



## Looking around Peștera Cu Oase: The beginnings of Upper Paleolithic in Romania

Mircea Anghelinu<sup>a,\*</sup>, Loredana Niță<sup>a</sup>, Valéry Sitlivy<sup>b</sup>, Thorsten Uthmeier<sup>c</sup>, Ion Bălțean<sup>d</sup>

<sup>a</sup> Department of History and Letters, Faculty of Humanities, Valahia University of Târgoviște, Str. Lt. Stancu Ion, 34–35, 130115 Târgoviște, Romania

<sup>b</sup> Institute of Prehistoric Archaeology, University of Cologne, Weyertal 125, 50923 Köln, Germany

<sup>c</sup> Institute of Prehistoric Archaeology, University of Erlangen, Kochstraße 4/18, 91054 Erlangen, Germany

<sup>d</sup> Heritage Advice S.R.L., Str. Nicolae Titulescu, 1, 280/B/63, 510096 Alba Iulia, Romania

### ARTICLE INFO

#### Article history:

Available online 16 January 2012

### ABSTRACT

In contrast to the widely acknowledged anthropological finds in Oase Cave and to the key geographical position of Romanian territory for the assumed dispersion of Anatomically Modern Humans in Europe, the archaeological information regarding the emergence of the Upper Paleolithic in Romania remains poorly known to a broader scientific community. The prolonged theoretical and methodological isolation of the Romanian Paleolithic research has particularly contributed to keeping the regional archaeology out of the mainstream debates regarding the Middle to Upper Paleolithic transition in Europe. It has also encouraged the widely held belief of most Romanian archaeologists in the gradual emergence of the Upper Paleolithic, initiated from the local Mousterian.

The present paper puts forward a brief examination of the Romanian archaeological record allegedly belonging to the main cultural actors involved in the transition to the Upper Paleolithic across Europe: the Late Mousterian, the so-called “transitional” industries, and the Aurignacian technocomplex. Doubtful stratigraphical data and radiocarbon sampling feed skepticism regarding the supposed Late Mousterian occurrences in the Southern Carpathian caves. The “transitional” industries ask for a similar criticism, as they either display stratigraphical mixing (e.g. the Mitoc-Valea Izvorului), or simply do not belong to the Early Upper Paleolithic chronological framework (e.g. the Ripiceni-Izvor “Aurignacian”). The local origin, the wide dispersal, and the surprisingly young chronology of the Aurignacian technocomplex in Romania are equally challenged. With the exception of the yet undated occurrences in Banat (Southwestern Romania), all the convincingly documented Aurignacian contexts belong to the generally accepted European chronological framework and show no particular connection to the local Mousterian.

© 2012 Elsevier Ltd and INQUA. All rights reserved.

### 1. Introduction

The recent finding from the Oase Cave (Southwestern Romania) of the oldest European remains of Anatomically Modern Humans (AMH) (c. 35 ka uncalBP, Trinkaus et al., 2003, 2005), coupled with the confirmation of a quite early age for some other AMH specimens (Cioclovina – 29 ka uncalBP; Muierii – 30 ka uncalBP, Mladeč – 31 ka uncalBP) (Churchill and Smith, 2000; Wild et al., 2005; Soficaru et al., 2006, 2007; Trinkaus et al., 2009), refueled the debate regarding the makers and the chronology of the first Upper Paleolithic (UP) industries in Central and South-Eastern Europe.

Unfortunately, the remains of the two individuals found in Oase Cave appear to be water-transported surface finds, intrusive into a karst system lacking any archeological traces of Pleistocene human activity (Zilhão et al., 2007). The archeological contexts associated with the human remains in Cioclovina and Muierii caves are equally unclear.

The significance of these finds has nevertheless become obvious after the gradual elimination of some other AMH representatives – Velika Pećina, Hahnöfersand, Vogelherd, Koněprusy (Smith et al., 1999; Terberger et al., 2001; Svoboda et al., 2002; Conard et al., 2004; Street et al., 2006) – from the regional Early Upper Paleolithic (EUP) timeframe. Furthermore, the reassessment of some key archeological sequences, such as Bacho-Kiro (Tsanova and Bordes, 2003; Rigaud and Lucas, 2006), Istallöskö (Adams and Ringer, 2004), Willendorf II (Haesaerts and Teyssandier, 2003), Krems-Hundssteig (Teyssandier, 2007), Stranska-Skala (Svoboda and Bar-Yosef, 2003) gave way to new hypotheses regarding the emergence of the UP in Europe.

\* Corresponding author.

E-mail addresses: [mircea\\_angelinu@yahoo.com](mailto:mircea_angelinu@yahoo.com) (M. Anghelinu), [loredana\\_nita2003@yahoo.com](mailto:loredana_nita2003@yahoo.com) (L. Niță), [vsitlivy@uni-koeln.de](mailto:vsitlivy@uni-koeln.de) (V. Sitlivy), [thorsten.uthmeier@ufg.phil.uni-erlangen.de](mailto:thorsten.uthmeier@ufg.phil.uni-erlangen.de) (T. Uthmeier), [ion.baltzean@heritageadvice.ro](mailto:ion.baltzean@heritageadvice.ro) (I. Bălțean).

Recently, there were serious adjustments to the classical model insisting strictly upon the allogeny and the identity between the AMH arrival and the UP cultural package (i.e. the Aurignacian) in Europe (Kozłowski and Otte, 2000; Mellars, 2004, 2006; Otte and Kozłowski, 2004). Many of the behavioral features previously attributed to the immigrating Aurignacian proved to have not only African (McBrearty and Brooks, 2000; Conard, 2005; Henshilwood and Marean, 2006), but also European precedents (d'Errico et al., 1998; Zilhão, 2006), pointing to a certain contribution of the local Neanderthal population to the UP *sensu lato*. Moreover, for some authors at least, the emergence of the UP in Europe seems to have been altogether less revolutionary in terms of technology, subsistence and mobility patterns when compared to the local Mousterian (Clark, 1997, 1999; Riel-Salvatore and Barton, 2004; Fedele et al., 2008; Straus, 2009). Nevertheless, the better empirical support gained by the polycentric/gradual scenarios for the appearance of the UP main features and the increasing acceptance of the Neanderthal cultural and genetic contribution to the European UP failed in convincingly changing the basic model of transition, still grounded in “the impossible coincidence” (Mellars, 2005) connecting the appearance of AMH to a novel behavioral package. What the last decade of research brought about is rather a shift of the lower chronological boundary to increasingly older ages.

The changing fate of the Bohunician provides a good case in point. This previously transitional, Mousterian-based Moravian industry, now associated with both the Bachokirian and Middle-Eastern Emiran, is currently seen as demonstrating an early presence of AMH in Europe (Svoboda and Bar-Yosef, 2003; Kozłowski, 2007; Svoboda, 2007; Hoffecker, 2009, 2011; Müller et al., 2011), although this claim lacks any paleoanthropological support and also disregards some archaeological arguments to the contrary, such as the presence of older blade non-Levallois and Levallois flake/blade/point industries (Blade Mousterian, Blade Levallois-Mousterian) in the neighboring Poland and Ukraine (Valladas et al., 2003; Zięba, 2005; Sitlivy and Zięba, 2006; Zilhão, 2006; Sitlivy et al., 2008, 2009).

The Mediterranean Proto-Aurignacian, at present insistently viewed as an older chronological stage of the Aurignacian phenomenon, connected to the Ahmarian in the Middle East (Teyssandier, 2003, 2007; Zilhão, 2006), offers a similar example. While in many areas of the continent, the allochthonous, Eastern origin of the Aurignacian technocomplex and its connection to the AMH remain irrefutable in the light of current data, the actual path followed by its expansion towards the Western Europe is still disputed. The currently available chronology suggests an earlier presence of the Aurignacian *sensu lato* across Mediterranean Europe, the Balkans and the Central Europe, with the Danube as a key corridor for a westward move (Conard and Bolus, 2003; Kozłowski and Otte, 2003; Mellars, 2006; Zilhão, 2006).

The Aurignacian or the Bohunician are clearly not the only actors of the transition from Middle Paleolithic (MP) to UP in Europe. Obvious transformations of the local Late Middle Paleolithic (LMP) traditions had actually taken place during the wildly unstable climate of MIS 3 (Van Andel and Davies, 2003). These autonomous changes are overtly reflected in the emergence of sharper boundaries among various Mousterian technologic phyla (e.g. Mousterian of Acheulean Tradition, Central and Eastern European Micoquian) (Richter, 2000; Otte, 2001), followed by the emergence of several particular LMP/EUP traditions, conventionally identified as “transitional” industries (Lincombian, Ranisian, Jerzmanowician, Szeletian, Streletskian, Chatelperronian, Uluzzian etc.). These “mixed” technocomplexes are generally characterized by an increasing, though variable, reliance on blade technology

(including Levallois), points (e.g. foliate, unifacial) and various other armatures (e.g. Uluzzian crescents, Chatelperronian points) (Kozłowski, 2004).

The already intricate picture of the EUP also incorporates several late Mousterian occurrences in particular refugia, such as Iberia south of Ebro (Cortés Sánchez et al., 2011) and Crimea (Chabai et al., 2004), reinforcing the already strong regional aspect of the MIS 3 cultural landscape. Moreover, the occurrence of bifacial forms, particularly of foliate points, well into the Upper Paleolithic across the Northern European Plains and Eastern steppes (various contributions in Kozłowski, 1990) maybe correlated to a certain survival of previous Mousterian traditions and presumably of their Neanderthal makers (Bar-Yosef, 2006). However, in Eastern Europe at least, the evolution and the paleoanthropological proxies of some of these cultural variants appear less straightforward. For instance, the industries belonging to the Streletskian–Sungirian complex, well known for the particular morphology of their foliate points, are also characterized by a strong flake technology (Vishnyatsky and Nehoroshev, 2004) and attest quite spectacularly, through the famous graves, to their association to AMH.

Located at the crossroads between the Eastern, Mediterranean and Central Europe, Romania holds an obvious key geographical position in relation to all the models proposed for the origin of the European UP. Hosting the oldest directly dated AMH remains found thus far in Europe, Romania seems to have provided a likely early scene for various interactions between the local Neanderthal population and the dispersing Aurignacian. In addition, the local Paleolithic record, to which many generations of scholars have contributed, is abundant (e.g. Jungbert, 1978, 1979, 1982, 1986; Chirica et al., 1996; Pănescu, 1998, 1999a, 1999b, 2000, 2001; Cărciumaru, 1999; Chirica, 2001; Borziac et al., 2006; Cărciumaru et al., 2007a, 2007b; Dobrescu, 2008; Niță, 2008; Doboș et al., 2010). Systematical prehistoric investigations have been undertaken for more than a century, resulting in many archaeological, paleontological and anthropological discoveries, albeit unequally reported and studied.

The Romanian Paleolithic had also long attracted the scientific attention of foreign researchers aiming at incorporating this record into the general European chrono-cultural framework (e.g. Bosinski, 1967; Gabori, 1976; Hahn, 1977; Allsworth-Jones, 1986; Yevtushenko, 1998; Chabai et al., 2004; Kozłowski, 2004; Noiret, 2004, 2009; Sitlivy and Zięba, 2006; Borziac, 2008). Recently, several international field projects yielding significant new results have also been carried out in some regions: Prut Valley and Moldova Republic (e.g. Otte and Chirica, 1993; Otte et al., 1996a, 2007; Noiret, 2004, 2009; Horvath, 2009; Tuffreau et al., 2009), South Carpathians (Otte et al., 1996b; Cărciumaru et al., 2000, 2002; Patou-Mathis, 2001; Doboș et al., 2010), Bistrița Valley (Cărciumaru et al., 2007a; Steguweit et al., 2009), Danube Valley (Alexandrescu et al., 2004) and Northwestern Banat (Tuffreau et al., 2007). Some systematic dating programs, also involving international research teams, have also been undertaken (Honea, 1984, 1986, 1987, 1994; Bălescu et al., 2003; Steguweit et al., 2009).

However, in spite of the encouraging fresh results, as a rule little reference is made to the Romanian EUP archaeological record in the vast bibliography available today (see contributions in Zilhão and D'Errico, 2003; Brantingham et al., 2004; Bar-Yosef and Zilhão, 2006; Conard, 2006; Mellars et al., 2007). Notwithstanding its rather central geographical position, Romania is paradoxically perceived as a peripheral zone and almost systematically avoided in most debates concerning the MP to UP transition (see also Horvath, 2009). The following discussion first presents clarification of this bizarre state of affairs, followed by a brief review of the archaeological information available on the emergence of EUP in Romania.

## 2. The “phylogenetic paradigm” Romanian-style

The main explanation for the low visibility of the Romanian Paleolithic record lies in the paradigmatic framework used by local scholars, which severely prohibited the incorporation of their results into the wider scientific debate. The profound impact of paradigmatic biases on Paleolithic research is generally acknowledged (see contributions in Clark, 1991, 2009), and therefore it will not benefit from an extensive treatment here. A variety of meta-physical perspectives, theoretical approaches and methodological penchants, usually accredited as research “traditions”, compete or rather evolve alongside, enabling and in the same time limiting the success of “normal science” (*sensu* Kuhn, 1962).

Romanian Paleolithic archaeology provides a particularly interesting example, all the more relevant when discussing the complex issue of the EUP emergence. For this particular topic at least, objective factors, such as site density, their state of preservation or their actual content seem as relevant as the theoretical and methodological biases involved in their exploration. Romanian archaeology as a whole was born and evolved for many decades in a more or less overt nationalist climate (Anghelinu, 2003). Unfortunately, remote Paleolithic prehistory, manifestly close to the natural sciences, has always had little direct relevance for the devoted search for national historical roots, stipulated by the modern state. Consequently, the Romanian Paleolithic research remained the mission of a small scientific community constantly forced to look abroad for research models, proper terminology and scientific feedback. The cultural prestige France constantly enjoyed amongst Romanian interwar intellectuals, coupled with the equally esteemed French Paleolithic research tradition, easily explains why the local Paleolithic research has been early and almost exclusively inspired by theoretical and methodological approaches born in relation to the Périgord record (e.g. Roska, 1923, 1925; Moroşan, 1938; Nicolăescu-Plopşor, 1938). The isolation experienced during the Communist times and the tiny scientific population devoted to Paleolithic research had seriously affected the emergence of a critical climate, magnifying the impact of a few, highly revered scholars. Reinforced by the sheer authority of the culture-historical paradigm on the entire Romanian prehistoric archaeology, these factors eventually led to the stabilization of a prevailing research model (Anghelinu, 2006) identical in its essence to the French “phylogenetic” approach (Sackett, 1991; for a strikingly similar outcome in Italian Paleolithic research, see; Bietti, 1991).

The most important feature of this *ad hoc* paradigm stands in the not very unusual blend between the vague principles of cultural evolutionism (*sensu* Bettinger, 1991) and the typical culture-historical methodology, focused on artifacts rather than behavior. To start with, notice the general propensity for locally confined, self-generated evolutionary models. However, in contrast to the neighboring Soviet/Russian archaeology, which constantly preferred the designation of several, locally specific Paleolithic “cultures” (Noiret, 2004), Romanian researchers frequently employed, somewhat paradoxically, the Western units (e.g. Mousterian of Acheulean Tradition, Aurignacian, Gravettian) as evidence for a similarly local evolution. The expected outcome was the huge number of “atypical” features displayed by many Romanian Paleolithic industries in comparison to their remote French originals.

On a methodological level, this research model gave a disproportionate credit to the lithic formal typology, while knapping debris, often the richest and the most informative part of an assemblage, was systematically omitted, if not regrettably abandoned on the spot. Naming an assemblage with abundant “waste” as “atypical” or “archaic” was a common practice, particularly troubling where EUP toolkits are concerned. This led not only to

selective and inaccurate descriptions of the lithic toolkits, but also put a strong emphasis on the vertical dimension of archaeological excavations, in spite of the routinely huge surfaces opened. The obsession for the “complete sequence”, illustrated by means of a few, selected tools, not only guided the field research, but also became the norm for most publications.

Although occasionally well preserved, particularly in cave sites, the organic material has been rarely subjected to a rigorous taphonomical evaluation (e.g. Patou-Mathis, 2001). With the exception of a few unusually valuable contributions (e.g. Bolomey, 1989), whose important insights actually passed unnoticed by the mainstream research, the faunal contexts of Romanian Paleolithic as a whole still rely on simple kitchen-lists (i.e. species identification), occasionally complemented by micro-mammal columns. Systematic studies of the organic industries, while solid, are all recent and still sparse (Beldiman, 1999; Mărgărit, 2008).

A large number of problems also plague the regional paleo-environmental reconstructions of the Upper Pleistocene. Given the prolonged absence of proper financial support and the lack of expertise in radiocarbon sampling, the numerical chronology available is equally modest (Table 1), occasionally suspect and, as a rule, difficult to correlate with the notoriously aged geochronological framework in use. With a few exceptions (e.g. Haesaerts et al., 2003, 2004), the latter was for decades reduced to basic correlations to the three-folded Wurmian geochronology (Nicolăescu-Plopşor, 1957; Nicolăescu-Plopşor et al., 1966; Bitiri, 1972; Păunescu, 1993), or to pollen analyses (Cârciumaru, 1980, 1989, 1999).

The cumulative effect of these biases on the knowledge of the EUP in Romania is more than noticeable today. Most of the archaeological collections presumably belonging to this particular timeframe are still undated. They also come from old and often crude excavations, lacking many of the methods currently in use, such as wet sieving and accurate topographical recording. Only small parts of the lithic assemblages have been illustrated, and most of the published information came in the form of simple typological lists. Unfortunately, the lack of a basic experience in the field of lithic technology led to numerous erroneous typological identifications, quite transparent in otherwise comprehensive works (e.g. Păunescu, 1993, 1998, 1999a, 1999b, 2000, 2001). The basic statistical separation between the main technological products (e.g. flakes vs. blades), irrespective of the original reduction strategies (i.e. blade vs. flake production), and the superficial description of the cores raise enormous problems in understanding the actual *chaînes opératoires* which generated most assemblages attributed to the EUP. Given all that, the hesitation of most foreign scholars carrying out projects in this country (e.g. Honea, 1994; Mertens, 1996; Noiret, 2004; Riel-Salvatore et al., 2008; Horvath, 2009) in using or even noticing the Romanian EUP record comes as no surprise. Overcoming these problems remains a daunting task, and it stands to reason that many conclusions of the regional summary proposed in the following section will wait for a solid validation through further research.

## 3. Transition? Long maybe, but not that big

One of the most striking features of the Romanian archaeological literature is its almost total agreement regarding the local origin of the UP. With rare exceptions (Moroşan, 1938; Mogoşanu, 1978) and in spite of some inconsistent oscillations in opinion (Nicolăescu-Plopşor, 1954, pp. 67–68), vague hesitations (Bitiri, 1972, pp. 112–113) or explicit cases made by the foreign specialists working in Romania (Honea, 1994; Noiret, 2004), the emergence of the first UP industries from the local Mousterian remained basically undisputed for decades (Nicolăescu-Plopşor, 1956, 1957;

**Table 1**

Radiocarbon chronology of the Romanian Late Middle Paleolithic/Early Upper Paleolithic (including the nature of the samples, calibration and alleged cultural contexts).

