NEW ARCHAEOZOOLOGICAL RESEARCH IN MONTEORU CULTURE SITES FROM EASTERN ROMANIA

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Keywords: Monteoru Culture, Pietroasa Mică, wild taxa, elk, bison.

Abstract: The paper put into question recent data on the exploitation of animals in settlements of the Monteoru culture, located in eastern Romania, in the light of the samples from Costişa (Neamţ county) and Pietroasa Mică – *Gruiu Dării* (Buzău county). 8,535 bones were taken into consideration, of which 2,755 are from the settlements mentioned above, the rest from others already published. Statistics show that hunting would have had a minor role in economy, since in most sites wildlife remainders do not exceed 8.5%, excepting sites from Sărata Monteoru with 12% and Costişa with 28.8 %. Most settlements are situated in the Sub-Carpathian Hills area, management of large and small ruminants was favoured by location, the Monteoru tribes specializing in their exploitation. After a review of inter specific relations, assessments on morpho-dimensional features and age profiles of domestic species are emphasized.

Cuvinte cheie: Cultura Monteoru, Pietroasa Mică, specii sălbatice, elan, bizon.

Rezumat: Materialul pune în discuţie date recente asupra exploatării animalelor în aşezări ale culturii Monteoru, amplasate în sud-estul şi estul României, pornind de la eşantioanele faunistice de la Costişa (jud. Neamţ) şi Pietroasa Mică – *Gruiu Dării* (jud. Buzău). S-au avut în vedere ca. 8.535 oase, dintre care, 2.755 provin din aşezările mai sus-amintite, restul din altele deja publicate. Conform statisticilor, vânătoarea avea un rol minor în economia comunităţilor monteorene, în mai toate siturile resturile speciilor sălbatice nu depăşesc 8,5 %, cu excepţia locuirii de la Sărata Monteoru, cu 12% şi Costişa cu 28,8%. Majoritatea aşezărilor fiind amplasate în zona dealurilor subcarpatice, creşterea rumegătoarelor mari şi mici a fost avantajată de poziţia geografică, triburile monteorene specializându-se în exploatarea lor. După o trecere în revistă a raporturilor interspecifice, se fac aprecieri asupra trăsăturilor morfo-dimensionale şi asupra vârstelor de tăiere a speciilor domestice.

The paper aims to present recent data on livestock management in the settlements of the Monteoru culture, located in eastern Romania, according to new faunal samples from Costişa (Neamţ county) and Pietroasa Mică – *Gruiu Dării* (Buzău county). 8,535 bones were taken into consideration, of which 2,755 are from the above mentioned sites, the rest from others already published (Table 1, fig. 1). *Gruiu Dării* is the name of a promontory with an oval shape and a height of 534 m belonging to the hills of Istriţa, a unit of Buzău Sub-Carpathians, located between the Romanian Plain and the Buzău Mountains. Under massive it stretches the Istriţa Glacis, a plain with heights of 200-300 m, representing a stage of transition towards the Bărăgan low plain. Basically the area is a mixture of biotope belonging to both Sub-Carpathian chain (dominated by deciduous forests – durmast oak woods mixed with lime-tree, flowering-ash, and horn-beam) and steppe, including secondary meadows and agricultural crops[1]. On that height, which gave good foresight and excellent natural protection to the field, there were found remains of the Eneolithic (Cernavodă Ic and Cucuteni B), Bronze Age (Monteoru culture), the 4th-3rd c. BC (only a few complex) and La Tène epoch[2]. The Bronze Age habitation belongs to an early phase of Monteoru culture (circa 2400-2100 BC), starting in the phase Ic4-2, also developing during the phase Ic3[3]. The 2,130 animal bones were harvested from dwellings and waste pits, by excavations performed during 2001-2009 campaigns.

Below we present the main results of sample analysis from Pietroasele a detailed analysis, being in print. According to it, hunting has a reduced contribution in providing of some products as meat, fur, leather, and raw material for tools, the bones of wild species totalling 8.47%. Red deer prevails among the game meat, but its remains do not exceed 5% as fragments, in terms of number of individuals it reaches 7.48%. Overall, the wild mammals adapted to an open landscape (roe deer, aurochs and hare) come to the same percent of the red deer, 7.48% as NMI; so we can speak of the

[1] Posea *et alii* 1982, 321-322.

[2] Sîrbu *et alii* 2010.

[3] *Ibidem*.

