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RECENT RESULTS FROM THE UPPER PALEOLITHIC SITE OF POIANA CIREȘULUI – PIATRA NEAMȚ (NORTHEASTERN ROMANIA)

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Abstract

The Upper Paleolithic site of Poiana Cireșului is located in the Bistrița Valley in the Eastern Carpathian area of North-eastern Romania. The long geological sequence preserved at Poiana Cireșului is attributed to the last Würm Pleniglacial and to the Tardiglacial. To date, four Epigravettian and Gravettian layers have been excavated, and at least two more have been documented through recent core tests in the lower part of the deposits. The oldest excavated Gravettian layer has recently yielded a date of 26,000 BP, which suggests that the deposits at Poiana Cireșului very likely preserve the longest geological and cultural Upper Paleolithic sequence in the area. Given the excellent state of preservation and the rich archaeological record, the site of Poiana Cireșului offers an opportunity for better understanding the Upper Paleolithic cultural dynamics in Eastern Romania. Moreover, recent data casts serious doubts on the time-honored cultural framework developed in the 1950s by C. S. Nicolăescu-Plopșor for the Upper Paleolithic of the Bistrița Valley.

1. Introduction

The Paleolithic site of Poiana Cireșului is located in North-eastern Romania, 4 km from the town of Piatra Neamț, at the confluence of the small Doamna River and the Bistrița River, precisely where they leave the Eastern Carpathian mountain area (Fig. 1). The Carpathian sector of the Bistrița Valley site is renowned for its high-density of Upper Paleolithic sites: 16 settlements were identified during recent decades of archaeological research. Most of them were exposed as a result of a large rescue excavation project initiated in the 1950s, before the building of the huge Izvorul Muntelui Dam (NICOLĂESCU-PLOPȘOR et al. 1966). Most of these typically stratified Upper Paleolithic sites are concentrated in the Răpciuni Basin (60

km upstream of Poiana Cireșului). A few others were found in the Bicz Basin (30 km northwest of Poiana Cireșului) (DRĂGOTESCU 1968; MOGOȘANU, MATEI 1981, 1983) but only two (Lespezi and Buda) 40 km further south (BITIRI 1972; CĂPITANU 1967; BITIRI-CIORTESCU et al. 1989) (Fig. 1).

Poiana Cireșului was the focus of systematic research in three main phases: in the 1960s, (SCORPAN 1976), the late 1980s (BITIRI-CIORTESCU et al. 1989), and more recently by an international team, from 1998 to the present (CÂRCIUMARU et al. 2004). The present paper summarizes the most important observations made during the current research project. The available information, while preliminary, is nevertheless solid enough to argue for the significant position that this particular site occupies in the cultural evolution of the Upper Paleolithic in Eastern Romania. The data from Poiana Cireșului also confirm the need for a critical reassessment of the Upper Paleolithic sequence from the Bistrița Valley, which was already cast into doubt by the recent results from Mitoc-Malul Galben (HAESAERTS et al. 2003; NOIRET 2004).

2. Geology, Stratigraphy and Geochronology

Much like all of the Upper Paleolithic sites in the Bistrița Valley, the Poiana Cireșului settlement is situated in a dominant position, on the right bank of the river. It lies on an erosion level cut into flysch deposits, roughly equivalent to the middle terrace of the Bistrița River (400 m above sea level). Due to the relatively soft bedrock, the site surface (now a clearing in a substantially forested area) was seriously affected by erosion, landslides and anthropic activity. To our current knowledge, the only area that was at least partially spared by these erosion processes is the northern ‘promontory’ (around 200 m²), where all archaeological investigations were concentrated (Fig. 2). During the last phase of research (1998–2005) 47 m² were exposed through systematic excavation. In order to