Settlement	Original cultural attribution	Sample	Laboratory number	Age uncalBP	Age calBP (CalPal-2007_Hulu)	References			
Gura Cheii-Râșnov Cave	Mousterian	Bone	GrN-13009	33,300 ± 900	38,336 ± 1702	Păunescu, 2001			
		Bone	GrN-13008	30,450 ± 300	34,643 ± 302				
		Charcoal	GrN-11619	29,700 + 1700/–1400	34,257 ± 1681				
Spurcată-Nandru Cave	Mousterian	Charcoal	GrN-14620	28,900 + 2400/–1800	33,632 ± 2388				
		Bone	GrN-14622	30,000 + 1900/–1500	34,749 ± 2030				
		Charcoal	GrA-4385	9930 ± 220	11,524 ± 365				
Curată-Nandru Cave	Unknown	Charcoal	GrA-4386	20,770 + 930/–830	24,944 ± 1208				
		Charcoal	GrA-13250	28,250 + 350/–330	32,712 ± 421				
Mitoc-Malul Galben	Mousterian	Charcoal	GrA-13249	29,940 + 420/–400	34,126 ± 367				
		Charcoal	GrN-14914	27,410 ± 430	32,131 ± 379				
Mitoc-Malul Galben	Aurignacian	Charcoal	GrN-12637	31,850 ± 800	36,336 ± 1212	Otte et al., 2007			
		Charcoal	GrN-15453	27,100 ± 1500	31,739 ± 1374				
		Charcoal	GrA-27261	27,700 ± 180	32,267 ± 276				
		Charcoal	GrA-27268	27,750 ± 160	32,301 ± 277				
		Bone	GrN-13007	>24,000	–				
		Charcoal	GrN-15451	26,530 ± 400	31,240 ± 438				
		Charcoal	GrN-15454	29,410 ± 310	33,760 ± 366				
		Charcoal	GrA-1355	25,380 ± 120	30,211 ± 277				
		Charcoal	GrN-14037	26,910 ± 450	31,511 ± 458				
		Charcoal	GrN-15457	24,400 + 2200/–1700	28,713 ± 2395				
		Charcoal	OxA-1646	31,100 ± 900	35,495 ± 952				
		Charcoal	GrA-1648	31,000 ± 330	35,076 ± 401				
		Charcoal	GrN-15456	25,930 ± 450	30,898 ± 470				
		Charcoal	GrN-20443	30,240 + 470/–440	34,482 ± 409				
		Charcoal	GrN-20770	31,160 + 570/–530	35,294 ± 586				
		Charcoal	GrN-20442	30,920 ± 390	35,042 ± 428				
		Charcoal	GrN-20444	31,160 + 550/–510	35,281 ± 561				
		Charcoal	GrA-1357	32,730 ± 220	37,251 ± 669				
		Ripiceni-Izvor	Aurignacian Ib	Charcoal (?)	Bln-809		28,420 ± 400	32,891 ± 504	Păunescu, 1999a
				Charcoal	GrN-12670		18,330 ± 300	21,968 ± 413	
Bistricioara Lutărie II	Upper Aurignacian (Pre-Gravettian)	Charcoal	GrN-16982	20,310 ± 150	24,254 ± 316	Păunescu, 1998			
		?	Gx-8726	20,300 ± 1300	24,400 ± 1617				
		?	Gx-8727	23,450 + 2000/–1450	27,805 ± 2279				
		?	Gx-8845	23,560 + 1150/–980	28,160 ± 1401				
		Charcoal	GrN-10529	24,100 ± 1300	28,697 ± 1504				
		Bone	GrN-11586	24,760 ± 170	29,795 ± 337				
		?	Gx-8844	27,350 + 2100/–1500	31,838 ± 1959				
		Charcoal	GrN-14629	>24,000	–				
		Charcoal	GrN-14632	21,050 ± 650	25,249 ± 879				
		Charcoal	GrN-14633	26,700 ± 1100	31,054 ± 989				
Ceahlău-Cetățica I	Lower Aurignacian	Charcoal	GrN-16985	21,100 + 490/–460	25,279 ± 671				
		Bone	GrN-12673	24,390 ± 180	29,155 ± 474				
Ceahlău-Cetățica II	Unknown	?	Gx-9415	25,450 + 4450/–2850	29,478 ± 4726				
		Charcoal (?)	GrA-5094	21,140 ± 120	25,297 ± 365				
Ceahlău-Dârțu	Lower Aurignacian	Charcoal	GrA-6037	22,790 ± 130	27,455 ± 406				
		Bone	LuA-5228	30,150 ± 800	34,403 ± 805				
Giurgiu-Malu Roșu	Middle Aurignacian	Human tibia and scapula	OxA-15529	29,930 ± 170	34,227 ± 175	Alexandrescu et al., 2004			
		Human cranium	OxA-16252	29,110 ± 190	33,585 ± 329				
		Human temporal bone							
Bordul Mare (Ohaba-Ponor) Cave	Aurignacian	Bone (?)	GrN-14627	28,780 ± 290	33,264 ± 444	Păunescu, 2001			
		Human temporal bone							
Cioclovina Cave	Aurignacian	Human temporal bone	LuA-5229	29,000 ± 700	33,332 ± 671	Soficaru et al., 2007			
		Human occipital	OxA-15527	28,510 ± 170	32,915 ± 359				
Hoșilor Cave	Aurignacian	Charcoal (?)	GrN-16980	25,940 ± 230	30,933 ± 369	Păunescu, 2001			
		Human mandible	GrA-22810	34,290 + 970/–870	39,180 ± 1410				
Oase Cave	Unknown	Human cranium	GrA-24398	28,980 + 180/–170	33,487 ± 339	Trinkaus et al., 2003 Trinkaus et al., 2005			

Bitiri, 1965a, 1972, 1973; Nicolăescu-Plopșor et al., 1966; Păunescu, 1970, 1980, 1989, 1993, 1998, 1999a, 1999b, 2001; Bitiri and Cărciumaru, 1978; Chirica, 1987, 1995; Chirica et al., 1996; Cărciumaru, 1999; Dobrescu, 2008). Moreover, no particular attention has been paid to the intricate paleoanthropological, adaptive and culture-historical issues actually involved in the replacement of the Mousterian traditions by the UP technocomplexes (but see Borziac, 2008). Paradoxically, the local character of the EUP assemblages stands in sharp contrast to the attribution of the Romanian fully UP technocomplexes to the Western cultural framework, which at least in part points to their

allochthonous origin. As little theoretical deliberation ever supported the rather spontaneous idea of an indigenous UP development, or indeed ever characterized the Romanian prehistoric archaeology as a whole (Anghelinu, 2003), this inconsistency passed unnoticed.

It should not therefore come as a surprise that the emergence of the UP in Romania is a regional evolutionary phenomenon, often going nowhere. It generally stands in various “transitional” or “intermediary” industries, scattered all across the country under different names – Late Mousterian, Szeletian, Mitoc-Valea Izvorului facies, Early Aurignacian, but clearly separated from the UP



technocomplexes *sensu stricto*. Except for its bizarrely young chronology, the latter comprise the “normal” Middle Aurignacian, Gravettian and Epigravettian succession, generally connected to the neighboring areas in Central and Eastern Europe.

The chronology of the transition process is as blurry as its actual content. It stands less on radiometric support and more in geochronological observations, based on different methods (lithostratigraphy for open air sites, pollen analysis for cave deposits). Given the geographical distance and the nature of the geological archives involved, no true correlation between the various sequences has been securely established, or even attempted. Conventionally, according to the Alpine chronology, the transition to the UP took place during the Würm I–II interstadial (Nicolăescu-Ploșor, 1956; Nicolăescu-Ploșor et al., 1966; Păunescu, 1993). In keeping with the pollen-based geochronological timeframe advocated by Cărciumaru (1980, 1985, 1989, 1999) and pooled with the few existent radiocarbon dates, the transition to the UP took place during the two-folded Ohaba Interstadial Complex (Arcy-Kessel-Denekamp, c. 35–28 ka uncalBP) – and particularly in its final part (see also Chirica et al., 1996). The better studied sequence from Mitoc-Malul Galben provided a more detailed, but chronologically comparable timeframe, at least for the Aurignacian appearance in the area: 33–27.5 ka uncalBP (Haesaerts et al., 2003). For the Middle Prut area and the neighboring Moldova Republic, the conventionally accepted landmark is provided by the Briansk-Dofinovka-Dniestr fossil soil (Borziac, 2008), presumably isochronous to the Ohaba Interstadial, in spite of its much younger and generally vague chronological range (27–23 ka uncalBP) (cf. Noiret, 2004). However, contrary to the mainstream interpretation in Romania, a much older beginning for the transition process is emphasized for this area, occasionally pushed back in time at least to the Hengelo interstadial (Borziac, 2008).

The transition process does not have, however, a clear chronological upper limit: various Mousterian “traditions” are believed to endure considerably longer during the Upper Paleolithic, occasionally to the Tardiglacial (e.g. Mogoșanu, 1978), as a percentage of flake or bifacial tools in commonly laminar industries, or as fully flake industries evolving alongside the leptolithic technocomplexes. With the exception of Middle Prut area, where various mixed traditions are reported to survive alongside the typically UP technocomplexes, as a rule the transition’s end across Romania was seemingly brought about by the late appearance (<30 ka uncalBP) of the first fully laminar industries (i.e. “middle Aurignacian”, Gravettian). The much clearer techno-typological mark of these technocomplexes often made their recognition easier and their allogeny equally likely. They were not only strangers, but also late and occasionally in a process of “degeneration”, such as the Aurignacian in South-West and Southern Romania (Mogoșanu, 1983; Alexandrescu, 1997).

Several rationales may explain the amazing unanimity regarding the local origin of the EUP. First, the idea was strongly advocated by the undisputed leader of the post-war Paleolithic research in Romania, C.S. Nicolăescu-Ploșor, who carefully guided the early research of his students. Ploșor’s remarkable research program had literally traced the current map of Romanian Paleolithic sites. Unfortunately, his intensive field researches lacked many of the technical requirements acknowledged today. He also pleaded for a local evolutionary framework and even tried to replace the accredited *lingua franca* of lithic typology, French, with sometimes awkward Romanian terms. Moreover, he never admitted and actually fiercely criticized the statistical analysis of the lithic toolkits, as proposed by F. Bordes (Nicolăescu-Ploșor, 1954). Thus, his sturdy evolutionary stance merged with a purely qualitative description of the lithic toolkits, constantly focusing on a few selected artifacts. Consequently, the appearance of several

Mousterian looking flakes or bifacial tools in some leptolithic assemblages seemed adequate for him to suggest a local cultural continuity between the Mousterian and the UP in virtually every geographical area of Romania (Nicolăescu-Ploșor, 1954, 1957; Nicolăescu-Ploșor and Zaharia, 1959; Nicolăescu-Ploșor et al., 1966).

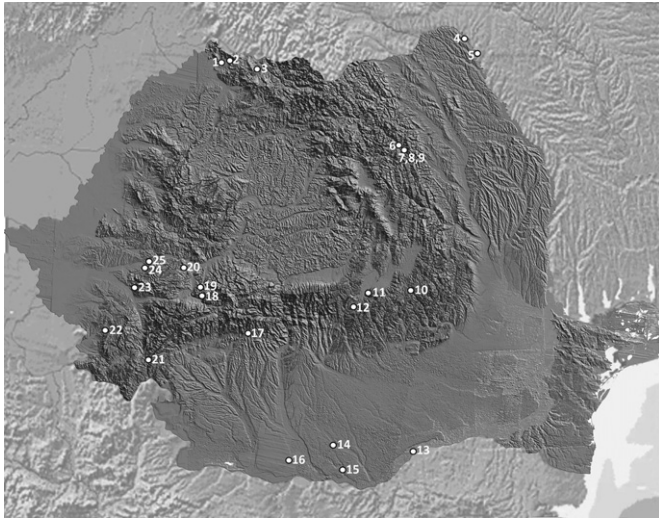
However, the idea persisted amongst his students, even if some of them started to use the Bordes’ type-list, after 1970. Unfortunately, the new method, although obviously allowing a better quantitative cover of the lithic collections, often had to deal with small, statistically intractable toolkits, coming from poorly understood depositional contexts. Thus, even when the numbers were high enough, as a descriptive method the approach itself was incapable of tackling the main problem, which was the taphonomical integrity of the assemblages themselves. As a result, it is hardly surprising that the beginning of the UP remained to many authors an essentially simple, organic evolutionary process, basically reduced to a gradual increase of laminar production. What the Bordes system certainly brought was an increasing reliance in the Western European UP cultural framework, already in use during the interwar period. This revival explains why, besides the local Mousterian, regularly divided according to the Southwestern France model (Mousterian of Acheulean Tradition, typical, Charentian etc.), the UP industries achieved a familiar name and a European profile wherever the statistical base allowed it, in spite of their rebel numerical chronology and their allegedly local origin.

To conclude, the acknowledged cultural framework of the Romanian EUP tells as much about the theoretical and methodological options made as about the empirical realities behind them. The following lines attempt to take a closer look at the actual content of the first stage of the UP in Romania. Here, much like everywhere in Eurasia, the transition to the UP *sensu lato* rests on three main phenomena: Late Mousterian occurrences, various industries displaying mixed flake and laminar techno-typological features, and the Aurignacian technocomplex. For the sake of brevity, a similar, separate treatment is proposed, even though intricate scenarios sometimes connect these units in the Romanian literature.

#### 4. Late Mousterian?

The idea of a “late, prolonged and degenerated” Mousterian belongs to Nicolăescu-Ploșor (1956), who had in mind several lithic assemblages found in the caves of the Southern Carpathians (Fig. 1). Nicolăescu-Ploșor’s initial argument stood less in the alleged mixture of blade and flake technology and more in the scattered presence of a few bifacial tools, which allegedly marked the evolution of the local Mousterian towards Szeletian. For him at least, the latter represented *par excellence* the transition to the UP on the entire Romanian territory. The supposed association between the *Homo sapiens sapiens* remains in Muierilor Cave and some Mousterian artifacts, now clearly rejected (Doboș et al., 2010), obviously encouraged this linear evolutionary scenario. The late persistence of Mousterian lithic traditions was further strongly supported by Mogoșanu (1978, 1983), whose “Quartzite Paleolithic” in Banat (Southwestern Romania), a flake-based facies found both in open air sites (Tincova, Românești-Dumbrăvița) and in caves (e.g. Hoșilor-Herculane Cave), was considered to survive alongside the UP traditions to the Tardiglacial.

A slightly modified version of this thesis was later promoted by Cărciumaru (1989, 1999), who considered, mainly on geochronological grounds, the upper Mousterian layers at the caves Ohaba-Ponor (Mousterian IVa and IVb, after Păunescu, 2001, pp. 294–295), Gura-Cheii Râșnov (Mousterian II, after Păunescu, 1991), Nandru-Curată Cave (Mousterian IId, after Păunescu, 2001, pp. 254–255),



**Fig. 1.** Geographical distribution of the main settlements mentioned in the text: 1. Remetea-Somos; 2. Boinești; 3. Călinești; 4. Mitoc (Malul Galben, Valea Izvorului); 5. Ripiceni-Izvor/Stânca; 6. Bistricioara-Lutărie; 7. Cetățica-Ceahlău; 8. Dârtu-Ceahlău; 9. Podiș-Ceahlău; 10. Cremenea (Poienița, Malul Dinu Buzea); 11. Gura-Cheii Râșnov Cave; 12. Mare-Moeciu Cave; 13. Giurgiu-Malu Roșu; 14. Nicolae Bălcescu; 15. Ciurpereni; 16. Vădastra; 17. Muierilor Cave; 18. Ohaba Ponor Cave; 19. Cioclovina Cave; 20. Nandru (Curată și Spurcată) Caves; 21. Hoților (Herculane) Cave; 22. Oase Cave; 23. Tincova; 24. Coșava; 25. Românești-Dumbrăvița.

and the single layers at Nandru-Spurcată Cave (Păunescu, 2001, pp. 261–262) and Hoților-Herculane Cave (Mogoșanu, 1978), respectively, as belonging to a transitional “Carpathian facies”, in which Mousterian elements mixed with UP type forms. All these layers, framed into the Ohaba Interstadial Complex, were consequently younger than 35 ka uncalBP.

The mixed technological aspect of these quartz-dominated tiny assemblages (ranging between 29 lithics at Spurcată Cave and 176 in Ohaba-Ponor’s Mousterian IV) is doubtful. As the illustrated pieces suggest (Mogoșanu, 1978; Păunescu, 2000, 2001), their technological and typological shape is indistinguishable from the Mousterian toolkits below (Figs. 2 and 3), systematically dated in excess of 40 uncalBP, and, given the limits of the radiocarbon method, possibly much older (Doboș et al., 2010). The UP elements, when present, are usually restricted to small percentages of blades and blade formal tools, usually made in better quality, siliceous raw material. They can be at least tentatively attributed to a contamination from the ever present UP layers above; a situation not only frequent in the typical palimpsest cave deposits, but also common to the collections recovered during early researches everywhere in Europe.

Nevertheless, the numerical chronology obtained later for these Mousterian layers proved unexpectedly young (Table 1). The Mousterian layer II (39 lithics) at Gura-Cheii provided 4 radiocarbon dates:  $33,300 \pm 900$  uncalBP;  $30,450 \pm 300$  uncalBP;  $29,700 + 1700/-1400$  uncalBP; and  $28,900 + 2400/-1800$  uncalBP (Păunescu, 2001, p. 343). The single layer at Spurcată Cave, which provided 6 bifacial tools, including at least one foliate point, was dated to  $30,000 + 1900/-1500$  uncalBP. However, apart from this bone sample, coming from the lower part of the layer, at 1 m in depth (Păunescu, 2001, p. 264), 2 other charcoal samples taken from 1.20 m in depth, albeit totally ignored in the Romanian literature, provided much younger ages:  $9930 \pm 220$  uncalBP and  $20,770 + 930/-830$  uncalBP. Unfortunately, the chronology in the nearby Curată Cave is even more confusing, as the youngest dates –  $28,250 + 350/-330$  uncalBP and  $29,940 + 420/-400$  uncalBP – apparently came from the deeper Mousterian layers (Ia and Ib),

while the upper ones provided 5 ages ranging between 45 and 47 ka uncalBP (Păunescu, 2001, p. 257). Another late age of  $28,780 \pm 290$  uncalBP, previously attributed to the Mousterian IVb layer in Ohaba-Ponor, most likely dates the thin UP (Aurignacian?) layer above, as recently suggested (Păunescu, 2001, p. 297).

The hypothesis of an isolated survival of the Middle Paleolithic traditions in an environment with rich biotic diversity, as provided by the many Carpathian ecozones, is certainly reasonable (Cârciumaru and Anghelinu, 2000). The late persistence of the Mousterian is actually well documented in some other European areas, such as Crimea (Chabai et al., 2004), or Iberia (Cortés Sánchez et al., 2011). Moreover, except for Ohaba Ponor, the UP layers found in the same sites, when dated, provided much younger ages, as they generally belong to the Gravettian or even Epigravettian. As the Aurignacian presence in the same caves is poorly documented, the late appearance of the UP in the Carpathian area seems plausible.

