants do not appear in Lepenski Vir /table II/. Lepenski Vir has in turn a wider selection of igneous raw-materials not known in Vlasac. Considerably increased ratio of Balkan flint /A11/ and grey radiolarite /B2/ explaines quantitative changes. Comparing the frequency of these raw materials, we should exclude

TABLE II

Comparing the structure of raw-materials of Lapenski Vir layer I with the three layers of Vlasac site

The kind of raw material	Denotation	Flakes		Total	
		Vlasac I - III	Lepenski Vir I /Quartz excluded/	Vlasac I - III	Lepenski Vir I /Quartz excluded/
		%	%	%	%
Balkan flint	A11	0 - 1	3.28	below 1	6.52
Grey radiolarite	B2	7 - 10	36.10	7 - 10	32.76
Red radiolarite	B1	0	0.65	0	0.56
Grey flint	A1	42 - 47	31.72	42 - 49	26.09
Brown transparent flint	A4	9 - 13	5.25	9 - 12	6.66
Brown non-transparent flint	A3	9 - 23	11.15	11 - 18	11.34
White flint	A7	7 - 8	–	2 - 4	0.56
Striped flint	A6	0 - 1	0.65	1	0.56
Black flint	A9	below 1	5.25	0 - 1	4.82
Yellow flint	A5	0 - 1	1.31	1 - 2	3.12
Greenish igneous rock	C1	below 1	0.21	0 - 1	3.12
Reddish igneous rock	C3	–	1.31	–	1.41
Purple igneous rock	C4	–	0.65	–	0.57
Quartzite	E	0 - 1	1.75	0 - 4	1.56
Mudstone	–	–	0.43	–	0.70
Obsidian	–	–	–	–	0.14

quartz out of the composition in Lepenski Vir since as far as Vlasac is concerned only siliceous and quartzite products have been taken into consideration. In these proportions the frequency of flint A11 in Vlasac is below 1% and in Lepenski Vir it amounts to 6.52%; radiolarite amounts to 7-10% in Vlasac and to 32.76 in Lepenski Vir. It was typical of Lepenski Vir that the ratio of local radiolarite and imported flint used often for the production of tools and blades had increased. It was imported from the region penetrated by the population of Starčevo culture. This flint began to dominate in Lepenski Vir layer III. The presence of this in Preneolithic layer I can be explained by the fact that Preneolithic settelement in Lepenski Vir was contemporary to Starčevo culture settlement in the regions surrounding southward and eastward Iron Gate. The ratio of A9 and A5 flint does not grow so fast since they amount to 0-1% and 1-2% and 4.82 and 3.12% in Vlasac and Lepenski Vir respectively. We may observe the diminished usage of the following three raw-materials: the usage of

A1 falls from 42 - 49% to 26%,
A4 - from 9 - 12% to 6.66%
A7 - from 2 - 4% to 0.56%.

In general, we may draw a conclusion that despite the domination of local raw-materials in Lepenski Vir layer I and in Vlasac, the ratio of some imported raw-materials grew in Lepenski Vir. These raw-materials come from the other, much broader supply zone, spreading southern-east and north much farther away than the supply zone for Vlasac. The character of imported raw-materials /flint A11 and obsidian/ showed that they were

TABLE III

Flakes and Blades - Mesolithic assemblage of Lepenski Vir layer I - The ratio of particular groups of products

	N°	%
Whole flakes	302	41.82
Fragments of flakes	302	41.82
Whole blades	49	6.78
Fragments of blades	54	7.47
Trimming and rejuvenation blades	15	2.07

brought by the population of Starčevo-Körös complex.

2.2 *The General Structure of the Assemblage*

The flint materials from Lepenski Vir presented below have the exact vertical and horizontal localization which was related to dwelling structures appeared in this level. It may be easily noticed in the Appendix presenting the sets of particular houses. Material from the so called trench II has been included in the described Mesolithic complex.

A small part of apparently Mesolithic artefacts do not have such precise localization and this is the reason for not including them in this part of the paper but treating them separately. Having in mind numerous discussions on the nature and limits of Lepenski Vir culture, we wished to avoid any confusions. The total of the chipped stone artefacts from layer I amounts to 854 pieces.

Among them are:

Cores and splintered pieces	73	8.56%
Flakes and their fragments	604	70.89%
Blades and their fragments	118	13.84%
Retouched tools	59	6.69%

The above structure is typical of living sites where the whole stoneworking was made on the spot, and mostly local raw-materials was used. Such is the case of Lepenski Vir layer I. Mineralogic and geochemical examination imply that almost 91.03% of products were manufactured of the local raw-materials.

2.3. *Core Group*

The assemblage of Lepenski Vir I contains 73 products of a core group including:

1. Typical cores	13	17.80%
2. "Plate" cores	4	5.47%
3. Splintered pieces	56	76.71%

Typical cores are usually represented by single-platform fine pieces, polihedral with flat and broad flaking face for blades and flakes /pl. 4: 13, 16/. Next to them can be found slender pieces with narrower flaking face for blade production /pl. 4: 14, 15/. All of them are initial specimen slightly processed and rarely prepared. Almost half of all the cores are fragments. All types of cores mentioned above, have their analogies in the materials from Vlasac site.

"Plate" cores /pl. 5:1-4%/ are short and made on natural flint and radiolarite plates or on thick tablets. They too, have their numerous analogies in materials from Vlasac.

Splintered pieces dominate in the discussed group of artefacts. Bipolar forms which are divided according to the size and number of flaking faces occur most frequently. First of all, we should mention bipolar bifacial pieces /pl. 5: 5-10/ which are 20 - 25 mm long and are of a similar width. Pieces amounting to 45 mm of length /pl. 5: 7,9/ are less numerous in the group. Bipolar unifacial splintered pieces have similar dimensions /pl. 6: 1-6/. Finally, quite a large group consists of bipolar splintered pieces /pl. 6: 8-13/ which do not exceed 20 mm of length and 10 mm of width. The smallest group /3 pieces/ is made up of splintered pieces with one pole and opposite platform processed as bipolar splintered pieces. Specimen with flaking face turned at 90° /pl. 6: 7/ are equally rare. To finish with, we should mention strongly processed specimens /pl. 7:4-5/ which are remnants of the above enumerated splintered pieces. Their poles are often removed.

All types of splintered pieces have their analogies in Vlasac. The only differences are in the quantitative structure of the core group, since splintered pieces in Lepenski Vir are most numerous in this group of artefacts.

2.4. *Flakes and Blades*

Mesolithic assemblage of Lepenski Vir layer I counts 722 flakes, blades and fragments. Table III shows the ratio of particular groups of products.

2.4.1 *Flakes*

The Mesolithic inventory counts 604 pieces of flakes and their fragments. Whole or almost whole artefacts with the scar pattern on the dorsal face amount to 302, the other 302 pieces are fragments of flakes, some of which are very small and difficult to identify.

According to the scar pattern on the dorsal face we can distinguish the following categories of flakes:

1. Cortical flakes	16	5.29
2. Flakes with cortex on one side	4	1.32
3. Flakes with cortex on the distal end	1	0.33
4. Flakes with common direction of scars on the dorsal side	75	24.83
5. Flakes with perpendicular scars	5	1.65
6. Flakes with divergent scars	4	1.32
7. Flakes with concentric scars	2	0.66
8. Flakes with transversal scars	15	4.96
9. Flakes from double platform cores	3	0.99
10. Flakes from splintered pieces	52	17.21
11. Chips /below 1.5cm/	118	39.07
12. Flakes removing the whole flaking face	1	0.33
13. Trimming flakes	5	1.65
14. Burin spalls	1	0.33
Total	302	100.00

Flakes with platforms are divided as follows /only pieces above 1.5cm were taken into consideration/:

1. Unprepared platforms	12	15.78
2. Platforms formed by single blow	19	25.00
3. Punctiform	38	50.00
4. Faceted platforms	6	7.89
5. Dihedral	1	1.31
Total	76	100.00

The above tables show that splintered technique and single platform core technique were very popular which was connected with the fact that flakes with common direction scars on the dorsal face and flakes from splintered pieces /with common and with opposite direction of scars and with percussion culbs and weawes on dorsal and ventral faces/accounted for the majority of artefacts. The total of pieces amounts to 42.04%. Fine chips accounting for 39.07% of all the flakes and for the majority of flakes with punctiform platform /50% of all the pieces with preserved platforms/are most likely the results of the use of splintered technique.

It is peculiar that there is only a small part of cortical flakes and flakes with >50% of cortex /5.29%/, which may be resulted by the fact that only natural fragments and not the whole nodules were used for core processing. An exceptionally small number of flakes with convergent, divergent or perpendicular scars in this inventory points to the fact that cores were not initially prepared. Some specimen of this kind are the cause of the change of core orientation or core repairing during the processing. Low ratio of faceted platforms /7.89% of all the artefacts with platforms/ is the result of not using platform preparation.

2.4.2. *Blades and bladelets*

Two subgroups are distinguished in a group of blades; one of them consists of blanks used for the production of retouched tools and the other one consists of trimming and rejuvenation blades from core preparation and of para-blades from splintered pieces.

Blanks

This subgroup contains 49 whole pieces /pl. 8: 1-14/ and 54 fragments /pl. 8: 15-24/. The list below shows the proportions:

whole pieces	49
pieces with broken distal parts and fragments with preserved platforms	31
middle parts	11
pieces with broken platforms	10
distal parts	2
Total	103

Whole Blades and Bladelets

Transversal platforms are typical of distal parts of blades and bladelets from Lepenski Vir. Lateral edges of blades are straight and parallel. Punctiform platform are in majority. Parallel interscar edges of previous blade scars appear usually on a dorsal side. A part of the whole blades have transversal and slightly oblique ends. They

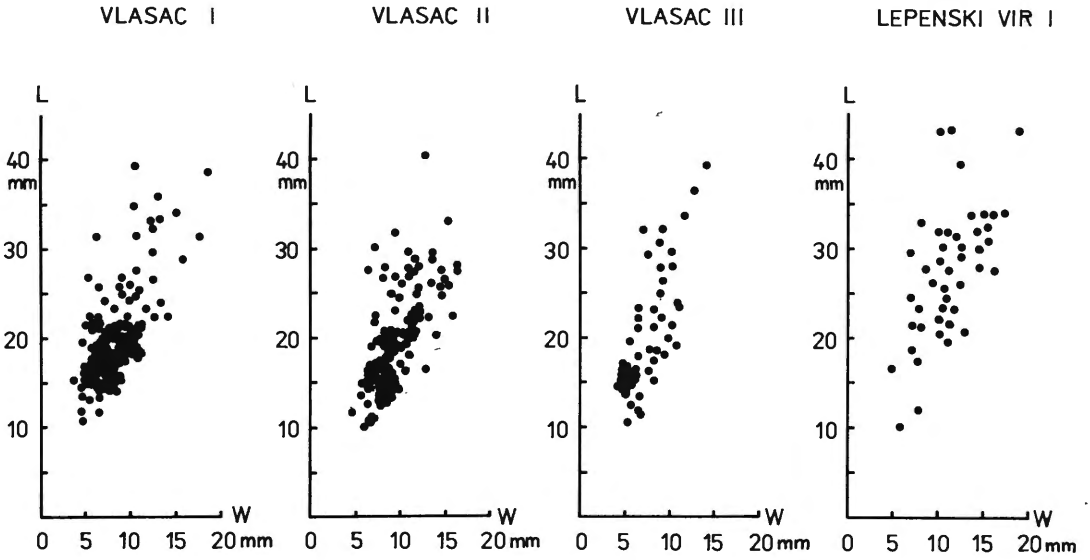

Fig. 2 - Lepenski Vir, layer I and Vlasac I-III. Morphometry of blades - Length: width ratio.

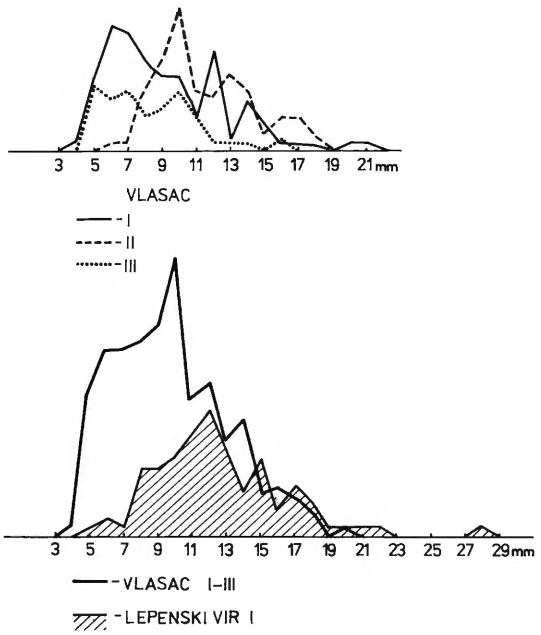

Fig. 3 - Lepenski Vir, layer I, and Vlasac, layers I-III. Width of blades.

are heavier from the described earlier and have scars from core preparation on a dorsal side /pl. 8: 4,5/. Some of blade-like flakes, which possibly were not subject to core processing, may be trimming blades. Diagram on fig. 2 shows the sizes of the whole blades and bladelets /their length and width/ and proves that the standard size was 21 to 40mm of length and 8 to 20mm of width with the proportions 2 : 1 to 4 : 1.

The same diagram shows the size of Mesolithic blades and bladelets from the three layers of Vlasac site, presenting flint industry similar to the one discussed here. It turns out that artefacts from Vlasac are shorter and narrower.

Speaking of comparisons between blanks from Lepenski Vir I and Vlasac I, II, III, fig. 3 is worth an attention. It shows the widths of blades and bladelets from those two sites /as far as Lepenski Virs concerned, we also presented the fragments of blades/. This figure reveals that the standard width of artefacts from Lepenski Vir is the same as the width of artefacts from all the three layers from Vlasac but somehow the comparison does not fit the framework.

Lepenski Vir has no narrower pieces but it should be added however, that there is no homogeneity of blades from three Vlasac layers. Parameters of layers I and III are similar but layer II differs somewhat and resembles parameters of Lepenski Vir blades /see widths presented on fig. 3/.

Typometric particularity of blades from Lepenski Vir /length/ may be explained by raw-material which was different in Vlasac /the analysis of raw-material proves this fact/. Some possible con-

vergencies of width standards from Vlasac layer II are an imponderable fact.

