

The Lower Paleolithic of Romania: A Critical Review

ADRIAN DOBOȘ

Institutul de Arheologie, „Vasile Pârvan,” 11 Henri Coandă, Sector 1, București 010667, ROMANIA; adobos@yahoo.co.uk

ABSTRACT

In the last few decades, our understanding of the Lower Paleolithic has expanded, due to multiple advances in research methods and the numerous sites recently discovered. As a consequence, there have been many changes in the interpretation of Lower Paleolithic technocomplexes, in terms of lithic industry characteristics, geographical spread, and chronological framing. This article presents a synthesis of the research carried out on the Lower Paleolithic in Romania in the 20th century. Several problems are discussed—the concept of Osteodontokeratic industries, which was used in the 1960s, still is has not been completely abandoned; terminology is very equivocal and there is no explicit delimitation between various stages of the Lower Paleolithic; tools found in disturbed context are used as cultural markers, which is not recommended for the Lower Paleolithic. Romania has very few sites with stratigraphy. Of those, even fewer have faunal-lithic associations and most of the lithics, scarce as they are (fewer than 10 per site), are often taphonomic or doubtfully anthropogenic. In addition, there are no trustworthy or radiometric dates. Therefore, based upon the evidence so far, the existence of the Lower Paleolithic in the territory of the current Republic of Romania is doubtful.

INTRODUCTION

The course of humanity has remote and only partially known origins. In recent decades, data on this topic has become more extensive. The interpretation of various chronological and cultural technocomplexes has changed due to the relatively larger number of newly found sites, better excavation techniques, more reliable dating methods, and more complex paleoenvironmental reconstructions. This article analyzes the Lower Paleolithic record from Romania within the context of current approaches. An analysis of this sort is necessary for several reasons—the interpretation of the Lower Paleolithic in Romania relies on a total of about 1,100 pieces, out of which more than 90% come from disturbed contexts; the few syntheses about this period in Romania still use some obsolete concepts, like Osteodontokeratic and Premousterian; and, the criteria used in assigning the pieces to the Lower Paleolithic are completely unstandardized, because they vary from one publication to another.

This paper is divided into four sections. The first is a brief presentation of current perspectives on the technocomplexes that belong to the Lower Paleolithic. The second deals with the history of research in Romania, where three research stages can be identified. The third section presents the discoveries that presumably belong to the Lower Paleolithic. The *in situ* finds are few and do not yield many artifacts. For that reason, all of them are presented with as many details as can be gained from the publications. Some comments regarding their particular situations are made here. The various types of pieces found in derived contexts are grouped in two graphs, according to the published sources, in order to infer the criteria used in assigning them to a certain technocomplex. The fourth section discusses issues in the Romanian Lower Paleolithic. The

inconsistencies in terminology are mentioned and illustrated through extensive quotations. The discussion continues with an analysis of the argumentation used to support the alleged Osteodontokeratic. Other issues discussed include the Long/Short Chronology debate and the concept of Premousterian, which is addressed from the perspective of the Romanian data, where issues regarding its validity can be raised.

CURRENT PERSPECTIVES

THE OSTEODONTOKERATIC

The theory that hominins who, prior to using stone tools, were employing animal bones, dentition, and antler as raw material was developed by R. Dart in the decades after the World War II, for sites in South Africa (Dart 1957, 1960). In that region, broken bones from large mammals were found in the same layers as *Australopithecus africanus*. Among the various fragments, some had peculiar shapes that resembled clubs, points, borers, etc. Dart thought this patterning was the sign of intentional actions performed by the Australopithecines, so the alleged types of tools were classified as the Osteodontokeratic industry and were assigned multiple functions, like “stabbing and digging, scraping and polishing, gouging and levering, twisting and boring and reaming and so on” (Dart and Wolberg 1971: 233) The existence of hominin behavior connected solely to hard organic materials was strongly criticized (Brain 1981; Singer 1956; Wolberg 1970), and the numerous pieces in question, previously interpreted as tools, were proven to be the result of predators’ activity and of taphonomic processes.

Recently, some true bone tools have been identified in three sites in Southern Africa. They were made on limb bone shaft fragments and were used by *Australopithecus*

africanus for digging into termite mounds (Backwell and d'Errico 2000). Nevertheless, these cannot account for the existence of the Osteodontokeratic industries *sensu* Dart.

LONG VS. SHORT CHRONOLOGY

In the interpretation of hominin colonization of Europe, two main approaches have dominated the last decades—the *Long* vs. the *Short Chronology* (for a concise presentation, see Balter 2001). The advocates for the long chronology assert that the earliest occupation of Europe took place in the Lower Pleistocene, around 2 MA (Bonifay and Vandermeersch 1991). Their opponents argue that the colonization took place (with some exceptions) mainly in the Middle Pleistocene (Dennell 2003; Roebroeks 2001).

For the *early Lower Pleistocene*, some landmark sites used to support the long chronology are Chilac, Saint Eble, Le Coupet, La Rochelambert, and Perrier-Etouières in the French Massif Central (Bonifay 1991, Chavaillon 1991) and Prezletice and Beroun in Bohemia (Fridrich 1991). The sites were included in the first phase of the *Trés Ancien Paléolithique* (TAP). From an archaeological point of view, the industries of this archaic period mainly comprised choppers, chopping tools, and polyhedrons. The human types are unknown, but are presumed to be either *Homo erectus* much earlier than expected (prior to 1.5 MA) or the presence of even more archaic hominins (Bonifay and Vandermeersch 1991: 315–318).

The anthropogenic character of most of these sites has been challenged for two reasons. First, the lithics, scarce and rudimentary as they are, could be the result of various natural actions (Raynal and Magoga 2000; Roebroeks 1994; Roebroeks and Van Kolfschoten 1994). Second, no true living floors were found, so it is difficult to get reliable biostratigraphical data (Korrisetar and Petraglia 1998; Roebroeks 2001; Rolland 1998).

A true archeological site of this age is Dmanisi (Georgia), which was securely dated at ca. 1.8 MA. The site has yielded numerous hominin fossils associated with Mode 1 lithic industries (Bosinski 1996: 33–34; Lordkipanidze 1998: 16; Lordkipanidze et al. 2007). At the other end of the continent, in Southern Spain, the earliest presence of *Homo* is at the sites of Barranco Leon and Fuente Nueva 3, in a pre-Jaramillo episode (ca. 1 MA) (Oms et al. 2000).

The *late Lower/early Middle Pleistocene*. The long chronology scholars defined a second phase of the TAP, in which the lithic industries have a higher percentage of flakes, the core tools more elaborate forms, and also protobifaces appear. This phase is represented at the sites of Soleilhac (French Massif Central), the caves of l'Escale and Vallonet in South-Eastern France (Bonifay 1991), Stranska Skala in Moravia (Valoch 1991), and Isernia la Pineta in Italy (Peretto 1991; Peretto et al 2004: 64–66). Questions have been raised regarding the anthropogenic character and/or the age of some of these sites (Roebroeks and Van Kolfschoten 1994; Rolland 1998). Nevertheless, the number of sites securely dated is greater than for the preceding phase. A very important site is Atapuerca Gran Dolina, in Northern Spain. Level TD6, dated to ca 800 KYr, has yielded *Homo*

antecessor in layers with Mode 1 industries (Arsuaga et al. 1999; Carbonell et al. 1999; Parès and Pérez-Gonzalez 1999). At the site of Pakefield, Mode 1 industries found in secure context, were dated to ca. 700 KYr (Parfitt et al. 2005).

The *Middle Pleistocene*. The map of the European Lower Paleolithic changes with the beginning of the Middle Pleistocene; for this period, there are a number of sites with better known contexts and many more artifacts—Boxgrove (Bergman and Roberts 1988), Cagny-La Garenne (Tuffreau et al. 1997: 229–232), Bilzingsleben (Brühl 2003; Gamble 1999: 153–173; Mania and Mania 2003), Schöningen (Thieme 2003), Notarchirico (Lefevre et al 1994), Vértesszölös (Dobosi 1988; Dobosi 2003). The excavated surfaces revealed habitation structures and numerous artifacts, fauna, and human skeletal remains. In some cases, refittings of artifacts demonstrated the existence of living floors, which could be accurately dated.

PREMOUSTERIAN

The end of the Lower Paleolithic was associated with industries that were called *Premousterian*. Some scholars believed that the Mousterian had evolved exclusively during colder periods, so this term was created to define Mousterian-like industries, with very few bifaces, which were associated with the last interglacial. In the past few decades, the term was abandoned, because new research revealed that this Middle Paleolithic industry was already present during the Eemian (Tuffreau 1979; Tuffreau 1982).

A BRIEF HISTORIC OF RESEARCH

Research on the Lower Paleolithic in Romania is almost a century old and is associated with many prominent figures of Romanian prehistoric archaeology. Within this lengthy period of research, several stages can be discerned, both according to the different theoretical orientations within the Romanian academic community, on the one hand, and, the international perspective on this topic, on the other hand.