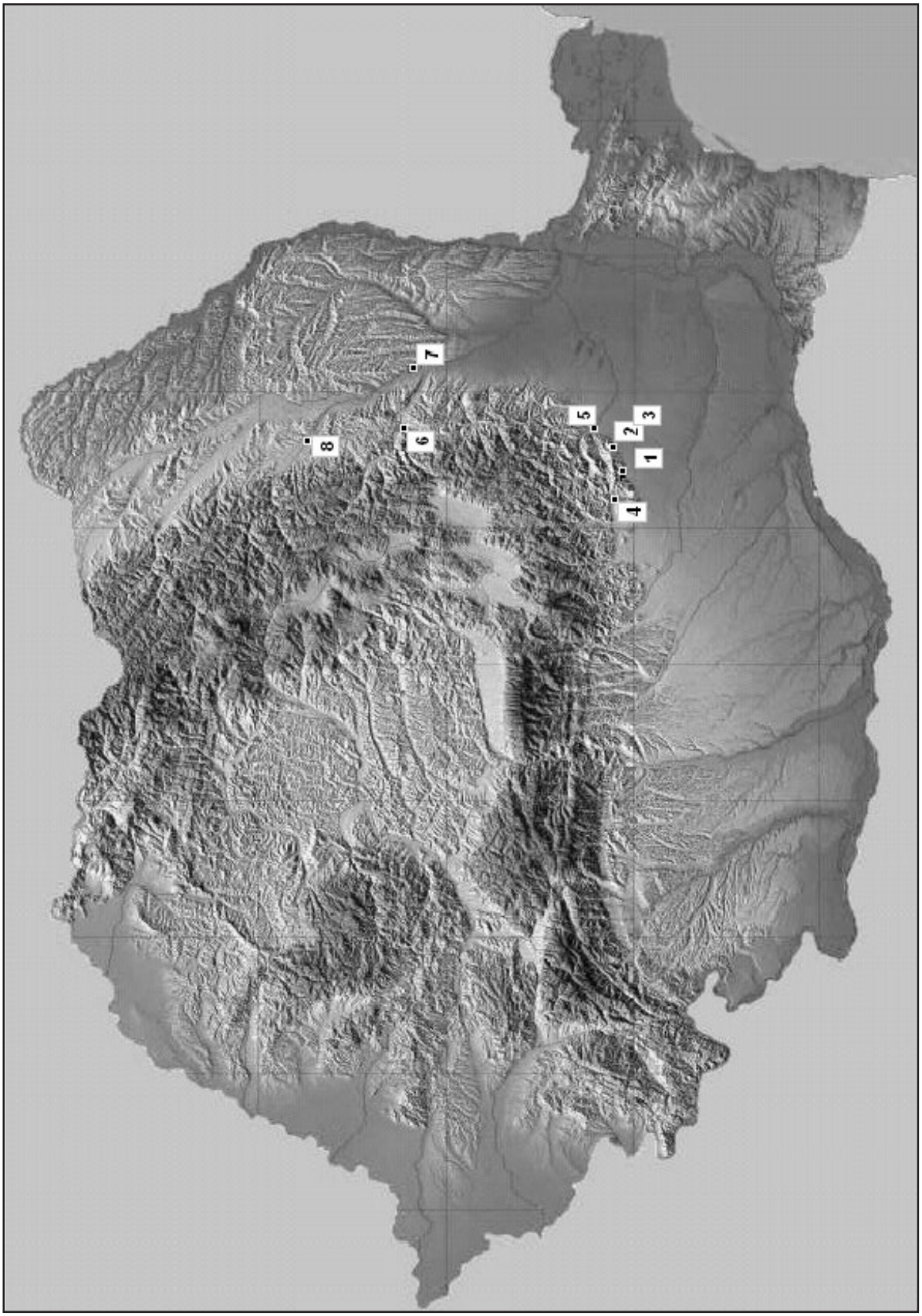

Fig. 1. Map of sites.

existence of open areas in the surroundings of the settlement, conducive to their existence. In addition to mammals' aquatic resources, primarily fish were occasionally exploited. In this respect to note four freshwater fish fragments, one of them is a jaw fragment from pike. Cattle prevail with 36% as fragments and only 17% as NMI. Ovicaprids record a high frequency similar to that of bovine, 35.86%. It is worth pointing the higher percentage of bones of goats 15.77% compared to only 12.9% that of sheep. The cattle management was largely focused on by-products according to age class-distribution. Specifically, there are few individuals up to one year, about 8%, similarly until two years and about 45% until three years. Over this limit was identified only 37%. Therefore few slaughters of calves, more animals of 2-3 years old, and many animals used for many years were found. The small ruminants were an important source of meat, milk and wool as well. Slaughter of sheep and goats carries different patterns. In the case of goats, from the 25 individuals, an animal (4%) was killed between 0-2 months, five individuals between 2-6 months (20%) and five between 6-12 months (20%). There are six animals slaughtered between 1-2 years (24%), five individuals up to 4 years (20%) and three between 4-6 years (12%). Thus about 44% of lambs was killed for meat, slaughter were intense during the warmer season. A rate of 20% was preserved for meat supplying (individuals 1-2 years old), and a third one for milk and reproduction. The maximum exploitation of the species lasted up to six years. Of 24 sheep, one specimen (meaning 4.17%) is below two months, seven animals (29.2%) between 2-6 months, two (8.33%) between 6-12 months, four (16.75%) between 1-2 years, six (25%) between 2-4 years, and four (16.67%) over that limit. Therefore, the data confirm significant culling of lambs, from spring to summer (slaughter for meat, or in connection with certain rites of spring?). Then, the slaughter rate decreases during 6-12 months, corresponding to the first pregnancy and parturition; few killings of animals of two-three years (the slaughters aimed at males and females with reduced milk productivity. Circa 17% was preserved for wool and breeding. The wastes assigned to pig account for 16.29%, a closed value of 13.61% estimated as MNI. According to pig dentition it is estimated that of twenty specimens, about 25% were killed up to a year and 70% between 1-2 years, especially between 14-18 months. There is an animal 3-4 years old. The horse is still less exploited, it is quoted by 1.5%. It seems that horse was not used in consumption.

