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The Palaeolithic in the Mountain Sector of the Bistrița Valley - Old and New Interpretations

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Abstract: The Bistrița Valley is located in the north-east of Romania, crossing the entire Eastern Carpathian chain. To the Palaeolithic communities in Eastern and Central Europe, the Carpathian arc must have been a difficult obstacle to overcome. In the mountain sector of the Bistrița Valley, the two areas of concentration of Palaeolithic settlements – the Răpciuni Basin (Ceahlău) and Bicaz-Izvorul Alb – have been variously addressed in terms of the extent of the archaeological investigations. In this study we have tried to take a different view regarding the definition and chrono-cultural sequence of Palaeolithic sites in the mountain sector of the Bistrița Valley. The idea of the existence of an Aurignacian in this area has been abandoned, as the arguments provided by the absolute chronology definitely exclude such an assumption, whereas the occupations attributed to the Gravettian have been adapted to the sequence of this culture at Poiana Cireșului. Therefore, one may now speak of a Gravettian I and II in the Ceahlău Basin.

Keywords: Palaeolithic, Aurignacian, Gravettian, Cultural sequence, Chronostratigraphy, the Bistrița Valley.

I. Introduction

The Bistrița Valley is located in the north-east of Romania, crossing the entire Eastern Carpathian chain. Along its route, several areas of concentration of Palaeolithic settlements have been identified, among which, from upstream down to its mouth, the small basins Răpciuni (Ceahlău) - Izvorul Alb, Secu, Bicaz - Piatra Neamț – Buda, Lespezi stand out (fig. 1).

In the mountain sector of the Bistrița Valley, the two areas of concentration of Palaeolithic settlements – the Răpciuni Basin (Ceahlău) and Bicaz-Izvorul Alb – have been variously addressed in terms of the extent of the archaeological investigations. There is a large number of settlements in the Ceahlău Basin and many of them have been excavated on large

areas over the entire thickness of the deposits in those particular terraces, whereas the settlements in the Bicaz-Izvorul Alb region are fewer and their research has been restricted to

Fig. 1 – Areas of concentration of Palaeolithic settlements in the Bistrița Valley. 1- Romania's geographic position in Europe; 2- location of the Bistrița Valley settlements in Romania; 3- concentration of Palaeolithic settlements in the Bistrița Valley (cartographic sources Google Earth and visualwallmaps.com).

small surveys.

In the Ceahlău Basin, the first stage of archaeological investigations, which occurred between 1955 and 1958, was the most important, given that extensive excavations were conducted in the most significant settlements and relevant surveys were carried out in others in order to define the cultural layers. Small-scale research was also conducted in 1964-1971 and 1980-1986 (fig. 2). The results of the first stage of investigations in the Ceahlău Basin were dealt with in the first synthesis study on the Palaeolithic in the Bistrița Valley (C. S. Nicolăescu-Plopșor et al., 1966). It was then that the succession of communities attributed to the Aurignacian, the Gravettian and the Epigravettian in the Ceahlău Basin was discussed for the first time. The cultural classification of those layers was made based strictly on the techno-typological studies of the lithic materials in each settlement. In his palaeoclimatic and geochronological study of the deposits in a number of important sites in the Ceahlău Basin,

Marin Cârciumaru (1980) would draw attention to the very young age of the Aurignacian in these settlements. Later, several C-14 dates were to confirm the hypotheses regarding the much too young age of the Aurignacian in the Ceahlău Basin (K. Honea, 1981, 1984; Al. Păunescu, 1984). All confirmations on the late age of the Aurignacian in the Bistrița Valley were not enough to make Al. Păunescu (1998) revise his opinion regarding the attribution of the respective layers to the Aurignacian culture. Moreover, some C-14 dates were only considered

Fig. 2 – Images of the archaeological investigations in the settlements at Bistricioara-Lutărie I-II and Dârțu in various stages. 1-Bistricioara Lutărie – excavations carried out in 1957-1958 (Alexandru Păunescu in the foreground); 2-3 Dârțu – excavations in 1957-1958 (2- Alexandru Păunescu in the background; 3- Florea Mogoșanu and Alexandru Păunescu in the background); 4- The appearance of the Bistricioara Lutărie II settlement in 1975, when samples were taken for the palynological study; 5- The profile at Dârțu from which samples were taken for the pollen analysis in 1975 (acc. to M. Cârciumaru et al. 2023).

selectively, with the author stating that "we shall discuss only those C-14 dates we deem accurate or those which point to an age close to the one considered plausible" (Al. Păunescu, 1998, p. 116). Had that been the case, we cannot but wonder how the ages of 26,700 ± 1,100 B.P. (GrN 14633) for the Cetățica II Aurignacian, 23,890 ± 290 B.P. (GrN 14630) from Cetățica I, 24,760 ± 170 B.P. (GrN 11586) for the Aurignacian from Bistricioara- Lutărie II or 24,390 ±

180 (GrN 12673) for the Dârțu-Ceahlău Aurignacian were considered "accurate" (p. 117), given the fact that all these ages were not consistent with the limits allowed for the duration of the European Aurignacian period.

During this time, the issue of the Aurignacian in the Bistrița Valley, which was too

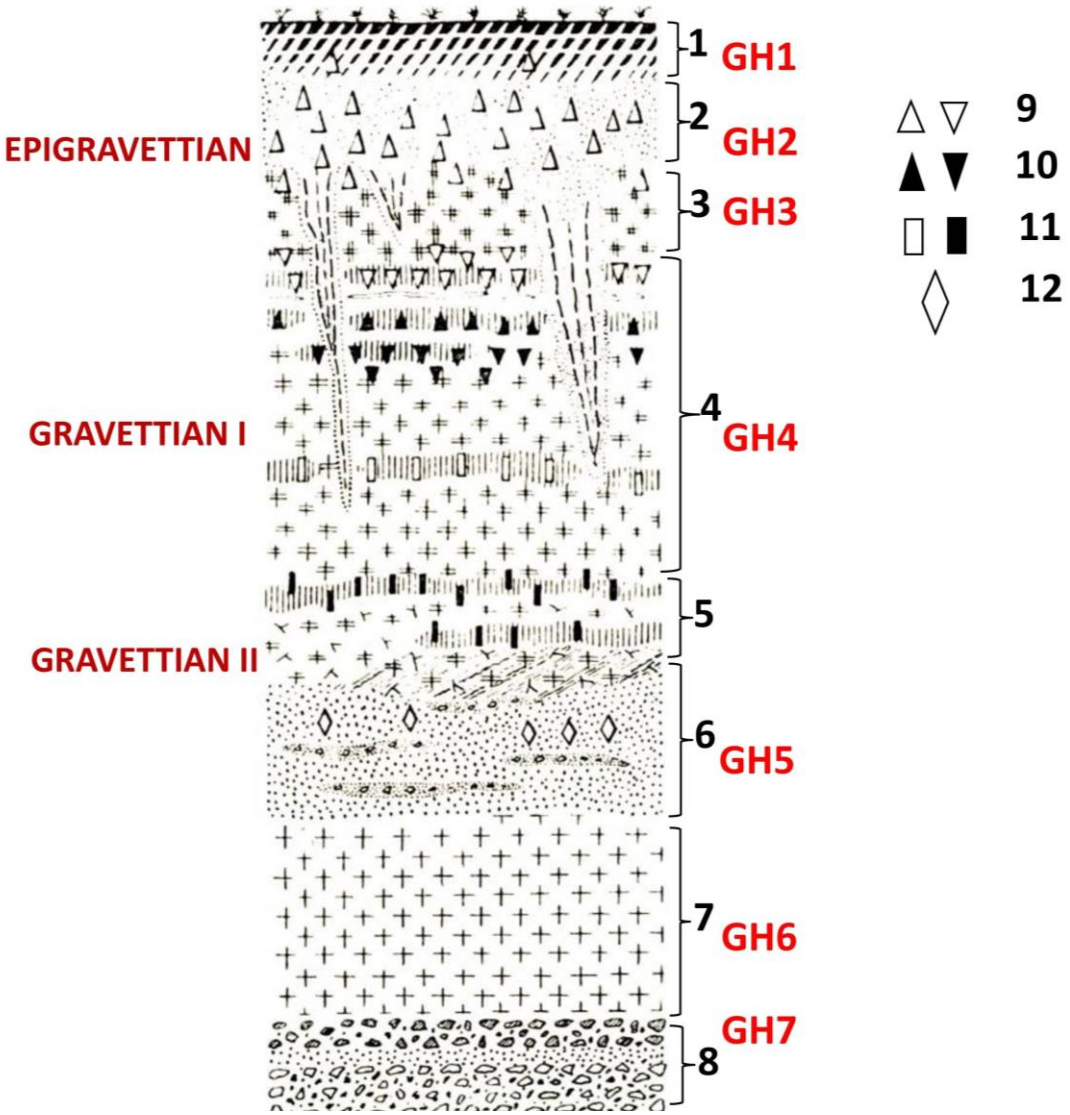

Fig. 3 – Integrated stratigraphic profile of the Gravettian and Epigravettian settlements in the Răpciuni Basin (Ceahlău). 1 current soil; 2 pale-yellow loessoid layer; 3 brown-reddish layer; 4 reddish-yellowish loess layer; 5 grey calcareous pseudo-mycelian loessoid layer with sedimentation due to congelifluction; 6 runoff deposit; 7 yellowish micaceous loessoid deposit; 8 stratified deposit with calcareous concretions, sands and gravels; 9-12 Palaeolithic lithic tools at various levels (acc. to C. S. Nicolăescu-Plopșor et al., 1966); GH1-GH7 – geological horizons (according to C. Schmidt et al., 2020).

young compared to its chronological development in other parts of Europe, was once again highlighted in a monographic work on the Palaeolithic in Romania (M. Cârciumaru, 1999). It

was only in 2009 that a new assessment of the Aurignacian in the Ceahlău Basin was made, indicating that the respective layers actually belonged to the Gravettian, in full agreement with their absolute age and the evolution of the two cultures in Eurasia (L. Steguweit et al., 2009).

In this study, we have chosen to adopt the hypothesis that rejects the existence of an Aurignacian in this region, as the arguments provided by absolute chronology unequivocally exclude the presence of this Palaeolithic culture in the Bistrița Valley. Furthermore, the techno-typological elements of the lithic material, with the exception, to some extent, of the lithic inventory from Cetățica I, do not support an Aurignacian presence in the Bistrița Valley, as the "guide fossils" in this regard are practically missing. The items from Cetățica I, which appear to have a different techno-typological nature, have been found at the contact with terrace gravels, suggesting that they originated from a deposit that had been washed and reshuffled.

Considering the reality imposed by C-14 dating, we have tried to adapt the cultural succession of the Gravettian communities in the mountain sector of the Bistrița Valley according to the model proposed at Poiana Cireșului-Piatra Neamț (M. Cârciumaru, E.-C. Nițu, 2018; M. Cârciumaru et al., 2016, 2023), a multilayered site with a complete sequence for the Gravettian in Romania and a highly coherent C-14 chronology, based on a considerable number of dates. For example, while at Poiana Cireșului at least three Gravettian cultural sequences have been identified (Gravettian I, Gravettian II and Gravettian III), in the mountain sector of the Bistrița Valley, the absolute chronology as well as the sedimentological features and succession of layers only allow for the existence of two Gravettian sequences (Gravettian I and Gravettian II). It is very interesting how this model works well even if we consider only the existing C-14 dates.

Under these conditions, we shall try to present the cultural evolution of each settlement in the Ceahlău Basin based on this objective reality. In order to eliminate any confusion regarding the stratigraphic position of the old layers previously attributed to the Aurignacian, we shall refer to the description of the geological layers and the position of the cultural levels initially established (C. S. Nicolăescu-Plopșor et al., 1966) and subsequently maintained in certain descriptions regarding the cultural succession and the presence of the Aurignacian in the Ceahlău Basin (fig. 3).

As for the settlements in the Bicaz-Izvorul Alb sector, most of them belong to the Gravettian and Epigravettian periods, and sometimes important collections, such as those from Izvorul Alb, lack a clear archaeological context.

II. The settlements in the Răpciuni Basin (Ceahlău)

The Răpciuni Basin, the most important concentration area of Palaeolithic settlements in the mountainous sector of the Bistrița, is located in the middle course of the valley, at the foothills of the Ceahlău Mountains, between the confluence with the Bistricioara and the narrowing of the valley near Cetățica. Its genesis is undoubtedly related to the multitude of tributaries received by the Bistrița River on the right side, such as the Bistricioara, the Schitu, the Răpciunița and the Pârâul Mare, which led to its asymmetric development. These tributaries exerted a constant pressure, pushing the course of the Bistrița River to the left, where a steep slope was created. This favoured the formation of terraces on the right side (fig. 4). The existence of these terraces is essential for the selection of encampment by Palaeolithic

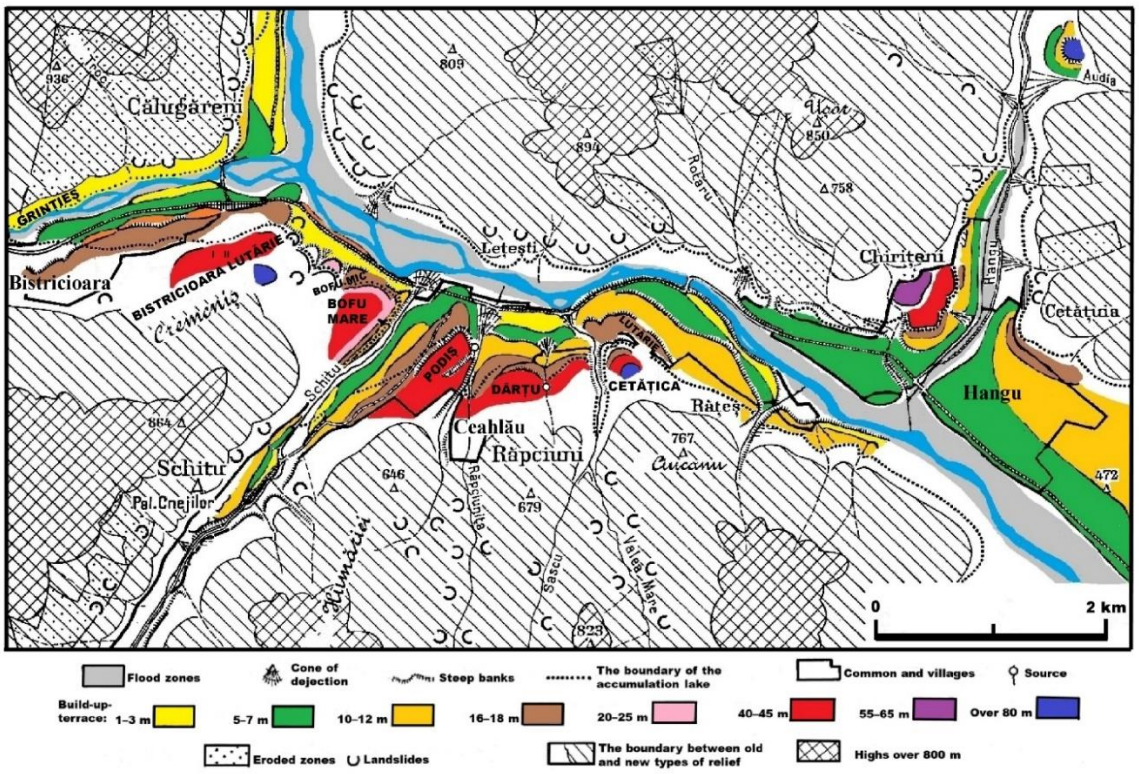

Fig. 4 – Geomorphology of the Bistrița Valley in the Răpciuni Basin before the construction of the reservoir (modified after C. S. Nicolăescu-Plopșor et al., 1966) (acc. to M. Cârciumaru et al., 2023).

communities. Under these conditions, within the Bistrița Valley, the Răpciuni Basin was preferred by Palaeolithic humans, and it is not coincidental that all the settlements discovered so far are exclusively located on the right side of the Bistrița River, where well-defined terraces

develop, providing ample living spaces, whereas the steep left slope only offers similar conditions in the area of the Hangu commune, where an important succession of terraces can be observed (figs. 1, 4) (M. Cârciumaru et al., 2023).

II.1. Bistricioara Lutărie

The Bistricioara-Lutărie settlement is located on the northern side of the Răpciuni Basin (Ceahlău), on a terrace at a relative altitude of 45 metres, in the east-northeast part of the Bistricioara commune. Archaeological research has been conducted in several stages: 1957-1958, 1980-1984 and at present.

At Bistricioara-Lutărie, several points are known: Bistricioara-Lutărie I and II, which have been studied since the 1950s, and Bistricioara-Lutărie III and the "La Mal" point, which have been investigated more recently.

Depth (cm)	Layer	Material	AMS Lab. Nr.	Age B.P. (uncal.)	Age (cal.B.P) (95.4 % probability)
87-96	**Epigravettian**	**Charcoal**	**GrN 10.528**	**16.150±350**	**20.364 – 18.754**
108-118	Gravettian I	Charcoal	GX 8.728	18.800±1.200	25.900-20.140
118-122	Gravettian I	Charcoal	GX 8.729	20.995 ± 875	27.289-23.450
140-148	**Gravettian I**	**Charcoal**	**GrN 12.670**	**18.330±300**	**22.885-21.455**
132	**Gravettian I**	**Charcoal**	**GrN.16.982**	**20.310±150**	**24.942-24.022**
135-146	Gravettian I	Charcoal	GX 8.726	20.300±1.300	27.649-21.851
150-165	Gravettian II	Bone	GX 8.727-G	23.450+2000 /-1450	
195-220	Gravettian II	Charcoal	GrN 10.529	24.100±1300	31.211-26.011
195-220	**Gravettian II**	**Charcoal**	**GrN 11.586**	**24.760±170**	**29.236-28.420**
200-215	Gravettian II	Charcoal	GX 8.845-G	23.560+1150 /-980	
200-215	Gravettian II	Charcoal	GX 8.844	27.350+2100/-1500	

Tab. 1 – C-14 dates at the Palaeolithic settlement of Bistricioara – Lutărie II (red – dates with small margin of error).

The stratigraphy of the deposit and the sequence of cultural levels (fig. 3) at Bistricioara-Lutărie I and II are almost identical, but the abundance of lithic material and settlement structures are quite different. For example, only 526 lithic items have been discovered at Bistricioara-Lutărie I, while at Bistricioara-Lutărie II, the number reaches 7,697, given that only half of the investigated area in point II has been excavated in point I, totalling 188.50 m².

At *Bistricioara-Lutărie I* and *II*, an ***Epigravettian*** has been identified in the pale-yellow loess layer, defined by the presence of 780 lithic pieces, of which 157 are tools. The most

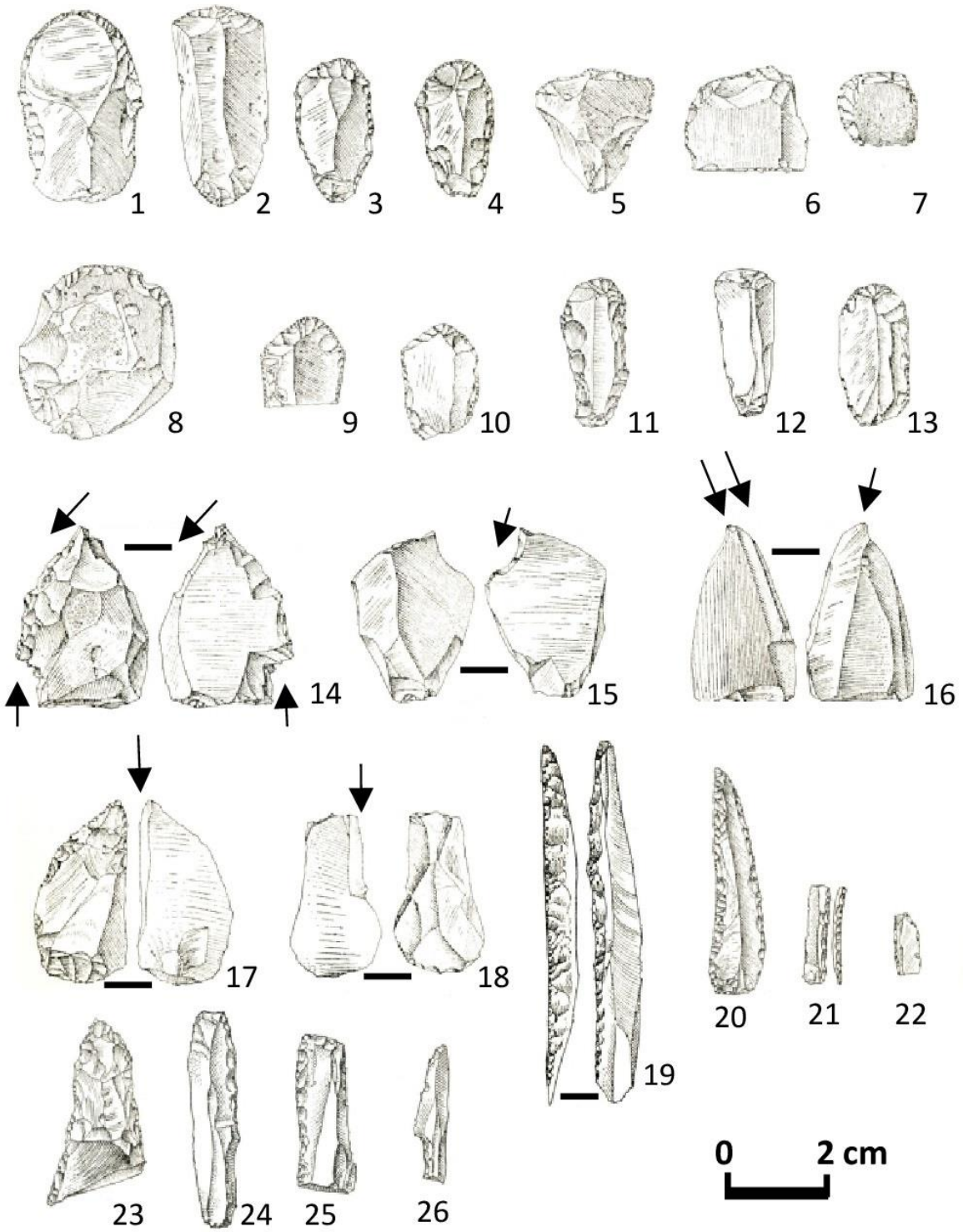

Fig. 5 – Lithic tools from the Epigravettian level at Bistricioara-Lutărie I-II. 1-13 endscrapers; 14-18 *burins*; 19 "la Gravette" point; 20-22 blades *à bord abattu*; 23-25 truncated blades; 26 atypical *à cran* point (drawings reworked after C. S. Nicolăescu-Plopșor et al., 1966).

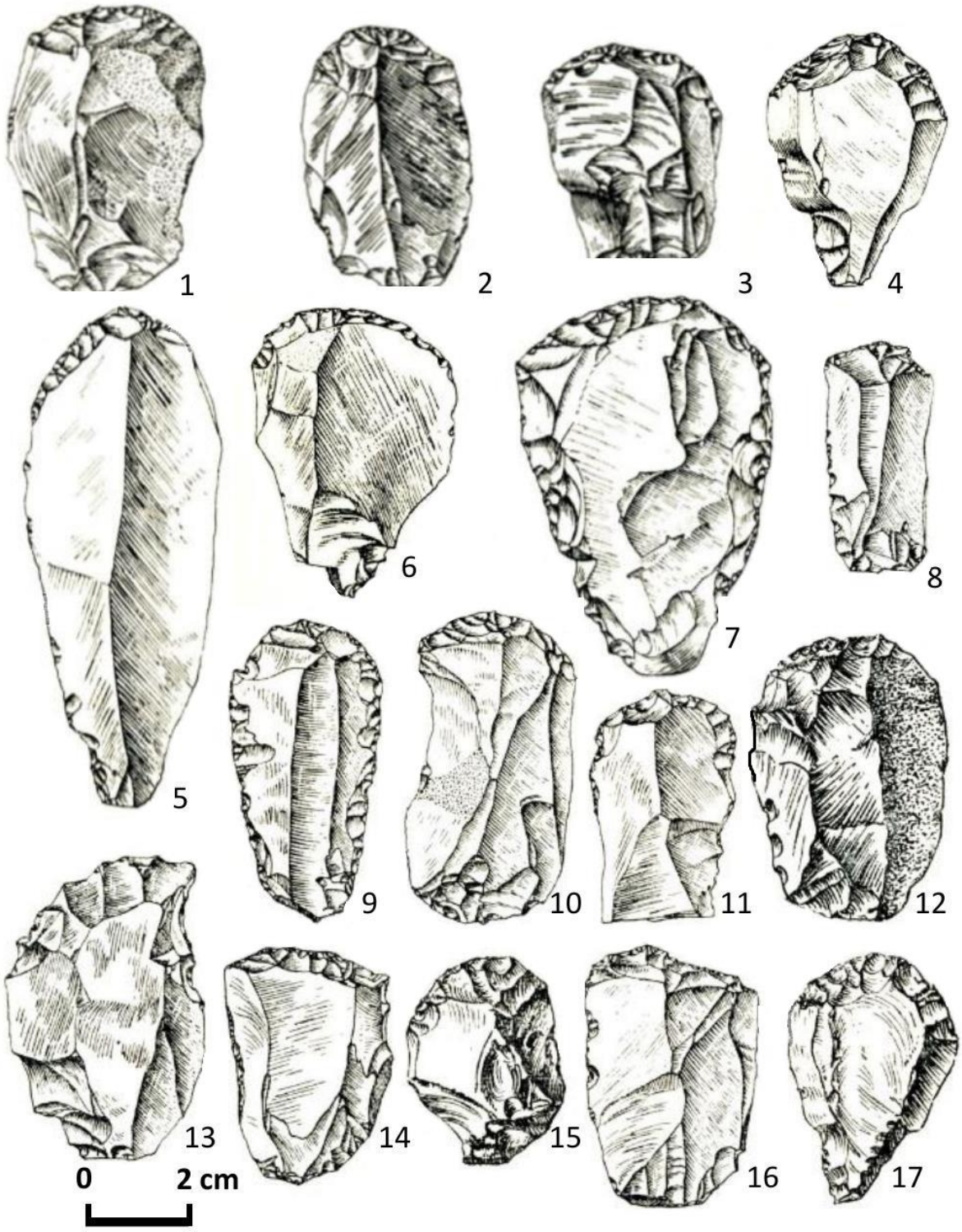

Fig. 6 – Endscrapers in the Gravettian I at Bistricioara-Lutărie I-II (drawings reworked after C. S. Nicolăescu-Plopșor et al., 1966).

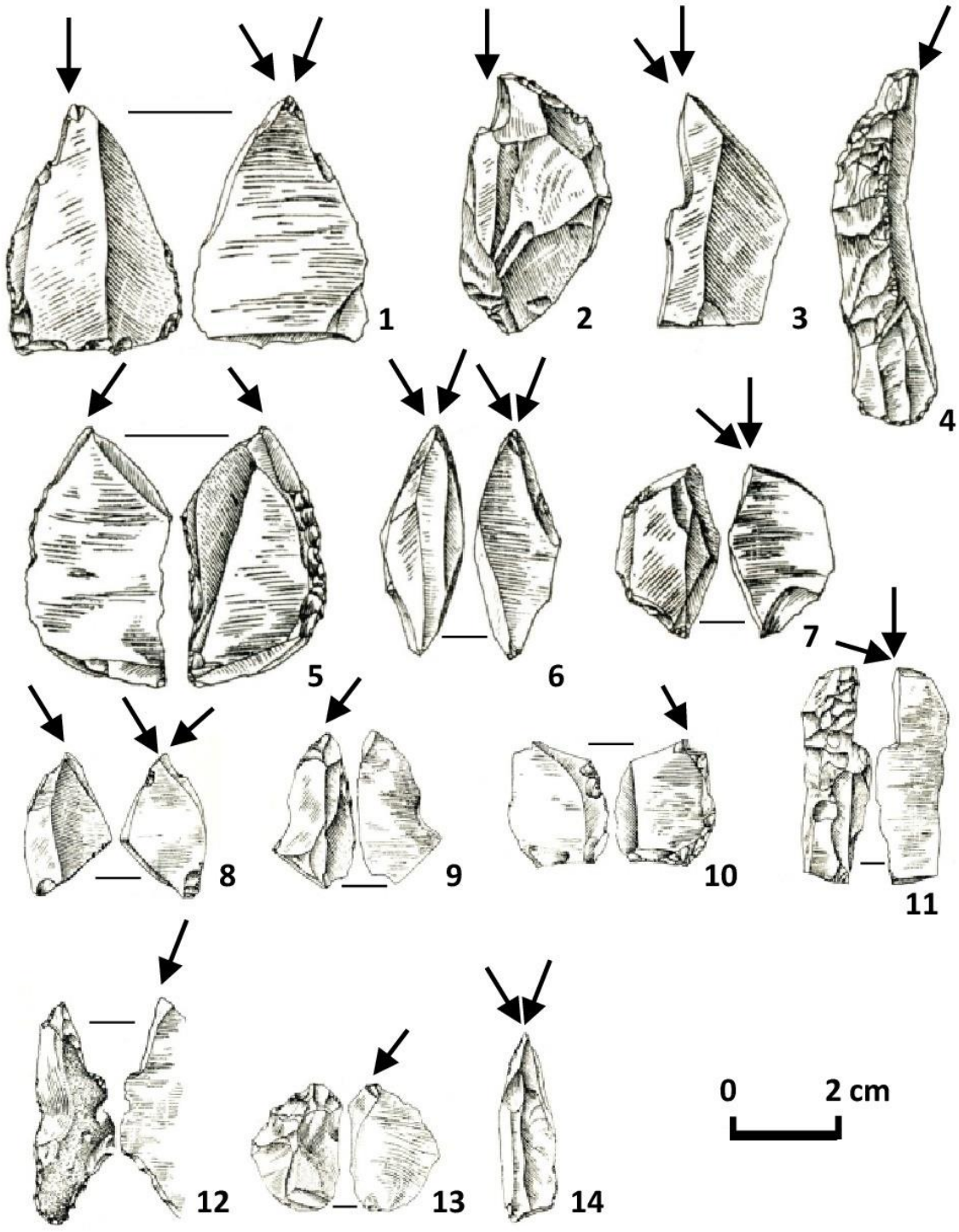

Fig. 7 – *Burins* in the Gravettian I at Bistricioara-Lutărie I-II (drawings reworked after C. S. Nicolăescu-Plopșor et al., 1966).

representative tools are the endscrapers (22.28%), especially the simple ones, on blade or flake, as well as the thumbnail endscrapers, *burins* (19.07%), mainly dihedral (dihedral angle and break angle) and burins on retouched truncation, backed bladelets (11.46%), items with notches and denticulate tools, a typical drill (1.27%), blades *à bord abattu* (2.54%), truncated items

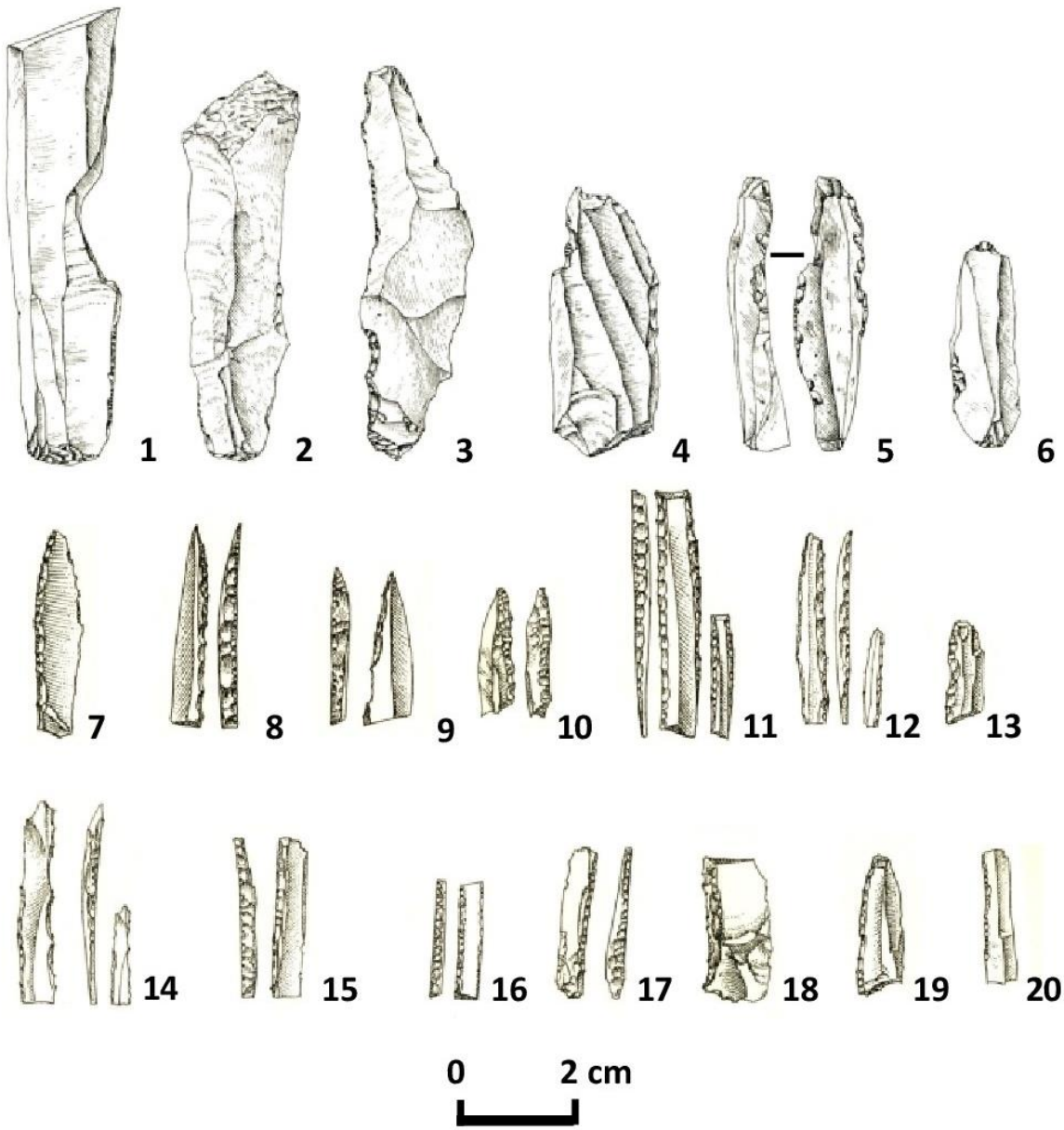

Fig. 8 – Lithic tools in the Gravettian I at Bistricioara-Lutărie I-II. 1-6 partially retouched blades with oblique retouches and small notches; 7-10 *la Gravette* points; 11-20 blades *à bord abattu* (drawings reworked after C. S. Nicolăescu-Plopșor et al., 1966).