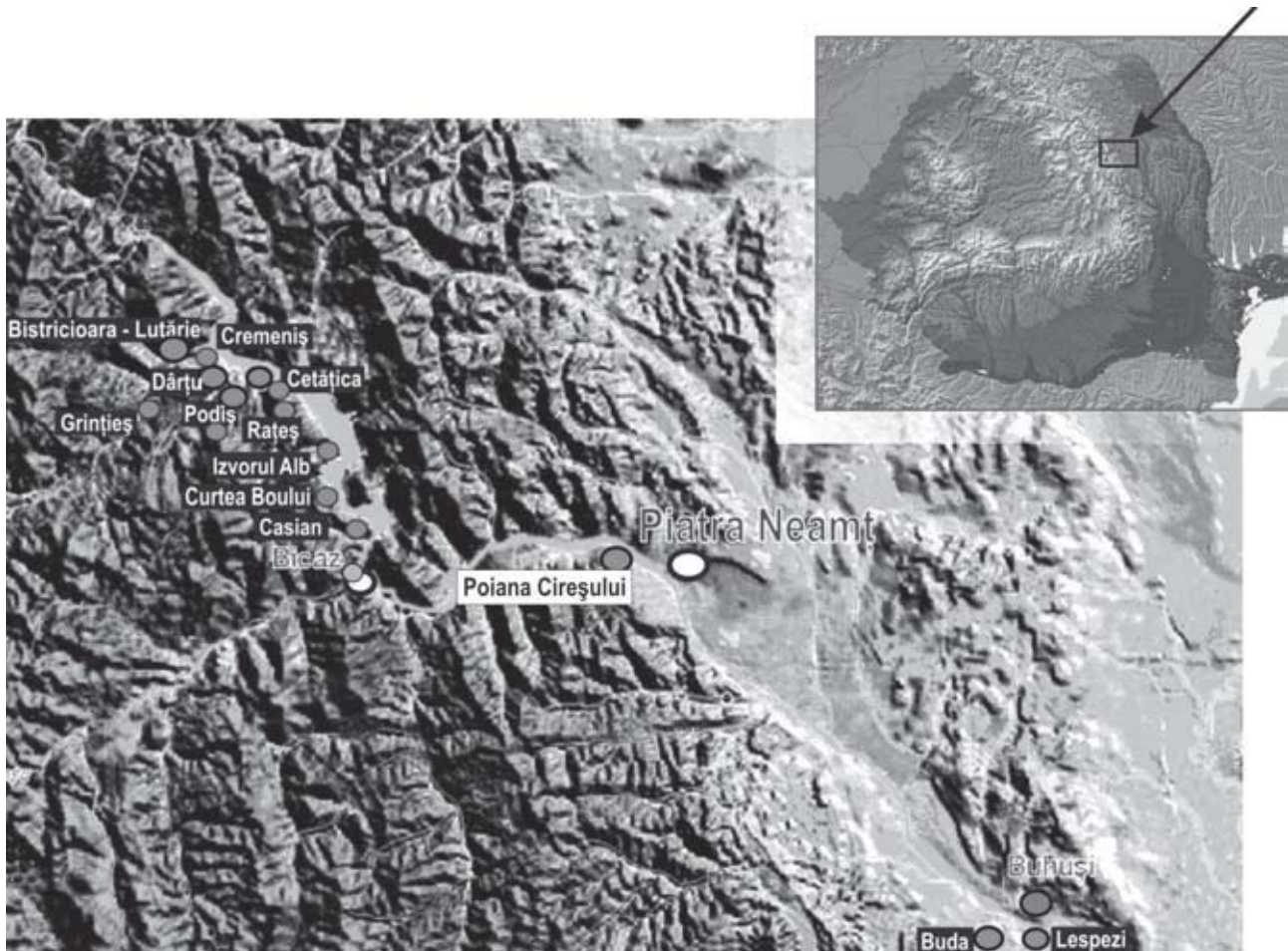


Fig. 1: The site of Poiana Cireșului in relation to other Upper Paleolithic sites in the Bistrița Valley.

verify the limits of the site and to obtain a general view of the lower parts of the geological sequence, 16 core tests were made during the 2005 campaign, using a mechanical borer (Fig. 2). The most important observation concerns the length of the geological sequence, which reaches down to 7 m from the surface in the eastern area of the plateau. The geological deposit from Poiana Cireșului displays clear similarities with the general stratigraphical succession from Bistrița's middle terrace (NICOLĂESCU-PLOPȘOR et al. 1966). Before 2005, five main stratigraphical units were identified down to 3.50 m in depth: (1) Holocene pale brown soil (Cambisol); (2) yellow Late Glacial carbonate free loess layer; (3) compact, decalcified light reddish brown Gelistagnic Cambisol ("Tundragley"); (4) heavily carbonated clay-loessic, light olive layer; (5) olive, calcic, sandy-loessic layer (Fig. 3). The drills allowed us to complete this succession with some new and important information, such as the presence of two weak palaeosols below. These palaeosols are incipient Gelic Gleysols (Nassböden of German authors) formed under environmental conditions where loess sedimentation competes with pedogenesis and water-logging

due to permafrost occurred (ANTOINE et al. 2001). They were clearly marked in samples from drill cores 1 and 12 (Fig. 4). The same drill produced a few fragments of wood charcoal suggesting that some older cultural layers lay beneath. Equally promising was the information recovered from drill 16, placed 16 m to the south from drill 1 (Fig. 4). Unfortunately, the lower part of the deposit is flooded in this area, but if the humic episodes can be correlated to those found in drill 1 and 12, we may expect an even longer sequence in this area and another two cultural layers. This correlation, however, remains unclear and needs further examination.

The paleoclimatic and geochronological interpretation of the deposit remains quite imprecise so far, given the lack of an absolute chronology. Nevertheless, considering the similarities with some better dated sequences in the area (e.g., Bistricioara, Dârțu, and Podiș, PĂUNESCU 1998), it seems that most of the sequence of Poiana Cireșului (the loessic units 4 and 5) can be attributed to the Upper Pleniglacial. The upper part certainly belongs to the Tardiglacial and the Holocene.

Given the new radiocarbon date of $26,070 \pm 340$ uncal.