The other site under consideration is Costişa. It is located in the Depression-Bistriţa-Cracău, in the eastern edge of Costişa village, on a promontory broken away from the high terrace of the river Bistriţa. The landscape is dominated by medium altitudes, with terraces and alluvial plains covered by deciduous forests, containing mostly durmast and oak. Flood plain vegetation developed along the river valley. Much of these forests have been cut over time, their place being taken by secondary grasslands, meadows and crops[4]. 4,020 faunal remains belonging to Precucuteni – Phase III, Costişa and Monteoru cultures were collected during 2001-2008 campaigns. The two deposits of the Middle Bronze Age (Costişa and Monteoru cultures) were considered as a result of two communities which in turn occupied the plateau. Monteoru archaeological deposit covering Costişa complexes has a completely different structure. It consists of a consistent layer of stones between them, revealing the 33 fireplaces, hearths portions, vitrified clay, pots fragmentation (dated in Ic2-Ic1 Monteoru phase), various objects of metal, stone, clay, and many animal bones[5]. Monteoru arrangement is the result of a huge effort, which is, according to researchers a strong argument to give a special character to site[6]. Faunal remains belonging to this level come, almost entirely from the plateau A. From the plateau B, few bones were collected and they were not considered. The sample of 625 bones, of which 452 completely identified, is the lot of the Plateau A. Excepting two remnants of turtle and two valves of clam, the 621 pieces originate in a proportion of 71.2% in domestic mammals and 28.8% in the game. Of 322 identified fragments, 32.7% is the rate of cattle, 16.4% that of pig, 12.4% that of small ruminants, 8.2% that of horse and 1.5% the dog. In the slaughter of cattle, there is a percentage of 17.6% in 18 months, 35.3% between 2-3 years and 47% over 3 years. So a report sub-adult/ adult of 9/8 could also suggest the use of cattle also for meat, dairy, breeding and labour. Two proximal widened and slightly deformed phalanges may be evidence for the use of cattle as beasts of burden. Related to pigs, a rate of 22.2% is the animals, slaughtered up to one year, 33.3% to 44.5% two years and 2-3 years at most. A single individual may be beyond that stage. Obviously there are two cutting tips, one between 12-18 months, and another at 2-3 years, these moments are about to reach a certain optimum body weight for slaughter and keeping in mind of zootechnical parameters (sexual maturity, calving, etc.). 16.7% is the rate of juveniles, 50%

[4] Posea *et alii* 1982, 609-615.

[5] Popescu, Băjenaru 2008, 5-17.

[6] Vulpe, Popescu, Băjenaru 2006, 141.

of the sub-adults and only 33.3% of the adult in small ruminants. Percentages clearly show an exploitation of meat production, while maintaining a certain stock, whether for reproductive or dairy; the report sheep/ goat with a value of 6/ 1 rather suggests the low importance given to goats in relation to sheep. It seems that the bones in the archaeological deposit derived primarily from animals cut since the end of spring to autumn. Old horses were not identified, with only sub-adult specimens or young adults. Certainly horse meat was consumed occasionally by the community. Wild mammals have a significant participation in the sample; it is a percentage of 28.8% as fragments, and 31.7% as the minimum number of individuals. Among the hunted taxa, the red deer has a majority share of 18.6% in the report of the NISP (no fragments) and 13.4% as MNI; it ranks the second as meet source after cattle. Indeed mention that I did not find any piece of horn, not even a waste processing, unlike the situation encountered in Precucutenian level, characterized by numerous remains of corn. Whether processing of this raw material was insignificant compared to Precucutenian times or red deer hunting was done mainly in the warm season, when males had horns cast. Or simply tools, processing waste were dumped elsewhere. The few data collected on the teeth suggests the preference of deer hunting in the summer. The boar is rated by 5.3%, 2% roe deer, 1.1% aurochs and hare, fox below 1%. A special mention for beaver, a common element of wildlife in the area, though its percentage is much lower (1.3%) from the Neolithic levels, where it reaches about 7%. In terms of number of individuals, we find the same high rate of 7.3% to Costişa, and 4.8% in Sărata Monteoru.

When referring to animal economy of Monteoru communities, even if the number of excavated settlements is large, in terms of faunal analyses, by now few lots of bones have been published. Except for Mândrişca sample with 3,859 fragments the others ones do not exceed 1,000 bones each one. Geographically, the sites are positioned in eastern part of Romania, in extra-Carpathian area. The sites no. 1-5 (numbering in table 1) are located into the Buzău zone, with environmental conditions similarly to those of Pietroasele. The sites from Moldova (no. 6-8) are also in the uplands, emphasizing bio-geographical patterns somewhat akin to those at Costişa. Obviously, there are some local peculiarities, at least in terms of temperature regime, rainfall, and type soil which made a particular impression. According to available data, the exploitation of animals reveals some features that I tried to sketch in the light of current data. Statistics show that hunting would have had a minor role in supply, since in most sites wildlife remainders do not exceed 8.5%, excepting sites from Sărata Monteoru with 12% and Costişa with 28.8%. Wildlife exploitation was diversified, despite lower percentages. Hunting focused on a large variety of mammals including: red deer, boar, roe deer, aurochs, beaver, hare, small carnivores, elk, and bison (Mândrişca and Bogdăneşti). Referring to domestic segment, three "*economic*

Table 1. Taxa frequencies in Monteoru sites

NISP	1	2	3	4	5	6	7	8
Cattle	36	40.14	42.1	28.2	48.3	52.46	63.07	32.7
Sheep/goat	35.82	22.9	43.8	46.3	26.7	18.78	11.68	12.4
Pig	16.29	13.38	11.6	15.4	16.4	16.69	14.96	16.4
Horse	1.56	5.44	0	0.3	6	0.59	0.89	8.2
Dog	1.86	5.67	1.4	3.8	0	4.18	1.15	1.5
Game	8.47	12.47	1.1	6	2.6	7.3	8.25	28.8
Total sample	**2,130**	**441**	**480**	**551**	**276**	**897**	**3,135**	**625**
MNI								
Cattle	17.01	18.07	28.6	19.4	36	30	40.23	20.7
Sheep/goat	38.77	22.89	28.6	27.8	24	22.22	5.47	14.6
Pig	13.61	20.48	23.8	19.4	24	18.89	31.65	22
Horse	3.4	4.82	0	2.8	8	2.22	1.95	7.3
Dog	3.4	9.64	9.5	5.6	0	6.67	2.73	3.7
Game	23.81	24.1	9.5	25	8	20	17.97	31.7

1: Pietroasa Mică – *Gruiu Dării*; 2: Sărata Monteoru (after Haimovici 1994); 3: Sărata Monteoru (after Becker 2000); 4: Năeni – *Zănoaga*; 5: Cârlomăneşti – *Arman*; 6: Bogdăneşti; 7: Mândrişca; 8: Costişa.

