FAUNA REMAINS AT HUNEDOARA – "GRĂDINA CASTELULUI" (HUNEDOARA COUNTY)

GEORGETA EL SUSI

Key words: Basarabi culture, dumping pits, animal husbandry, hunting.

Summary. The article presents the results of a faunal sample analysis belonging to Basarabi culture from Hunedoara. The material comes from the trench SIV/2001-2002, being collected from three dumping pits and one containing a buried human skeleton. A survey on morphological and dimensional characteristics of used animals, insisting on kill-off patterns is presented. There are some final comparative analysis with faunal data from other Hallstattian sites as Bernadea and Medias.

Cuvinte cheie: cultura Basarabi, gropi mena jere, creșterea animalelor, vânătoare.

Rezumat. Articolul prezintă rezultatele analizei unui lot osteologic aparținând culturii Basarabi, de la Hunedoara. Materialul provine din SIV/2001-2002, fiind colectat din trei gropi menajere și una conținând un schelet uman inhumat. Apoi se face o trecere în revistă a caracteristicilor morfologice și dimensionale ale animalelor exploatate, insistându-se pe datele de sacrificare. În final sunt prezentate comparativ datele despre faună provenite și din alte situri Hallstattiene, Bernadea și Mediaș.

Hunedoara County is located in south-west part of Transylvania laying over a sector of the Mures and Jiu hydrographic basins. An important city is Hunedoara sited in the Strei-Cerna hilly depression, bounded by Poiana Ruscă-Şurianu Mountains and Mureş Valley. A much known historical monument, the Corvin Castle is settled in the southern part of the town, on a rocky promontory nearby Cerna and Zlaşti rivers' confluence. The point "Grădina Castelului" (Castle Garden) refers to the high terrace of Cerna that surrounds the Sânpetru Hill in its south-eastern part. The archaeological excavations in this location yielded finds belonging to Starčevo-Criş, Petreşti, Wietenberg, Basarabi, Dacian and Medieval epochs¹. The research area includes two important moments, one starting in 1980 and the second one in 1996 up till present day. The most important archaeological complexes brought to light confirm the habitation of the area during Hallstattian epoch, since that time several store pits, preserved. In the present stage of site investigation, one appreciates that the settlement, with two habitation phases within the same horizon belongs to an early phase of the Basarabi culture². An important finding from 1998, a hole deemed as a deposit place of a metalwork oven, with ceramic remains found in the padding of it confirm the function of the site during the early phase of the Basarabi culture³. Interesting, an earth wave from Basarabi epoch was found too; at present it reaches 2.30 m hight, a Hallstattian cup was deposed at the bottom (foundation offering)⁴. From medieval times a complex (a stone oven) dated in the 9-10th centuries AD was unearthed and published as well⁵.

The entire faunal assemblage presented in this article was collected from the surface (S.) IV investidated along 2001-2002 season diggings. It occupies the NW corner of the garden, to -1.1 m⁶. The faunal sample counts about 1,295 fragments of which 1,011 were precisely determined to species. Quite a few faunal remains were collected from archaeological complexes (noted as pits: no 1, 3, 5, 6), consisting of about 769 bones. Another 526 fragments were found within the cultural layer. There is little information on

THRACO-DACICA (Serie Nouă), Tomul I (XXIV), Nr. 1-2, 2009, p. 25-35

¹ Roman, Diaconescu 2002, 55.

² Luca 1999, 65.

³ Roman, Diaconescu 2002, 59.

⁴ Luca et alii 2001, 154.

⁵ Ibidem.

⁵ Luca et alii 2002, 144.

the animals in the Basarabi settlements. That where why we considered a good opportunity to publish the material, not so large, but utterly interesting (Table I).