The first phase began with discoveries made by M. Roska in the 1920s and 1930s in Transylvania. Among the pieces he found, he published some that he called “*coups de poing*,” bifaces, and flake tools, which he assigned to Chellean, Acheulian, and Micoquian (Roska 1928, 1931, 1933), using the European chronology of the time. One of the first critical analyses of the Romanian Lower Paleolithic was written by H. Breuil who visited some of the sites in 1924. In his review of the Paleolithic in Transylvania (Breuil 1927), he acknowledged very few pieces as being possible Acheulian and Premousterian. Among Romanian scholars, these pieces generated a debate that rarely was centered on their cultural context, but more on whether they were human-made or just natural accidents. A series of articles published in the 1930s confirmed the consensus view that the majority of the tools were not of anthropogenic origin (Moga 1936; Moroşan 1933; Nicolăescu-Plopşor 1929, 1930, 1931).

A second phase of research began after World War II, mainly in the 1950s when the new authorities were eager to find traces of populations that had inhabited Romania's

territory through the ages. Their aim was to re-create a long and glorious past. At that time there was a boom in archaeological field research, including the Paleolithic. This once again brought the problem of the Lower Paleolithic to the forefront because, throughout the country, many choppers, chopping tools, polyhedrons, discoids, and various flake tools, which seemed to belong to the early periods of the Paleolithic, were discovered. All of the pieces were found in derived contexts and cultural attribution was made using the typology of the pieces. Thus, based on the principle of *fossiles directeurs*, tools were assigned to the Pebble Culture, the Clactonian, the Acheulian, and the Premousterian (Nicolăescu-Plopșor 1957; Nicolăescu-Plopșor and Moroșan 1959; Păunescu 1970). In the early 1960s, the discovery of large mammal fossil sites in the Olteț River Valley prompted the idea that Pre-Paleolithic industries, such as the Osteodontokeratic, may have played a role in the history of Romanian Paleolithic. This was in part caused by a politically motivated desire to see Romania's territory as another cradle of humanity (Nicolăescu-Plopșor 1964b; Nicolăescu-Plopșor and Nicolăescu-Plopșor 1963).

The third phase is associated with P. Samson and C. Rădulescu, two paleontologists who developed a biochronological framework that covered the entire Late Pliocene and Pleistocene sequence and tried to correlate it with the European sequences (Rădulescu et al. 1998; Păunescu et al. 1982). From an archaeological point of view, the work of Al. Păunescu (1999a, 1999b, 2000, 2001) had the greatest impact on this stage of research. He was the first to catalogue and synthesize all the pieces reported as Lower Paleolithic into a single compendium, as well as providing standardized criteria for their description.

THE ARCHAEOLOGICAL DATA

The record assigned to Lower Paleolithic is presented here in detail. It is divided into two categories. The first consists of all *in situ* discoveries, which are ordered according to their chrono-cultural attribution. The second comprises the majority of the pieces, which were found in disturbed contexts.

THE IN SITU DISCOVERIES

Figure 1 illustrates the Romanian geochronological scale and includes the sites where lithics were reported in association with faunal material (with one exception, the choppers of Tetoiu – Dealul Mijlociu).

One of the oldest and richest venues with paleontological remains is in the Olteț Valley, near the village of Tetoiu [Bugiulești]¹ (Figure 2). During the Villafranchian, this area was on the shore of Lake Getian. Three of the sites from this locality, which are very important for the geochronology of the Lower Paleolithic in Romania, are presented below.

Tetoiu – Pietrișu Vijoiești (Vâlcea County)

At this site, an area of 126m² was excavated to a maximum depth of 7.2 m in 1960–1961. Over an area of about 50m², numerous animal bones were found in a sandy layer between 5.7m and 6m in depth. The taxa identified were *Ar-*

chidiskodon meridionalis, *Nyctereutes megamastoides*, *Lynx issiodorensis*, *Eucladocerus* sp., *Pliotragus ardeus*, *Stephanorhinus etruscus*, *Plessipus athanasiui*, *Beremendia* cf. *fissidens*, *Trogotherium dacicum*, and *Vulpes alopecoides* (Păunescu 2000: 304–305; Rădulescu et al 1998: 283–285). Most of the bones were found in anatomical position in the marshy banks of Lake Getian. This marshy environment presumably trapped animals on their way to the water and thus turned them into easy victims for their predators (Nicolăescu-Plopșor 1964a: 305–306, Nicolăescu-Plopșor et al. 1964: 40).

Tetoiu – Dealul Mjlociu (Vâlcea County)

In 1960, field research was done on the western slope of a hill near the village of Tetoiu. It is unclear if the remains were excavated or simply recovered from an exposed profile. In a 1.5m thick layer, consisting of sand and gravel, two or three pebble tools were found. Although not *in situ*, they were considered to have originated very close to the spot where they were found because they exhibited few traces of post-depositional movement. The paleontologists who recovered the artifacts mentioned three chopping tools—two in flint (Figure 3: 1–2) and one in quartzite (Rădulescu and Samson 1991: 285). Subsequent publications only mention two, namely those made on flint (Bosinski 1996: 37; Păunescu 2000: 307). No faunal remains were found; nevertheless, the layer's age was estimated at around 1.7 MY (Upper Pliocene – Tiglien) (Rădulescu and Samson 1991) and the chopping tools were assigned to the TAP.

Tetoiu – Valea lui Grăunceanu (Vâlcea County)

This is the best known of the Tetoiu sites, because of reports of Osteodontokeratic artifacts. Unfortunately, the documentation regarding the site is very poor; no profiles or plans were printed. The excavation covered approx. 200m². This site was very rich in fauna; the majority were found in an area of 90m², in a clayey-sandy layer at a depth of between 4.77m and 5.6m. Associated fauna includes *Archidiskodon meridionalis*, *Equus stenorhinus*, *Gazellospira trolicornis*, *Pliotragus ardeus*, *Macedotherium martini*, *Dicerorhinus* sp., *Cerous philisi*, *Crozetoceros ramosus*, *Castor plicidens*, *Trogotherium cuoieri*, *Nyctereutes megamastoides*, *Ursus etruscus*, *Crocota perrieri*, *Homotherium crenatidens*, *Megantereon megantereon*, *Felis issiodorensis*, *Felis toscana*, and *Meles* sp. Most of the skeletons were found with the bones in anatomical position. Aside from the these taxa, the remains of a primate, *Paradolopithecus arvernensis geticus*, were found. The faunal assemblage led scholars to date the layer to the Villafranchian and suggested similarities with the site of Senèze in the Massif Central, France (Păunescu 2000: 300–304; Rădulescu et al. 1998). Among the 20,000 bones, certain fragments were considered tools and based on the different presumed active parts, they were called clubs, scrapers, borers, etc. These alleged tools formed the main evidence for the anthropogenic origin of this assemblage. In the same layer, three unworked cobbles were interpreted as manuports (Nicolăescu-Plopșor 1964a: 311–312, Nicolăescu-Plopșor 1964b: 49, Nicolăescu-Plopșor and Nicolăescu-Plopșor 1965: 32–34).

	<i>Guiding taxon</i>	Romania	France, Italy, Greece	Germany, Hungary	Georgia, Russia
Middle Pleistocene Saalian Holsteinian Elsterian “Cromerian”	<i>S gregalis martelensis</i>	Sândominic - 2 (LP)	La Fage	Steinheim Castellum Uppony	Khazarian Singlian Okaian
	<i>Arvicola terrestris</i> <i>Plyomis relictus</i>	Sândominic -1 (LP)			
		Slatina (terrace) (LP)		Vértesszölös (LP)	
	<i>Arvicola cantianus</i>	Gura Dobrogei (2) (LP) Gura Dobrogei (1) Casian - 1	L’Escale Isernia (LP)	Mosbach - 2 Tarko	Tiraspolian
Lower Pleistocene Bavelian Menapian Waalian Eburonian			Vallonet (LP)		Tamanian
	<i>Canis etruscus</i>	Fântâna Alorțiței	Olviola		Odessan Dmanisi (LP)
Upper Pliocene Tiglian	<i>Paradolicopithecus</i> <i>Mitilanotherium</i> <i>Manis</i> <i>Trogotherium</i> <i>dacicum</i>	Valea lui Grăunceanu Dealul Mijlociu (LP) Pietrișu - Vijoiești	Tiglian 5C Chilhac (LP) Volakas S. Vallier	Villany - 3	Khaprovian

Figure 1. Correlation of the fossil sites of Romania assigned to the Lower Paleolithic (LP), together with their principal European biochronological equivalents (redrawn from Rădulescu et al. 1998).



Figure 2. The most important sites of the Romanian Lower Paleolithic. Squares = in situ discoveries; triangles = disturbed context locales with 40–100 pieces; circles = disturbed context locales with more than 100 pieces.