(6.37%), etc. (fig. 5). These are made of menilite (58%), flint (26.60%), glauconitic siliceous sandstone (5.50%), black shale (5.25%) etc. No combustion structures or faunal remains have

been found in the excavated areas (Al. Păunescu, 1998). A C-14 date might indicate the age of this layer as 16,150 ± 350 B.P. (GrN 10,528) (tab. 1).

Starting from the boundary between the reddish-brown layer and the reddish-yellow loess layer to the upper part of the grey pseudo-mycelian layer, what we call the ***Gravettian I*** level developed at Bistricioara-Lutărie. The lithic industry consists of endscrapers-27.79% (fig. 6), burins-26.97% (fig. 7), items with notches over 10%, retouched blades-8.85%, denticulate tools-4.57%, and in smaller percentages *la Gravette* points and *microgravettes*, truncated backed blades, etc. (fig. 8). The raw materials used were flint (42.29%), menilite (28.90%), black shale (19.67%), glauconitic siliceous sandstone (5.73%) etc. In the Gravettian I, combustion structures have been identified in most of the excavated sections (fig. 9).

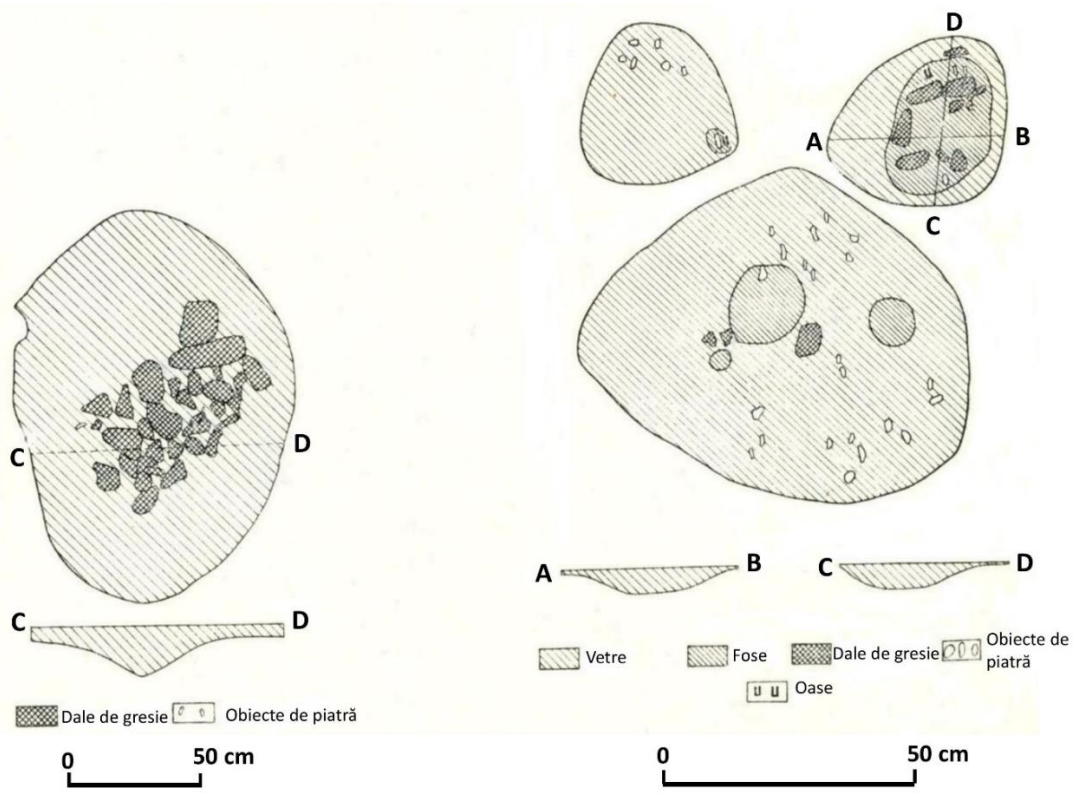

Fig. 9 – Combustion structures in the Gravettian I at Bistricioara-Lutărie I-II (acc. to C. S. Nicolăescu-Plopșor et al., 1966).

The fauna has been poorly preserved, with only a few species identified based on a small number of recovered remains: *Equus transilvanicus*, *Bison priscus*, *Rangifer tarandus*, *Capra ibex*.

According to existing C-14 dates with a small margin of error, the Gravettian I at Bistricioara I and II occurred between 20,310 ± 150 B.P. (GrN 16,982) and 18,330 ± 300 B.P. (GrN 12,670) (tables 1, 2).

In the middle part of the grey pseudo-mycelian loess layer, a Palaeolithic level has been identified, initially considered to be Aurignacian (C. S. Nicolăescu-Plopșor et al., 1966), but more recently attributed to the Gravettian (L. Steguweit et al., 2009). We shall refer to it as the ***Gravettian II*** level. The lithic assemblage is represented by endscrapers (29.21%) (fig. 10/1-10) (the majority being simple, but there are also some carinated ones (fig. 10/1-3), retouched blades (15.72%) (fig. 10/12-16), items with notches (13.48%), scrapers (12.36%) (of simple convex, straight or concave type) (fig. 10/20-21), dihedral burins or burins on concave retouched truncation (6.76%) (fig. 10/11). *Dufour* bladelets are very rare.

Depth (cm)	Layer	Material	AMS Lab. Nr.	Age B.P. (uncal.)	Age (cal.B.P) (95.4 % probability)
70/80-100	**Gravettian I**	**Charcoal**	**Erl 11.854**	**21.541±155**	**25.549-26.090**
70/80-100	**Gravettian I**	**Charcoal**	**Erl 12.164**	**22.181±112**	**26.069-26.748**
95-103	Gravettian I	Charcoal	GX 8.730	19.055±925	25.485-21.005
135	**Gravettian II**	**Charcoal**	**Erl 9968**	**24.213±299**	**27.725-28.805**
134	**Gravettian II**	**Charcoal**	**Erl 9967**	**24.370±300**	**27.795-28.976**
125	**Gravettian II**	**Charcoal**	**Erl 11855**	**24.396±192**	**27.967-28.812**
170	No archaeological context	Charcoal	ER 9.970	26.869±447	29.964-31.576
180	No archaeological context	Charcoal	ER 9.969	28.069±452	31.141-33.136

Tab. 2 – C-14 dates at the Bistricioara Lutărie I settlement (red – dates with small margin of error).

The industry on animal hard materials is represented by a spearhead made from a lateral horse metapodium, roughly shaped at the base and with a post-depositionally broken point (fig. 11). Its current dimensions are 12.8 cm in length, 1.3 cm in maximum width and 1.2 cm in maximum thickness.

Combustion structures associated with pits, sandstone rocks, bones and lithic objects have been noted (fig. 12).

The mammal fauna is more diversified than in the Gravettian I, represented by *Equus transilvanicus*, *Bison priscus*, *Rangifer tarandus*, *Megaceros giganteus*, *Lepus* sp., *Vulpes*

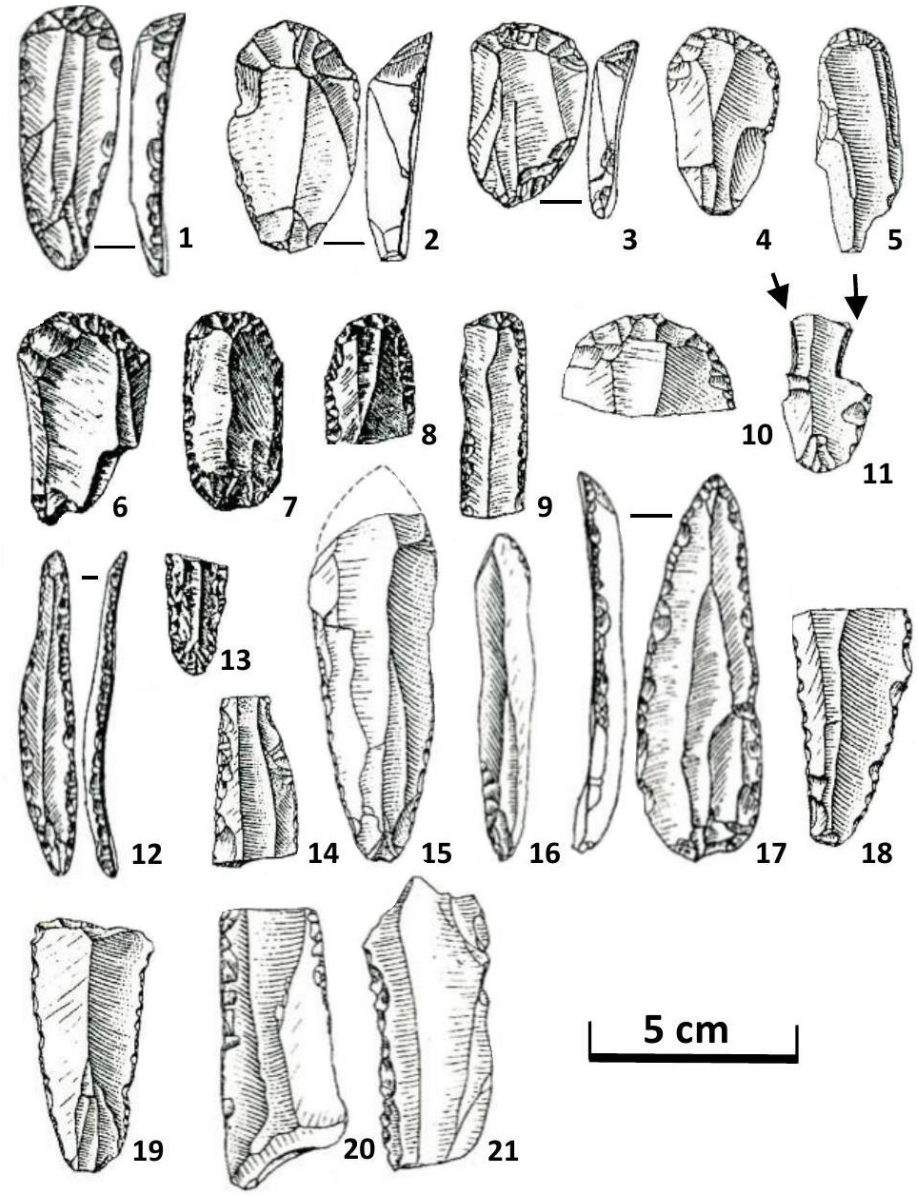

Fig. 10 – Lithic tools in the Gravettian II at Bistricioara-Lutărie I-II. 1-10 endscrapers; 11 *burin*; 12-16 retouched blades; 17 pointed blade; 18-19 denticulate tools; 20-21 scrapers (drawings reworked after Al. Păunescu, 1998).

vulpes (Al. Bolomey, 1966). The malacological fauna was studied by A. V. Grossu and includes the species *Pupilla muscorum*, *Succinea oblonga*, *Clausilia pumila*, *Vallonia enniensis*, *Trichia sericea*.

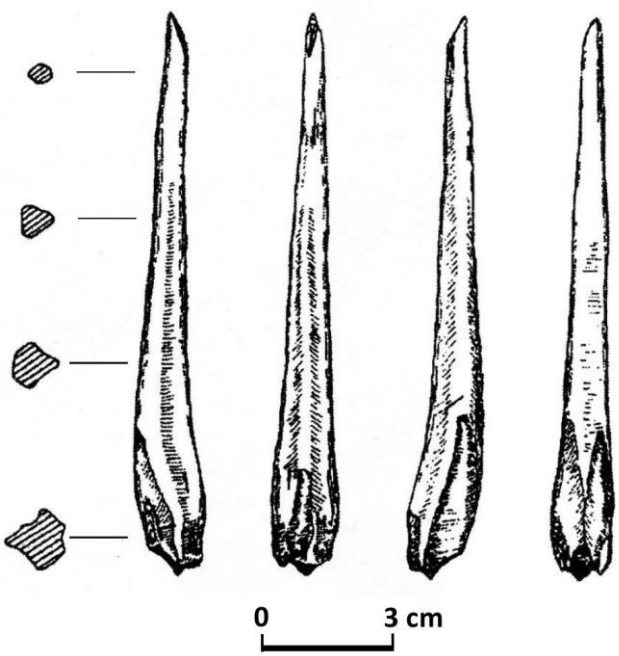

Fig. 11 – Spear point in the Gravettian II at Bistricioara-Lutărie II, made from a horse metapodium (acc. to Al. Păunescu, 1998).

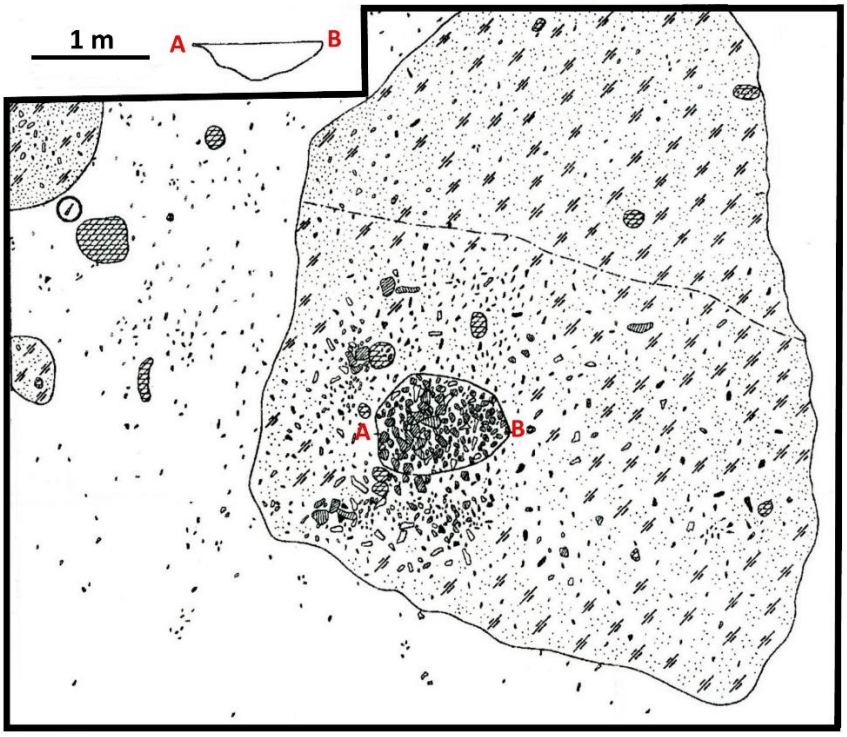

Fig. 12 – Combustion structure in the Gravettian II, associated with pits, sandstone rocks, bones and lithic items found in trenches H-L at Bistricioara-Lutărie II (reworked after Al. Păunescu, 1998).

C-14 dates for the Gravettian II at Bistricioara-Lutărie I and II generally range from 23,000 to 24,000 B.P. However, a single charcoal sample recovered 200-215 cm deep at Bistricioara-Lutărie II has provided two significantly different ages with very large margins of error: GX 8.844: 27,350 + 2100/-1500 B.P. and GX 8.845-G: 23,560 + 1150/-980 B.P. Two other dates, however, offer ages closer to 24,100 ± 1,300 B.P. (GrN 10529) and 24,760 ± 170 B.P. (GrN 11586).

Bistricioara-Lutărie III was discovered on 3 August 2005 by Marin Cârciumaru and Ovidiu Cîrstina (fig. 13/1-2), and the first significant embankment of the respective slope was performed one year later, on 19 August 2006, by the team of archaeologists led by Marin Cârciumaru and the archaeologists from Erlanger University in Germany, with whom Valahia

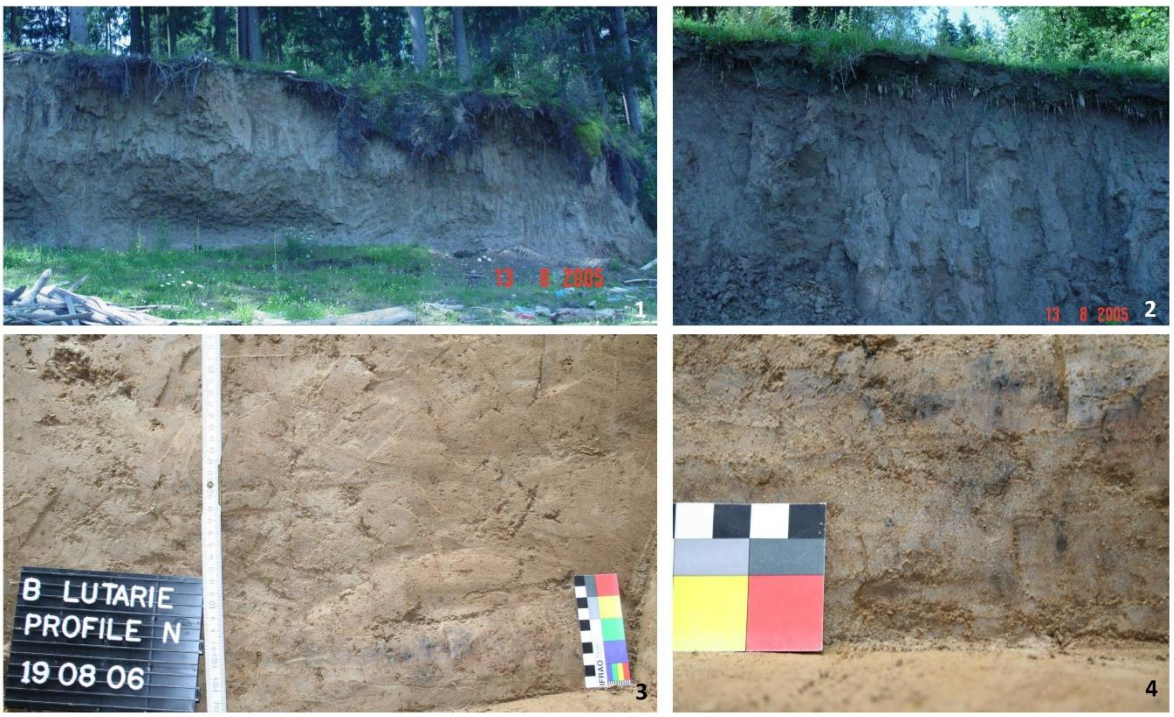

Fig. 13 – The first pictures of the discovery of the Bistricioara-Lutărie III settlement in 2005 (1-2) and of the embankment in 2006 (3-4).

University was collaborating on a project (fig. 13/3-4). Subsequently, the responsibility for the research at Bistricioara-Lutărie III was handed over to Mircea Anghelinu, in order to continue the investigations along the Bistrița Valley together with the German team.

It should be noted that the Bistricioara-Lutărie III settlement was discovered in 2005, not in 2007 as stated in the studies on this settlement: "BL III is located on the right bank of the

Bistrița River and was identified during a field survey along the river terraces in 2007" (M. Anghelinu et al., 2021, p. 212).

The archaeological excavations were carried out systematically between 2008 and 2023, and the excavated area is just over 30 m^2, while the explored area is 36 m^2 (trenches T0/2008, T1 and T2/2015, T3/2018, T4/2019), which is very small compared to the estimated perimeter of the 2,000-m^2 site. The stratigraphy was not correlated with that known from other settlements in the Ceahlău Basin, but an attempt was made to assign a new name to the layers, which actually represents the old stratigraphic sequence published by C. S. Nicolăescu-Plopșor, Al. Păunescu, F. Mogoșanu (1966), presented in a different terminology (fig. 3).

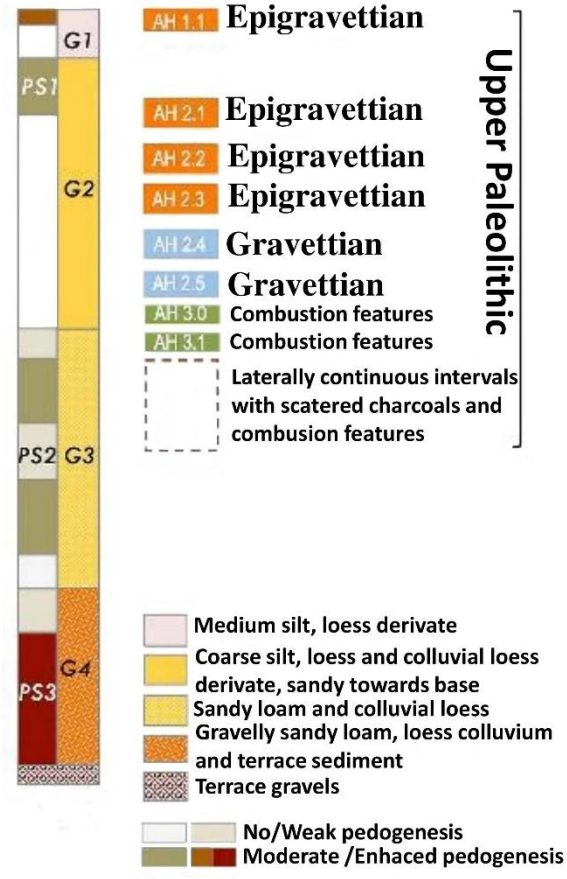

Fig. 14 – Stratigraphy and Palaeolithic levels at Bistricioara-Lutărie III (acc. to M. Anghelinu et al., 2021- simplified).

Although the complicated stratigraphic situation at Bistricioara-Lutărie III and the possible recent contributions to the formation of the deposit are recognised, "The gentle slope of the terrace at BL III (ca. 10◦ to the northeast) and the physical connection to the higher level

of the middle terrace in the south are indications for the crucial role of colluvial input at BL III. Sediment relocation from deposits uphill (i.e., deposits from the middle 40–50 m terrace and higher slopes) is indicated by the omnipresent occurrence of small-scale sand and gravel admixture, especially noticeable in the lower part of the sediment sequence (C. Schmidt et al., 2020)" (M. Anghelinu et al., 2021, p. 212), the authors present an ideal stratigraphy of the 15-18 m terrace of the Bistrița River (fig. 14).

On the other hand, studies conducted at Bistricioara-Lutărie III have systematically ignored pollen analysis from the nearby Bistricioara-Lutărie II settlement and from Dârțu in the same area. This has led to a series of unacceptable omissions, such as the identification of the brownish-red layer as a fossil soil by C. S. Nicolăescu-Plopșor, Al. Păunescu and F. Mogoșanu (1966) based solely on its colour, while pollen analysis has revealed that it is actually contemporaneous with a cold stadial period (M. Cârciumaru, 1980). Maintaining the classification of the brownish-red layer as a fossil soil, referred to as PS1 (M. Anghelinu et al., 2018, 2021; C. Schmidt et al., 2020), lacks substance, especially since the same authors state that "the PS1 layer witnessed in its last formation phase harsh frost events creating small-scaled polygonal features with ice wedges and frost lamination reaching in places more than 1 m into unit G2. These features together with the many root channels and other bioturbation features hinder a clear definition of PS1's lower boundary. PS1 can be interpreted as a polygenetic, gelistagnic cambisol, typical for arctic ecozones today. The onset of pedogenetic processes in PS1 can only be estimated based on immediately underlying TL ages ranging between 17.3 and 14.9 ka (C. Schmidt et al., 2020)" (M. Anghelinu et al., 2021, p. 214). In addition to the importance of prioritising the definition of sedimentary conditions for the reddish-yellow layer in a stadial environment, we believe that the aspect of vegetation in which the sedimentation of the brownish-red layer occurred, and the specific climate would complement and enhance the lithological and pedogenetic study.

According to the new proposal, the stratigraphy of the Ceahlău Basin, as described by C. S. Nicolăescu-Plopșor, Al. Păunescu, and F. Mogoșanu in 1966, should be as follows: GH1-soil recently attributed to the Holocene; GH2-yellowish loess layer of aeolian origin, attributed to the Würm III; GH3-reddish paleosol with prismatic structure (Würm II-III interstadial); GH4-red-yellow loess derivative with "rhythmic stratification" (i.e., lenses of finer/coarser washout material, slope material) in the upper part and carbonate accumulations in the form of

pseudo-mycelia and traces of congelifluction in the lower part, attributed to the Würm II stadial; GH5-reddish paleosol, rich in angular gravel, concretions and lenses of gravel and yellowish clay resulting from slope washout (Würm I-II); GH6-sandy loess with intercalations of mica-rich fine sands (Würm I stage); GH7-terrace sands and gravels (C. Schmidt et al., 2020) (fig. 3). As can be seen, apart from the introduction of the GH (1-7) terms and the PS (1-3), the description used at Bistricioara-Lutărie III does not represent any novelty, as it uses the GH names from 1 to 7 for the old layers, as they were initially described and with the estimated ages at that time, in relation to the Alpine chronology, which is difficult to accept today.

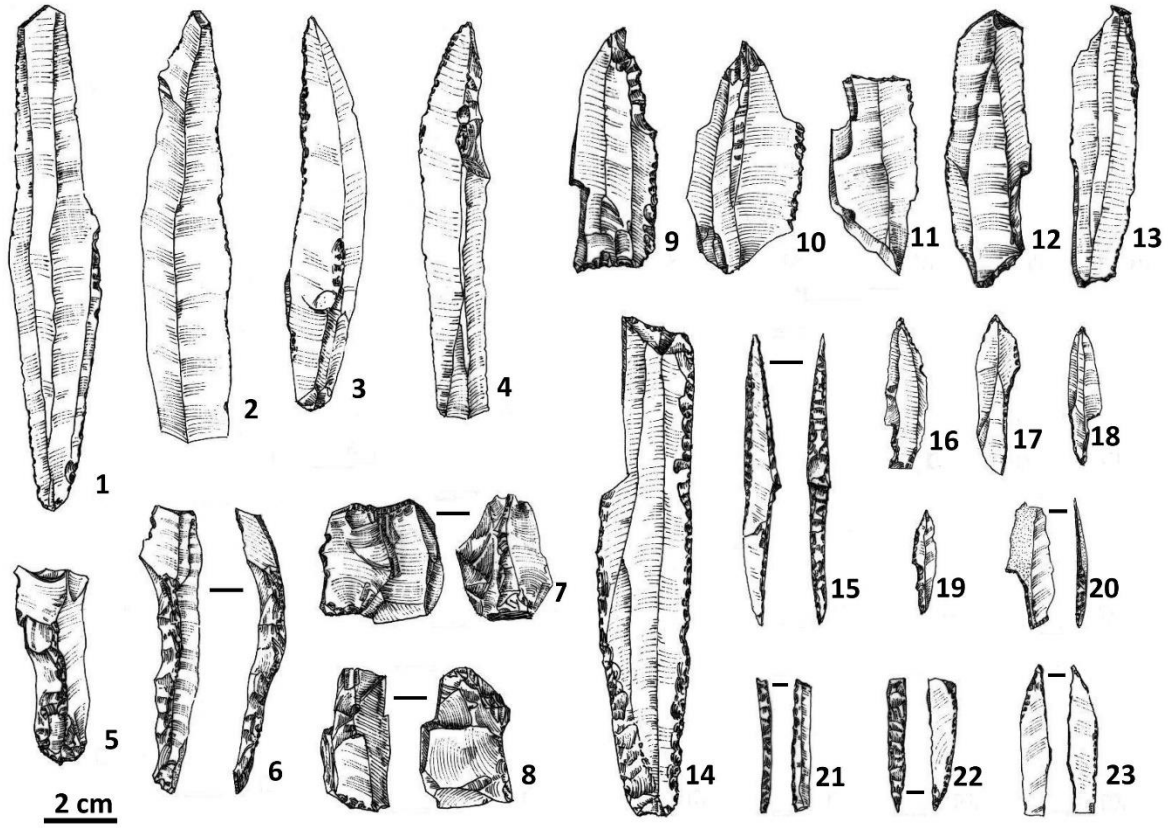

Fig. 15 – Lithic items in level AH 2.5 at Bistricioara-Lutărie III. 1-3 blades; 5-6 crested blades; 7-8 cores; 9-14 *burins*; 15-20 points; 21 bladelets; 22 *microgravette*; 23 pointed blade (acc. to M. Anghelinu et al., 2021).