Irrespectively of all mentioned differences, the technical standard of blades from Lepenski Vir is close to that in Vlasac. The same concerns typometric features /the same proportions/. Altogether, blades from Vlasac and Lepenski Vir I are closer to each other than blades from Lepenski Vir I and Lepenski Vir III.

Blade Fragments

Whole blades /but not trimming blades/ were their initial form. Breakings noticed on the described fragments seem to be intentional in most cases and are the results of intentional breaking of blades which was the technique used in Mesolithic industries based on regular blades /e.g. Janislawice culture in Poland, Upper-Volga and Kunda cultures in USSR and numerous Mediterranean assemblages with trapezes./

Trimming and Rejuvenation Blades

This poorly exemplified sub-group of Lepenski Vir I looks as follows:

Trimming blades	1
Blades removed after core edge rejuvenation	2
Whole blade-like flakes /pl. 7: 9-14/	7
Fragments of blade-like flakes	2

The first two items show that core preparation has rarely been used in Lepenski Vir. They correspond to similar pieces from Vlasac. The next two positions are occupied by blade-like flakes with almost parallel inter-scar edges and transversal platforms and distal parts. It seems that some of those artefacts are merely low quality blades.

Finally we should also mention three para-blades incidentally obtained during the treatment of splintered pieces.

2.5 *Retouched Tools*

General Structure of the Assemblage

Lepenski Vir I assemblage contains 59 retouched tools. Their classification, in comparison to Vlasac I, II, and III is shown in table IV /numbers of typological groups from 1-12 as in Vlasac, see J.K. Kozlowski, S.K. Kozlowski, 1982 /.

The above table and fig. 4 /major tool classes according to J.K. Kozlowski and S.K. Kozlowski 1975/ show that the general structure of Lepenski Vir I assemblage closely correspond to Vlasac assemblages. All typological groupes met in Vlasac appear again in almost identical order, i.e. irregular scrapers and retouched blades dominate, also quite numerous are end - scrapers and microliths. Not a single typological group absent in Vlasac occurred in Lepenski Vir.

Detailed Typology

Table V in turn, shows a detailed typological

TABLE IV

The composition of major tod classes in Vlasac and Lepenski Vir

Typological group	Vlasac %			Lepenski Vir	
	I	II	III	N°	%
1	9.08	13.41	15.65	5	8.47
2	15.23	20.73	20.86	10	16.94
3	1.32	2.42	–	–	–
4	19.86	19.51	17.39	7	11.86
5	2.64	2.43	3.47	2	3.38
6	7.94	3.04	4.34	2	3.38
7	1.98	–	3.47	4	6.77
8	12.58	15.85	21.73	14	23.72
9	1.32	2.43	0.86	1	1.69
10	9.27	8.53	4.34	3	5.08
11	1.98	1.21	0.86	3	5.08
12	12.58	10.36	6.95	8	13.55
Total N°	152	164	115	59	99.89

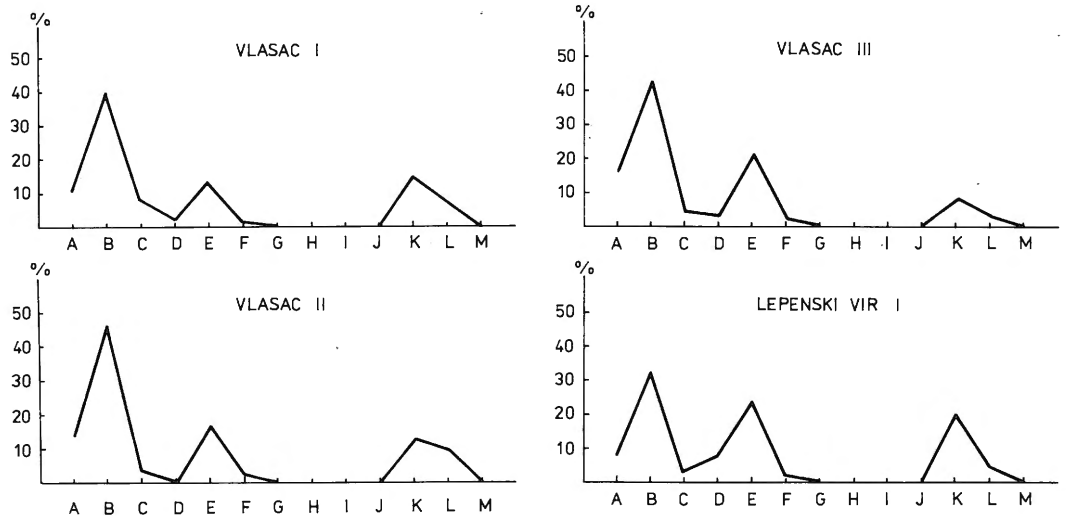

Fig. 4 - Lepenski Vir layer I and Vlasac, layers I-III. General structure of major tool classes: A - end-scrapers, B - irregular scrapers, C-burins, D-truncations, E-retouched blades, F-perforators, K-backed pieces and microliths, L-chisel-like tools.

structure of Lepenski Vir I against Vlasac assemblages, which results the following conclusions: the typology of Lepenski Vir I assemblage is poorer than that of Vlasac which may be explained by a smaller number of retouched tools. Nevertheless, certain typological convergencies between the two sites can be noticed. Among 70 types distinguished in Vlasac, 26 /e.i. 37.1%/ occurred in Lepenski Vir and only 3 types strange to Vlasac appeared in Lepenski Vir.

More detailed analysis of the retouched tools from the two sites implies that Lepenski Vir I and Vlasac are typologically similar to each other which is caused by the similarity of such characteristic forms as scrapers, retouched flakes, raclettes, retouched blades, chisel-like tools, backed blades and microliths /trapezes and micro-retouched bladelets/. Moreover, arched backed blade, identical with the specimen from Vlasac /pl. 16: 4/ occurred in our site. Its stratigraphic position is not entirely clear but its Mesolithic character is almost certain.

Thus, typological differences between the two sites, concern mainly the types which are not exemplified and these are: truncations, burins and perforators. All of them account for 5 - 11% in Vlasac and for 11.84% in Lepenski Vir. It is worthwhile to mention a burin /pl. 16: 1/ having its analogy in Vlasac, with uncertain stratigraphic but most likely Mesolithic position.

Concluding, the assemblage of retouched tools from Lepenski Vir I and that of Vlasac are very much alike and represent the same cultural unit, referred here as Lepenski Vir culture.

Considerable typological convergencies between the two discussed sites do not slur certain differences between some artefacts concerning typometric aspect rather than the morphology of pieces. It is worth mentioning that not only some blades from Lepenski Vir but also some retouched tools from this site are much larger than their equivalents in Vlasac. What we mean here, are scrapers /pl. 1: 14,15/ and retouched blades /pl. 3: 1-3,7/ and the difference is resulted by different raw-materials/in Lepenski Vir - flint A11 mainly/. But the above mentioned typometric differences do not shake our conviction that both sites reveal close similarity in tool assemblages.

3. Neolithic Finds from Layer III

3.1 *Raw-materials*

The frequency of basic raw-materials in Neolithic levels is presented in table VI. It shows that wax coloured, so called Balkan flint /A11-acc. to the denotation in the monography of Vlasac site - J.K. Kozlowski, S.K. Kozlowski, 1982/accounting for 65.73% has maintained the top place. In a core group it constitutes 100% of all the products, in a group of tools it accounts for 93.75% and in a group of blades - for 75.71%. This raw-material did not appear in Iron Gate and was imported from Pre-Balkan Plateau, east of Iron Gate. Its exact localization, however, is not known.

TABLE V
Detailed Structure of Retouched Tools

No. of Tool Class	Tool Class	Vlasac			Lepenski Vir
1.	End-Scrapers	I	II	III	
1.1	Very Short Arched	–	2	4	–
1.2	Short Arched	–	2	1	1 /pl. 1:1)
1.3	Short, Arched with a Unilateral Retouch	4	2	2	–
1.4	Short, Arched with a Bilateral Retouch	1	1	–	–
1.5	Short End-Scrapers with Oblique				
1.6	Front	3	–	1	2 /pl. 1:2,3)
	Elongated, Arched	–	2	1	2 /pl. 1:4,5)
1.7	Elongated, Arched with Lateral Retouch	–	2	1	–
1.8	Very Short, Straight	1	–	–	–
1.9	Very Short, with Oblique Front	–	–	1	–
1.10	Very Short, with Unilateral Retouch	1	1	–	–
1.11	Circular and Subcircular	3	3	1	–
1.12	High	3	2	1	–
1.13	Atypical Nosed	1	–	–	–
1.14	Double	1	–	–	–
1.15	On Splintered Pieces	–	2	2	–
1.16	Fragments	3	3	3	–
	Total	21	22	18	5
2.	Irregular Scrapers	I	II	III	
2.1	Staight, Lateral	4	10	5	1 /pl. 1:12)
2.2	Lateral Undulated	1	–	3	2 /pl. 1:11,15)
2.3	Staight, Transversal	4	1	2	–
2.4	Undulated, Transversal	1	2	1	1 /pl. 1:7)
2.5	Transversal, Oblique	1	3	1	1 /pl. 1:8)
2.6	Lateral + Transversal	5	6	4	1 /pl. 1:6)
2.7	Double Lateral	1	1	1	–
2.8	Convergent	1	–	1	1 /pl. 1:9)
2.9	On Splintered Pieces	5	11	6	1 /pl. 1:14)
2.10	Fragment	–	–	–	2 /pl. 1:10,13)
	Total	23	34	24	10
3.	Side Scrapers	2	4	–	–

No. of Tool Class	Tool Class	Vlasac			Lepenski Vir
4.	Retouched Flakes	I	II	III	
4.1	Unilateral Retouch	13	18	11	7 /pl. 2:1 - 7)
4.2	Bilateral Retouch	4	3	4	–
4.3	Transversal Retouch	7	8	4	–
4.4	Lateral + Transversal Retouch	3	3	1	–
4.5	Convergent Retouch	1	–	–	–
4.6	Heavy, Denticulated	2	–	–	–
	Total	30	32	20	7
5.	Raclettes	I	II	III	
5.1	Simple	3	2	1	2 /pl. 2:8,9)
5.2	Inverse	1	2	3	–
	Total	4	4	4	2
6.	Burins	I	II	III	
6.1	Central Dihedral	–	2	1	–
6.2	Lateral Dihedral	2	1	1	–
6.3	Lateral on Truncation	2	–	2	2 /pl. 2:10)
6.4	On Broken Blade	1	–	1	–
6.5	Single Blow	7	1	8	1 /pl. 2:11)
6.6	On Splintered Pieces	–	1	–	–
	Total	12	5	5	2
7.	Truncated Blades	I	II	III	
7.1	Transversal	1	–	–	–
7.2	Transversal + Lateral Retouch	–	–	2	–
7.3	Convex	–	–	1	–
7.4	Concave	1	–	–	–
7.5	Small	1	–	1	–
7.6	Short Oblique	–	–	–	2 /pl. 2:12,13)
7.7	On Ventral Face (Flat)	–	–	–	2 /pl.2:14,15)
	Total	3	–	4	4

No. of Tool Class	Tool Class	Vlasac			Lepenski Vir
8.	Retouched Blades	I	II	III	
8.1	One - Sided	8	12	7	4 /pl. 3:1,2,4,5)
8.2	Two - Sided	6	9	14	4 /pl. 3:3,6-8)
8.3	With Transversal Retouch	–	–	1	–
8.4	Tanged	–	1	–	–
8.5	Fragments	1	–	–	2 /pl. 3:9,10)
8.6	Microretouched	4	4	3	4 /pl. 3:11-14)
	Total	19	26	25	14
9.	Perforators	I	II	III	
9.1	Simple on Blade	–	1	–	–
9.2	Simple on Flake	2	2	1	–
9.3	Alternated	–	1	–	–
9.4	Small, with inverse retouch	–	–	–	1 /pl. 4:4)
	Total	2	4	1	1
10.	Chisel - Like Tools	I	II	III	
10.1	Single	8	7	3	2 /pl. 7:6,7)
10.2	Double	6	7	2	1 /pl. 7:8)
	Total	14	14	5	3
11.	Backed Blades	3	2	1	3 /pl. 4:1,3)
12.	Microliths	I	II	III	
12.1	Backed Arched Points	2	–	3	–
12.2	Backed Straight Points	–	1	–	–
12.3	Crescents	1	–	–	–
12.4	Isoscele Triangles	–	1	–	–
12.5	Sauveterrian Points	–	1	–	–
12.6	Rectangles	1	–	–	–
12.7	Normal Trapezes	3	–	1	2 /pl. 4:6,7)
12.8	Narrow Trapezes	1	1	–	2 /pl. 4:9,10)
12.9	Normal Trapezes with Concave Truncations	1	–	–	–
12.10	Fragments of Trapezes	2	1	–	2 /pl. 4:8,11)
12.11	Unilateral Microret. Bladelets	6	10	2	1 /pl. 4:12)
12.12	Bilateral Microret. Bladelets	1	1	3	1 /pl. 4:5)
12.13	Truncated Bladelets	6	1	–	–
	Total	19	17	9	8

TABLE VI

The raw-material structure of Lepenski Vir Starčevo assemblage

The kind of raw-material	Group acc. to the monography of Vlasac	Cores	Splintered pieces	Tools	Blades	Flakes	Total	
							N°	%
Wax flint/Balkan/	A11	5	2	29	53	146	236	65.73
Striped flint	A6	–	–	–	–	21	21	5.84
Grey flint	A1	–	–	1	3	9	13	3.62
White flint	A7	–	–	–	–	9	9	2.50
Brown non-transparent flint	A3	–	–	–	3	5	8	2.22
Brown transparent flint	A4	–	–	–	1	5	6	1.94
Black flint	A9	–	–	–	2	8	10	2.78
Yellow flint	A5	–	–	1	–	1	2	0.55
Grey radiolarite	B2	–	–	1	3	9	13	3.62
Red radiolarite	B1	–	–	–	1	–	1	0.27
Red igneous rock	C3	–	–	–	–	2	2	0.55
Pourple igneous rock	C4	–	–	–	1	–	1	0.27
Basalt	C5	–	–	–	–	1	1	0.27
Quartz	D	–	1	–	–	22	23	6.40
Quartzite	E	–	–	–	–	3	3	0.83
Burnt pieces	–	–	–	–	–	4	2	6	1.67
Total		5	6	31	70	246	358	100.00

The second place on the frequency list is taken by quartz /D/ occuring on the spot in the alluvial deposits of Danube. Quartz costitutes 6.40% of all products and is represented only in a group of flakes and splintered pieces. It was treated by flake and splintered techniques.