In the same layer, three rocks were found. After a macroscopic analysis, it was stated that they could only have come from sources some 40 kilometers away, although no mineralogical analysis was carried out. Together, they weighed about 1 kilo. After eliminating the hypothesis of natural transportation, the scholars concluded that the rocks were transported by Australopithecines in order to be used for breaking and shaping the large bones.

Finally, a quartzite chopper found in the layer above the faunal deposit (Păunescu 2000: 303), also was described, but the associated drawing suggests that it is a taphonomically-modified piece (see Figure 3: 3).

The evidence from these three sites presents a rather awkward situation (see Figure 1). In theory, the *Osteodontokeratic* should precede any stone-tool-bearing assemblage, but given the geochronological assignments of the Tetoiu sites, the three chopping tools from Dealul Mijlociu seem to pre-date the *Osteodontokeratic* level from Valea lui Grăunceanu.

Gura Dobrogei (Constanța County)

Gura Dobrogei is a cave site, also referred to as **Peștera**

Liliecilor (Bats' Cave). The excavations that yielded Paleolithic artifacts were carried out in 1971 in a section called the "Secondary Gallery." The stratigraphic sequence is difficult to follow, as is identifying the layers in which the lithics were found—there is no drawing that would make the dense description of sediment disposition more comprehensible.

The upper part of the sediment, which mostly consisted of loess with clastic limestone fragments, was divided into three loess levels separated by a silty level (towards the bottom) and a brown paleosol (towards the top).

The silt level and the loessic levels above and beneath it were placed in the geochronological framework as Phase Gura Dobrogei 2 (contemporary to the late Cromerian), based on the rodent faunal taxa identified—*Allactaga orghidani*, *Apodemus sylvaticus*, *Cricetulus gr. migratorius*, *Mesocricetus newtoni*, *Cricetus cricetus praeglacialis*, *Ellobius calabaei*, *Spermophilus gr. nogaici*, *Clethrionomys glareolus*, *Lagurus transiens dacicus*, *Eolagurus gromovi vistornensis*, *Arvicola cantianus*, *Microtus guentheri*, *Microtus arvalis*, *Pitymys arvaloides*, *Stenocranium gregalis*, *Ochotona pussila*, and unspecified *Caprinae*. The loess level above the silt layer yielded

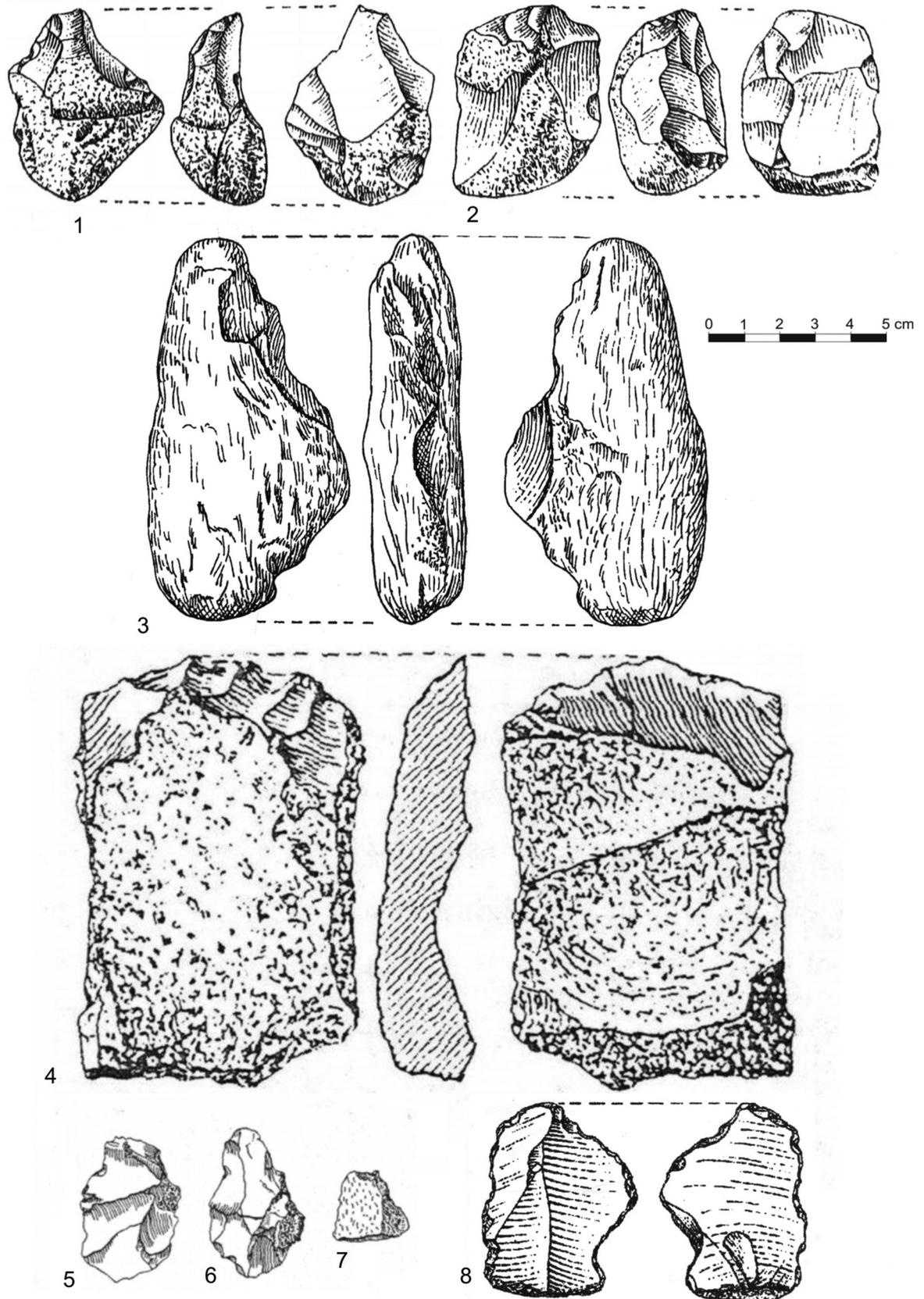


Figure 3. Tetoiu – Dealul Mijlociu: 1, Chopping tool; 2, Protobiface (Păunescu 2000); Tetoiu – Valea lui Grăunceanu: 3, Chopping tool (Păunescu 2000); Gura Dobrogei – Peștera Liliacilor: 4, Chopping tool; 5, Flake with retouched edge; 6, Side scraper; 7, Flake (Samson et al. 1998); Slatina – Terrace: 8, Levallois retouched flake (Păunescu 2000) [all illustrations from Păunescu used with permission of the AGIR; illustration from Samson et al. used with permission of the AFEQ].

only two artifacts, which were interpreted as a chopping tool and a flake with a retouched edge (see Figure 3: 4–5). In the loess level below the silt level, a dubious side-scraper and a quartzite flake were reported (see Figure 3: 6–7). All the pieces were assigned to the TAP (Cârciumaru 1999: 45–46; Păunescu et al. 1982: 55–56; Păunescu 1999: 130–132; Rădulescu et al. 1998: 285–287).

Slatina (Olt County)

There are five archaeologically or paleontologically interesting locations near this city. Of these, two sites yielded only fauna, one site only lithics (in disturbed context), and the other two were reported as containing both fauna and lithics. In Figure 1, Slatina is categorized as having Lower Paleolithic finds whose age was indicated by the fossil fauna. Below are the two candidates.

Slatina – southern side of the city (or Slatina – terrace)

The find-spot at the Slatina terrace is a river-cut profile (see Figure 1). The sequence described here (~45m depth) contains an important stratified paleontological collection, which was used in Romania's geochronological framework. In particular, Level 37 was thought to represent the Pliocene-Pleistocene boundary, according to the taxa identified—*Trogontherium dacicum*, *Mimomys* sp., *Unio aspheronicus*, *Unio bozdagiensis*, *Anodonta* sp., *Euphrata* sp., *Corbicula* sp., and *Viviparus lineatus*. Using paleomagnetic dating carried on in the area (Andreescu et al 1981), the layer's age was estimated at 1.8–1.6 MY and came to represent Phase Slatina 3 (Tiglian). On the other hand, in the gravel of the Elsterian terrace of Olt, a single Levallois flake was found (see Figure 3: 8) which was assigned to the Premousterian (Cârciumaru 1999: 45–46; Rădulescu et al. 1998: 285; Păunescu 2000: 205–206). Slatina – terrace thus is reported as having Lower Pleistocene fauna and a presumed Middle Pleistocene flake. There is no argument for presenting it as a site yielding both fauna and lithics (as in Figure 1), because no correlation between them (lithics and fauna) can be made.

Slatina – Valea Clocociovului

In another part of the city, in 1970, two pieces were reported—a chopper and a flake that exhibited serious edge damage. They came from a disturbed context and were assigned to TAP. A few years before, in the same valley, an *Elephas antiquus* molar was reported (cf. Păunescu 2000: 205–207). In this case, another impossible correlation was made, between lithics and fauna, both with unknown stratigraphical provenience.