Table 1
Species frequencies at Hunedoara "Grădina Castelului"

Species	Frgm.	%	MNI	%
Bos taurus	583	57.7	44	35.5
Sus scrofa domesticus	210	20.8	34	27.4
Ovis/Capra	131	12.9	24	19.4
Equus caballus	10	1	3	2.4
Canis familiaris	14	1.4	4	3.2
DOMESTICS	948	93.8	109	87.9
Cervus elaphus	44	4.4	9	7.3
Sus scrofa ferrus	11	1.1	3	2.4
Capreolus c.	6	0.5	1	0.8
Bos primigenius	1	0.1	1	0.8
Lepus europaeus	I	0.1	1	0.8
WILDS	63	6.2	15	12.1
TOTAL	1,011			
Bos/Cervus	88			
Splinters of Ovis/Sus	78			
Splinters of Bos/Cervus/Equus	118			
TOTAL SAMPLE	1,295			

As previously mentioned, several pits yielded 769 bones: some of them would have had a waste function (Pits 3, 5, 6); the one had a ritual character (Pit 1/2001 the same as the pit 1/2002). Its ritual function was recognized during the excavations, the faunal analysis confirming the archaeological observations.

Table 2
Bones distribution within pits

	Pit				
	1/2002	Pit 1/2001	Pit 3	Pit 5	Pit 6
Bos taurus	5	14	49	22	413
Sus s. dom.	3	6	12	14	81
Ovis/Capra	2	10	22	17	13
Equus caballus	2	2			
Canis familiaris	2	1	7	2	
Cervus elaphus				8	
Sus s. ferrus					
Capreolus c.		6			
Bos primigenius					
Lepus europaeus					
Bos/Cervus				18	
Splinters of					
Ovis/Sus					
Splinters of					
Bos/Cervus/Equus	3	8	22		5
TOTAL	17	47	112	81	512

In this respect we envisaged the bones amount from each pit, their distribution according skeletal parts, some association between bones, the fragmentation degree and the position of bones inside pits.

Pit no. 3 contained 112 bones from 21 individuals, such as cattle, pig, dog, sheep and goat; the material is randomly allotted according to skeletal parts; the complex served to discard the garbage. Pit no. 5 contained 81 fragments deriving from 16 animals: the complex could have also functioned as a dump place. Pit no. 6 furnished the greatest amount of the sample; the 512 fragments belong to minimum 22 individuals. Half of the refused bones are ribs, vertebrae, especially from cattle. Pit no. 1 was dug in 2001 when about 47 animal bones were collected from its filling; the complex depletion was accomplished in 2002. On that occasion a buried human skeleton was found, beside other 17 faunal remains. The inhumation grave was found in the SW sector, within the surface IV/2001-2002. Its walls were burnt before the deposal of the corps⁷. A pair of distal femora of a horse was found on the same level with the human skeleton. The animal was a little older than 3-3.5 years judging after the fusing but the line is still visible. In the filling of the complex a canine of a stallion and a shoulder blade from the same taxon were found. It is impossible to say whether or not these last remains are in relation with the pair of femora (Fig. 5). The other bones from the accumulation of Pit no. 1 derive from six taxa and minimum 7 individuals: two cattle (a juvenile and a young mature), an immature pig, two immature sheep, an adult dog and a very young roe deer exemplary, captured in summer. Besides many big sized-mammal splinters (11 fragm.) were contained in the filling. Perhaps, initially, the complex would have had a special role.

The main domestic mammals, cattle, sheep/goat, pig, horse and dog account for most (93.8%) of the identifiable bones in the Hallstattian assemblage. Cattle with 583 bones (57.7%) of 44 animals (35.5%) rank the first among culinary and utilitarian needs of the community. The discrepancy between the quota as fragments and individuals is due chiefly to small amount of mandibules fragments. A large horn core of "primigenius" type deriving from a bulky domestic bull was found. Also a femur of 368 mm in length derives from a male, a withers height of 118.8 cm being appreciated. From the pit no. 5 was collected a metacarpus with a length of 164.5 mm suggesting a small cattle size of 99.2 cm. Dwarf cattle were found in other early Hallstattian sites, such as that from Medias - "Cetate" (Transilvania). A smaller tall of 92.3 cm⁸ was estimated at that site. At Medias⁹ overall withers height is 102.97 cm. Cattle of similar size were also found at Bernadea¹⁰ too, values of 97.3 and 107.2 cm being estimated. The same type of cattle of small size was found in an early Hallstattian dwelling from Remetea Mare – "Gomila lui Gabor" (Banat Plain) (103 cm)¹¹. Coming back to the same question, two cattle metatarsals of 227.5 and 231 mm in length were found in the pit no. 6 at Hunedoara (Fig. 4). Most likely the bones originated in oxen in accordance with the values of slenderness indices. Withers' heights of 124.4 and 126.3 cm are estimated. In broad lines, an average of 117.1 cm was estimated of the site; similarly values characterize the cattle from Kalakača and Vašice (Serbia) (117 cm and 114-115 cm¹²). A conclusion can be drowning, namely that the cattle population from this site included cows with around one meter small stature, taller males, around 1.18 m and gelds. The strong sexual dimorphism, a characteristic of primitive breeds, is quite visible. Beyond all doubt the keepers practiced the gelding of the bulls.