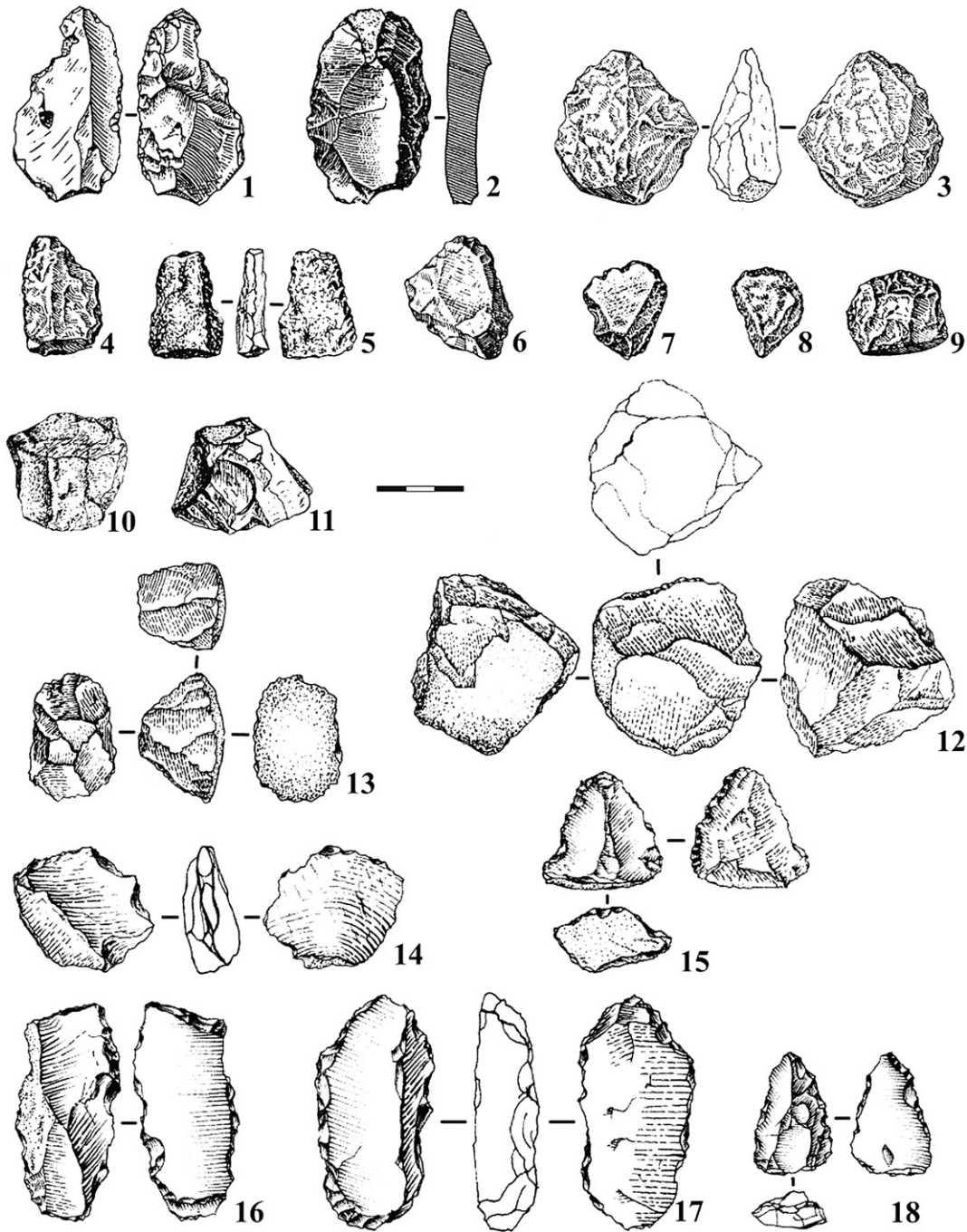
However, the early ages obtained for the AMH finds in the same restricted area (Soficaru et al., 2007; Trinkaus et al., 2009; Doboș et al., 2010), and the possibility that at least one of the ages obtained is actually dating an UP layer (Ohaba-Ponor) is certainly intriguing. Furthermore, most of the Late Mousterian ages involved were obtained through the classical radiocarbon method, with large standard deviations. As recently revealed by Păunescu (2000, 2001), confusion surrounds the location of most of the samples involved, which also regularly contained mixed soil, charcoal and bones. All the dates from Gura-Cheii-Râșnov and the 30 ka uncalBP obtained for the Spurcată Cave come from presumably poorly treated bone samples (Doboș et al., 2010). Summing up, it seems at least prudent to leave the question of a late Mousterian in the Carpathian caves to a proper radiometric validation. A similar caution surrounds the completely undated open air Mousterian occurrences in Oaș-Maramureș (Bitiri, 1972) and Banat (Mogoșanu, 1978), occasionally framed into Würm III on purely stratigraphical observations.

## 5. Transitional industries or taphonomical puzzles?

The survival of the Mousterian technological traditions during the first stages of the UP apparently followed a secondary path, in the form of transitional industries such as the Szeletian, whose extended presence of the Romanian territory was first stated by Nicolăescu-Plopșor (1956). Unfortunately, Nicolăescu-Plopșor had actually attributed all but the Lower Paleolithic bifacial forms in Romania to the Szeletian, thus forming a quite odd, linear evolutionary scheme for the emergence of the UP, involving both a “Mousterian-Szeletian” and a “Szeleto-Aurignacian”. Lacking a clear stratigraphical context, the few isolated foliate points (Fig. 4) found in Transylvania (Jungbert, 1977; Păunescu, 2001) are far from supporting such a strong thesis. However, these thin, biconvex or plano-convex foliate points from the open-air workshops at Iosășel and Cremenea-Sita Buzăului (all surface finds), as well as the bifacial/foliate piece from Spurcată Cave certainly have little in common with the Carpathian Mousterian, generally lacking any systematic use of the bifacial technology (contra Păunescu, 1970). Thus, the presence of an EUP industry with foliate points affiliated or not to the Szeletian is quite possible, although hard to defend given the uneven research in Transylvania (see also Horvath, 2009). A still not defined Middle Paleolithic variant is another possible candidate, as foliates in the only assemblage found *in situ* (Spurcată Cave) actually belong to a fully flake inventory.

The EUP “transitional” or rather “symbiotic” (Borziac, 2008) industries in Romania seem better represented in its Eastern half, particularly in the Middle Prut area, where several assemblages, overtly paralleled to sites on the left bank of the river, are thought

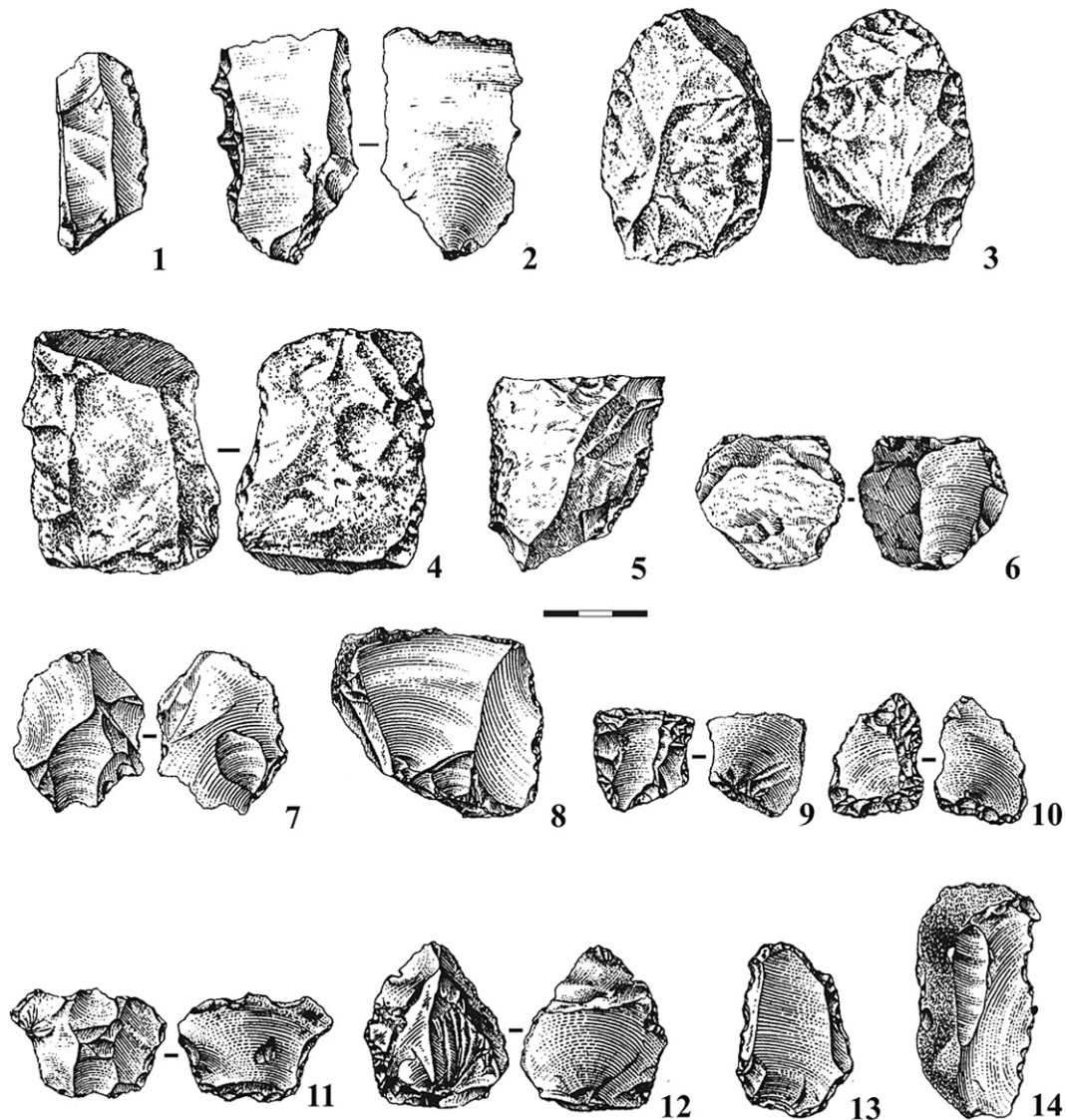




**Fig. 2.** Lithics from Mousterian single layers: 1,2 – sidescrapers, Nandru-Spurcăță Cave (modified after Păunescu, 2001: 260); 3 – bifacial piece, 4,5 – sidescrapers, 6–9 – end-scrapers, 10,11 – cores, Hoților (Herculane) Cave (modified after Mogoșanu, 1978, pp. 28–29); 12,13 – cores, 14–17 – retouched flakes, 18 – retouched point, Gura Cheii-Râșnov Cave (modified after Cârciumar, 2010, pp. 123; 125; 127).

to be more representative for the emergence of the regional UP than the Aurignacian *sensu stricto*. Amounting to a considerable variability, these toolkits usually come from uncertain stratigraphic positions and remained poorly dated. Roughly, they occupied a very large time-span, between 35 and 20 ka uncalBP (usually after 30 ka uncalBP, during the Ohaba-Arcy Interstadial – Cârciumar, 1989, 1999; but see Chirica et al., 1996 and Borziac, 2008, for older estimations) and involved variously defined units (“Mitoc facies”, Brânzeni and Prut “cultures”, Corpaci facies), which contain different frequencies of Mousterian-like elements (Levallois debitage and/or points, sidescrapers, denticulates and

notches), together with leptolithic implements (burins, end-scrapers, truncated pieces) – and a single tool in common, the bifacial foliate point. These industries have been the subject of various comparisons with the local Middle Paleolithic, Aurignacian, Szeletian, Uluzzian/Zwierzyniecian, Streletskian and Gravettian (see Allsworth-Jones, 1986; Chirica et al., 1996; Noiret, 2004, 2009; Kozłowski, 2000, 2004; Borziac, 2008; Horvath, 2009, all with references). Curiously enough, single-layered settlements rarely if ever provided mixed, transitional assemblages. Additional stratigraphic and dating problems force using this data with prudence.



**Fig. 3.** Lithics from “Late Mousterian” layers: 1–5 – sidescrapers, 6–8 – retouched flakes, Nandru – Curată Cave; 9–12 – retouched flakes, 13,14 – sidescrapers, Ohaba Ponor Cave (modified after Păunescu, 2001, pp. 252; 283).

A clear case at point is offered by the so-called “Mitoc facies” (Bitiri and Cârciumar, 1978), defined through the researches from Mitoc-Valea Izvorului on the Middle Prut. The first excavations in this site, located in the proximity of the much better known sequence at Mitoc-Malul Galben, initially described six archaeological layers: five Mousterian layers beneath an UP archaeological horizon, which directly overlaid the last Middle Paleolithic (Nicolăescu-Ploșor and Zaharia, 1959). During the second research stage, the entire lithic collection, scattered on the upper part of the sequence (about 2 m in depth) (Bitiri, 1973) was attributed to a single industry, geochronologically framed into the Ohaba-Arcy Interstadial (Bitiri and Cârciumar, 1978; Cârciumar, 1999). The reported assemblage displayed a technological mixture between flake (including Levallois) and blade knapping, as expressed at least in the almost even percentages of flakes and blades recorded. The typological spectrum included various formal tools (sidescrapers, endscrapers, and borers) and a small amount of bifacial tools, including several foliate points (Fig. 5).

Unfortunately, the doubts regarding the stratigraphical unity of this industry, expressed quite early by Mogoșanu (1983, pp. 40–41), have been reinforced by recent research (Tuffreau et al., 2009),

which identified only two, clearly separated archaeological layers: an Early Middle Paleolithic (around 160 ka BP – OSL) and an undifferentiated UP (26 ka BP – OSL). It should be stressed, however, that each of the later research stages failed in identifying the precise location of the previous excavations, and therefore the hypothesis of a mechanical mixture in some areas remains as plausible as the existence of a truly EUP industry (see also Horvath, 2009, p. 148). It is worth noticing that the recently identified UP assemblage lies in the same reworked, Upper Pleniglacial stratigraphical unit as the Aurignacian and the Gravettian layers from the nearby Mitoc-Malul Galben. On the other hand, the presence of some UP layers with foliate implements is documented in proximity, at Ripiceni-Izvor (Păunescu, 1993). The latter site may therefore suggest a secondary, albeit less likely interpretation to the Mitoc-Valea Izvorului “transitional” industry: much as the supposed “Aurignacian” in Ripiceni, it may represent a totally different, albeit poorly defined technocomplex, the Brânzeni culture (Chirica et al., 1996; Borziac, 2008). The few illustrated lithics are incapable of giving definitive credit to any of the alternative interpretations. Whatever the case, for chronological reasons at least, the “Mitoc facies” cannot document any transitional process.



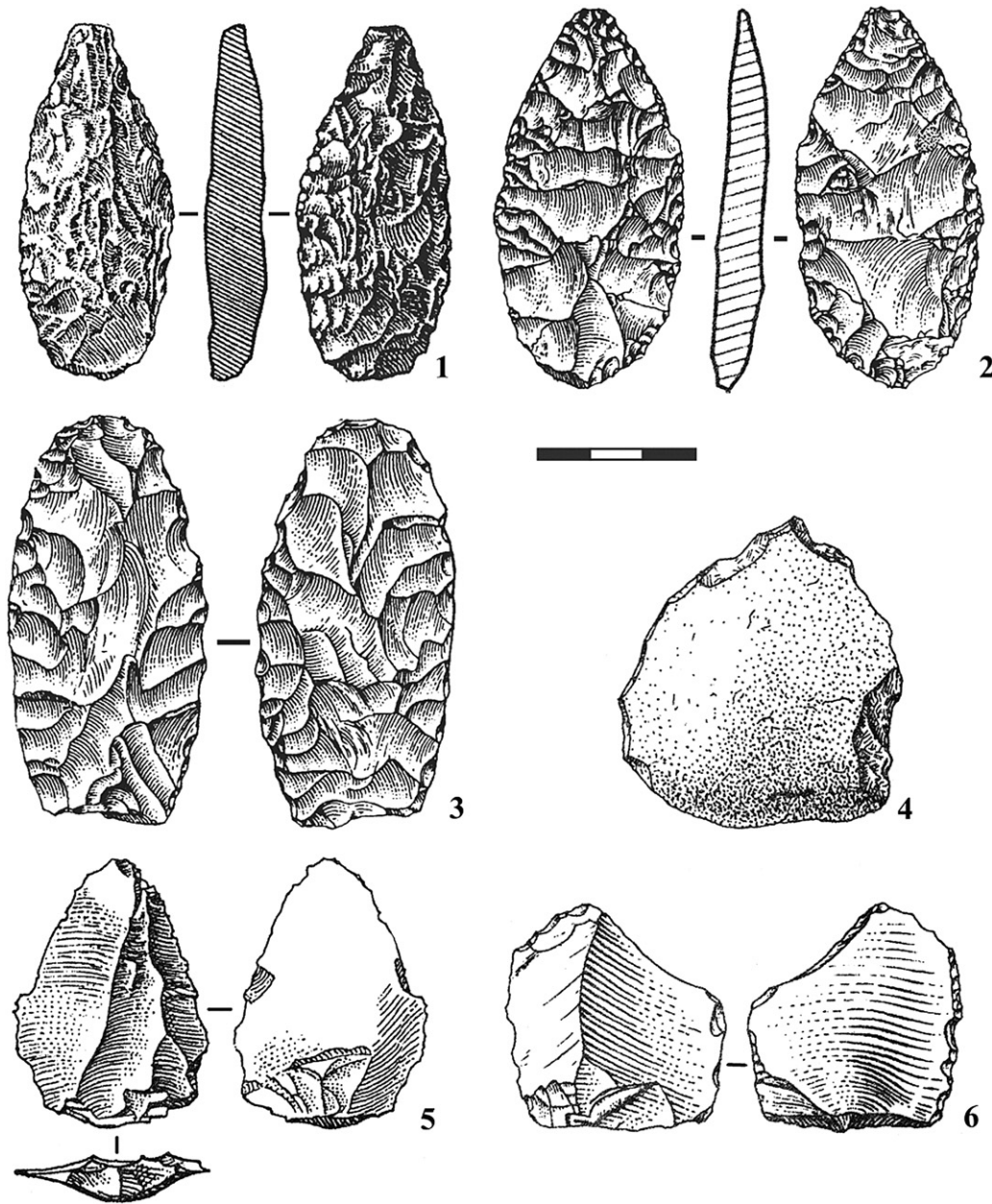


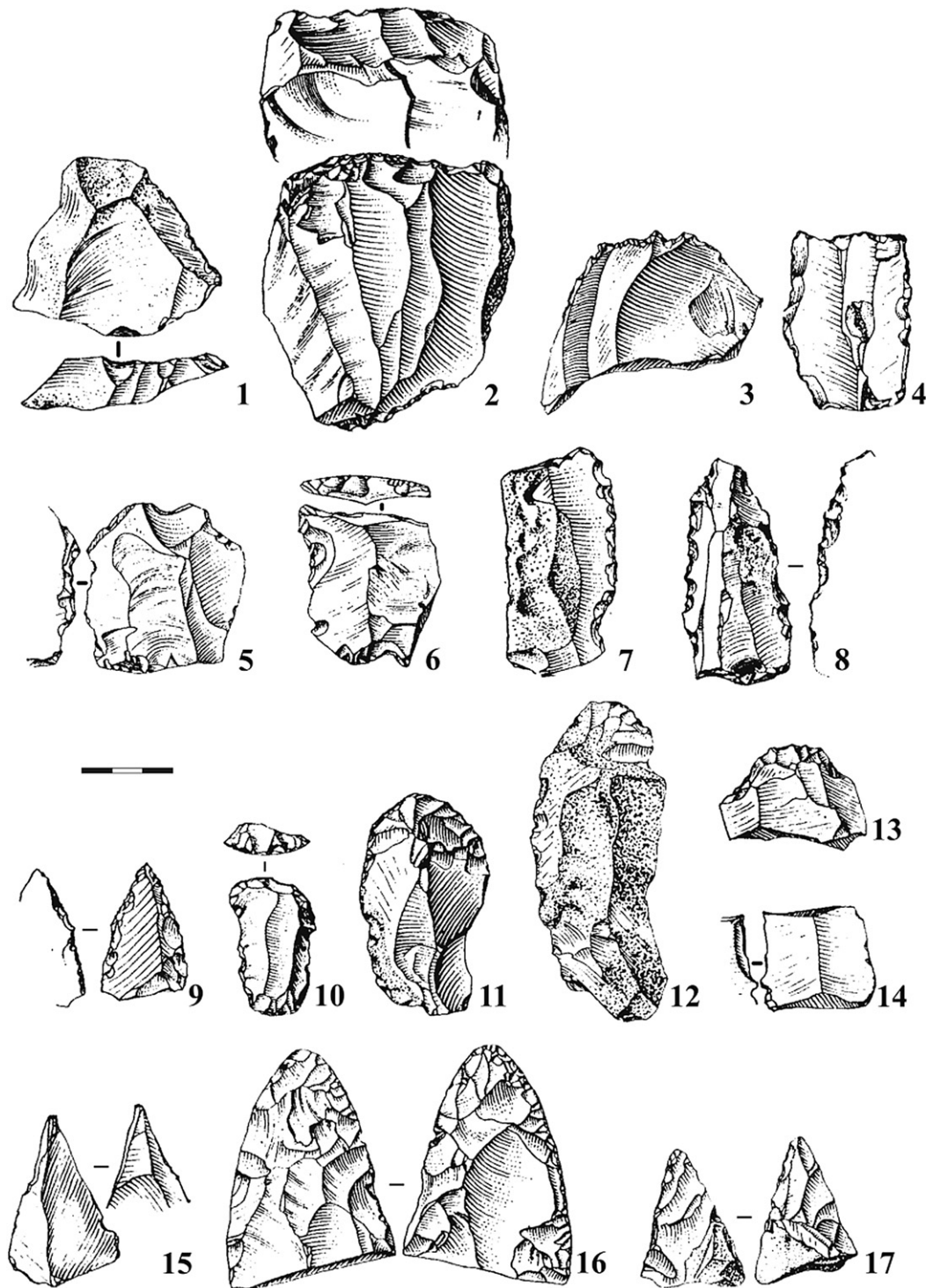
Fig. 4. Surface finds: 1,2 – bifacial pieces/leafpoints, Iosășel; “Late Mousterian”: 3 – leafpoint, 4 – cortical fragment, 5 – Levallois flake, 6 – retouched flake, Nandru-Spurcată Cave (modified after Bitiri, 1965b, p. 434; Păunescu, 2001, pp. 215; 261).

