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Content

A SURVEY ON FAUNAL REMAINS FROM CRISTIAN I (SIBIU COUNTY)

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Abstract: *The preventive archaeological researches performed in the sector no. 4 of the Sibiu-Orăştie Highway brought to light a multipart site, including a settlement and a sanctuary, belonging to early Neolithic, phase I of the Starčevo-Criş Culture. The present work looks at a sample of 1,006 bones, of which 309 bones collected from sanctuary' pits, 259 bones from the pit-houses on terraces I, II, and 438 bones from the complex C_{24}, also located on terrace II as the sanctuary.*
Keywords: *early Neolithic, Starčevo-Criş Culture,bones, Cristian I*
Rezumat: *Cercetările arheologice preventive în sectorul 4 al autostrăzii Sibiu-Orăştie au permis cercetarea unui sit compus dintr-o aşezare şi un sanctuar, aparţinând neoliticului timpuriu, faza I a complexului cultural Starčevo-Criş. Materialul faunistic prezentat în analiza de faţă însumează 1.006 oase, recuperate din gropile sanctuarului (309 fragmente), din locuirea de pe Terasele I, II (259 fragmente) şi din complexul C_{24} („Casa morţilor"; 438 oase) de pe Terasa II, zona sanctuarului.*
Cuvinte cheie: *Neolitic timpuriu, cultura Starčevo-Criş, material faunistic, Cristian I*

The preventive archaeological researches performed in the sector no. 4 of the Sibiu-Orăştie Highway brought to light a multipart site, including a settlement and a sanctuary, belonging to early Neolithic, phase I of the Starčevo-Criş Culture. Technical and statistically the sanctuary dates from the Ist phase (IA) – up to abandonment and the dwellings from the phase IB-C – up to abandonment. The burials belong to Starčevo-Criş IC (House of the dead-CM or C24); the abandonment of the site probably got at the same time span (Luca *et al* 2013b, 24-25). The present work looks at a sample of 1,006 bones, of which 309 bones collected from sanctuary' pits, 259 bones from the pit-houses on terraces I, II, and 438 bones from the complex C_{24}, also located on terrace II as the sanctuary.

TERRACE I

The location provided 86 bones from three pit-houses, namely C40, 44 and C90 (L1 housing components), partly contemporary with the „House of the dead", which was part of the ritual of site going away, dated in IB-C Starčevo-Criş culture

(Table 1) (Luca *et al* 2012, 59). Related to distribution of cattle bones within dwellings, a great deal of isolated teeth and distal limb extremities (metapodii, phalanges) preserved, mostly small portions, scattered by traffic.

Table 1 - Bones distribution within pit-houses on terrace I

Terrace I	C_{40}	C_{44}	C_{90}	NISP	%	MNI	%
Bos taurus	28	3	4	35	83.33	6	66.67
Capra hircus			1	1	2.38	1	11.11
Domestics	28	3	5	36	85.71	7	77.78
Cervus elaphus	3			3	7.14	1	11.11
Bos primigenius	3			3	7.14	1	11.11
Wilds	6			6	14.28	2	22.22
Determined	34	3	5	42	100	9	100
Splinters	27	8	**9**	44			
TOTAL	61	11	14	86			

The complex C40 provided 61 wastes from three cattle, a red deer and an aurochs. 28 bones from cattle originate in a specimen 6-9 months old (slaughtered in autumn), another one 30-36 months old (also in autumn) and a mature, 6-9 years old.

Two splinters from an antler on pedicle come from a red deer 3-4 years old. The male was captured very likely during cold season, autumn-winter. The beam of the piece was removed for processing, preserving the base. The animal was mature, according to pivot diameter of 51 mm. A jawbone fragment, a proximal radius and tibia preserved from an aurochs killed by six years (noted by asterisks in Table 12). 27 splinters originate in the recognized specimens, their fragmentation and fossilization did not allow a specific assignment. Debris from all body parts of two wild taxa got, suggesting that, after capture the complete animals were brought into the site and processed on the blot. Three cattle bones from the complex C40 bear a red colour (Fig. 18). Remind that an oven household (complex C33) was set up in the north-west part of the house (Luca *et al* 2012, 58). The complex C44 has provided eleven wastes, three of which belong to cattle 16-19 months old, sacrificed during the summertime. Other eight sharps are unidentifiable; they arise from a large mammal. A bit from goat horn, four cattle bones and nine splinters collected from the complex C90. It is almost a sub-adult specimen and another killed between 6-9 years. Hence, in this stage of habitation cattle prevail by 83.33% as NISP and 66.67% as MNI. The wilds drop to 14.28% as NISP and 22.22% as MNI (Fig. 16).