Amărăști (Dolj County)

This site is located in a piedmont area and was discovered when a dam was built near the village. A small excavation was made (size is unknown). In a clay layer, found at a depth between 2.7m and 4.05m, some parts of an *Elephas trogontherii* skeleton and eight quartzite pieces were recovered. The lithics were two manuports with some knapping scars (Figure 4: 1–2), two unretouched cortical flakes (see Figure 4: 4), three flakes with denticulate retouch, and one

tranche de citron flake (see Figure 4: 3). This discovery was interpreted as the remnants of a hunting party. The lithic material was presumed to belong either to some post-TAP industry of the Lower Paleolithic or to the Premousterian, with no further refinement (Cârciumaru 1999: 43–44; Păunescu 2000: 454–456).

Sândominic (Harghita County)

This site is located in a travertine quarry that was exploited beginning in 1967. The stratigraphic sequence found in a large rock fissure was analyzed by Rădulescu and Samson (1998), who identified two distinct layers—1 (lower) and 2 (upper).

Level 1, about 0.5m thick, was terra rosa (4YR 5/6); based on the presence of *Arvicola terrestris* and *Pliomys relictus*, its age was estimated as late Holsteinian. Four lithics were found, three in quartzite (a cortical flake, a proximal flake, and a shatter) and a sandstone fragmentary biface (see Figure 4: 6). They were assigned to the post-TAP Lower Paleolithic, with no further refinement.

Level 2, about 1.5m thick, mostly consisted of clastic fragments. Based on the presence of *Stenocranius gregalis martelensis*, its age was estimated as early Saalian. The excavation of this layer yielded a piece interpreted as simple side scraper on a Levallois flake and a proximal flake (see Figure 4: 5 and 7) which were assigned to the Premousterian (Păunescu 2001: 401–404; Păunescu et al. 1982: 60–61; Rădulescu et al. 1998: 287–288).

It thus appears that all the *in situ* discoveries have yielded less than two dozen pieces. Unfortunately, for most of the situations mentioned above, profiles were not published, and details about the excavation technique and/or surface are insufficient.

THE DISTURBED CONTEXTS

Before presenting the material in this section, some clarification should be made. Find-spots where only pebble tools were found were assigned to the TAP. Find-spots that yielded pebble tools plus bifaces and/or flakes were presented as having TAP and some vaguely defined Lower Paleolithic industries; no boundary was drawn to separate the two categories of lithics. If only bifaces and/or flakes were found, the lithics were assigned to the Lower Paleolithic (post-TAP) and presumably to the Premousterian². The total number of pieces is around 1,100; the exact amount is unclear, because for some sites published reports simply say there are “a few” artifacts.

There are 65 locations where TAP, later Lower Paleolithic (post-TAP), and Premousterian pieces have been reported. Most are located on river terraces. The largest number of these are in Walachia and Oltenia (53); in the other provinces, the locations are far fewer—five in Moldavia, four in Transylvania, and three in Dobrudja. In Figure 2, those that have yielded more than 40 pieces are shown.

THE TAP AND LOWER PALEOLITHIC SITES

The majority of these sites is located in the southern part of Romania, namely in Walachia and Oltenia. As shown in

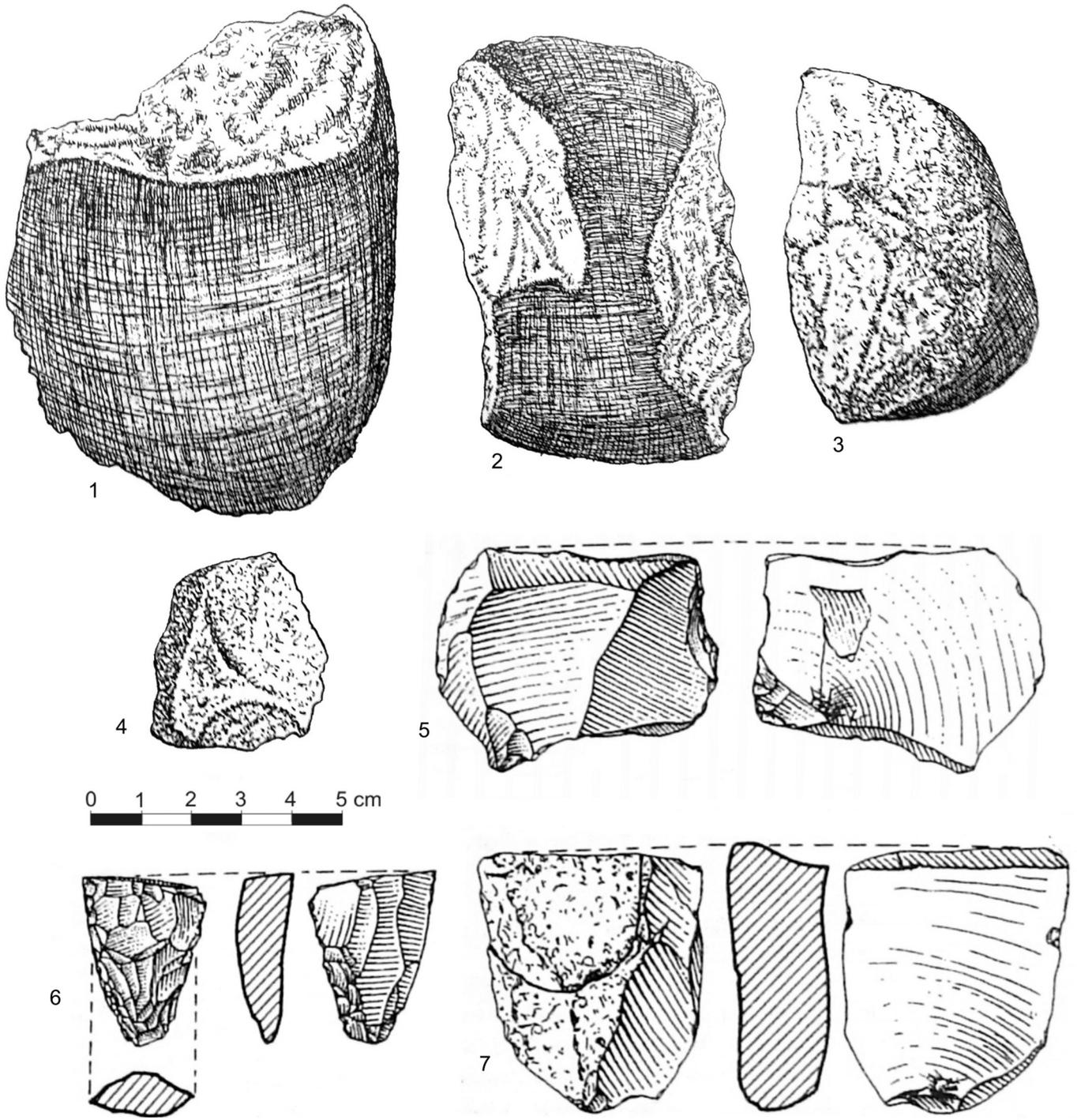


Figure 4. Amărăști – Baraj: 1–2, Pebbles with knapping negatives; 3, Flake; 4, Tranche de citron flake (Păunescu 2000); Sândominic – Travertine Quarry: 5, Simple side scraper on Levallois flake; 6, Biface fragment; 7, Flake fragment (Păunescu 2001) [all illustrations from Păunescu used with permission of the AGIR].

Figure 5, the total of 729 pieces that define the TAP plus the later Lower Paleolithic (post-TAP) consists mostly of choppers (202) and chopping tools (347), followed by various kinds of flakes, pebble tools, polyhedrons, and discoids. Because bifaces were sometimes associated with the Lower Paleolithic and at other times with the Premousterian, their

column is shown with a different pattern.