Complicated issues are actually raised by the transitional Brânzeni and Prut “cultures”, and Corpaci facies, defined in the same Middle Prut area. The most significant lithic assemblages involved (Bobulești VI, Brânzeni I, Gordinești I, and Corpaci, level 4) actually come from settlements on the left shore of the river (Moldova Republic); only one settlement is located in Romania (Ripiceni-Izvor), but their geographical proximity, documented chronological range, raw material use (local Cretacic/Buglovia flint) and archaeological implications for the Romanian EUP are worth a brief review in this context.

The assemblage from the eponymous cave in Brânzeni amounts to more than 8500 lithics and displays a technological and typological mixture between Mousterian-type elements (Levallois and foliate points, sidescrapers, notches) and leptolithic features (prismatic cores, blades, burins, endscrapers, Dufour and backed

bladelets) (Chirica et al., 1996; Borziac, 2008). Not only a contamination from the late Gravettian layer above is quite possible at Brânzeni (see Chirica et al., 1996, p. 215, their Fig. 13), but the radiocarbon chronology, exclusively based on bone samples and ranging between 26.5 and 19 ka uncalBP (Borziac, 2008) is astonishingly young. As corroborated by the dates coming from a presumably similar cultural context at Ciuntu rockshelter (21 ka uncalBP, Borziac, 2008), this chronology naturally feeds hesitations regarding the “transitional” status of this facies (Noiret, 2004).

The Prut culture and the Corpaci-type UP display less “archaic” elements, normally reduced to a few sidescrapers and notches (Chirica et al., 1996; Otte et al., 1996a; Kozłowski, 2004; Noiret, 2004; Borziac, 2008). Apart from the consistent blade component and the higher content of UP tool types (regularly including backed



**Fig. 5.** Lithics from the "transitional" single layer in Mitoc-Valea Izvorului: 1 – Levallois flake, 2 – core, 3 – core fragment?, 4–8 – retouched blades, 9 – pointed blade, 10–13 – endscrapers, 14,15 – burins, 16,17 – bifacial pieces (modified after Bitiri and Cărciumaru, 1978, pp. 470; 472–473).

bladelets of Gravettian type), the toolkits attributed to the Prut culture (e.g. Gordinești) also contain elongated bifacial points with round base, and small and triangular leafpoints, very similar to the Streletskian-Sungir points with concave bases. A peculiar feature in Corpaci layer 4 toolkit (about 14,000 lithics according to Borziac, 2008) is the 22 blade crescents, which encouraged its incorporation into a separate evolutionary phylum, the Zwierzyniecian/Uluzzian (Kozłowski, 2000, 2004). While the age of the Prut culture

relies on a single date of 25.5 ka uncalBP (Corpaci), its actual link to the UP in the area remains to be established.

The four "Aurignacian" and four "Gravettian" layers at Ripiceni-Izvor (Păunescu, 1993), though artificially separated in the absence of any intermediate sterile layer, are currently disputed between the three cultural units mentioned above. Much like Brânzeni and presumably from the same taphonomical reasons, the UP sequence of this settlement, better known for the rich Mousterian layers



below, displays a similar technological and typological mixture. As a general rule, the characteristic features – carinated forms, Dufour bladelets – if rightly identified, amount to insignificant percentages (3%) in the “Aurignacian” layers, whereas the already strong flake component increases in the upper, IIa and IIb levels. However, leaving the typological features aside, most of the cores (25) found along the entire sequence display clear UP features (Horvath, 2009, p. 148). A constant presence of biconvex foliate forms, including several triangular/concave base Sungir points has also been noted along the “Aurignacian” sequence (Fig. 6). As the stratigraphical interface separating them is unclear, it comes less as a surprise that at least the “Aurignacian” II and the “Gravettian” I are virtually indistinguishable from a techno-typological point of view (see Păunescu, 1993, his Figs. 95 and 98; Noiret, 2004, p. 439). The “Gravettian” sequence simply displays a stronger leptolithic

component, a few backed implements, associated with several foliate implements. Unfortunately, the entire chronology of the UP here hangs on a 28 ka uncalBP age coming from the Aurignacian Ib.

The poor stratigraphical resolution, the partial publication and the missing chronology leaves the intriguing UP sequence here open to contradictory interpretations. Defending the Mitoc-Valea Izvorului facies, some authors included both the upper Mousterian layers (V and VI) and the “Aurignacian” here into this supposedly transitional phenomenon (Bitiri and Cârciumar, 1978). While the “Aurignacian” I was also connected to the Brânzeni culture, the “Aurignacian” layer IIb has been in turn attributed to the Prut culture, granting the presence of the triangular bifacial points with concave bases (Chirica et al., 1996; Otte et al., 1996a; Cohen and Stepanchuk, 1999; Noiret, 2004; Borziac, 2008). The incorporation of the same Aurignacian layer IIb into the

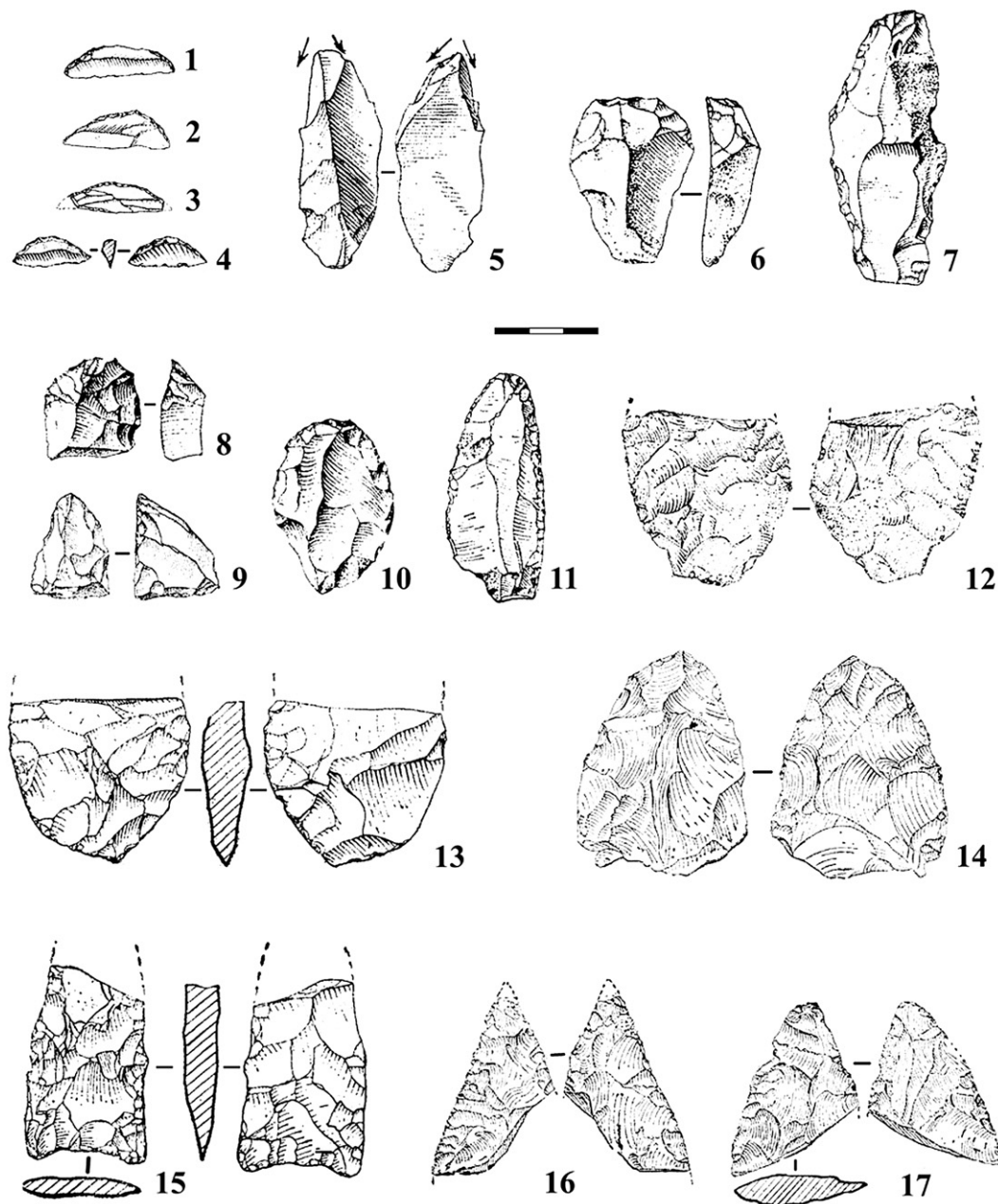


Fig. 6. Lithics from the Aurignacian (IIb) layer in Ripiceni-Izvor: 1–4 – “lunates”; 5 – burin; 6–10 – endscrapers; 11 – retouched blade; 12–14 – bifacial pieces/cores?; 15–17 – bifacial points (modified after Păunescu, 1993, p. 150).



Zwierzyniecian, on the base of 4 lunates found, raise serious doubts: while the taphonomical integrity of the eponymous site is questionable (Kozłowski, 2004; Sítlivy and Zięba, 2006), the microlithic component of the Ripiceni layer involved is much more consistent (Horvath, 2009). However, the analogies of Ripiceni “Aurignacian” II with the Corpaci I, layer 4 are indeed strong, irrespective of the differences recorded in the blade vs. flake component between the two assemblages. The considerably younger chronology of the layer IV in Corpaci (25.5 ka BP) provides a reasonable timeframe for the “Aurignacian” IIa and IIb in Ripiceni and probably a *terminus post quem* for the “Gravettian” there. In sum, the technological and typological features of all these layers have certainly nothing in common with the Aurignacian, while the Zwierzyniecian is at best a debatable proxy. They rather seem to point to a regional Mid Upper Paleolithic tradition with foliate points.

Amassing all the industries attributed to Brânzeni and Prut cultures into a single unit, an all-encompassing redefined Prut culture (e.g. Allsworth-Jones, 1986; Noiret, 2004), while pragmatic from the point of view of the numerical chronology available (at best, younger than 28 ka uncalBP) can only be provisional, given the strong empirical differences among them, particularly in what concerns the shape of the foliate points and the variable amount of Levallois vs. leptolithic/microlithic component. For instance, the quantity of Mousterian-like implements in the Brânzeni EUP layer is much more consistent (Borziac, 2008, p. 65) than is generally acknowledged (Noiret, 2004, p. 438). Certainly, a better clarification can only be achieved after a throughout technological reassessment of the lithic collections and the abandonment of the so far futile typological game-playing. With the current knowledge, however, both the documented chronology and the possible analogies further East (Sungir) inevitably rejects at least the Aurignacian II at Ripiceni from the EUP timeframe (see also Noiret, 2004), while the alleged pre-Hengelo age of the Brânzeni culture, including the lower “Aurignacian” layers at Ripiceni (Borziac, 2008), awaits for a better substantiation.

## 6. The Aurignacian

A deeper reconsideration of the Aurignacian in Romania has been proposed by two of the present authors (Anghelinu and Niță, submitted for publication). Even a brief review of the Romanian literature would leave the impression that the Aurignacian is the most widespread technocomplex of the Romanian UP, both in time and space. The Aurignacian seems to set off most of the UP sequences in northwestern and southwestern Romania, in the Carpathian caves, in the open air sites from the Prut, Bistrița and Danube valleys. According to many authors (Mogoșanu, 1978; Alexandrescu, 1997; Cârciumar, 1999; Păunescu, 2000; Alexandrescu et al., 2004; Borziac et al., 2006; Borziac, 2008) using both numerical chronology and geochronological estimates, it also survived alongside the Late Mousterian and Gravettian, at times to the Tardiglacial.

This geographical extension and bizarre chronology owes much to the very vague definition of the Aurignacian in the Romanian literature. Its assumed position as the first UP complex made this technocomplex very vulnerable to a “transitional” status, already obvious in the descriptions of the “Early Aurignacian” from the 1950s (Nicolăescu-Plopșor, 1956; Nicolăescu-Plopșor et al., 1966), and reiterated (e.g. the “Aurignacian” at Ripiceni-Izvor, Păunescu, 1993; the “Aurignacian with bifacial forms” in Eastern Romania and Moldova Republic, Borziac, 2008). To put it bluntly, the Aurignacian in Romania encompasses not only any blade-dominated assemblage between a certain Mousterian and an equally undisputable Gravettian toolkit, in longer archaeological sequences, but

also any isolated laminar industry missing characteristic tools, including the Aurignacian ones. In the rare instances when “typical” tools were identified (e.g. carinated items, intensively retouched large blades), misunderstood technology and typology notions played their part in further puzzling the already biased lithic collections. For instance, there was no clear attempt at differentiating between carinated tools (endscrapers, burins) and carinated cores (*sensu* Demidenko et al., 1998). The improper excavation methods often used (absence of dry or wet sieving, employment of untrained workers) severely affected the recovering of microlithic items (e.g. retouched bladelets). Not only the amount, but also the characteristics of bladelet production remain difficult to assess: when retouched bladelets were found, they were labeled as Dufour, thus including into the same category small laminar blanks with straight, curved, or twisted profile, partially or completely modified through direct, inverse, or alternate semi-abrupt retouch.

For the purpose of the present analysis, a more operational definition of the Aurignacian is favoured, hereafter understood as a fully laminar industry, generally dated between 36.5 and 28 ka uncalBP, exhibiting systematic bladelet production from carinated forms, associated to heavily retouched blades and common UP formal tools (burins, endscrapers). Unfortunately, the fragmented state of most of the collections makes it impossible to assess the actual occurrence of marginally retouched bladelets or typical bone industry, both vital for an accurate identification of any Aurignacian-related industry (Teyssandier and Liolios, 2003, 2008; Liolios, 2006; Lucas, 2006). Although admittedly generous, this understanding of the Aurignacian seems nevertheless much narrower than the one available in the Romanian literature.

Applying this definition instantly eliminates from the picture many of the supposed Aurignacian sites. The first are the lower layers at Cetățica I and Dârțu (Ceahlău Basin, North-Eastern Romania) (Nicolăescu-Plopșor et al., 1966), which offered small collections of large blades and UP formal tools, together with few bifacial forms at Cetățica I, and unexpectedly young dates (ranging between 26 and 21 ka uncalBP) (Păunescu, 1998). The almost exclusive use of local raw materials and the macrolithic aspect of these small toolkits, if not due to excavation or recording biases, separate empirically these layers from the more consistent Gravettian layers above. However, they display no consistent Aurignacian features, apart from the few thick, but not carinated endscrapers in Dârțu (layers 1 and 2). The actual content of the “Pre-Aurignacian” (level I) collection from the nearby site Bistrițioara I, together with its new AMS chronology (26 ka uncalBP) support its new attribution to the Gravettian (Steguweit et al., 2009). The same arguments apply to the supposed Aurignacian at Podiș (layer 1). However, the much older AMS age estimation (30–35 ka uncalBP) (Steguweit et al., 2009) of the lower part of the geological sequence in Dârțu, coming from a survey sampling unfortunately lacking an archaeological context, supports the existence of a still undefined UP layer there.

Although the Ripiceni-Izvor “Aurignacian” have been dismissed, early research in the nearby cave of Stâncă-Ripiceni (Moroșan, 1938), now completely destroyed by limestone exploitation, revealed in the oldest layer (1) an assemblage lacking bifacial forms, with few prismatic and rabot-like cores, endscrapers, burins, large blades, mostly unretouched bladelets, and several bone awls. An Aurignacian attribution seems likely, although impossible to substantiate.

The only securely documented Aurignacian presence on the Romanian Prut shore comes from the long geological and archaeological sequence from Mitoc-Malul Galben, which comprises five assemblages attributed to the Aurignacian, consistently dated between 32.7 and 27.5 ka uncalBP (Otte et al., 2007). All the

Aurignacian occupations here mirror workshop activity correlated to the export of blade and bladelet blanks. The assemblages are mainly composed of flakes, burin spalls, prismatic and sub-prismatic cores, but also of an important number of endscrapers, burins and carinated burins on flakes or blades (Fig. 7). The formal typology is dominated by retouched flakes (lower Aurignacian level), burins and simple endscrapers (Aurignacian levels I and II) or mainly endscrapers (Aurignacian III). Despite the lack of Dufour bladelets *in situ*, both the content and the chronology of these lithic toolkits clearly support the Aurignacian identification, further

reinforced by the two reindeer antler points found, at least one conforming to the Mladec type.

A further relevant area seems to be southeastern Transylvania, where large, both surface and excavated collections from two locations near Cremenea (Poienița, Malul Dinu Buzea), include some carinated cores, a great number of burins, but only a few Dufour bladelets (Păunescu, 2001; Horvath, 2009). The actual chronology of these finds remains unknown.