Table 2 - Distribution of bones in pit-houses on terrace II

Terrace II	C_{20}	C_{23}	C_{25}	NISP	%	MNI	%
Bos taurus	38	11	24	73	75.26	7	53.85
Ovis aries	3	2		5	5.15	2	15.38
Domestics	41	13	24	78	80.41	9	69.23
Cervus elaphus	9	8	1	18	18.56	3	23.08
Bos primigenius			1	1	1.03	1	7.69
Wilds	9	8	2	19	19.59	4	30.77
Determinate	50	21	26	97	100	13	100
Bos/Cervus	12	20	20	52			
Splinters	10	14		24			
Total	72	55	46	173			

TERRACE II.

The sector provided faunal samples, belonging to several pit-houses, C20, 23, 25, a sanctuary of ritual pits and a construction called „The House of the Dead"" (CM or C24), which „is not a place for everyday use" (Luca *et al* 2013a, 8). The sample of dwellings consists of 173 bones, of which 97 from cattle, sheep, red deer and aurochs. In addition 76 unknown remainders come from large-sized mammals (cattle, deer, and aurochs). Broadly speaking, cattle bones make up 75.26%, accompanied by red deer with 18.56%, sheep with 5% and aurochs with 1.03%. The highly fragmented material produced a small number of individuals, benefiting species with few bones. As such, the rate of MNI significantly differs from that of NISP (Table 2). Thus cattle register 53.85%, red deer 23.08% and sheep, aurochs increase to 15% and 7.69%. 72 faunal remains, most of cattle were analyzed from the filling of C20. 38 cattle bones originate in at least

Table 3 - Body parts distribution in C_{20}, $_{23}$, $_{25}$

Taxa	Cattle	Sheep	Deer	Cattle	Sheep	Deer	Cattle	Aurochs	Deer	Total
Complex	C_{20}			C_{23}			C_{25}			
Neurocranium		1					1			2
Viscerocranium	1									1
Dentes superiores	1			1			1			3

Mandib.+dentes	1			2	1	1	2			7
Vertebra	3		2	1			8			14
Sacrum			1				1			2
Costae	4									4
Scapula	1	1	2	4		1	1			10
Humerus	1		1				3	1		6
Radius				1		1	1			3
Ulna			1			1				2
Metacarpus						1	2			3
Pelvis	2		1							3
Femur	1				1		1		1	4
Tibia	2	1		1						4
Calcaneus						1				1
Talus	3					2				5
Metatarsus	7		1	1						9
Ossa metatarsi	2									2
Phalanx 1	5						1			6
Phalanx 2	4						1			5
Phalanx 3							1			1
TOTAL	38	3	9	11	2	8	24	1	1	97

four specimens: one under 6-12 months, another around 18-24 months and two others went past two-three years. One of them is over 4-5 years (fused vertebrae). To mention the large amount of metapodii and phalanges (Table 3), articulated more or less of them. Nine elements of the postcranial skeleton from an adult red deer complete the sample. For a sub-adult sheep belong splinters from neurocranium, scapula and tibia. Other 20 residues, many ribs are attributable to deer or cattle. The sample from C20 provided a left talus from cattle (LL / Lm / GB - 71/66/44 mm) with fine parallel cuts on distal trohlea, evidence for animal skinning (Fig. 21). The complex C23 contained bones from two cattle slaughtered between 4-6 years and 6-9 years, an adult sheep over three years and two red deer. One of them was hunted in 6-9 months, at the last part of autumn (M1- incomplete roots, see Brown, Chapman 1991, 94), and another over three years (post cephalic elements sutured). The complex C25 supplied 24 cattle remains, belonging to an animal 6-7 months old (end of summer, autumn) and an adult, five years old. The two bones of red deer and aurochs mean one specimen for each other. Slaughter of cattle affects one-third (28.57%) of juvenile and sub-adult individuals, two-thirds (71.43 %) meaning adult and mature specimens.

Table 4 – Distribution of mammal bones pits of sanctuary

Complex	**C 8**	**C 9**	**C 13**	**C 14**	**C 15**	**C 22**	**C 37**	**C 42**	**C 43**	**C 64**	**C 66**	**C 68**	**C 73**	**C 75**	**C 79**	**C 80**
Bos taurus	9	19	7	7	4		2	9	5	1	1	2		16	39	27
Ovis aries		1		9	1	2										
Ovis/ C.	1															1
Domestics	10	20	7	16	5	2	2	9	5	1	1	2		16	39	28
Cervus elaphus		1	9								1				7	2
Bos primig.	1		7						2					2		9
Capreolus			1											2		
Wilds	1	1	17						2		1			4	7	11
Determin.	11	21	24	16	5	2	2	9	7	1	2	2		20	46	39
Bos	1	10	14						1				8		14	31
Splinters	6			4	5					2	4		1			
Mammals	18	31	38	20	10	2	2	9	8	3	6	2	9	20	60	70
Mollusca										1						
TOTAL	**18**	**31**	**38**	**20**	**10**	**2**	**2**	**9**	**8**	**4**	**6**	**2**	**9**	**20**	**60**	**70**