THE PREMOUSTERIAN

The lithic types can be grouped as follows—cores (“quasi-prismatic,” discoidal, or inform), Levallois blanks (blades and flakes), common blanks (unretouched flakes and

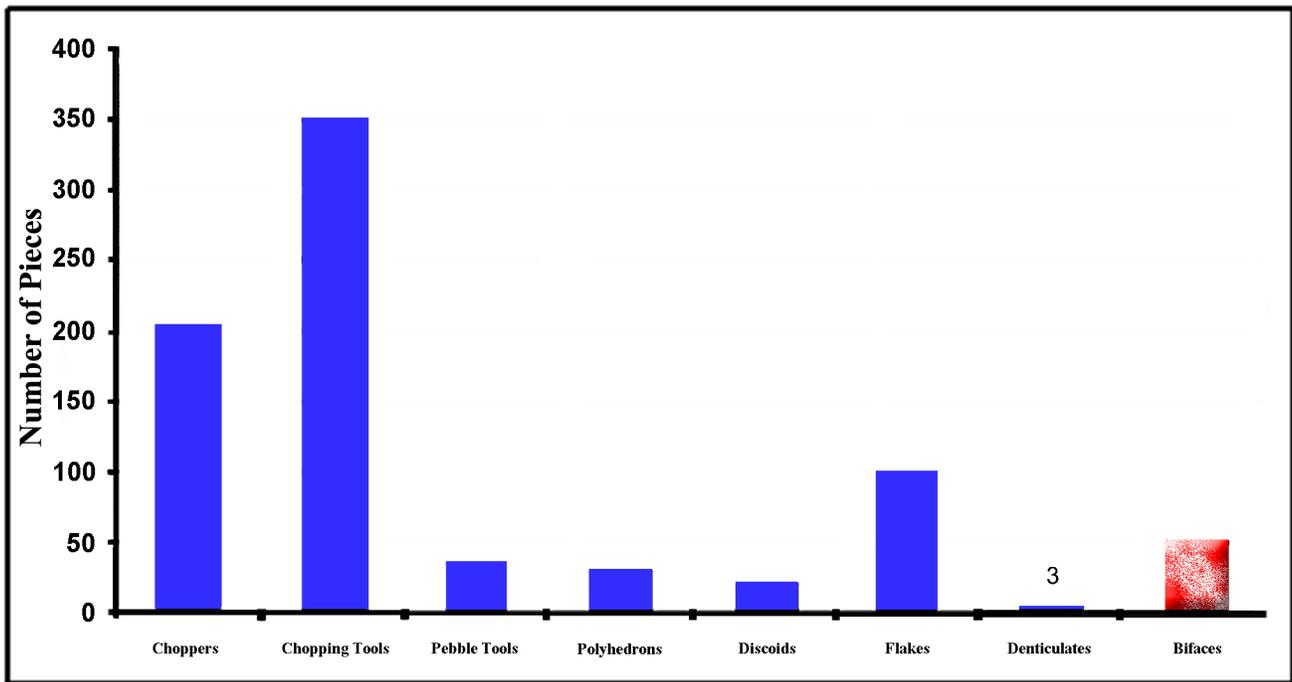


Figure 5. Tool types assigned to the Tres Ancien Paléolithique and the Lower Paleolithic.

blades), side scrapers (single, double, and transverse), backed knives (naturally backed and with retouched back), and notches/denticulates (Figure 6).

DISCUSSION

TERMINOLOGY

This is a topic that is still very unclear for the Lower Paleolithic record of Romania. Inconsistencies regarding the terms are mentioned here.

Tres Ancien Paléolithique (TAP)

This term refers, *sensu* Bonifay (Bonifay and Vandermeersch 1991), to industries that were prior to the emergence of developed Acheulian bifaces and Levallois technology.

In Romanian archaeology, it is used as a synonym for the Pebble Culture and is meant to designate Mode I industries, as can be inferred from the typology of the material (see Figure 5).

A very difficult issue is learning what meaning underlies the term *Lower Paleolithic* itself. In order to clarify this problem, one must look back a few decades, when there was a belief that the cultures that postdate the Pebble Culture were the Abbevillian, Acheulian and Clactonian, all emerging from Pebble Culture industries. After the cultural meaning of the Abbevillian and the Clactonian were challenged, in Romanian archaeology the framing of this period became more cautious. There was no explicit shift defended in publications, but gradually the two terms fell

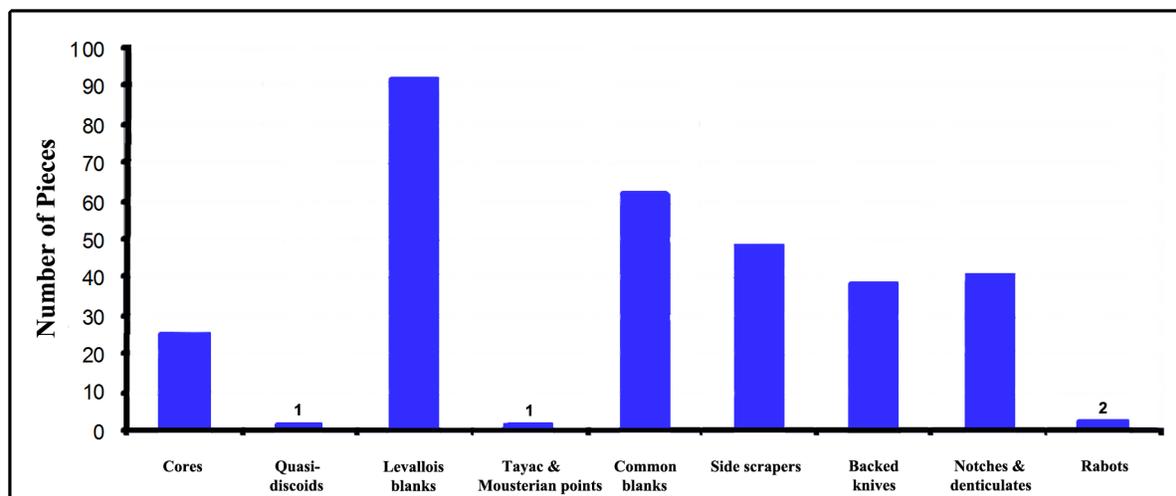


Figure 6. Tool types assigned to the Premousterian.

out of use in defining distinct industries and became just a typological and a technical description, respectively. At the same time, the existence of the Acheulian north of the Danube was no longer claimed, but the term still was used in classification of bifaces.

It seems that vague formulations were preferred, and the reader could understand anything he or she wanted:

“Au Pléistocène moyen, aux formes d’outils spécifiques pour cette industrie archaïque sur galets, s’ajoutent de nouveaux types, comme par exemple les pièces proto-bifaciales (representent semble-t-il une évolution à partir du chopping tool) ou les bifaces de type abbevillien comme ceux découverts dans la vallée du Dirjov, ou ceux de type Acheuleen trouvés parmi les graviers des vallées de l’Olt et du Dirjov, de même que des éclats de technique clactonienne” (Păunescu 1989: 129)³.

What can be inferred from the quote above is that Mode 2 industries (with no particular assignment to Acheulian, non-Acheulian, or both) evolved from Mode 1; they have bifaces and flakes. For some of the tools, terms like Abbevillien, Acheulian, and Clactonian are used, not in a *cultural* but in a *typological* sense.

Premousterian

The *Premousterian* also is very equivocally defined, as follows:

“Par cette culture, ou plutôt par les cultures prémoustériennes, on entend en general ces industries d’éclats de débitage Levallois ou non Levallois, dans lesquelles les formes anciennes d’outils travaillés sur galets (de type choppers, chopping-tools) ou les bifaces peuvent être rencontrés dans un pourcentage plus ou moins grand, ou sont absents, et qui se sont développées dans la dernière partie du Paléolithique inférieur. Leur origine semble se situer au début du Riss; quant à leur disparition, elle pourrait atteindre même les débuts du Würm inférieur” (Păunescu 1989: 129)⁴.

This generous description leaves room for practically everything, because the only criterion is a very long time span.

As one can see, there is much ambiguity concerning the meaning of each term involved in classifying the Romanian Lower Paleolithic. The definitions are too general and thus virtually every artifact can be assigned to any technocomplex.

THE PUBLISHED SOURCES

Because most of the lithic pieces were found in derived contexts, they were published in reports usually entitled along the lines of: “*Pebble tools found at [the village of] Fărcașele*” (Nica 1970) or “*Lower Paleolithic tools found in the Dârjov and Mozac Valleys*” (Nania 1972). Usually the presentation consisted of a description of the pieces and a few drawings; the final part of the article was concerned with assigning them to various periods—usually the choppers and chopping tools were supposed to show the presence of the Pebble Culture and the bifaces, the presence of the Acheulian. The flakes, based on their internal platform angle, were

supposed to be either Clactonian or Premousterian. Sometimes, due to the particular morphology of the piece, additional interpretations were made regarding the piece’s various presumed functions, such as cutting, crushing and scraping (Nania 1972: 241). Those pieces were regarded as true evidence of the existence of the Lower Paleolithic and a tacit assumption was that future field research would reveal the *in situ* sites.

A complete description of all the pieces was made by Al. Păunescu, who applied identical criteria to all the pieces. The pieces were presented using two perspectives:

1. *typological*; for the choppers and chopping tools, he described the shape of the pebble/cobble and the shape and size of the cutting edge; for the bifaces, the shape and the degree of complexity were mentioned; and, for the flake and blade supports, the criteria were the technique (Levallois or non-Levallois), the presence/absence of cortex, the platform type, the size of the percussion bulb, and the kind of retouch, if any (see for example Păunescu 2000: 167–177).
2. *physical*; three variables were taken into account, the patina, the gloss, and the degree of rolling. Each of them was evaluated on a scale from absent (-) to very intense (+++). According to the degree to which the variables were present, the pieces were interpreted as having been transported a shorter or a longer distance, although this aspect was identified as a criterion which should not be generalized (Păunescu 2000: 41)

THE OSTEODONTOKERATIC

As presented above, the arguments for supporting the existence of the Osteodontokeratic rely on the presumed bone tools and the three “manuports” at Tetoiu – Valea lui Grăunceanu. Even during the 1960s, when the concept was still in use, the argumentation was insufficient, no matter how enthusiastically it was presented. Regarding the bone industry, researchers proved that the Osteodontokeratic, *sensu* Dart, is not a valid concept (Brain 1981; Singer 1956; Wolberg 1970). R. Feustel, for example, particularly referred to the bones of Bugiulești [Tetoiu] as presenting tooth marks of carnivores (Feustel, reply in Wolberg 1970: 32). As for the existence of the three manuports, is hard to believe that early hominins, no matter how primitive, would only prefer rocks found 40km away. There are many other potential explanations for their presence beyond the purposeful transportation over such a distance.