The third place belongs to striped flint /A6/ -5,84%/, represented in a group af flakes exlusively. Less frequent are grey radiolarites /B2 - 4.45%/ represented in a group of blades, flakes and splintered pieces, and grey flint /A1-3.62%/ represented in all groups except cores and splintered pieces.

The remain raw-materials account for 2.50 /A7/, 0.27%/B, C4, C5/.

The analysis of raw-materials origin shows that Starčevo population exploited local resources to a small degree, importing the most of flint from the regions east of Iron Gate. It served mainly for the production of retouched tools and blades. Other raw-materials had minor meaning and were often used in splintered and flake techniques. Amog other raw-materials, those of C group coming from volcanic rocks surrounding Southern Carpathians from the west, were imported. This concerns also igneous rocks of reddish /C3/ and purple /C4/ colours and basalt /C5/.

3.2 *General/ Structure of the Inventory*

General structure of Starčevo inventory looks as follows:

Cores and their fragments	5	1.39
Splintered pieces	6	1.67
Flakes and their fragments	246	68.52
Unretouched blades	70	19.49
Retouched tools	31	8.91

The structure of the inventory presented here is typical of living sites located far away from the resources of raw-materials where only part of the treatement was made on the spot. The most striking is the low ratio of cores, lower than in other sites of a similar function which in case of Starčevo culture may be explained by a specific core

processing technique applied when blanks was needed. Further core exploatation could take place somewhere else/see comments on this problem by M. Kaczanowska, J.K. Kozlowski, J. Makkay 1982/.

One of the five cores (pre-core) is carefully prepared but not processed and two others are natural fragments from blade cores. Therefore, it may be supposed that pre-cores /not worked raw-material to a smaller degree/ were brought to the site, then slightly processed in order to obtain blanks and were taken to some other place. All this concerned first and foremost the Balkan flint /A11/ since there were no cores from other raw-materials.

The ratio of retouched tools is fairly low /8.91%/ as normally in Starčevo-Körös sites /some assemblages consist entirely of retouched tools/. It is explained by the fact that nodules with the parameters typical of this culture were hard to obtain, and some groups of Starčevo-Körös culture used the same stock of blades and retouched tools during a long time.

The presence of debitage opposes the fact of bringing ready blades to the site since the blanks was obtained on the spot by slight processing of prepared cores. The ratio of debitage is relatively high /68.52%/ even if we postpone fragments of flakes difficult for identification /179 finds = 49.86% will be still left/.

3.3 *Cores*

One of the two pre-cores was prepared laterally on one side but it got cracked and was transformed into a scraper /pl.9: 3/. The other one was prepared bifacially on both lateral edges and on the base. It has single initial blow on a pre-flaking surface /pl. 14/.

One whole core left /pl. 13: 1/ has careful bifacial preparation on one side and on a distal part and blade scars forming a flaking face on a narrower side of the core and flake scars on a wider side. This core represents an initial processing stage.

It was impossible to reconstruct the way and stages of processing through these two blade core fragments.

Despite a small number, these objects deserve much of an attention since Starčevo sites have very few cores and their processing is reconstructed through dynamic characteristic of debitage. The fact of finding in Starčevo site carefully prepared pre-cores produced outside the place, is of major importance.

3.4 *Splintered Pieces*

6 splintered pieces were included conditionally into the discussed inventory. Five of them are relatively small bipolar objects /14 - 25mm of height, 12-22mm of width and 3-9mm of thickness/. Only one of them has one pole and the opposite end is in a form of transversal platform.

The morphology of the discussed artefacts does not differ from Preneolithic splintered pieces from layer I. It is supposed that they may occur on the secondary position. Particularly it may concern four pieces made of grey radiolarite, quartz or brown transparent flint. Two pieces are made of Balkan flint which implies their Neolithic origin. We have expressed our doubts on the chronology of splintered pieces shown on plates 16: 2, 3, 7.

3.5 *Flakes*

The described group counts 246 flakes including 179 whole or almost whole items /when scars pattern on a dorsal face was easy to reconstruct/ and 67 fragments.

Considering the scar pattern on a dorsal face we may propose the following classification:

1. Cortical flakes	28	15.64
2. Flakes with cortex on one side	14	7.82
3. Flakes with cortex on one side and with perpendicular scars	4	2.23
4. Flakes with cortex on a distal part and with common direction scars	4	2.23
5. Flakes with cortex on a distal and and with perpendicular direction scars	3	1.67
6. Flakes with common direction scars	12	23.46
7. Flakes with opposite direction scars	4	2.23
8. Flakes with perpendicular scars on a dorsal face	14	7.82
9. Flakes from double-platform cores	8	4.46
10. Flakes with perpendicular scars coming from one side	18	10.05
11. Flakes with perpendicular scars coming from both sides	8	4.46
12. Flakes from double-platform cores and additionally with perpendicular scars	2	1.11
13. Flakes with concentric scars on a dorsal face	11	6.14
14. Flakes from splintered pieces	10	5.58

15. Trimming flakes	4	2.23
16. Flakes from core-platform rejuvenation	1	0.55
17. Fine chips /below 1.5cm/	4	2.23
Total	179	100.00%

The above list shows the aboundancy of a group of flakes comming from the early stage of core processing. The group includes objects from items 3-5 and 7-13 with strongly differentiated scar directions on a dorsal face. They account for 40.22% of all the flakes. It is a peculiar thing that their frequency exceeds considerably the frequency of cortical or partially cortical flakes /pos. 1,2/ coming from the initial phase of core or pre-core processing /total 23.46/. It confirms once more our supposition that mostly pre-cores or initial cores were brought to the site.

The frequency of flakes coming from splintered technique is relatively low /only 5.58%/ which speaks of a minor importance of this technique. We cannot leave out the possibility that some flakes from splintered pieces can occur in the secondary position. Amog them there are also flakes from Balkan flint /4 items/ which may imply the fact that not all flakes from splintered pieces have been Mesolithic.

Single platform core technique for blades or blade-flake core was most frequently used which probably resulted the majority of flakes with one direction scars /pos. 6 - 23.46%/.

Platform features can be described for 162 flakes. The ratio of particular types of platforms is as follows:

1. Cortical platforms	13
2. Unprepared platforms	9
3. Platforms formed by single blow	93
4. Punctiforms	10
5. Faceted platforms	22
6. Dihedral platforms	15

The above classification reinforces earlier conclusions. High frequency of platforms formed by single blow and relatively large number of dihedral and faceted platforms point out to the origin of flakes from an early stage of processing cores prepared in advance. A small number of unprepared /particularly cortical/ platforms indicates earlier treatment outside the site. Low ratio of punctiforms shows a marginal role of splintered technique.

3.6 *Blades*

A group of 70 blades includes 46 whole pieces /or almost whole so that their length can be reconstructed/ and 24 fragments. Among fragments the frequency of particular parts is more or less equal:

proximal parts	10 pieces
middle parts	7 pieces
distal parts	7 pieces

Almost all blades are coming from single platform cores and only one from double platform Core. The majority of blades have trapezoidal cross-section and only some fine pieces have triangular profile.

We can describe the character of the platform for 42 pieces. Platform formed by single blow are in majority /16 pieces - 38.1%/, less numerous are blades with faceted platforms /11 pieces - 26.2%/ and punctiforms /9 pieces - 21.4%/. Unprepared platforms count only 6 items /14.3%/.

It confirms the hypothesis that these blades are struck from cores with initially prepared platforms. Numerous blades removed after core edge rejuvenation indicate prepared pre-cores /4 pieces; pl. 13:3/ and two regular trimming blades, one of them - with two-sided preparation /pl. 13: 4/, the other one - with one-sided preparation. Some of the blades have fragments of trimmed edges in the distal parts /pl. 13: 2/.

Morphometric analysis of blades shows that as far as their length is concerned, objects of 40 - 61mm are in majority. The presence of some very long blades / up to 125mm/ causes that the average lenght of the blade amounts to 64.58mm.

As far as the width of the blades is concerned, dominate pieces 12 - 24 mm wide / particulary 16-18mm/. The averange width amounts to 17.33mm /fig. 5/.

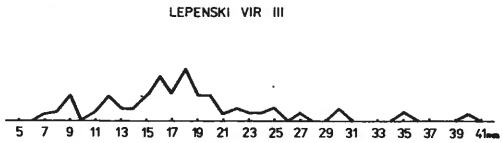

Fig. 5 - Lepenski Vir, layer III. Morphometry of blades - diagram showing width of blades.

The thickeness of blades is from 3 to 10mm with two maximums: 3mm and 6mm.

13 objects have proportions smaller than 1:4 and 27 objects have 1:4 and 1:2 proportions. It shows that almost half of the artefacts are very slender /fig. 6/.

The results of morphometric analysis mentioned above correlate to a high level of technology of blade production obtained from carefully prepared nodules. Big sizes of Balkan flint nodules allowed to produce very long blades. They are usually slightly bent which is caused by carefully prepa-

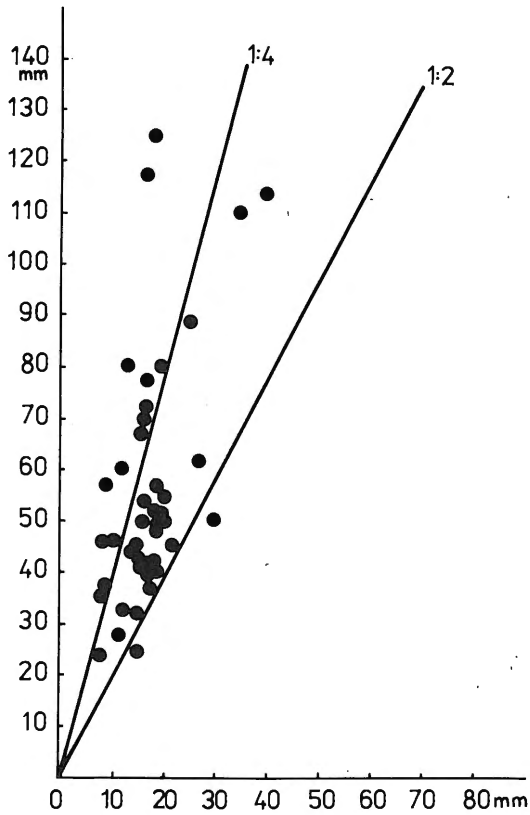

Fig. 6 - Lepenski Vir, layer III. Morphometry of blades - legth: width ratio.

red pre-striking surface and maintaining flat flaking face by renewing preparation during core processing.

3.7 *Tools*

The discussed inventory of Starčevo layers contains 31 retouched tools and 1 blade used as a sickle-insert /without a retouch/. The major tool classes are as follows:

End-scrapers	6 pieces
Truncations	3 pieces
Perforators	1 piece
Retouched blades and typical «lames retouchées»	13 pieces
Denticulated-notched implements	3 pieces
Irregular scrapers and retouched flakes	4 pieces
Cleaver /tranchet/	1 piece

The most numerous are retouched blades /40.6%/ then go scrapers /18.7%/ and retouched flakes with denticulated-notched implements /21.8%/.

In a group of end-scrapers items on flakes account for 3 pieces /pl. 9:2, 10:3,8/: one narrow object with undulated front and two wide objects with micro-retouched undulated fronts and abruptly retouched asymmetric front. One more carenoidal scraper made on a cracked pre-core /pl. 9:3/ should be included in the group.

Blade end-scrapers are represented by two artefacts: a short one with strongly rounded front /pl. 9:4/ and atypical one fine retouched with slightly convex front /pl. 9:5/.

The number of end-scrapers can be enlarged by one flake piece with surrounding denticulated retouch, previously classified to the group of denticulated-notched implements /pl. 9:1/.

A group of truncations counts 1 blade specimen of Kostienki - type truncation with an inverse notch on a tip /pl. 11:2/, we count also two oblique flake truncations.

There is only one perforator retouched on a lateral-distal part of one flake /pl. 11:3/.

A large group of retouched blades is represented by only one object of «lame retouchée» type /pl. 12:4/ with fully retouched both sides /micro-retouch on one side and more distinct simple retouch with an angle of 65° on the other side/. There are also four blades with the distinct retouch of one side /angle 60-80°/ mainly in a proximal part. The remain 8 objects are blades with not continuous micro-retouch on one or both edges: retouch of a dorsal side on one edge /pl. 12:1, 2, 7/, retouch of dorsal side of both edges /pl. 12:3/, retouch of an inverse side of one edge /pl. 12:5,6/ and alterne retouch /pl. 12:8,9/ One object illustrated on pl. 12:10 has not been included in the list since the intentional nature od the retouch on a small part of one edge evokes certain doubts.

Denticulated-notched implements are represented by mentioned earlier tool with surrounding denticulated retouch of a fairly thick flake /pl. 9:1/ and by two lateral notched implements /pl. 10:4/, and one with a flat marginal retouch /pl. 10:7/.

Retouched flakes and other irregular scrapers are represented by objects with lateral retouch on a dorsal face /pl. 10:1,5/ and with an inverse retouch /pl. 10:2,6/.

An intersting object described as a cleaver on a flake, having processed sides on an inverse side /pl. 11:1/ and bifacial retouch of a distal part as in axes.

3.8 *Finds from Layer III in Comparison with Stone Assemblages of Starčevo Culture.*

Inadequate information on Starčevo culture sto-

ne assemblages hinder an attempt of finding out the place of stone artefacts of Lepenski Vir III in the history of Starčevo assemblages. General observations on the differentiation of Starčevo culture assemblages allow to distinguish two types of these assemblages:

1. Assemblages with numerous retouched blades, end-scrapers and retouched flakes, possibly with a small number of perforators and truncations. Early inventories from Anzabegovo/E.Elster 1976, 1977/, Divostin /D. Srejović M. McPharron 1971/, Golokout /J.K. Kozlowski 1982/ and some poor inventories from Great Hungarian Plain /J.K. Kozlowski 1982, E. Bacskay 1976/.
2. Assemblages with the high frequency of microliths /mainly exemplified by rombs and trapezes/. The ratio of microliths in these assemblages falls in between retouched blades and retouched flakes, next to them in number are splintered pieces, truncations and scrapers. To similar type of inventories belong: upper /Starčevo/ levels of Cuina Turcului /A. Paunescu 1970/, Ostrovu Golu /G. Lazarovici 1979/ in Rumania and Mehtelek in Hungary /J.K. Kozlowski 1982/.