The Aurignacian-called assemblages recovered from the Carpathian caves raise another set of problems. These usually very

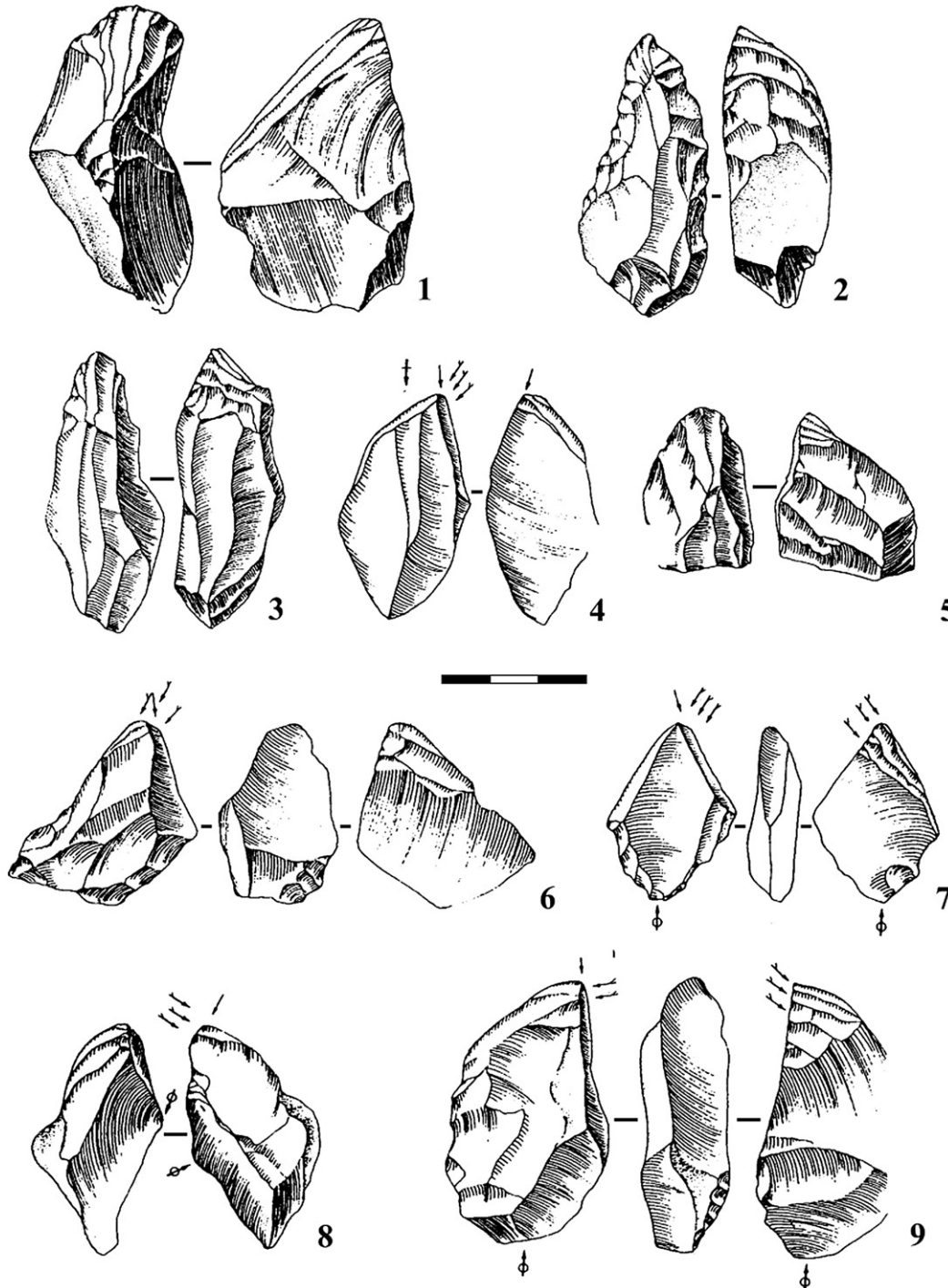
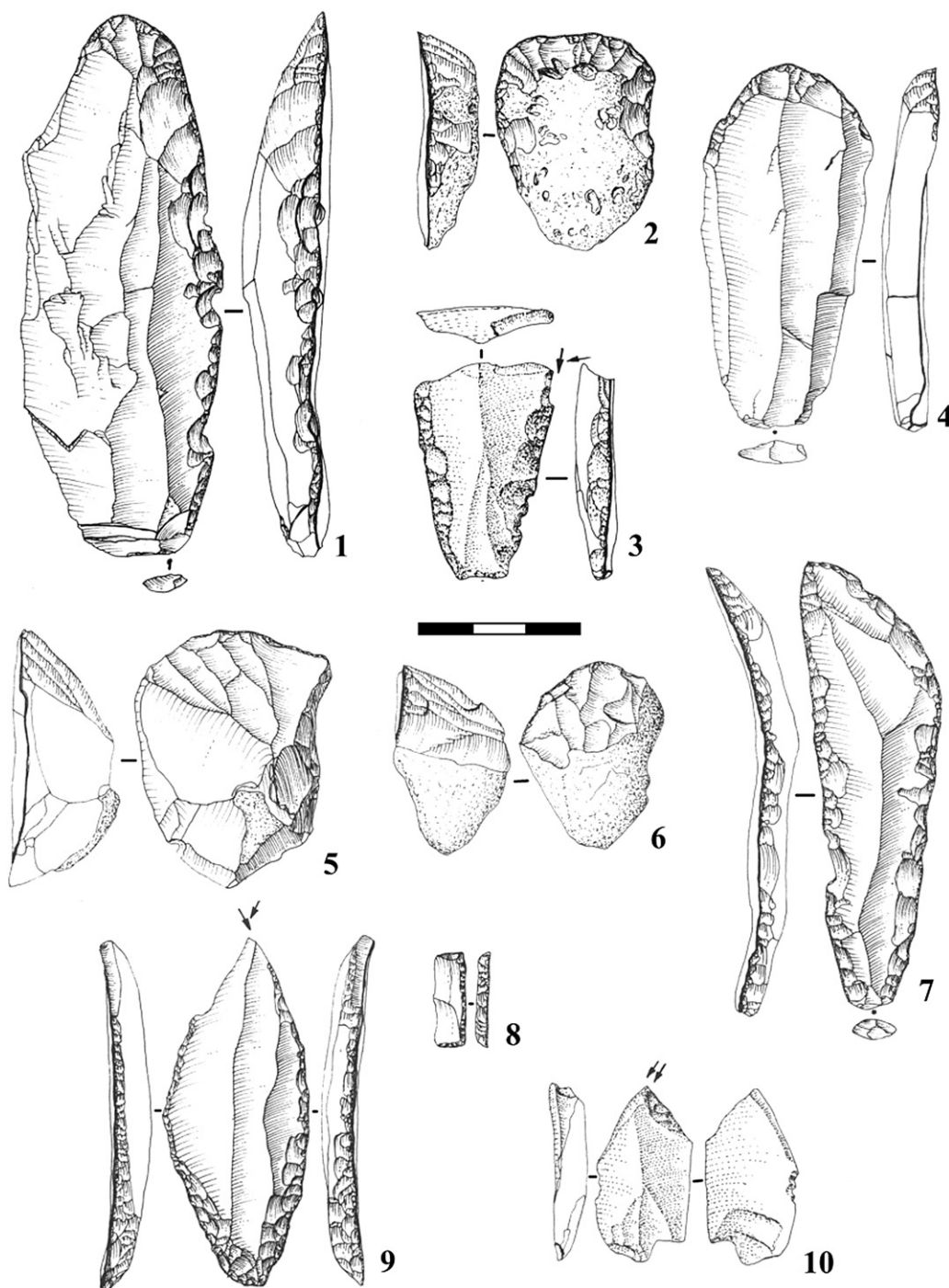


Fig. 7. Lithics from Aurignacian layers in Mitoc-Malul Galben: 1–9—bladelet cores (modified after Chirica, 2001, pp. 171; 173)

small toolkits – 54 lithics at Gura-Cheii Râşnov, 173 at Mare-Moeci, 60 at Muierilor-Baia de Fier, 18 at Ohaba Ponor, 20 at Cioclovina and 15 at Hoţilor-Herculane (Păunescu, 2000, 2001) – consist mainly of simple, sometimes retouched blades, rarely transformed into common UP formal tools. The only exception is the high altitude (950 m) Mare-Moeci Cave assemblage, where a few carinated pieces and Dufour bladelets were mentioned (Păunescu, 2001, pp. 325–327). In spite of the generally good faunal preservation, only the Muierilor Cave layer provided some worked bones (awls, a fragmented point?), which can be connected to

a likely Aurignacian layer there (see Hahn, 1977, Taf. 152; Doboş et al., 2010). With the exception of the already mentioned sample from Ohaba Ponor UP layer and the  $25,940 \pm 230$  uncalBP from Hoţilor-Herculane (Păunescu, 2001, p. 142), the chronology of these undifferentiated UP toolkits remains currently unknown, but normally younger than the “Late Mousterian” discussed above.

The Aurignacian presence seemed apparently better sustained in some open air sites along the Danube Valley: Vădastra, Ciurpereni, Nicolae Bălcescu, Giurgiu-Malu Roşu (Alexandrescu, 1997; Păunescu, 2000). These sites provided occasionally large collections



**Fig. 8.** Lithics from Aurignacian layers in Oaş: 1,2 – endscrapers; 3 – retouched blade/burin? (Remetea Şomoş); 4–6 – endscrapers; 7 – retouched blade; 8 – retouched bladelet; 9,10 – burins (Călineşti III) (modified after Hahn, 1977, Taf. 158–159).



(60,000 in the lithic workshop at Giurgiu-Malu Roşu, for instance), usually with a very small percentage of formal tools. However, pooling all of them together seems as hasty as their identification as Aurignacian: neither the Giurgiu-Malu Roşu, nor Ciuperceni (2179 lithics) (Păunescu, 2000, pp. 236–242), nor Nicolae Bălcescu (309 lithics) (Păunescu, 2000, p. 104) published toolkits display any particular Aurignacian feature, except for a well-mastered, but mainly bipolar laminar technology at Ciuperceni. The occasional presence of a few carinated items in Vădastra collection has to be noticed, however. Unfortunately, the only numerical dates available

from Giurgiu are unexpectedly young: 21–23 ka uncalBP (radio-carbon) corroborated by a 26 ka (OSL) sample from the underlying loess deposit (Alexandrescu et al., 2004), thus excluding at least Giurgiu-Malu Roşu from the EUP timeframe, and from the Aurignacian technocomplex as defined above (contra Alexandrescu et al., 2004).

Another cluster of six Paleolithic sites, unfortunately lacking both chronology and well-preserved stratigraphical contexts, is located in northwestern Romania (Oaş and Maramureş lowlands), on highly eroded terraces (Dobrescu, 2008). As some collections

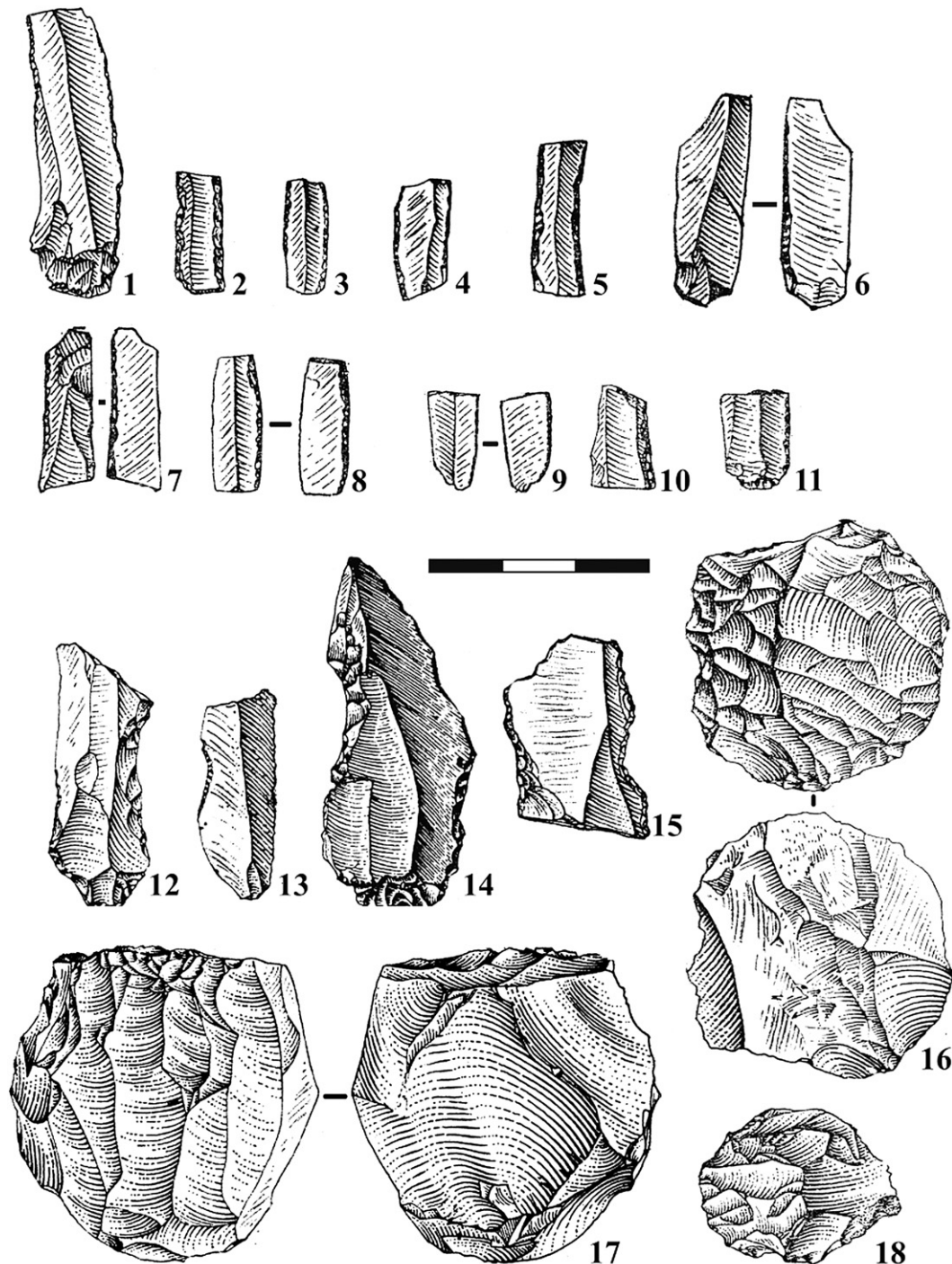


Fig. 9. Lithics from the Aurignacian layer in Tincova: 1–11 – Dufour bladelets; 12–15 – retouched blades; 16–18 – bladelet cores (modified after Mogoşanu, 1978, pp. 41; 46–47).

were not available for study (Călinești I, II, Remetea-Șomoș), and another (Boinești) is still undergoing a technological analysis (Dobrescu, pers. comm. to L. N., 2010), only a few aspects can be mentioned about their main characteristics. Most Aurignacian layers are restricted to an average depth of 50 cm below the surface, directly underlying thin Gravettian layers. The lithic collections represent nearly all stages of a unique operational sequence aimed at producing laminar blanks (Fig. 8) and range between 130 and 1808 items. The cores are various sized blocks or pebbles, with one striking platform and wide flaking surfaces. Usually, blades and bladelets are thick and large, straight or slightly curved, sometimes directly or inversely retouched (*écailleuse* retouch). Burins, carinated endscrapers, lateral/convergent sidescrapers on both blades and large flakes were also found. A small amount of the debitage, limited to homogenous good quality raw materials, such as jasper or obsidian, qualifies as bladelet production.

An undisputable Aurignacian presence was also noticed in the heavily eroded loessic deposits from the southwestern part of Romania (Banat). The sites at Tincova, Coșava and Românești-Dumbrăvița (Mogoșanu, 1978) provided medium to large collections, and given their special location, close to the Oase cave, but also their cultural peculiarities, they deserve special attention.

Recent debates on the definition of the Aurignacian have usually involved Tincova (Teyssandier, 2006, 2007, 2008; Zilhão, 2006). This single-layered workshop, where mostly poor quality opal was exploited, contained 2494 artifacts: 2015 waste products (fragments, flakes, and cores), 369 blades and bladelets, and 110 tools (Mogoșanu, 1978) (Fig. 9). The toolkit is dominated by endscrapers (31), but also comprises carinated, nosed, core-like forms, rabots (all in all 12 items) and 22 Dufour bladelets. Three Font Yves points were also found. Burins, mostly dihedral, are rare (8) and little is known about cores: 2 prismatic, 1 pyramidal, 7 globular, 55 core fragments and formless (Păunescu, 2001). In addition, 12 carinated

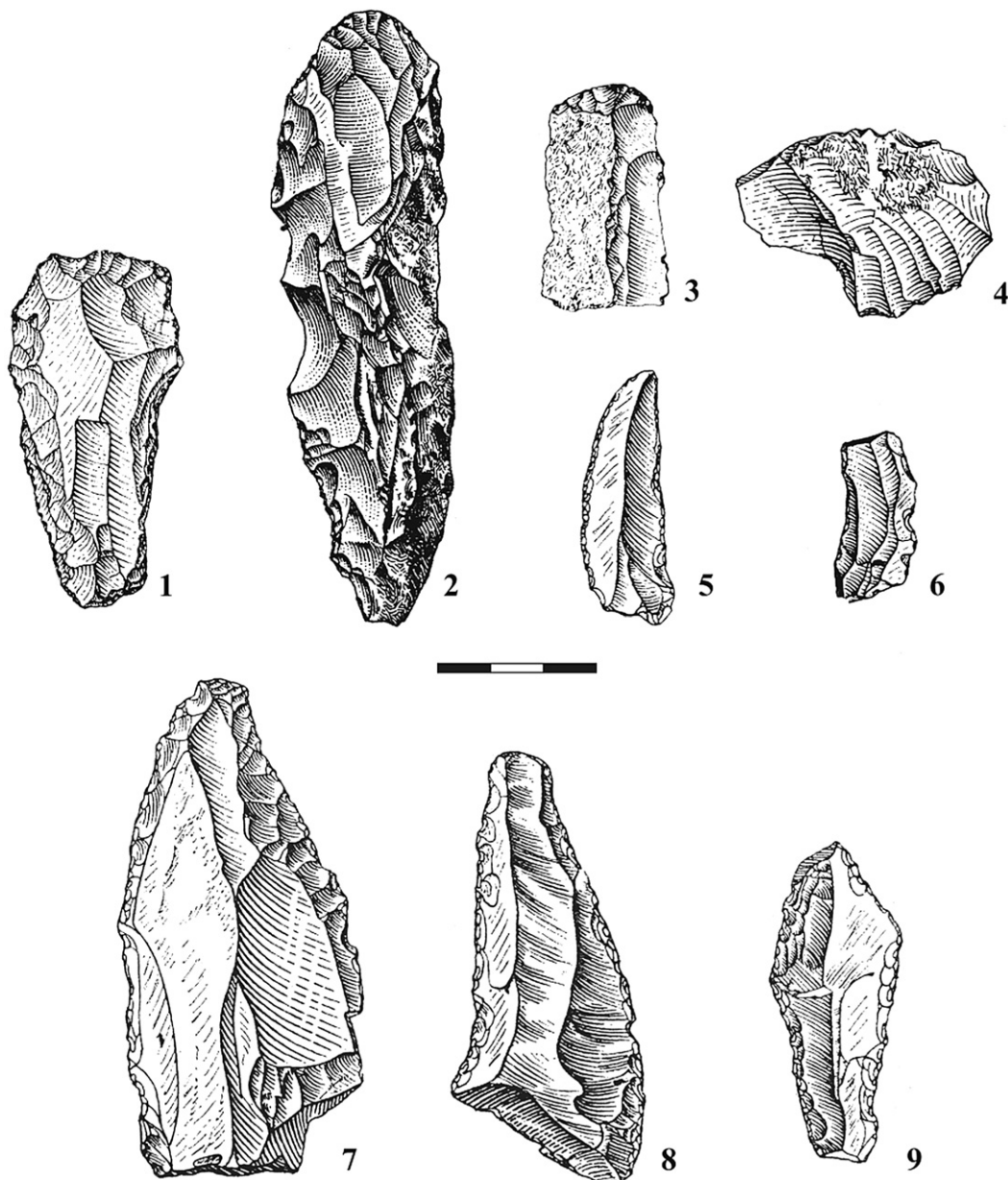


Fig. 10. Lithics from Aurignacian layers in Coșava: 1–4 – endscrapers; 5–9 – retouched blades (modified after Mogoșanu, 1978, pp. 76–77; 79).



pieces/cores (including atypical, nosed, core-like and *rabot*) partially illustrated in earlier publications (Mogoşanu, 1978, Fig. 16; Hahn, 1977, Taf. 170, 9.10) were also recorded during the recent reexamination.