Six archaeological horizons (AH) are mentioned, which are concentrated in the upper part of the deposit, specifically in the lithological units G2-G1, and are enclosed by PS2 and PS1 (or the Holocene soil) (M. Anghelinu et al., 2021). This suggests that the oldest Palaeolithic

occupations at Bistricioara-Lutărie III are contemporaneous with the period of deposition of the yellowish loess layer of aeolian origin, according to the old stratigraphic scheme of the Ceahlău Basin.

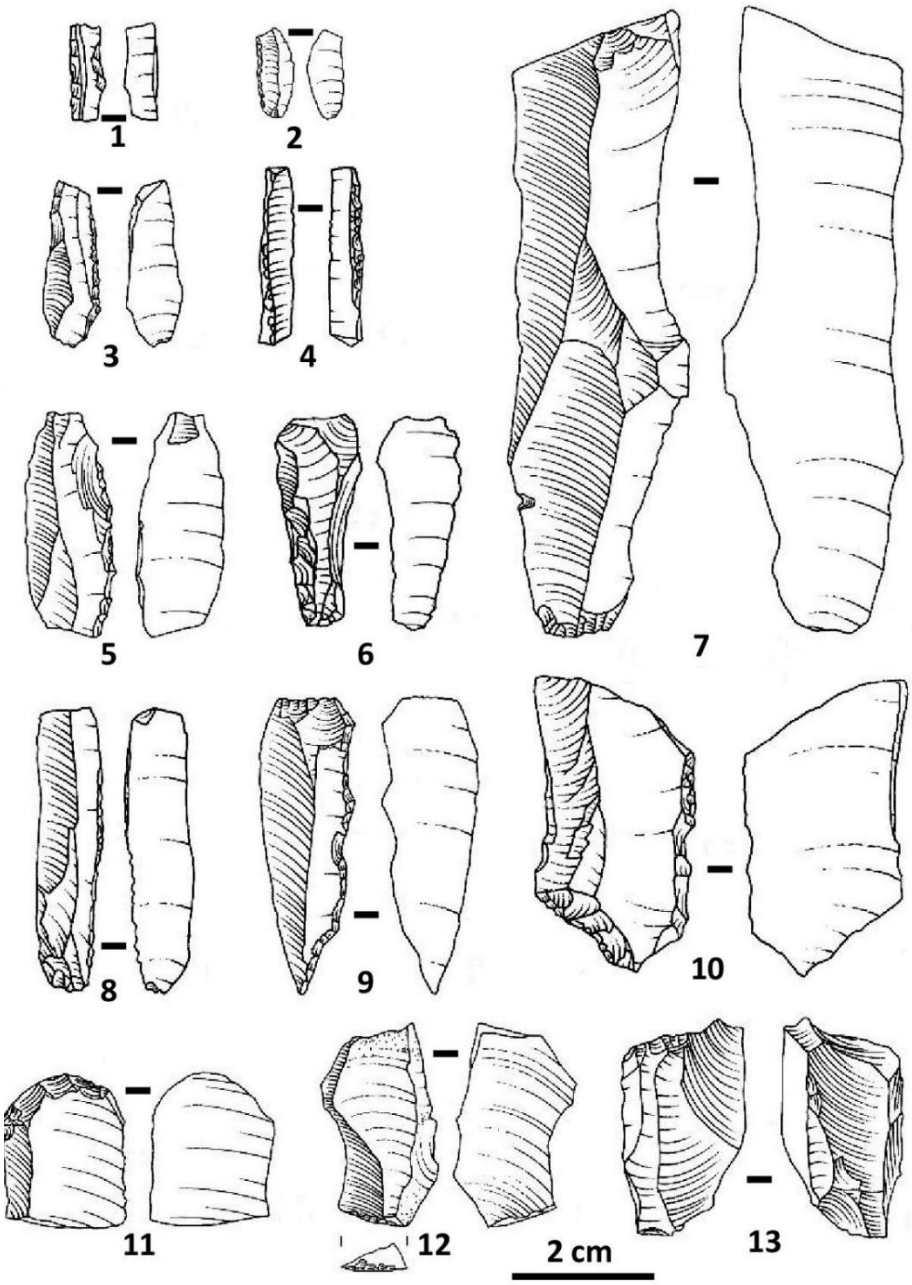

Fig. 16 – Lithic tools in level AH 2.3 at Bistricioara-Lutărie III. 1-4 cores; 5-6 endscrapers; 7, 9-12 blades; 8 crested blade; 13 secondary flake (acc. to M. Anghelinu et al., 2021).

An unambiguous correlation of layers from different sections or trenches is quite difficult, as claimed (M. Anghelinu et al., 2021). The earliest evidence of human presence at Bistricioara-Lutărie III would only be some combustion structures found at the base of G2, but

their presence is questioned due to erosion and relocation processes. The oldest certain archaeological level, defined by lithic tools as well (AH 2.5) (figs. 14-15), found approximately 2 metres deep in the lower half of G2, is techno-typologically attributed to a late Gravettian, for which there is also a date of 23,284 ± 139 B.P. (RoAMS 1413.101) (tab. 3). It is mentioned that this level is affected by slope and solifluction processes but there are sufficient arguments to consider it *in situ*. A more secure occupational level seems to be AH 2.4, at a depth of 1.7

Depth (cm)	Layer	Material	AMS Lab. Nr.	Age B.P. (uncal.)	Age (cal.B.P) (95.4 % probability)
			DeA 7465	**16.949±57**	**20.630-22.228**
			DeA 7574	**18.378±66**	**22.438-21.994**
G2	**Epigravettian**	**Charcoal**	**RoAMS1067.101**	**18.992±121**	**23.232–22.515**
	Epigravettian		**DeA 7575**	**19.486±98**	**23.777-23.111**
115	**Epigravettian**	**Charcoal**	**Erl 12.851**	**19.749±149**	**23.393-24.154**
G2	**Epigravettian**	**Charcoal**	**RoAMS1411.101**	**19.864±94**	**24.180–23.620**
G2	**Epigravettian**	**Charcoal**	**RoAMS1069.101**	**20.108±141**	**24.525–23.829**
G2	**Gravettian I**	**Charcoal**	**RoAMS1418.101**	**21.543±129**	**26.059–25.604**
176	Fără context arheologic	Charcoal	DeA 3685.1.1	21.950±90	25.940-26.419
	Fără context arheologic		DeA 7577	22.257±111	26.922-26.145
G2	**Gravettian II**	**Charcoal**	**RoAMS1413.101**	**23.284±139**	**27.754–27.300**
G2	**Gravettian II**	**Charcoal**	**RoAMS1070.101**	**23.332±185**	**27.824–27.274**
186	**Gravettian II**	**Charcoal**	**DeA 7462**	**23.342±133**	**27.346-27.773**
G2	**Gravettian II**	**Charcoal**	**RoAMS1417.101**	**23.699±137**	**28.051–27.551**
196	No archaeological context	Charcoal	DeA 3688.1.1	24.153±112	27.873-28.515
276	No archaeological context		DeA 4462	24.490±99	28.270-28783
222	No archaeological context	Charcoal	DeA 4466	27.249±240	30.879-31.488
	No archaeological context		DeA 7466	29.243±207	33.868-32.944
246	No archaeological context		DeA 4460	30.249±169	33.929-34.623
237	No archaeological context	Charcoal	DeA 7464	31.938±279	35.180-36.384
G3			RoAMS1415.101	23.450±152	27.851–27.391
G3			RoAMS1236.101	28.142±100	32.442–31.511

Tab. 3 – C-14 dates at the Palaeolithic settlement of Bistricioara Lutărie III (red – dates with small margin of error).

metres, overlaid by two other levels (AH 2.3 and AH 2.2) attributed to the Epigravettian (fig. 16). They are separated by a 15-cm sterile layer. These levels, in turn, are not without problems of stratigraphy and artefact relocation. Their age would be around 24 cal ka BP and 23 cal ka BP.

A younger Epigravettian level (AH 2.1), estimated to be between 20 and 15 ka cal BP, extends in G2, until it reaches the lower part of PS1 (boundary hard to determine), between 0.9 and 0.6 metres deep. AH 1.1 is a scattering of lithic materials, without being able to speak of i*n situ* situations. In conclusion, as mentioned by the researchers at Bistricioara-Lutărie III, the deposit has been affected by geomorphological phenomena that have caused serious disturbances and have disrupted the accumulation process, leading to the relocation of sediment and, consequently, the position of the archaeological material. The habitation structures appear eroded, which explains the absence of artefacts. AH 2.5 layer has certainly been affected by periglacial phenomena and cryoturbation and slope processes. Moreover, levels AH 2.3 and AH 2.2 have been visibly disturbed by the presence of polygonal structures caused by prolonged freezing. An even more worrying situation is the sloping position of the habitation structures, which led to the fan-shaped arrangement of materials. (M. Anghelinu et al., 2021). This situation can only be the consequence of an extremely active dynamics of the deposit at Bistricioara-Lutărie III, which makes it difficult to imagine coherence of lithic assemblages, their belonging and classification to well-defined techno-typological facies.

II.2. Dârțu

The settlement of Dârțu, along with the one at Bistricioara-Lutărie, has been the subject of extensive archaeological research, in terms of excavated areas and interdisciplinary studies.

Depth (cm)	Layer	Material	AMS Lab. Nr.	Age B.P. (uncal)	Age (cal. B.P) (95.4 probability)
108-113	Epigravettian	Charcoal	GrN 12.672	17.860±190	22.155-21.068
170	Gravettian I	Charcoal	GrN 16.985	21.100+490/-460	
164-174	Gravettian II	Charcoal	GrN 12.673	24.390±180	28.800-27.987
168-171	Gravettian II	Charcoal	GX. 9.415	25.450+4450/-2850	
230	No archaeological context	Charcoal	Erl 9.971	30.772±643	36.123-33.748
230	No archaeological context	Charcoal	Erl 12165	35.775±408	41.331-39.528

Tab. 4 – C-14 dates at the Palaeolithic settlement of Dârțu (red – dates with small margin of error).

It lies in the southern part of the Ceahlău commune, on the same terrace at a relative altitude of 45 metres, bordered in the west-northwest by the Răpciunița rivulet, in the east-southeast by the Dârțu valley and in the north-northeast by the Bistrița Valley. The spur on which the

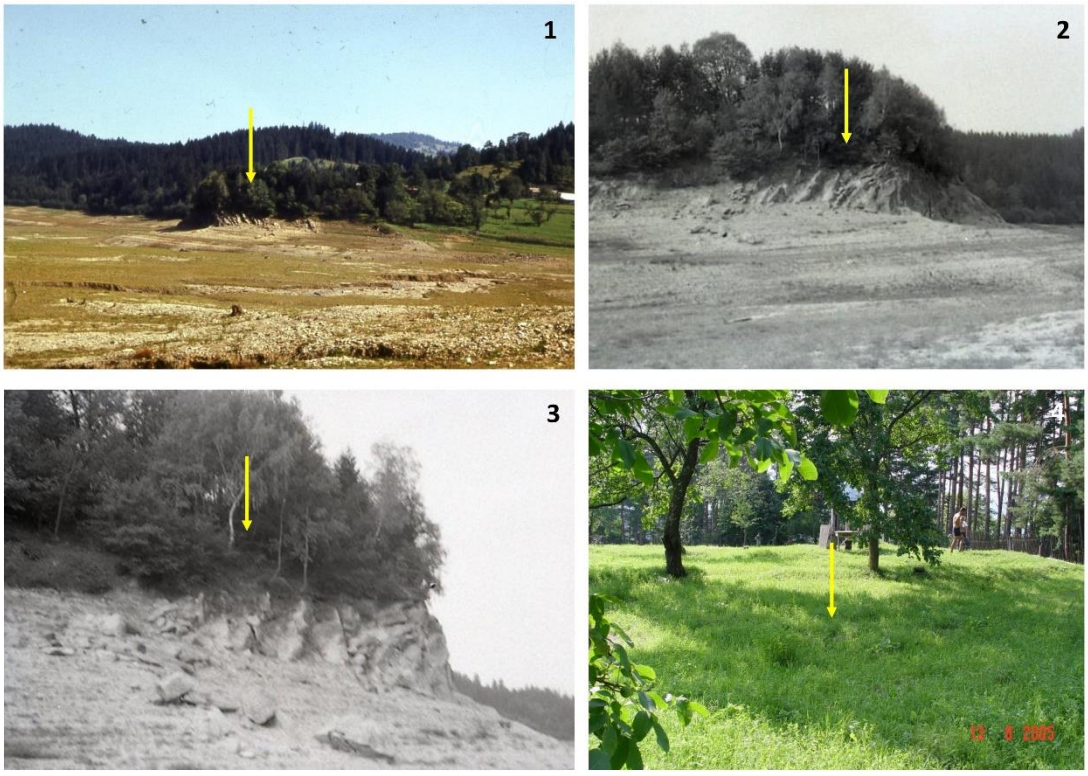

Fig. 17 – The Dârțu-Ceahlău settlement. 1-3 Pietricica spur on which the Gravettian settlement is located; 4 terrace surface.

Fig. 18 – The last stage of archaeological excavations at Dârțu in 2006. 1 the beginning of one of the sections; 2-3 the 2006 section; 4 stratigraphic profile.

settlement is located, known as Pietricica, is actually a pedestal of conglomerates on which Pleistocene sediments have been deposited (figs. 17-18).

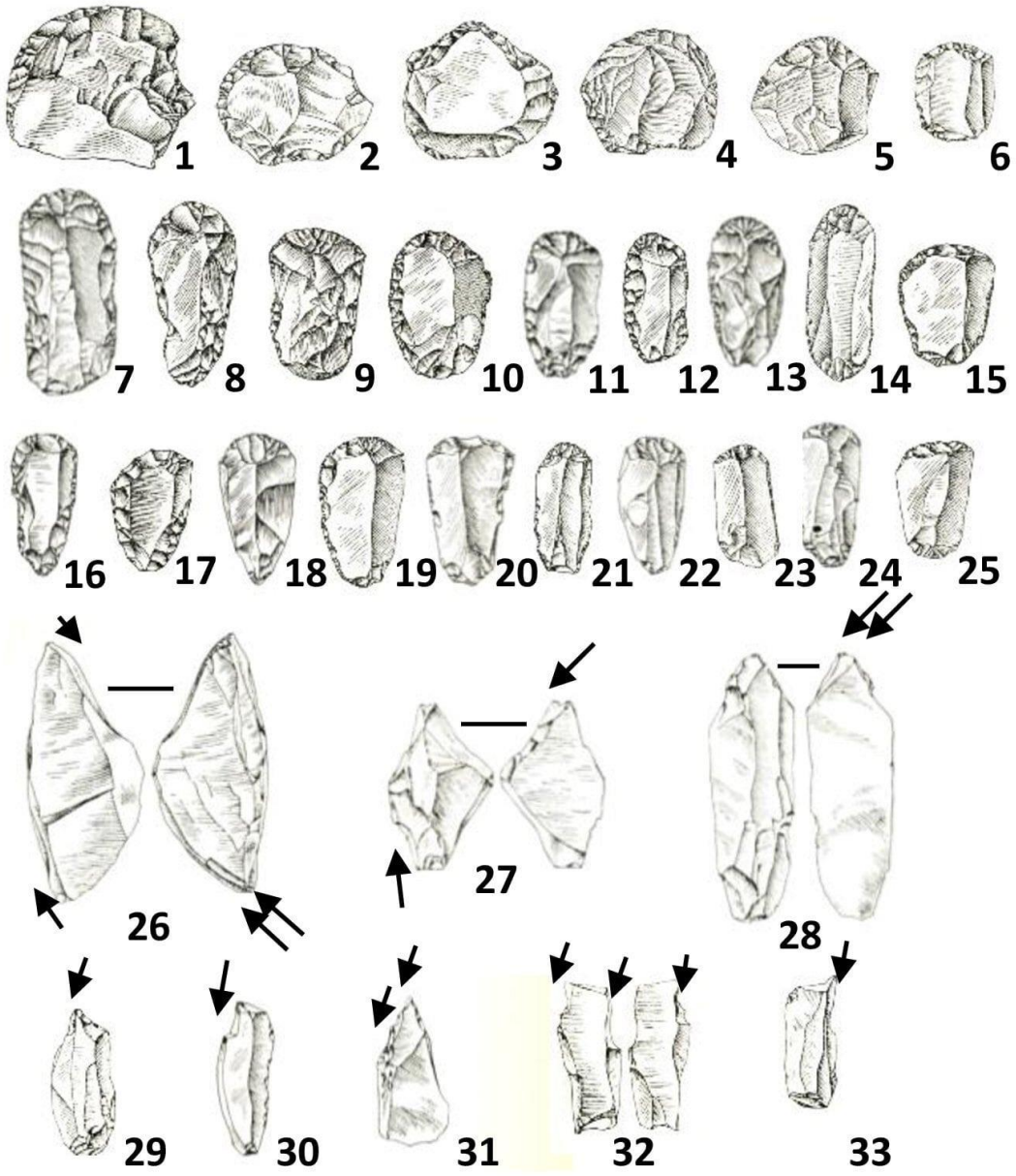

Fig. 19 – Lithic tools in the Epigravettian at Dârțu. 1-25 single and double endscrapers on flakes and blades; 26-33 *burins* (drawings reworked after C. S. Nicolăescu-Plopșor et al., 1966)

The following cultural levels can be identified within the deposit at the Ceahlău-Dârțu settlement: the Epigravettian level, found within the layer of pale-yellow loess and at the upper part of the reddish-brown layer; Gravettian I level, which extends from the upper limit of the

reddish-yellowish loess layer to the lower limit of the reddish-brown layer; Gravettian II level, identified in the greyish pseudo-mycelian loess layer.

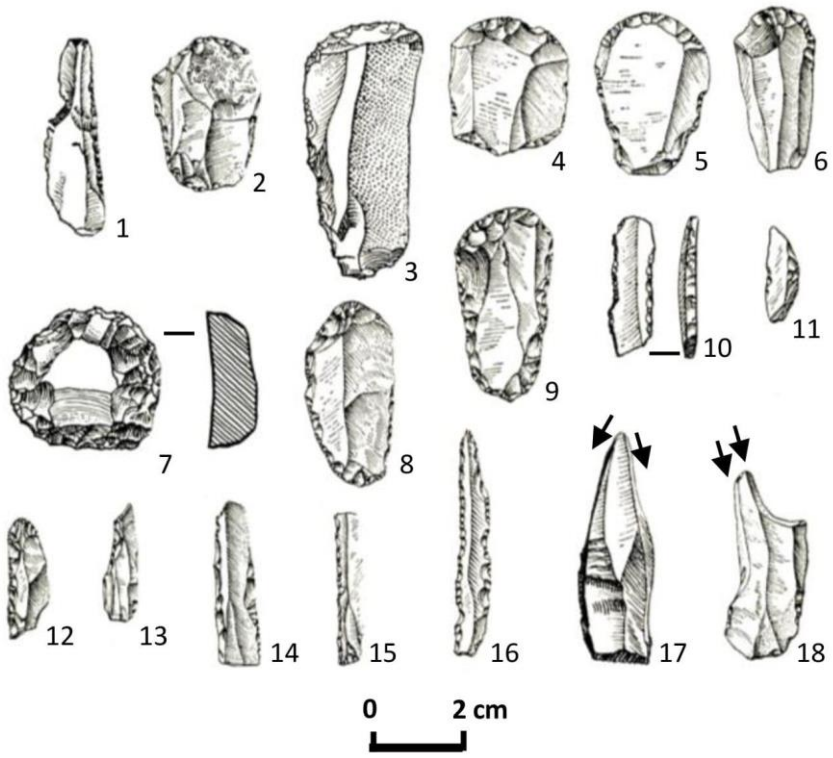

Fig. 20 – Lithic tools in the Gravettian I at Dârțu. 1, 10-15-bladelest *à bord abattu*; 2-9 – endscrapers; 16- *la Gravette* point; 17-18 – *burins* (acc. to C. S. Nicolăescu-Plopșor et al., 1966).

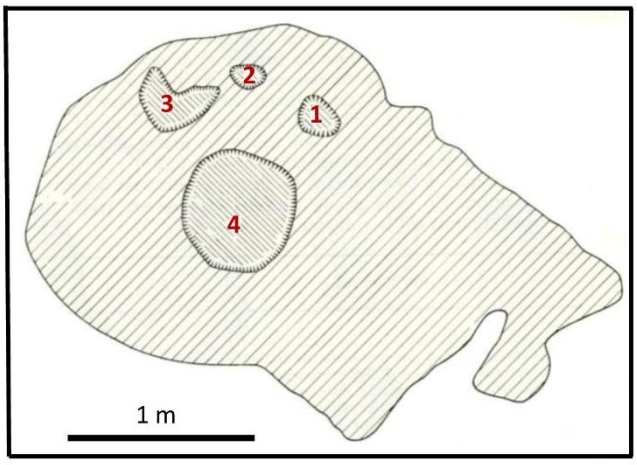

Fig. 21 – Hearth with pits inside in the Gravettian II at Ceahlău-Dârțu (reworked after C. S. Nicolăescu-Plopșor et al., 1966).

The **Epigravettian** level lacks occupation structures and is defined only by lithic items of menilite (47.20%), black shale (24%), often patinated flint (22.65%), glauconitic siliceous

sandstone (2.58%), radiolarite (0.73%) etc. Over 2% of the artefacts are calcined (Al. Păunescu, 1998), which is a curious phenomenon considering the complete absence of combustion structures in this level. It is not excluded that there may be confusion between calcination and exposure to sunlight. Microlithic pieces, as expected, represent 73.70%. The lithic assemblage consists of endscrapers (28.70%), especially simple ones, but also on retouched blade, double endscrapers or on flake, backed bladelets (24.40%), burins (8.56%), mainly dihedral ones, notched items (6.97%), *la Gravette* points (5.54%) etc. (fig. 19).

The **Gravettian I** is dominated by endscrapers, both simple and double, accounting for approximately 40%, followed by backed bladelets at over 15%, and notched items at almost 10% (fig. 20). These artefacts were primarily made from flint, with a generally patinated surface, as well as menilite, and much less from black shale and other types of rocks.

In the **Gravettian II**, the lithic assemblage was very poor, as only 1,596 lithic items were recovered from the large area that was excavated (37 sections, 15 trenches, etc.), of which only 144 represented tools. The following categories have been identified: endscrapers (38.57%), generally simple, on a blade or retouched flake, retouched blades (24.33%), notched pieces (55.65%) etc. The most commonly used rocks were siliceous sandstone with glauconite (55.65%), black shale (28.50%), menilite (9.15%), flint (4.40%) etc.

On the other hand, combustion structures seem to be quite frequent as compared to the discovered lithic material, and their variety is notable, as is the existence of pits (fig. 21).

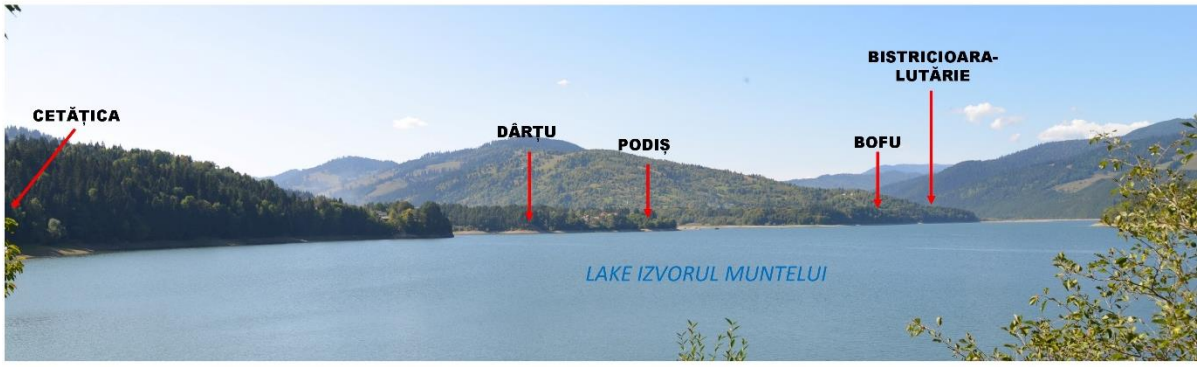

Fig. 22 – The main Palaeolithic settlements in the Răpciuni Basin (picture near the settlement of Cetățica).

For the Gravettian I, there is a radiocarbon date of 21,100+490/-460 (GrN 16.985), while for the Gravettian II, a date with an acceptable margin of error sets the age of this level at 24,390±180 (GrN 12.673) (tab. 4).

II.3. Bofu

There are actually two settlements, Bofu Mare and Bofu Mic. The former is located on a terrace at a relative altitude of 55-65 m, while the latter lies on a terrace at a relative altitude

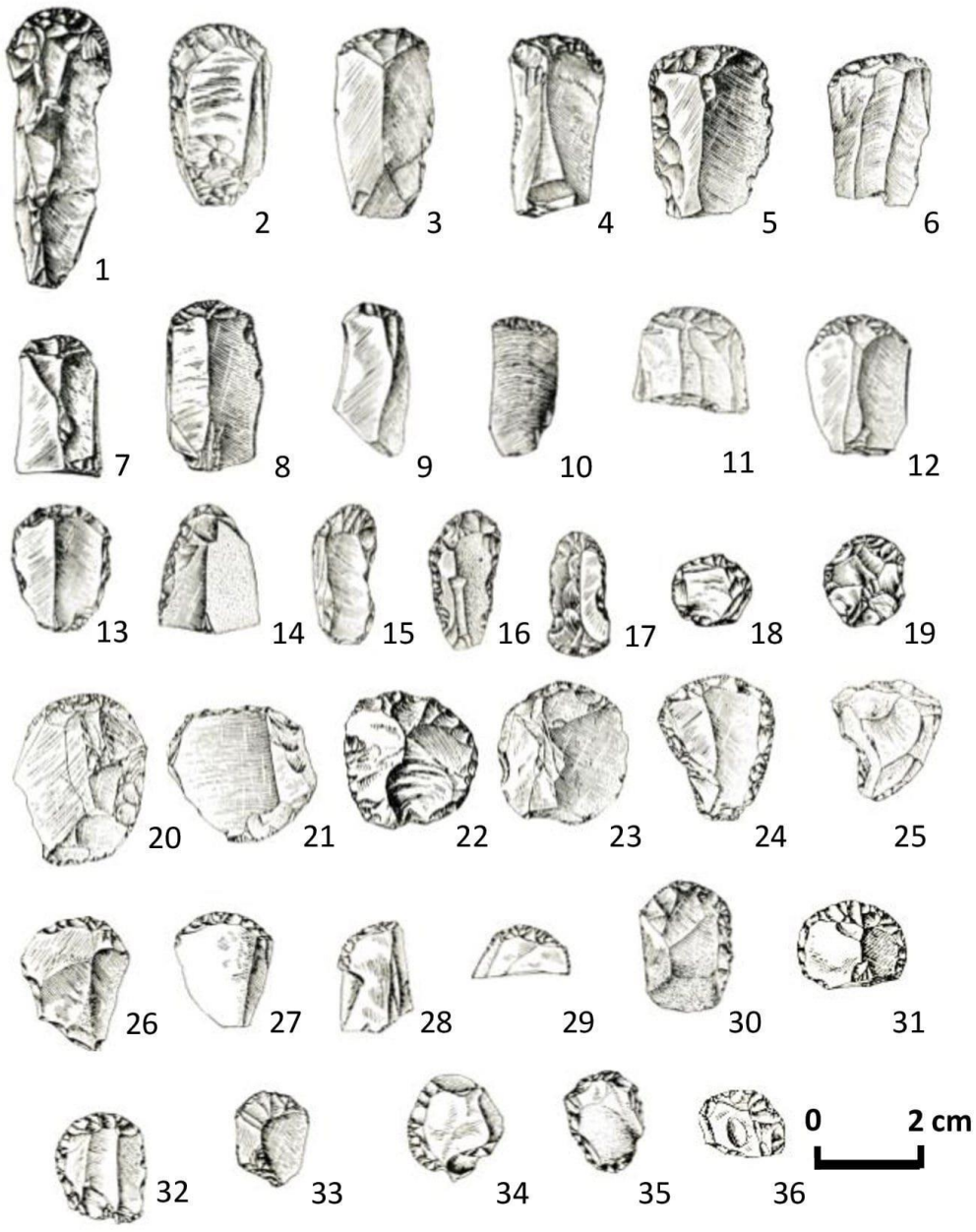

Fig. 23 – Various types of endscrapers in the Epigravettian level at Bofu Mic (acc. to C. S. Nicolăescu-Plopșor et al., 1966, modified).

of 45-55 m. The Bofu Mare settlement is less significant because the stratigraphy here is relatively short, in that, only the upper layers have been preserved, namely the current soil, the

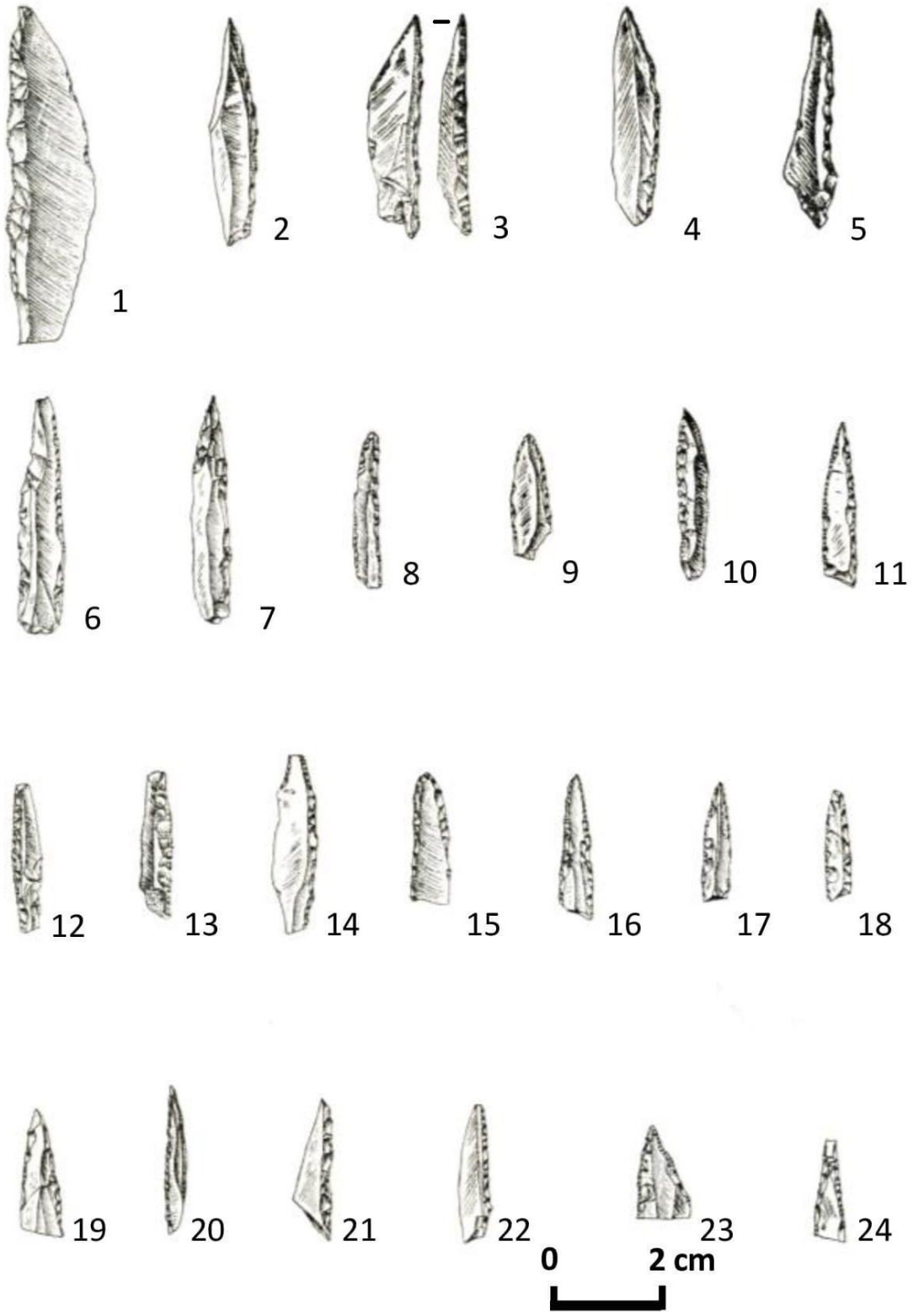

Fig. 24 – *La Gravette* points in the Epigravettian level at Bofu Mic (acc. to C. S. Nicolăescu-Plopșor et al., 1966).