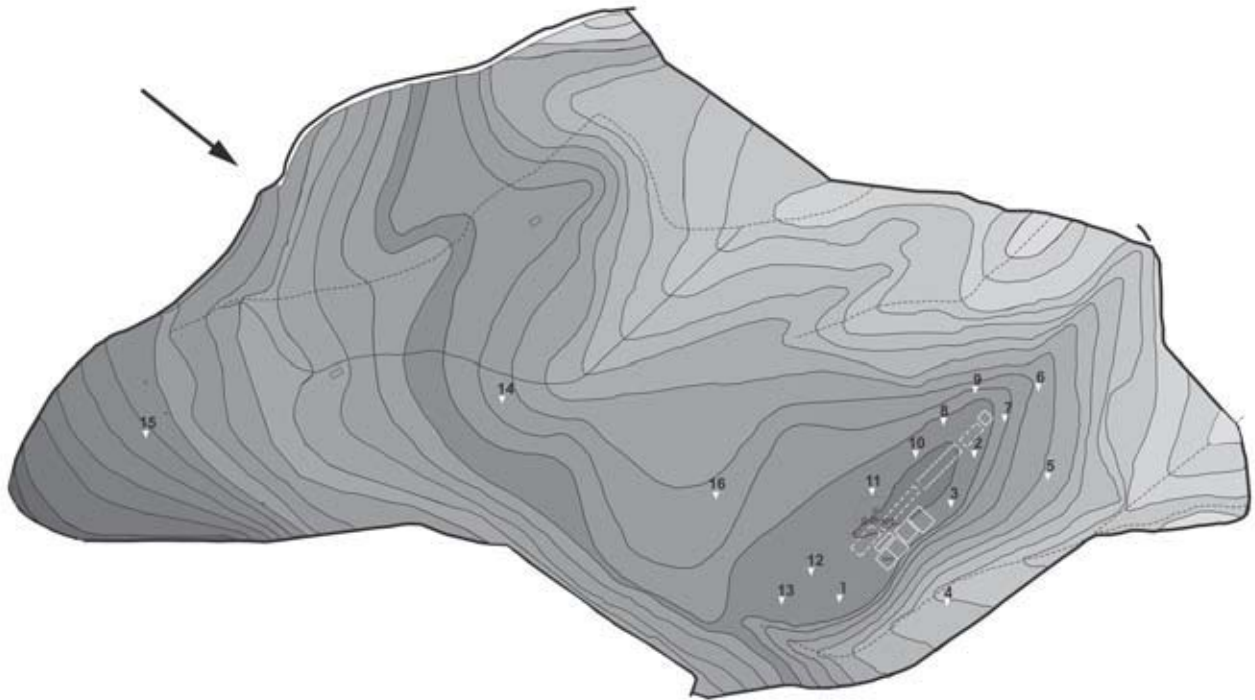


Fig. 2: Poiana Cireșului: topographic map; location of excavations and core drills.

BP (Beta 206707) [Calendric Age cal BP: 30781 ± 270 ; by CALPAL online] of the lowest excavated Gravettian layer, the recently identified gleyic horizons may be attributed to the Greenland interstadials younger than Denekamp. The incipient Gelic Gleysols (Nassböden) result from hydromorphic conditions, showing slight decalcification with occasional redistribution of carbonates at the base of the profile, and the reduction and redistribution of iron (oxidised patches and bands). They are well known from the Würm loess in Western and Central Europe and interpreted as the relative mild climatic phases of the Bond-cycles when the atmospheric dust content was relatively low due to low wind dynamics (ROUSSEAU et al. 2002).

The palaeosol which represents the stratigraphical unit 3 is by far the most intense pedohorizon of the entire section. In spite of the lack of analytical data, it is preliminarily classified as Gelistagnic Cambisol (“Tundra-gley”). The upper part of unit 4 represents the lower part of this palaeosol revealing the carbonate precipitation horizon. Such Gelistagnic Cambisols were formed in Central Europe during the Allerod/Boelling interstadial on loess (KINGER 1996). Therefore, the overlaying yellow Late Glacial loess layer (unit 2) presumably represents the climatic relapse of the Younger Dryas.

However, since a precise chronological framework is still missing, the proposed correlation to the Central and Northern European palaeoclimatic data and the Greenland ice core records remains highly speculative.

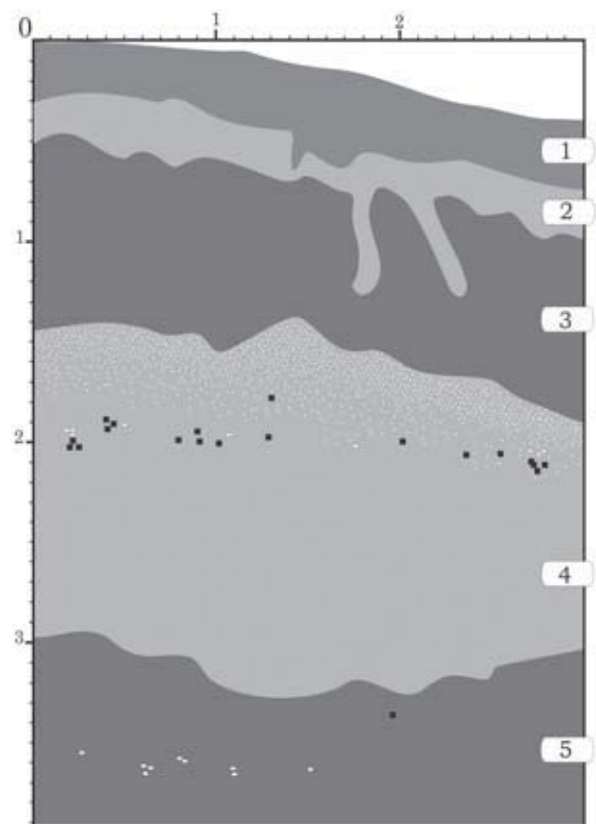


Fig. 3: Poiana Cireșului: Western stratigraphic profile, section -V-.