With the advent of the 1970s, direct references to the bone industries were tacitly abandoned, but not entirely, especially in popular journals (Nicolăescu-Plopșor 1970). Later work mentions the two components separately and more cautiously, but the reader is still allowed to conclude anthropogenesis for some materials a possibility:

„Si à Valea lui Grăunceanu de Bugiulești [Tetoiu] des pierres étaient apportées depuis des gisements distants de plusieurs jours, on ne saurait en aucun cas attribuer

cet acte à un comportement instinctif. Cela suppose, au contraire, un démarche consciente appartenant à un être humain. On peut dire autant des os longs transportés dans ce même gisement et dont les extrémités étaient transformées en outils à destination intentionnelle, en employant chaque fois une technique de transformation similaire" (Cărciumaru 1999: 47)⁴.

This was not the only problem regarding the chronology and interpretation of the Tetoiu sites. For all three Tetoiu sites mentioned above, an age of ca 1.7 MY BP was estimated. Among them, Dealul Mijlociu is supposed to be older than Valea lui Grăunceanu. At Dealul Mijlociu, however, the discovery of three chopping tools was reported; these were assigned to the TAP, and thus, they predate the level with the presumed bone tools. This creates a situation that

simply contradicts the rules of time and place.

THE LITHIC INDUSTRIES OF THE LOWER AND MIDDLE PLEISTOCENE SITES

Except for the poorly documented *in situ* finds presented above, the majority of pieces were found in disturbed contexts. Besides the vaguely defined industries, other serious doubts occur:

- *Anthropogenic action.* That hominins produced some of the simplest choppers is questionable, if one keeps in mind that the rivers carry millions of stone blocks, and so it is very likely that many such pieces were created naturally. For the Romanian case, there are some pebbles that hardly exhibit any trace of voluntary modification (Figure 7). When



Figure 7. 1–4, "Choppers" discovered in disturbed context from the Dârjov Valley.

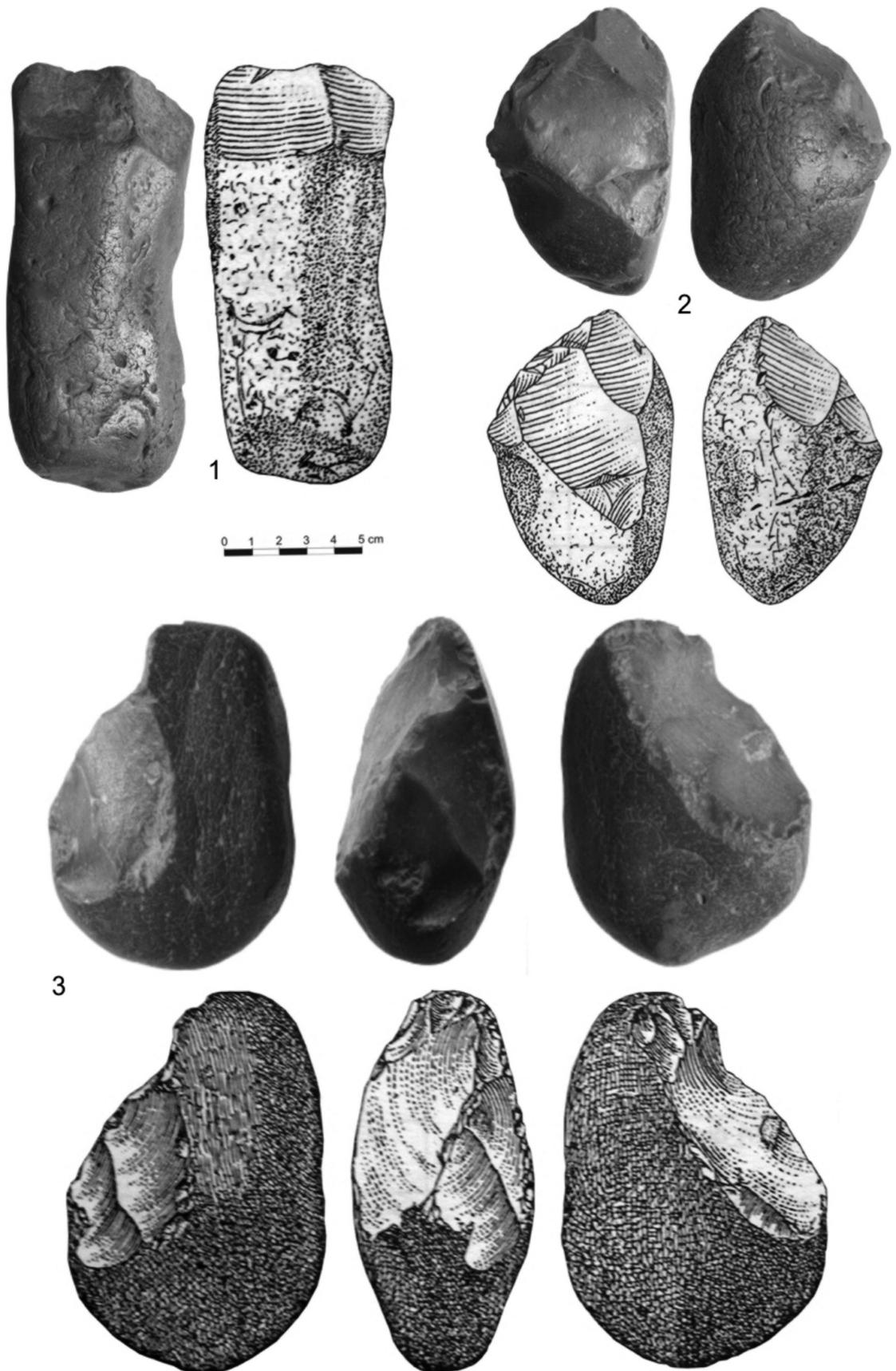


Figure 8. Slatina – Valea Muierii: 1, Chopper. Valea Mare: 2, Chopping tool; Brebeni: 3, Chopping tool. (Drawings after Păunescu 2000; used with permission of the AGIR).

published, they were counted for the statistics but never illustrated.

- *Chronological value.* There are numerous artifacts that were assigned to the Lower Paleolithic (Pebble Culture, Mode 2 industries, and Premousterian) according to their typological features, although the context was lacking. Certain types may have a greater occurrence in certain periods, but that does not mean that they should solely be connected to a unique technocomplex, and, especially for this period, they should not be assigned chronological relevance (Roebroeks 1994).
- *Presentation.* Some pieces were “upgraded” while being drawn, in order to be closer to the idea of pebble tools (Figure 8). This situation is not unique; for example, Roebroeks and Kolfschoten (1994) mention this regarding some Bohemian material.
- *Bifacial tools.* These pieces range from proto-bifaces to “Abbevillian” and “Acheulian” bifaces, and they have been the subject of the most variable interpretations. From the expanded presentation of data (Cârciumaru 1999; Păunescu 1999b, 2000) it can only be inferred that they postdate the TAP industries. Other than that, no consistent chrono – cultural interpretation was made. Sometimes these pieces were assigned to undefined Lower Paleolithic industries; elsewhere, Acheulian bifaces are interpreted as being Premousterian (Păunescu 2000: 42, Table 1); finally, some of them are regarded as possibly Mousterian (see note 2 above).

THE PREMOUSTERIAN

For Romania, Păunescu vaguely defined the Premousterian as a set of Levallois or non-Levallois industries in which pebble tools may be present or not; these industries evolved from the Riss up to the early Würm (Păunescu 1989: 129). According to this definition, the only criterion is the chronological interval, and thus this concept should only apply to pieces that were found *in situ*, namely in sediments whose age would fall within this temporal range. Because all of the so-called Premousterian pieces were found in derived contexts, there is no information about the age of their original layer and thus they should not be classified this way, at least not according to this definition.

CONCLUSIONS

The purpose of this paper was to show that the Romanian Lower Paleolithic record needs to be reevaluated. The data gathered for this period is the result of a century of research, undertaken by intrepid scholars who studied the Old Stone Age; thus far, the record for the earlier phases of this age is scarce if compared to the Middle and Upper Paleolithic in Romania. I have presented some issues that, if acknowledged, show that there are some important questions regarding the validity of the discoveries made so far.

