

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

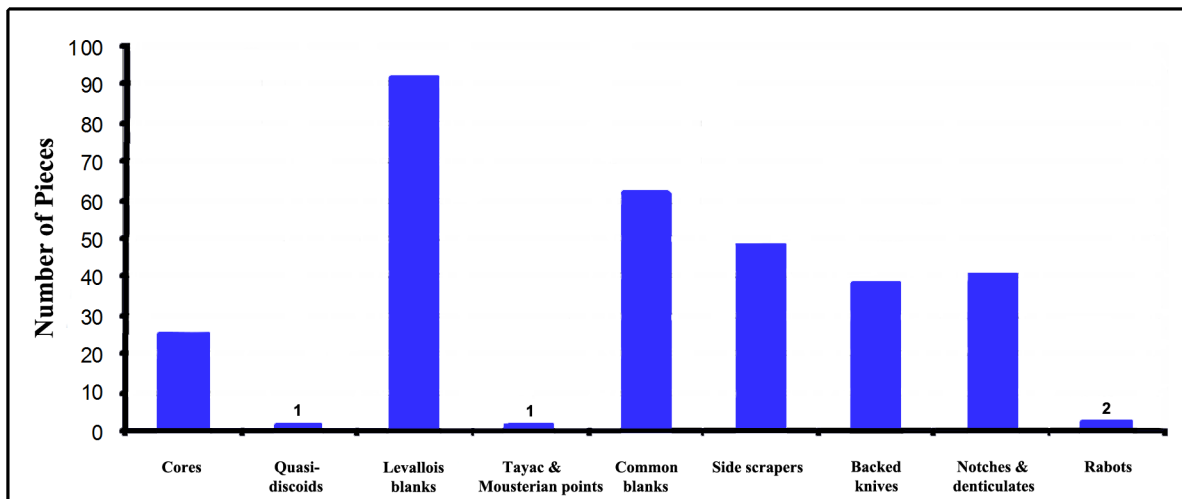


Figure 6. Tool types assigned to the Premousterian.

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.

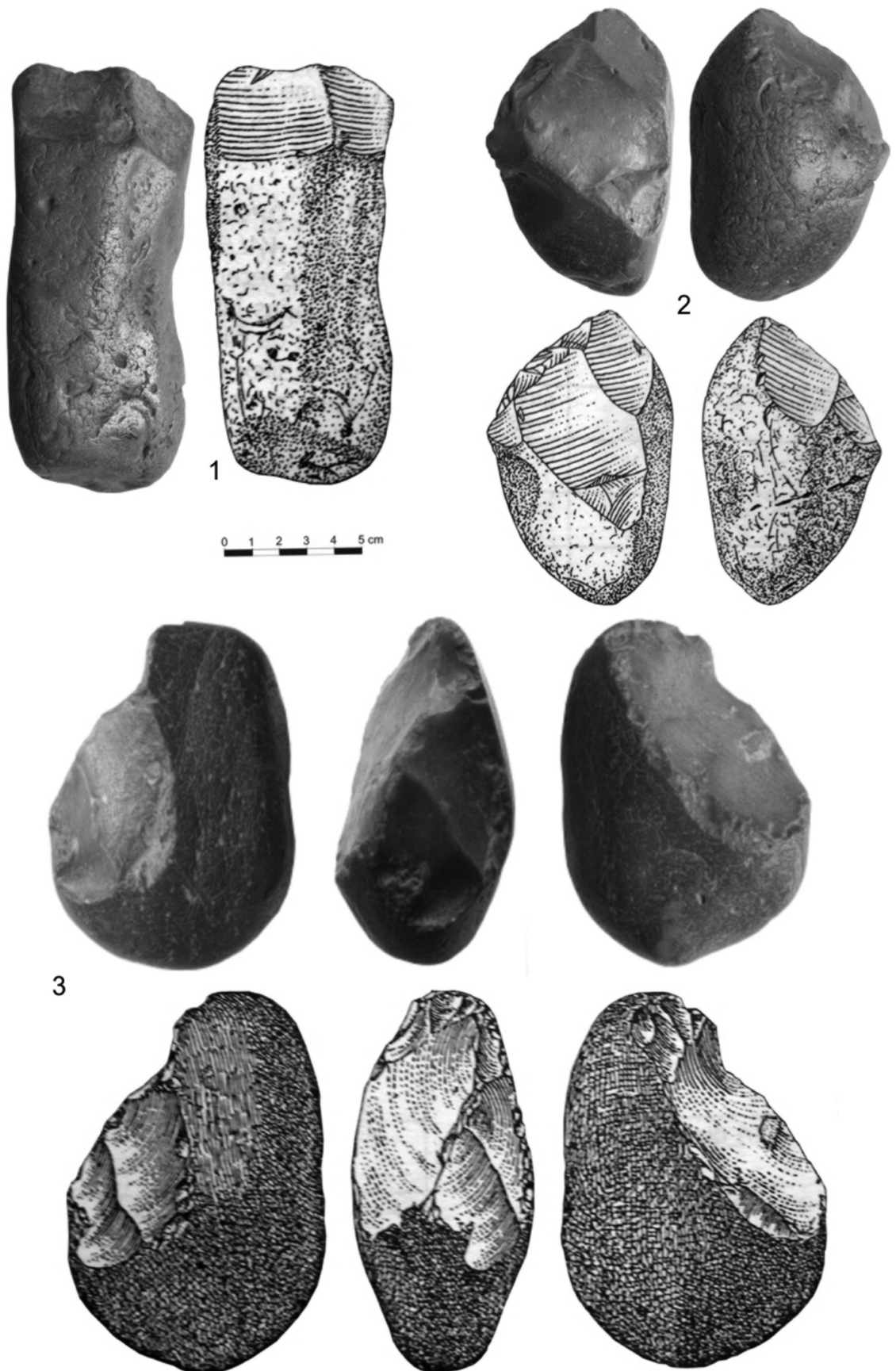


Figure 8. Slatina – Valea Muierii: 1, Chopper. Valea Mare: 2, Chopping tool; Brebeni: 3, Chopping tool. (Drawings after Păunescu 2000; used with permission of the AGIR).

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.

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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 Dîrjov Valley) and Acheulian bifaces (from the gravels of the Olt and Dîrjov 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.