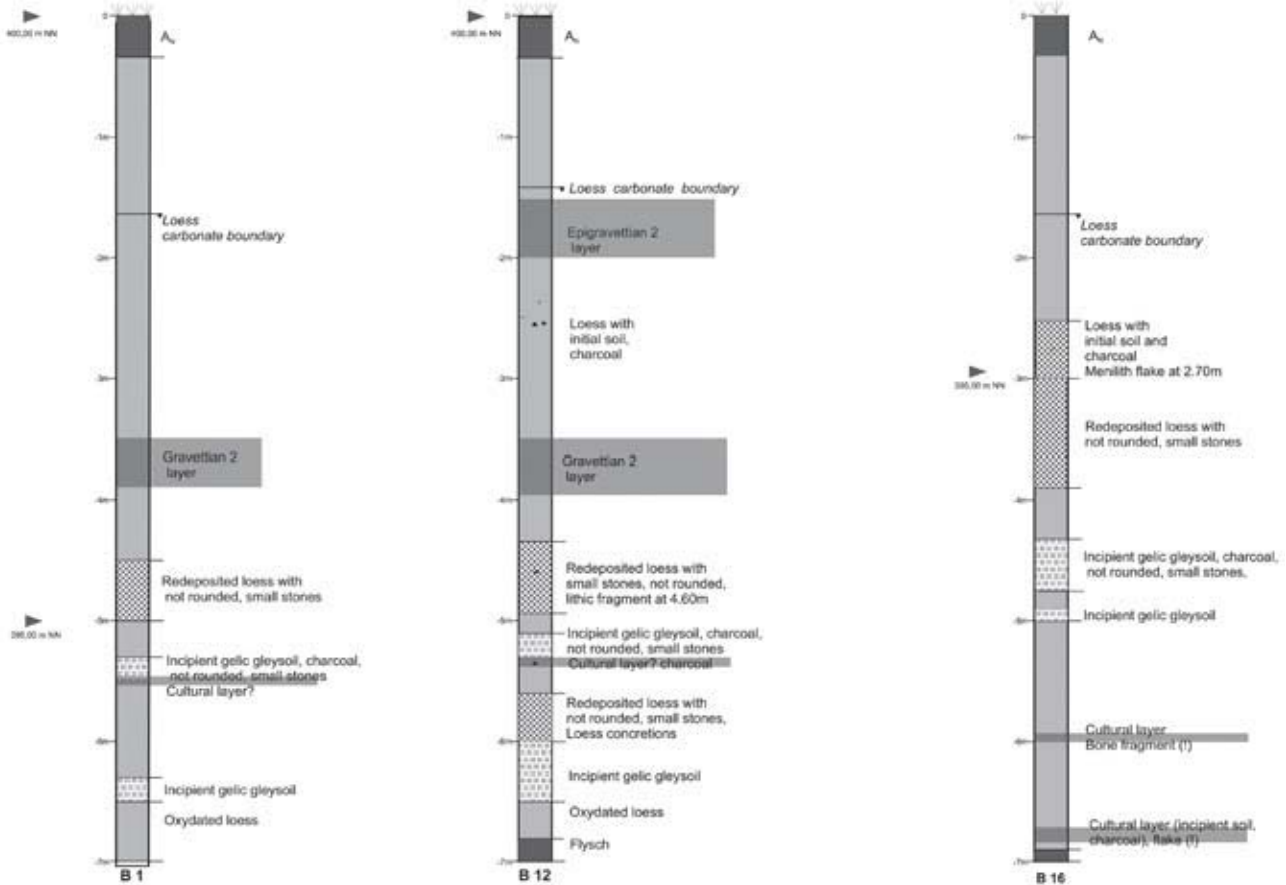


Fig. 4: Stratigraphic observations: drills 1, 12, 16 (2005).

Furthermore, it is important to note that none of these episodes have ever been mentioned for the Bistrița Valley Würm deposits, which suggests that the Poiana Cireșului sequence may well document a longer stratigraphical and hence cultural succession in the area.

The correlation between some of the warmer climatic episodes and the human presence in the Bistrița Valley has been occasionally highlighted in recent decades (CĂRCIUMARU 1999). Hypothetically, one may assume the same pattern for Poiana Cireșului, in spite of the lack of clear sedimentological signatures such as soil formation episodes. We are perfectly aware that all of these interpretations may be the subject of future change, at least in some details.

3. Archaeology

Four Paleolithic layers have been identified and systematically excavated at Poiana Cireșului to date. They all belong to a broad Gravettian tradition, although some important differences between these layers do exist. The cultural traits of the newly documented layers below are currently unknown (older Gravettian, Aurignacian?).

The most recent, uppermost Late Epigravettian (Epigravettian layer 1) belongs to the Tardiglacial yellow loess unit. This

thin layer was seriously affected both by an early Neolithic occupation and by more recent agricultural activities. No fauna was preserved and the few scattered lithic tools are often mixed with Neolithic artifacts.

The next archaeological concentration (Epigravettian layer 2) belongs to the upper part of the clay-loessic layer (stratigraphical unit 4). It is a rich cultural layer, evidencing at least three overlapping occupational episodes. It preserves the traces of a rich and diverse human activity: shallow hearths, 6,267 lithics from both local (menilith, siliceous sandstone, black schist) and distant raw material sources (Cretaceous flint from the Prut Valley), faunal remains, bone and antler art objects, ivory points, resin and small pieces of red ochre are all present.

The raw material includes mostly rounded pebbles or prismatic blocks of menilith (73.30%) and also siliceous sandstone and black schist (8%), probably collected from the riverbed, since primary removals have smooth, rounded surfaces. As for the Cretaceous flint, jasper and opal (18.68%), the absence of cortical products and the decreased length of crested blades seem to indicate that prepared cores were brought to the site.

The laminar lithic technology is oriented toward two types of blanks: regular long and narrow blades or small bladelets. The blades come from cores with a flat, broad detachment

surface and one striking platform, while the bladelets are the result of exploiting the narrow, curved detachment surfaces of burin-shaped cores, also with one striking platform. The production of a second striking platform usually represents an opportunistic choice, dictated by a knapping accident. The toolkit includes mostly endscrapers and dihedral burins on long blades, retouched blades and bladelets (Fig. 5). While surprisingly poor in backed elements, except for a few microgravettes, this assemblage is very rich in small bladelets. They are less than 5 mm wide, with direct marginal retouch and rather twisted profiles, similar to Dufour bladelets. Burin spalls sometimes show the same type of retouch.

The faunal assemblage is currently under study. We have recovered around 12,000 bone fragments, most of them belonging to reindeer (60 individuals) which suggest a repeated autumn-winter occupation. The antler and bone industry is well represented, both by tools such as the *lisoirs* (burnishers) or waste from the working of reindeer antler.

The concentration of art objects and the organic industry have no equivalent in other Romanian Paleolithic sites. We have recovered a pierced wolf canine, a pierced deer canine, a few engraved bones (Fig. 6), an antler point and two well-preserved mammoth ivory points (Fig. 7). The same layer produced an incised pebble with traces of ochre and some large pieces of this pigment. Four Miocene fossils (*Congerina*) were also brought to the site by the Paleolithic inhabitants.

