Ministère de l'Education Nationale
L'Université Valahia Târgovişte
Faculté de Sciences Humaines

ANNALES

D'UNIVERSITÉ VALAHIA TARGOVISTE

SECTION d'Archéologie et d'Histoire

TOME XIX

2017

Valahia University Press
Târgovişte

Annales d'Université Valahia Targoviste Section d'Archéologie et d'Histoire publie des mémoires originaux, des nouvelles et des comptes-rendus dans le domaine de l'archéologie préhistorique, de l'histoire du moyen âge, de l'environnement de l'homme fossile, de l'archéologie interdisciplinaire et de patrimoine culturel.

Revue indexée B+ par CNCSIS et B par CNCS - Roumanie

Indexée dans:

SCIMAGO Journal and Country Rank, AWOL, FRANTIQ

Tout ce qui concerne la Rédaction des *Annales d'Université Valahia Targoviste Section d'Archéologie et d'Histoire* doit être envoyé à: mcarciumaru@yahoo.com, www.annalesfsu.ro

ISSN: 1584-1855; ISSN (online): 2285–3669

Sommaire

ARTICLES ET ÉTUDES

NOTES ET DISCUSSIONS

Annales d'Université Valahia Targoviste,
Section d'Archéologie et d'Histoire,
Tome XIX, 2017, p. 19-32
ISSN: 1584-1855;
ISSN (online): 2285–3669

Evolution of Human Habitat in the Carpathian-Dniester Area during Upper Paleolithic and Neolithic

*Mădălin-Cornel Văleanu**

* Moldova National Museum Complex of Iași, The Moldavia's History Museum, Stefan cel Mare si Sfânt Square no. 1, Iași, 700028, Iași County, Romania; e-mail: madalinvaleanu@yahoo.com.

Abstract: The paper aims at analyzing the evolution of the human habitat in the Carpathian - Dniester area, the manner adopted by the human communities for occupying the natural space, starting from the data existing in the specialized literature and from the new data regarding the evolutions of the natural environment in the Upper Pleistocene-Early Holocene. The paper raises the problem of the modification of the geographic landscape of the region, and implicitly of the human habitat, under the impact of the level fluctuations of the Black Sea. Certain results of statistic models of analysis of the human habitat in the region especially at the level of the Neolithic are also considered.

Keywords: Human habitat, Paleolithic, Mesolithic, Epipaleolithic, Neolithic, Carpathian-Dniester area.

Knowing the human habitat in Upper Paleolithic and their further developments during the Mesolithic and Neolithic represent a major scientific subject, necessary for understanding the transformations has been occurring inside of the human communities.

A special scientific interest related with this subject is the cultural transmissions from the Paleolithic human communities to the Neolithic ones, and in this direction, the proposed geographic area has a particular importance.

The geographic area

The expression *Carpathian-Dniester space* or the *Carpathian-Dniester area* was introduced and used after 1990 for the explanation of cultural - historical events unleashed of a certain political charge, but still tributary to a certain type of mentalities, which obviously marked the history of the 20th century in the east of Europe.

V. Chirica and I. Borziac establish the usage of the expression in the field of Paleolithic archeology, by a series of scientific studies and specialized volumes. The term was also used for the study of historical epoch, being taken over also in other scientific fields.

In the strict meaning, by the Carpathian-Dniester space, one understands the geographic area contained between the Carpathian Mountains and Dniester river, on the nowadays territory of Romania, Ukraine and the Republic of Moldova (Fig.1).

The north and east limits are clear, being represented by the composing elements, respectively Dniester river, generating the same type of limit to the south, where the Dniester flows into the Black Sea, the confluence of the Siret and the Danube, and the Carpathian Curvature.

The only limit that may have multiple interpretations is the western limit of such area: the Carpathians. Taking into account the above limits, the western limit should consequently be given by the unity of the Eastern Carpathians, within the Carpathian Mountains, respectively their eastern boundary.

If one takes into account the characteristics of the natural environment and the evolution hereof

Fig. 1 - The localisation of the analyzed area - the Carpathian-Dniester area.

during the Quaternary, as well as the dynamics of the historical phenomena of this geographic area, from prehistory until the modern epoch, the western limit to the west of the Carpathian-Dniester area should be placed on the line of the inter-river Tisa-Siret within the Eastern Carpathians (Fig. 1).

This represents a well defined natural barrier, which in fact had an important natural and historical role. This limit is the one we shall use in our study for delimiting to the west the Carpathian – Dniester area.

Mention should be made of the fact that the

term Carpathian – Dniestrean has also been used with wider meanings, associating to this area a part of the Carpathian space. This may be correct, on the condition of the precise stipulation of the geographic limits taken into account.

The generic usage of this term, without a clear definition, can also lead to other interpretations, obviously exaggerated, such as those which associate to this space the whole Carpathian area, from the north of Serbia, Romania, Hungary, Ukraine and Slovakia, having as eastern limit the Dniester.

History of the researches

The first Neolithic and Paleolithic settlements of the Carpathian - Dniestrean area were identified almost simultaneously: in 1884 at Cucuteni and in 1885 at Mitoc.

If the Neolithic settlement from Cucuteni enjoyed a special scientific interest, entering the European scientific circuit already in 1889 and being investigated by systematic researches by Hubert Schmidt in 1909-1910 or visited by the abbot Henry Breuil in 1924, the Paleolithic settlements shall be the subject of detailed researches only after World War I, by the efforts of N. N. Moroşan. He is the one who discovered and investigated several Paleolithic settlements also east of Prut river, and elaborated the first archaeological monographic study of the Paleolithic settlements of this region, the book being published in 1938. Mention should also be made of the trip in the area and the consequent study elaborated by Etienne Patte (1934).

Between 1945 and 1990, due to the territorial redistribution, the research of the Paleolithic and the Neolithic undertook two almost parallel research directions, but marked by the identification of other archaeological settlements, including the first settlements belonging to the Early Neolithic, and the implementation of numerous systematic campaigns of archaeological research.

Within these researches, in the area between the Dniester and the Prut rivers, there should be specified the important contribution of the Soviet researchers, while in the area between the Prut and Carpathians, it may retain only the visits and participations of some American researchers (Kenneth Honea, Linda Elis etc.)

In this phase, 1945-1990, there are specified and clarified the main evolutionary phases of the area during the Upper Paleolithic– the Neolithic, with the mention though of certain differences between the two regions, pertaining to the systems in use and certain interpretations.

After 1990, even political-administrative barriers remained in place, the scientific research is marked by an intensive collaboration between archaeologists in Romania and those in the Republic of Moldova, collaborations in which there were also involved researchers from Occidental Europe.

The results of such collaborations, mainly marked by interdisciplinary investigations on the Paleolithic and Neolithic settlements (which characterize this period), led to the elaboration of numerous studies of this geographic area, both for the Paleolithic period and for the Neolithic one.