The important paleontological site of Tetoiu-Valea lui Grăunceanu should be divorced from the idea of presumed hominin activity in the Villafranchian. Even for the 1960s,

this interpretation relied on virtually no solid data. The *in situ* discoveries assigned to the Lower Paleolithic are very few and relatively poor. The ca. 1,100 pieces found in disturbed context can be divided into two major categories—some whose artifactual character is doubtful, because they are very rudimentary, and others, which are true artifacts but should not be used as chrono-cultural markers. Scholars must be cautious when interpreting them. On the other hand, the presence of these pieces indicates that Lower Paleolithic sites may exist in Romania, but have yet to be discovered.

ACKNOWLEDGEMENTS

The research for this paper was supported by CNCSIS (grant 137/01.10.2007), Romania, and by the Fulbright Commission, USA. I also wish to thank to all who have guided me through writing this paper: Harold Dibble, Radu Ioviță, Utsav Schurmans, Alain Tuffreau, Gabriel Popescu, John Ely, and two anonymous reviewers. I also am deeply grateful to Deb Olszewski for editing this text and polishing the English.

ENDNOTES

1. Tetoiu is current name of the village. At the time when the research began, it was called Bugiulești.
2. The following excerpt is relevant for the vague cultural attribution. It refers to many pieces found at Drăgănești, Olt County, in a disturbed context. The lot consists of seven choppers, six chopping tools, six bifaces and protobifaces, seven simple flakes, five naturally backed knives, one Levallois flake, three side scrapers, and one denticulate:

“We believe that the material described above belongs to different industries. The choppers and the unretouched flakes could be assigned to the TAP (probably to the archaic industry of worked manuports and simple flakes); the other pieces (the protobifaces, the bifaces, the Levallois flakes, the naturally backed knives, the side scrapers and the one denticulate) may belong to the Lower Paleolithic, and some of them to the Premousterian or even to the Mousterian.” (Păunescu 2000: 194) [author’s translation]

3. “During the Middle Pleistocene, in addition to the typical tools of this archaic cobble/core industry, new types appear, such as proto-bifaces (which presumably have evolved from the chopping tools), Abbevillian bifaces (found in the *Dirjov Valley*) and Acheulian bifaces (from the gravels of the Olt and *Dirjov Valleys*); Clactonian flakes also appear during this period” (Păunescu 1989: 129). [author’s translation].
4. “This culture, or, rather, the Premousterian cultures, generally refers to Levallois or non-Levallois flake industries, in which ancient forms of tools made on cobbles (choppers, chopping tools) or bifaces may be present in variable percentages or may be completely lacking, developed during the last part of the Lower Paleolithic. Their origin seems to have been at the beginning of the Riss; as to their disappearance, they last until the beginning of the lower Würm” (Păunescu 1989: 129). [author’s translation].
5. “If it is acknowledged that the rocks of Valea lui Grăunceanu, Bugiulești [Tetoiu] were carried from distant

locations of several days' walk, one cannot in any case attribute this to mere instinctive behavior. Rather, this is the result of the conscious action of a human being. It could be said that the same conscious actions were involved in carrying long bones to the site, in order to be shaped into tools, by similar techniques every time" (Cârciumaru 1999: 47). [author's translation].

REFERENCES

- Andrescu, I., Rădulescu, C., Samson, P., Tschepalyga, A., and Troubikhin, I. 1981. Chronologie (Mollusques, Mammifères, Paleomagnetism) des formations Plio-Pléistocènes de la zone de Slatina (Bassin Dacique). *Travaux de l'Institut de Speleologie "Emile Racovitza"* 20: 127–137.
- Arsuaga, J.-L., Martínez, I., Lorenzo, C., Gracia, A., Muñoz, A., Alonso, O., and Gallego, J. 1999. The human cranial remains from Gran Dolina Lower Pleistocene site (Sierra de Atapuerca, Spain). *Journal of Human Evolution* 37: 431–457.
- Backwell, L.R., and d'Errico, F. 2000. Evidence of termite foraging by Swartkrans early Hominids. *Proceedings of the National Academy of Sciences U.S.A.* 98 (4): 1358–1363.
- Balter, M., 2001. In search of the first Europeans. *Science* 291(5529): 1722–1725.
- Bergman, C.A. and Roberts, M.B. 1988. Flaking technology at the Acheulean site of Boxgrove, West Sussex (England). In: Tuffreau, A., Blanchet J.-C., Fagnart, J.-P., and Sommé, J. (Eds.), *Industries lithiques en milieu loessique*. Amiens: Revue Archéologique de Picardie, 1–2: 105–113.
- Bonifay, E. 1991. Les premières industries du Sud-Est de la France et du Massif Central. In: Bonifay, E. and Vandermeersch, B. (Eds.), *Les premiers Européens*. Paris: Comité des Travaux Historiques et Scientifiques, 63–80.
- Bonifay, E., and Vandermeersch, B. 1991. Vue d'ensemble sur le très ancien Paléolithique de l'Europe. In: Bonifay, E. and Vandermeersch, B. (Eds.), *Les premiers Européens*. Paris: Comité des Travaux Historiques et Scientifiques, 309–318.
- Bosinski, G. 1996. *Les origines de l'homme en Europe et en Asie: Atlas des sites du Paléolithique Inferieur*. Paris: Editions Errance.
- Breuil, H. 1927. Stations paléolithiques en Transylvanie. *Buletinul Societății de Științe din Cluj* 2: 193–217.
- Brühl, E. 2003. The small flint tool industry from Bilzingsleben – Steinrime. In: Burdukiewicz, J. M. and Ronen, A. (Eds.), *Lower Palaeolithic Small Tools in Europe and the Levant*. Oxford: British Archaeological Reports International Series 1115, 49–63.
- Brain, C.K. 1981. *The Hunters or the Hunted? An Introduction to African Cave Taphonomy*. Chicago: University of Chicago Press.
- Carbonell, E., García-Anton, M.D., Mallol, C., Mosquera, M., Ollé, A., Rodríguez, X.P., Sahnouni, M., Sala, R., and Verges, J.M. 1999. The TD6 level lithic industry from Gran Dolina, Atapuerca (Burgos, Spain): production and use. *Journal of Human Evolution* 37: 653–693.
- Cârciumaru, M. 1999. *Le Paléolithique en Roumanie*. Grenoble: Jérôme Millon.
- Chavaillon, J. 1991. Les ensembles lithiques de Chillac III (Haute-Loire): typologie, situation stratigraphique et analyse critique et comparative. In: Bonifay, E. and Vandermeersch, B. (Eds.), *Les premiers Européens*. Paris: Comité des Travaux Historiques et Scientifiques, 81–92.
- Dart, R.A. 1957. *The Osteodontokeratic culture of Australopithecus Prometheus*. Transvaal Museum Memoir No. 10.
- Dart, R.A. 1960. The Bone-Tool Manufacturing Ability of *Australopithecus Prometheus*. *American Anthropologist* 62(1): 134–143.
- Dart, R.A. and Wolberg, D.L. 1971. On the Osteodontokeratic Culture of the Australopithecinae. *Current Anthropology* 12(2): 233–236.
- Dennell, R. 2003. Dispersal and colonization, long and short chronologies: how continuous is the Early Pleistocene record for hominids outside Africa? *Journal of Human Evolution* 45: 421–440.
- Dobosi, V. 1988. Le site paléolithique inférieur de Vértesszölös, Hongrie. *L'Anthropologie* 92(4): 1041–1050.
- Dobosi, V.T. 2003. Changing environment – unchanged culture at Vértesszölös, Hungary. In: Burdukiewicz, J. M. and Ronen, A. (Eds.), *Lower Palaeolithic Small Tools in Europe and the Levant*. Oxford: British Archaeological Reports International Series 1115, 101–111.
- Fridrich, J. 1991. Les premières peuplements humains en Bohême (Tchécoslovaquie). In: Bonifay, E. and Vandermeersch, B. (Eds.), *Les premiers Européens*. Paris: Comité des Travaux Historiques et Scientifiques, 195–202.
- Gamble, C. 1999. *The Palaeolithic Societies of Europe*. Cambridge: Cambridge University Press.
- Korisettar, R. and Petraglia, M. 1998. The archaeology of the lower paleolithic: background and overview. In: Petraglia, M. and Korisettar, R. (Eds.), *Early Human Behavior in Global Context. The Rise and Diversity of the Lower Paleolithic Record*. London: Routledge, 1–22.
- Lefevre, D., Raynal, J.-P., Vernet, G., Pilleyre, T., Piperno, M., Sanzelle, S., Fain, J., Miallier, D., and Motret, M. 1994. Sédimentation, volcanisme et présence humaine dans le bassin de Venosa (Basilicata, Italie) au Pléistocène moyen: exemple du site de Notarchirico. *Bulletin de la Société Préhistorique Française* 91(2): 103–112.
- Lordkipanidze, D. 1998. The Pleistocene Settlement of the Transcaucasus by Hominids. In: M. Otte (Ed.), *Préhistoire d'Anatolie. Genèse de deux mondes*. Liege, ERAUL 85, 1998, 15–28.
- Lordkipanidze, D., Jashashvili, T., Vekua, A., Ponce de León, M.S., Zollikofer, C.P., Rightmire G.P., Pontzer, H., Ferring, R., Oms, O., Tappen, M., Bukhsianidze, M., Agusti, J., Kahlke, R., Kiladze, G., Martínez-Navarro, B., Mouskhelishvili, A., Nioradze, M., and Rook, L. 2007. Postcranial evidence from early *Homo* from Dmanisi, Georgia. *Nature* 449: 305–310.
- Mania, D. and Mania, U. 2003. Bilzingsleben – *Homo erectus*, his culture and his environment. The most important results of research. In: Burdukiewicz, J. M. and Ronen,