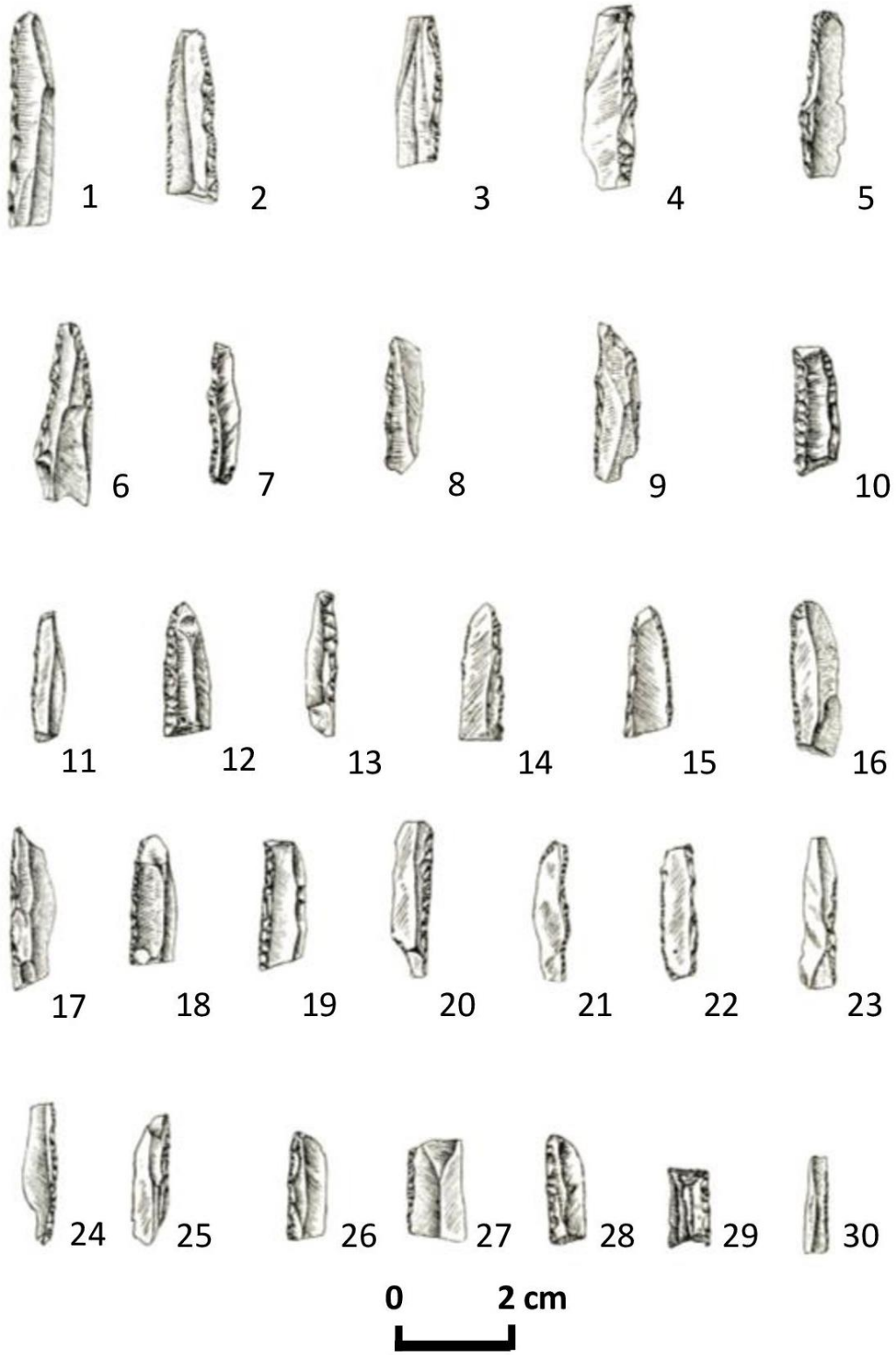

Fig. 25 – Bladelets *à bord abattu* in the Epigravettian level at Bofu Mic (acc. to C. S. Nicolăescu-Plopșor et al., 1966).

pale-yellow loess layer, the brown-reddish layer and the yellow-reddish layer with pseudo-mycelia at the base. Next, there are fluvial deposits in the form of sand and gravel. Very few items have been discovered only in the pale-yellow loess layer and they most likely belong to the Epigravettian.

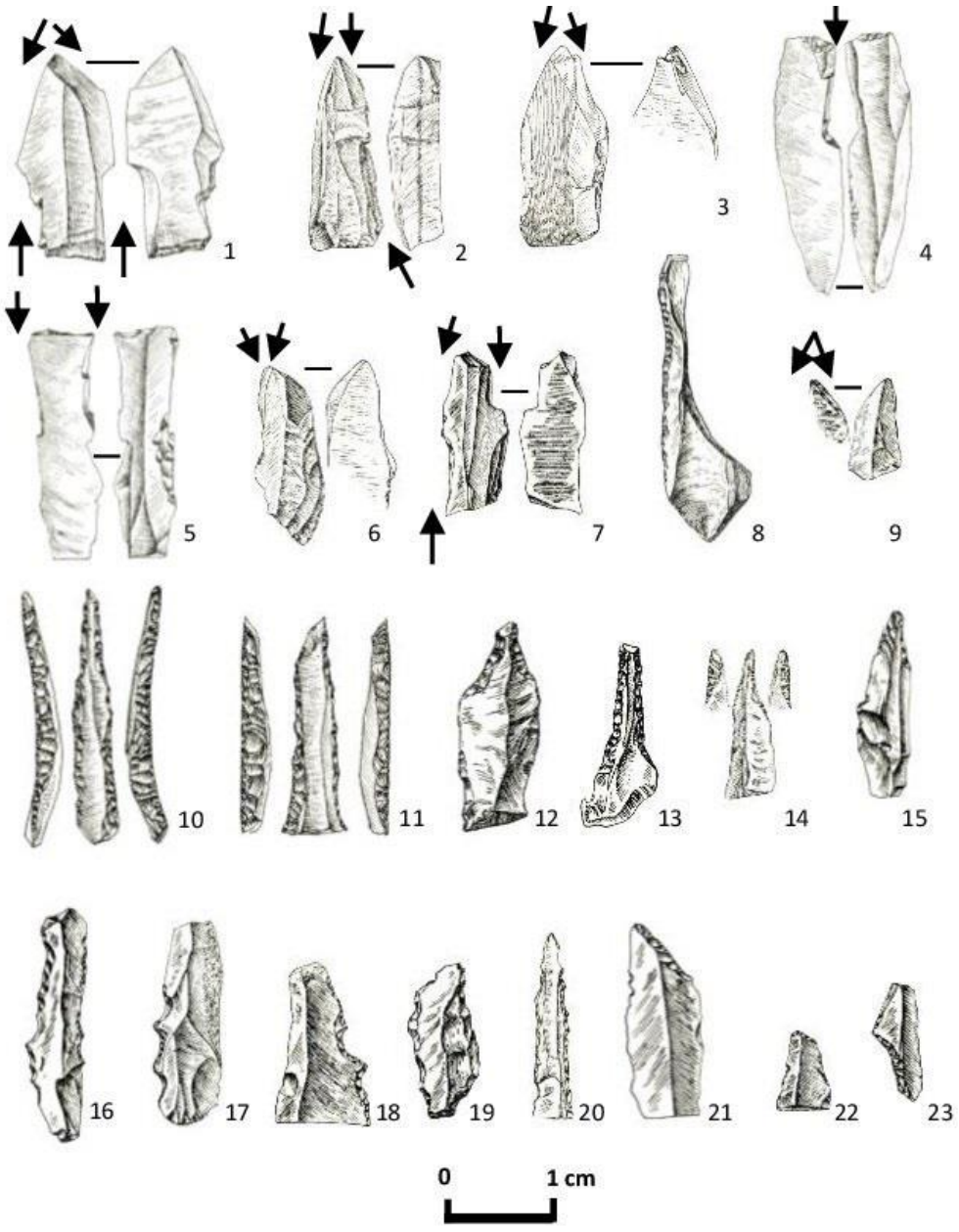

Fig. 26 – Lithic tools in the Epigravettian level at Bofu Mic. 1-7, 9 - *burins*; 8- *burin spall;* 10-15 – *drills*; 16-20 –denticulate blades; 21-22 – oblique truncated blades; 23- atypical *à cran* point (modified after C. S. Nicolăescu-Plopșor et al., 1966).

The Palaeolithic settlement of Bofu Mic is located on the same terrace as the Bistricioara- Lutărie I-II and Dârțu settlements, on the west-northwest edge of the Ceahlău

village (fig. 22). The stratigraphy of the deposit does not entirely preserve that of the two mentioned settlements: the current soil; the pale-yellow loess layer; the brown-reddish layer; the reddish-yellowish layer; the dark red layer, which lies on sand and gravel. As can be seen, the grey pseudo-mycelian loess layer is missing, probably due to the cryogenic structures observed in this deposit.

From the pale-yellow layer of loess, a small number of lithic items belonging to the **Epigravettian** stratigraphy have been recovered. The lithic assemblage is dominated by endscrapers, accounting for over 24% (fig. 23), most of them on blades or flakes with signs of reuse. Circular and thumbnail endscrapers are also present. "*La Gravette"* points and *microgravette* points (fig. 24) are well represented (7.68%), as are blades *à bord abattu* (fig. 25). Burins make up 6.68%, mostly dihedral ones and on retouched truncation (fig. 26/1-7, 9). Multiple burins have also been encountered, while burins-cores are extremely rare. Drills are typical, with long points with bilateral steep retouch that can reach over 8 cm in length (fig. 26/10-15) (C. S. Nicolăescu-Plopșor et al., 1966; Al. Păunescu, 1998). As we have seen, the stratigraphic situation at Bofu Mic does not fit into the general pattern of deposit formation specific to the 45-55 m terrace, as it is likely affected to a greater extent by glacial processes, such as ice wedges, which have already been reported. Consequently, the evolution of Gravettian cultural layers has been largely affected, making this site less important solely based on its attribution to the Epigravettian, which, compared to other settlements in the Răpciuni Basin, appears to be one of the richest. It has been better preserved because, chronologically, it is posterior to the Glacial Maximum, which is responsible for the intense periglacial processes that disturbed the lower layers.

II.4. Podiș

The Podiș settlement is located in the village of Ceahlău, flanked to the north-northwest by the Schitul rivulet, to the east by the Răpciunița rivulet, and to the north-northeast by the Bistrița River (figs. 4, 22). Archaeological excavations were carried out in two points, labelled A and B, which are very close to each other, separated by a ravine, much like the Bistricioara Lutărie I and II settlements. Of these two points, extensive research was conducted at point A, located near the area known as Dealul Delenilor or Dealul Cantacuzinilor. Here, in 1956-1958, an area of approximately 473 square metres was excavated. A smaller area, of only 72 square metres, was also excavated in 1962. The long and narrow trench system was also employed here, generally oriented in the E-NE to S-SW direction, not far from the edge of the terrace,

about 150 metres away. For example, trench I had a length of 110 metres and a width of only 1 metre. Naturally, such a system can have some advantages when investigating the extent of the settlement. However, as a systematic excavation method, we consider it to be completely deficient, as there is a high risk of cutting through habitation structures without the possibility of making a revealing reconstruction of these structures.

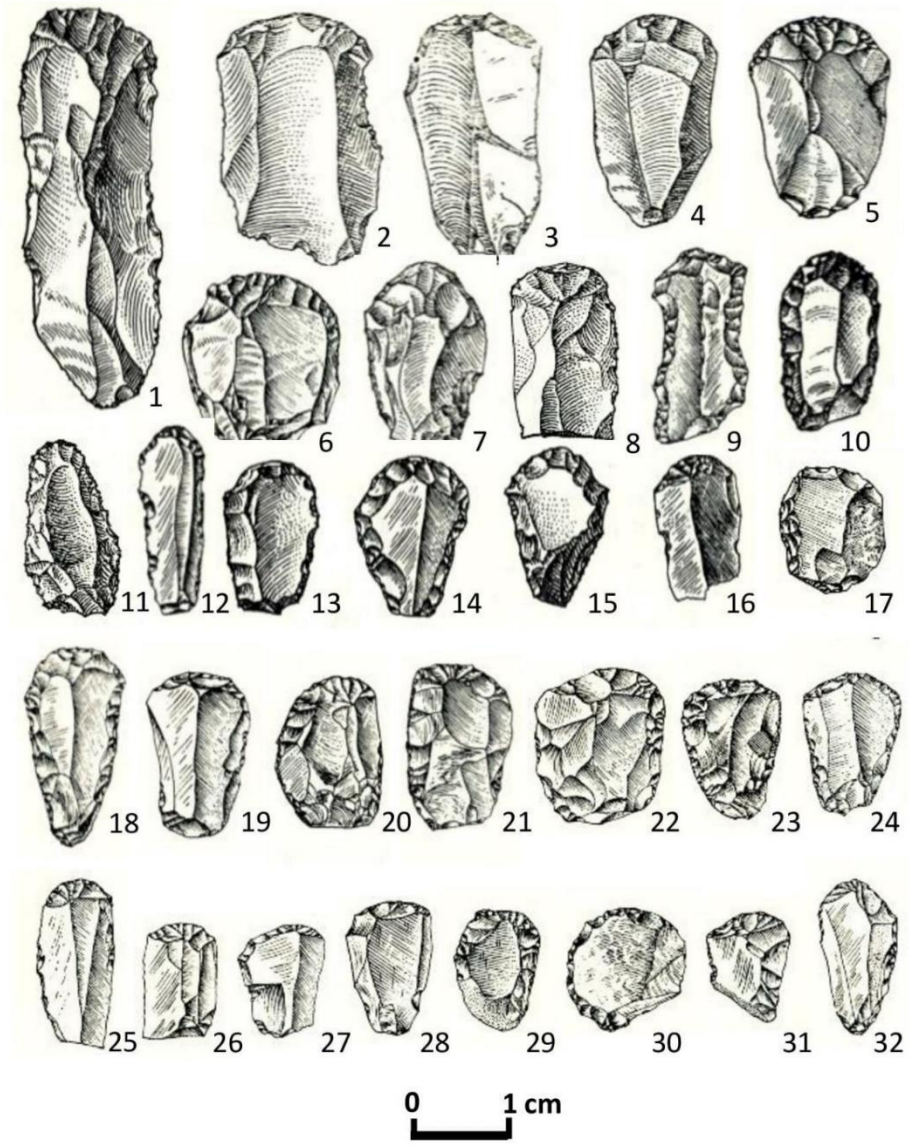

Fig. 27 – Various types of endscrapers in the Epigravettian level at Podiș (modified after C. S. Nicolăescu-Plopșor et al., 1966).

The succession of geological layers is very similar to the situation at Bofu Mic and somewhat different from the lower part of the deposit described at Bistricioara-Lutărie I-II and Dârțu. From top to bottom, the following have been identified: the current soil; a pale-yellow

loess layer; a reddish-brown layer; a reddish-yellow layer; and a dark reddish layer (whose lower boundary has not been reached). The same periglacial processes, as at Bofu Mic, have

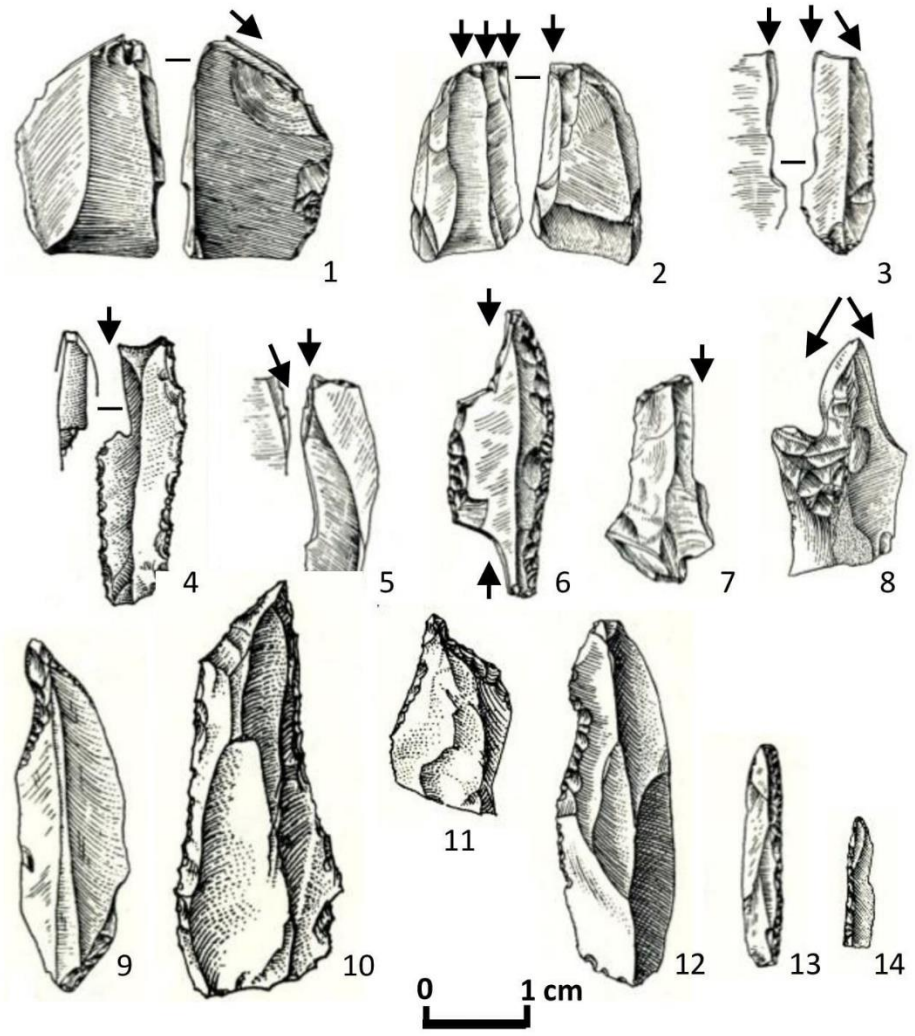

Fig. 28 – Lithic tools in the Epigravettian level at Podiș. 1-8 – *burins*; 9-11 – *drills*; 12-notched blade; 13-14 –*la Gravette* points (modified after C. S. Nicolăescu-Plopșor et al., 1966).

affected the deposit, especially the ice wedges that originate from the base of the pale-yellow layer, in perfect accordance with the climatic character of the underlying brown-reddish layer. These ice wedges, which often penetrate the lower layers as deep as 90 cm, logically formed during a glacial period, in this case during the deposition of the brown-reddish stratum, which, as has long been established through palynological studies, was contemporary with a glacial stage (M. Cârciumaru, 1980).

A number of lithic items have been identified in the pale-yellow loess layer beneath the current soil, whereas combustion structures are completely absent. A total of 3,730 lithic pieces have been recovered, of which only 352 have been attributed to tools. The dominant ones are

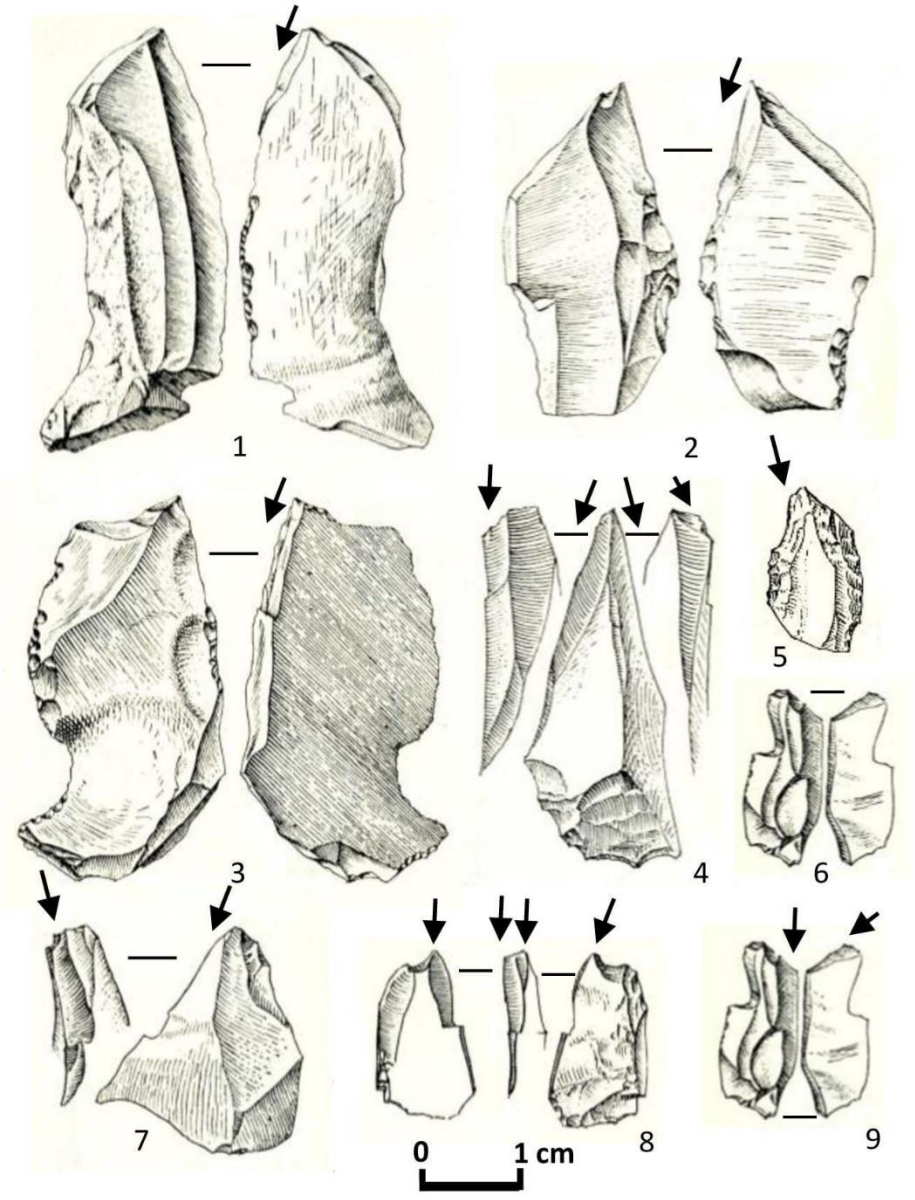

Fig. 29 – *Burins* in the Gravettian I level at Podiș (modified after C. S. Nicolăescu-Plopșor et al., 1966).

the endscrapers - 23.29%, represented by simple ones, on retouched blade, double ones, on flake, thumbnail ones, and even atypical carenated ones (fig. 27). Backed bladelets are also well represented - 19.88%, some of which are pointed; there are also burins, which account for

9.36%, mainly the dihedral ones (excelling in angle burins) (fig. 28/1-8), bladelets *à bord abattu* - 7.67%, notched items - 6.82% (fig. 28/12), *la Gravette* points (fig. 28/13-14), and *micrograveттes* - 4.26%. Surprisingly, Dufour blades are also present at 4.54%. The lithic material was obtained from melinite - 54%, flint, often patinated - 30%, black shale - 11%, glauconitic siliceous sandstone - 2.80%, radiolarite - 0.40% etc. (Al. Păunescu, 1998). We consider that this level belongs to the **Epigravettian**, as is the case with all the occupations within the pale-yellow loess layer located at the upper part of the 45-55 m terrace in the Ceahlău Basin.

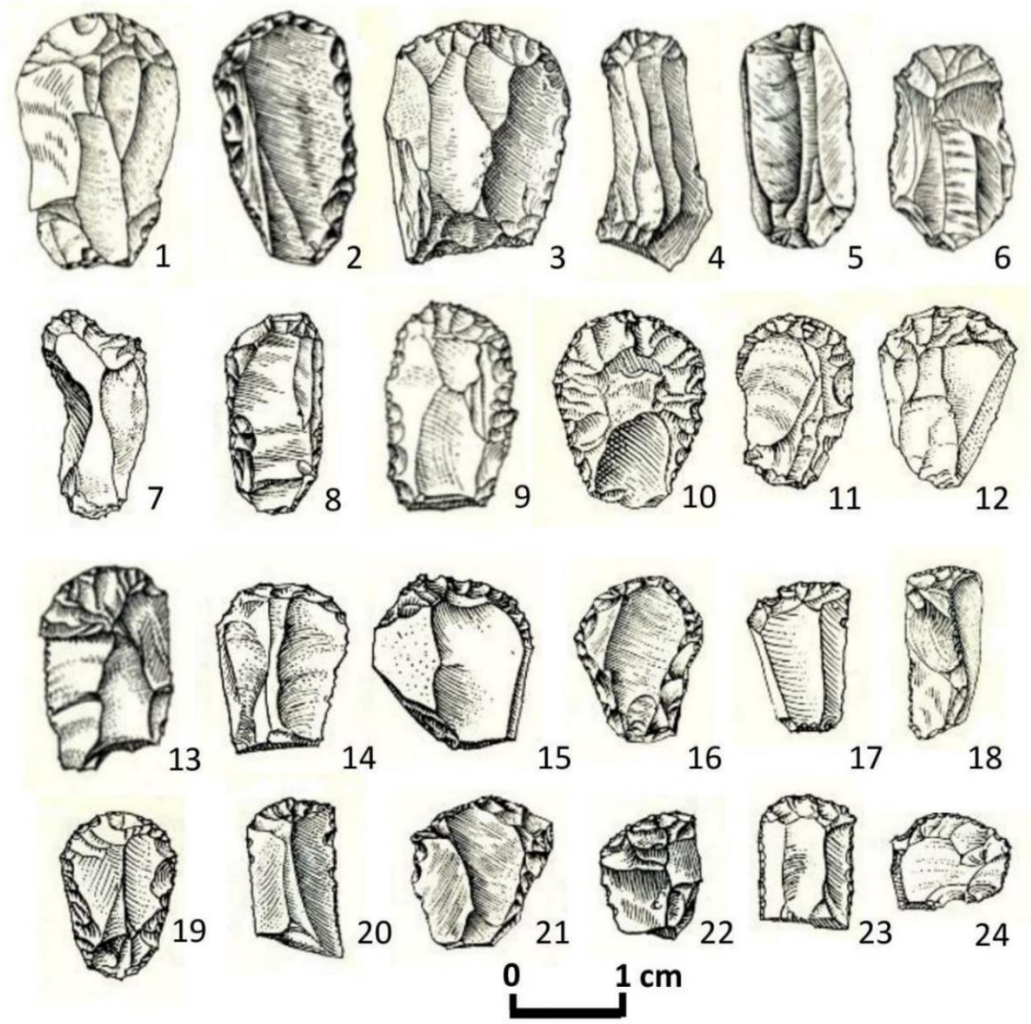

Fig. 30 – Endscrapers in the Gravettian I level at Podiș (modified after C. S. Nicolăescu-Plopșor et al., 1966).

The reddish-yellowish layer contains the occupation assigned to the **Gravettian I**. Overall, the lithic industry is dominated by burins at 23.90% (fig. 29), and notched items

(13.21%), endscrapers (12.13%) (fig. 30) and backed bladelets (10.11%) have appeared in similar percentages. The *burins* were represented by the dihedral ones, *déjeté*, angle and on a break, while among the endscrapers, the most numerous were the simple ones. In addition to these tools, retouched blades, several Dufour bladelets, denticulate blades etc. were also recovered from the Gravettian I. The raw materials used for making the tools were dominated by the presence of melinite with over 50%, followed by flint (generally patinated) with just over 20%, glauconitic siliceous sandstone with around 10% and black shale below 10%.

For the Gravettian I at Podiș, we only have one date, which has provided a much younger age compared to the development of the Gravettian I in other settlements in the Răpciuni Basin (Ceahlău): GrN 14,640: 16,970 ± 360 B.P.