Chronological limits and cultural framework

It is considered that the passage from the Middle Paleolithic to the Upper Paleolithic in the Carpathian – Dniestrean area took place at the chronological limit of 35,.000-30,000 BP, moment when the Aurignacian (the Early Upper Paleolithic) started (Al. Păunescu, 2001, p. 34). The latter has five development phases, includes several local facieses (V. Chirica, D. Boghian, 2003, p. 182) and ends its evolution at about 24,000-22,000 BP (Al. Păunescu, 2001, p. 90).

The Gravettian (the Recent Upper Paleolithic) undertook in this region a wider development than the previous culture (I. Borziac et al., 2006, p. 78 sqq), within it being identified eight evolution phases, out of which two define the Epigravettian, and ends its evolution at about 14,000-12,000 BP (Al. Păunescu, 2001, p. 92).

The Epipaleolithic is ascertained in this area by habitats of the Swiderian type and is followed by the Mesolitic (which develops between 9,500-9,000 and 7,500-7,000 BP) characterized by habitats of the Tardenoasian type (Al. Păunescu, 2001, p. 100 sqq).

On the process of transition from Paleolithic to the Neolithic, the archeological researches achieved so far in this geographic area have not allowed to reach a unanimously accepted consensus. The Early Neolithic starts west of the Prut with the apparition of the first communities of the Starcevo-Criş culture (N. Ursulescu, 2001, p. 129), while east of it, especially in the Dniester area, human habitats are assigned to the Bugo-Dniestrean culture (O. Larina, 1994, p. 42 sqq).

The chronological sequence taken into account in our study ends in Middle Neolithic - with the

Linearbandkeramik culture (LBK) (ca. 6,200 BP) (V. Chirica, D. Boghian, 2003, p. 141).

Archaeological discoveries

The corpus of the Paleolithic and Neolithic discoveries of the Carpathian - Dniestrean area is still tributary to the parallel evolutions of the archaeological research registered during the period 1945-1990.

Thus, for the area west of the Prut on the territory of Romania, the settlements assigned to the Upper Paleolithic – Epipaleolithic – Mesolithic enjoyed a better inventory and publication, both in regional (N. Zaharia et al., 1970) or zonal (Al. Păunescu et. al, 1976; Coman G., 1980; V. Chirica, M. Tanasachi, 1984-1985) monographic studies, and in synthetic volumes dedicated to this period (M. Brudiu, 1974; Al. Păunescu, 1998, 1999).

Unfortunately the impossibility of using during the period 1950-1990 of detailed maps for the investigated zones, for the location of the archaeological discoveries, especially field researches, the specificity of the Paleolithic discoveries, that is the identification in the field of a low number of objects (an important factor, see *infra*), as well as numerous documentation errors[1], determine the impossibility of locating nowadays of a large number of such discoveries.

The information from archaeological literature have required a careful structuring and a proper interpretation to draw and to build a database, the database what allowed issuing multiple queries to obtain real results. And our previous experience was particularly most important in this direction (M. Văleanu, 2003a; M. Văleanu, 2003b).

In our database, regarding the Paleolithic discoveries between Carpathians and Prut, we have included so far 545 entries[2], out of which only 384 are of interest for the specified temporal segment (Upper Paleolithic - Mesolithic), the rest being discoveries of Pleistocene fauna or discoveries assigned exclusively to the Lower and Middle Paleolithic.

On the basis of the existing information, out of the 384 archeological mentions only 257 could be exactly located and marked on maps that is only two thirds of the total number, while 127 could not be located at all.

Regarding the type of undertaken researches, in 265 cases we deal with random discoveries or identified within a single field campaign (out of these 122 could not be located), in 25 cases we deal with more field research campaigns (in two cases there was attempted the re-identification in the field, which though did not lead to positive results). In 94 settlements there were achieved archaeological survey or excavations, of smaller or larger amplitude, which aimed directly Paleolithic habitats or which were focused on other periods but which lead to the discovery of Paleolithic items or levels.

From the number of 384 archaeological mentions, 41 are chronologically framed only on the basis of the discovery of a single item, in 31 cases there exists the specification of the identification of 2 to 10 items, and in other 202 cases there is specified the discovery of "several items". There are 274 such cases, out of which 122 did not allow for their location. Under these circumstances, a possible attempt of re-identification in the field of these types of objectives might not be possible any more (see *supra*).

From the point of view of the chronological framing, out of the 384 archaeological mentions 56 are generically assigned to a Paleolithic habitat, 125 to a habitat of the Upper Paleolithic, in 41 there were identified levels of several phases (Middle Paleolithic / Upper Paleolithic / Mesolithic), and in four cases it was not possible to specify exactly the chronological framing (Gravettian or Epigravettian / Tardenoasian).

In three cases, only the discoveries were assigned to the Aurignacian, in 124 discoveries to the Gravettian (with a larger or small accuracy degree), in five to the Epigravettian, in seven to the Epipaleolithic and the Swiderian, and 19 to the Tardenoasian.

The general situation mentioned above pertaining to the territory of Romania is similar to the one characterizing the area east of River Prut, with the remark that down there no updating of the repertory of the discoveries is available.

The synthetic study of the Upper Paleolithic between the Prut and the Dniester, relatively recent (I. Borziac, 1994, p. 24 sqq), refers also to the first archaeological repertory of the zone (N. Chetraru, 1973, p. 60-112). The same situation is true for the Mesolithic (I. Borziac, 1994, p. 29 sqq; N. Chetraru 1973, p. 112-124), although there were sequentially published data on certain discoveries (O. Larina, 1997, 62 sqq; I. Borziac et al., 2008, p. 40 sqq).

As a total, within the area between the Prut and the Dniester there is specified the existence of about 470 settlements and points with discoveries

assigned to the Upper Paleolithic and the Mesolithic (I. Borziac, 1994, p. 24 and 29). Out of these, 40 were researched by surveys or systematic excavations. Regarding the cultural framing, new researches reveal the fact that it has not been always very precise, as is the case of certain Mesolithic settlements (I. Borziac et al., 2008, p. 52).

Regarding the settlements assigned to the Early Neolithic on the territory of Romania, corresponding to the study area, respectively the Stracevo-Criş Culture and the Linearbadkeramik Culture, these enjoyed rather quickly after their discovery, from synthetic studies on their evolution and a detailed repertory (N. Ursulescu, 1984).

Later on, there was also achieved a mapping thereof, using detailed topographic maps (M.-C. Văleanu, 2003b), fact which allowed the implementation, within a unitary system, of statistical analysis models (M.-C. Văleanu, 2003a).