Although there is no radiocarbon date as yet available for this layer, its cultural content and stratigraphic position definitely points to the Early Epigravettian. It could presumably be dated around 17–19,000 BP (Laugerie-Lascaux oscillation?). There are enough equivalents for this type of industry in the Bistrița Valley, both downstream (Lespezi, level II) and upstream (the so-called “Upper Gravettian” from Bistricioara, Dârțu, Podiș, Cetățica I) (NICOLĂESCU-PLOPȘOR et al. 1966).

The first Gravettian layer (Gravettian 1) suggests a short occupational sequence, at the bottom of the same loessic unit 4. No clear living structure could be observed and the few faunal remains are poorly preserved. The small toolkit (196 lithics) is dominated by retouched blades and bladelets, backed elements, points. Shouldered and tongued items, and rare endscrapers and burins are rare (Fig. 8).

The most frequently employed raw materials are local: siliceous sandstone (38.26%), menilith (29.58%), and black schist (4.59%); the imported raw materials (Cretaceous flint – 17.34%, jasper and opal – 10.20%), although accounting for less than half of the entire assemblage, are almost exclusively represented by exhausted tools and cores. The numerous blades and bladelets, as well as the last removals observed on the cores point to a laminar debitage, initiated from one striking platform. The second, opposite or convergent, striking platform usually appears on flint or jasper cores, as a strategy intended for the maximal exploitation of a good-quality (exotic) raw

material. Only a few retouched blades or points were made on flint and jasper.

The general technological features of this assemblage and the few shouldered and tanged implements present allowed us to consider this small toolkit to be contemporary with the Buda layer I assemblage, where the shouldered points are associated with exotic western raw materials, such as obsidian (BITIRI-CIORTESCU et al. 1989). This layer can be dated to around 23,000 BP, probably during the warm Herculane I oscillation (Mitoc-Malul Galben episode MG 4?) (CĂRCIUMARU 1999; HAESAERTS et al. 2003), and belongs to a fully developed Gravettian stage.

The last layer excavated so far represents at least two different occupational sequences, as suggested by the overlapping living structures. This older Gravettian (Gravettian layer 2) belongs to the sandy-loess deposit at the bottom of the stratigraphic column (unit 5). A radiocarbon date of $26,070 \pm 340$ uncal. BP (Beta 206707) has recently become available for this layer. We have only exposed a small part of a larger habitat structure, apparently delimited by large pebbles around a simple shallow excavated hearth (Fig. 9), still filled with charcoal, ashes, burnt lithics and bone fragments. While the fauna (also reindeer) is degraded, the density of lithics is important, rising to 3,225 pieces. The assemblage is largely made of siliceous sandstone (48.77%) and black schist (12.80%); the tools, cores and few by-products typical for the final stages of the debitage sequence are mostly of Cretaceous flint (17.15%).

The exploitation of local raw materials usually begins with rolled pebbles, probably collected from the riverbed, as shown by the primary removals: large flakes with smooth and rounded surfaces. After the removal of a crested blade, laminar debitage continues, starting from a single striking platform, along a slightly convex flaking surface that was frequently rejuvenated. As for the Cretaceous flint and the several varieties of jasper and opal, the assemblage contains only cores, a few broken blades or tools and none of the products characterizing the initial stages of the operational sequence. The discarded cores appear to be completely exhausted, the final removals being small, feathered flakes or bladelets. The industry is rich in backed elements, including Gravette points (Fig. 10). About 90% of the backed implements are made of Cretaceous flint, the remaining few are made of local schist, menilith or sandstone. Apart from a sidescraper and few other retouched implements, the scarcity of other tool types is definitely surprising.

In the same layer, but outside the area of this “hut”, we discovered 10 small pierced snails, belonging to a quite common local species (*Litoglyphus naticoides*) (Fig. 11).

As the local topography only allowed us to excavate limited surfaces, excavation below this cultural layer has not yet been possible.

4. Discussion and Conclusions

As already noted, there are important differences between the Upper Paleolithic layers in Poiana Cireșului, both in the intensity of occupation and in the contents and structure of the related assemblages. These differences are apparently due both to different activities and to chronologically distant Gravettian/Epigravettian stages. Although the samples are unequal, some general observations are nevertheless possible.

The use of raw material is quite similar: local sources are dominant, with a clear shift from siliceous sandstone to microlith in the Epigravettian layer 2. The exotic categories are clearly dominated by the Cretaceous flint from the Prut Valley. The constant presence of the exotic Prut flint in all of the toolkits of Poiana Cireșului draws attention to a certain cultural connection with the eastern area. The content and the significance of these relationships remain to be explored by further research.

Regarding lithic technology, one can observe a constant decrease in blade size in the Epigravettian layer 2 and also the enhancement of the typological spectra in the same layer, which suggests a different behavioral pattern (longer duration of occupation, various activities?).

The well-documented “Dufour” bladelet production from Epigravettian layer 2 is quite significant, particularly because these small bladelets and the related carinated forms have been generally correlated to an ambiguous revival of the Aurignacian tradition (DJINDJIAN et al. 1999, 241, 250). However, at Poiana Cireșului, these small bladelets, which are completely absent in the lower Gravettian layers, are found in a sure Epigravettian context (as documented by the microlithic inventory, backed implements and organic industry). Consequently, there are solid grounds to support a different explanation, such as simple technological convergence, already suggested for some other Eastern industries of presumably similar age (ZWYNS 2005).