The sanctuary includes 48 pits (Luca *et al* 2013b, 11-12), of which 16 pits furnished animal bones. Archaeological materials in that structure are dated in phase IA of the Starčevo-Criş culture, being the earliest expression of the Neolithic in Romania (Luca et al 2013b, 24). Below we describe the bones recovered from pits (Table 4). Eighteen mammal bones were identified in the pit C8, of which eleven are assessable. It is close to nine elements from a bovine, 3-3.5 years old, evidence a pair of tibia, one of them proximal not fused but distal. The wastes come from the fleshy parts of the front and rear limbs, cf. distribution in Table 6 and Fig.

1. A distal left humerus from cattle shows fine incisions on epicondyles, as an outcome of cutting the ligaments of the joint and dismembering the limb. From an immature ovicaprid identified a tibia, proximal not fused. A fused distal tibia from aurochs, indicates an adult specimen. Then, three specimens provided body parts for depositing. In addition to eleven pieces assigned to presumed individuals, were also recovered a radius shaft from cattle/aurochs and six splinters from a low-bodied mammal, maybe the identified sheep.

Table 5 - Species frequencies in sanctuary pits and "House of the dead" (CM)

	Sanctuary				**Cx. 24 (CM)**			
Taxa	NISP.	%	MNI	%	NISP	%	MNI	%
Bos taurus	148	71.49	22	55	240	69.77	9	40.91
Ovis/ Capra	15	7.25	6	15	14	4.07	4	18.18
Domestics	**163**	**78.74**	**28**	**70**	254	73.84	13	59.09
Cervus elaphus	20	9.66	5	12,5	52	15.12	4	18.18
Bos primigenius	21	10.15	5	12,5	35	10.17	4	18.18
Capreolus c.	3	1.45	2	5	3	0.87	1	4.55
Wilds	**44**	**21.26**	**12**	**30**	**90**	**26.16**	**9**	**40.91**
Determined	207	100	40	100	344	100	22	100
Bos/Cervus	79				55			
Splinters	22				39			
Mammals	308				438			
Mollusca	1							
TOTAL	309				438			

Pit C9 pit provided 31 bones from at least four animals, two cows, a sheep and a red deer (Fig. 1). From an individual slaughtered in 18-24 months preserved splinters from distal end of metacarpals (unfused), a proximal phalanx recently fused[1], astragal, a left metatarsal distal unfused and a second phalanx. A part of the cervical column, with atlas, axis, two vertebrae, all fused and a portion of the distal end of the left foot (metatarsus, two phalanges I, II) originate from the other cattle slaughtered over 4-5 years. To an adult ram was put an axis with the body fused. Joining up to red deer, we have identified only a left complete calcaneus. About ten indeterminable elements originate either in red deer or cattle, the previously

[1] This is just proximal fused, confirming the animal slaughter between 24 - 30 months

mentioned specimens. Thus, in this case low meaty parts of limbs preferred fro deposing.

Pit C_{13} produced 38 bones, of which 24 assigned to four specimens: one cattle, an aurochs, a red deer and a roe deer (Fig. 2). Seven walls from a cattle horn-core, originally fully preserved.

Table 6 – Distribution of cattle bones in sanctuary pits

Complex	C8	C9	C13	C14	C15	C37	C42	C43	C64	C66	C68	C75	C79	C80	Total	%
Ossa corni	1		7			1*						2	4	2	17	11.48
Viscerocr, dentes				1									10		11	7.43
Mandib. dentes inf.													7	1	8	5.41
Vertebra		2			2			3					4		11	7.43
Atlas		1													1	0.68
Axis		1						1							2	1.35
Costae				2								3			5	3.38
Scapula	2											1	1	2	6	4.05
Humerus	1				1							1	2	3	8	5.41
Radius													1		1	0.68
Ulna							1								1	0.68
Metacarpus		2										1		1	4	2.7
Ossa metacarpi												1			1	0.67
Pelvis	1							1			1		1	3	7	4.73
Femur	1			1								2		1	5	3.38
Tibia	2			1	1	1						3	1	2	11	7.43

Patella												1			1	0.68
Calcaneus											1		1	2	4	2.7
Talus		2								1			1	1	5	3.38
Metatarsus	1	7					8					1	2	5	24	16.22
Ossa metatarsi									1					1	2	1.35
Metapodii													1		1	0.67
Phalanx 1		2											2	1	5	3.38
Phalanx 2		2		1									1	2	6	4.05
Phalanx 3				1											1	0.68
TOTAL	9	19	7	7	4	2	9	5	1	1	2	16	39	27	148	100
NMI	**1**	**2**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**3**	**4**	**3**	**22**	