Age-related (Table 3), the youngs and sub-adults total up to 54.5% of the presumed individuals; the adults and matures sum up 45.5% by the two categories. Six animals were slaughtered after 7-9 years old. Pursuant to statistics, the cattle were used chiefly for beef, milk and only draught power as the second employment. Their killing for meet took place either before growing up, or later in proportion as their output diminished.

The **suids** rank the second among culinary preferences of the inhabitants, the 210 fragments totaling 20.8% of the sample. As the quota MNI (minim number individuals) significantly increases up to 27.4% the few measurements offer irrelevant data about their size. Out of 34 presumed individuals, beyond 70% were killed before reaching their maturity while 29.4% of animals were kept 3-4 years, for reproduction. The percentage is suggestive indicating a balanced exploitation of the species.

⁷ Luca et alii 2003, 143.

⁸ Bindea, Haimovici 2004, 119.

⁹ Ibidem.

¹⁰ El Susi 2001, 239.

¹¹ El Susi 1997, 50.

¹² Bökönyi 1981, 108.

Sheep/goat

100

5

20.8

208

	Kill-off patterns of main species										
	infans-juveniles	sub-adults	adults	matures							
Cattle	13	11	9	11							
%	29.5	25	20.5	25							
Pig	10	14	9	1							
%	29.4	41.2	26.5	2.9							

10

42

Table 3
Kill-off patterns of main specie

131 fragments (12.9 %) belong to **caprovines** originating from 24 animals (19.4%). Three goats and six sheep were identified among the presumed individuals. The goat sample belongs to a sub-adult and two adults; a complete metatarsus of 123 mm gave a tall of 65.6 cm, a medium size for that epoch. The sheep samples belong to three sub-adults, an adult and two matures. One of the animals was slaughtered when it was around 6-8 years. A tall of 60.4 cm was estimated. Generally, the metric evaluations characterize small-medium sized individuals, common during Hallstattian epoch in the Carpathian Basin. At Bernadea the stature of the sheep is about 57-60 cm¹³. The values recorded at the two sites from Transylvania (Hunedoara and Bernadea) correspond to those from Kalakača (56, 59, 60, 61 cm)¹⁴. 58.4% of 24 individuals were killed as juveniles and sub-adults and 41.6% reached their complete maturity. Judging from the statistics the small ruminant exploitation envisaged the mutton and by-products.

16.4

The **horse** sample is fairly small; there were only 10 bones (1%) related to the 3 exemplars (2.4%). The fragments exemplify all the body regions, the fleshy parts as well, but the teeth prevail. Undoubtedly the horse beef was used for consumption. Complete bones were not preserved; few measurements suggest medium-sized animals. After statistics, one exemplar was killed around 2-2.5 years, the second one barely reached 3.5-4 years and the third one, a male, was killed during 6-11 years.

The **dog** is quoted with 1.4%-14 remains from 4 animals (3.2%). A pair of mandibles with a length of 72 mm (Pm+M) corresponds to a large animal, as the length of Dahr (164.8) confirms. The teeth are much worn out suggesting an old individual. In addition, a radius of 187 mm belongs to another taller dog, 60.2 cm. Dogs of medium and large size were common at that time¹⁵. They had been used for guarding the livestock, the camp, for hunting, etc.