The divergency in the development of stone industries of Starčevo-Körös assemblages, mentioned earlier, may be resulted by a divergent nature of the economy /more or less developed hunting/ and dependence on the ecological conditions of Danube zone. Hypothesis presuming this divergency to be the result of an influence of Preneolithic local base in forming stone assemblages of this complex /presence of microliths/ is also admissible.

Finds from Lepenski Vir layer III clearly correspond to group I which has no microliths. In other fields of technology and stylistic features hiatus between layer I and III may be observed. It should be stressed here that particular types of retouched tools, not only as far as the major tool classes frequency is concerned, strongly resemble early inventories of Starčevo from Anzabegovo layer III. It particularly concerns the way of very fine retouched blades, almost all kinds of end-scrapers and retouched flakes. Analogical blade technology underline these similarities but in Anzabegovo the whole production starting fom an initial phase and core processing took place on a spot while in Lepenski Vir, initial phase of core processing was made outside the settlement. The above facts and raw-material conditions /flint and radiolarite nodules were smaller in Anzabegovo, explain why Lepenski Vir blades were longer and more slender.

Late-Starčevo Golokout site in Fruska Gora reveal similar analogies. Except of obsidian and radiolarite, also Balkan flint was used in this site. Therefore morphometric parameters of blades are closer to those of Lepenski Vir artefacts. The way of retouching blades and flakes was similar.

Unfortunately our present knowledge od Starčevo culture stone industries does not permit to settle down the evolutive features of this industry. That is why it is not possible to differentiate assemblages of monochromie phase from middle and later phase. The situation in Lepenski Vir does not ease the difficulties in selecting stone materials from layers IIIa and IIIb.

A peculiar thing is, that all analogies concerning certain types of artefacts like end-scrapers, retouched blades and flakes concern the whole region supplied with Balkan flint which also includes finds of Körös culture in Great Hungarian Plain.

4. Conclusions

The analysis of chipped artefacts from Lepenski Vir presented in this paper imples the following conclusions:

1. Chipped stone artefacts from Lepenski Vir layer I should be classified as a separate taxonomic unit which together with D. Srejović, we have described as Lepenski Vir culture. Next to materials from Lepenski Vir, this unit includes materials from the there layers of Vlasac site, from Icoana, Schela Cladovei and Ostrovul Corbului.
2. The inventory of Lepenski Vir layer I is undoubtedly of Preneolithic nature and comes from a local Late-Paleolithic industry, Cuina Turcului type /A. Paunescu 1970/ and Epipaleolithic Padina A type /I. Radovanovic 1981/. This thesis correlates with the results of zoological researches on the sites of Lepenski Vir culture /S. Bökönyi 1970, 1973, 1978/ and its predecessors and with the results of anthropological research on Preneolithic Djerdap populations /J. Nemeskeri, L. Szathmari 1978, Z. Mikić 1981/. The results of paleo-botanical analysis of coproliths from Icoana is not an adequate argument for proving the beginnings of plant cultivation in Lepenski Vir culture.
3. Lepenski Vir layer III represents stone chipped industry corresponding closely to Starčevo-Körös complex, though insufficient knowledge of stone chippped industry this complex does not allow to settle down the evolutive phase. The results of the analysis of the inventory of layer IIIa cannot possibly be an argument in a discussion on chronological position of Lepenski Vir layer IIIa. We

APPENDIX 1: Inventories of lithic finds from houses of Lepenski Vir, layer I

	Living floor - house 1	House 3	Living floor - house 4	House 8	House 11	Living floor - house 13	House 15	Living floor - house 16	House 16	House 18	Living floor - house 19	House 19	Living floor - house 20	House 20	Surface between houses 18/23	Surface between houses 20/23	House 21	House 22	Living floor - house 23	Living floor - house 24	House 24	Living floor - house 25	House 25
1. Typical cores											1	1				1						1	
2. Splintered pieces	1				1		1				1	1			5	1	1						
3. "Plate"cores																							
4. Cortical flakes														1		2			1		2		1
5. Partially cortical flakes												1			1	1			1				
6. Flakes with common directions of scars on dorsal face		4									9	3		2			1						1
7. Flakes with centripetal scars													1										
8. Flakes with perpendicular scars															3							1	
9. Flakes with opposite scars																							
10. Flakes from splintered pieces							2	1							1	1	1	2				1	3
11. Blade - flake															1								
12. Blade and blade fragment		2	3	1		1	2	1	1		5	1			13	1	2		2			6	
13. Fine flake									1			1			1								
14. Trimming flake or blade																	3						
15. Waste / fragments /			5			1	1		1	35					5	3		9	10	6		14	2
16. Quartz fragments	20		3	2		4	4					9	7	12	14	6	2	1			1	5	5
1. End - scrapers																							
2. Burins																					1	1	
3. Irregular scrapers	1														1							1	
4. Raclettes																							
5. Retouched flakes											1				1								
6. Retouched blades	1			1			1	2		1					2							1	
7. Truncations				1							1												
8. Perforators																							
9. Chisel like tools															1								
10. Backed pieces											1												
11. Microliths											1								1				

House 26[1]	House 26	House 27	House 28	House 30	House 31	House 32	House 33	House 34	House 35	House 36	House 37	Living floor - house 38	House 38	House 39	Surface between houses 40/41	Living floor - house 41	House 41	House 42	Living floor - house 43	House 43	House 45	House 46	Living floor - house 47	House 47	House 48	Living floor - house 49	House 51	House 54	House 57	House 61	House 62	House 63	House 66
1															2																		
	1	1		1					14	2				1	2			1			1	1						1			1		
						1			3																								
							1		1					2											1			2	1				
										1			1															1		1	1		
1	4			2		2			35	4	1	1	2		2				1				1			2	2	2		2			
	2						1		5		1								1				1	1	1				1	2		1	
	1								1																				1				
1	2			1		5			3		3			1							1		2		1		2					3	
						2			1				3															2					
	6		1	1		10	1		17	7	1	2		2	3	2		3	1		2	1	3		3			1			2		4
				1				3	97								4	2	2					1									
								1	1																					1			
	15			1		2			30	14		5			2	3	8		1		1		1	2	5	7					2		
	9					1			3			2				3	7						2	1	3		5						
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also see no reason for settling down the beginning of Lepenski Vir culture on the middle of VIIth millenium B.C. as D. Srejović suggests, since C14 dates and the peculiarity of stone chipped industries speak for the beginning of VI millenium and not earlier, as far as layer I is concerned. Numerous arguments poit out that Lepenski Vir layer I was contemporary to at least part of Vlasac assemblage and also to the settlement of Starčevo culture in noth-eastern Jugoslavia, on Hungarian Plain and possibly in Banat. The presence of raw-materials which could have been brought to Lepenski Vir by the population of Starčevo culture are in favour of those synchronisms.

4. All the elements of the analysis /raw-materials, processing technology, morphology of retouched tools/point out to the hiatus between the inventories of Lepenski Vir layers I and III. The hiatus is also confirmed by anthropological analysis /Z. Mikić 1981/ which revealed that new population came to the region of Iron Gate.

Though not all doubts concerning the place of Lepenski Vir in the European Stone Age will be dispelled, we hope however, that the present wil be a major Contribution to the discussion on Preneolithic character of stone art and architecture, showing that they emerged in a final part of totally indigenous development of the Mesolithic communities of Iron Gate region.

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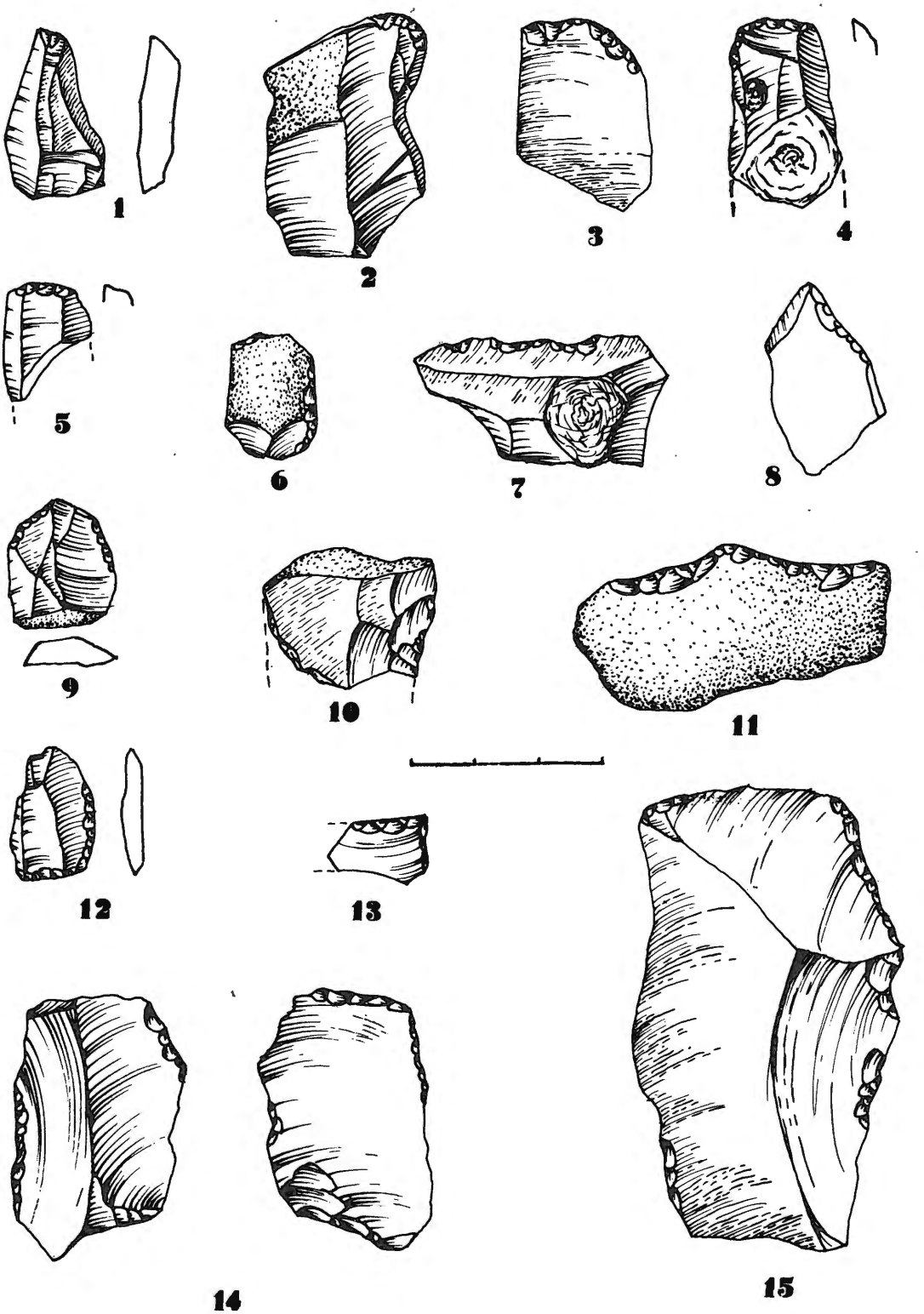
RIASSUNTO

Il sito di Lepenski Vir, molto noto per le scoperte di manifestazioni artistiche e di strutture architettoniche, ha fornito una serie interessante di industrie litiche in pietra scheggiata che sono l'oggetto di questa monografia. Gli Autori hanno applicato i medesimi principi di analisi da loro usati nella monografia sul vicino sito di Vlasac, anch'esso situato nel Djerdap (regione delle Porte di Ferro).

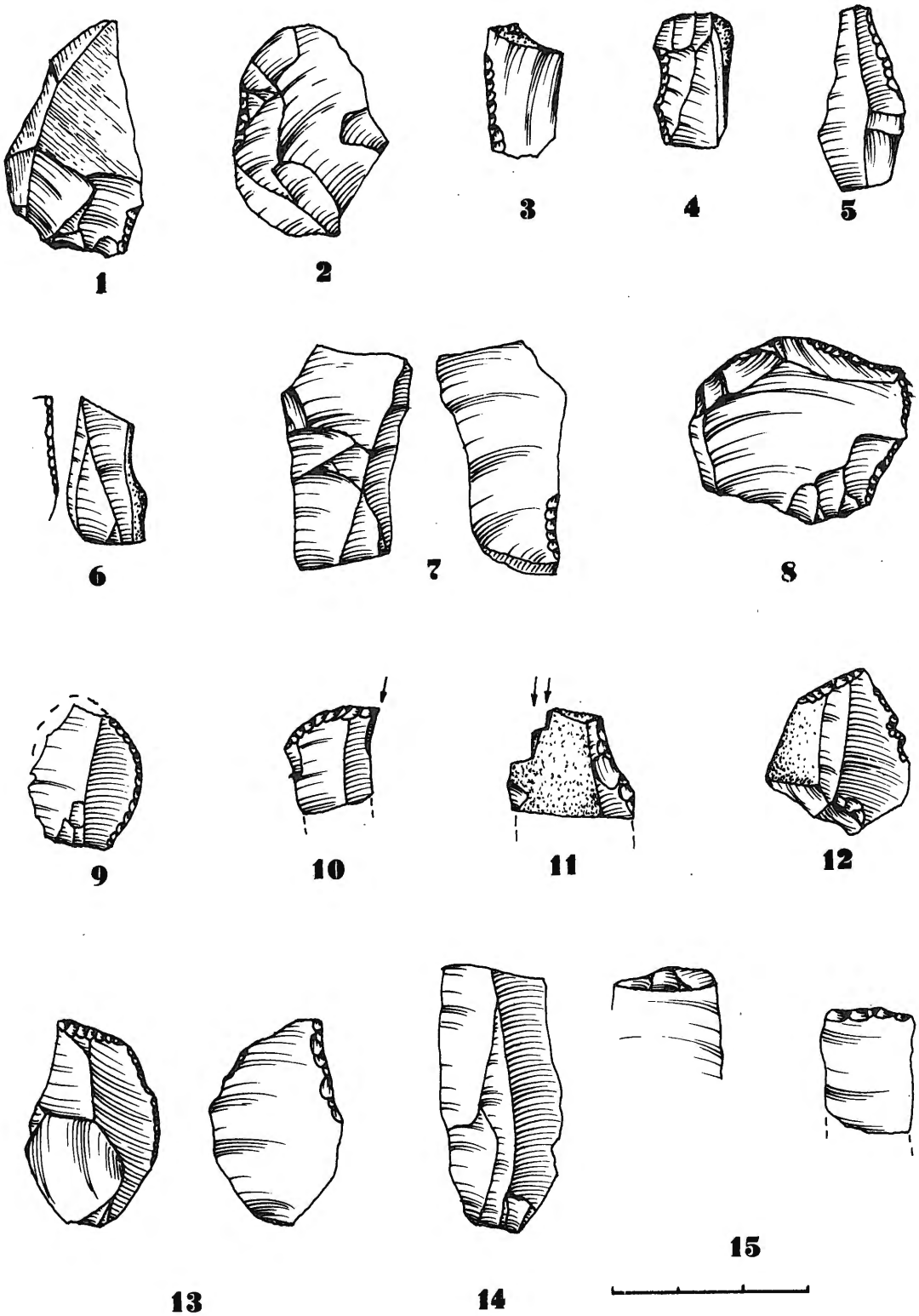
Sono state esaminare due unità stratigrafiche: il livello I - preneolitico e il livello III - neolitico, quest'ultimo contenente ceramiche della civilizzazione Starčevo. Un profondo iato separa le due unità per quanto concerne le materie prime utilizzate, la tecnologia adottata nella scheggiatura dei materiali litici, la composizione tipologica dello strumentario. Il livello I si riallaccia ai complessi di Vlasac appartenenti alla civilizzazione mesolitica di Lepenski Vir, mentre il livello III presenta numerose analogie con lo strúmentario balcanico della cultura Starčevo. L'industria del livello I è il risultato di una evoluzione locale del Tardigravettiano balcanico, mentre quella del livello III è allogena e legata alla comparsa dei primi gruppi di popolazioni neolitiche nel nord dei Balcani.