Coşava yielded three UP assemblages, of which at least the two lowermost levels comprise Aurignacian tools without mixtures (Fig. 10). The most representative level I contains 116 tools, and in contrast to Tincova, this toolkit is dominated by carinated and nosed endscrapers, associated with abundant retouched blades,

including 10 Aurignacian blades (e.g. strangled, notched and denticulated), rare dihedral burins, a single Dufour bladelet and one Font Yves point. Level II comprises 56 tools with a similar composition: a high frequency of endscrapers, particularly carinated, a limited number of dihedral burins and a single Dufour bladelet. Uppermost level III (24 tools) contains Aurignacian types (5 Dufour, 2 carinates and a single Font Yves point) as well as some Epi-Paleolithic elements (e.g. thumbnail endscrapers, 2 obsidian blades).

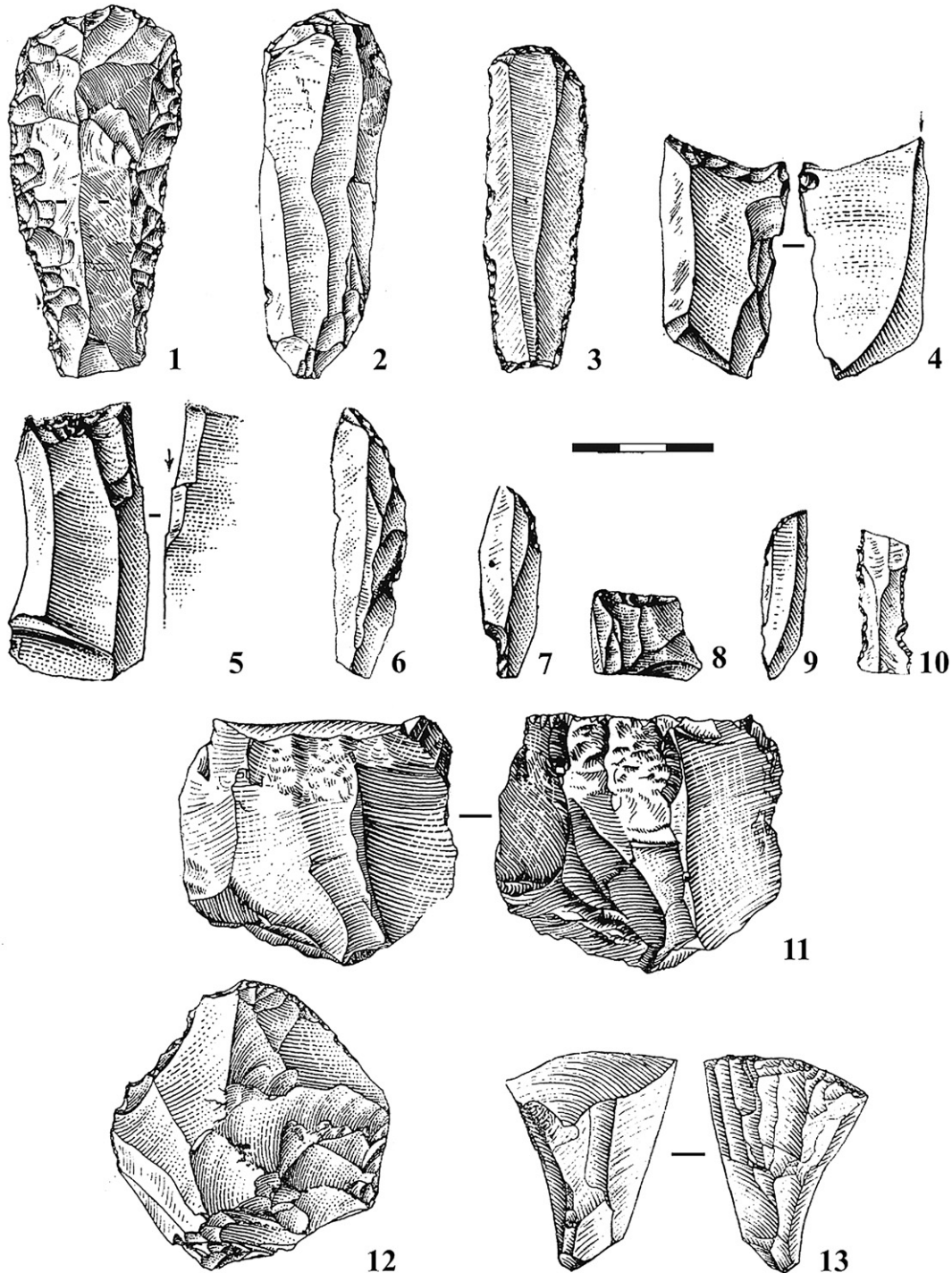


Fig. 11. Lithics from Aurignacian layers in Româneşti: 1–3 – endscrapers; 4,5 – burins; 6–8 – retouched blades; 9,10 – retouched bladelets; 11–13 – cores (modified after Mogoşanu, 1978, pp. 58–59; 63; 65).



At Românești-Dumbrăvița I, the Aurignacian (levels II, III, IV and V) is sandwiched between “Quartzite Mousterian” and a thin Gravettian level. The richest assemblage (>5000 pieces, including 114 tools) was recovered from level III (Fig. 11). Endscrapers, including many Aurignacian types, amount to 51 pieces and predominate over burins (26, including 18 dihedral types), and are associated with 8 Dufour bladelets and some retouched blades (5 of which are Aurignacian). Among the 77 cores mentioned by Păunescu (2001), there are 14 prismatic single/double platform cores, 8 pyramidal, 25 globular and 30 formless and fragments. Level IV differs from the previous one in the presence of truncated blades/flakes and a decrease in the frequency of endscrapers, with a corresponding increase in burins. Aurignacian artifacts become less common and Dufour bladelets are absent. Level V has several clustered workshops and offered an assemblage rich in knapping waste and few tools (39), with a composition statistically dominated by burins. Aurignacian pieces are less common. The neighboring Românești-Dumbrăvița II spot yielded small workshop clusters, which correspond stratigraphically to level V of the first location.

The initial excavator, Fl. Mogoșanu, had promptly noted the similarities between Tincova, Coșava, level I, Românești-Dumbrăvița I, level III, and the UP collection at Krems-Hundssteig (Austria). Unfortunately, much like Krems, these Aurignacian assemblages remain currently undated. Based on pollen analyses (Mogoșanu, 1978; Cărciumaru, 1989, 1999), the Banat Aurignacian appeared unusually late: Tincova was correlated to Herculane I (Tursac), and level III in Românești was placed at the beginning of the Late Glacial (Herculane II/Laugerie). Given the lack of numerical dates for these short sequences, this interpretation, which overtly contradicts the content of the lithic collections (see also Chirica et al., 1996), asks for further investigation. Some recent reassessments (Bălțean, 2011a, 2011b) of most of the UP layers involved (Tincova, Românești-Dumbrăvița layers II–III, and Coșava layers I–II) point to the similarity between their lithic technology and the Proto-Aurignacian. In the absence of direct radiocarbon support, the chronology of Românești-Dumbrăvița layer I and Tincova was thus estimated to reach the Hengelo-Arcy interstadial (Bălțean, 2011a). Moreover, various data recently gathered during the research project running in this area from 2009 concur in suggesting an older chronology for the Aurignacian phenomenon in Banat (Sitlivy et al., in preparation).

## 7. Discussion and conclusions

Strangely enough, the early AMH found in Romanian Carpathian caves seem destined to stay isolated for the moment. Although tempting, the association between the *Homo sapiens* finds in Cioclovina, Muierilor and Oase caves and any particular EUP cultural phenomena cannot be firmly made with the data at hand. On the contrary, the chrono-stratigraphical framework available today in Romania gives the impression of one of the most delayed manifestations recorded for the emergence of the UP in Europe, on both geochronological and radiometric grounds. Most of the archaeological contexts attributed to the EUP in Romania are thought to be considerably younger than the Mitoc-Malul Galben typical, albeit very late Aurignacian (32.7 ka uncalBP). In the same time, the widely avowed idea of a gradual transition to the UP lacks a proper, stratigraphically secure support: across Romania, all settlements providing single or clearly separated layers documented either typically MP or purely UP industries. No single-layered transitional industries have been actually identified. Corroborating these facts, two plausible scenarios can be forwarded.

According to the first, and following strictly the currently available data, the UP in Romania appears indeed entirely allogeous and generally late, thus leaving potential room for a longer survival of the local MP traditions in various areas such as the Carpathian caves or the Middle Prut valley. For unclear reasons, these retarded Mousterian-based communities disappeared and had been replaced by unrelated, fully UP traditions only sometimes after 30 ka BP. However, this picture disregards many aspects, such as the early presence on AMH in Southwestern Romania, the lack of accurately dated late Mousterian sites and the possible, though poorly sustained existence of some older “transitional” industries (Szeletian, Brănzeni/Ripiceni). Most importantly, this image defies most of the acknowledged scenarios for the earlier appearance of the UP involving both the Middle East, the Balkans, the Central and Eastern Europe, areas for which Romania naturally acts like a geographical crossroads. Given the better known EUP archaeological record in the surrounding European areas, such uniqueness looks rather suspicious. It is the authors’ impression that this original landscape has more to do with research and preservation biases than with the very nature of the transition to the UP in Romania. This qualm encourages proposition of a more likely, though less straightforward scenario, which may also serve as a rough blueprint for further research on the EUP in Romania.

The first step needed for a proper evaluation of the emergence of the UP in Romania can only be attempted in relation to the cultural dynamics in the neighboring areas, provided that few basic biogeographical markers are kept in mind (for a similar argument, see Dobosi, 2000). Given the variety of geographical settings and ecozones, the orientation of the natural communication ways (e.g. main river systems), generally used in landscape orientation by hunter-gatherers (Kelly, 2003), and particularly the prominent barrier of the Carpathian mountain chain (see also Djindjian, 2000; Anghelinu and Niță, submitted for publication), it seems very likely that the emergence of the UP in Romania experienced different cultural-evolutionary rhythms, naturally connected to the adjacent areas displaying roughly similar topographical and ecological conditions during the MIS 3. Although not impossible, maintaining consistent communication and demographic networks across Carpathians must have been likely difficult for the Late Pleistocene hunter-gatherers. On the other hand, the wide eastern opening towards the steppes north of the Black Sea, much as Western Transylvania’s aperture towards the Carpathian Basin and Central Europe, are as obvious as the hub effect Danube maintains for Southern Romania and Northern Balkans. As later prehistoric (e.g. Gravettian, Neolithic) cultural development suggests, autonomous cultural trajectories could be anticipated for these admittedly roughly defined areas. The expected cultural segregation suggested is only partially reflected in the current knowledge, given the uneven research the various areas of Romania have benefited from, but also the differential state of preservation of the archaeological sites.

However, the best proxy available, the pattern of lithic raw material circulation, when not reduced to the strictly locally available raw material, documents at least in the most intensively studied part, the East Carpathian, the suggested eastern connection (Noiret, 2004; Borziac, 2008). The plethora of LMP/EUP industries from nearby Moldova, Ukraine (including Crimea) and Russia (Chabai et al., 2004; Vishnyatsky and Nehoroshev, 2004; Demidenko, 2008) supplies a likely model for open, East-Carpathian EUP, namely the consistent presence of bifacial/flake-based EUP assemblages and a quite late and sparse Aurignacian presence. The only securely dated and accurately defined Aurignacian on Eastern Romania, at Mitoc-Malul Galben, although still isolated, supports this working hypothesis. In the present knowledge, however, the connection between the mid Upper Paleolithic

industries with bifacial implements (e.g. Ripiceni-Izvor) and the local Mousterian is simply missing.

Unfortunately, most research in Eastern Romania concentrated in the Middle Prut, an area dominated by large workshops for the exploitation of the local, good quality flint. Thus, the dominant function of the known settlements and the homogenous local raw material provided a peculiar noise, leading to an averaging effect on the UP industries in the area. The failure of all typologically based approaches facing these knapping waste/flake dominated assemblages is understandable. Another bias, at least in relation to the Western and Central European taxonomical framework, which was obviously also pursued here, stands in the functional nature of Eastern European open air sites, often (but not always) associated with short stops, killing and butchering sites, and occasionally dominated by abundant and expedient, sometimes bifacial tools (Hoffecker, 2011). However, the taxonomical differences separating the Western European or Middle East UP frameworks from their Eastern European counterparts are not related mainly to functional/accumulation noise; nor can these dissonances be solved by simply forcing the labeling in order to fit a paradigmatic succession to an actually very different empirical content. While better results can certainly be attained with the identification of both more distant and functionally different locales of the contemporary settlement networks, regional variability in both function and style is still to be expected.

The EUP in Southern Romania raises different issues. No transitional assemblages or properly documented Aurignacian settlements have been identified between the Danube and the Black Sea (Dobrudja) (Păunescu, 1999b) or generally along the Romanian Danube sector. While the young chronology of some UP settlements (e.g. Giurgiu-Malu Roșu) points to an interesting phenomenon already noticed further east, on the northern shore of the Black Sea (Zwyns, 2004; Demidenko, 2008), the absence of Gravettian and the late revival of some Aurignacian reduction strategies, none of the EUP phenomena documented in Bulgaria (e.g. Kozarnika, Temnata, Bacho-Kiro) has a counterpart on the North-Danube shore. Climatic causes, insufficient field research or the loess deposits covering the monotonous landscape of the Romanian Plain are equally likely explanations for this, at least in part artificial, Danubian border.

The last impression is reinforced by the recent issues raised by the Banat Aurignacian, missing any connection to the local Mousterian and whose likely southern origin naturally involves crossing both the Danube and the Carpathians. An older hypothesis concerning the chronological position of the Aurignacian in Banat has recently regained support. For Hahn (1977), the Tincova assemblage appeared very similar to the Western Proto-Aurignacian, a feature which was again pointed out more recently (Teysandier, 2003; Zilhão, 2006; Bălțean, 2011a). The Proto-Aurignacian assemblages are characterized by the production of elongated bladelets with straight profiles, through a continuous blade/bladelet core reduction strategy. These bladelets were modified by marginal retouch either into bilaterally retouched Krems/Font Yves points, or through alternate retouch into Dufour bladelets (Dufour sub-type). Lithic technology at Tincova was also compared to the original assemblage at Kozarnika, level VII (Bulgaria), which is as old as 39–36 ka uncalBP (Tsanova, 2006), and consequently to the Early Ahmarian (Teysandier, 2008). As the Proto-Aurignacian assemblages were dated in excess of 36.5 ka uncalBP, demonstrating this analogy would reinstate the chronological boundary of the EUP in Southwestern Romania to a much older age.

However, recent data coming from the ongoing lithic studies on the Banat old assemblages as well as from the recently excavated material seem to suggest that all Banat settlements, including Tincova, rather lie within the framework of a more “classical”

Aurignacian variability, on both technological and typological grounds (Sitlivy et al., in preparation). Irrespective of the chronology involved, new settlements belonging to this cultural aspect should be found at least further north, as the closest similar association is reported in Krems (Teysandier, 2007, 2008). Notably, the poorly researched western flank of the Romanian Western Carpathians provides similar topographical settings to the Banat documented occurrences. Unfortunately, with the exception of its fringes (Oaş-Maramureș, Southern Carpathian caves, Banat) Transylvania represents a white spot on the Romanian EUP map, a feature which is certainly due to the lack of systematic field research (see also Horvath, 2009).

To conclude, the uneven EUP image available today in Romania clearly asks for further researches. Anyway, as this reassessment shows, the analysis of old collections, especially when based on the available literature and not on the reappraisal of the collections themselves, demands caution, as the poor initial database can severely affect the final outcome of some otherwise innovative approaches (e.g. Riel-Salvatore et al., 2008). For instance, recent excavations at Românești (2009) yielded over one thousand artifacts from just 1 m<sup>2</sup>, due to water sieving, while the old published collection numbers only 5278 artifacts recovered from a total excavated surface of about 400 m<sup>2</sup>. Therefore, the conclusion reached by Riel-Salvatore and co-workers – a broad level of behavioral continuity across the MP-UP transition, perhaps supported in some other European areas (e.g. Riel-Salvatore and Barton, 2004) remains provisional, even if the results are in line with the patently naive arguments in Romanian literature supporting a gradual metamorphosis of the local Mousterian. While an approach overtly focused on “stylistic” matters and certainly aiming for a different objective, seems to point quite to the contrary, the most important common conclusion to be held is the need for totally fresh perspectives on the Romanian EUP. An accurate assessment of the anthropological and behavioral aspects underpinning the MP-UP transition in Romania require, however, new field investigations and a reliable chronological framework, apart from a systematic review of the old collections. Hopefully, the ongoing collaborative projects currently running in Romania will add the much needed precision to the brief outline proposed above.

## Acknowledgments

The authors wish to express their gratitude to several funding bodies which supported the elaboration of this paper. M. Anghelinu benefited from the financial support of the Sectoral Operational Programme for Human Resources Development 2007–2013, co-financed by the European Social Fund, under the project number POSDRU 89/1.5/S/61104. L. Niță benefited from the financial and logistical support of the CNCSIS PN II grant ID\_628 (O abordare integrată a comunităților de vânători-culegători preistorici: economie, societate și simbol în paleolitic și mezolitic). The recent field researches and lithic studies in Romania have been supported by the Collaborative Research Centre 806 (Our Way to Europe: Culture–Environment Interaction and Human Mobility in the Late Quaternary), project B1 (The “Eastern Trajectory”: Last Glacial Palaeogeography and Archaeology of the Eastern Mediterranean and of the Balkan Peninsula), University of Cologne. The authors are grateful to Pierre Noiret for his insightful comments on an earlier version of this paper. We also wish to thank Florin Dumitru for the help provided with the illustration.

## References

- Adams, B., Ringer, A., 2004. New C14 dates for the Hungarian Early Upper Paleolithic. *Current Anthropology* 45 (4), 541–551.