Among hunted mammals the **red deer** dominates the statistics with just 4.4% as fragments (44 bones) and 7.3% as individuals. All the body parts are represented, but the skull elements and the distal parts of the legs are numerous. The entire carcasses were most likely carried back to settlement for processing. Only one shed antler with cut-marks was found; the antlers were likely used as raw material. Of nine presumed individuals, one animal was hunted around 6-12 months, another one at 1-2 years, two animals at 2.5-3 years, and the other ones as matures. The measurements show medium sized animals. One large male approached the size range of cattle, e.g. GLP of scapula is 67 mm.

Eleven specimens of **wild swine** (1.1%) were identified, belonging to an immature and two mature animals. Estimations towards the of withers' heights from mc. IV and talus yielded the following values: 86.8 cm and 102 cm. According these ones, the two bones belong to a sow and a boar.

The **roe deer** material is less significant; the six bones (0.5%) come from an individual (0.8%), hunted soon after 2-3 months (during warm time). A single fragment of **hare'** pelvis was found. A third phalanx with GL of 93.5 mm should belong ¹⁶ to an **aurochs**.

DISCUSSION

The faunistic material from Hunedoara it shows that the domestic animals were the backbone of the economy, as there is high ratio of them: 93.8/6.2% (fragments) and 87.9/12.1% (individuals). Our site is

¹³ El Susi 2001, 240.

¹⁴ Bökönyi 1981, 108.

¹⁵ See the bibliographical list.

¹⁶ Very possible the fragments belong to a domestic male.

noteworthy for the very high level of cattle in the assemblage: 57.7% (as fragments), followed by pig with 20.8% and small ruminants with 12.9%. From the aging information it can be observed an increased percent of immature cattle (over 50%), suggesting the rearing primarily for beef. Animals kept also for work, dairying and breeding purposes total up 45%, witch appears as a significant value. There is no evidence for the presence of larger cattle in the Hallstattian period, all exemplars belonging to a small sized-type. The pig was an important component of the community sustainability, as the surroundings favored their breeding; it ranks the second in the diet preferences, with 20.8%. A kill-off peak occurs in the first year of life of the individuals (29.4%) while (41.2%) in the second year. That means a rate of immature around 70.6%, a normal value having in view the meat production as primarily aim of pig rearing. The small ruminants are expected to be lesser exploited in forested upland habitat, reaching 12.9% from the total sample. They were primarily valued for mutton, 42% of animals being killed in their first year. In the second year the percent decreases to 16.4%; 20.8% is the rate of animals slaughtered between 3-4 years and 20.8% over that age. That means that an important part of the flock was kept for wool and milk production. The horse had a small contribution in the diet (its broken bones came amongst butchery waste in small number (1%); it was used for transportation, loads carrying chiefly and in ritual practices.

Although the environment favored a dense and diversified wild fauna, the animal spectrum reflects a fewness of taxons. Must not be omitted the sample at issue which is not too large, so that the results could partly reflect the general layout. According to the statistics, up to 6% (as fragments) and 12% (as MNI) represents the quota of the game at the site. It seems that the venison was not an important source of food to the inhabitants. Likely, the hunting was incidental practiced, barely to reduce the competitors for domestic stocks or to complete the food resources during the cold season. As mentioned above, amongst wild species the red deer is more frequent (4.4%) than boar (1.1%), a fact to be put in the connection with the environment and particularly with the local woodland. The roe deer, a species typical to a semi-forested habitat had a small contribution in diet (0.5%). The aurochs and hare had small density throughout the region, reflecting a local environment not very rich in opened habitat which was preferred by the species. In this context the prevalence of red deer and boar among the hunted species is explained.

The new data about the climate evolution during Holocene indicate a cooling of the weather, known as "Little Ice Age" (humid, short and cold summers) for the mid Hallstat¹⁷ period. Certainty, a wet climate favored the woodland extension and implicit the growing of deer and boar herds (forest-dwelling species); also there were good conditions for the pig feeding. At the same time, light forested or opened landscape species (roe deer, aurochs, hare) would decreased in frequency.