To conclude, the recent results obtained in Poiana Cireșului substantiate the importance of the site with respect to Upper Paleolithic cultural dynamics in the eastern part of Romania. First, the lithic toolkits of Poiana Cireșului are considerably larger than the older collections, in spite of the limited excavated surface area. Second, the good state of preservation of the organic material allows a more accurate reconstruction of human behavior. Moreover, the recent data concerning the depth of the sedimentary sequence suggest that the deposits at Poiana Cireșului preserve a significantly long succession of paleoclimatic shifts, which may cover the entire duration of the Late Pleniglacial and the upper part of the Middle Pleniglacial. This situation is all the more important given the age of 26,000 BP, making it the oldest Gravettian site in the area. It is also much older than the Aurignacian sites in the Bistrița Valley (ranging between 25,000–21,000 uncal. BP) (PĂUNESCU 1998).

In consequence, the information available for Poiana Cireșului seriously questions not only the chronology, but

also the taxonomic position of some older collections from the Bistrița Valley, in so far as the oldest Gravettian of Poiana Cireșului belongs to the same loessic sedimentary unit in which so-called Aurignacian toolkits were found during the 1950s (NICOLĂESCU-PLOPȘOR et al. 1966). Together with the unusually late radiocarbon chronology of these Aurignacian layers, the situation at Poiana Cireșului casts serious doubts on the very existence of true Aurignacian industries in the region. Hopefully, the interdisciplinary project of Poiana Cireșului and the systematic re-evaluation of the old sites and/or collections will elucidate this issue.

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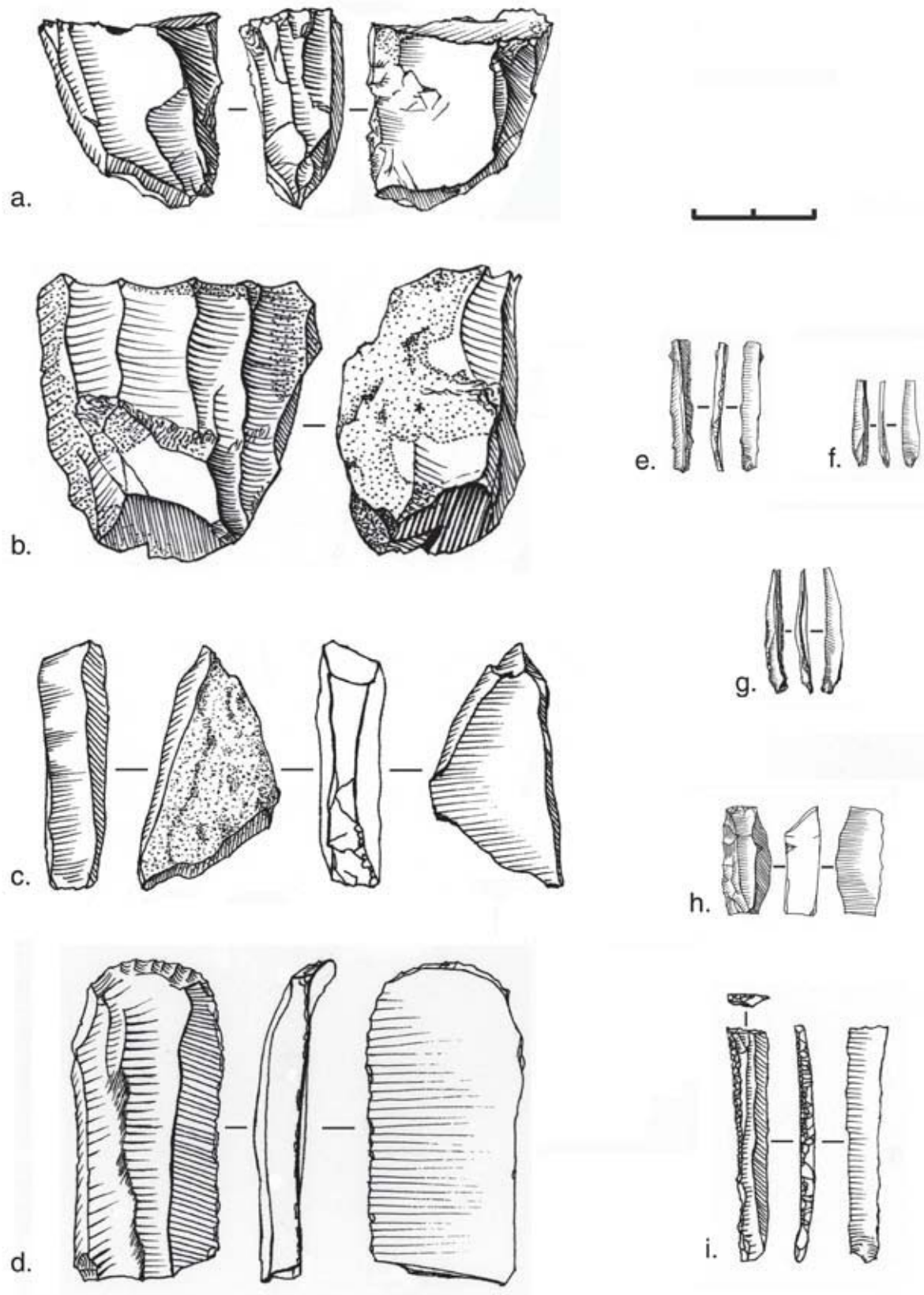


Fig. 5: Lithic implements from the Epigravettian layer 2. a: Bladelet core; b: Blade core; c: Burin; d: Endscraper; e.-g: Marginally retouched bladelets; h.-i: Steep retouched blades (?Backed blades).