- Alexandrescu, E., Bălescu, S., Tuffreau, A., 2004. Nouvelles données chronologiques, technologiques et typologiques sur le Paléolithique supérieur ancien de la Plaine roumaine du Danube: le gisement de Giurgiu-Malu Rosu. *L'Anthropologie* 108 (3–4), 407–423.
- Alexandrescu, E., 1997. O ipoteză despre evoluția complexului cultural aurignacian din Câmpia Română. In: Nistor, V., Zaharia, D. (Eds.), *Timul istoriei I. In onorarea emeriței Ligiae Bărzu. Universităţii, Bucureşti*, pp. 11–36.
- Allsworth-Jones, P., 1986. *The Szeletian and the Transition from Middle to Upper Palaeolithic in Central Europe*. Clarendon, Oxford.
- Anghelinu, M., Niță, L., submitted for publication. What's in a name: the Aurignacian in Romania. *Quaternary International*.
- Anghelinu, M., 2003. Evoluția gândirii teoretice în arheologia din România. Concepte și modele aplicate în preistorie. Cetatea de Scaun, Târgoviște.
- Anghelinu, M., 2006. O paleontologie a "omului etern": arheologia paleoliticului din România. *Cercetări Arheologice* XIII, 135–158.
- Bălescu, S., Lamothe, M., Mercier, N., Huot, S., Băllean, I., Billard, A., Hus, J., 2003. Luminescence chronology of Pleistocene loess deposits from Romania: testing methods of age correction for anomalous fading in alkali feldspars. *Quaternary Geochronology* 22 (10–13), 967–973.
- Băllean, I., 2011a. Paleoliticul superior din Banat în contextul paleoliticului superior din spațiul central-est european. Unpublished PhD. Thesis, Archaeological Institute, Romanian Academy, Iași.
- Băllean, I., 2011b. The Palaeolithic in Banat. In: Tasic, N., Drasovean, F. (Eds.), *The Prehistory of Banat; I. The Palaeolithic and Mesolithic*. Academiei, Bucharest.
- Bar-Yosef, O., Zilhão, J., 2006. Towards a definition of the Aurignacian. In: *Trabalhos de Arqueologia*, vol. 45. Instituto Português de Arqueologia, Lisbon.
- Bar-Yosef, O., 2006. Neanderthal and Modern Humans: a different interpretation. In: Conard, N.J. (Ed.), *When Neanderthals and Modern Humans Met*. Kerns Verlag, Tübingen, pp. 467–482.
- Beldiman, C., 1999. Industria materiilor dure animale în paleoliticul superior, epipaleolitic, mezolitic și neolitic timpuriu din România. Teză de doctorat, Institutul de Arheologie "Vasile Pârvan", Academia Română, București.
- Bettinger, R.L., 1991. *Hunter-gatherers. Archaeological and Evolutionary Theory*. Plenum, New York.
- Bietti, A., 1991. Normal science and paradigmatic biases in Italian hunter-gatherer prehistory. In: Clark, G.A. (Ed.), *Perspectives on the Past: Theoretical Biases in Mediterranean Hunter-gatherer Research*. University of Pennsylvania Press, Philadelphia, pp. 258–281.
- Bitiri, M., Cărciumaru, M., 1978. Atelierul de la Mitoc-Valea Izvorului și locul lui în cronologia Paleoliticului României. Studii și cercetări de istorie veche și arheologie 29 (4), 463–480.
- Bitiri, M., 1965a. Cu privire la începuturile paleoliticului superior în România. Studii și cercetări de istorie veche 16 (1), 5–16.
- Bitiri, M., 1965b. Considerații asupra prezenței unor forme de unelte bifaciale în așezările paleolitice din România. Studii și cercetări de istorie veche 16 (3), 431–449.
- Bitiri, M., 1972. Paleoliticul în Tara Oașului. Studii arheologice. Academiei, București.
- Bitiri, M., 1973. Câteva date cu privire la paleoliticul de la Mitoc-Valea Izvorului, Suceava. Studii și materiale de istorie III, 27–34.
- Bolomey, A., 1989. Considerații asupra resturilor de mamifere din stațiunea gravetiană de la Lespezi-Lutârie (jud. Bacău). *Carpica* XX, 271–290.
- Borziac, I., Chirica, V., Văleanu, M.-C., 2006. *Culture et société pendant le Paléolithique supérieur à travers l'espace carpato-dniestréen*. Editura PIM, Iași.
- Borziac, I., 2008. Paleoliticul superior din spațiul carpato-nistrean (cronostratigrafie, culturogeneză, paleoecologie). Teza de doctor habilitat în Științe istorice. Academia de Științe a Republicii Moldova, Chișinău.
- Bosinski, G., 1967. Die mittelpaläolithischen Funde im westlichen Mitteleuropa Fundamenta A/4, Böhlau, Köln and Graz.
- Brantingham, P.J., Kuhn, S.L., Kerry, K.W., 2004. *The Early Upper Paleolithic Beyond Western Europe*. University of California Press, Berkeley.
- Cărciumaru, M., Anghelinu, M., 2000. The Carpathian Mousterian and the transition from Middle to Upper Paleolithic in Southern Romania. In: Orschied, J., Weniger, G.-C. (Eds.), *Neanderthals and Modern Humans: Discussing the Transition. Central and Eastern Europe from 50.000–30.000 B.P.* Neanderthal Museum, Mettmann, pp. 189–196.
- Cărciumaru, M., Moncel, M.-H., Cărciumaru, R., 2000. Le Paléolithique moyen de la grotte Cioarei-Borosteni (commune de Peștișani, département de Gorj, Roumanie). *L'Anthropologie* 104, 185–237.
- Cărciumaru, M., Moncel, M.-H., Anghelinu, M., 2002. The Cioarei-Boroșteni Cave (Carpathian Mountains, Romania), Middle Palaeolithic finds and technological analysis of the lithic assemblages. *Antiquity* 76, 681–690.
- Cărciumaru, M., Anghelinu, M., Niță, L., 2007a. The Upper Paleolithic on the Bistrița Valley (North-Eastern Romania). A Preliminary Review, VIII–IX. *Annales d'Université Valahia de Târgoviște, section d'Archeologie et d'Histoire*, 107–124 pp.
- Cărciumaru, M., Anghelinu, M., Nițu, E.-C., Cosac, M., Murătoareanu, G., 2007b. Geoarheologie du Paléolithique moyen, Paléolithique supérieur, Epipaléolithique et Mésolithique en Roumanie. *Cetatea de Scaun, Târgoviște*.
- Cărciumaru, M., Nițu, E.-C., Dobrescu, R., Ștefănescu, R., 2010. Paleoliticul din județul Brașov. Valahia University Press, Târgoviște.
- Cărciumaru, M., 1980. Mediul geografic în Pleistocenul Superior și culturile paleolitice din România. Academiei, București.
- Cărciumaru, M., 1985. Le relation homme-environnement, élément important de la dynamique de la société humaine au cours du Paléolithique et de l'Épipaléolithique sur le territoire de la Roumanie. *Dacia* XXIX (1–2), 7–34.
- Cărciumaru, M., 1989. Contexte stratigraphique, paléoclimatique et chronologique des civilisations du Paléolithique moyen et supérieur en Roumanie. *L'Anthropologie* 93, 99–122.
- Cărciumaru, M., 1999. Le paléolithique en Roumanie. J. Millon, Grenoble.
- Chabai, V.P., Marks, A.E., Monigal, K., 2004. Crimea in the context of the Eastern European Middle Paleolithic and Early Upper Paleolithic. In: Chabai, V., Monigal, K., Marks, A. (Eds.), *The Middle Paleolithic and Early Upper Paleolithic of Eastern Crimea*, vol. 3. *Études et Recherches Archéologiques de l'Université de Liège-ERAUL* 104, Université de Liège, Liège, pp. 419–460.
- Chirica, V., Borziac, I., Chetaru, N., 1996. Gisements du Paléolithique supérieur ancien entre le Dniestr et la Tissa. *Helios*, Iași.
- Chirica, V., 1987. La genèse et l'évolution des cultures du Paléolithique supérieur dans la zone du Prut moyen d'après les recherches récentes. In: Chirica, V. (Ed.), *La genèse et l'évolution des cultures paléolithiques sur le territoire de la Roumanie. Bibliotheca archaeologica lassiensis*, vol. 2, pp. 25–40.
- Chirica, V., 1995. Les pièces bifaciales et la transition du Paléolithique moyen au Paléolithique supérieur en Roumanie. *Paléo (Supplément)* 1, 105–109.
- Chirica, V., 2001. Gisements paléolithiques de Mitoc. *Helios*, Iași.
- Churchill, S.E., Smith, F.H., 2000. Makers of the early Aurignacian in Europe. *Yearbook of Physical Anthropology* 43, 61–115.
- Clark, G.A., 1991. *Perspectives on the Past. Theoretical Biases in Mediterranean Hunter-gatherer Research*. University of Pennsylvania Press, Philadelphia.
- Clark, G.A., 1997. The Middle-Upper Paleolithic transition in Europe: an American perspective. *Norwegian Archaeological Review* 30, 25–53.
- Clark, G.A., 1999. Modern Human origins: highly visible, curiously intangible. *Science* 28, 2029–2032.
- Clark, G.A., 2009. Accidents of history: Conceptual frameworks in paleoarchaeology. In: Camps, M., Chauhan, P.R. (Eds.), *Sourcebook of Palaeolithic Transitions. Methods, Theories, and Interpretations*. Springer, New York, pp. 19–42.
- Cohen, V.I., Stepanchuk, V.N., 1999. Late Middle and Early Upper Paleolithic evidence from the East European Plain and Caucasus: a new look at variability. *Interactions and transitions. Journal of World Prehistory* 13 (3), 265–319.
- Conard, N.J., Bolus, M., 2003. The Swabian Aurignacian and its place in European prehistory. In: Bar-Yosef, O., Zilhão, J. (Eds.), *Towards a Definition of the Aurignacian. Trabalhos de Arqueologia*, vol. 45. Instituto Português de Arqueologia, Lisboa, pp. 211–240.
- Conard, N.J., Grootes, P.M., Smith, F.H., 2004. Unexpectedly recent dates for human remains from Vogelherd. *Nature* 430, 198–201.
- Conard, N.J., 2005. An overview of the patterns of behavioral change in Africa and Eurasia during the Middle and Late Pleistocene. In: d'Errico, F., Blackwell, L. (Eds.), *From Tools to Symbols: From Early Hominids to Modern Humans*. Witwatersrand University Press, Johannesburg, pp. 294–332.
- Conard, N.J., 2006. *When Neanderthals and Modern Humans Met*. Kerns Verlag, Tübingen.
- Cortés Sánchez, M., Gibaja Bao, J.F., Simón Vallejo, M.D., 2011. Level 14 of Bajondillo Cave and the end of the Middle Paleolithic in the South of the Iberian Peninsula. In: Conard, N., Richter, J. (Eds.), *Neanderthal Lifeways, Subsistence and Technology*. Springer, Dordrecht, pp. 241–248.
- d'Errico, F., Zilhão, J., Julien, M., Baffier, D., Pelegrin, J., 1998. Neanderthal acculturation in Western Europe? A critical review of the evidence and its interpretation. *Current Anthropology* 39, 1–44.
- Demidenko, Y.E., Chabai, V.P., Otte, M., Yevtushenko, A.I., Tatartsev, S.V., 1998. Siuren I, an Aurignacian site in the Crimea (the investigations of the 1994–1996 field seasons). In: Otte, M. (Ed.), *Préhistoire d'Anatolie*, vol. I. *Études et Recherches Archéologiques de l'Université de Liège-ERAUL* 85, pp. 367–413.
- Demidenko, Y., 2008. The Early and Mid-Upper Palaeolithic of the North Black Sea region: an overview. *Quartär* 55, 99–114.
- Djindjian, F., 2000. Le Paléolithique en Roumanie (Review), vol. 97. *Bulletin de la Société Préhistorique Française*, 309–324 pp.
- Doboș, A., Soficar, A., Trinkaus, E., 2010. The Prehistory and Paleontology of the Peștera Muierii (România). *Études et Recherches Archéologiques de l'Université de Liège-ERAUL* 124, Université de Liège, Liège.
- Dobosi, V., 2000. Interior parts of the Carpathian Basin between 30,000 and 20,000 BP. In: Roebroeks, W., Mussi, M., Svoboda, J., Fennema, K. (Eds.), *Hunters of the Golden Age. The Mid Upper Paleolithic of Eurasia 30,000–20,000 BP*. Leiden Univ. Press, Leiden, pp. 231–240.
- Dobrescu, R., 2008. *Aurignacianul din Transilvania. Renaissance*, București.
- Fedele, F.G., Giaccio, B., Hajdas, I., 2008. Timescales and cultural process at 40,000 BP in the light of the Campanian Ignimbrite eruption, Western Eurasia. *Journal of Human Evolution* 55, 834–857.
- Gabori, M., 1976. Les civilisations du Paléolithique moyen entre les Alpes et l'Oréal: esquisse historique. Akademiai Kiado, Budapest.
- Haesaerts, P., Teyssandier, N., 2003. The Early Upper Paleolithic occupations of Willendorf II (Lower Austria): a contribution to the chronostratigraphic and cultural context of the beginning of the Upper Paleolithic in Central Europe. In: Zilhão, J., d'Errico, F. (Eds.), *The chronology of the Aurignacian and of the transitional complexes. Dating, stratigraphies, cultural implications. Trabalhos de Arqueologia*, vol. 33. Instituto Português de Arqueologia, Lisboa, pp. 133–152.
- Haesaerts, P., Borziac, I.A., Chirica, V., Damblon, F., Koulakovska, L., Van der Plicht, J., 2003. The East Carpathian loess record: a reference for the Middle and Late Pleniglacial stratigraphy in Central Europe. *Quaternaire* 14, 163–188.
- Haesaerts, P., Borziac, I.A., Chirica, V., Damblon, F., Koulakovska, L., 2004. Cadre stratigraphique et chronologique du Gravettien en Europe Centrale. In: Svoboda, J., Sedláčková, L. (Eds.), *The Gravettian Along the Danube. Dolní Veštonice Studies*, vol. 11. Institute of Archaeology, Brno, pp. 33–56.