At present, within the space contained between the inter-rivers Tissa / Siret and the Prut, there have been acknowledged 205 settlements with discoveries / settlements assigned to the Starcevo-Criş culture, in 40 of them carrying out surveys or archaeological excavations, of larger or smaller amplitude, which directly aimed at this type of habitat or which aimed at habitats of other periods, but which also lead to the identification of items or levels of the Starcevo-Criş culture.

Mention should be made of the fact that only a relatively small number of discoveries assigned to this culture, more precisely eight, could not be located on maps.

The number of archaeological settlements which provided discoveries assigned to the Linearbandkeramik culture of the specified geographic area is of 55, excavations or surveys being organized only in 16 of these. Mention should be made of the fact that only six discoveries could not be located.

Unfortunately, the situation of the discoveries assigned to the Neolithic east of the Prut cannot compare to the one of the similar discoveries in the considered study area of the territory of Romania, but rather to the situation of the Paleolithic and Mesolithic discoveries of this area, as there is no updated record of such discoveries, the situation remaining to the level of the eighth decade of the 20th century (O. Larina, 1994, p. 43).

Also from the cultural-chronological perspective the situation of these discoveries is relatively different from the one west of the Prut, meaning that the beginning of the Neolithic period is marked by the habitats assigned to the Bugo-Dniestrean Culture, a term considered as not sustained with sure archaeological proofs (N. Ursulescu, 2001, p. 60 sqq). It is to this cultural group that are assigned about 20 discoveries, generally located near the Dniester river (O. Larina, 2010, p. 190), some of which in the area not considered by our study, on the left riverbank (O. Larina, 1994, p. 43).

Discoveries assigned to the Starcevo-Criş Culture east of the Prut were made only in the 1970s by Ilie Borziac, although certain materials were discovered much earlier but could not be for the moment culturally assigned.

Mention should be made of the fact that some of the cultural assignments were reconsidered in time, discoveries initially assigned to the Bugo-Dniestrean Culture being then assigned to the Starcevo-Criş Culture, and the other way around as well (O. Larina 1997,p. 47), fact that would sustain the argumentation of some Romanian researchers (N. Ursulescu, 2001, p. 60 sqq). At present, there have been acknowledged 13 Stracevo-Criş settlements, within three of them wider investigations being also carried out.

Discoveries assigned to the Linearbadkeramik Culture east of the Prut are much more numerous than in the first part of the Neolithic, being assigned a number of 60 settlements (O. Larina, 2010, p. 107), out of which 10 were investigated through excavations and surveys (O. Larina, 1997, p. 52).

Climate and natural environment in the Upper Pleistocene and Early Holocene

The recreation of the climatic evolution and the natural environment in the Upper Pleistocene and Early Holocene within the Carpathian-Dniestrean space is based on the results of the interdisciplinary researches made in the archaeological settlements, on the observations of researchers in the field of natural sciences made outside the archeological contexts and on parallelisms with the situation in the neighboring geographic areas.

On the climatic evolution in this area there were published several syntheses (M. Cârciumaru, 1980; C. Mihăilescu, 2004), and also wide studies based on the observations in certain archeological settlements – the most eloquent example – Mitoc-Malul Galben, Cosăuţi and Molodova (M. Otte, V. Chirica, P. Haessart, 2007).

For the chosen temporal segment, the climatic schemes of the zone are correlated with the European ones, the identified phenomena finding their causality in events that marked the evolution at the continental level, but observing also aspects with a regional character.

Out of these, in the Upper Pleistocene, at the level of the middle Pleniglaciary (35,000-26,000 BP) - apart from the Ohaba A, Ohaba B and Herculane I oscillations (M. Cârciumaru, 1980, p. 57), there were identified and detailed the climatic phases MG 13-8 (P. Haessart et al., 2003, p. 181 sqq), in the Upper Pleniglaciary (26.000-15.000 BP) - Herculane II and the phases MG6-4, Cosăuţi VI-VI (P. Haessart et al., 2003, p. 183 sqq).

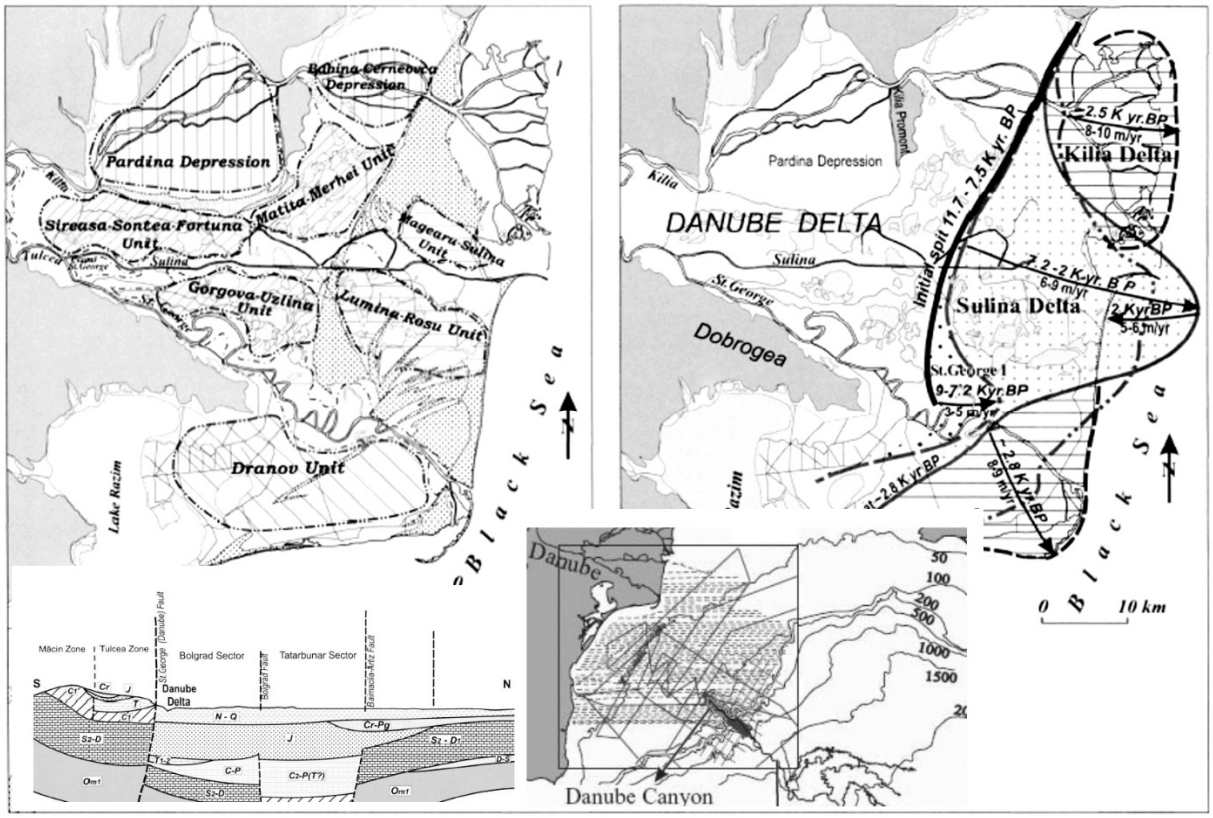

Fig. 2 -The evolution of the Danube Delta (after N. Panin, 2003, fig. 2-4; I. Popescu et al., 2004, fig. 1).