Table 4
Species frequencies, in Basarabi sites from Transylvania

	Hunedoara-Grădina Castelului	Bernadea	Mediaş-Gura Câmpului	Mediaș-Cetate
Bos taurus	57.7	34.7	42.8	26.4
Sus s. dom.	20.8	25.3	14.4	25.16
Ovis/Capra	12.9	19.7	18.1	30.19
Equus caballus	1	5	1	9.43
Canis familiaris	1.4	1.4	2.8	5.03
DOMESTICS	93.8	86	79.1	96.23
WILDS	6.2	14	20.9	3.77
Total sample	1,295	346	215	159

It must be specified from the very beginning that Hallstattian settlements (most of them partaining to Basarabi culture) with faunal analyses are few: Hunedoara, Bernadea¹⁸, Mediaş-Gura Câmpului¹⁹, Mediaş-Cetate²⁰; the gathered samples are not numerous (less than 500 remainders, except Hunedoara), and therefor

¹⁷ Tomescu 2000, 268.

¹⁸ El Susi 2002, 109-115.

¹⁹ Blăjan, Stoicovici, Georoceanu 1979, 35-42.

²⁰ Bindea, Haimovici 2004, 117-125.

the evidence is slander and sometimes insufficiently for our purpose. A parallel between the faunal spectra (Table 4) indicates two aspects to be taken in to account: the contribution of main domestic species in the site economy (Fig. 1) and the wild/domestic mammals' ratio (Fig. 2). Related to first question, it seems that the Hallstattian communities were bovines' breeders, the cattle predominance of being observed in almost all cases. They count for 40-57% at Mediaş-Gura Câmpului, Hunedoara and fewer at Bernadea (34.7%). An exception is Mediaş-Cetate, with a value of 26.4% ranking the second among domestics. The disagreeing values at Mediaş rely rather on the smallness of both samples. By and large, cattle were bred mostly for meat, though other products such as milk drought power will have been exploited along the life. The age-class distribution in each site (Fig. 3) suggests as foloows: at Hunedoara – a specific farming regime primarily focused on meat production (an augmented percent of immatures 54%) interrelated with a good representation of taxon (as fragments); at Bernadea – a little reduced cattle percent, correlated with an increasing of adult-mature segment to 80%. That means that the using of the bovines was chiefly for byproducts. At length, a lower frequency of cattle (exceeded by sheep, pig) closely connected with a large proportion of matures (80%) was found at Mediaş-Cetate; that allow us to consider cattle as main source for secondary products such as milk, or for traction.

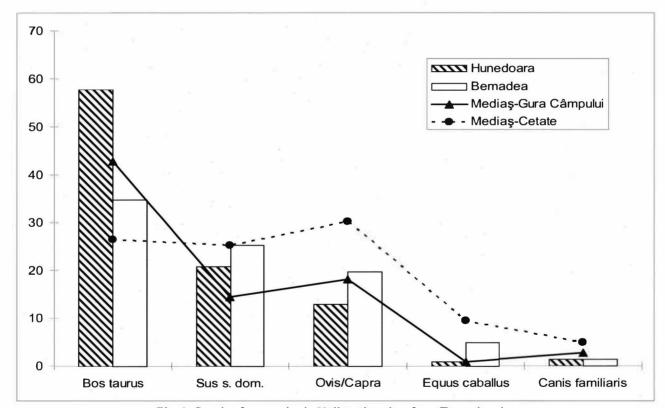


Fig. 1. Species frequencies in Hallstattian sites from Transylvania.

With one exception (Mediaş-Gura Câmpului), pig was on a large-scale exploited in the mentioned sites, their bones counting for one third of samples. Presumably high percentages of the pig in sites suggest forested surroundings propitious for its rearing. According to archaeological bibliography, the settlements in question developed on terraces or promontories on the bank of the rivers²¹, in a hilly and forested (perhaps) landscape, befit to pig breeding in loose holding.

By and large, the small ruminants were exploited in a less degree at Hunedoara-Grădina Castelului (12.9%); at Bernadea and Mediaș-Gura Câmpului register around 18-19% and a highest value at Mediaș-Cetate (30%), as a compensation for a lower share of cattle. Interesting in all the sites, the immature/mature ratio is roughly fifty/fifty, implying a mixed exploitation using of taxa: mutton and wool, milk, hides. Butchered horse bones are relatively commonly on Hallstattian sites and is usually consistent with the exploitation for meat.

²¹ Ursuțiu 2002, 24.