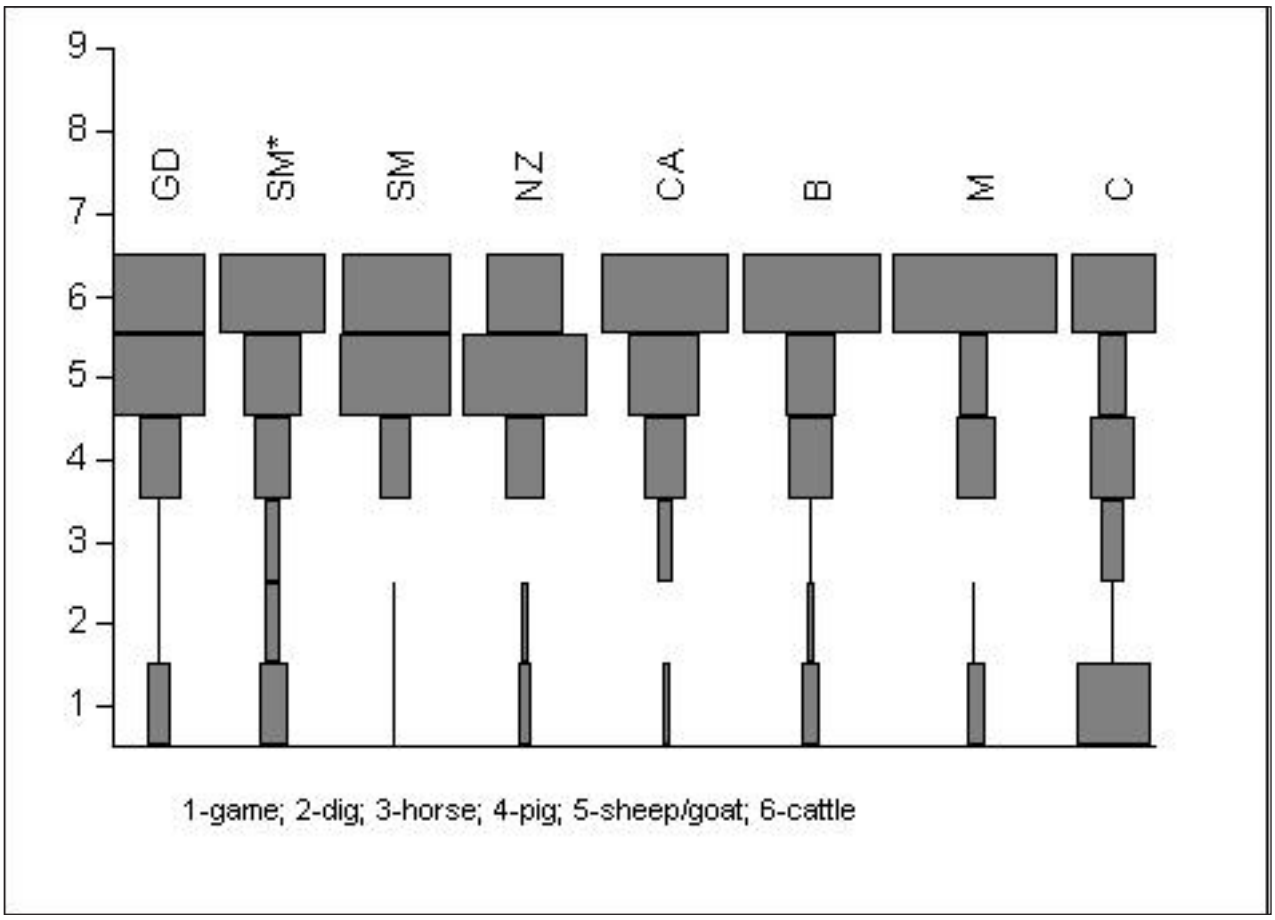

Fig. 2. Distribution of taxa in Monteoru settlements (sites order is presented in Tab. 1).

schemes" are predicted in terms of management of cattle, sheep/goat, pig and horse: 1. prevalence of bovines with a low rate of ovicaprids, up to half of cattle's frequency; 2. both species with similar value; 3. prevalence of small ruminants with lower rates of cattle. The first grouping includes sites with very high percentage of cattle, 48% at Cârlomăneşti – *Arman*, 52% at Bogdăneşti and 63% at Mîndrişca. Offsetting, the ovicaprids rate is reduced at 11-18% in sites from Moldavia and somewhat larger at Cârlomăneşti – *Arman* (27%). A sub-variant of this model, with a lower rate of cattle (about 40%) but prevailing versus 20% of sheep/goat was found at Sărata Monteoru and 32.7% cattle versus 12% sheep at Costişa (fig. 2).

The next class includes sites with similar rates of cattle and ovicaprids, Pietroasa Mică – *Gruiu Dării* – 36% and Sărata Monteoru – 42%. Finally, the last class includes settlements with dominance of small ruminants versus a low percent of bovines: Năeni-*Zănoaga* with 28% cattle and 46% ovicaprids is according to this pattern. In terms of MNI discrepancies are more pronounced: ovicaprids predominate in sites in the surroundings of Buzău, perhaps a little drier local climate would have influenced this choice. On the contrary their share is lesser in Moldavia, prevailing cattle. Pig rate is always the same, slightly varying between 15-17% and somewhat smaller at Sărata Monteoru (11.6%). Just in terms of number of individuals, figures range from 19 to 24% with a minimum of 13.6% to Pietroasele, and a maximum of 31.6% to Mândrişca. The horse is less exploited. It is worth emphasizing its high share at Costişa (8%) and Sărata Monteoru (5.44% as fragments) as compared to other settlements reaching less than 2%. The low quota of its bones may be explained by the fact that the Monteoru communities *"have not yet fully assimilated it in their economy, as a domestic animal"*[7]. Its use in food is incidental. A more special is the sites of Bogdăneşti and Sărata Monteoru, with many dog remains, 4.18% and 5.67%. As MNI the share is even higher, about 6.67% and 9.64%. "*Its high frequency may be correlated with the position of settlements in the Carpathian foothills, where they were abundant prey species (bear, wolf, lynx), so it was necessary to have more dogs to guard flocks*" according to the author. It would be a plausible explanation, but let's not forget that all sites were located in the Carpathian foothills, rich in wild taxa. Probably should be considered the sample size, their harvesting, etc. The exploitation of aquatic resources such as shellfish gathering and fishing

[7] Haimovici 1994, 316.

made a small contribution to the diet without neglecting what was preserved of these remains, as well.