For the Tardiglaciary (15,000-10,000 BP), apart from the prior local climatic episodes which have correspondences in Occidental Europe (M. Cârciumaru, 1996, p. 9 sqq) other events were also individualized (P. Haessart et al., 2003, p. 185).

The consequences of the climatic amelioration which mark the limit Pleistocene / Holocene (P. Gibbard, T. van Kolfschoten, 2004, p. 451) shall influence not only the initial period of the Holocene, but also the following episodes which are better documented in this region of the Carpathian space (Tanţău I., 2006, p. 10 sqq). Recent data indicate the beginning of a period marked by fast climatic changes (P. A. Mayewski et al., 2004, p. 244 sqq), some of which with a large separation, such as the event of 8,200 BP, to which we shall below refer.

The effects of the climatic variations of the Upper Pleistocene – Early Holocene of the studied area did not consist only in modifications at the level of the vegetal cover and of the fauna spectrum, such as those well detailed and studied also by the archeological discoveries in this region, which had direct repercussions on the human habitat. The major implications of these climatic variations also have a component at the supra-regional level, pertaining to the existence of the Black Sea basin. That is why, recent researches were focused on the level variations of the Black Sea and the

implications on the human habitat in the region (V. Yanko-Hombach et al., 2007), and they should also refer to tributary rivers of its basin with a role in shaping the relief, aspect identified at a large scale at the level of the Danube Delta (N. Panin, 2003, p. 154) (Fig. 2).

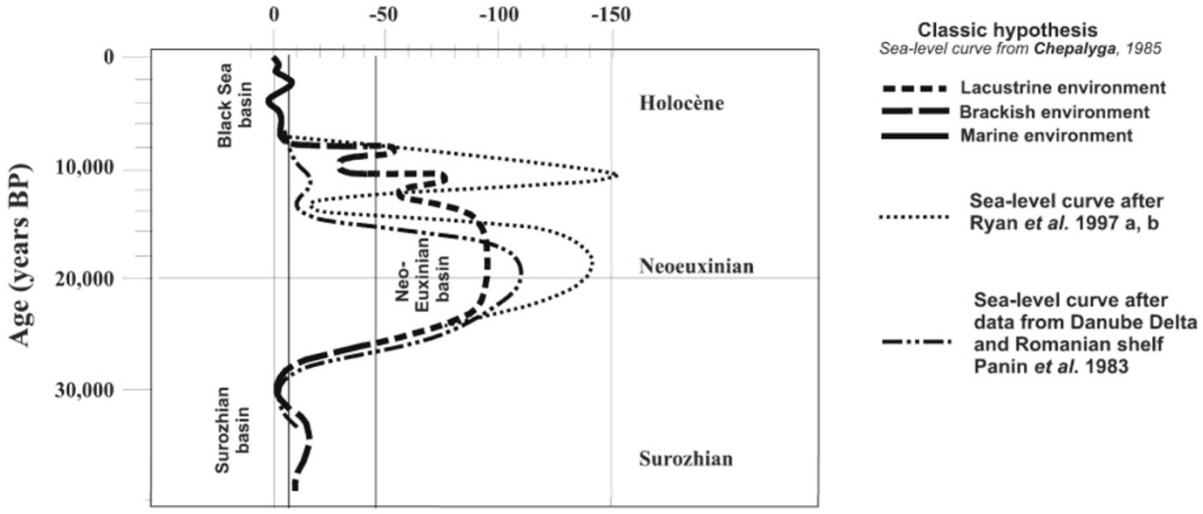

Fig. 3 - The Black Sea level variations (after N. Panin, I. Popescu, 2007, p. 401).

The level variations of the Black Sea (Fig. 3) had direct repercussions on the equilibrium profiles of the tributary rivers of its basin, leading to the modification thereof, with a direct effect on the accumulation – erosion processes at the level of the hydrographic network (Fig. 4).

And amplitudes of -100 m or even up to -150 m of the Black Sea level, as revealed during the Upper Pleistocene and of the starting period of the Holocene (N. Panin, I. Popescu, 2007, p. 401) (Fig. 3) lead to wide erosion processes of the river meadows and then of refilling hereof, generating the phenomenon of the buried terraces, especially in the middle and lower segment of rivers (Fig. 4).

This phenomenon, documented for the whole northeast zone of the Romanian Plain, along the Lower Siret and the Lower Prut, was well pointed out on the Valley of Milcov (R. Săcrieru, L. Cîrnu, 2008, p. 85), but exclusively assigned to eustatic movements.

And if we take into account the fact that the site of Mitoc-Malul Galben is at 90 m above the level of the Black Sea at 35.000 BP, these effects should be felt up to here. Could not this be another explanation for the observations regarding the existence of sedimentation levels pertaining to a higher level of the river, observed in the stratigraphic profile? (K. Honea, 1994, p. 118; M. Otte et al., 2007, p. 183).

But beyond this observation, the raised problem, the impact of the level variations of the Black Sea on the shaping of the geographic landscape might provide answers also for the understanding of the evolution of the human habitat in the specified temporal segment.

Climatic events observable around the date of 8,400 BP (P. A. Mayewski et al., 2004, p. 244 sqq) – 8,200 BP (B. Weninger et al., 2003, p. 76) also involved a sudden raise of the level of the Black Sea (W. Ryan, 2007, p. 73 sqq; E. Konikov 2007, p. 427 sqq), with the advancement towards inland of the shore line and the flooding of wide areas.

All these events, which took place in a rather short time interval, obviously had consequences both on the communities of the affected regions, and on the natural environment.

Human habitat and its evolution in the Upper Paleolithic - Mesolithic

The facts shortly described above are the starting points in the analysis of human habitat. For the Upper Paleolithic, the archaeological research pointed out more than 820 archeological mentions, in 134 of them achieving surveys or systematic excavations, that were focused directly on Paleolithic habitats or which treated also habitats of other periods, but which lead to the discovery of Paleolithic items or levels.

Fig. 4 - The changing profile of equilibrium of the rivers and their impact over the floodplains: 1. the sea level variations and the changing profile of equilibrium of the river; 2. a schematic evolution of the sedimentation and erosion processes; 3. the development of the regressive erosion processes of alluvial deposits in the floodplain of the Bahlui River under the impact of the local changing profile of equilibrium of the river as a result of hydro-amelioration works; 4. the floodplain of the Prut River at Popricani (Iaşi County); some aspects of the evolution of the alluvial sedimentation.