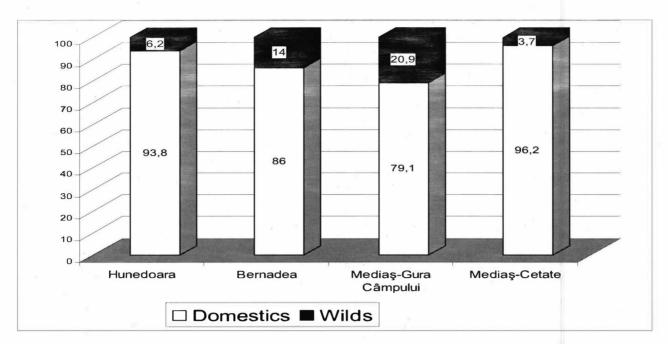


Fig. 2. Domestic/wild ratio in the Hallstattian sites from Transilvania.

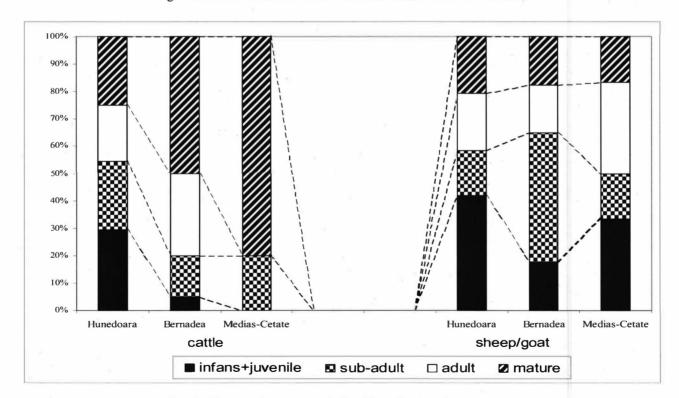


Fig. 3. Kill-of patterns at the Hallstattian sites from Transilvania.

Referring to wild/domestic ratio, in two sites the hunted mammals don't exceed 7 %, despite a forested landscape; it is the case of Hunedoara (6.2%) and Mediaş-Cetate (3.7%). In both cases wild animals played a very minor role in terms of food production despite of forested areas. A low incidence of wild mammals in economy is recorded at Bernadea (14%), as opposite to Mediaş-Gura Câmpului, with 21%. Overall the hunting took into account the meat supplying (red and roe deer, boar, aurochs, hare), raw materials provisioning (antlers, bones, teeth) or hides, furs. In general the faunal lists from sites do not reflect the richness in wild taxa in day by gone in the Transylvanian depression.

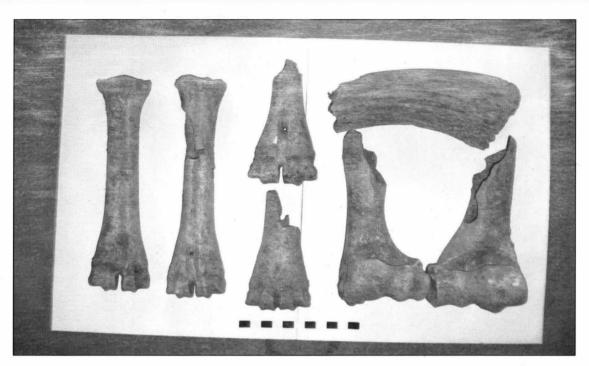


Fig. 4. Cattle bones from Pit 6.

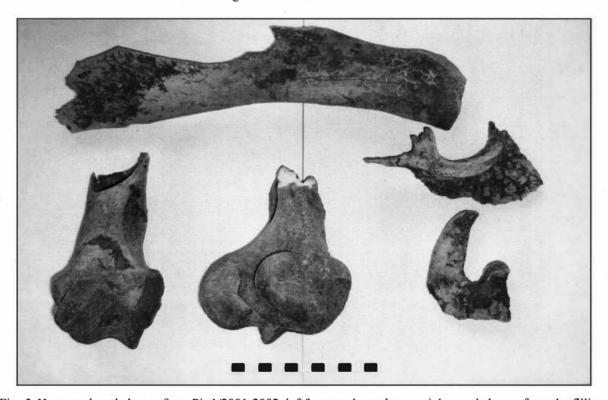


Fig. 5. Horse and cattle bones from Pit 1/2001-2002: left/bottom: horse bones; right: cattle bones from the filling.