II.5. Cetățica

Several Palaeolithic sites have been found at Cetățica, each located on one of the five terrace levels, which are at different altitudes: Cetățica I on the 55-65-m terrace, Cetățica II on the 45-55-m terrace, Cetățica III (or the New Church Cemetery) on the 20-25-m terrace, Cetățica IV (or the New Church Courtyard) on the 15-18-m terrace, and Cetățica V (or the

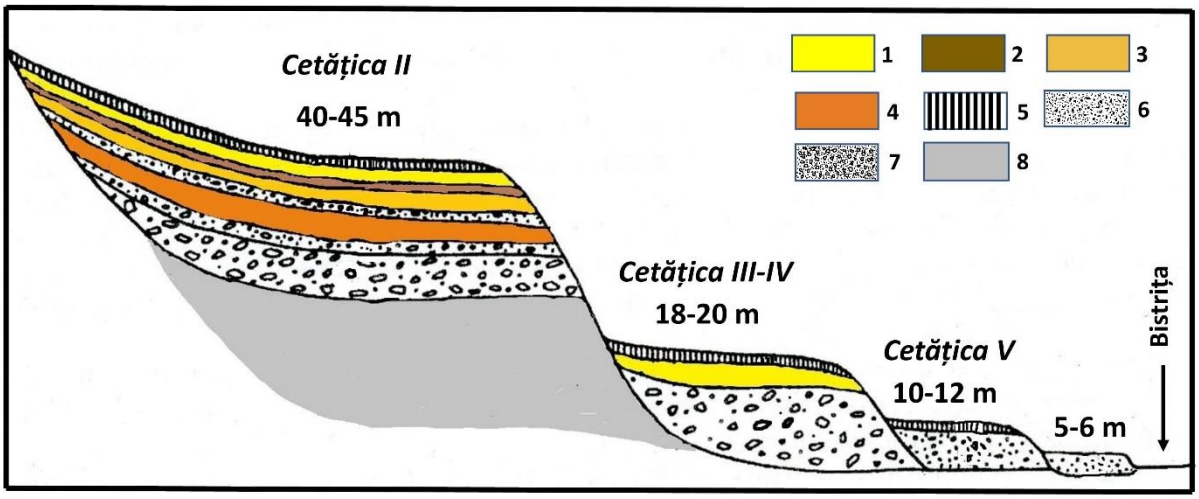

Fig. 31 – The sequence of terraces at Dârțu and the possible arrangement of some of the Cetățica settlements on the treads of certain terraces of the Bistrița. 1- pale-yellow loess layer; brown-reddish layer; 3- yellowish-reddish loess layer; 4- yellowish-grey loess layer with calcium carbonate deposits; 5- current soil; 6-layer of sheetwash sands and gravels; 7-terrace gravels; 8-sandstone substrate.

Heroes' Cemetery) on the 8-12-m terrace (fig. 31). It can be said that Cetățica is one of the most complex Palaeolithic settlements in the Ceahlău Basin, both in terms of the number of sites,

their layering according to the stepped arrangement of terraces and the composition of some of the cultural layers, particularly in the Cetățica I site. Cetățica, or Dealul Cetățica ('Cetățica Hill'), is located in the south of the village of Ceahlău, about one kilometre away, and its western boundary is formed by the confluence of the Pârâul Mare with the Bistrița River (fig. 4). Dealul Cetățica extends like a spur towards the Bistrița Valley, creating a narrower area of the Bistrița River and thus delimiting the Răpciuni Basin (Ceahlău) (fig. 22).

The terrace tread on which the settlement of ***Cetățica I*** is located is bordered on three sides by steep slopes. The archaeological excavations were conducted in several stages (1956-1957, 1981, 1985-1986) and covered an area of almost 250 square metres.

The succession of geological layers is as follows: current soil; a layer of pale-yellow loess; a brown-reddish layer; a yellowish-reddish loess layer with a pseudo-mycelian base; a runoff and washout layer; terrace gravels.

Culturally, an **Epigravettian** level can be distinguished in the pale-yellow loess layer, in line with the position of this culture in other settlements in the Răpciuni Basin. The **Gravettian I** level is contemporary with the sedimentation period of the yellowish-reddish layer, and a **Gravettian** level is found within the runoff and washout layer with rare pebbles, which is stratigraphically difficult to correlate with other Gravettian levels in the Bistrița Valley.

Depth (cm)	Layer	Material	AMS Lab. Nr.	Age B.P. (uncal)	Age (cal. B.P) (95.4 probability)
152 -159	**Gravettian I**	**Charcoal**	**GrN 14.631**	**19.760 ± 470**	**25.084-22.727**
213-220	**Gravettian II**	**Charcoal**	**GrN 14.630**	**23.890 ± 290**	**28.583-27.545**
270-280	Gravettian II	Charcoal	GrN 14.629	>24.000	-

Tab. 5 – C-14 dates at Ceahlău-Cetățica I (red – dates with small margin of error).

According to previous research, the **Epigravettian** at Cetățica I is poorly represented, as only 269 lithic items have been discovered, of which only 38 are tools, mainly endscrapers and burins, along with a few *la Gravette* points and *microgravettes*, truncated notched pieces etc. They were made using black shale, glauconitic siliceous sandstone and, to a lesser extent, flint.

The **Gravettian I** at Cetățica I is found in the upper half of the yellowish-reddish loess layer with a pseudo-mycelian base. Burn marks have been found, some interpreted as hearths, as small pieces of sandstone have been discovered inside them. The lithic inventory contains a

total of 213 items, of which only 32 are notches, denticulate tools, *à cran*, *à bord abattu*, truncated tools etc. (fig. 32). The majority of lithic items were made from black shale, glauconitic siliceous sandstone, menilite and much less flint and other rocks.

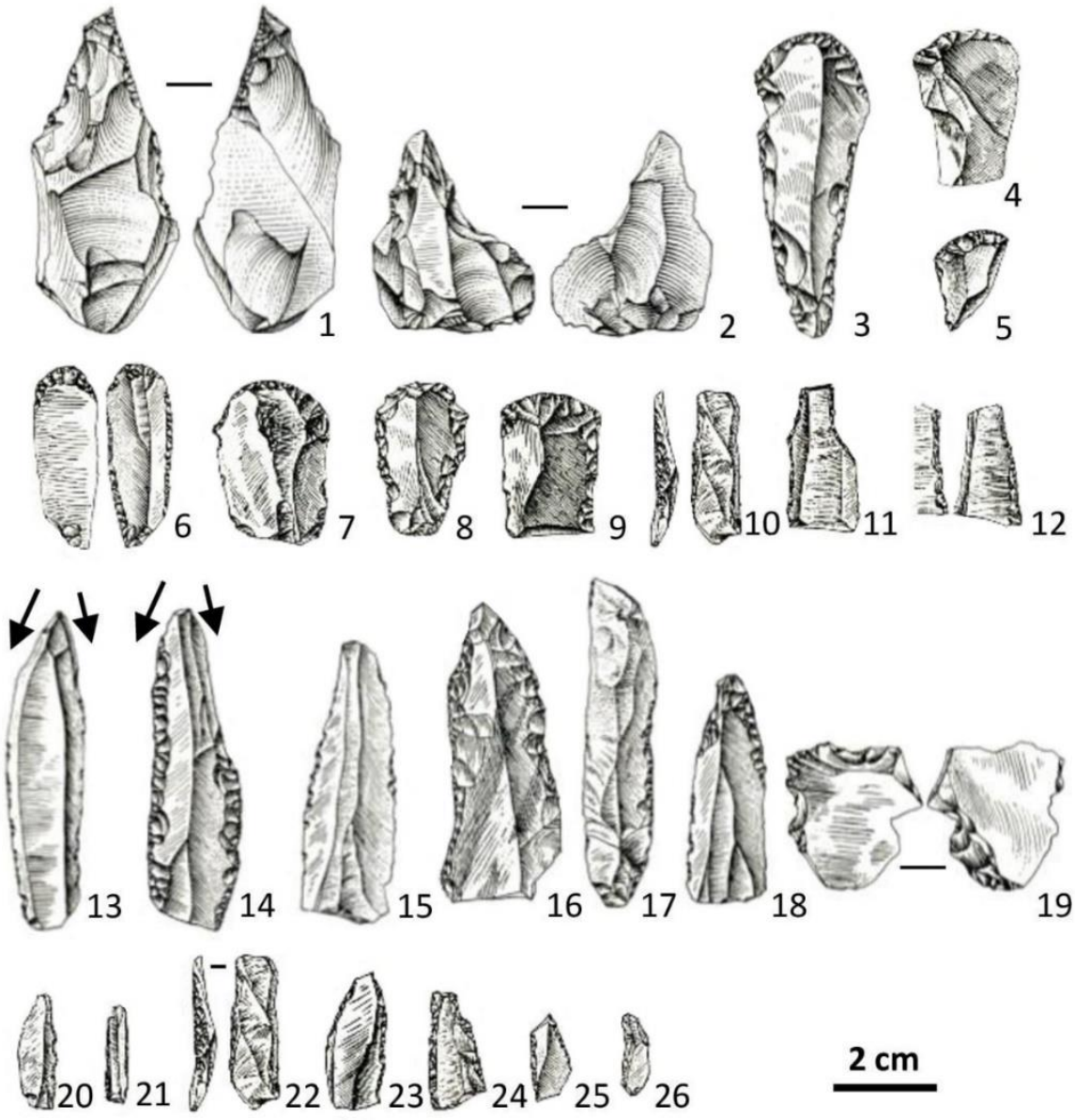

Fig. 32 – Lithic tools in the Gravettian I at Cetățica I. 1-9 – various endscrapers; 10- *la Gravette* point; 11- *à cran* tool; 12, 20-21 – *Dufour* bladelets; 13-14 *burins*; 15-denticulate tool; 16-18 – retouched blades; 19- retouched flake; 20-26 – backed bladelets (redefined after C. S. Nicolăescu-Plopșor et al., 1966; Al. Păunescu, 1998).

For the Gravettian I at Cetățica I, we also have a C-14 date of 19,760 ± 470 B.P. (GrN 14.631) (tab. 5).

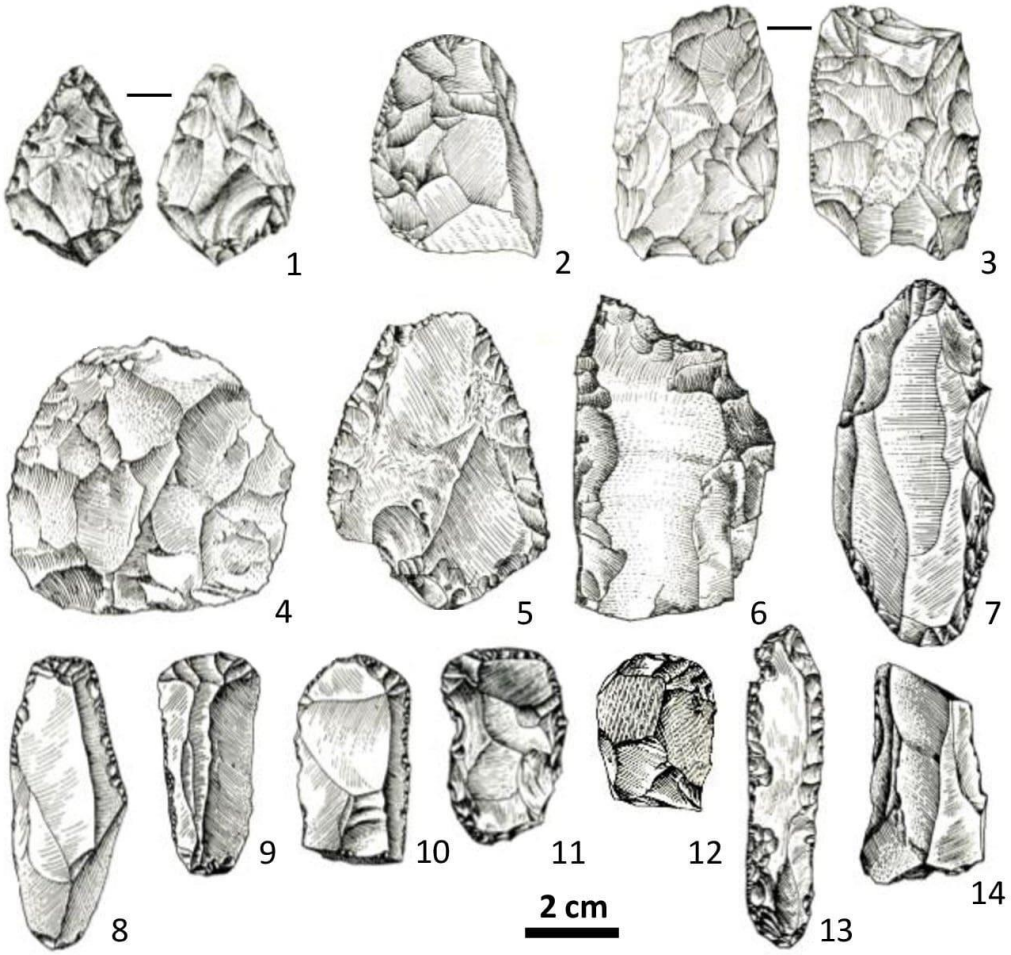

Fig. 33 – Lithic tools in the Gravettian II level at Cetățica I. 1, 3-foliate tools; 2, 7-12-endscrapers; 4- bifacial disc; 5-scraper; 6-retouched flake; 13-retouched blade; 14-blade with use retouch (modified after C. S. Nicolăescu-Plopșor et al., 1966).

The lithic items, recovered from above the terrace gravels at the Cetățica I site, which are difficult to strictly classify within specific cultural facies, consist of 266 pieces, of which 70 can be attributed to tools. It should be noted that most of the tools are made on flakes. The most common tool categories are endscrapers, notched items, scrapers (mostly falling into the category of simple straight ones, with steep or even flat retouches) etc. Of course, the three bifacial items (fig. 33/1, 3) as well as the denticulate tools remain extremely interesting (C. S. Nicolăescu-Plopșor et al., 1966; Al. Păunescu, 1998). A C-14 date places the age of this layer

at 23,890 ± 290 B.P. (GrN 14.630) (tab. 5). This age suggests that this level is contemporaneous with the **Gravettian II**.

In 1956, the first excavations were carried out on the 45-55-m terrace at ***Cetățica II***., Small surveys were subsequently conducted in 1981 and 1985 to recover charcoal and bone samples for C-14 dating. Combined, the archaeological excavations at Cetățica II did not exceed 64 m in depth. The stratigraphy of the deposit does not differ greatly from that described at Cetățica I.

The **Epigravettian** level was identified in the pale-yellow loess layer, and it was found to be quite poor based on excavations conducted in the 1950s and 1980s. Only 112 lithic items were discovered, mainly consisting of broken gravel and simple flakes (82 items). Only 10 retouched blades, 1 microlithic endscraper, one burin-core, 3 notched items and one denticulate and truncated blade were retained as tools. These were made using siliceous sandstone, black shale, menilite and very rarely flint.

Depth (cm)	**Layer**	**Material**	**AMS Lab. Nr.**	**Age B.P. (uncal)**	**Age (cal. B.P) (95.4 probability)**
144-147	Gravettian I	Charcoal	GrN 14.632	21.050±650	26.825-23.870
174-177	Gravettian II	Charcoal	GrN. 14.633	26.700±1.100	33.630-28.778

Tab. 6 – C-14 dates at Ceahlău-Cetățica II.

The **Gravettian I** is very poor in terms of the lithic material. Stratigraphically, it is located in the upper part of the yellowish-reddish pseudo-mycelian loess layer. A series of burn marks were discovered, but since they were not accompanied by other lithic materials or faunal remains, they are viewed with great doubt, as they might be the result of natural fires. Only 6 lithic items were found, including 5 simple quartzite and sandstone flakes and one unretouched mesial blade made of black shale. Under these circumstances, the C-14 date obtained must be viewed with some reservations, as it practically does not date a well-structured and defined cultural level with relevant archaeological materials. It provided the age of 21,050 ± 650 B.P. (GrN 14,632) (tab. 6).

Attempts have been made to define the **Gravettian II** solely based on some unconvincing burn marks and a few unremarkable lithic items, consisting of 30 pieces

represented by 3 broken quartzite pebbles, 6 simple flakes made of sandstone, 10 flakes, some atypical cores etc. Without a clear cultural context with interpretable combustion structures as origin, the C-14 dating must be taken with some reservations: GrN 14,633: 26,700 ± 1,100 B.P., not to mention the approximation coefficient that is hard to accept.

Cetățica III is located on the terrace tread at a relative altitude of 20-25 m, nearby the new church Cemetery. Excavations were carried out only in 1956, on a limited surface of 60 m², in some sections on a thickness of 4.50 m, when the terrace gravels were reached. On such a lower terrace it is abnormal for a thicker deposit to accumulate above the terrace gravels, unless we accept the possibility of landslide inputs coming from the deposits of the upper terraces.

Fig. 34 – Resumption of excavations at Cetățica in 2020. 1-general view from the approximately 20-m terrace at Cetățica; 2-the area of the old archaeological excavations at Cetățica II; 3-the start of a first survey; 4-the obtained stratigraphic profile.

In the pale-yellowish loess layer, an **Epigravettian** level was specified, based on simple microlithic endscrapers on a flake, a small drill, *microgravette* points, notched items, a backed

bladelet etc., obtained from glauconitic siliceous sandstone, black shale, menilite and a little flint, often with a bluish patina.

In the **settlements of *Cetățica IV*** and ***V***, very few lithic items have been recovered from the pale-yellow loess layer attributed to the **Epigravettian**.

II.5.1. Recent research at Cetățica

In 2020, the team of Palaeolithic researchers from the Museum of Human Evolution and Technology in the Palaeolithic within the "Princely Court" National Museum Complex in Târgoviște, made up of Elena-Cristina Nițu, Marin Cârciumaru, Marian Leu, Ovidiu Cîrstina, Florin-Ionuț Lupu and Horia Ghiță, resumed the excavations at Cetățica. In the initial phase, their objective was to identify the previous excavations, mostly carried out in the 1950s, and then conduct verification surveys (fig. 34).

In 2022, the team of Palaeolithic researchers returned to Cetățica, accompanied by the renowned Italian Palaeolithic investigator Marco Peresani, for a new real assessment of the potential of this area. Taking advantage of the very low water level of the reservoir, the research

Fig. 35 – Survey on the terrace above the beach that yielded significant amounts of lithic tools.

took on new values, as the extremely wide beach allowed for the recovery of a significant number of lithic items. Considering the impressive density of artefacts left on the beach as well as the coherence of the material, in that, it was quickly observed that several pieces could be refitted together, a different strategy for collecting the material was resorted to. As the items

were identified, their location was marked with a stick, and then, through extremely meticulous and laborious work, the position of each of them was recorded before being recovered in a plastic envelope, on which the coordinates were noted using a Garmin GPSMAP 64st GPS. At the same time, surveys were carried out on the terrace treads at various heights, for stratigraphic verifications and the detection of occupation levels (fig. 35).

The appearance of the reservoir has greatly changed the landscape of the Răpciuni Basin, and at Cetățica, more than in other settlements, a number of sites have been affected, especially those located on lower terraces. With the rising waters of the lake, or even at its

Fig. 36 – Aspects of the beach where a high density of lithic tools has been found. 1-floodable area which is usually below the lake level; 2-4 the beach littered with Palaeolithic lithic items.

normal fill level, only Cetățica I and II usually remain above the water level. Therefore, the chance to encounter low water levels is quite rare, and in 2022 we fully benefited from such a situation (fig. 36). In our opinion, the beach where we discovered over a thousand items in two

days belongs to the Cetățica III site, and the terrace where it is situated is either the 18-20-m relative altitude (relative to the old bed of the Bistrița River) (fig. 31), or the 20-25-m terrace, usually less well-preserved. Considering the thickness of the deposit in our surveys, which reached the terrace gravels at approximately 2.50 m, we incline to the view that it is the 20-25 m terrace.

Studies regarding the older excavations at Cetățica mention that the Cetățica III settlement, located nearby the new church cemetery, on a terrace of 20-25 m, yielded a rather poor lithic inventory after excavating an area of approximately 60 m².

Certainly, the area we have researched is not located at the site of the new church cemetery. Under these conditions, if we are indeed in the settlement of Cetățica III, it means

Fig. 37 – Marking the items on the beach surface (1-2, 4-5) and recording them with Garmin GPSMAP 64st GPS (3-6).

that we have managed to discover an area much richer in lithic material, compared to the old excavations. It is not excluded that this might be the true settlement of Cetățica III, or in other words, the true nucleus of the Cetățica III settlement.

The rigorous method of recovering the material from an area of approximately 2 hectares, the precise GPS recording of the position of each item as well as the subsequent technological studies of the lithic equipment give us the certainty that the material has not been moved significantly from its initial position within the cultural layer (figs. 36, 37). In a few cases, when the items were very close, they were recorded as a single point (fig. 38).

To verify whether the items originated from gliding and sliding down from the upper terraces or were brought by the lake water as a result of waves crashing against the shore, we carried out shallow scraping of the sediment in the areas where lithic artefacts were concentrated. The surprise was huge when we found that at a shallow depth relative to the

Fig. 38 – Particular density of items (1), well-defined typological characteristics of some of them (2, 4) and recording method (3).

current beach surface, there were items in place, unaffected and unmoved by the lake water (fig. 39). This led us to conclude that we were indeed on the settlement and the items currently visible on the beach were relatively close to their original location. The water only revealed

them and did not move them significantly. It was a great chance for us to encounter such a situation. The fact that the material was recorded with precise coordinates allowed for a reconstruction close to that of an excavation in a normal deposit, undisturbed by floods. At the same time, recording all items with precise coordinates, using a high-performance GPS, allows us, for the first time, to have a Palaeolithic site in the complex of settlements at Cetățica, whose position is known with great precision and can be identified at any time without any ambiguity. Through the approach of an unprecedented situation, such as the one encountered on the beach resulting from the retreat of the lake water, we believe that a model for the recovery of prehistoric artefacts in such circumstances has been established (E.-C. Nițu et al., 2023).

Fig. 39 – Areas of higher concentration of lithic tools (1-2) and the superficial surveys which proved the existence of items in the layer (3-4).

Once the position of each item, along with all the coordinates, had been recorded with the Garmin GPSMAP 64st GPS, it was extremely important to process and transpose them onto a general distribution plan. This was achieved not only with specific Garmin GPS programs,

but also using QGIS data processing programs. The techno-typological study of the lithic material will be the subject of a separate study.

The research did not only focus on the recovery and recording of the lithic material from the beach and possible superficial surveys intended to verify the existence pieces still in place, unaffected by the lake water or other erosion and destruction processes. In order to gain a better understanding of the origin of the respective materials and of the chronostratigraphy of the deposit from which the beach pieces originated, we conducted an initial survey (S-I) that reached a depth of 2.50 metres (fig. 40). In this way, it was possible to recover some items *in situ*, to better understand the succession of geological layers, to collect samples for C-14 dating etc.

Fig. 40 – Survey I from 2022 (September-October) in the southern part of the beach. 1-general view; 2, 4-survey I; stratigraphic profile; 5-items *in situ*.

The ages obtained are as follows: Beta 646476: 11,690 ± 40 B.P. (13,607-13,459 cal. B.P.) and Beta 646477: 9,680 ± 30 B.P. (11,201-11,071 cal. B.P.). Thus, the level we have identified at Cetățica III becomes the youngest Epigravettian determined by radiocarbon dating

in the Bistrița Valley, completing a long sequence of Palaeolithic settlements in the intramountainous sector of the Bistrița Valley. At the same time, the site we discovered represents the location with the highest density of lithic material in the settlement at Cetățica, providing a premise for future research in this settlement.

II.6. Scaune

The settlement at Scaune is located at an absolute altitude of 1,328 meters, at the foot of Mount Ocolașul Mare in the Ceahlău Mountains.

Extensive archaeological research was conducted at the Scaune settlement in 1957-1958, when an area of over 700 square metres was excavated, following a 3 square metre survey the previous year (fig. 41). Between 1983 and 1986, a series of additional surveys were

Fig. 41 – The Palaeolithic settlement of La Scaune. 1-general view of the La Scaune glade; 2-the first excavations in the 1950s; 3-cottage built of wood in traditional style which accommodated the team during the excavations (image 2, right, the palaeontologist Alexandra Bolomey, image 3, left, the archaeologists Maria Bitiri, C. S. Nicolăescu-Plopșor and Lucian Roșu) (acc. to M. Cârciumaru et al., 2023).

conducted, covering an area of 19 square metres, for the collection of sediment sampling and especially of charcoal for C-14 dating (Al. Păunescu, 1998).

The deposit is very thin, only 1 metre thick, and the succession of layers is as follows: 1- current soil; 2- yellowish-grey layer; 3- yellowish loessoid layer; 4- dark yellow layer with many friable fragments of sandstone; 5- rock substrate belonging to the Carpathian flysch.

From a cultural perspective, although lithic objects appear on the surface in the current soil, it has been noted that a Swiderian cultural level develops in the yellowish loessoid layer.

Based on the arrangement of the lithic material, one might speak of a workshop settlement. This hypothesis is supported by the significant number of debitage remains (the overwhelming majority of the approximately 14,000 lithic items recovered) and even the over 100 prismatic and conical cores (fig. 42), as well as over 800 unretouched blades. Among the tools, a large quantity of endscrapers (over 150) stands out (figs. 43, 44), while burins are present in a modest number (fig. 45), just over 20 specimens, and among the weapons, the striking tanged points (figs. 46-77).

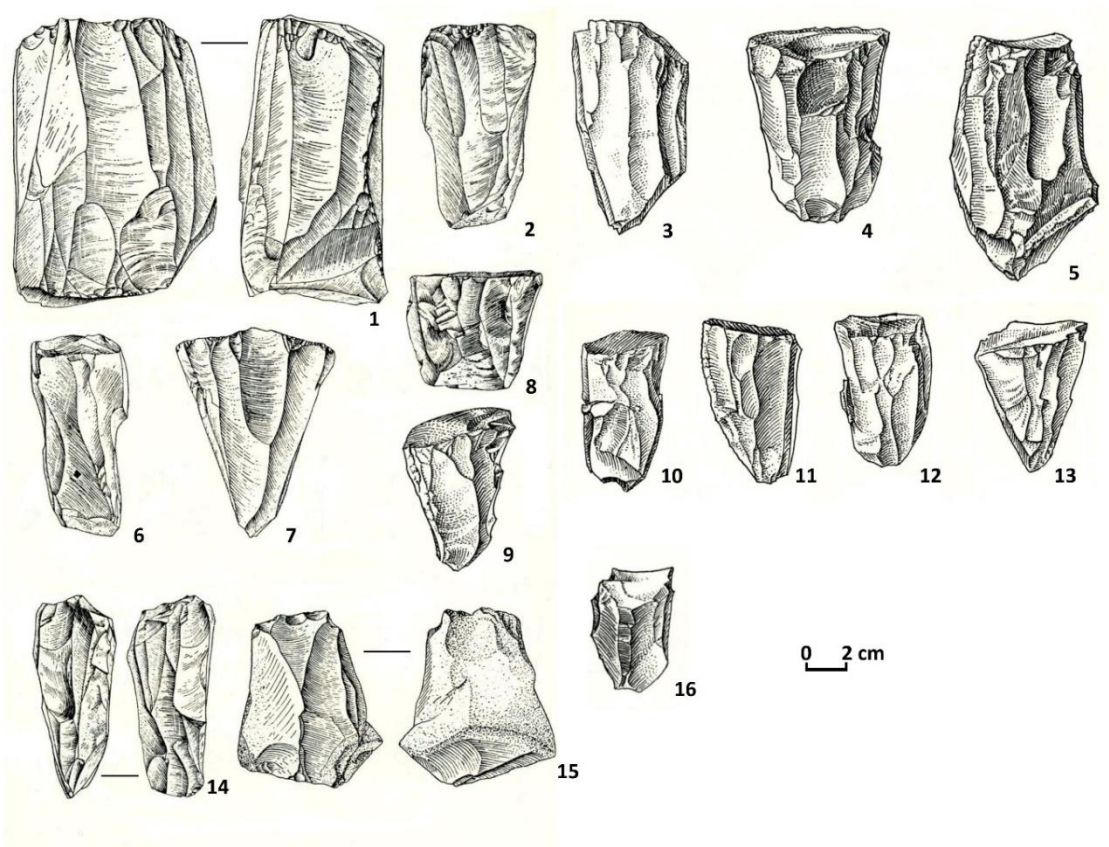

Fig. 42 – Cores of various types in the settlement of Scaune (reworked after C. S. Nicolăescu-Plopșor et al., 1966).

The reason why the Scaune settlement was attributed to the Swiderian in the 1960s was probably the presence of tanged points, knowing that this culture is characterised by such items.

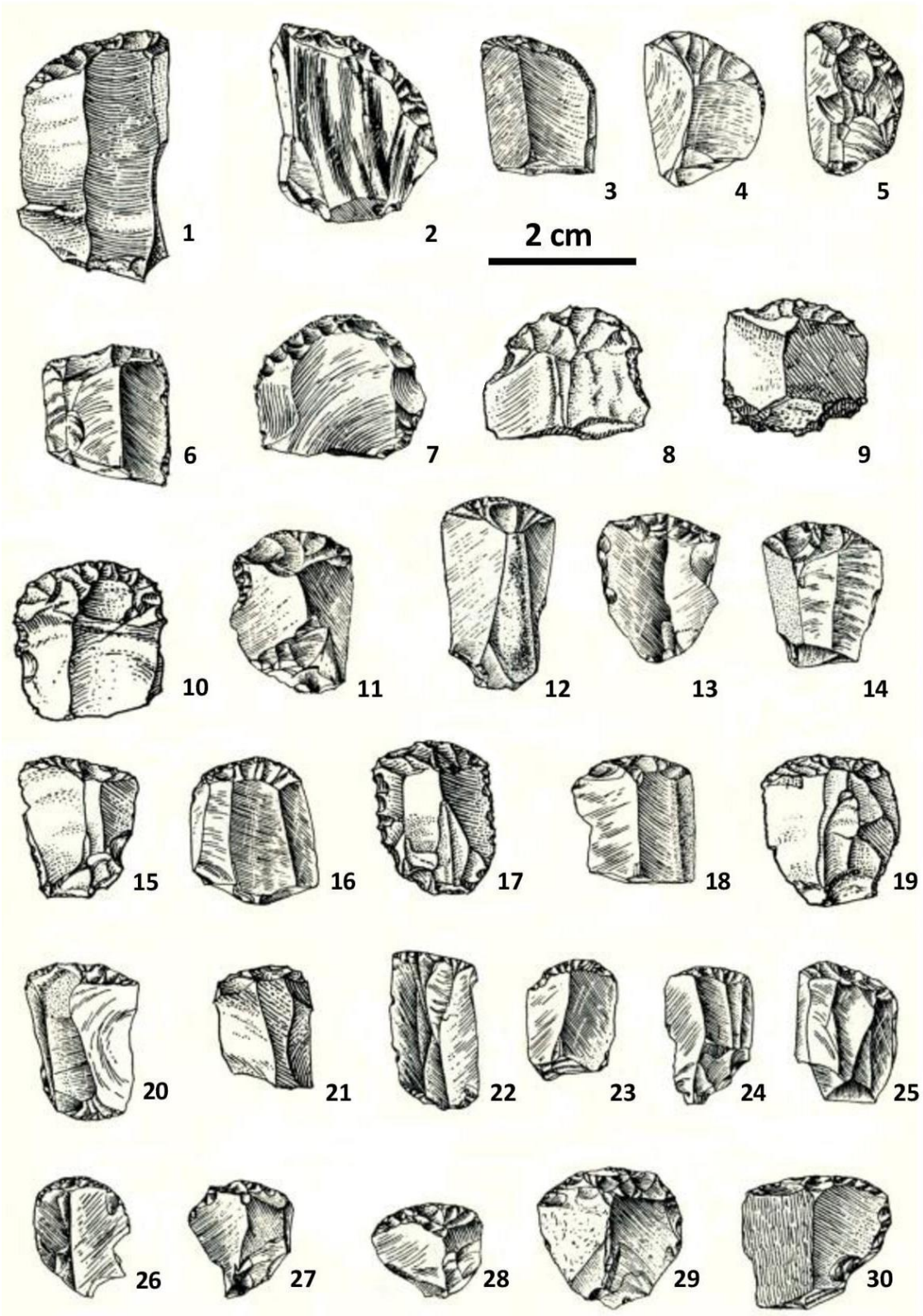

Fig. 43 – Endscrapers of various types in the settlement of Scaune (after C. S. Nicolăescu-Plopșor et al., 1966).