The geographic distribution of these discoveries points out a linkage thereof, obviously connected to the attention paid to the archaeological research in the given area.

On the Valley of Bistriţa river (Fig. 1), where intensive archaeological researches were undertaken in connection to the achievement of civil projects, the number of the discoveries assigned to the Upper Paleolithic is particularly high, with 34 identified objectives, and with surveys or systematic excavations carried out in 23 of them.

On the valley of Trotuş river, located south of it, with a geographic position similar to the one of Bistriţa valley (Fig. 1), only one site was identified. The situation is similar south of it as well, on the valley of Putna river, and also north of Bistriţa valley, on the valley of Moldova river.

Another situation is encountered on the Valley of Suceava river and on the Valley of Siret river, near the city of Suceava, where a high density of the discoveries assigned to the Upper Paleolithic has been acknowledged (Fig.1). To the south though, on Siret Valley, the number of the discoveries gradually decreases, and down the city of Roman they disappear completely.

This analysis pattern can be extended also on the Valley of the Prut river (Fig. 1). On the right bank, on the Romanian territory, up the locality of Ştefăneşti, where the archaeological interest was higher, the number of discovered settlements is of 61 (more than 50% of the total number of similar discoveries of the county of Botoşani), out of which in 24 there were carried out surveys and excavations.

The same situation characterizes the left bank of the Prut, on the territory of the Republic of Moldova, where practically there are gathered more than 90% of the discoveries in this zone.

The same situation is also encountered on the Valley of the Dniester river, where up the locality of Butuceni, there are concentrated more than 120 sites, that is an impressive number, while down this point the discoveries are rather scarce. A higher concentration of habitats also appears on the upper sector of the Valley of Răut river, between Bălţi and Orhei.

In the rest of the territory, but referring to the space between the Carpathians and Prut, where the archaeological research was more intensive, the number of discoveries is higher, and the example that can be given is the one of counties of Iaşi and Botoşani. Practically, in this area, from north to south, the number of Paleolithic archaeological discoveries gradually decreases. Still, wherever repeated archaeological excavation campaigns were attempted, discoveries appeared and this is the case of the county of Vrancea.

But the total lack of Paleolithic discoveries, especially on the lower courses of the main rivers in the region, would have as unique explanation only the type of research? In our opinion, the answer must be searched somewhere else too, more precisely in the attempt of recreating the natural landscape of the zone, in direct connection to the human habitat.

In the Upper Pleistocene, the network of the main rivers of the region was already individualized, and we refer here to rivers Siret, Prut and Dniester, and also to their main affluent branches, Putna, Trotuş, Moldova, Suceava, Bârlad, Bahlui, Jijia and Răut (Fig.1). The evolution hereof also depended on eustatic movements of the zone, positive or stationary to the north or in the center of the area (with a decrease of the amplitude from east to west) and negative to the south.

But the evolution of these rivers was much more sensitive and reacted under the impulse of another phenomenon: the level fluctuations of the Black Sea. The modification of the level of the Black Sea automatically leads to the modification of the equilibrium profile of the tributary rivers of its basin that is in this case the rivers specified above.

At 35,000-30,000 BP, the Black Sea level was relatively close to the current level. There follows a period when the Black Sea level gradually decreases until 20,000 BP, when it reaches an absolute minimum, according to some authors down to - 150 m under the current level (N. Panin, I. Popescu, 2007, p. 401) (Fig. 2).

At the level of the equilibrium profiles of the rivers, this was reflected by the erosion of the alluvia of the major riverbeds and the gradual deepening of the valleys, down to the basic rock bed or eroding even the rock (Fig. 2). The amplitude of the phenomenon decreases proportional to the distance to the Black Sea, being also influenced by the relative altitude in relation to the level of the sea, but also by the geologic substratum, which can be favorable or not.

The phenomenon was documented for the

Danube Delta, where the alluvia prior to this period were practically fully eroded (N. Panin 2003, p. 254 sqq). This is probably the cause which led to the creation of the underwater canyon of the Danube (I. Popescu et al., 2004, p. 11 sqq). These are also proofs which sustain the fact that the same thing must have taken place at the level of the hydrographic network.

Precisely, on Prut Valley, on its lower segment, what was at 35,000-30,000 BP the river meadow, at 20,000 BP became a terrace of the respective river. The level of the new meadow could be found much under the level of 35,000-30,000 BP, and the difference can be of several tens of meters, taking into account the estimated regression (see *supra*).

On the middle and upper sectors, let's take the example of the area of Mitoc, located at about 90 m above the level of 35,000-30,000 BP, the phenomenon for sure had a smaller amplitude, and also a difference of 15-20 m would have led to important modifications of the natural landscape. And these situations can be extrapolated at the level of the whole hydrographic network of the area.

Taking into account the dependence on the water source, and on the area of the riverbeds (from where people would get the rocks for creating the various implements), one should suppose that the Paleolithic habitation should have occupied the new niches thus created, practically descending under the level occupied at 35,000-30,000 BP.

Apart from this phenomenon, the strong marine regression led to the advancement of the shoreline towards the offshore, releasing thus new territories, and this why practically the southeast part of the studied area is united to the land of the Crimea. And the about 10,000-15,000 years are more than enough for the occupation of the new bio-geographic niche created this way.

After reaching the maximum of the regression, the Black Sea level started to gradually increase until about 11,000 BP, but regarding the reached level data are contradictory (N. Panin, I. Popescu, 2007, p. 401). The marine transgression had now the opposite effect compared to the previous period, the modification of the equilibrium profiles leading to the accumulation of alluvia. Practically, deep valleys get refilled gradually with alluvia[3], including therein the spaces released during the previous phase. In the seacoast area, the previously released territories are now gradually flooded, reentering the submersed environment.

These events practically lead to the disappearance of the possible witnesses of the Upper Paleolithic habitats. This natural phenomenon can therefore be an important cause for which in the zones with low absolute altitude of the studied area, concentrated especially to the south, the habitats assigned to the Upper Paleolithic are practically absent[4] (Fig. 5).

The total surface that could be affected by these phenomena, calculated on the basis of level curves with the current absolute altitude of 15 m, exceeds with 40% the surface of the southern area of the Carpathian-Dniester space. To this, one should also add the area released by the Black Sea waters which was then submersed back, which is important at the regional scale.

Regarding the human habitat of the zone during the Upper Paleolithic, one can notice a predisposition for habitats near a watercourse, in relatively low lands, although there are numerous habitats in the upper part of the landform.

Even if the specialized literature provides certain hypotheses as for the types of human settlements of the Upper Paleolithic and the relations with the natural environment, in our opinion the current phase of the researches does not allow the formulation of final hypotheses, fact also sustained by other researchers who observe the *sensitivity* of the evolution of cultural manifestations in this area (P. Noiret, 2009, p. 529).