The data set of metric evaluations attest that the cattle are approximately of the same stature at all sites, namely small and medium size (infrequently). There is no evidence for the presence of large individuals in that epoch. A rough estimation emphasizes values of 92-114 cm (cows), 107-118 cm (bulls) and 124-126 cm (gelds) in the mentioned settlements. The results confirm the supposition according to which, the cattle size decreased along the Iron Age from previous epochs²². Referring to pig size, a primitive type with a withers

²² Haimovici 1967, 326.

height over 70 cm (71.6-80.5 cm registered at Bernadea) was presumed in Hallstattian sites. Related to small ruminant size, the few data point out certain heterogeneity of sheep populations, due either to sexual dimorphism or dissimilar farming conditions. Such small sized-sheep exemplars of 57-60 cm wcre found at Bernadea, Hunedoara, medium ones (65 cm) at Hunedoara and large ones (67 cm) at Mediaş²³. For goat, a single value of 50 cm was registered at Medias, as well²⁴ (Table 5).

Table 5

Measurements (cf. A. von den Driesch, 1976)

Horn cores					A	tlas	
Gd	Sd	Circonf.		BF cr	BFcd	GL	GB
76	56.5	209	cattle	98	89	84	128.5/cattle

	Maxila				Man	dibula	
M1-M3	M3/ P4			P2-M3	M1-M3	M3/ M1	
81	30	cattle				35.5	cattle
83	29	cattle				40.5	cattle
	17	dog				32.5	pig
	17.5	dog				36	pig
	Scapul	a		62	46	20	o/c
SLC	GLP	LG		67.5	47	20	o/c
50	72	59	cattle	63	42.5		o/c
52.5		55	cattle	61	42	21.5	o/c
57.5	61	46.5	cattle		46.5	23	o/c
21.5	35	28	goat			23	o/c
90	54	45	horse	72		20.5	dog
	67		deer				

	Humer	us			T	alus	
ВТ	Bd	Dd		GLI	GLm	Bd	
65			cattle	66		41	cattle
65.5			cattle	68	63	42	cattle
66.5			cattle		62		cattle
73	75	78	cattle	54	50	34	deer
74			cattle	57	53	35	deer
75	81	79	cattle	63	56	37	deer
91			cattle	51	57	33	boar
		75.5	cattle	27	29	18.5	goat
	35	39	pig				
		37	pig		P	elvis	
		41	pig		LA		
32	39	41.5	pig		69	cattle	
27	36	34.5	pig		37	pig	
	29	26	sheep		12	hare	
28.5	31.5	26.5	sheep				

²³ Bindea, Haimovici 2004, 118

²⁴ Ibidem.

	Radius									
BFp	Вр	Dp	Bd	Dd						
71.5	80	40			cattle					
71.5	75.5	38.5			cattle					
72	78.5	38.5			cattle					
75.5	83	42			cattle					
76	81				cattle					
76.5	82.5	40.5			cattle					
77	79	39			cattle					
			69	43	cattle					
			74.5	48.5	cattle					
	31	20.5			pig					
		18.5			pig					
27.5	29	15.5			sheep					
	31	15			o/c					
25.5		14.5			sheep					
31.5	32	16			goat					
	71	43			horse					
187			22	11	dog					
	21	14			dog					

	Metacarpus										
GI	Bp	Dp	Sd	Bd	Dd						
164.5	42.5	26.5	25	47	25	cattle					
	54	32				cattle					
	56.5	33				cattle					
				53.5	34.5	cattle					
				66	36	cattle					
				55.5	32	cattle					
				58.5	32	cattle					
				56	30	cattle					
Mc IV - 82.5						boar					

Metatarsus							
GL	Вр	Dp	Sd	Bd	Dd		
227.5	48.5	50	31	54	31.5	cattle	
231	47	47.5	28	53.5	29,5	cattle	
	45.5	45				cattle	
	40	41				cattle	
	48.5	46.5				cattle	
	44	44				cattle	
				53	29	cattle	
				53	31	cattle	
				57	32	cattle	
				62	34	cattle	
123	26	25	16	28		goat	
	49.5	41.5				horse	
				43	45	horse	