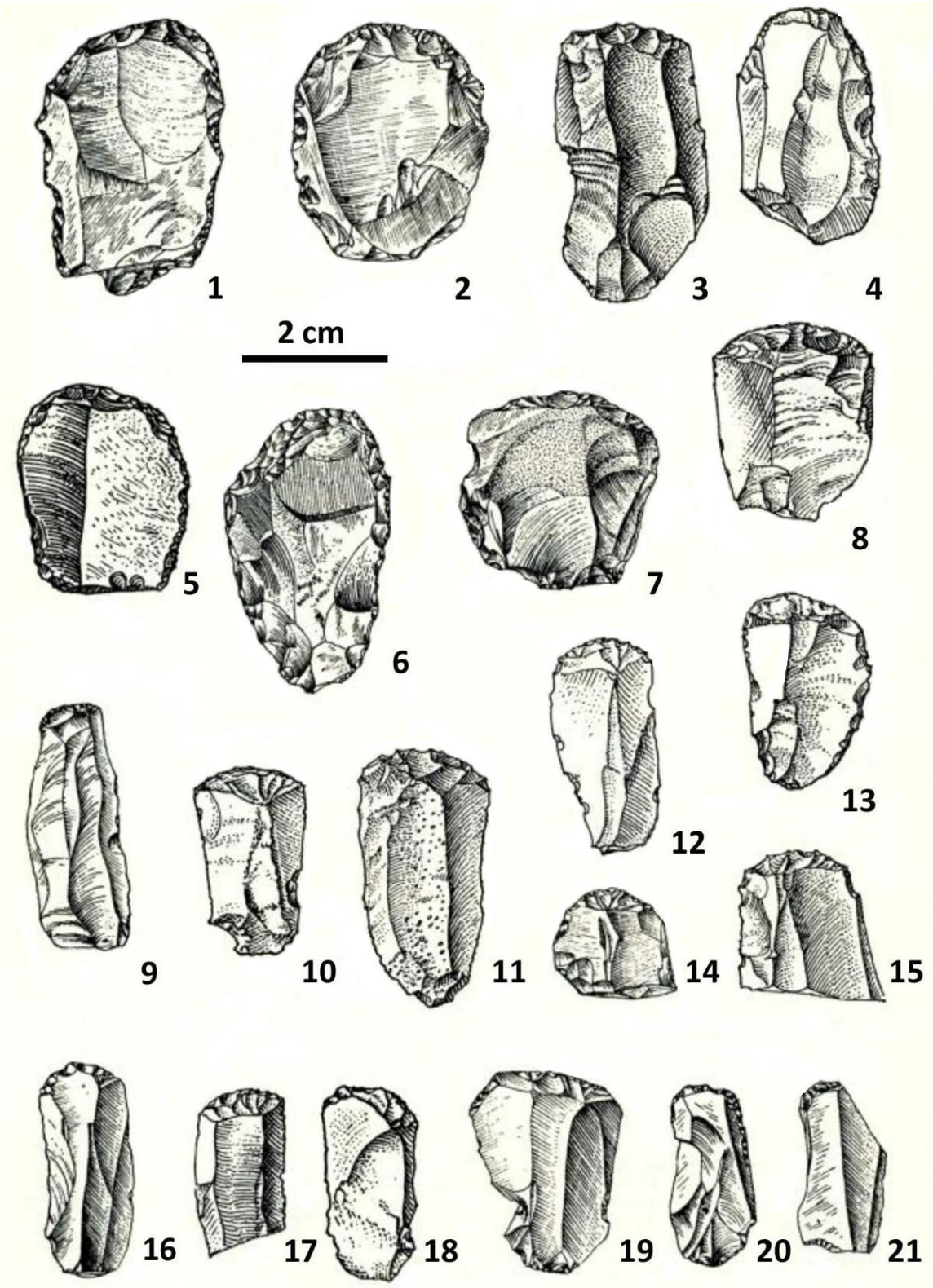

Fig. 44 - Endscrapers of various types in the settlement of Scaune (after C. S. Nicolăescu-Plopșor et al., 1966).

However, less consideration was given to the fact that Swiderian is a culture spread in the plain areas of Central-Eastern Europe, with the respective communities preferring mainly sandy dune relief, a completely different environment from the high mountain area of Ceahlău. The Swiderian, in its area of origin, developed after the Dryas III, generally between ca. 10,800 and 9,900 B.P. (A. Leroi Gourhan, 1988).

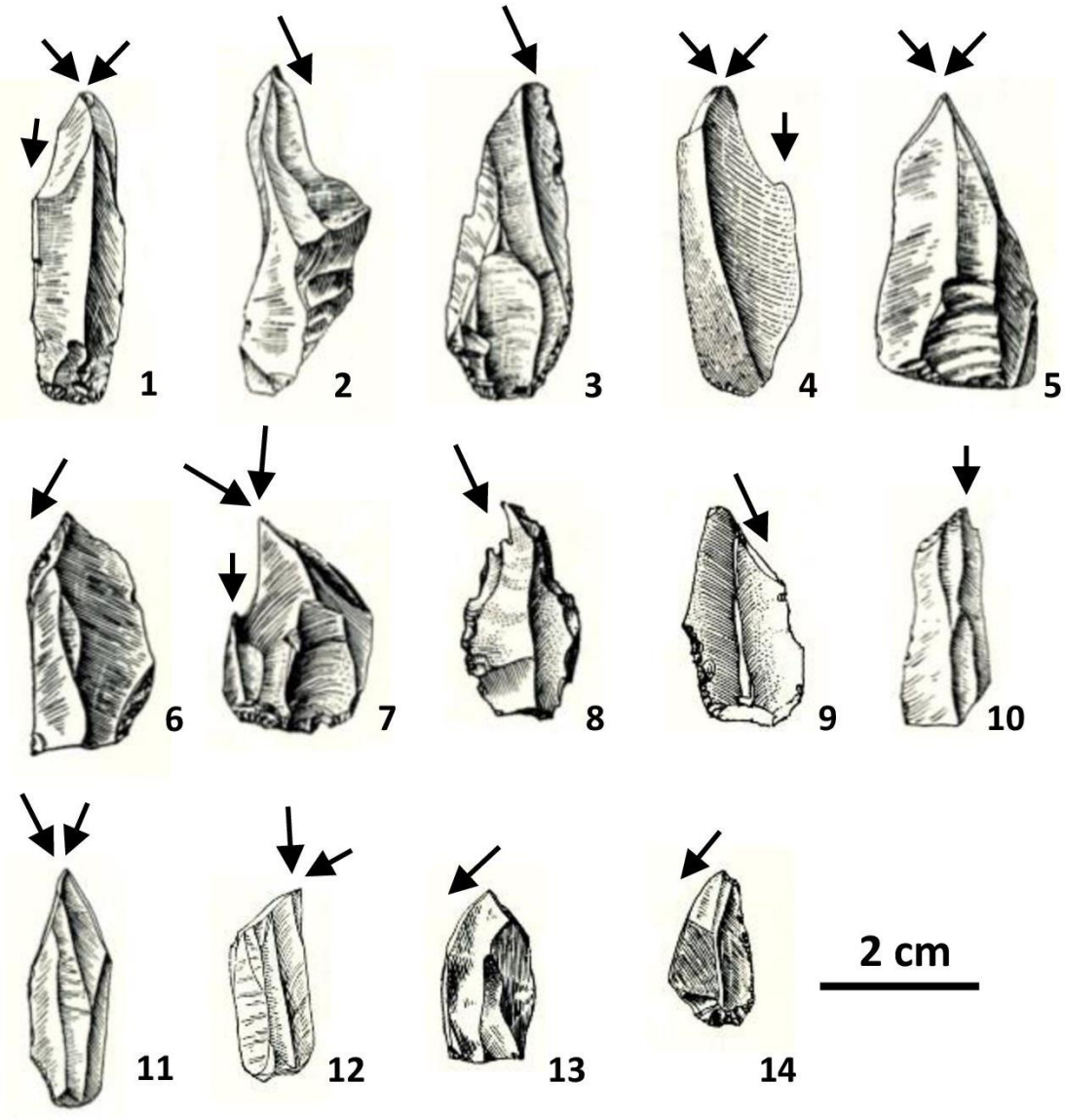

Fig. 45 – *Burins* in the settlement of Scaune (modified after C. S. Nicolăescu-Plopșor et al., 1966).

The first indication of the delayed character of the deposit in the La Scaune clearing was provided by the results of the pollen analysis (M. Cârciumaru, 1980). The results of the palynological study specified that the deposit is Holocene, sedimented during the *phase of spruce, mixed oak and hazel*, as defined by E. Pop (1929) for the vegetation evolution in the

Eastern Carpathians. The *phase of spruce, mixed oak and hazel* is accepted to have occurred during the Boreal and Atlantic periods, specific to the Holocene. A C-14 date of 5,330 ± 80 B.P. (6,281-5,940 cal. B.P.), obtained later, fully confirmed the aforementioned assumption.

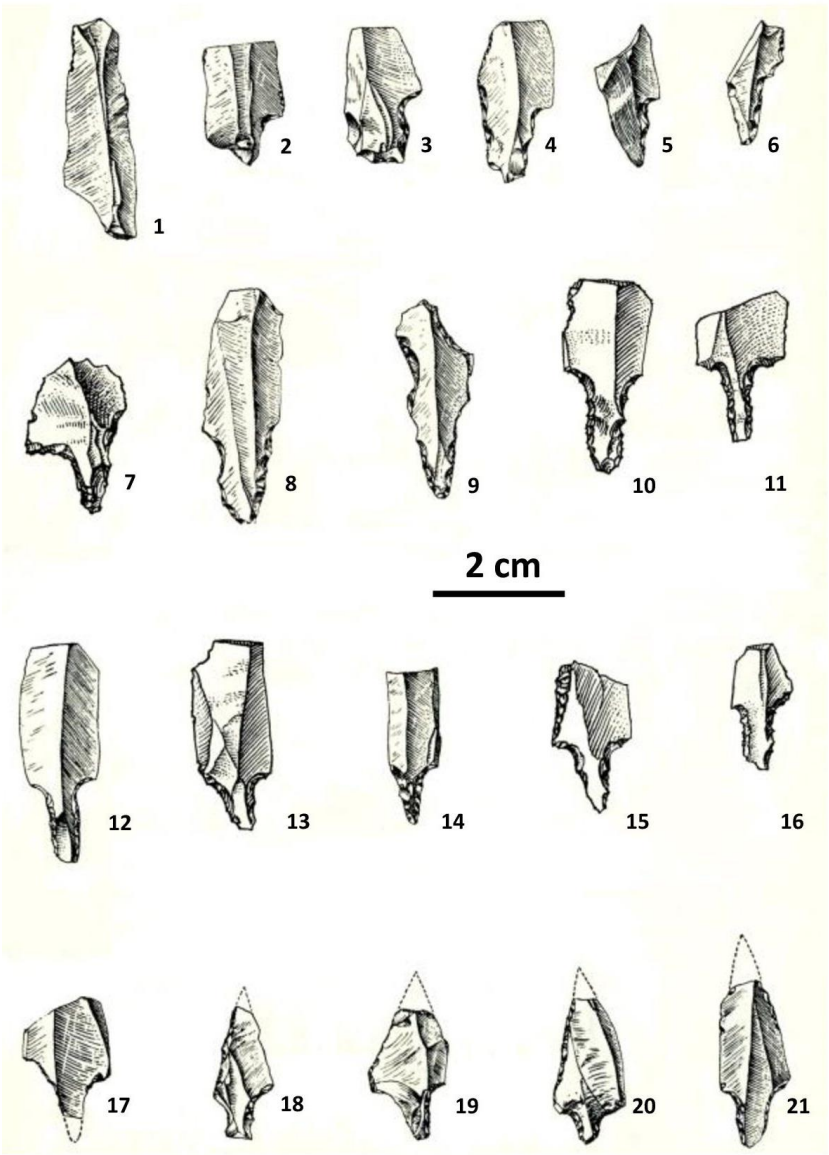

Fig. 46 – Arrow tanged points at Scaune (acc. to C. S. Nicolăescu-Plopșor et al., 1966).

This means that the settlement in the La Scaune clearing, defined as Swiderian, actually appeared much later than it was assumed for this culture in Central Europe. We do not exclude the hypothesis of the existence of ecological niches in the mountainous area of Ceahlău, which persisted until the Holocene, favouring the survival of small groups of hunter-gatherers who arrived here from the Bistrița Valley in pursuit of cold climate game, such as *Capra ibex*,

Rupicapra rupicapra, *Marmota marmota* etc. However, such a hypothesis is difficult to sustain, as it is challenging to explain the survival of these communities for over 4,000 years, in order to label them as Palaeolithic.

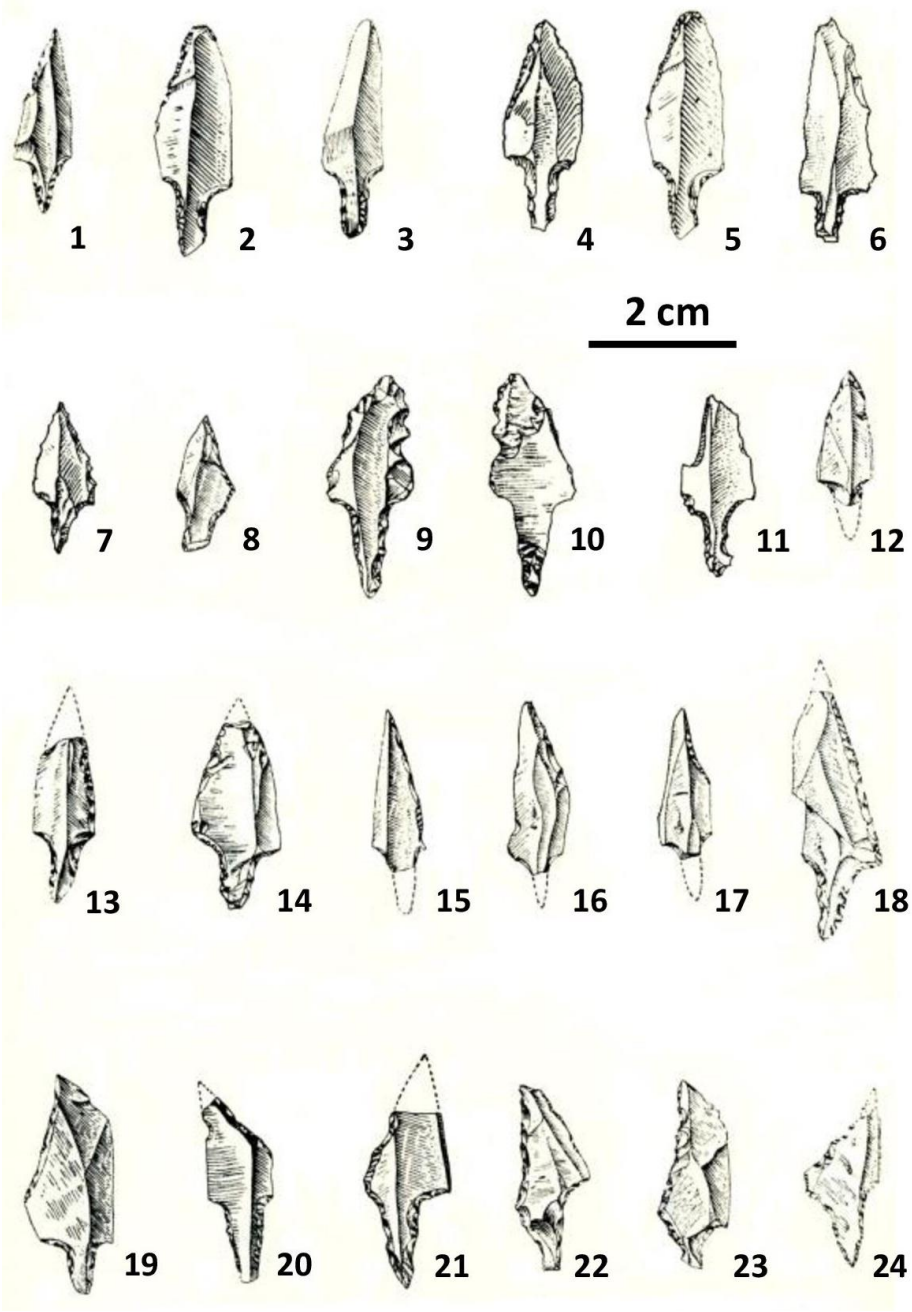

Fig. 47 - Arrow tanged points at Scaune (acc. to C. S. Nicolăescu-Plopșor et al., 1966).

Considering the new reality offered by relative chronology studies, but especially by carbon-14 absolute dating, it is more plausible to accept that at Scaune we are dealing with some Neolithic hunters who arrived in the mountainous area in search of game at these altitudes.

This option was also favoured by the presence in the area of lithic raw material sources necessary for the manufacturing of specific weapons, mainly spear points. This explains why the Scaune settlement has been defined as a workshop for lithic tool manufacturing.

III. The settlements in the Bicaz-Izvorul Alb sector

As mentioned, the second concentration of Palaeolithic settlements in the mountainous area of the Bistrița Valley is represented by the Bicaz-Izvorul Alb sector. In fact, from an administrative point of view, all the settlements in this sector belong to the town of Bicaz, even though the distance between Izvorul Alb and Bicaz is quite significant.

III.1. Bicaz-Ciungi

The settlement of Bicaz-Ciungi is located on the 15-18-m terrace of the Bistrița River, at an absolute altitude of 425 meters. This particular terrace, also known as Ciungi, is situated near the confluence of the Bicaz with the Bistrița, on the right side of both rivers.

Fig. 48 – The settlement of Bicaz Ciungi. 1- the gas station built right on the Bicaz-Ciungi settlement; 2-3 the edge of the terrace greatly transformed by anthropic works.

The settlement was found during the construction of a gas station in the centre of the town of Bicaz. The first surveys, covering an area of 36 square metres, were carried out in 1964 by M. Drăgotescu (1968), as an initial intervention after several lithic pieces had been recovered by the workers involved in the construction. Unfortunately, the settlement had already been largely

destroyed by previous constructions, a railway, the local houses etc. (fig. 48). Archaeological excavations continued in 1967, 1969 and 1971, led by Maria Bitiri, covering a total area of 72 square metres, which exhausted the entire area of the settlement (M. Bitiri et al., 1989). On this occasion, the following stratigraphic succession was established: the current grey soil; a pale-yellow layer; a dark layer with a grainy structure; a yellowish clay-sand layer with rusty and ash-coloured spots.

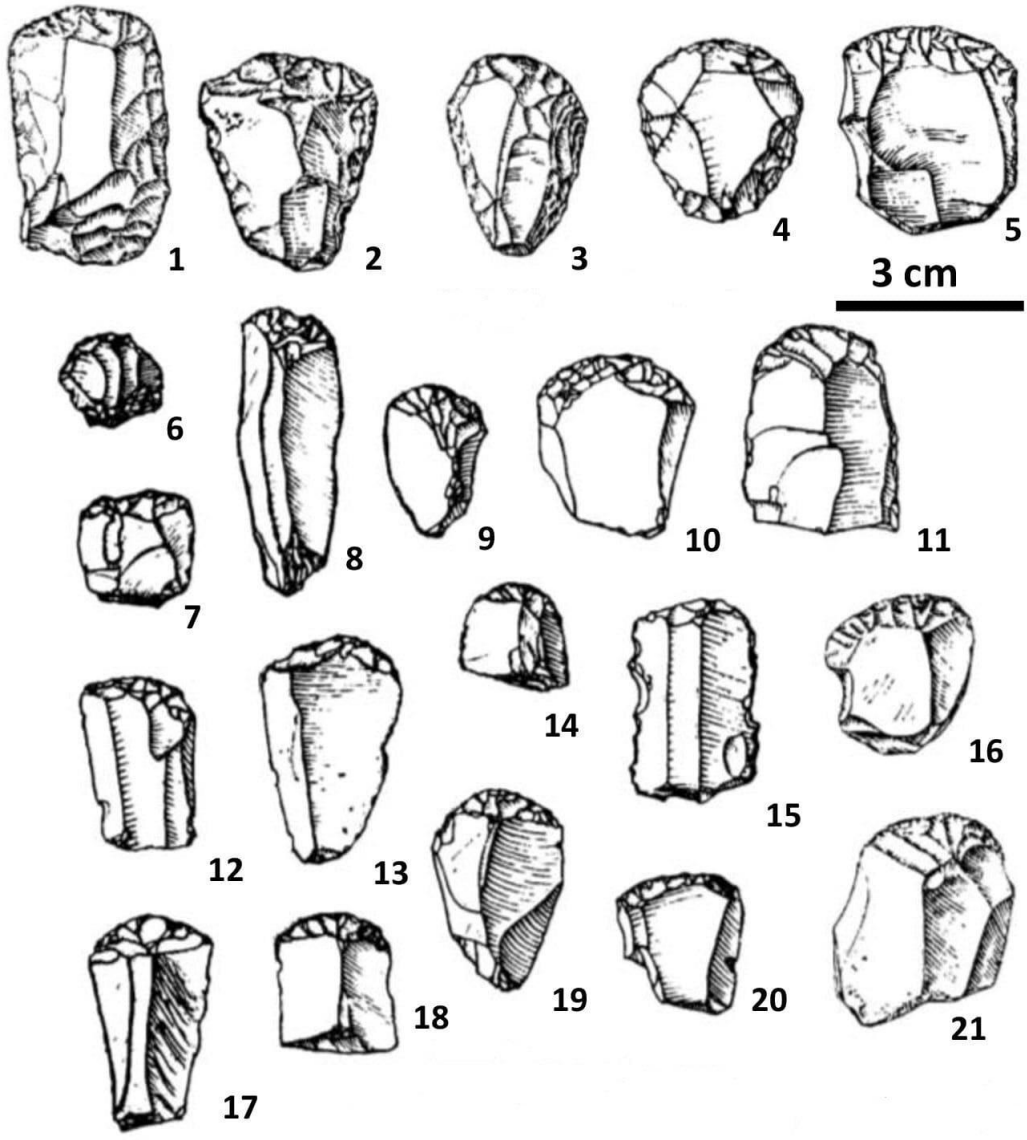

Fig. 49 – Endscrapers in the settlement of Bicaz-Ciungi (acc. to M. Bitiri et al., 1989).

The lithic items are quite scattered both vertically and horizontally. A greater concentration of lithic items and combustion structures was observed at the upper part of the

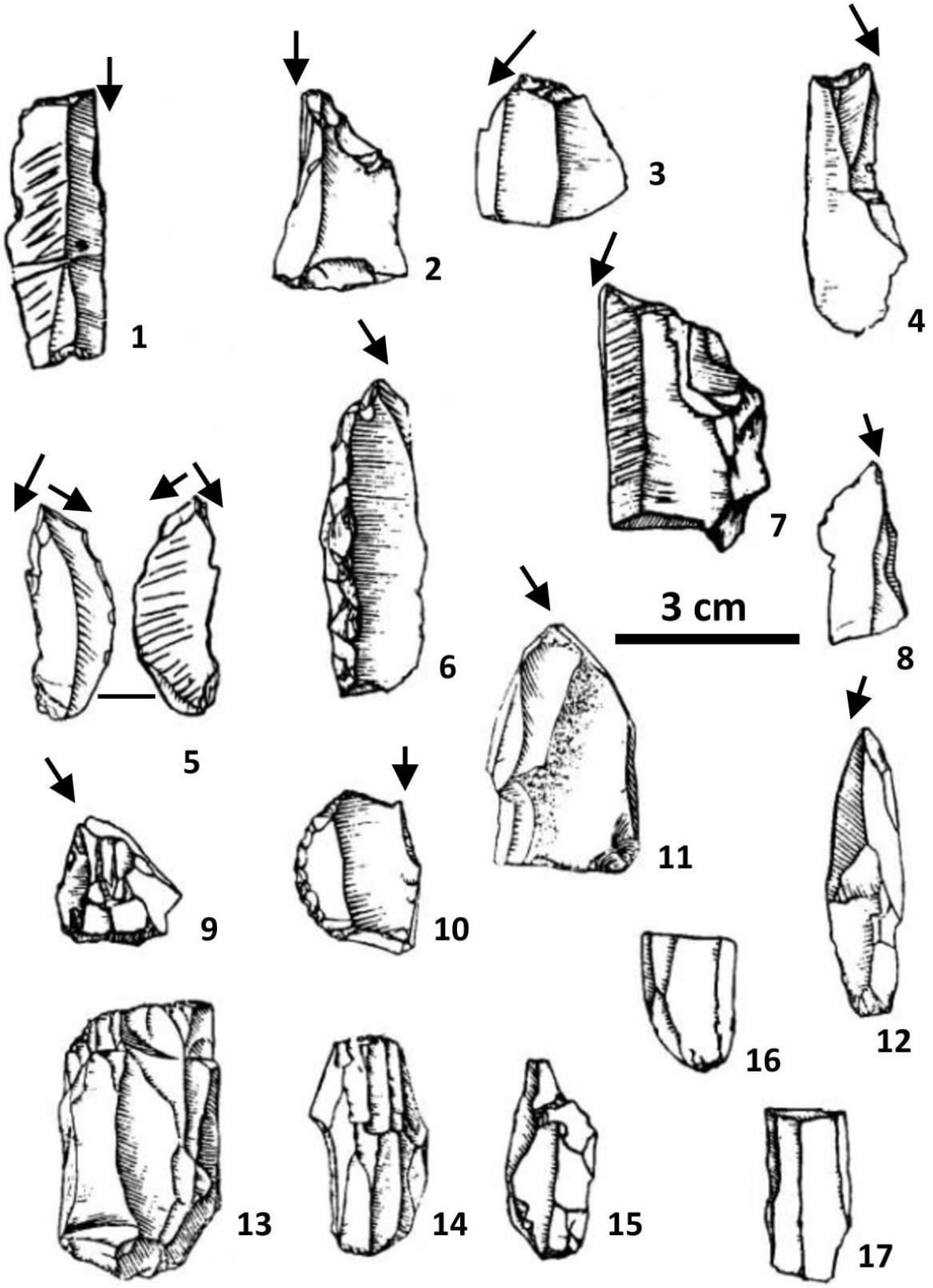

Fig. 50 – *Burins* (1-12) and cores (13-17) at Bicaz-Ciungi (acc. to M. Bitiri et al., 1989).

yellowish clay-sand layer with rusty and ash-coloured spots, at a depth of approximately 170-140 cm. From the lower part of this layer, sandstone pieces were recovered, which seem to come from a carving workshop. Despite the distribution of the pieces throughout the deposit, one might talk about an upper level between 170-140 cm and a lower level between 260-220 cm.

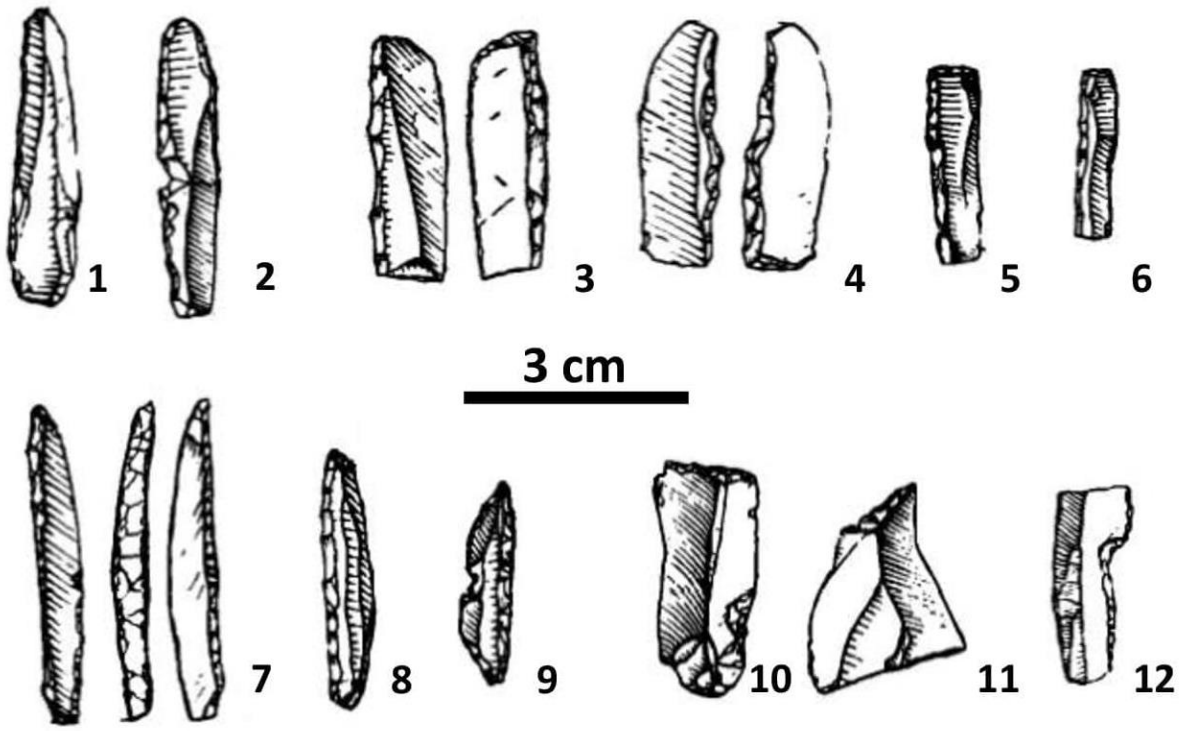

Fig. 51 – Lithic tools at Bicaz-Ciungi. 1-6 backed bladelets; 7-9 "la Gravette" points; 10-11 truncated retouched tools; 12 *à cran* tool (reworked and redefined after M. Bitiri et al., 1989).

The total number of lithic items recovered is 2,335, being made of menilite (61.97%), sandstone (17.60%), flint (16.27%), black shale (2.78%) etc. Among these, only 176 tools were identified (approximately 22%), distributed as follows: endscrapers - 47.73% (fig. 49), backed blades and *La Gravette* points - 32.39%, finely retouched blades - 8.52%, burins - 6.82% (fig. 50), truncated blades - 3.98% etc. (fig. 51).