- A. (Eds.), *Lower Palaeolithic Small Tools in Europe and the Levant*. Oxford: British Archaeological Reports International Series 1115, 29–48.
- Moga, M. 1936. Paleoliticul inferior în Transilvania. *Anuarul Comisiunii Monumentelor Istorice, Secțiunea pentru Transilvania* 4: 3–21.
- Moroșan, N.N. 1933. Evoluția cercetărilor preistorice-paleolitice din România nord-estică și rezultatele obținute. Chișinău, 1–21 (Offprint).
- Nania, I. 1972. Unelte ale paleoliticului inferior descoperite pe văile Dâmbovnicului și Mozacului. *Studii și Cercetări de Istorie Veche și Arheologie* 23(2): 235–244.
- Nica, M. 1970. Unelte ale culturii de profund descoperite la Fărcașele (jud. Dolj). *Revista Muzeelor* 7(5): 430–433.
- Nicolăescu-Plopșor, C.S. 1929. Cultura șeleană în România? *Arhivele Olteniei* 8(45–46): 469–473.
- Nicolăescu-Plopșor, C.S. 1930. Iarăși cultura șeleană în România. *Arhivele Olteniei* 9(49–50): 211–213.
- Nicolăescu-Plopșor, C.S. 1931. Asupra culturii acheuleene și micoquiene în România. *Arhivele Olteniei* 10(53): 46–52.
- Nicolăescu-Plopșor, C.S. 1957. Cercetări asupra paleoliticului timpuriu. *Materiale și Cercetări Arheologice* 3: 281–290.
- Nicolăescu-Plopșor, C.S. 1964a. Date noi cu privire la cunoașterea începuturilor și sfârșitului paleoliticului României. *Studii și Cercetări de Istorie Veche și Arheologie* 15(3): 307–320.
- Nicolăescu-Plopșor, C.S. 1964b. Nouvelles données sur la possibilité de l'existence de protohominiens dans le villafranchien de Roumanie. *Dacia Nouvelle Serie* 8: 47–52.
- Nicolăescu-Plopșor, C.S. and Moroșan I.N. 1959. Sur le commencement du paléolithique en Roumanie. *Dacia Nouvelle Serie* 3: 9–33.
- Nicolăescu-Plopșor, C.S. and Nicolăescu-Plopșor, D. 1963. The possible existence of protohominids in Romania's villafranchien. *Dacia Nouvelle Serie* 7: 8–25.
- Nicolăescu-Plopșor, D. 1970. Vârsta omului. *Magazin Istoric* 4(36): 83–84.
- Oms, O., Parés, J. M., Martínez-Navarro, B., Agustí, J., Toro, I., Martínez-Fernández, G., and Turq, A. 2000. Early human occupation of Western Europe: Paleomagnetic dates for two Paleolithic sites in Spain. *Proceedings of the National Academy of Sciences U.S.A.* 97: 10666–10670.
- Parés, J.M. and Pérez-Gonzalez, A. 1999. Magnetochronology and stratigraphy at Gran Dolina section, Atapuerca (Burgos, Spain). *Journal of Human Evolution* 37: 325–342.
- Parfitt, S.A., Barendregt, R.W., Breda, M., Candy, I., Collins, M. J., Russell Coope, G., Durbridge, P., Field, M.H., Lee, J.R., Lister, A. M., Mutch, R., Penkman, K.E.H., Preece, R.C., Rose, J., Stringer, C.B., Symmons, R., Whittaker, J.E., Wymer, J.J., and Stuart, A.J. 2005. The earliest record of human activity in Northern Europe. *Nature* 438: 1008–1012.
- Păunescu, Al. 1970. *Evoluția uneltelor și armelor de piatră cioplită descoperite pe teritoriul României*. București: Editura Academiei.
- Păunescu, Al. 1989. Le paléolithique et le mesolithique de Roumanie (un bref aperçu). *L'Anthropologie* 93(1): 123–158.
- Păunescu, Al. 1999a. *Paleoliticul și mezoliticul de pe teritoriul Moldovei cuprins între Siret și Prut*. București: Satya Sai.
- Păunescu, Al. 1999b. *Paleoliticul și mezoliticul de pe teritoriul Dobrogei*. București: Satya Sai.
- Păunescu, Al. 2000. *Paleoliticul și mezoliticul din spațiul cuprins între Carpați și Dunăre*. București: AGIR.
- Păunescu, Al. 2001. *Paleoliticul și mezoliticul din spațiul transilvan*. București: AGIR.
- Păunescu, Al., Rădulescu, C., and Samson, P. 1982. Découvertes de paléolithique inférieur en Roumanie. *Travaux de l'Institut de Speleologie "Emile Racovitza"* 22: 53–62.
- Peretto, C. 1991. Les gisements d'Isernia la Pineta (Molise, Italie). In: Bonifay, E. and Vandermeersch, B. (Eds.) *Les premiers Européens*. Paris: Comité des Travaux Historiques et Scientifiques, 161–168.
- Peretto, C., Biagi, P., Boschian, G., Broglio, A., Stefani, M., Fasani, L., Fontana, F., Grifoni, R., Guerreschi, A., Iacopini, A., Minelli, A., Pala, R., Peresani, M., Radi, G., Ronchitelli, A., Sarti, L., Thun Hohenstein, U., and Tozzi, C. 2004. Living – Floors and structures from the Lower Paleolithic to the Bronze Age in Italy. *Collegium Antropologicum* 28(1): 63–88.
- Raynal, J-P. and Magoga, L. 2000. Géofacts et téphrophacts dans le Massif Central. Quand la nature mystifie le préhistorien. *Revue d'Auvergne* 554–555 (1–2), 1–16 (Offprint)
- Rădulescu, C. and Samson, P. 1991. Traces d'activité humaine a la limite Pliocène/Pléistocène dans le Bassin Dacique (Roumanie). In: Bonifay, E. and Vandermeersch, B. (Eds.), *Les premiers Européens*. Paris: Comité des Travaux Historiques et Scientifiques, 203–207.
- Rădulescu, C., Samson, P. and Știucă, E. 1998. Cadre bios-tratigraphique du paléolithique inférieur en Roumanie. *Quaternaire* 9(4): 283–290.
- Roebroeks, W. 1994. Updating the earliest occupation of Europe. *Current Anthropology* 35(3): 301–305.
- Roebroeks, W. and Van Kolfschoten, T. 1994. The earliest occupation of Europe: a short chronology. *Antiquity* 68: 489–503.
- Rolland, N. 1998. The Lower Paleolithic settlement of Eurasia, with special reference to Europe. In: Petraglia, M. and Korisettar, R (Eds.), *Early Human Behavior in Global Context. The Rise and Diversity of the Lower Paleolithic Record*. London: Routledge, 187–220.
- Roska, M. 1928. Le paléolithique inférieur de Zimbru (Arad). *Buletinul Societății de Științe din Cluj* 4(2): 35–37.
- Roska, M. 1931. Paleoliticul Ardealului. *Anuarul Institutului Geologic al României* 14: 99–126.
- Roska, M. 1933. Recherches paléolithiques en Transylvanie en 1927. *Dacia* 3–4: 8–23.
- Singer, R. 1956. The "Bone Tools" from Hopefield. *American Anthropologist* 58(6): 1127–1134.
- Thieme, H. 2003. Lower Paleolithic sites at Schöningen, Lower Saxony, Germany. In: Burdukiewicz, J. M. and

- Ronen, A. (Eds.), *Lower Palaeolithic Small Tools in Europe and the Levant*. Oxford: British Archaeological Reports International Series 1115, 9–27.
- Tuffreau, A. 1979. Les débuts du paléolithique moyen dans la France septentrionale. *Bulletin de la Société Préhistorique Française* 76(5) 140–142.
- Tuffreau, A. 1982. The transition Lower/Middle Palaeolithic in Northern France. In: Ronen, A. (Ed.), *The Transition from Lower Paleolithic to Middle Paleolithic and the Origin of Modern Human Man*. Oxford: British Archaeological Reports International Series 151, 137–149.
- Tuffreau, A., Lamotte, A., and Marcy J-L. 1997. Land-use and Acheulean complexes of the Somme Valley. *World Archaeology* 29(2): 225–241.