Tibia			Calcaneus			
Bd	Dd		G1	GB		
58	48	cattle	112	40.5	cattle	
59	37	cattle	121	47	cattle	
63	46.5	cattle	134	49	cattle	
65	40	cattle	53	21	sheep	
28	26	pig	47	16.5	dog	
26.5	20	o/c				
29	22	o/c				
29.5	24	o/c				
24	18	dog				
53	38*	deer				

^{*} Early fused

One appreciates that the horse bred by Hallstattian communities belongs to a small medium-sized with manifold using. A single tall of 140 cm is estimated on bones at Mediaş-Cetate²⁵. Insomuch as new faunal analyses for Hallstattian epoch – Basarabi community implicitely – will complete the existing data on this subject.

BIBLIOGRAPHY

- Bindea, Haimovici, 2004 D. Bindea, S. Haimovici, Resturi paleofaunistice din așezarea hallstattiană timpurie de la Mediaș -,,Cetate", Corviniana 8, 2004, 117-125.
- Blăjan, Stoicovici, Georoceanu 1979 M. Blăjan, E. Stoicovici, E. Georoceanu, Contribuții la cunoașterea vieții economice a populației hallstattiene din zona Mediaș (Jud. Sibiu), Sargeția 14, 1979, 35-42.
- Bökönyi, 1981 S. Bökönyi, Eisenzeitliche Tierhaltung und Jagd im Jugoslawischen Donau Gebiet, Die Altere Eisenzeit in der Wojwodina und benachbarten Gebieten, Materijali 19, Symposium Novi Sad, 1981, 105-112.
- El Susi, 1997 G. El Susi, Resturile de faună dintr-o locuință hallstattiană de la Remetea Mare- Gomila lui Gabor, jud. Timiş, Analele Banatului 5, 1997, 53-55.
- El Susi, 2001 G. El Susi, Studiul resturilor de faună din așezarea hallstattiană de la Bernadea (Com. Bahnea, Jud. Mureș), TD 22, 2001, 1-2, 238-246.
- El Susi, 2002 G. El Susi, Studiul paleofaunistic, in: Ursuțiu Adrian, Etapa mijlocie a primei vârste a fierului în Transilvania (Cercetările de la Bernadea, com. Bahnea, jud. Mureș), Cluj-Napoca, 2002, p. 109-115.
- Haimovici, 1967 S. Haimovici, *Unele caracteristici morfologice ale taurinelor din așezările traco-getice*, AUI, secț. II, T. 13, 1967, f. 2, 321-329.
- Luca, 1999 S. A. Luca, Contributii la istoria veche a Hunedoarei, Hunedoara, 1999.
- Luca et alii, 2001 S.A. Luca (colectiv), Raport de cercetare arheologică. Hunedoara "Grădina Castelului", CCA (Campania 2000), 2001, 85.
- Luca et alii, 2002 S.A. Luca (colectiv), Raport de cercetare arheologică. Hunedoara "Grădina Castelului", CCA (Campania 2001), 2002, 154.
- Luca et alii, 2003 S.A. Luca, Raport de cercetare arheologică. Hunedoara "Grădina Castelului", CCA (Campania 2002), 2003, 143.
- Luca, 2005 S.A. Luca, *Repertoriul arheologic al Județului Hunedoara*, Bibliotheca Septemcastrensis XIV, Alba Iulia, 2005, 235 p.
- Roman, Diaconescu 2002 C. Roman, D. Diaconescu, Un complex aparținând culturii Basarabi descoperit la Hunedoara-Grădina Castelului, Acta Terrae Septemcastrensis I, 2002, 55-68.
- Tomescu 2000 M. Tomescu, Holocenul. Date cronologice şi climatice, CAB 9, 2000, 235-270.
- Ursuțiu, 2002 A. Ursuțiu, Etapa mijlocie a primei vârste a fierului în Transilvania (Cercetările de la Bernadea, com. Bahnea, jud. Mureș), Cluj-Napoca, 2002.

²⁵ Ibidem, 119.