RESUMÈ

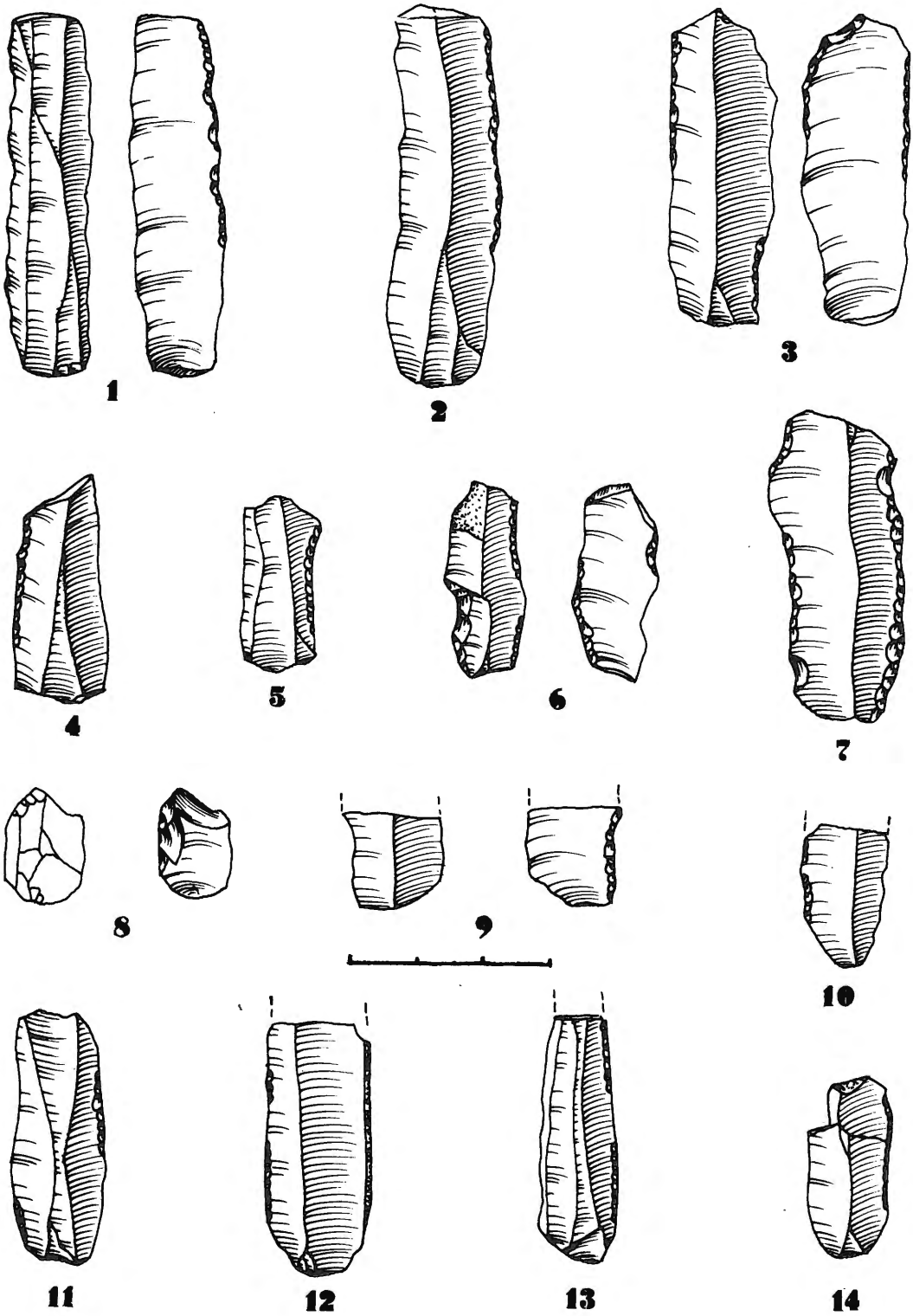
Le Site de Lepenski Vir, bien connu par la découverte de l'Art et de l'Architecture pubbliées par D. Srejovic, a fourni une série interessante des objets en pierre taillée, étudiées dans cette monographie. Les auteurs ont appliqué le même principes d'analyse que dans leur monographie du site voisin de Vlasac, situé aussi dans le Djerdap (région de Portes de Fer). Deux unités stratigraphiques ont été examinées: la couche I - préneolithique et la couche III - néolithique, contenant la ceramique de la civilisation de Starčevo. Il existe un profond hiatus entre les deux unités en ce qui concerne les matières premières, la tecnologie de la production des supports lithiques et la composition typologique des outillages. La couche I se rattache aux ensembles de Vlasac, appartenant à la civilisation mésolithique de Lepenski Vir, par contre la couche III présente plusieurs analogies avec les otillages balkaniques de la culture de Starčevo. L'industrie de la couche I résulte d'une evolution locale du Tardigravettien balkanique, par contre celle de la couche III est allogène, liée avec l'apparition de premiers groupes de la population néolitique dans le Nord des Balkans.



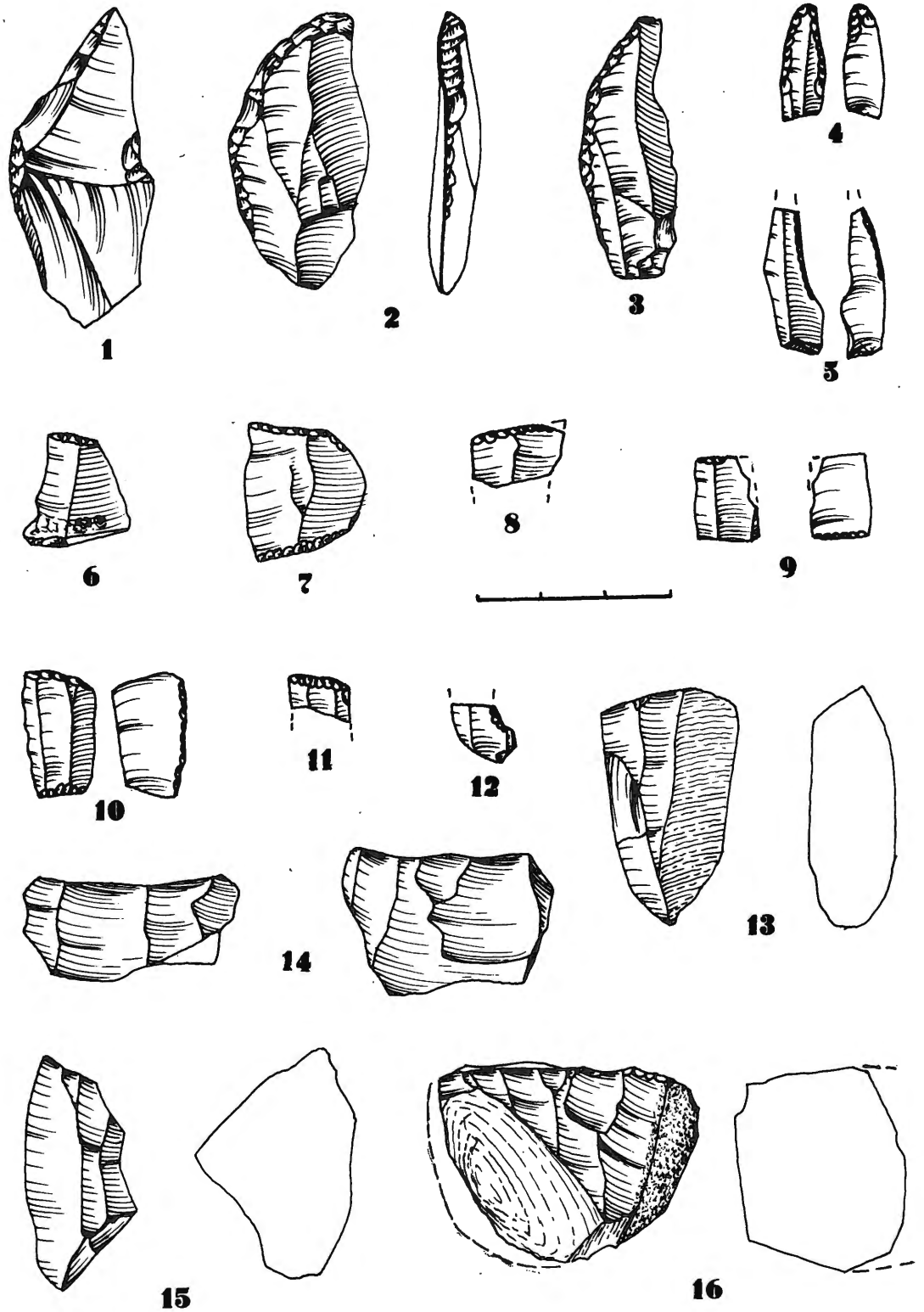
Pl. 1 - Lepenski Vir, layer I: 1-5 - end-scrapers, 6-15 - irregular scrapers.



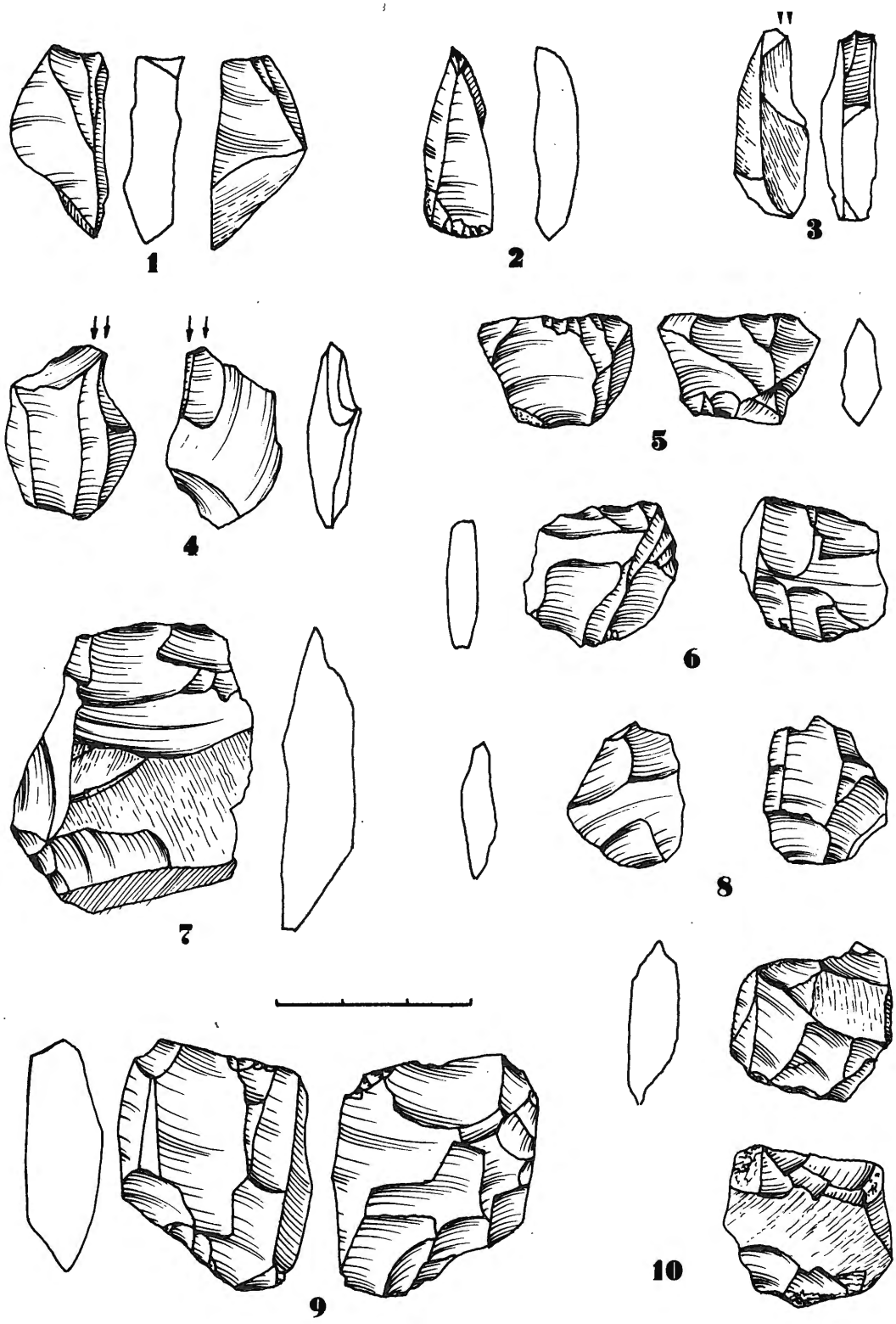
Pl. 2 - Lepenski Vir, layer I: 1-7 - retouched flakes, 8,9 - raclettes, 10, 11 - burins, 12-15 - truncations.