In terms of metric data, there is limited information on size and body conformation of domestic taxa. Referring to cattle horn-cores typology, few pieces were described in mentioned sites. A single piece of very small proportions, from a female ("*brahyceros*" type) was found at Pietroasele, a similar piece identifying at Bogdăneşti. The sample from Mândrişca and Bogdăneşti contained pieces with characteristics closer to the "*primigenius*" type (but not pure type), they were assigned to males. Costişa sample did not contain pieces to allow morpho-dimensional evaluations, only cracks of walls. In terms of height at the withers of cattle, the data partially cover the range size. For example, a value of 116.4 cm was identified in Costişa, suggesting a female; values of 109.7 cm and 119.3 cm (we recalculated the size, cf. Matolcsi coefficient) were obtained in Bogdăneşti, 107.3 cm in Cârlomăneşti-*Arman* and an average of 118.6 cm in Mândrişca. Values of 106.4 cm for cows and 134.4 cm for geld are assumed at Sărata Monteoru (average 115.4 cm). Overall, it is found a wide variation of 106.4 - 118.6 cm, with an average of 114.68 cm; obviously values are much lower compared to Eneolithic in the region. I argue by a comparison with data from the Eneolithic levels from Pietroasele and Costişa (fig. 3). It seems that cattle in the Monteoru settlements were of medium size, few of them reaching the lower limits of variation of the aurochs.

With regard to sheep and goats, body biometrics data indicates the following: goat is characterized by slightly curved horns, of "*prisca*" type, with plane-convex cross-section and convex toward top. Such type of horns was identified almost everywhere. Instead, a horn from a he-goat, with "*prisca*" features least sketched, was found to Mândrişca. However such pure aegagrus was not identified anywhere. Two horns of goats, one "*prisca*" and other featured "*aegagrus*" are found at Sărata Monteoru. Unfortunately there is little data on the size of the goat; one height of 71.2 cm was estimated at Sărata Monteoru and a lower value - 64.6 cm at Cârlomăneşti. Measurements of width of bones suggest specimens as robust as those from Eneolithic epoch. Regarding sheep, the sample offered little data on this topic. Both kinds of skulls, horn and acorn were found, the first type is predominant. Acorn females were identified only at Mândrişca. For information, to remember that a wether horn, with a length of 162 mm was identified in Sărata Monteoru. About castration of rams is also recalled when analysing material from Bogdăneşti. Height at withers based only on calcaneus and talus was estimated at Pietroasele,

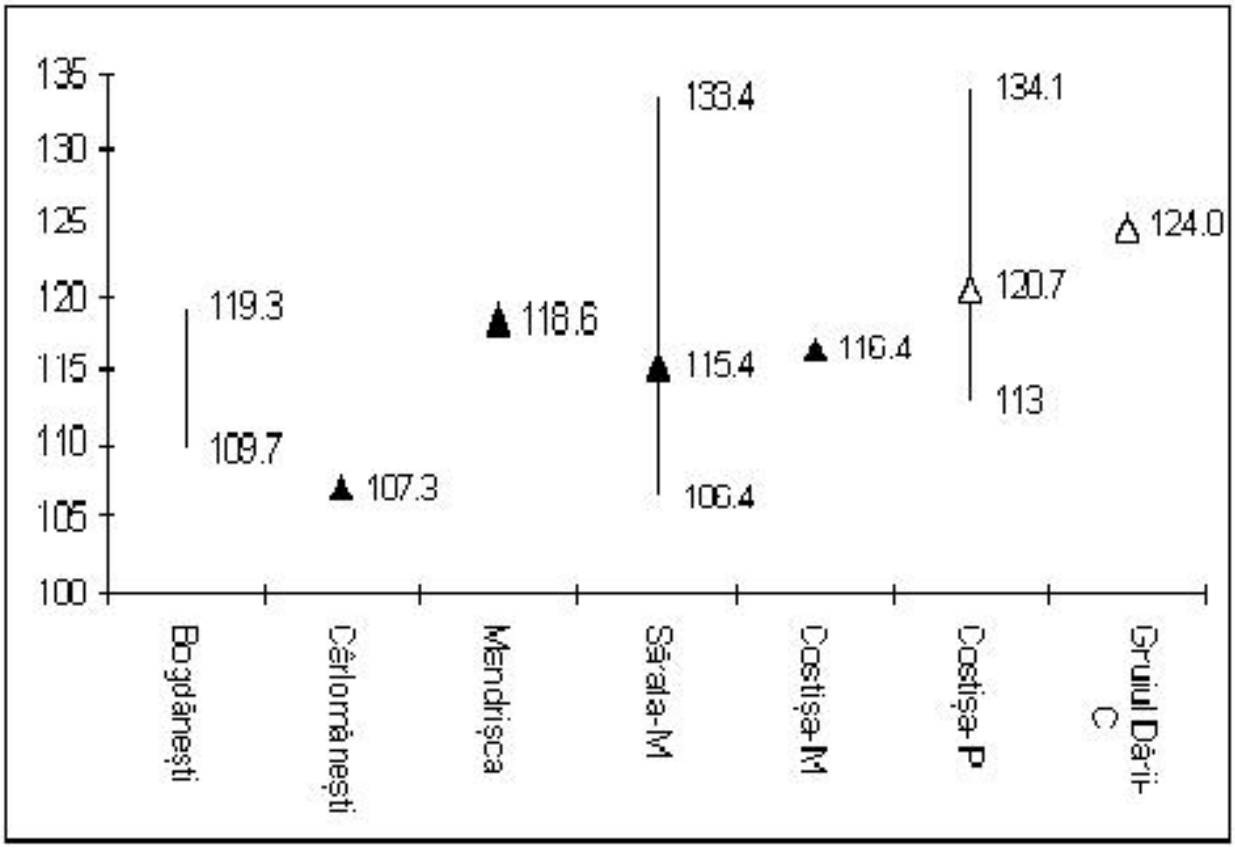

Fig. 3. Cattle size: ▲-Monteoru; ∆ -Eneolithic.