We do not exclude the possibility that the settlement of Bicaz-Ciungi belongs to a relatively late Gravettian period, considering the fact that it was identified on a low terrace at an altitude of 15-18 metres. The endscrapers are simple, usually made on blades and small

flakes, often with retouched edges (fig. 49). Very few are double. Burins are much rarer than endscrapers, being made on blades and flakes, angle on a break and on truncated blades (M. Bitiri et al., 1989).

III.2. Curmătura Bardosului

The settlement at Curmătura Bardosului lies north of Bicaz Gorges, more specifically to the east-southeast of the Lapoș rivulet, on its left side, before the small gorges it has carved. The settlement is located in Gavril Lungu's courtyard in the village of Bicaz-Chei. Geographically, it is the area of the Hăghimaș Mountains, and the settlement is situated on a kind of mountain saddle or suspended depression, at an altitude of 1,135 m. Even just the position of the Curmătura Bardosului settlement and its high altitude were sufficient arguments for C. S. Nicolăescu-Plopșor to initially link it to the settlement at Scaune (M. Bitiri, V. Căpitanu, 1967).

The deposit of the settlement has been visibly affected at its upper part by erosion processes. Its stratigraphy is as follows: current soil; brown-yellowish layer; reddish-brown layer with a coarse structure; reddish-violet clayey layer, with angular limestone debris; reddish-bluish layer with greenish spots in places; deposit representing the alteration crust.

The cultural layer is at the surface, in the brown-yellowish layer, just below the Holocene soil. 250 artefacts have been recovered, of which 99 have been attributed to typical items. The lithic material is striking due to the absence of cores, given that the site is considered a workshop settlement, especially since no combustion structures have been discovered. It has been stated that the cores were fully exhausted because raw materials were quite a distance away (M. Bitiri, V. Căpitanu, 1967). We argue that this cannot be seen as an argument, given that the Hăghimaș Mountains excel in sources of high-quality raw materials such as jaspers, radiolarites and even flint (M. Cârciumaru et al., 2007). Additionally, the lithic inventory includes decortication flakes and carving flakes. In our opinion, flint, which was widely used by the prehistoric communities of Curmătura Bardosului, could very well have been obtained from flint plates attributed to the Ladinian, found in the outcrops of Dealul Criminișului, Hăghimaș, and Piatra Crăpată. Furthermore, V. Mutihac and L. Ionesi (1974) mentioned the presence of siliceous accidents in limestone along the Hăghimaș rivulet and in the area of Roșu Lake.

Backed bladelets are predominant, 45.71% (fig. 52/12-15), followed by endscrapers (20%) (fig. 52/1-9). Notched blades (8.57%) (fig. 52/17), burins (5.71%) (fig. 52/10-12), tanged

points (fig. 52/18-19) etc. have also been recovered. The artefacts as a whole are of small dimensions, especially the backed bladelets and *microgravette* points. Dark or bluish-violet flint was used in 95% of the cases (M. Bitiri, V. Căpitanu, 1967; M. Bitiri et al., 1989).

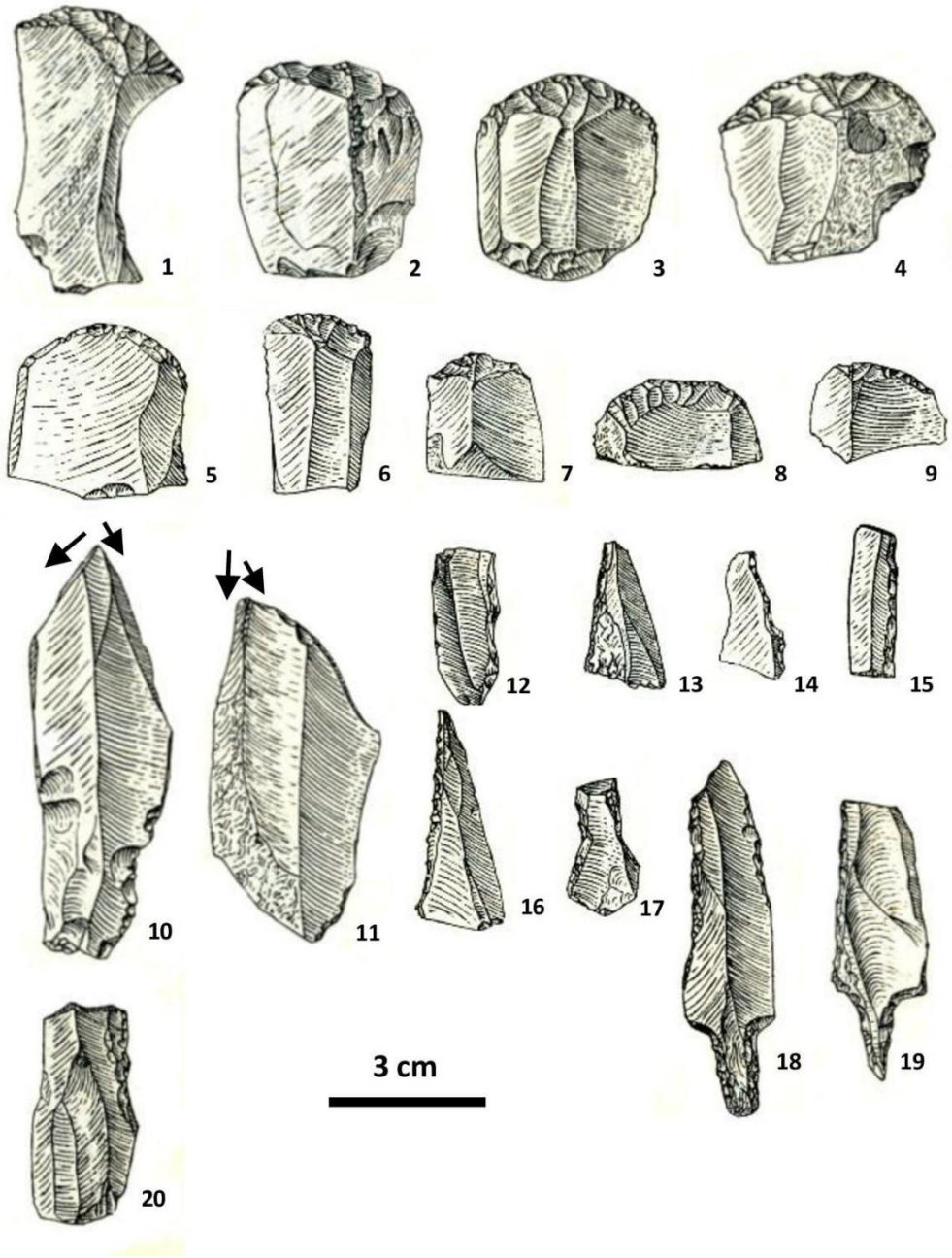

Fig. 52 – Lithic tools at Bicaz-Curmătura Bardosului. 1-9 endscrapers; 10-11 *burins*; 12-15 backed bladelets; 16 "la Gravette" point; 17 notched tool; 18-19 tanged points; 20 fragmented blade retouched on one side (reworked and redefined after M. Bitiri et al., 1989).

Due to its location at an altitude of over 1000 metres, the position of the cultural level just below the current soil and the lithic inventory, particularly the presence of tanged points,

the Curmătura Bardosului settlement has been associated with the settlement at Scaune, considered Swiderian for a long time (M. Bitiri et al., 1989). However, as we have seen, the myth of the Swiderian in the Eastern Carpathians should be abandoned. Based on sufficient arguments of a chrono-climatic nature and absolute C-14 dating data, it can be concluded that at Scaune and, consequently, at Curmătura Bardosului, one cannot speak of Palaeolithic communities but possibly a series of Neolithic populations who arrived in the mountainous area to hunt.

III.3. Izvorul Alb

The village of Izvorul Alb, along with Secu in its immediate vicinity, are administratively part of the town of Bicaz, which is over 10 km away (fig. 53/1). At Izvorul Alb, two points have been discovered that have provided rich and interesting Palaeolithic lithic artefacts, the Baicu Ridge and Piciorul Gol (fig. 53/1-2). Both are located at the confluence of the Izvorul Alb stream with the Bistrița River: Baicu Ridge on the right side of Izvorul Alb (figs. 53/1; 54-65), and Piciorul Gol on the left side. Both settlements are located on the right side of the Bistrița River.

Geomorphologically, Baicu Ridge appears as a fan-shaped succession of terraces formed at the confluence of Izvorul Alb with the Bistrița River, which penetrate deep into the Bistrița Valley like a spur (figs. 53-56). Thus, in this area, the Bistrița Valley was severely narrowed down and pushed towards the left bank, resulting in the emergence of a basin similar to the Răpciuni Basin, marked by the spur at Cetățica.

The most developed terrace is at an elevation of 35-40 metres relative to the old course of the Bistrița River, and above it, there are terraces at elevations of 55-65 metres, 80-100 metres, and even spurs with higher terraces (fig. 56).

Archaeological research began at Izvorul Alb in 1979 as a result of occasional discoveries of lithic items by the locals and later by Mihai Matei, the museographer at the Bicaz Museum at the time. Between 1979 and 1984, archaeological investigations were conducted almost every year, consisting of the recovery of items from the soil surface; and the first excavations in 1979-1980 revealed the presence of multiple occupation phases at both Baicu Ridge and Piciorul Gol. During that time, 85 flint items were discovered at different depths, representing the first lithic artefacts found *in situ* at Izvoru Alb (F. Mogoșanu, M. Matei, 1981).

The stratigraphy of the deposit specified as a result of these investigations is as follows (fig. 57): 1- current soil; 2- heavily disturbed loess layer, grey-yellowish in colour, with reddish

Fig. 53 – Palaeolithic settlements at Izvorul Alb. 1-general view of the two sites: Baicu and Piciorul Gol; 2-3 - Baicu spur (photo 2 Cristian Preutu).

Fig. 54 – Culmea Baicului with the sequence of terraces (photo Cristian Preutu).

Fig. 55 – The Izvorul Alb settlement in a winter landscape, probably similar to that encountered during the Ice Age (photo Ion Panaite).

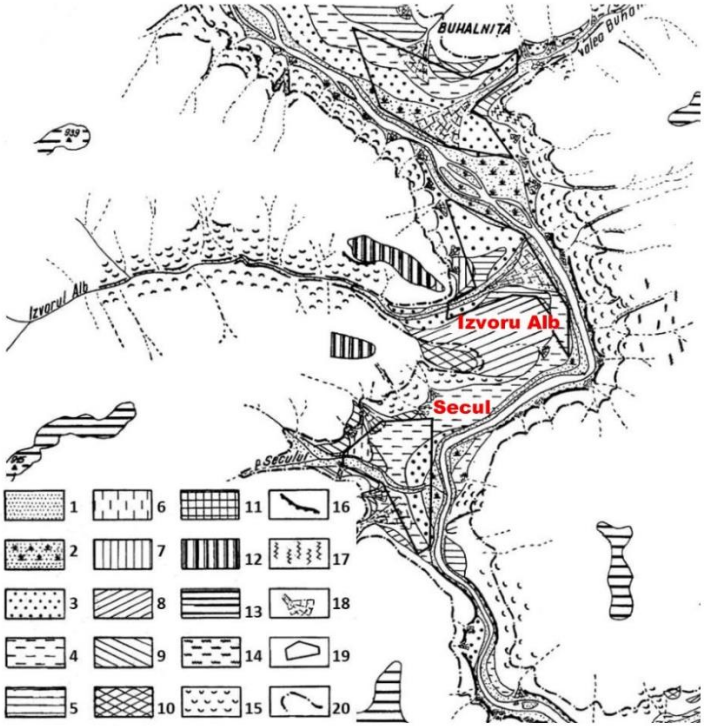

Fig. 56 – Geomorphological map of the Bistrița Valley between the confluences with the rivulets Hangu and Potoci (modified after L. Badea and Gh. Popa, 1961). 1-current riverbed; 2-major riverbed; 3-the1-3 m terrace; 4-the 4-6 m terrace; 5-the 8-12 m terrace; 6-the 15-17 m terrace; 7- the 20-25 m terrace; 8- the 35-40 m terrace; 9- the 55-65 m terrace; 10- the 80-100 m terrace; 11- the 130-150 m terrace; 12- the 200-240 m terrace; 13-the 900-1000 m level; 14-solifluctions; 15-slides, 16- steep erosion; 17- torrential erosion; 18- outfall; 19-outline of villages; 20- approximate limit of the lake (acc. to M. Cârciumaru et al., 2023).

spots; 3- layer with loessoid aspect, reddish-yellowish; 4- very hard reddish-brown layer; 5- compact layer, brown with yellowish shades and vertical greyish-blue infiltrations; 6- reddish layer with increasingly bright shades towards the base; 7- terrace gravels and sands (F. Mogoșanu, M. Matei, 1981).

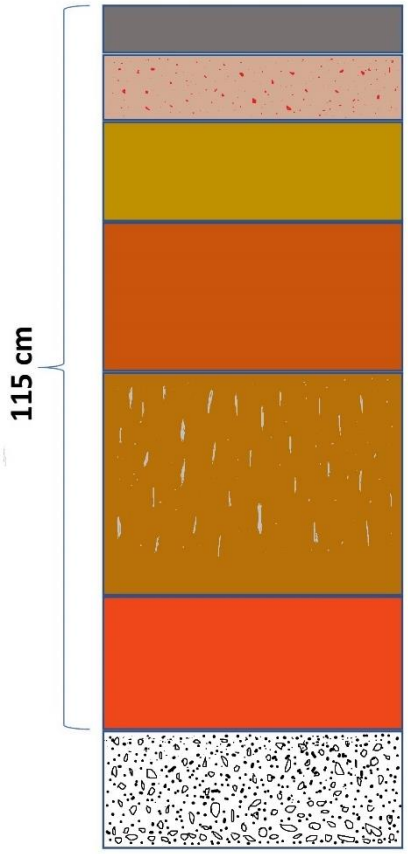

Fig. 57 – Reconstruction of a stratigraphic profile at Baicu-Izvorul Alb. 1- current soil; 2- highly re-stratified loess layer, grey-yellowish in colour with reddish spots; 3- reddish-yellowish layer with loessoid aspect; 4- very hard brown-reddish layer; 5- compact layer, brown with yellowish shades and vertical grey-bluish infiltrations; 6- reddish layer with increasingly bright shades towards the base; 7- terrace gravels and sands.

In 1981, the excavations focused mainly on the Piciorul Gol area, as the high-water level of the lake did not allow similar research on the low terrace at Baicu. The very steep slope of Piciorul Gol hill led to numerous deposit slides, sometimes in compact packages. This allowed for archaeological excavations to be carried out in such a displaced baulk, without affecting the horizontality of the layers, over a thickness of approximately 250 cm. The recovered items led to the identification of two levels of Gravettian occupation (F. Mogoșanu, M. Matei, 1983).

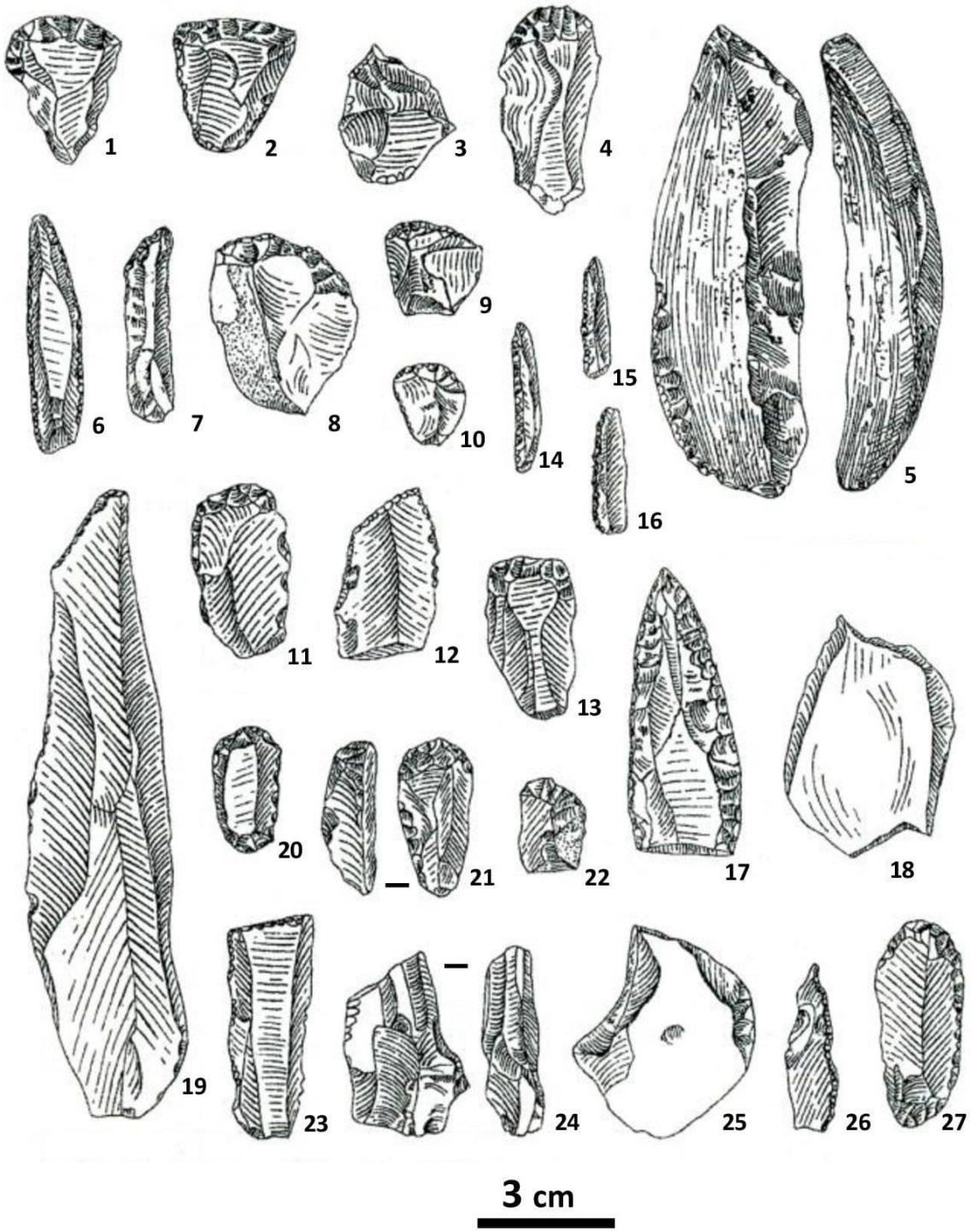

Fig. 58 – Lithic tools at Izvorul Alb: Baicu (1-18) and Piciorul Gol (19-27). 1-2, 4, 8-11, 22 – endscrapers; 3, 5, 18, 24-25 - *burins*; 6 – retouched blade; 7, 12, 19, 23 – oblique truncated blades; 14-15 – *micrograveţte*; 16 – backed bladelet; 17 – double scraper on large blade; 20-21, 27 – double endscrapers; 26 – atypical *la Gravette* point (acc. to Al. Păunescu, 1998).

In 1982, excavations were resumed on the Baicu terrace, which had emerged from the water in the form of the well-known beach in this area (figs. 53, 54). A long section, reaching almost to the tip of the terrace, did not yield the expected results. Instead, one of the smaller sections, located close to the mouth of the Izvorul Alb stream on the lake, on the northern side of the terrace, near the old pier, offered the opportunity to discover several items *in situ*. The most consistent Gravettian level seems to concentrate at a depth of approximately 90-120 cm, within the reddish-yellowish loessoid deposit. The oldest items were found at the contact between the reddish layer 6 with increasingly bright shades towards the base and the brown layer 5 with yellowish shades and vertical greyish-blue infiltrations (fig. 57). The lithic inventory from this level, though limited in number, consisted of push-plane (*rabot*) scraper, an endscraper on a long sandstone blade end, a dihedral burin made of menilite and another multiple burin made of black shale. The artefacts from the upper Gravettian levels are predominantly made of flint, represented by endscrapers and blades (fig. 58).

Therefore, the research conducted by F. Mogoșanu and M. Matei (1981; 1983) identified two levels of Gravettian occupation at Piciorul Gol, and several Gravettian levels and possibly one Epigravettian level on the Baicu terrace.

III.3.1. Recent research at Izvorul Alb

The impressive collection, resulted from the recovery of artefacts over the years, from 1979 until the present, totals nearly 3,000 lithic items. This is a significant reason for the particular interest in surface finds in this area. The discovery of such a large number of artefacts on the surface was entailed by the multitude and variety of landslides that affected this region, from isolated landslides along torrential valleys to landslides on extensive surfaces and even the displacement of sedimentary deposits in packages, which led to the emergence of numerous diluvial-colluvial irregularities on terrace treads. The most extensive landslides and ground degradation occurred on the southern slope of Izvorul Alb rivulet. Landslides still occur today, mainly on the right slope of the stream, where mass movements have dammed the valley in its middle third (C. Brânduș et al., 2006).

However, after the surveys conducted in 1979-1982 (F. Mogoșanu, M. Matei, 1983), the settlements at Izvorul Alb remained overshadowed for a long time. The repeated visits to Izvorul Alb in the past 10 years of the team of Palaeolithic researchers from the Museum of Human Evolution and Technology in the Palaeolithic in Târgoviște, the consultation of the

impressive lithic material collection stored at the Museum in Bicaz, the ongoing recovery of many lithic items from the surface of the Baicu terrace and even from Piciorul Gol led to a series of surveys being carried out in 2019 and 2020, deep enough to identify the entire sequence of geological layers of the terrace deposit at a relative altitude of 35-40 metres. The rationale for such a decision was mainly driven by the fact that the study of the collection at the Museum in Bicaz, conducted by Elena-Cristina Nițu, concluded that the lithic materials have a certain coherence, as they even allowed for reassembling.

The research conducted by the team from the Museum in Târgoviște was to begin with an elaborate study of a unique collection of lithic materials collected by Mihai Matei in 1977 and 1978, before the research coordinated by F. Mogoșanu in 1979. This collection was not included in the subsequently published articles (F. Mogoșanu, M. Matei, 1981, 1983; A. Păunescu, 1998).

The collection analysed by our team comprises a total of 262 items, with 216 collected from the Baicu site and 46 from Piciorul Gol (E.-C. Nițu et al., 2018).

III.3.1.1. Considerations on the sources of raw materials

It has been established that the lithic items from Piciorul Gol were mainly knapped from translucent smoky flint, with a bluish or white patina. However, at Baicu, the raw material used is much more varied, including flint, cherts/menilites, Audia black shale, siliceous sandstone, jasper etc. Flint is present in several varieties: translucent smoky, translucent whitish, brown etc. At Baicu, the most commonly used was chert/menilite, as also shown in other published collections from Izvorul Alb (F. Mogoșanu, M. Matei, 1981, 1983; A. Păunescu, 1998).

The different proportion of raw materials depending on the general technical categories is especially interesting. Thus, most flakes were carved from flint, while laminar products (blades and bladelets) and cores were obtained from chert/menilite.

Most of the artefacts are patinated. These post-depositional modifications are complex, their origin being determined by various factors, such as the alkalinity of the deposit from which the items come, the hydration of the materials after being extracted from the initial deposit and exposed to the sun (D. Stapert, 1976; A. L. Van Gijn, 1989).

The patina on the items is uneven and its intensity differs at Piciorul Gol and Baicu. There are items with patina only on one side, while the other surface has a fresh appearance. From our observations, the formation of patina on the artefacts from Izvorul Alb was generated by prolonged exposure to the sun, going through two phases. Initially, a bluish film formed,

which later turned white (D. Stapert, 1976). Considering these two phases, it has been found that the bluish film is more present on the artefacts recovered from the Baicu site, while the bluish-whitish film is more present on the artefacts from Piciorul Gol (fig. 59).

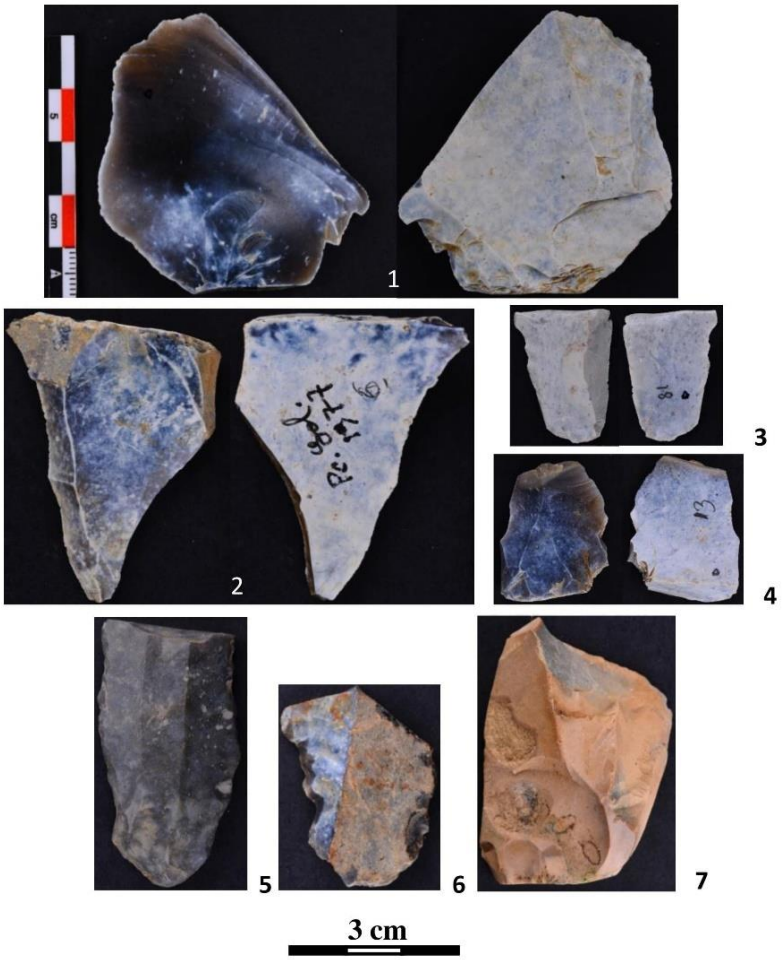

Fig. 59 – Post-depositional surface changes of lithic materials at Piciorul Gol (1-4) and Baicu (5-7). 1-4, 6 patina on flint flakes; 5 rubbing, abrasion, polish on the retouched blade fragment; 6 abrasion, polish and damage of edges; 7 gelifraction (acc. to E.-C. Nițu et al., 2018).

Among other aspects that caused post-depositional alterations to the items, processes such as rubbing, abrasion, polish, damage to the edges of the pieces due to trampling etc. have been observed. The Piciorul Gol items have been much less affected by such processes (only three pieces) than those from Baicu (around 10%). However, considering that the lithic pieces were collected from surfaces periodically freed from the lake waters, the proportion of post-

depositional modified artefacts is low. There is a supposition that the items from Baicu originate from deposits on the terrace at a relative altitude of 35-40 metres.

III.3.1.2. The lithic material from Piciorul Gol

The lithic inventory consists of 3 cores, 26 flakes (5 of which are smaller than 25 mm), 10 blades, 2 bladelets (including one burin), and 5 debitage residues.

The cores are highly characteristic, with two being made of flint and one made of menilite. The flint cores were produced with the same intention of obtaining bladelets, but through different methods: one with a single narrow striking platform, the other with a double striking platform. The menilite core is laminar, with a double-facet striking platform and a debitage surface (fig. 60).

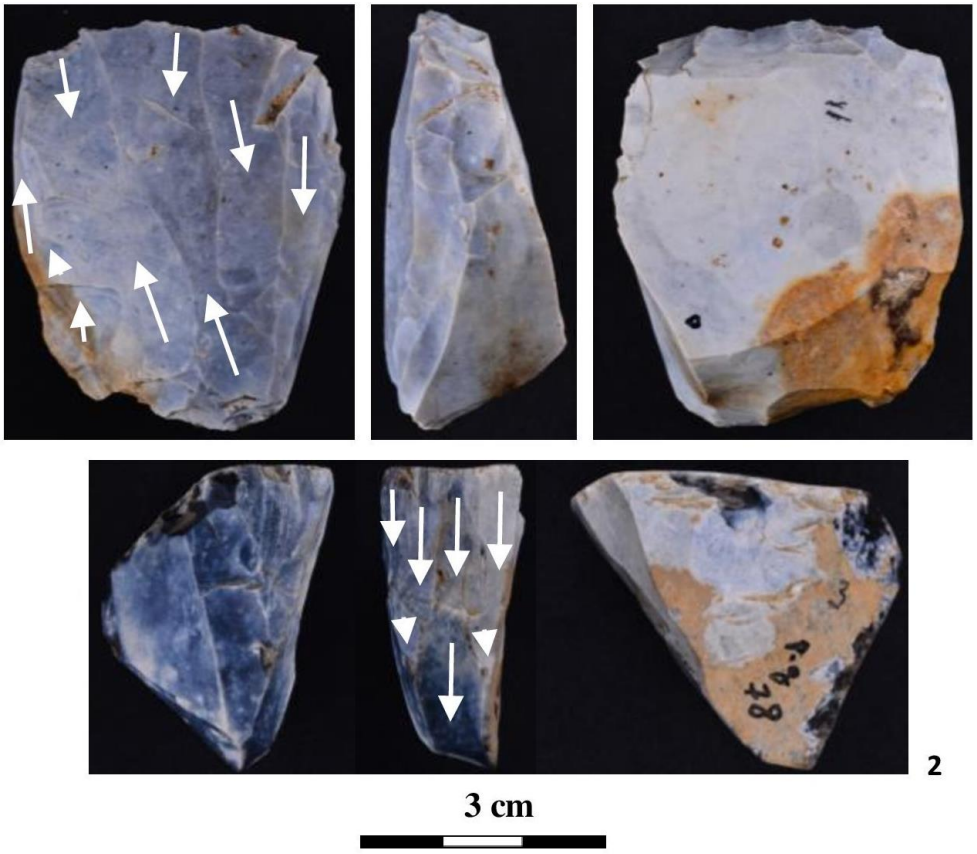

Fig. 60 – Cores at Izvorul Alb-Piciorul Gol (acc. to E.-C. Nițu et al., 2018).

As for cortical products, they are scarce, as are the technical items resulting from core shaping, which are represented by a few flakes and 4 blades for rejuvenating debitage surfaces

or core edges. The blades are fragmented, with only one being intact, even though it was obtained from joining two fragments. Similarly, the two bladelets are fragmented.