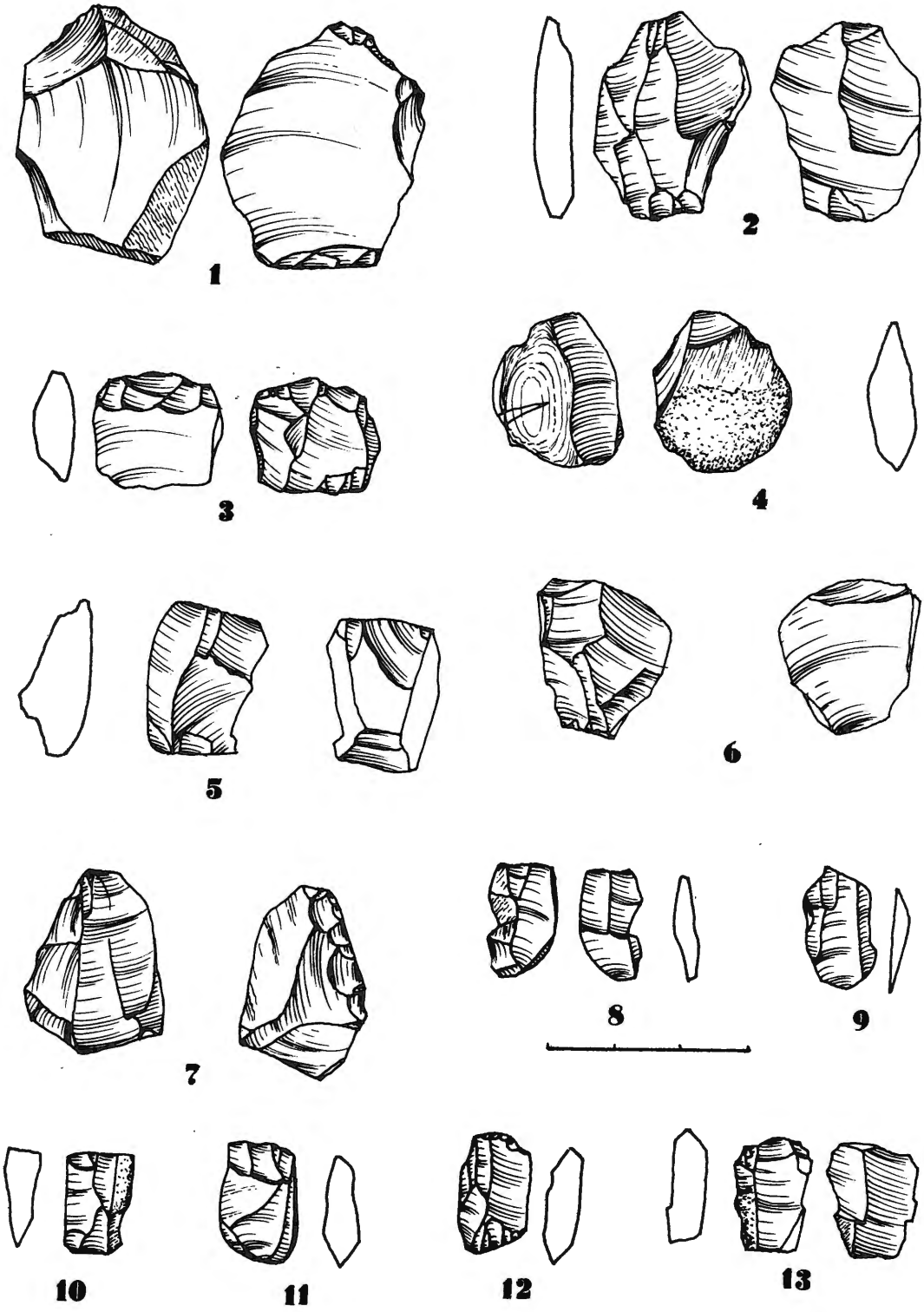
Pl. 3 - Lepenski Vir, layer I: 1-14 - retouched blades.



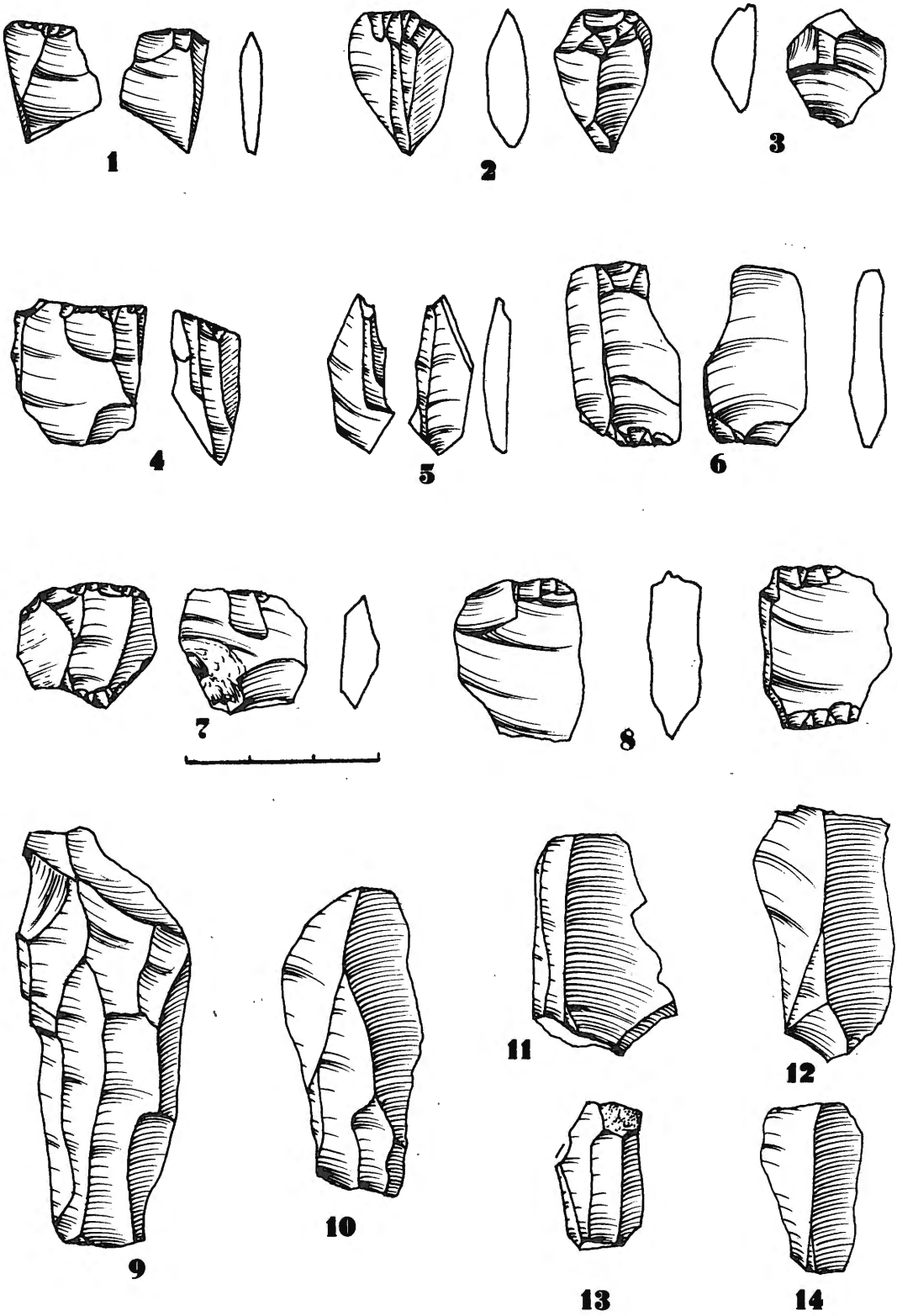
Pl. 4 - Lepenski Vir, layer I: 1-3 - backed blades, 4 - perforator, 5 - microretouched bladelets, 6-11 - trapezes, 13-16 - typical cores.



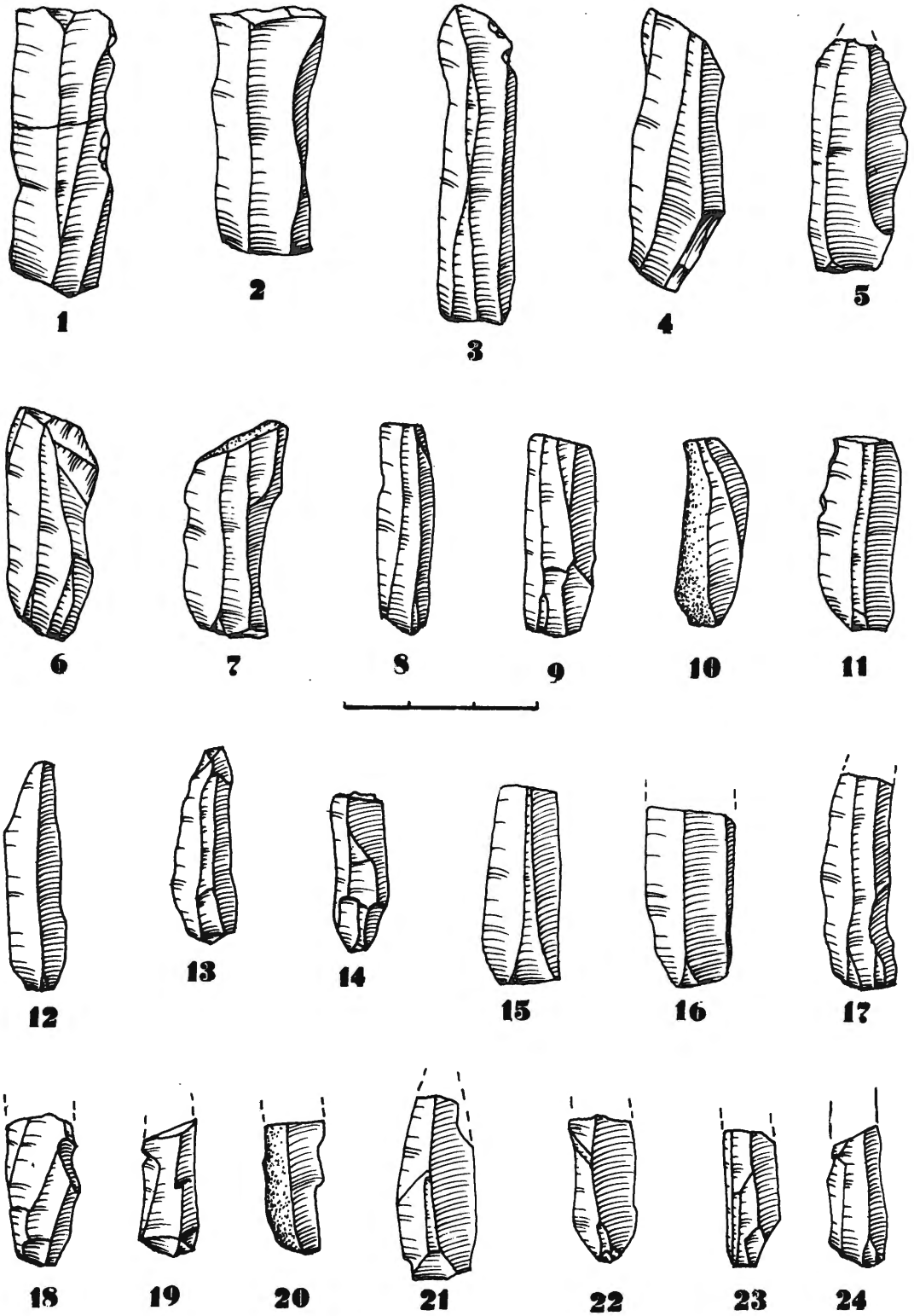
Pl. 5 - Lepenski Vir, layer I: 1-4 - plate cores, 5-10 - splintered pieces.



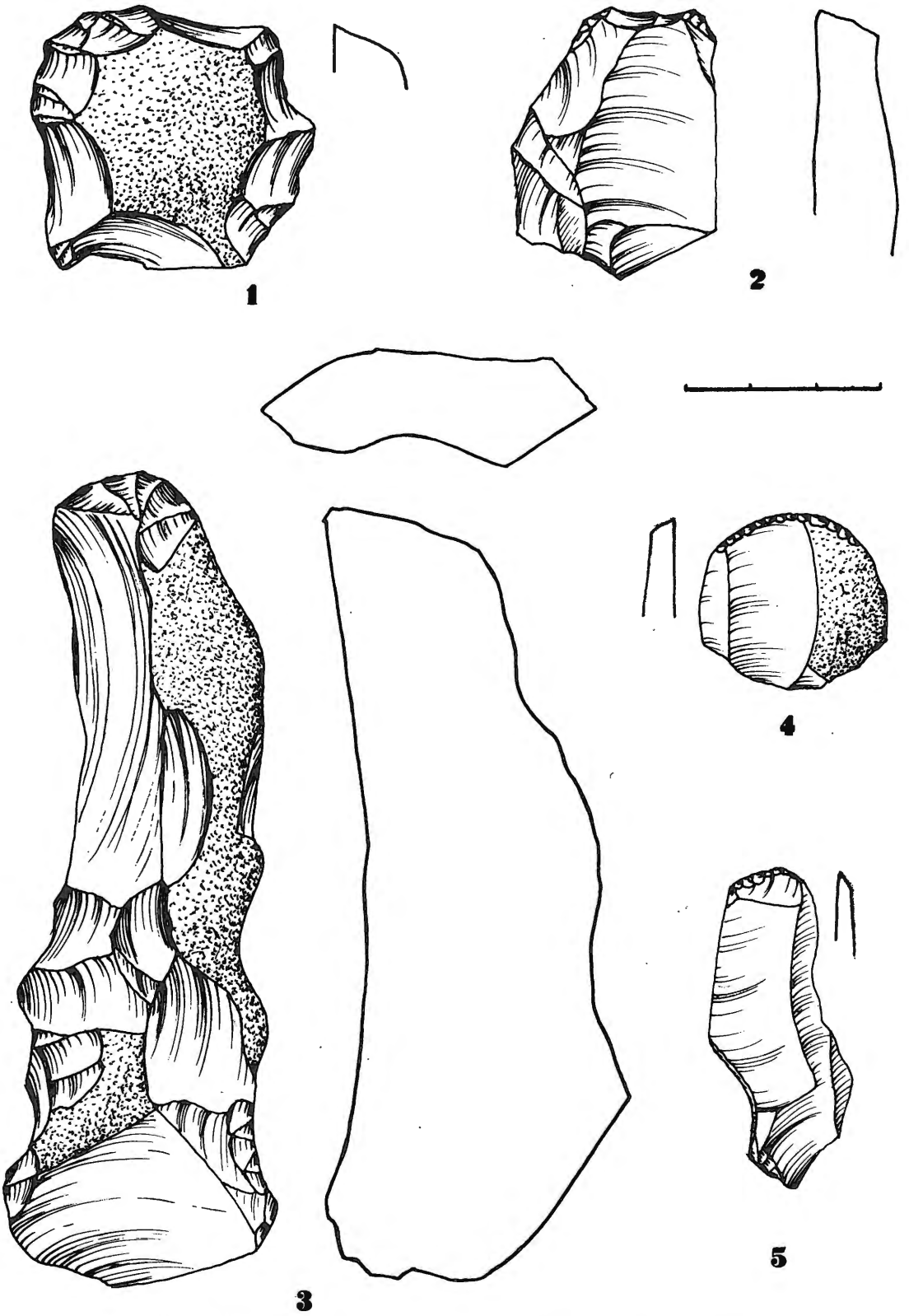
Pl. 6 - Lepenski Vir, layer I: 1-13 - splintered pieces.