resulting increased values, of 65-74 mm, with an average of 68.7 cm. In other Monteoru sites the values are much smaller, whereas estimates were made solely on the long bones: 61.85 cm in Costişa, 54.93 cm, 56.23 cm in Bogdăneşti, 60.9 cm in Mândrişca and 68.8 cm in Sărata Monteoru. Overall, the metric evaluations fall within the range size of the Bronze Age in south-eastern Romania.

Pig raised by Monteoru communities was relatively massive compared to previous epochs, some dimensions reaching the lower limits of wild boar. Even if some of its parameters are increased from previous epochs, it shows some primitive features: massive teeth, oblong lacrimal, obliquely nuchal region. For an astragalus from Costişa, it was estimated a waist of 76.1 cm, high value but consistent with those in other settlements: 69.1 cm in Bogdăneşti, 78.9 cm in Cârlomăneşti – *Arman*. As large values, but normal for the epoch were registered in Pietroasele: 70.3, 74.8 and 78.3 cm. Let us note a lacrimal bone index of 1.4, suggesting a piece not too elongated at Pietroasele. Massive teeth and large bones close to wild swine are missing.

Some fragmented dog skulls provide interesting data on racial types, common in the Bronze Age, in our regions. For example, a skull with a sharp and long snout, tiny but high orbits, placed sideways, relatively narrow forehead, cheekbones middle developed, with a total length of 180 mm, comes from Mândrişca. By these characters it approaches the current hounds. Dahr basal length varies between 156 to 179, so in the settlement there were dogs of varying sizes. It seems that the variation in waist is stronger than Neolithic epoch, according to the author. A large dog, like the wolf, with a Dahr length of 166.4 and a smaller one with a size of 45.1 cm were evidenced at Sărata Monteoru. So, dogs of different sizes with diverse features as security, hunting, guarded flocks have been highlighted in this site. Sub-medium and medium-sized animals are predominantly at Pietroasele and Costişa; one of them is about 49.39 cm. Overall, the few metric data of dog remains suggest more able-bodied animals than Eneolithic levels, in almost all cited settlements. However compared to Eneolithic, increases the proportion of medium and high specimens, though there are animals of small size as well. In case of horse data are even less. A sturdy horse with a height at the withers of medium size is suggested by the bones of Sărata Monteoru, unfortunately it is the only sample, more or less dimensional.

Regarding the age classes of the main domestic species, in some cases, general data are given without adequate detail. In the case of cattle from Mândrişca one stated that "*there are few sub-adult and young animals and old specimens are missing*"[8]. Similarly, if the Sărata Monteoru fauna, it seems that bovine specimens were cut between 3-10 years, there are slaughter of calves, there are few adults, there is very old animals, predominantly adults. The lack of bones of young animals, we believe is due to the selected sample (derived from the excavations from 1948 to 1952) as suggested in the article. As expected, large bones have been collected (suggesting a lot of adults). The other sample from Monteoru contains cattle bones come from a fetus, two calves and three adults, one of which is bull. A comparable situation displays Năeni – *Zănoaga* fauna, containing remainders from two young individuals, one subadult and four adults. Of these, one is about 5-7 years and another 7-9 years. Three juvenile (about 6-9 months), one sub-adult and five adult-mature (two individuals 4-6 years and one 8-10 years old) were supposed in Cârlomăneşti – *Arman*. So, a summary of previously stated shows that (fig. 4): similar picture emphasized Cârlomăneşti, Năeni and Sărata Monteoru, expressed by a majority of adult/mature animals (50%). Special is Bogdăneşti, with 89% adult/mature and Pietroasele with a predominance of sub-adults. Costişa is also placed apart with a moderate prevalence of adults, below 50%, with many sub-adults and few juveniles. Regardless of the share of either age class, beef was constantly used in food by Monteoru communities, not to mention, dairy.

Regarding small ruminants, the published samples have not provided detailed information on the

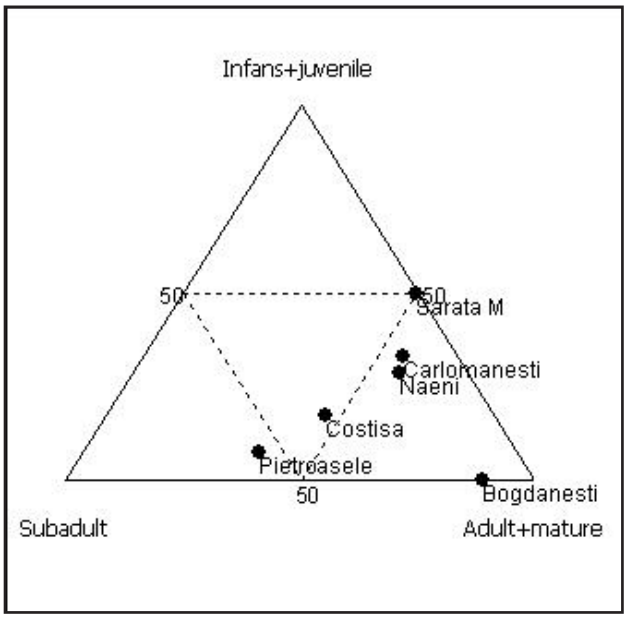

Fig. 4. Age-class patterns in cattle.