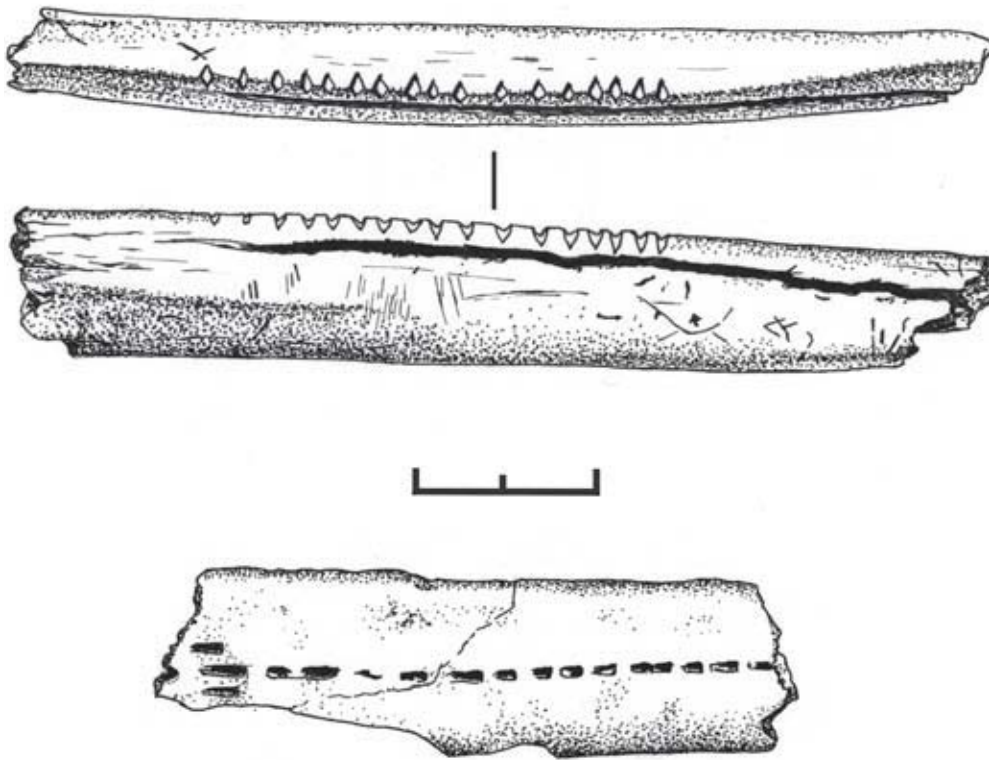


Fig. 6: Engraved bones from the Epigravettian layer 2.

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Fig. 7: Ivory spearpoints from the Epigravettian layer 2.

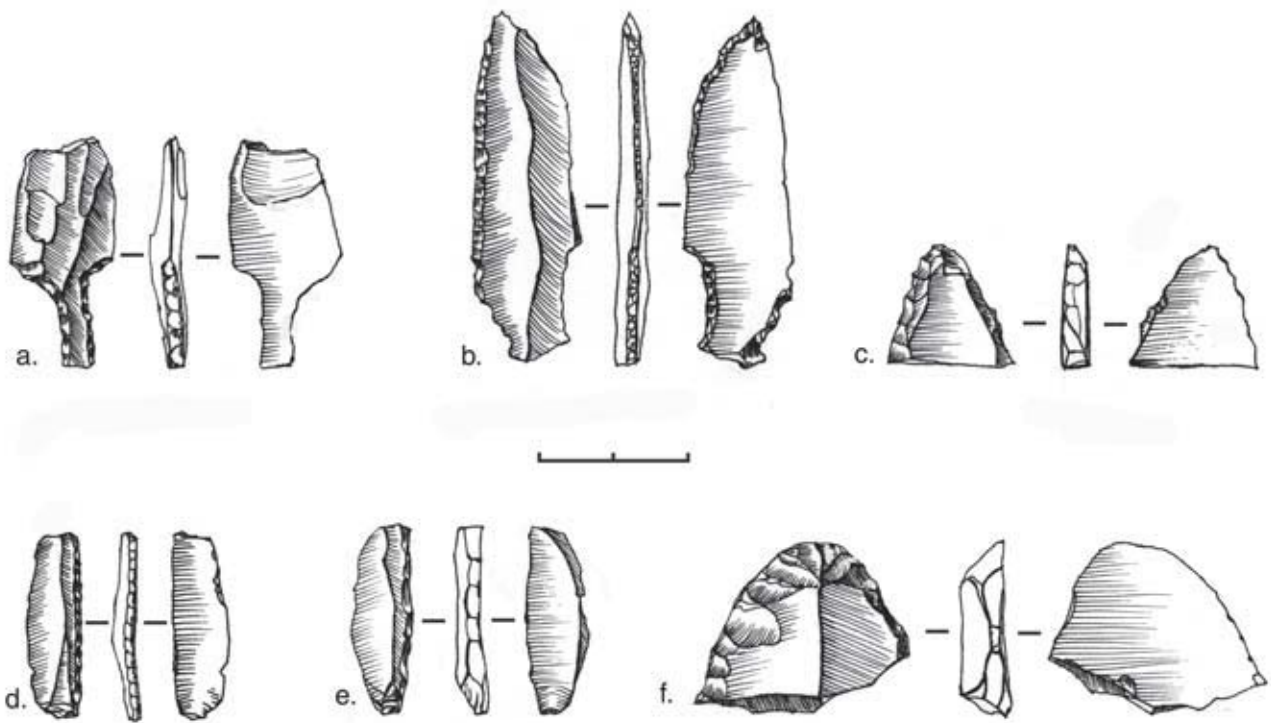


Fig. 8: Lithic tools from the Gravettian layer 1. a: Tanged point; b: Shouldered point; c: Unifacial point; d.–e: Steep retouched blades (?Backed blades); f: Endscraper.



Fig. 9: Section V, Eastern profile: hearth from the Gravettian layer 2.