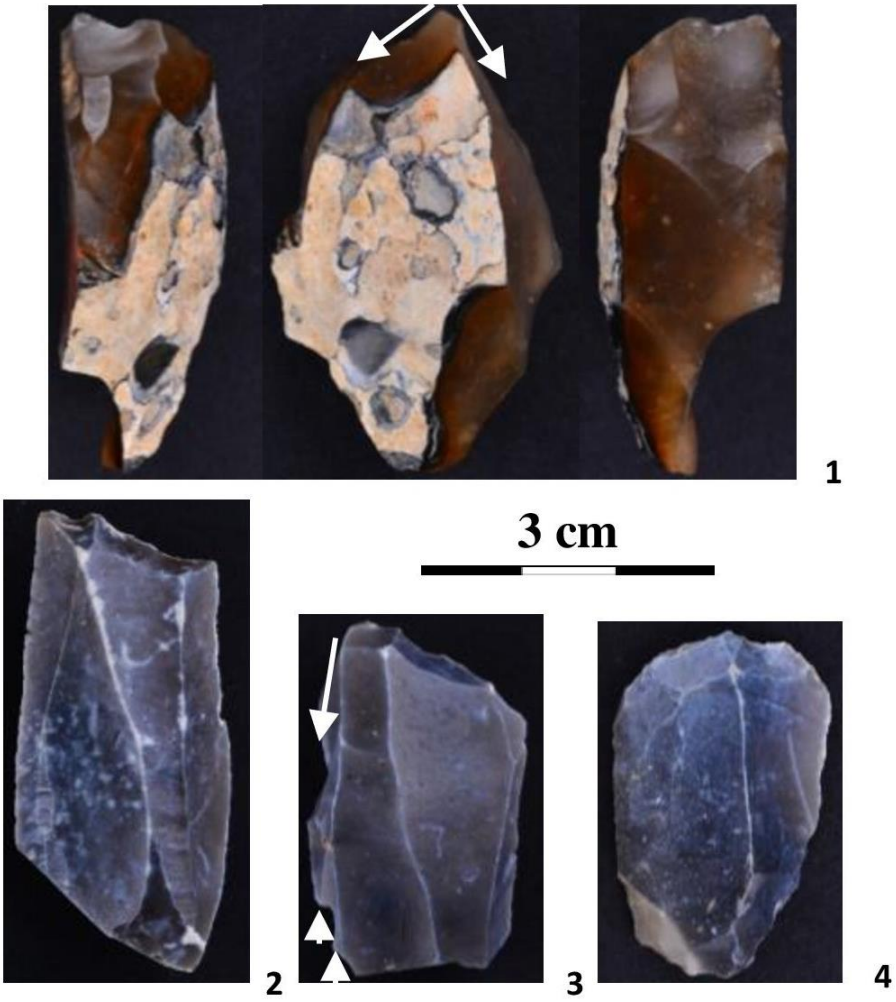

Fig. 61 - *Burins* at Piciorul Gol. 1 carenated burin (thermal alteration is to be noted); 2 truncated blade; 3 burin on truncation; 4 endscraper (acc. to E.-C. Nițu et al., 2018).

Regarding the dimensions of the items, it can be said that the majority of flakes have lengths between 30 and 50 mm, but there are also flakes smaller than 20 mm. As for the blades, due to the fact that they are highly fragmented, only their width has been measured, ranging from 20 to 25 mm.

In terms of the techniques used, they vary depending on the products. Hard percussion is used for flake and partial blade debitage, while soft percussion is used for obtaining blades and bladelets. Typologically, 3 burins (dihedral, carenated, and on oblique truncation), 2

oblique truncated blades, 1 retouched blade, and 1 endscraper on retouched flake have been identified (fig. 61).

III.3.1.3. The lithic material from Baicu

The lithic inventory from this collection recovered from the Baicu terrace consists of 9 cores, 87 flakes, 68 blades, 18 bladelets and 33 debitage waste.

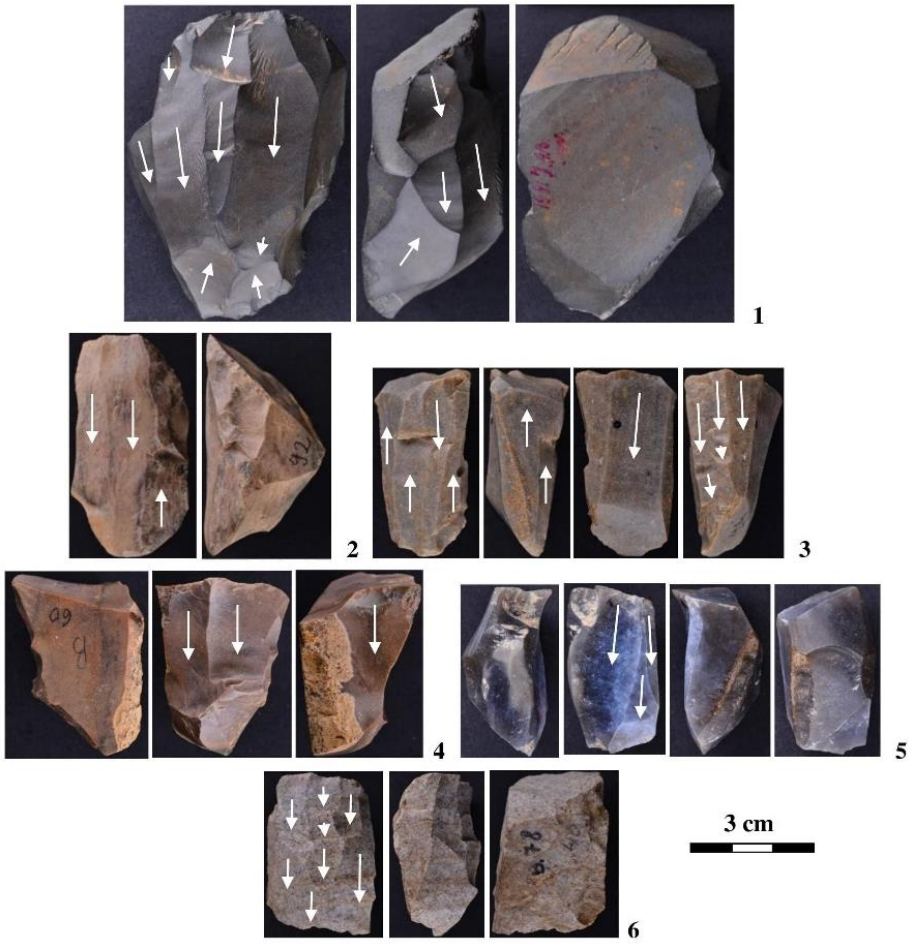

Fig. 62 – Various types of blades and bladelets cores (acc. to E.-C. Nițu et al., 2018).

Most cores are the result of blade and bladelet production, often alternating from the same core. There is one exception, where the last flakes from a core were small in size, indicating that the initial production purpose may have been different.

The production stages reflect a volumetric exploitation of cores through multiple methods (fig. 62): frontal reduction, cores with a single striking platform, unipolar scars (3); semi-rotating reduction, single or double platform cores, with one or two debitage surfaces, and

unipolar scars (4); rotating reduction, double platform cores, bipolar scars (1). The cores from Baicu are generally exhausted, except for one made of Audia black shale that was abandoned. Most of them are between 30 and 40 mm long, and the last scars are often blades or microlithic items. Microlithism is also exhibited in the case of other technical categories of the collection (flakes, blades).

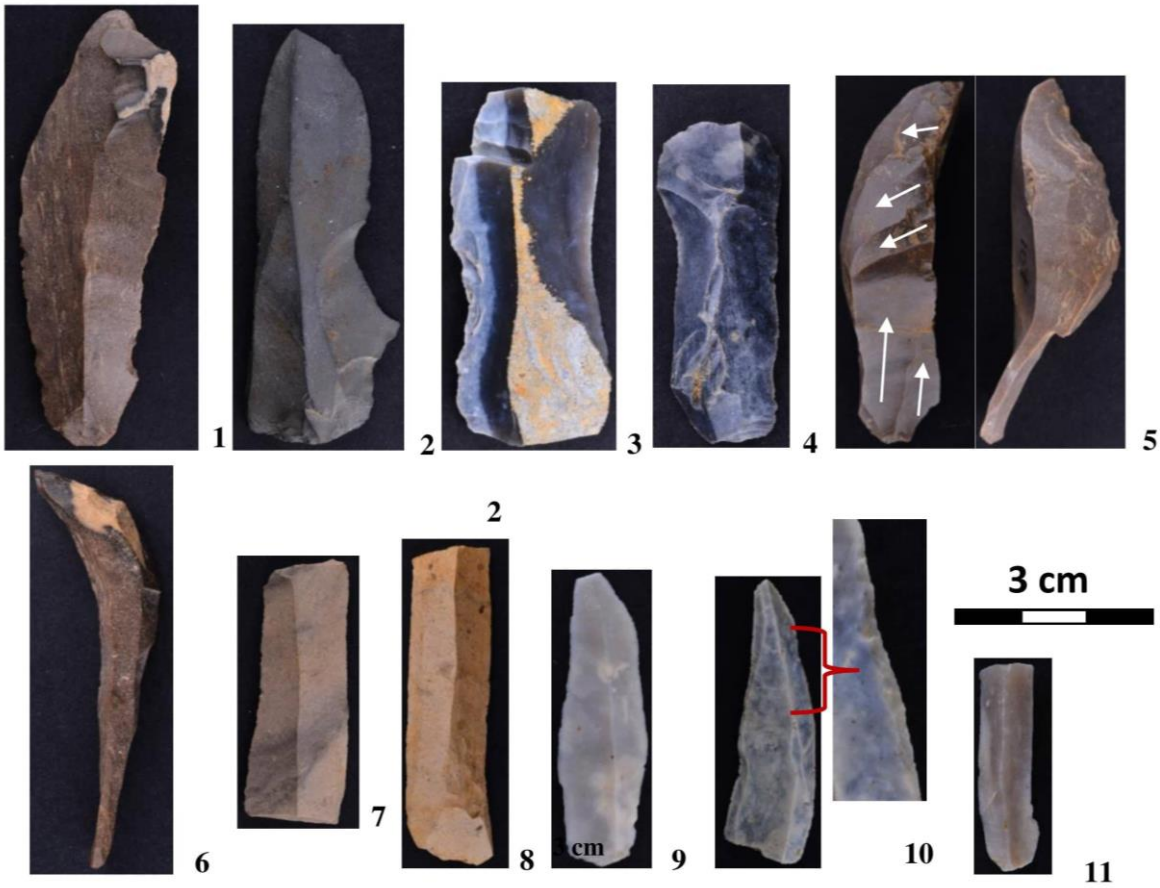

Fig. 63 – Laminar products. 1-5 blades; 6-11 bladelets (acc. to E.-C. Nițu et al., 2018).

Half of this collection consists of laminar products, but they are highly fragmented, with around 70% of blades in this state (fig. 63). Hard percussion is the most commonly used technique, as only 20% of blades are produced through soft percussion. Marks from accidental knapping are also present. It is interesting that half of the blades are products of core preparation and maintenance, such as the crested blades and secondary semi-finished products from the rejuvenation of core debitage surfaces. In 60% of cases, the dorsal scars on their surface are unipolar. The blanks have small widths (13-20 mm), the longest items being two sandstone blades measuring 80 mm, while the rest of the products are 30 to 60 mm long (fig. 63/1-5).

The bladelets are just as fragmented (fig. 63/6-11). There are larger bladelets that are actually burin spall detachments resulting from the transformation of some flakes into cores, which might represent a particularity of the lithic assemblage from the Baicu ridge.

Fig. 64 – Tools at Baicu. 1 burin on truncated blade; 2-10 enscrapers; 11-12 truncated blades (acc. to E.-C. Nițu et al., 2018).

A significant part of the flakes (70%) are small in size, under 40 mm, with many of them falling into the category of micro-flakes (≤ 20 mm). They are primarily derived from the preparation or maintenance of laminar cores, although cortical products resulted from the removal of cortex or the extension of the debitage surfaces are also present. The majority of these flakes have unipolar dorsal scars on their surface, and many of them are laminar. The most commonly used technique was direct hard percussion, although soft percussion was not completely absent.

Overall, it can be argued that the artefacts from Baicu primarily represent the production of blades and bladelets, often obtained alternately from the same type of core. An interesting

aspect is the production of certain blades through thickness exploitation of flakes, even those of larger dimensions.

Among the tools, endscrapers are predominant (fig. 64), with 9 specimens, and among them, the microlithic ones are quite numerous. They were mostly worked on small-sized flakes. Additionally, two fragments of truncated blades, one on a truncated blade and a drill on a bladelet, were identified.

The items found on the Baicu terrace do not exhibit the same homogeneity as those from Piciorul Gol. The explanation may be that at Baicu, the waters of the lake have eroded at least two occupational sequences, one of which is very late, most likely belonging to an Epigravettian or even Epipalaeolithic period, considering the significant microlithic component.

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* *

Following the study of the lithic material of this collection, conducted by Elena-Cristina Nițu (E.-C. Nițu et al., 2018), as well as the observations made on the materials collected from Izvorul Alb in 1979-1982, stored at the Museum in Bicaz or at the Museum of Natural Sciences in Piatra Neamț, a first hypothesis may be formulated, according to which there are some differences between the items collected in the two places, Baicu and Piciorul Gol. In addition to the differences in the raw materials used, the technical features and composition of the debitage products, other distinguishing elements have also been identified.

It has often been argued that the bluish or white flint, identified in all settlements along the Bistrița Valley, originates from the Prut Valley, located approximately 200 km away. Our conclusions have specified that the flint used at Izvorul Alb, even though it shows the same type of patina as the one in the Prut Valley, differs, at least macroscopically. On the other hand, the occurrence of various technical categories made from this raw material, including products resulting from cortex removal and cores, points to local manufacturing and probably a supply from an area near the settlements (E.-C. Nițu et al., 2018). Because the oldest levels in the Bistrița Valley (24-27 ka uncal. B.P.) have a higher percentage of flint compared to other sources of raw material, it has been considered that this aspect is an argument in favour of the assumption that the items from Piciorul Gol are older than those discovered at Baicu (F. Mogoșanu, M. Matei, 1981, 1983). From the very outset, it should be emphasised that the

proportion of raw material cannot constitute a chronological argument. Our studies have revealed that the presence of microlithic tools at Baicu and their absence in the materials from Piciorul Gol can rather be an argument for the older age of the items found in the latter spot.

Without a clear stratigraphic context and without any dating, materials are difficult to classify chrono-culturally. In general, some of the items found on the beach at Baicu come from a rather late Palaeolithic level, Epigravettian or even Epipalaeolithic. The rest of the materials may belong to Gravettian traditions *sensu lato*, especially since among them, there are some backed bladelets and *la Gravette* points in some collections.

III.3.1.4. Recent surveys at Baicu

Considering the large number of lithic materials collected over time, the identification of geological deposits that could preserve potential Palaeolithic occupations has become a necessity at Izvorul Alb. However, the endeavour is difficult due to the highly complicated geomorphology of the land, characterised by large-scale landslides and the potential destruction of deposits containing Palaeolithic occupations. On the other hand, at least one settlement, indicated by the significant number of artefacts collected from the lakeshore at Baicu, has been irretrievably lost due to erosion caused by fluctuating water levels. Nevertheless, the area of Izvorul Alb has potential for possible Palaeolithic discoveries, which might connect the settlements located in the Ceahlău basin with the site at Poiana Cireșului-Piatra Neamț. All of these factors served as important arguments that prompted the group of Palaeolithic researchers from the Museum of Human Evolution and Technology in the Palaeolithic (Târgoviște) to conduct surveys at various points along the Baicu ridge, starting in 2019.

The geomorphology of the area, with the terraces at the confluence of the Izvorul Alb stream with the Bistrița River arranged in a fan-shaped pattern, gives the landscape an amphitheatre-like appearance (figs. 53-54). Undoubtedly, this feature was also attractive to the Gravettian communities that moved along the Bistrița Valley from the Subcarpathian region deep into the mountains, reaching even the foothills of the Ceahlău Mountains. Furthermore, a well-defined basin along the Bistrița Valley, similar to the one at Cetățica, further enhanced the appeal of the area, as already mentioned (fig. 65). All of these elements presented a challenge for the team of Palaeolithic researchers to initiate a new phase of archaeological research in the respective area.

As a strategy, a cartographic documentation of the area was carried out, using maps made before the formation of the reservoir, in order to delimit all the terraces, including those

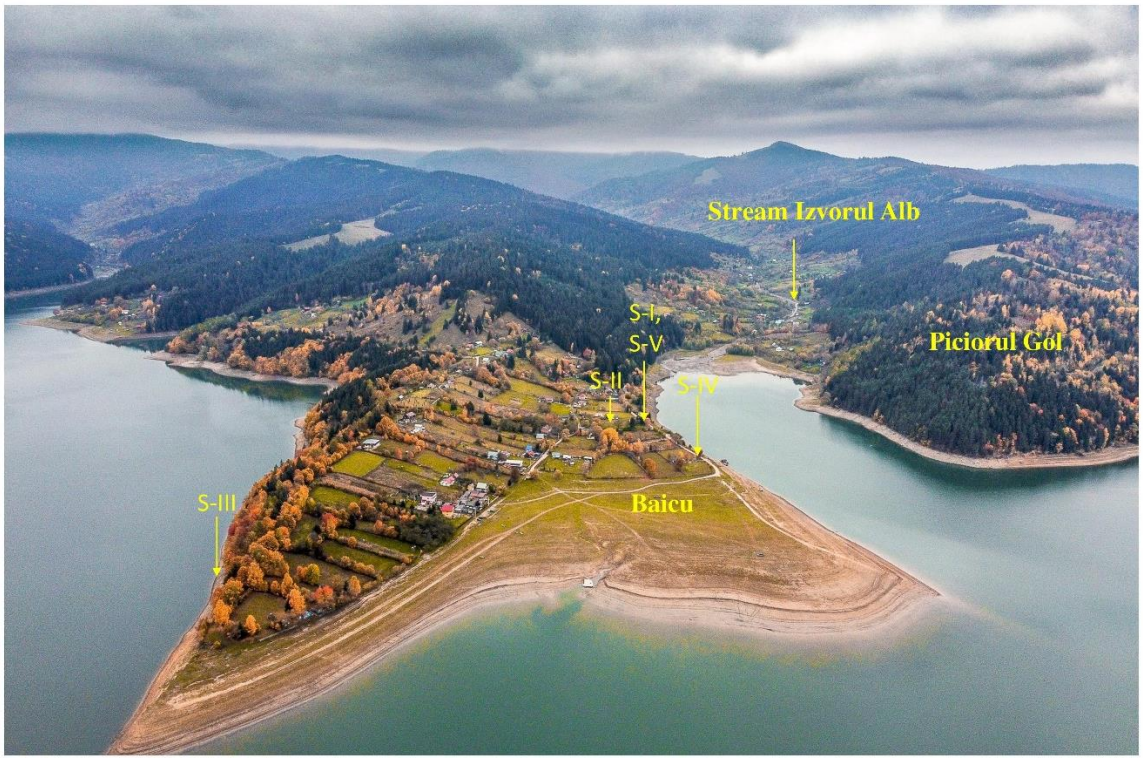

Fig. 65 – Location of surveys on Baicu terrace (photo Cristian Preutu).

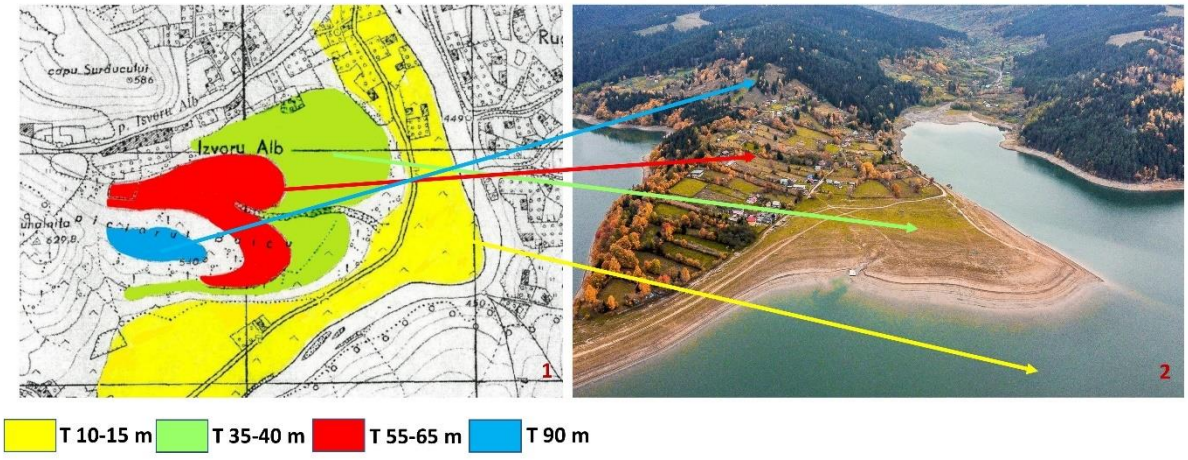

Fig. 66 – Marking of terraces at Izvorul Alb using the topographic map (1- the 10-15 m terrace; 2- the 35-40 m terrace; 3- the 55-65 m terrace; 4- the 90 m terrace) and their correlation with the current situation.

Fig. 67 – Baicu - Survey I. 1-general view; 2- items *in situ*; 3- stratigraphic profile (1-curent soil; 2-highly re-stratified loess layer, grey-yellowish with reddish spots; 3- reddish-yellowish layer with loessoid aspect; 4- very hard brown-reddish layer; 5- compact layer, brown with yellowish shades and vertical grey-bluish infiltrations.

Fig. 68 – Baicu - Survey III.1-2 images during the excavation; 3-4 stratigraphic profile.

Fig. 69 – Baicu – Survey IV. 1-2 images during the excavations; 3-4 stratigraphic profiles (1- current soil; 2- highly re-stratified loess layer, grey-yellowish with reddish spots; 3- reddish-yellowish layer with loessoid aspect; 4- very hard brown-reddish layer; 5- compact layer, brown with yellowish shades and vertical grey-bluish infiltrations.

Fig. 70 – Baicu – Survey V. 1-2 general images; 3-survey; 4-5 – stratigraphic profiles (1- current soil; 2- highly re-stratified loess layer, grey-yellowish with reddish spots; 3- reddish-yellowish layer with loessoid aspect; 4- very hard brown-reddish layer; 5- compact layer, brown with yellowish shades and vertical grey-bluish infiltrations.

currently submerged (fig. 66/1). Thus, the terraces that could potentially serve as attraction areas for Palaeolithic humans were identified. Among the four cartographically delimited terraces, the 10-15 m terrace, where the old Izvorul Alb village and the main road of the locality were situated, is now covered by the lake's waters and even during significant water level decreases, it remains submerged (fig. 66/1-2). It is not excluded that the possible Epigravettian occupation, indicated by the typology of certain items frequently found on the Baicu beach, could be embedded in the deposits of this terrace. This would explain their emergence after each lake level decrease, as a result of wave action that displaced them from the cultural layer within the deposit of this terrace.

On the topographic map, the 35-40 m terrace, which easily corresponds to the spur at Baicu (fig. 66/1), has been delineated quite revealingly. The 55-65 metre terrace is also well delimited, both on the map and in the field. The front of this terrace has been worn off due to erosion and denudation processes, as well as anthropogenic activities. Currently, it is densely populated and used for agriculture. These two terraces, 35-40 m and 55-65 m, along with the 10-15 m terrace that had existed before the lake appeared, have contributed to creating this amphitheatre-like aspect of the area.

Based on these elements, we proceeded to locate the placement of the first surveys. We adopted a method of conducting relatively small but sufficiently extensive surveys to identify possible clusters of lithic artefacts and combustion structures. The surveys were at least of 2/1 m in size.

After several years of visiting Izvorul Alb, especially the 35-40 m terrace when it was exposed, in order to identify the locations where Palaeolithic lithic items were concentrated, we conducted the first surveys in 2019. The first survey was located on the right side of the Izvorul Alb stream (fig. 67), and the second one was a short distance away, further south, i.e., slightly further from the shore. Survey III actually represented the deep embankment of the southern slope at Baicu, specifically on the southern side facing Secu (fig. 68). Survey IV was located on the northern side, slightly downstream from survey I (fig. 69).

In 2020, considering the limited time we had, we only carried out one survey, labelled V. It was conducted in close proximity to survey I (fig. 70).

It was only in surveys I, IV and V that the succession of layers, which we presented in the form of a stratigraphic profile, based on the descriptions by F. Mogoșanu and M. Matei (1981; 1983) (fig. 57), was identified, sometimes with some difficulty. Naturally, we tried to

maintain the same numbering of the layers. Survey II did not yield anything of interest, so it was not further discussed, and survey III, located on the southern side of Baicu, in our opinion, revealed a completely re-stratified deposit, lacking the structure and succession of any layers. Consequently, the artefacts occasionally found on the surface of the soil in this area are likely the result of intense denudation processes.

As for the presence *in situ* of Palaeolithic lithic items, the only surveys that produced materials were I and V, which were, in fact, very close to each other. This means that this particular area represents a gain in this respect because, even though the abundance of materials is not very high, it is a starting point that gives us hope for future research.

Combining all the aspects of the investigations carried out at Izvorul Alb, which were initiated in 1979 and continued until 1982 by F. Mogoșanu and M. Matei (1981; 1983), and then our own research from 2019-2022 (E.-C. Nițu, 2018), we may say that the sites at Izvorul Alb warrant further investigation, as the potential of the area is undeniably worth considering.

IV. Conclusions

The Carpathian arc certainly posed a formidable obstacle for Palaeolithic communities in Eastern Europe and those in Central Europe, especially during certain stages of the Late Pleistocene glaciation, such as the Last Glacial Maximum (LGM). In this context, the importance of the Bistrița Valley lies in the fact that it is deeply embedded in the mountainous landscape, with an extended route in the Subcarpathian area and a generous opening towards the east into the plateau region and further towards the vast Russian Plain. On the other hand, following the course of the Bistrița Valley towards its sources, especially along its tributary the Bistricioara, there are sufficient mountain passes that could have provided relatively easy routes for Palaeolithic communities towards the Transylvanian Plateau, and from there, through the valleys of the Someș and Mureș rivers, towards Central Europe.

In terms of the number of investigated Palaeolithic settlements as well as the richness and variety of archaeological materials, the Bistrita Valley represents a landmark of the Palaeolithic period in Romania. Unfortunately, the quality of archaeological research on Palaeolithic settlements as a whole is quite uneven. The archaeological research in the 1950s in the Răpciuni Basin, at least in terms of its scope, focused more on the settlements of Bistricioara-Lutărie and Ceahlău-Dârțu, despite the fact that they presented the greatest risks in terms of the preservation of their deposits. We are referring to the damage caused to the

settlement of Bistricioara Lutărie by the soldiers' trenches during the First World War, as well as the almost continuous exploitation of clay by the locals, and the fact that the cemetery of the Ceahlău commune overlapped with the settlement at Dârțu before the hydroelectric system was established in the region. One justification for this concentration of investigations in these two settlements may be the wealth and even the quality of the lithic material found in each of them, but this situation might be explained precisely by the significantly larger excavated surface compared to the other sites. On the other hand, at that time, there was great enthusiasm because these were among the first Palaeolithic discoveries in the Bistrița Valley. However, surprisingly, subsequent research for the sampling required for interdisciplinary studies (palynology, granulometry, chemical analysis) (Al. Păunescu et al., 1977) as well as the recovery of materials for C-14 dating (K. Honea, 1981, 1984; Al. Păunescu, 1984) adapted to this preexisting situation and also focused on these two settlements. Perhaps, to the extent that a re-evaluation of the Palaeolithic in the Răpciuni Basin is attempted, it would be more advisable to focus on the discovery of other sites in the vicinity of those already known, or in other areas of the region. This approach would not be devoid of meaning, given the potential of the Răpciuni Basin, already demonstrated by the countless existing settlements. This new attempt might be made through a new, modern approach in all respects.

The results so far reveal the actual chronostratigraphic boundaries of the Răpciuni Basin in terms of deposit age and, consequently, the identified Palaeolithic layers. Existing C-14 dates, with a reasonable margin of error, indicate ages younger than 25,000 B.P. However, considering the lithic material characteristics at the settlement in Cetățica, where there is a possibility of an Early Upper Palaeolithic, we believe that future research should focus on this area. Surveys conducted between 2020 and 2023 do not rule out the existence of older layers. Future research in the Răpciuni Basin should consider higher terraces with older deposits, which may have been inhabited by earlier Palaeolithic communities than those discovered in the terrace with a relative altitude of 40-50 metres. Additionally, reassessing the results from Scaune and Curmătura Bardosului offers an opportunity to intensify research in the mountainous region in order to identify prehistoric hunters at altitudes higher than 1,000 meters, who can be better defined in terms of chrono-culture.

We have attempted to adopt a different perspective in defining the chrono-cultural succession of Palaeolithic sites in the mountain sector of the Bistrița Valley. We have preferred the hypothesis that dismisses the existence of an Aurignacian in this region because the

arguments provided by absolute chronology categorically exclude such a supposition (L. Steguweit et al., 2009; M. Cârciumaru et al., 2023). Furthermore, the techno-typological elements of the lithic material, with the possible exception, to some extent, of the lithic inventory from Cetățica I, do not suggest an Aurignacian in the Bistrița Valley either, as the "guide fossils" are practically missing in this regard.

Taking into account the reality imposed by C-14 dates, we have tried to adapt the cultural succession of the Gravettian communities according to the model documented at Poiana Cireșului-Piatra Neamț. While at Poiana Cireșului, at least three Gravettian cultural sequences have been identified, in the mountain sector of the Bistrița Valley, the absolute chronology as well as the sedimentological characteristics and sequence of layers only allow for the existence of two Gravettian sequences (Gravettian I and Gravettian II).

We believe that the approach of our research has provided sufficient arguments regarding the still significant potential of the Bistrița Mountain area for Palaeolithic research. In this regard, several findings should be considered. There are some old settlements that appear to be exhausted, such as the one at Dârțu. Besides being deeply affected by the old cemetery of the Ceahlău village being superimposed upon it, the development of the Palaeolithic settlement towards the edge of the terrace has caused the action of the lake waters to accentuate the degradation processes of the deposit. The settlement at Bofu Mic would deserve further investigation, considering the lithic inventory, but the deposit needs to be carefully reanalysed because the lower layers do not fit into the general scheme of the settlements at Bistricioara I-II and Dârțu. This is due either to non-existent sequences in the two settlements or to some sedimentological restratifications and relocations under the influence of intense periglacial processes. However, the settlement remains extremely important for the Epigravettian occupations in the Ceahlău Basin. The settlement at Podiș remains generally less known, perhaps because the deposit has been severely affected by ice wedges. Nevertheless, it should remain the focus of investigations in the coming years. As recent research has revealed, the settlements at Cetățica have provided unexpected surprises, by identifying, on the terrace at approximately 20 m, one of the most inhabited areas in the Epigravettian along the Bistrița Valley. It gives us hope for future research.

In conclusion, the mountainous sector of the Bistrița Valley is far from being an exhausted region in terms of potential archaeological investigations in the years to come. We are convinced that by approaching this part of the Bistrița Valley with great determination,

sufficient material resources and a methodology suitable for current archaeological research, the results will not be long in coming.

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