[8] Haimovici 1980, 197.

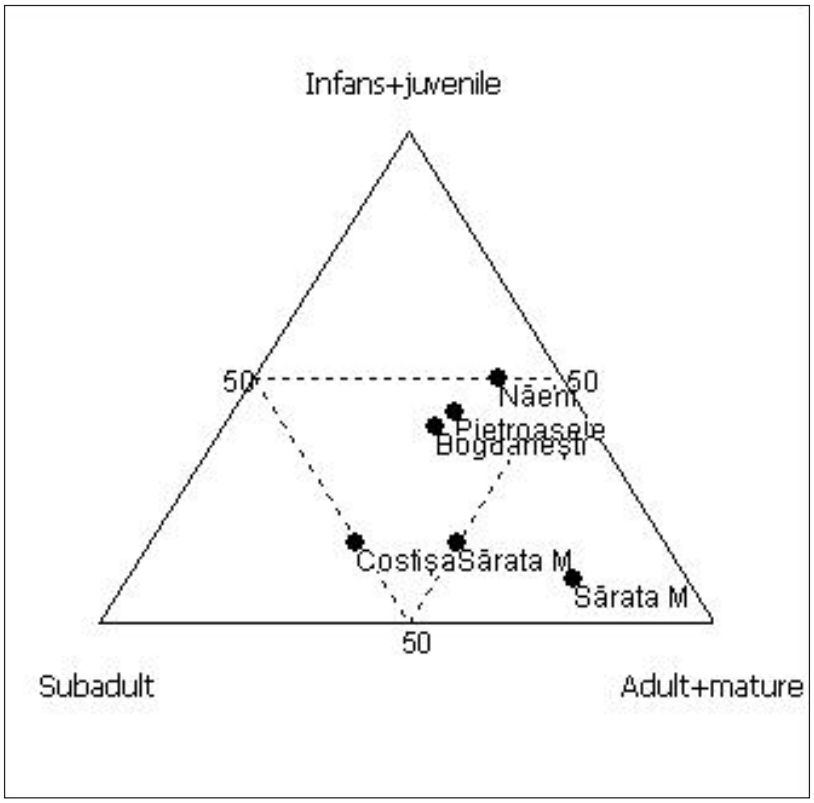

Fig. 5. Age-class patterns in ovicaprids.

age of slaughter too. On this basis we used only the ratio between young individuals, sub-adults and adults (mature). In the case of Mândrişca, it is specified that "*the young and sub-adult individuals are few... the small ruminants were mainly bred for by-products, milk and wool, whereas we found two individuals with very eroded dentition*"[9]. Ovicaprids' bones from Bogdăneşti come in small numbers from young individuals (four individuals under one year and as many about one year), five specimens were about 1.5-2 years and seven over this limit. And if Monteoru sample, there are few young specimens and sub-adults: only three animals (one between 6-9 months and two at 9-12 months), prevailing adults (matures) at a rate of 72.7% (about eight exemplars were 4-7 years old). Perhaps the bones' selection, mentioned before increased the percent of adults. The other Monteoru sample analysis emphasizes only three adult specimens (one for 6-8 years), three up to one year. At Năeni of ten individuals at least four are sheep (two of them female), one she-goat, and the other five indefinite. There are many young animals (even unborn) and sub-adults, accounting for about 60%, the rest are adults. Two goats, one of them over 4 months and another 4-6 years were assumed to Cârlomăneşti – *Arman*[10]. The latter had almost the whole skeleton, with fine cut-marks, assuming a deposit ritual context. Among other four ovicaprids, one was an adult, another was over 16-21 months, one was cut in 2-3 years and another was a juvenile / sub-adult. A graphical representation of the presented data, adding personal information for Pietroasele and Costişa (fig. 5) suggests that: Năeni, Pietroasele and Bogdăneşti show almost balanced shares of the three age-classes. Summing the percentages of young and sub-adults, it appears that more than 60% of animals were exploited for meat, and there is a significant rate (about 40%) of animals raised for dairy, wool, reproduction. A similar situation is found at Sărata Monteoru, so a pretty large share of adults, about 50%. However, the Monteoru samples determined by Professor Haimovici, with two thirds matures of the presumed specimens, is in constrast with the above described situation. And finally, the Costişa sample, with much smaller proportion of adults (about 33%) and an increased sub-adult rate, about 50%.

It seems that pig slaughtering is done prevalent up to two years, especially between 1-2 years, during it reached an optimum body weight (fig. 6). For example there are two individuals in Sărata Monteoru slaughtered at 18-22 months, two at 2-3 years and one at 6-7 years. The other sample from Sărata Monteoru reveals a specimen of 6-10 months, two between 18-24 months and two adults. Instead of it, most individuals are about two years at Mândrişca. The fauna from the Bogdăneşti provides only general information. The author states that most jawbones belong to animals "*for two years or have reached that age. There are younger individuals, but we found no remains of piglets or from older individuals*"[11]. According to fig. 6 the most represented age class is 1-2 years, it varies between 33% at Costişa, Pietroasele and 60% at Cârlomăneşti. Also, the grouping of adult/mature animals is also present in each sample, obviously with different shares; in almost each case there are a consistent percentage of animals kept for breeding. It ranges from 23-28% to Pietroasele, Năeni increasing to 40-44% at Cârlomăneşti, Costişa, reaching a maximum of 60% at Sărata Monteoru. On the contrary, the class of individuals killed up to one year is higher in Pietroasele, 44%, missing in Sărata Monteoru and Cârlomăneşti. So in terms of pig exploitation it is established that most nu-

[9] Haimovici 1980, 200.

[10] Dumitraşcu, Bălăşescu 2004, 52.