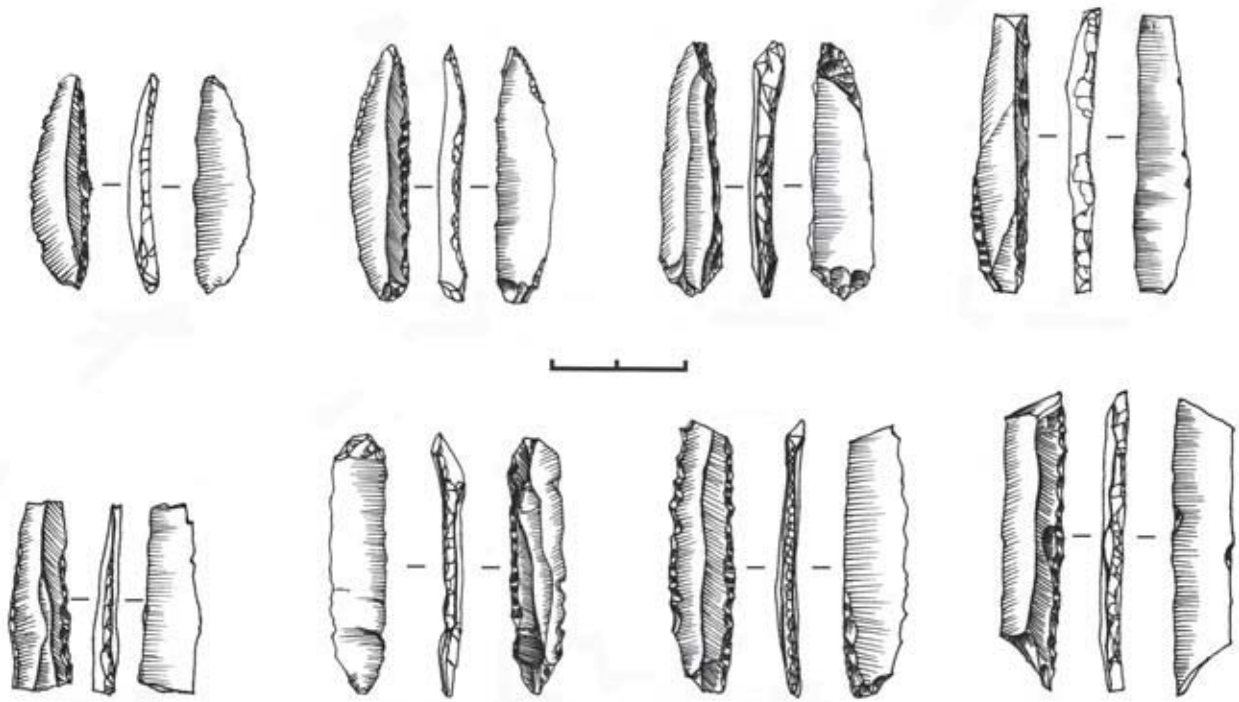


Fig. 10: Gravette points from the Gravettian layer 2.

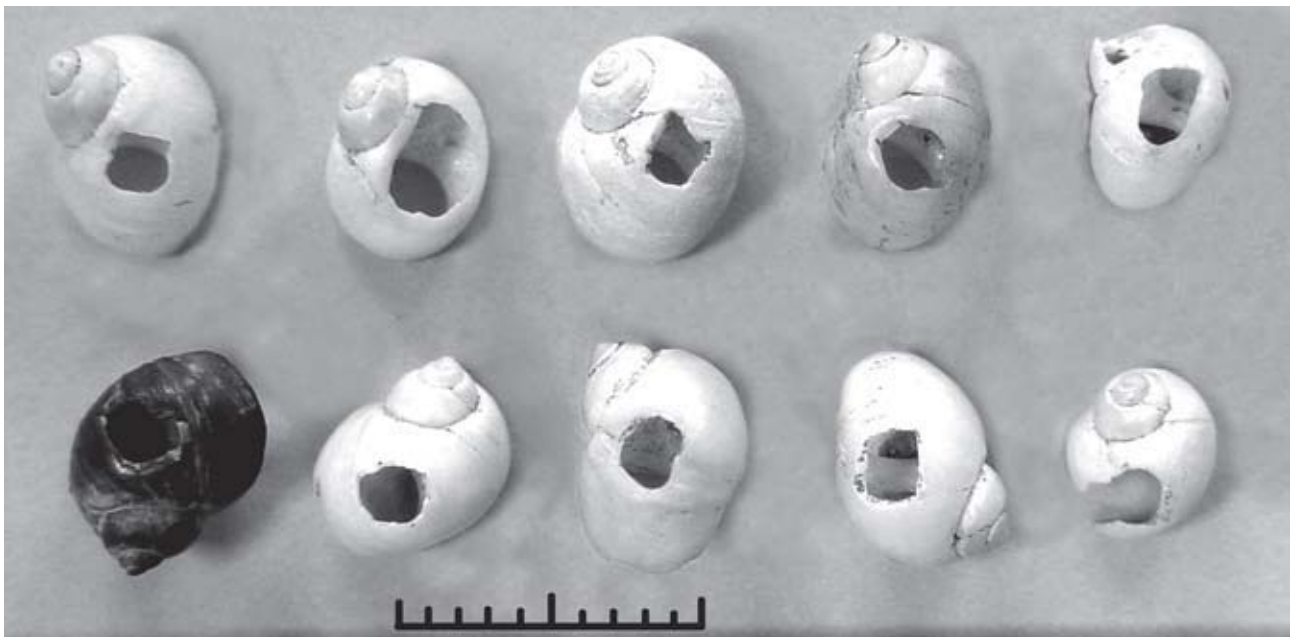


Fig. 11: Pierced snail shells from the Gravettian layer 2.