The data available in the specialized literature do not allow quantitative recreations of the natural landscape of the area of the settlements or of the anthropic impact.

Naturally, the high number of discoveries in the area of occurrence of the rocks used for creating the tools, and we refer here to the middle sector of Prut and Dniester rivers, might indicate a certain specialization of the human communities in the production thereof or that it represents an area mainly used for rock procurement and processing.

Still, one should take into account that the alluvia of the respective rivers, pebbles of raw materials that can be used at the creation of chopped tools, are found down to the lower sector in the flowing area into the Danube, respectively the Black Sea (M. Văleanu, 2003, p. 197), and the previously referred phenomenon of marine regression and transgression, seems to have led to the disappearance of these habitation traces.

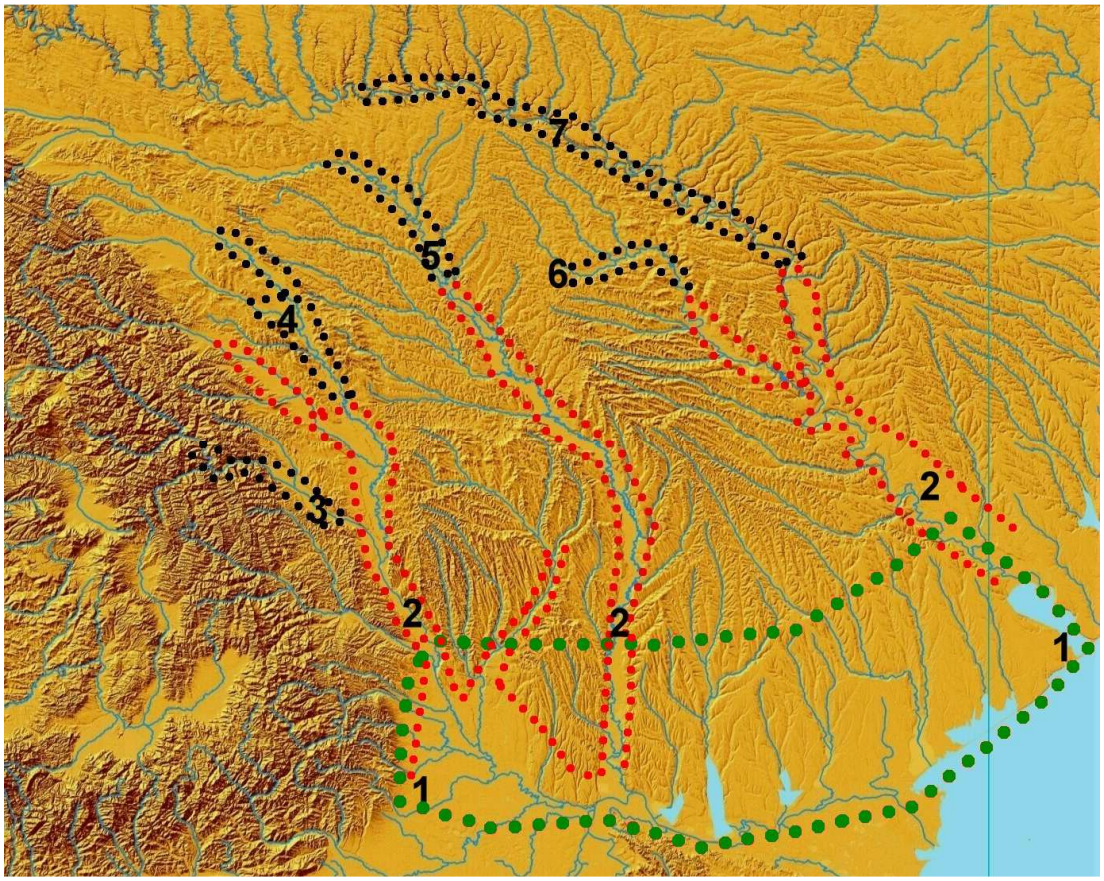

Fig. 5 - The Carpathian-Dniester area: 1. the southern part - without discoveries attributed to Upper Paleolithic; 2. the floodplains of the main rivers of the region (where it was manifested the powerful influence of the Black Sea level variations) - without discoveries attributed to Upper Paleolithic; 3-7. the floodplains of the rivers (where it wasn't manifested the influence of the Black Sea level variations) – with many discoveries (settlements) attributed to Upper Paleolithic. 3. Bistrita Valley; 4. Siret Valley (near by the Suceava City); 5. Prut Valley; 6. Răut Valley; 7. Dniester (Nistru) Valley.

The previously specified conclusions are also valid for the Epipaleolithic and Mesolithic periods, even if the number of the discoveries in the region is incomparably lower than in the previous phase[5].

The phenomena of concentration of certain Epipaleolithic or Mesolithic discoveries (on Bistriţa Valley, in the area corresponding to the limit between counties Vaslui and Galaţi, or on Răut Valley) can have the same causes as those previously specified for the Upper Paleolithic.

Starting from the Black Sea Level of 11,000 BP (N. Panin, I. Popescu, 2007, p. 401) and the reaching of a similar level with the current one at 8,200 BP, whatever the evolutions hereof, with a new minimum or with gradual decreases, the cumulated effect is the same: the burial of the lower terraces and the advancement of the shoreline. Consequently, the facts specified above for the previous period are also valid for these phases as well.

Unfortunately, the Epipaleolithic and Mesolithic habitats both by their number and by the materials discovered so far do not provide enough data for a detailed analysis of the aspects pertaining to the human habitat in the area.

Human habitat and its evolution in the Early and Middle Neolithic

On the evolution of the human habitat during the Early Neolithic, data in the specialized literature provide more informations. Starting from the location of the archaeological sites on maps and the establishment of their position, there could be

pointed out a series of aspects pertaining to the manner of occupation of the geographic space (M. Văleanu 2003a, p. 65 sqq)[6].

For the habitats of the Starcevo-Criş culture, the geographic distribution and the internal chronological evolution reveal the ways of penetration and advancement in this area of certain allogenic communities, fact sustained by the associated discovered inventory (M. Văleanu, 2003a, p. 92 sqq). These groups, of southern origin, include in their structures autochthonous populations as well, that were at the limit of the Mesolithic, fact sustained by the anthropological discoveries (E. Popuşoi, 2005, p. 52 sqq).

At present, there are no DNA analysis able to confirm such observations, although on the contact and coexistence phenomena between the two human groups, researchers agree (M. Zvelebil, 1995, p. 123 sqq). The fact that 10% of the settlements of the Starcevo-Criş Culture in this area overlap habitats of the Paleolithic type (M. Văleanu 2003a, p. 70) can serve as an argument in the above direction.