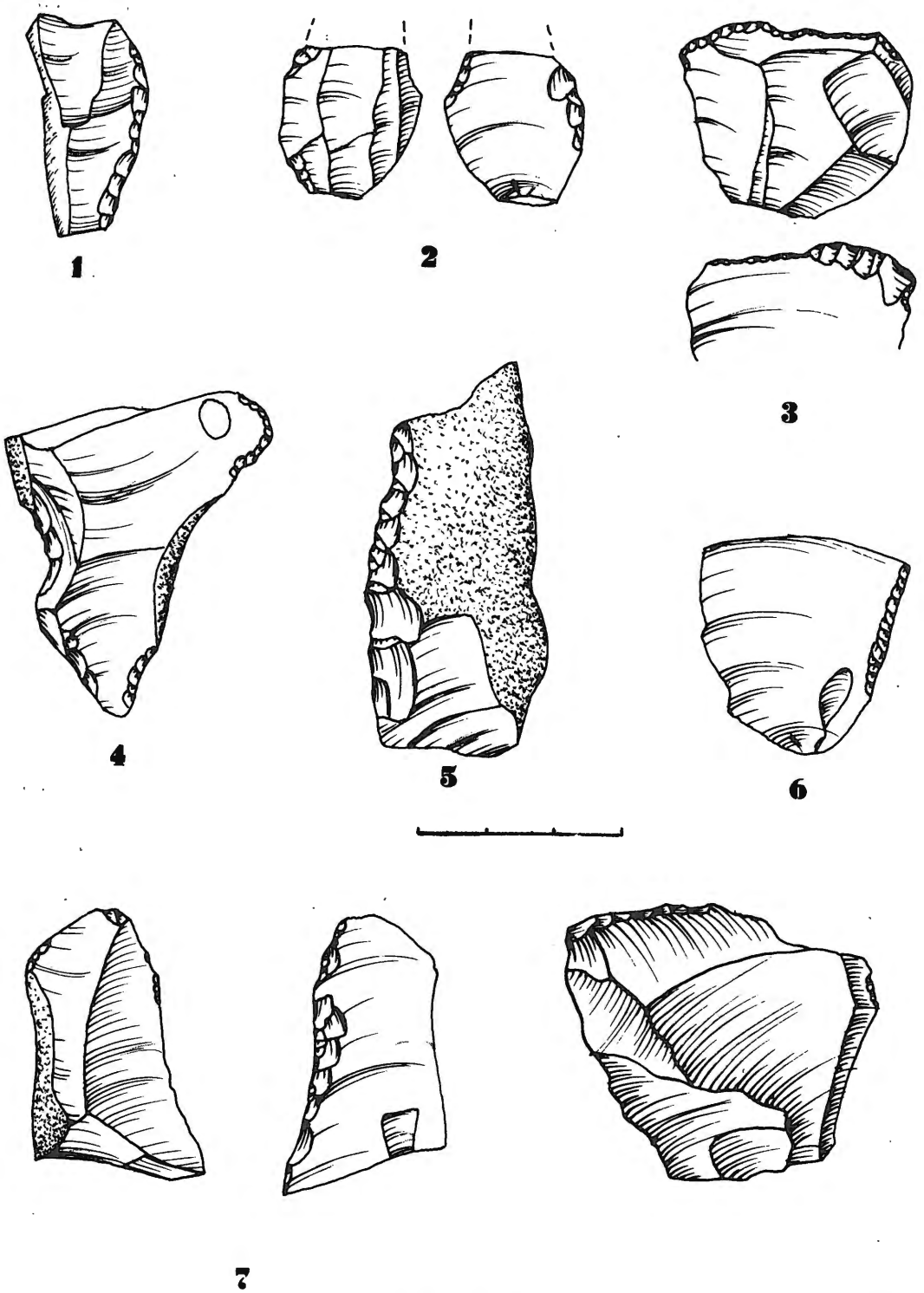
Pl. 7 - Lepenski Vir, layer I: 1-5 - splindered pieces, 6-8 - chisel like tools, 9-14 - blades.



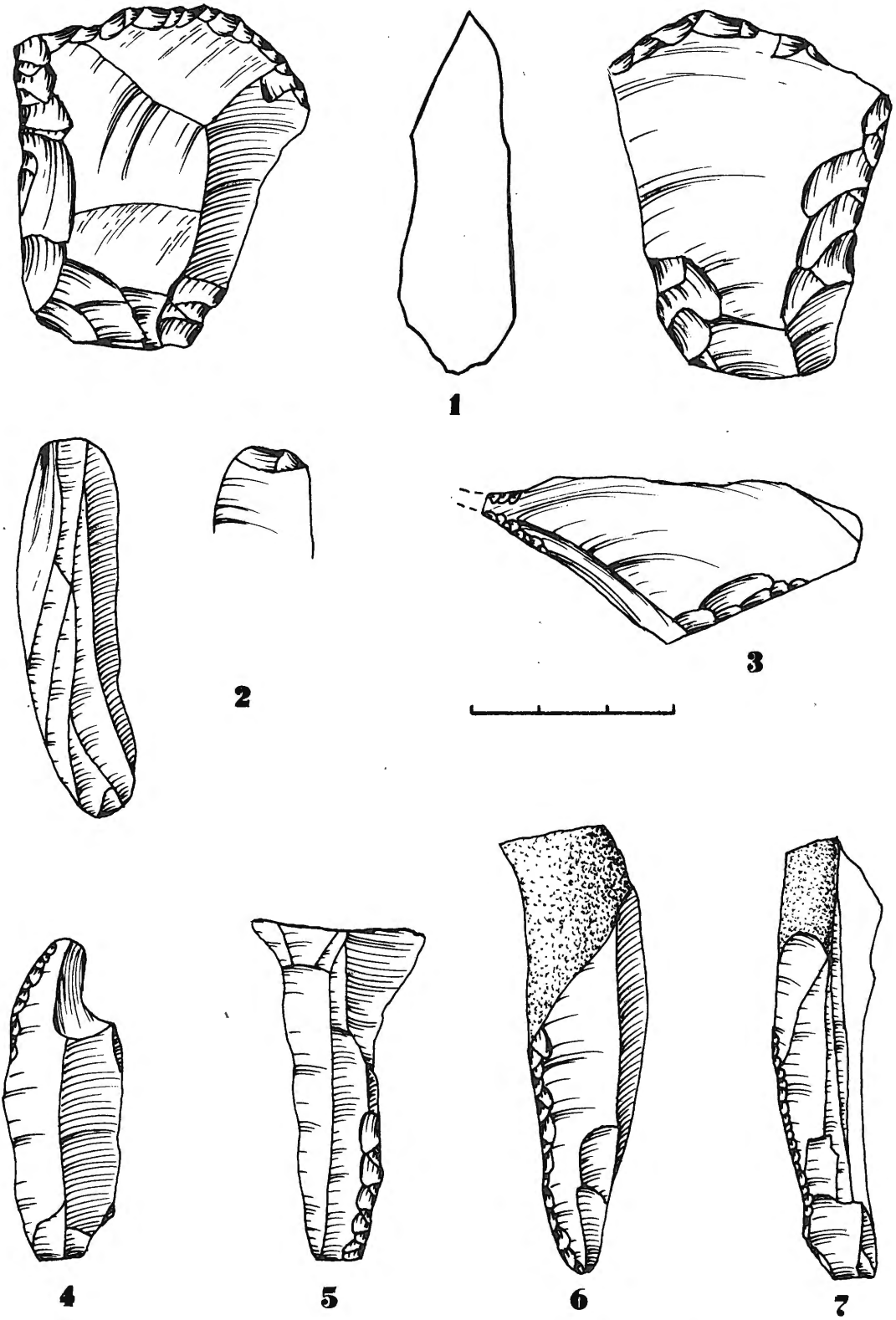
Pl. 8 - Lepenski Vir, layer I: 1-24 - blades.



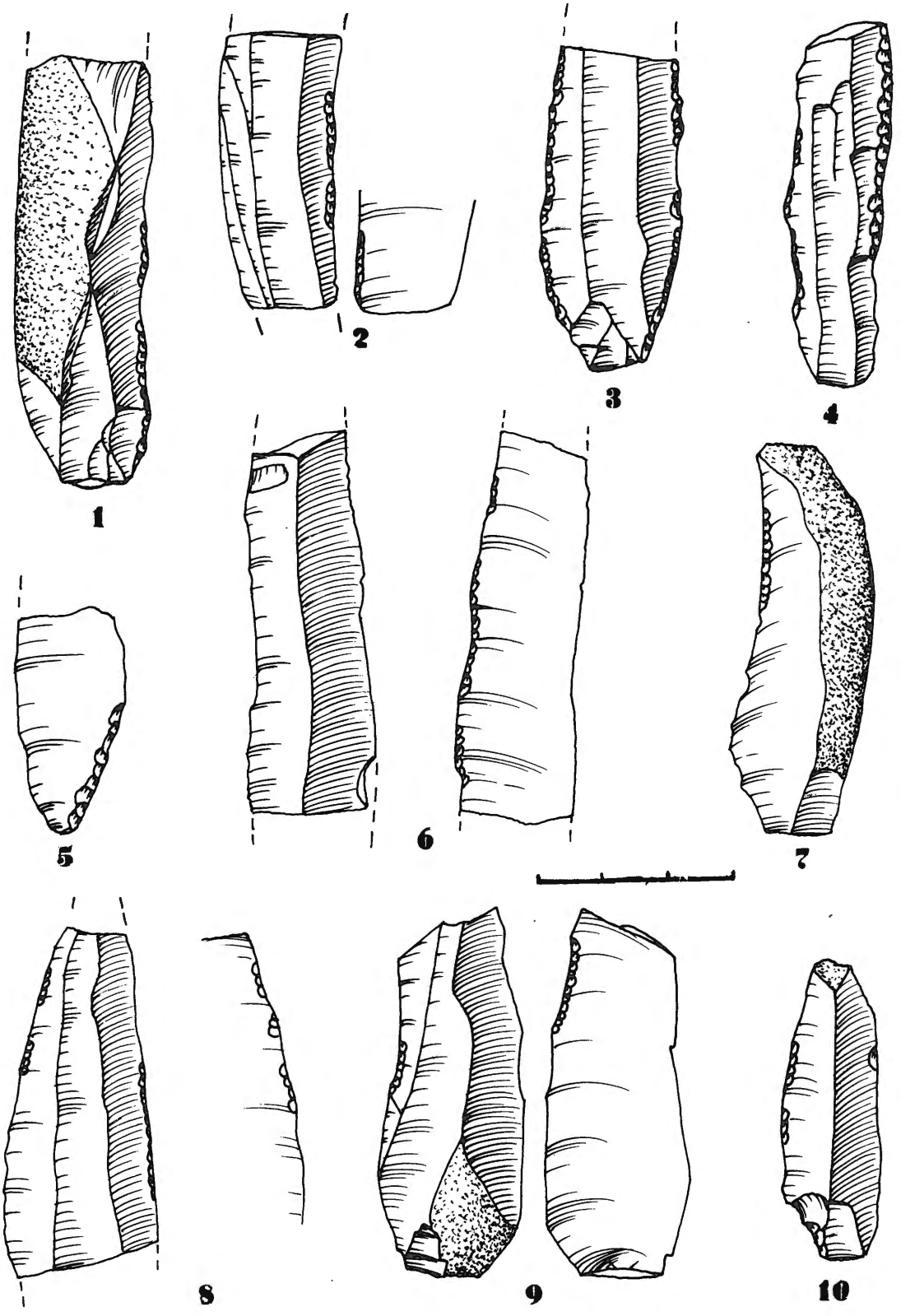
Pl. 9 - Lepenski Vir, Layer III: 1 - scraper like and denticulated tool, 2-5 - end-scrapers.