[11] Haimovici 1966, 128.

merous were slaughters in sub-adult and adult stage. Slaughter of animals under one year was not too common in these communities. Based on the above it is concluded that Monteoru communities were breeders of cattle, especially in the settlements of the current Moldavia and small ruminants in the Curvature Carpathians region.

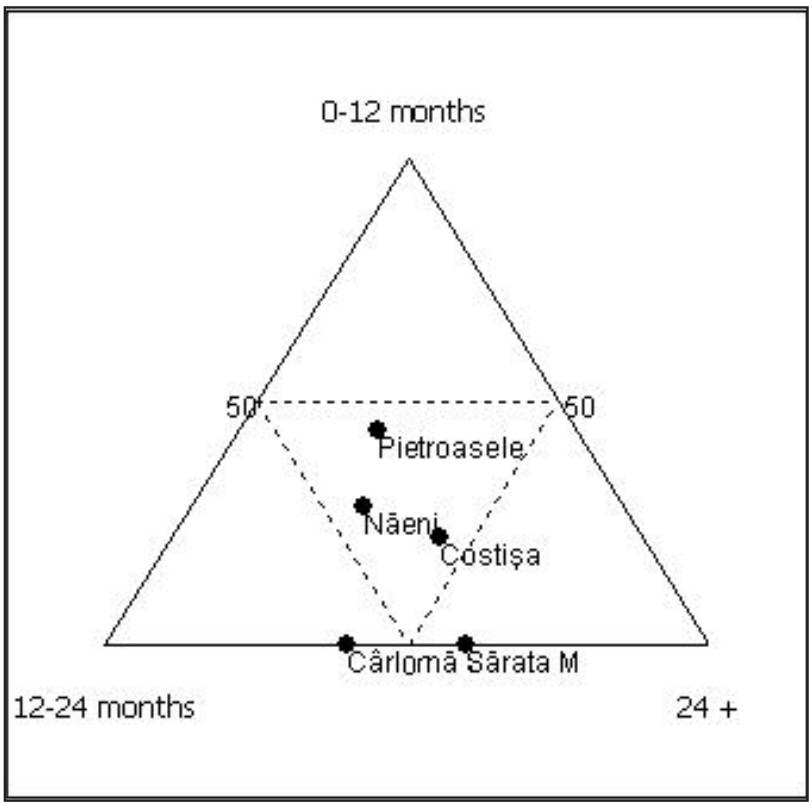

Fig. 6. Age-class patterns in pig.

BIBLIOGRAPHY

Becker 2000	C. Becker, *Subsistenzstrategien während der frühen Metallzeit im zentralkarpatischen Raum – neue archäozoologische Daten zur Coţofeni- und Monteoru-Kultur*, Prähistorische Zeitschrift 75, 2000, 1, 63-92.
Dumitraşcu, Bălăşescu 2004	V. Dumitraşcu, A. Bălăşescu, *Fauna din complexele arheologice de la Cârlomăneşti-Armanu (jud. Buzău)*, Mousaios 9, 2004, 51-56.
Grant 1982	A. Grant, *The use of tooth wear as a guide to the age of domestic ungulates*, in Wilson, B. Grigson C. and Payne S. (eds.), *Ageing and Sexing Animal Bones from Archaeological Sites* (Oxford: BAR British Series 109) 1982, 91-108.
Haimovici 1966	S. Haimovici, *Studiul materialului faunistic descoperit în aşezarea din epoca bronzului (Cultura Monteoru) de la Bogdăneşti (r. Tg. Ocna, regiunea Bacău)*, Arheologia Moldovei 4, 1966, 119-136.
Haimovici 1980	S. Haimovici, *Studiul materialului paleofaunistic din aşezarea de la Mândrişca (Valea Seacă) aparţinînd culturii Monteoru*, Carpica 12, 1980, 191-201.
Haimovici 1994	S. Haimovici, *Studiul unui lot de paleofaună provenit din aşezarea eponimă a culturii Monteoru*, Arheologia Moldovei XVII, 1994, 309-319.
Higham 1967	C. F. W. Higham, *Stock rearing as a cultural factor in prehistoric Europe*, Proceedings of the Prehistoric Society 33, 1967, 84–103.

Popescu, Băjenaru 2008	Anca Popescu, R. Băjenaru, *Rivalries and conflicts in the Bronze Age: two contemporary communities in the same space*, Dacia, N. S. 52, 2008, 5-17.
Posea *et alii* 1982	Gr. Posea *et alii*, *Enciclopedia geografică a României*, Bucureşti, 1982.
Reitz, Wing 2008	E. J. Reitz, E. S. Wing, *Zooarchaeology,* second edition, *Cambridge Manuals in Archaeology*, Cambridge, 2008.
Sîrbu *et alii* 2005	V. Sîrbu, S. Matei, V. Dupoi, Monica Mărgineanu-Cârstoiu, A. Bălăşescu, D. Ştefan, *Pietroasa Mică, com. Pietroasele, jud. Buzău. Punct: Gruiu Dării, Campania 2004,* Cronica Cercetărilor Arheologice, Jupiter-Mangalia 39, 2005, 271-274.
Sîrbu *et alii* 2010	V. Sîrbu, S. Matei, D. Costache, L. Grigoraş, D. Ştefan, Maria Magdalena Ştefan, C. Constantin, M. Constantin, *Pietroasa Mică, com. Pietroasele, jud. Buzău. Punct: Gruiu Dării*, *Campania 2009*, Cronica Cercetărilor Arheologice 44, Iaşi, 2010, 142-145.
Vulpe, Popescu, Băjenaru 2006	A. Vulpe, Anca Popescu, R. Băjenaru, *Costişa, com. Costişa, jud. Neamţ. Punct: Cetăţuia*, *Campania 2005*, Cronica Cercetărilor Arheologice, Constanţa, 40, 2006, 141.