This type of contacts are those which might explain certain evolutions in the region and the presence of local phenomena, such as the Bugo-Dniestrean Culture (N. Ursulescu, 2001, p. 60 sqq), together with other events, already in the phase of hypotheses, pertaining to the evolution of the Black Sea shoreline (V. Dergacev, P. Dolukhanov, 2007, p. 493 sqq), but the analysis of the phenomena of transition to the Neolitic in the region exceeds the topic of the present study.

The manner of distribution throughout the natural landscape of the settlements of the Starcevo-Criş culture points out the importance of the plant cultivation by these human communities, aspect highlighted also by the palinological researches (I. Tanţău, 2006, p. 161).

The high number of settlements located in the lower part of the landform, in stepped zones with low relative altitude, with an exposure favorable to plant cultivation (M. Văleanu, 2003, p. 78 sqq), together with the presence of the phenomenon of *grouped settlements* (N. Ursulescu, 2000, p. 117 sqq), are other arguments in this regard.

The existence of local aspects in the occupation of the geographic environment within the geographic subunits of the region, indicates the fact that the respective human communities had knowledge on certain morpho-climatic particularities of the region.

An example in this regard is the occupation of higher zones in the mountains and sub-mountains, where the phenomenon of thermal inversion or of exploitation of natural resources of salt are more visibly manifest (M. Văleanu, 2003, p. 83, 93 sqq).

The positioning of the settlements within the hydrological units of the region is interesting as it reflects the prevalent occupation of *more protected zones*, *with good natural defense* (N. Ursulescu, 2001, p. 112; M. Văleanu 2003q, p. 83), but the usage of zones providing natural defensive advantages is not relevant from the statistic point of view (M. Văleanu, 2003a, p. 81), as in this area no anthropic defense systems have been identified.

Regarding the internal organization of the settlements of this culture, the scientific literature advances several hypotheses (N. Ursulescu, 2001, p. 25, 108 sqq). The presence of the phenomena of *grouped settlements*[7], and the archeological observations made until now cannot sustain these points of view, an opinion already stated by us (M. Văleanu, 2003a, p. 68).

An interesting phenomenon encountered in this area is the existence of the stratigraphic superposition of the habitats of the Stracevo-Criş culture and of those of the linear ceramic culture, a fact observed in 25 cases east of the Prut river, that is almost half of the total number of settlements of the linear ceramic culture in this area. Investigated for the clarification of the temporal relations between the two cultures (M. Petrescu-Dîmboviţa, 1957, p. 65 sqq), this aspect might be based on a possible continuity of population between the two cultures. Yet we should not forget there are no anthropologic proofs in this regard (M. Văleanu, 2003a, p. 113).

The number of archaeological discoveries assigned to the linear ceramic culture in the region does not allow a statistical analysis in the strict meaning of the occupation pattern of the geographic space, but a percentage relation can lead to the identification of the main characteristics (M. Văleanu, 2003a, p. 98 sqq). These point out general aspects similar to those specified for the Starcevo-Criş culture, although one can notice a higher tendency of areas occupation with favorable exposure for the practicing of agriculture (M. Văleanu, 2003, p. 113).

The geographic distribution of the habitats of this culture also points out the directions of dispersion hereof in this region. One of them

develops near the mountain zone, east of it, and which in a later development phase generated the habitats on the inner side of the Carpathian bend (N. Ursulescu, 2001, p. 144 sqq).

The other dispersion way was through the central zone of the interfluvium Prut-Dniester, with a larger development of the habitat on Răut Valley (O. Larina, 1994, p. 58). It is from there, most probably, that is then spread westwards and southwards (M. Văleanu, 2003, p. 102).

The individualization of elements of internal organization of the settlements, by the disposition of the dwellings in circles, as it happens in Drânceni I, or in rows, in Floreşti 1, announce the following development phase of the region– the Eneolithic.

Acknowledgements

The Romanian-language version of this study appeared in the journal *Cercetări Istorice* (serie nouă), XXXVI, Iași, 2017, p. 11-32.

Notes

[1] For example, the corpus of discoveries elaborated by Al. Păunescu (1999b) does not include 60 Paleolithic mentions of the territory of Iaşi county.

[2] The database includes all Paleolithic settlements researched by means of surveys and systematic excavations, but we estimate that about 70-90 entries should still be introduced as pertaining to certain surface researches, in which there were also identified Paleolithic items.

[3] The refilling of the major riverbeds is mainly achieved by repeated silting, aspects observed in the stratigraphic profiles of Mitoc-Malul Galben (K. Honea, 1994, p. 118; M. Otte et al., 2007, p. 183).

[4] Similar remarks are formulated as for the Mesolithic of the area (D. Bailey, 2007, p. 520 sqq).

[5] On the high number of discoveries assigned to the Mesolithic between the Prut and the Dniester we formulate our reserves, considering the fact that a reassessment thereof is necessary.

[6] Taking into account the type of statistical analysis proposed for the geographic space east of the Prut, and the number of similar settlements east of this river, the conclusions can be extrapolated, within the error margin.

[7] Until now, there are no detailed archaeological researches leading to the explanation thereof or to establishing stratigraphic relations between the neighboring habitats.

Bibliography

Bailey D., 2007, *Holocene changes in the level of the Black Sea: Consequences at a human scale*, in V. Yanko-Hombach, A. Gilbert A., N. Panin, P. Dolukhanov (eds.), ***The Black Sea Flood Question. Change in Coastline, Climat and Human Settlement***, Springer, New York, p. 515-537

Borziac I., Burlacu I., Vartic I., 2008, *Situri mezolitice din valea râului Căinari*, *Republica Moldova*, Revista Arheologica, IV/1, p. 40-60.

Borziac I., Chirica V., Văleanu M.-C., 2006, ***Culture et sociétés pendant le Paléolithique supérieur à travers l'espace carpato – dniestréen***, Iaşi.

Borziac I., 1994, *Paleoliticul şi Mezoliticul în spaţiul dintre Nistru şi Prut*, Thraco-Dacica, XV, 1-2, p. 19-40.

Brudiu M., 1974, ***Paleoliticul superior şi epipaleoliticul din Moldova***, Bucureşti.

Cârciumaru M., 1980, ***Mediul geografic în Pleistocenul superior şi culturile paleolitice din România,*** Acad. RSR, Bucureşti.

Cârciumaru M., 1996, ***Paleoetnobotanica,*** Helios, Iaşi.

Chetraru N., 1973, ***Pamiatniki epoh paleolita i mezolita. Arheologhiceskaia karta moldavskoi SSP***, Kisinev.

Chirica V., Boghian D., 2003, ***Arheologia preistorica a lumii***, vol. I-II, Iaşi.

Chirica V., Tanasachi M., 1984-1985, ***Repertoriul arheologic al judeţului Iaşi***, vol. I-II, Iaşi.