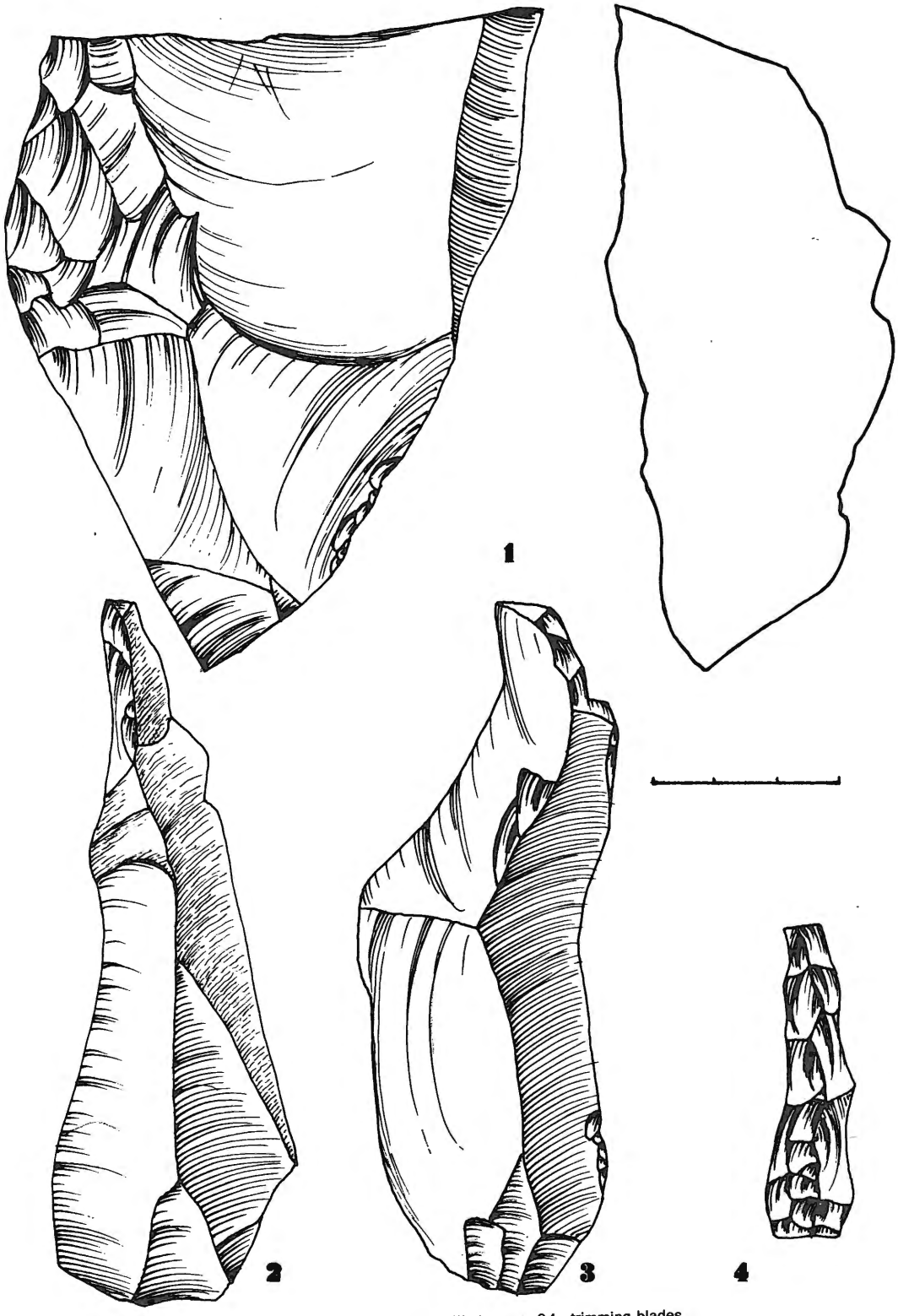
Pl. 10 - Lepenski Vir, layer III: 1, 2, 5, 6 - irregular scrapers and retouched flakes, 3,8 - end-scrapers on flakes, 4,7 - notched implements.



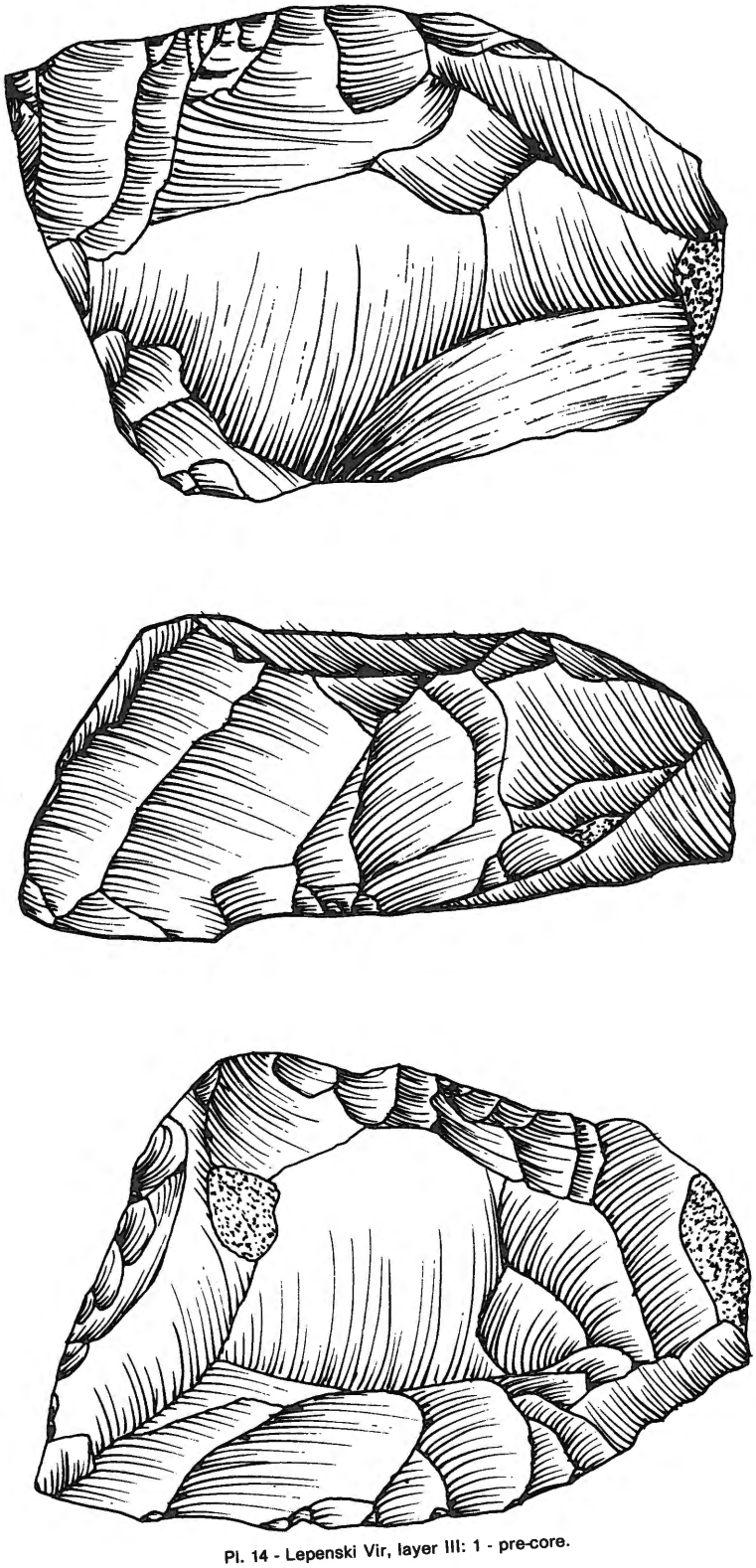
Pl. 11 - Lepenski V̨ir, layer III: 1 - tranchet, 2 - Kostienki-type truncation, 3 - flake perforator, 4-7 - retouched blades.



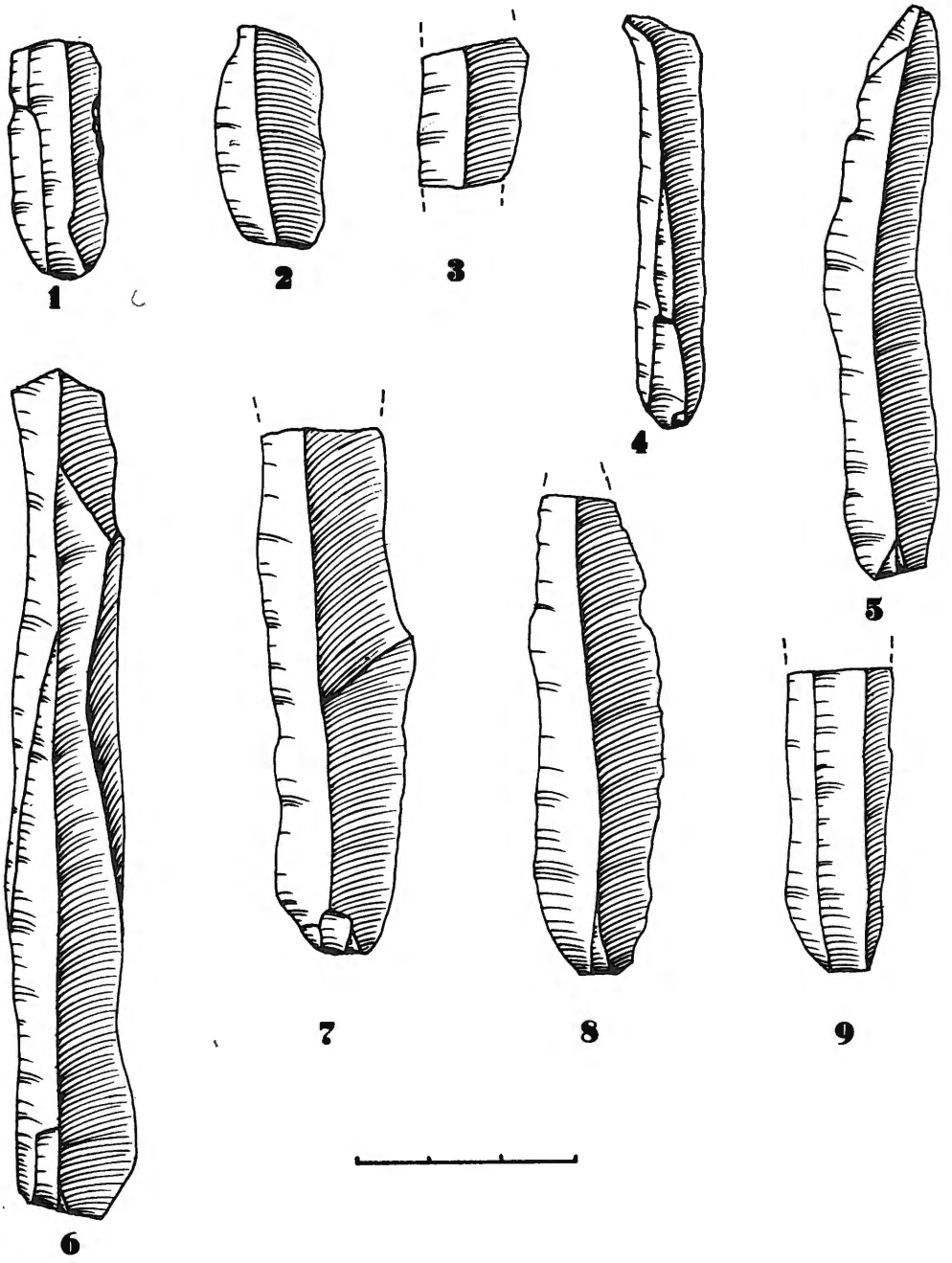
Pl. 12 - Lepenski Vir, layer III: 1-10 - retouched and microretouched blades.



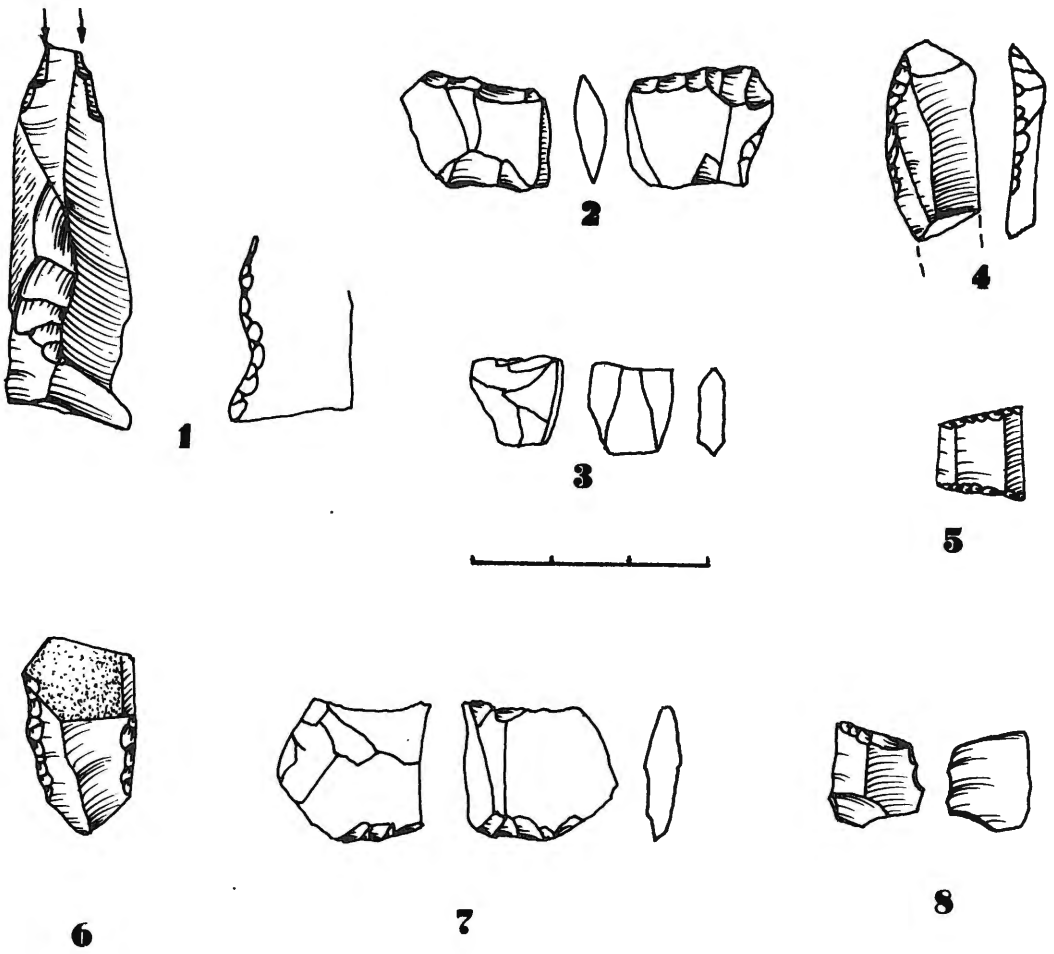
Pl. 13 - Lepenski Vir, layer III: 1 - core, 2-4 - trimming blades.



Pl. 14 - Lepenski Vir, layer III: 1 - pre-core.



Pl. 15 - Lepenski Vir, layer III: 1-9 - unretouched blades and blade fragments.



Pl. 16 - Lepenski Vir, layer I or III / stratigraphical position uncertain/: 1 - burin, 2, 3, 7 - splintered pieces, 4 - backed blade, 5,8 - trapezes, 6 - irregular scraper.