- Hahn, J., 1977. Aurignacien. Das ältere Jungpaläolithikum in Mittel- und Osteuropa. Fundamenta A/9. Bohlau, Köln and Wien.
- Henshilwood, C.S., Marean, C.W., 2006. Remodelling the origins of modern human behavior. In: Soodyall, H. (Ed.), *The Prehistory of Africa: Tracing the Lineage of Modern Man*. Jonathan Ball, Cape Town, pp. 31–46.
- Hoffecker, J., 2009. The spread of modern humans in Europe. *Proceedings of the National Academy of Sciences of the United States of America* 106, 16040–16045.
- Hoffecker, J., 2011. The Early Upper Paleolithic of Eastern Europe reconsidered. *Evolutionary Anthropology* 20, 24–39.
- Honea, K., 1984. Chronometry of the Romanian Middle and Upper Paleolithic: implications of current radiocarbon dating results. *Dacia XXVIII* (1–2), 23–39.
- Honea, K., 1986. Rezultate preliminare de datare cu carbon radioactiv privind Paleoliticul mijlociu din Peștera Cioarei de la Borosteni (Jud. Gorj) și Paleoliticul superior timpuriu de la Mitoc-Malu Galben (Jud. Botoșani). *Studii și cercetări de istorie veche și arheologie* 37 (4), 326–332.
- Honea, K., 1987. The chronology of Romania's Palaeolithic. In: Chirica, V. (Ed.), *La genèse et l'évolution des cultures paléolithiques sur le territoire de la Roumanie*. Bibliotheca archaeologica lassienensis, vol. 2, pp. 49–61.
- Honea, K., 1994. Tranzitii culturale în paleoliticul superior timpuriu și cronostratigrafia de la Mitoc-Malu Galben (Jud. Botoșani). *Arheologia Moldovei XVII*, 117–146.
- Horvath, I., 2009. The Early Upper Paleolithic in Romania: past and current research. In: Camps, M., Szmíd, C. (Eds.), *The Mediterranean from 50 000 to 25 000 BP: Turning Points and New Directions*. Oxbow Books, Oxford, pp. 137–162.
- Jungbert, B., 1977. Câteva considerații privind unele forme de unelte bifaciale paleolitice. *Acta Musei Napocensis XIV*, 1–11.
- Jungbert, B., 1978. Repertoriul localităților cu descoperiri paleolitice din Transilvania (I). *Acta Musei Napocensis XIX*, 1–17.
- Jungbert, B., 1979. Repertoriul localităților cu descoperiri paleolitice din Transilvania (II). *Acta Musei Napocensis XX*, 389–410.
- Jungbert, B., 1982. Repertoriul localităților cu descoperiri paleolitice din Transilvania (III). *Acta Musei Napocensis XXI*, 543–555.
- Jungbert, B., 1986. Repertoriul localităților cu descoperiri paleolitice din Transilvania (IV). *Acta Musei Napocensis XXII–XXIII*, 385–400.
- Kelly, R.L., 2003. Colonization of new land by hunter-gatherers: expectations and implications based on ethnographic data. In: Rockman, M., Steele, J. (Eds.), *Colonization of Unfamiliar Landscapes*. Archaeology of Adaptation. Routledge, London, pp. 44–58.
- Kozłowski, J.K., Otte, M., 2000. The formation of the Aurignacian in Europe. *Journal of Anthropological Research* 56, 513–534.
- Kozłowski, J.K., Otte, M., 2003. Constitution of the Aurignacian through Eurasia. In: Zilhão, J., d'Errico, F. (Eds.), *The Chronology of the Aurignacian and of the Transitional Complexes. Dating, Stratigraphies, Cultural Implications*. *Trabalhos de Arqueologia*, vol. 33. Instituto Português de Arqueologia, Lisboa, pp. 19–28.
- Kozłowski, J.K., 1990. Feuilles de pierre. Les industries à pointes foliacées du Paléolithique Supérieur Européen. *Études et Recherches Archéologiques de l'Université de Liège-ERAUL 42*, Université de Liège, Liège.
- Kozłowski, J.K., 2000. The problem of cultural continuity between the Middle and Upper Paleolithic in Central and Eastern Europe. In: Bar-Yosef, O., Pilbeam, D. (Eds.), *The Geography of Neandertals and Modern Humans in Europe and the Greater Mediterranean*. Peabody Museum Bulletin, vol. 8. Peabody Museum of Natural History at Yale University, Boston, pp. 77–105.
- Kozłowski, J.K., 2004. Early Upper Paleolithic backed blade industries in Central and Eastern Europe. In: Brantingham, P.J., Kuhn, S.L., Kerry, K.W. (Eds.), *The Early Upper Paleolithic Beyond Western Europe*. University of California Press, Berkeley, pp. 14–29.
- Kozłowski, J.K., 2007. The significance of blade technologies in the period 50–35 ka BP for the Middle Paleolithic – Upper Paleolithic transition in Central and Eastern Europe. In: Mellars, P., Boyle, K., Bar-Yosef, O., Stringer, C. (Eds.), *Rethinking the Human Revolution*. McDonald Institute Monographs, University of Cambridge, Cambridge, UK, pp. 317–328.
- Kuhn, T.S., 1962. *The Structure of Scientific Revolutions*. The University of Chicago Press, Chicago.
- Liolios, D., 2006. Reflections on the role of bone tools in the definition of the Early Aurignacian. In: Bar-Yosef, O., Zilhão, J. (Eds.), *Towards a Definition of the Aurignacian*. *Trabalhos de Arqueologia*, vol. 45. Instituto Português de Arqueologia, Lisboa, pp. 37–51.
- Lucas, G., 2006. Re-evaluation of the principal diagnostic criteria of the Aurignacian: the example from Grotte XVI (Cénac-et-Saint-Julien, Dordogne). In: Bar-Yosef, O., Zilhão, J. (Eds.), *Towards a Definition of the Aurignacian*. *Trabalhos de Arqueologia*, vol. 45. Instituto Português de Arqueologia, Lisboa, pp. 173–186.
- Mărgărit, M., 2008. L'art mobilier paléolithique et mésolithique de Roumanie et de la République Moldova. *Cetatea de Scaun, Târgoviște*.
- McBrearty, S., Brooks, A.S., 2000. The revolution that wasn't: a new interpretation of the origin of modern human behavior. *Journal of Human Evolution* 39, 453–563.
- Mellars, P., Boyle, K., Bar-Yosef, O., Stringer, C. (Eds.), 2007. *Rethinking the Human Revolution*. McDonald Institute Monographs. University of Cambridge, Cambridge, UK.
- Mellars, P., 2004. Neandertals and the modern human colonization of Europe. *Nature* 432, 461–465.
- Mellars, P., 2005. The impossible coincidence. A single-species model for the origins of modern human behavior in Europe. *Evolutionary Anthropology* 14, 12–27.
- Mellars, P., 2006. Archaeology and the dispersal of modern humans in Europe: deconstructing the "Aurignacian". *Evolutionary Anthropology* 15, 167–182.
- Mertens, S.B., 1996. The Middle Palaeolithic in Romania. *Current Anthropology* 37, 515–521.
- Mogoșanu, F., 1978. Paleoliticul din Banat. *Academiei, București*.
- Mogoșanu, F., 1983. Paléolithique et épipaléolithique. In: Dumitrescu, V., Bolomey, A., Mogoșanu, F. (Eds.), *Esquisse d'une préhistoire de la Roumanie*. Academiei, București.
- Moroșan, N.N., 1938. In: *Le Pléistocène et le Paléolithique de la Roumanie du Nord-Est (Les dépôts géologiques, leur faune, flore et produits d'industrie)*, vol. 19. Anuarul Institutului Geologic al României, București.
- Müller, U.C., Pross, J., Tzedakis, P.C., Gamble, C., Kotthoff, U., Schmiedl, G., Wulf, S., Christianis, K., 2011. The role of climate in the spread of modern humans into Europe. *Quaternary Science Reviews* 30, 273–279.
- Nicolăescu-Ploșor, C.S., Zaharia, N., 1959. Cercetările de la Mitoc. *Materiale și cercetări arheologice VI*, 11–23.
- Nicolăescu-Ploșor, C.S., Păunescu, A., Mogoșanu, F., 1966. Le Paléolithique de Ceahlău. *Dacia (NS) X*, 5–116.
- Nicolăescu-Ploșor, C.S., 1938. Le paléolithique en Roumanie. *Dacia V–VI*, 41–107.
- Nicolăescu-Ploșor, C.S., 1954. Introducere în problemele paleoliticului din R.P.R. *Probleme de antropologie I*, 59–62.
- Nicolăescu-Ploșor, C.S., 1956. Rezultatele principale ale cercetărilor paleolitice în ultimii patru ani în R.P.R. *Studii și cercetări de istorie veche VII* (1), 7–39.
- Nicolăescu-Ploșor, C.S., 1957. Le paléolithique dans la République Populaire Roumaine à la lumière des dernières recherches. *Dacia (NS) I*, 41–60.
- Niță, L., 2008. Le Paléolithique supérieur de la Vallée de Bistrița dans le contexte des recherches de Poiana Ciresului, Piatra Neamț. *Cetatea de Scaun, Târgoviște*.
- Noiret, P., 2004. Le Paléolithique supérieur de la Moldavie. *L'Anthropologie* 108, 425–470.
- Noiret, P., 2009. Le Paléolithique supérieur de Moldavie. *Études et Recherches Archéologiques de l'Université de Liège-ERAUL 121*, Université de Liège, Liège.
- Otte, M., Chirica, V., 1993. Atelier aurignacien à Mitoc Malul Galben (Moldavie roumaine). *Préhistoire Européenne* 3, 55–66.
- Otte, M., Kozłowski, J.K., 2004. La place du Baradostien dans l'origine du Paléolithique supérieur d'Eurasie. *L'Anthropologie* 108 (3–4), 395–406.
- Otte, M., López Bayón, I., Noiret, P., Borzic, I.A., Chirica, V., 1996a. Recherches sur le Paléolithique supérieur de la Moldavie. *Bulletin de la Société royale belge d'Anthropologie et de Préhistoire* 107, 45–80.
- Otte, M., Ulrix-Closet, M., Cărciumaru, M., Beldiman, C., 1996b. Comportements techniques au Moustérien de la "Peștera Cioarei" (Oltenie). In: Bietti, A., Grimaldi, S. (Eds.), *Reduction Processes for the European Mousterian*. *Quaternaria Nova*, vol. VI, pp. 83–92.
- Otte, M., Chirica, V., Haesaerts, P., 2007. L'Aurignacien et le Gravettien de Mitoc-Malu Galben (Moldavie Roumaine). *Études et Recherches Archéologiques de l'Université de Liège-ERAUL 72*, Université de Liège, Liège.
- Otte, M., 2001. Le Micoquien et ses dérivés. In: Cliquet, D. (Ed.), *Les industries à outils bifaciaux du Paléolithique moyen d'Europe occidentale*. *Études et Recherches Archéologiques de l'Université de Liège-ERAUL 98*, Université de Liège, Liège, pp. 173–177.
- Patou-Mathis, M., 2001. Les grands mammifères de la grotte Cioarei (Borosteni, Roumanie): repaire de Carnivores et halte de chasse. *Préhistoire Européenne* 16/17, 57–63.
- Păunescu, A., 1970. Evoluția uneltelor și armelor de piatră cioplită descoperite pe teritoriul României. *Academiei, București*.
- Păunescu, A., 1980. Evoluția istorică pe teritoriul României din paleolitic până la începutul neoliticului. *Studii și cercetări de istorie veche și arheologie* 31 (4), 519–546.
- Păunescu, A., 1989. Le Paléolithique et le Mésolithique de Roumanie (un bref aperçu). *L'Anthropologie* 93, 123–158.
- Păunescu, A., 1991. Paleoliticul de la Gura-Cheii Râșnov și unele considerații privind cronologia locuirilor paleolitice din sud-estul Transilvaniei. *Studii și cercetări de istorie veche și arheologie* 42 (1–2), 5–20.
- Păunescu, A., 1993. Ripiceni-Izvor. Paleolitic și Mezolitic. *Academiei, București*.
- Păunescu, A., 1998. Paleoliticul și epipaleoliticul de pe teritoriul Moldovei cuprins între Carpați și Siret, vol. I/1. *Satya SAI, București*.
- Păunescu, A., 1999a. Paleoliticul și epipaleoliticul de pe teritoriul Moldovei cuprins între Siret și Prut, vol. I/2. *Satya SAI, București*.
- Păunescu, A., 1999b. Paleoliticul și mezoliticul de pe teritoriul Dobrogei. *Satya SAI, București*.
- Păunescu, A., 2000. Paleoliticul și mezoliticul din spațiul cuprins între Carpați și Dunăre. *Agir, București*.
- Păunescu, A., 2001. Paleoliticul și mezoliticul din spațiul cuprins între Carpați și Dunăre. *Agir, București*.
- Richter, J., 2000. Social memory among the last Neandertals. In: Orschied, J., Weniger, G.-C. (Eds.), *Neandertals and Modern Humans: Discussing the Transition*. Central and Eastern Europe from 50.000–30.000 B.P. Neanderthal Museum, Mettmann, pp. 123–132.
- Riel-Salvatore, J., Barton, M.C., 2004. Late Pleistocene technology, economic behavior, and land-use dynamics in Southern Italy. *American Antiquity* 69 (2), 257–274.
- Riel-Salvatore, J., Popescu, G., Barton, M.C., 2008. Standing at the gates of Europe: human behavior and biogeography in the Southern Carpathians during the Late Pleistocene. *Journal of Anthropological Archaeology* 27 (4), 399–417.
- Rigaud, J.-P., Lucas, G., 2006. The first Aurignacian technocomplexes in Europe: a revision of the Bachokirian. In: Bar-Yosef, O., Zilhão, J. (Eds.), *Towards*

- a definition of the Aurignacian. *Trabalhos de Arqueologia*, vol. 45. Instituto Português de Arqueologia, Lisboa, pp. 277–286.
- Roska, M., 1923. Săpăturile din Peștera de la Cioclovina. In: Teodorescu, M., Roska, M. (Eds.), *Cercetări Arheologice în Munții Hunedoarei*. Publicațiile Comisiunii Monumentelor Istorice, Cluj, pp. 27–51.
- Roska, M., 1925. Paleoliticul Judetului Hunedoara. Publicațiile Muzelului Deva, Deva.
- Sackett, J., 1991. Straight archaeology French style. The phylogenetic paradigm in historic perspective. In: Clark, G.A. (Ed.), *Perspectives on the Past. Theoretical Biases in Mediterranean Hunter-gatherer Research*. University of Pennsylvania Press, Philadelphia, pp. 109–139.
- Sitlivy, V., Zięba, A., 2006. Eastern and Central Europe before 30 ka BP: mousterian, levallois & blade industries. In: Chabai, V., Richter, J., Uthmeier, T. (Eds.), *Kabazi II: The 70,000 Years Since the Last Interglacial. The Palaeolithic Sites of Crimea*, vol. 2. Shlyakh, Simferopol and Cologne, pp. 361–419.
- Sitlivy, V., Zięba, A., Sobczyk, K., 2008. Middle and Early Upper Palaeolithic of Krakow region. Piekary IIa. In: *Monographie de Préhistoire générale*, vol. 6. Musées Royaux d'Art et d'Histoire, Bruxelles.
- Sitlivy, V., Zięba, A., Sobczyk, K., 2009. Middle and Early Upper Palaeolithic of Krakow Region. Księcia Józefa. In: *Monographie de Préhistoire générale*, vol. 7. Musées Royaux d'Art et d'Histoire, Bruxelles.
- Sitlivy, V., Chabai, V., Anghelinu, M., Uthmeier, T., Kels, H., Niță, L., Bălțean, I., Veselsky, A., Țuțu, C., in preparation. Preliminary Reassessment of the Aurignacian in Banat (Southwestern Romania).
- Smith, F.H., Trinkaus, E., Pettitt, P.B., Karvanić, I., Paunović, M., 1999. Direct radiocarbon dates for Vindija G and Velika Pećina Late Pleistocene hominid remains. *Proceedings of the National Academy of Sciences of the United States of America* 96, 12281–12286.
- Soficaru, A., Doboș, A., Trinkaus, E., 2006. Early modern humans from the Peștera Muierii, Baia de Fier, Romania. *Proceedings of the National Academy of Sciences of the United States of America* 103 (46), 17196–17201.
- Soficaru, A., Petrea, C., Doboș, A., Trinkaus, E., 2007. The human cranium from the Peștera Cioclovina Uscată, Romania. *Context, age, taphonomy, morphology, and paleopathology*. *Current Anthropology* 48 (4), 611–619.
- Steguweit, L., Cărciumaru, M., Anghelinu, M., Niță, L., 2009. Reframing the Upper Paleolithic on the Bistrița Valley (Northeastern Romania). *Neue Untersuchungen zum Jungpaläolithikum im Bistrița Tal (Nordöst-Rumänien)*. *Quartär* 56, 139–157.
- Straus, L.G., 2009. Has the notion of "Transitions" in Paleolithic prehistory outlived its usefulness? The European record in wider context. In: Camps, M., Chauhan, P.R. (Eds.), *Sourcebook of Palaeolithic Transitions. Methods, Theories, and Interpretations*. Springer, New York, pp. 2–18.
- Street, M., Terberger, T., Orschiedt, J., 2006. A critical review of the German Paleolithic hominin record. *Journal of Human Evolution* 51 (6), 551–579.
- Svoboda, J., Bar-Yosef, O. (Eds.), 2003. *Stránská Skála. Origins of the Upper Paleolithic in the Brno Basin Moravia, Czech Republic*. Peabody Museum of Archaeology and Ethnology at Harvard University, Cambridge MA.
- Svoboda, J., Van der Plicht, J., Kuzelka, V., 2002. Upper Paleolithic and Mesolithic human fossils from Moravia and Bohemia (Czech Republic): some new <sup>14</sup>C dates. *Antiquity* 76, 957–962.
- Svoboda, J., 2007. On Modern Humans penetration to Northern Eurasia: the multiple advances hypothesis. In: Mellars, P., Boyle, K., Bar-Yosef, O., Stringer, C. (Eds.), *Rethinking the Human Revolution*. McDonald Institute Monographs, University of Cambridge, Cambridge, UK, pp. 329–339.
- Terberger, T., Street, M., Bräuer, M., 2001. Der menschliche Schädelrest aus der Elbe bei Hahnöfersand und seine Bedeutung für die Steinzeit Norddeutschlands. *Archäologisches Korrespondenzblatt* 31, 521–526.
- Teyssandier, N., Liolios, D., 2003. Defining the earliest Aurignacian in the Swabian Alp: the relevance of the technological study of the Geissenklösterle (Blau-beuren, Germany) lithic and organic productions. In: Zilhão, J., d'Errico, F. (Eds.), *The chronology of the Aurignacian and of the transitional complexes. Dating, stratigraphies, cultural implications*. *Trabalhos de Arqueologia*, vol. 33. Instituto Português de Arqueologia, Lisboa, pp. 179–196.
- Teyssandier, N., Liolios, D., 2008. Le concept d'Aurignacien: entre rupture pré-historique et obstacle épistémologique. *Bulletin de la Société Préhistorique Française* 105 (4), 737–747.
- Teyssandier, N., 2003. Les débuts de l'Aurignacien en Europe. Discussion à partir des sites de Geissenklösterle, Willendorf II, Krems-Hundssteig et Bacho Kiro. Thèse de doctorat, Université de Paris X-Nanterre.
- Teyssandier, N., 2006. Questioning the first Aurignacian: mono or multi cultural phenomenon during the formation of the Upper Paleolithic in Central Europe and the Balkans. *Anthropologie – International Journal of the Science of Man XLIV* (1), 9–29.
- Teyssandier, N., 2007. L'émergence du Paléolithique supérieur en Europe: mutations culturelles et rythmes d'évolution. *Paléo* 19, 367–390.
- Teyssandier, N., 2008. Revolution or evolution: the emergence of the Upper Paleolithic in Europe. *World Archaeology* 40 (4), 493–519.
- Trinkaus, E., Milotă, Ș., Rodrigo, R., Mircea, G., Moldovan, O., 2003. Early modern human cranial remains from the Peștera cu Oase, Romania. *Journal of Human Evolution* 45, 245–253.
- Trinkaus, E., Bălțean, I.C., Constantin, S., Gherase, M., Horoi, V., Milotă, R.Ș., Moldovan, O., Petrea, C., Quiles, J., Rodrigo, R., Rougier, H., Sarcină, L., Soficaru, A., Zilhão, J., 2005. *Asupra oamenilor moderni timpurii din Banat: Peștera cu Oase*. *Banatica* 17, 9–27.
- Trinkaus, E., Soficaru, A., Doboș, A., Constantin, S., Zilhão, J., Richards, M., 2009. Stable isotope evidence for early modern human diet in Southeastern Europe: Peștera cu Oase, Peștera Muierii and Peștera Cioclovina Uscată. *Materiale și cercetări arheologice (NS) V*, 5–14.
- Tsanova, T., Bordes, J.-G., 2003. Contribution au débat sur l'origine de l'Aurignacien: principaux résultats d'une étude technologique de l'industrie lithique de la couche 11 de Bacho Kiro. In: Tsonev, T., Montagnari Kokelj, E. (Eds.), *The Humanized Mineral World: Towards Social and Symbolic Evaluation of Prehistoric Technologies in South Eastern Europe*. *Études et Recherches Archéologiques de l'Université de Liège-ERAUL 103*, Université de Liège, Liège, pp. 41–50.
- Tsanova, T., 2006. Les débuts du Paléolithique supérieur dans l'Est des Balkans. Réflexion à partir de l'étude taphonomique et techno-économique des ensembles lithiques des sites de Bacho Kiro (couche 11), Temnata (couches VI et 4) et Kozarnika (couche VII). Thèse de doctorat, Université Bordeaux I.
- Tuffreau, A., Boroneant, V., Goval, E., Lefevre, B., Boroneanț, A., Doboș, A., Popescu, G., 2007. Le gisement paléolithique moyen de Zăbrani (Département d'Arad). *Materiale și cercetări arheologice (NS) III*, 5–18.
- Tuffreau, A., Chirica, V., Bălescu, S., Haesaerts, P., 2009. Nouvelles recherches sur le gisement paléolithique de Mitoc-Valea Izvorului (départ. de Botoșani). *Fouilles 2003–2004. Matériaux et recherches archéologiques (NS) V*, 21–31.
- Valladas, H., Mercier, N., Escutenaire, C., Kalicki, T., Kozłowski, J., Sitlivy, V., Sobczyk, K., Zięba, A., Van Vliet-Lanoe, B., 2003. The late Middle Paleolithic blade technologies and the transition to the Upper Paleolithic in southern Poland: TL dating contribution. *Eurasian Prehistory* 1, 57–82.
- Van Andel, T., Davies, W. (Eds.), 2003. *Neanderthals and Modern Humans in the European Landscape During the Last Glaciation: Archaeological Results of the Stage 3 Project*. McDonald Institute Monographs, University of Cambridge, Cambridge, UK.
- Vishnyatsky, L.B., Nehoroshev, P.E., 2004. The beginning of the Upper Paleolithic on the Russian Plain. In: Brantingham, J., Kuhn, S.L., Kerry, K.W. (Eds.), *The Early Upper Paleolithic Beyond Western Europe*. University of California Press, Berkeley, CA, pp. 80–96.
- Wild, E.M., Teschler-Nicola, M., Kutschera, W., Steier, P., Trinkaus, E., Wanek, W., 2005. First direct dating of Early Upper Paleolithic human remains from Mladeč. *Nature* 435, 332–335.
- Yevtushenko, A.I., 1998. The industries of the Eastern Micoquian: some approaches to typological variability. In: Otte, O. (Ed.), *Préhistoire d'Anatolie*, vol. I. *Études et Recherches Archéologiques de l'Université de Liège-ERAUL 85*, Université de Liège, Liège, pp. 113–123.
- Zięba, A., 2005. *Środkowy paleolit w rejonie Krakowa: Piekary IIa, Kraków ul. Księcia Józefa na tle europejskim (The Middle Palaeolithic in Krakow Region: Piekary IIa, Krakow ul. Księcia Józefa sites, in European Context)*. Ph.D. Thesis, Jagiellonian University, Krakow (in Polish).
- Zilhão, J., d'Errico, F. (Eds.), 2003. *The Chronology of the Aurignacian and of the Transitional Complexes. Dating, Stratigraphies, Cultural Implications*. *Trabalhos de Arqueologia*, vol. 33. Instituto Português de Arqueologia, Lisboa.
- Zilhão, J., Trinkaus, E., Constantin, S., Milotă, Ș., Gherase, M., Sarcină, L., Danciu, A., Rougier, H., Quiles, J., Rodrigo, R., 2007. The Peștera cu Oase people, Europe's earliest modern humans. In: Mellars, P., Boyle, K., Bar-Yosef, O., Stringer, C. (Eds.), *Rethinking the Human Revolution*. McDonald Institute of Archaeology Monographs, Cambridge, pp. 249–262.
- Zilhão, J., 2006. Neanderthals and Moderns mixed, and it matters. *Evolutionary Anthropology* 15, 183–195.
- Zwyns, N., 2004. La problématique de l'Aurignacien tardif dans la zone des steppes nord-pontiques. *L'Anthropologie* 108 (3–4), 471–493.