Coman G.,1980, ***Statornicie, continuitate. Repertoriul arheologic al Judeţului Vaslui***, Bucureşti.

Dergacev V., Dolukhanov P., 2007, *The Neolithization of the north Pontic area and the Balkans in the context of the Black Sea floods*, in V. Yanko-Hombach, A. Gilbert, N. Panin, P. Dolukhanov (eds.), ***The Black Sea Flood Question. Change in Coastline, Climat and Human Settlement***, New York, p. 489-514

Gibbard P., van Kolfschoten T., 2004, *The Pleistocene and Holocene Epochs*, in F.M. Gradstein, J.G. Ogg, A.G. Smith (eds.), ***A Geologic Time Scale***, Cambridge University Press, p. 441-452.

Haessart P., Borziac I., 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*, Quaternar, 14/3, p. 163-188.

Honea K., 1994, *Tranziţii culturale în Paleoliticul superior timpuriu si cronostratigrafia de la Mitoc-Malu Galben (jud. Botosani)*, Arheologia Moldovei, XVII, p. 117-146.

Konikov E., 2007, *Sea-level fluctuations and coastline migration in the northwestern Black Sea area*

over the last 18 ky based on high-resolution lithological-genetic analysis of sediment architecture, in V. Yanko-Hombach, A. Gilbert, N. Panin, P. Dolukhanov (eds.), ***The Black Sea Flood Question. Change in Coastline, Climat and Human Settlement***, New York, p. 405-436.

Larina O., 1994, *Neoliticul pe teritoriul Republicii Moldova*, Thraco-Dacica, XV, 1-2, p. 41-66.

Larina O., 1997, *New Field Survey on Mesolithic and Neolithic of Moldova*, in *Vestigii arheologice din Moldova*, Chişinău, p. 61-110.

Larina O., 2010, ***Începuturile Economiei Productive. Neoliticul. Orânduirea gentilico-tribală,*** **in** ***Istoria Moldovei. Epoca preistorică şi antică***, Chişinău, p. 177-219.

Mayewski P.A., Rohling E. E. et al., 2004, *Holocene climate variability,* Quaternary Research 62, p. 243– 255.

Mihailescu Constantin, 2004, ***Clima şi hazardurile Moldovei: evoluția, starea, predicția***, ed. Licorn.

Noiret P., 2009, ***Le Paleolithique superior de Moldavie. Essai de synthese d'une evolution multi-culturelle***, Eraul 121, Liege.

Otte M., Chirica V., Haessart P., 2007, ***L'Aurignacien et le Gravetien de Mitoc – Malul Galben (Moldovie Roumanie)***, Eraul 72, Liege.

Panin N., 2003, *The Danube Delta. Geomorphology and Holocene Evolution: a Synthesis / Le delta du Danube. Géomorphologie et évolution holocène: une synthèse*, Géomorphologie, vol. 9/4, p. 247-262.

Panin N., Popescu I., 2007, *The northwestern Black Sea: climatic and sea-level changes in the Late Quaternary*, in V. Yanko-Hombach, A. Gilbert, N. Panin, P. Dolukhanov (eds.), ***The Black Sea Flood Question. Change in Coastline, Climat and Human Settlement***, New York, p. 387-404.

Patte E., 1934, *Souvenirs de voyage en Roumanie. Notes de Préhistoire*, Bulletin de la Société préhistorique de France, tome 31, n°9, p. 371-432.

Păunescu Al., 1998 ***Paleoliticul şi epipaleoliticul de pe teritoriul Moldovei cuprins între Carpaţi şi Siret***, Bucureşti.

Păunescu Al., 1999, ***Paleoliticul şi mezoliticul de pe teritoriul Moldovei cuprins între Siret şi Prut***, Bucureşti.

Păunescu Al., 2001, *Paleoliticul şi Mezoliticul pe teritoriul României*, in ***Istoria Românilor***, p. 67-110.

Păunescu Al., Șadurschi P., Chirica V., 1976, ***Repertoriul arheologic al județului Botoșani***, București.

Petrescu-Dîmboviţa M., 1957, *Sondajul stratigrafic de la Perieni (reg. Iaşi, r. Bârlad)*, Materiale, 3, p. 65-82.

Popescu I., Lericolais G., Panin N., Normand A., Dinu C., Le Drezen E., 2004, *The Danube Submarine Canyon (Black Sea): Morphology and Sedimentary Processes*, Marine Geology, 206 (1-4), p. 249-265.

Popuşoi E., 2005, ***Trestiana. Monografie arheologică,*** Bârlad.

Ryan W., 2007, *Status of the Black Sea flood hypothesis*, in V. Yanko-Hombach, A. Gilbert, N. Panin, P. Dolukhanov (eds.), ***The Black Sea Flood Question. Change in Coastline, Climat and Human Settlement***, New York, p. 63-88.

Săcrieru R., Cîrnu L., 2008, *Repere geomorfologice şi istorice privind braţul focşănean al Milcovului*, Milcovia, s.III, an IV/8, 79-86.

Tanţău I., 2006, ***Histoire de la vegetation tardiglaciaire et holocene dans les Carpates Orientales***, Cluj.

Ursulescu N., 1984, ***Evoluţia culturii Starcevo-Criş pe teritoriul Moldovei***, Suceava.

Ursulescu N., 2000, ***Contribuţii privind neoliticul şi eneoliticul din regiunile est-carpatice ale României***, Iaşi.

Ursulescu N., 2001, *Începuturile neoliticului pe teritoriul României*, in ***Istoria Românilor***, p. 122-148.

Văleanu M.-C., 2003a, ***Omul şi mediul natural în neo-eneoliticul din Moldova***, Iaşi.

Văleanu M.-C., 2003b, ***Aşezări neo-eneolitice din Moldova***, Iași.

Weninger B., Alram-Stern E., Bauer E., Clare L., Danzeglocke U., Jöris O., Kubatzki C., Rollefson R., Todorova T., 2005, *Die Neolithisierung von Südosteuropa als folge des Abrupten Klimawandels um 8200 cal BP*, in D. Gronenborn, ***Klimaveränderungen und Kulturwandel in neolithischen Gesellschaften Mitteleuropas***, RGZM, Mainz, p. 75-104.

Yanko-Hombach V., Gilbert A., Panin N., Dolukhanov P. (eds.), 2007, ***The Black Sea Flood Question. Change in Coastline, Climat and Human Settlement***, Springer, New York.

Zaharia N., Petrescu-Dîmboviţa M., Zaharia Em., 1970, ***Aşezări din Moldova de la Paleolitic pînă în secolul XVIII***, București.

Zvelebil M., 1995, *Neolithization in Eastern Europe: a view from the Frontier*, Porocilo, XXII, p. 107-151.