*- 40 scraps from horn-core quoted by value 1

It was set above, at a depth of 0.45 m. We do not know whether it is the same piece from 0.42 m depth, formerly named by archaeologists as „a deer horn without any processing marks"; possibly, the extremely splitting up produced a false ending. Seven fragments from a distal humerus, distal radius, and proximal metacarpal come from the right side of an aurochs' foreleg[2]; to observe that the radius bears a burning stain. Parts of the distal right femur and patella of the rear leg identified. From an adult red deer, parts of the shoulder blade, distal femur, proximal tibia, talus, all on the right side determined. From the roe deer there is a fragment of the right shoulder blade. To mention the bones of cervids have a reddish pigmentation by fire. Of eighteen unassigned bones, four are ribs possible from deer, considering the pigmentation and their smaller dimensions.

Pit C_{14} was "sealed" on the cover with a "lid" made of river stones and bones of big sized-animals (Luca *et al* 2013b, 13). Faunal remnants are twenty, of which sixteen ascertainable. Specifically, seven bones come from an animal that had exceeded 3.5-4 years, namely: a fragment of maxilla, two ribs, a shaft femur, a

[2] I colour the fragments along the left, the drawing from Fig 2 does not allow otherwise.

proximal fused tibia, phalanges II, III; Fig. 2). Theoretically derive from a specimen, but simply as likely may be more. Unfortunately the bones are not articulated, they are coming from many regions of the corpse. Excepting the phalanges II, III suggesting an anatomical connection, the other does not. From the skeleton of a sheep we have identified a distal left humerus, two sharps of the shoulder blade on the same side, three ribs, a talus, a vertebra, a proximal left metatarsal and some small splinters (ovicaprid perhaps). More conceivable, the bones originate in a specimen killed between 1-3/4 years (the vertebra not ossified). In this case one supposes the deposition of some pieces from the back left leg (tibia, metatarsal, and talus), the right front leg (scapula, humerus) and column. Four fragments were not named in this complex.

Pit C_{15} contained four cattle bones, one of sheep, another from a small taxon (presumably ovicaprid), and four from a large mammal. From a bovine slaughtered around 24-30 months, preserved a right distal humerus, a left distal tibia recently fused and two vertebrae (Fig. 3). The humerus is reddish in colour. Two splinters from a left distal radius were assigned to sheep.

From **pit C_{22}** were collected a left mandible with M_1 erosion-c, suggesting an individual 8-10 months old and a left radius proximal fused (Fig. 4). Both of them go to a sheep killed, most likely in autumn, by the end of it.

From **pit C_{37}** were analyzed 40 small pieces from a cattle core which, according to the field archaeologists was placed on the upper side of the pit „at -0.90 m from the configuration a group ("top") made of river stones, ceramic fragments, animal bones and a cattle horn" (Luca *et al* 2013b, 13). Possibly from the same specimen to come a right tibia proximal not fused, suggesting an animal slaughtered below 3-4 years. The bone emphasizes a burning spot on the proximal end (Fig. 2). We assigned the bone to the same immature individual due to the fineness of the walls.

Table 7 – Distribution of ovicaprids' bones in sanctuary pits

Complex	**C8**	**C 9**	**C 14**	**C15**	**C 22**	**C 80**	**Total**	**%**
Mandib.+dentes inf.					1		1	**6.67**
Vertebra		1	1				2	**13.33**
Costae			3				3	**20**
Scapula			2				2	**13.33**
Humerus			1				1	**6.67**
Radius				1	1		2	**13,33**
Tibia	1					1	2	**13.33**
Talus			1				1	**6.67**

Metatarsus			1				1	**6.67**
TOTAL	1	1	9	1	2	1	15	**100**
MNI	1 Oc.	1Ov is	1 Ovis	1 Ovis	1 Ovis	1 Oc.	6	

From **pit C_{42}** originate eight bits from a metatarsal/metatarsals (?), a right ulna proximal not fused suggesting, at least a cow slaughtered below 3.5-4 years (Fig. 4).

Pit C_{43} provided eight remains, two of which come from an aurochs, older than 3-4 years. It is a fragment of the right tibia, proximal fused, and a phalanx I. Three cervical vertebrae and a halve axis (meaning the head was detached from the body in that region) originate in a cattle column (Fig. 4). A left acetabulum with LA-67.5 mm belongs to the same specimen. A jawbone fragment was not specifically assigned.

From **pit C64**, at a depth of 1.60 m was taken a clam, without traces of usage or processing. On the bottom of the pit were found a cattle metatarsal and two splinters from a big specimen, not identified (Fig. 4).

A right talus as from cattle, another one from red deer, one vertebra, and three unknown remainders gathered from **the pit C66**. The animals probably reached the adulthood, as per bone density (Fig. 3).

Pit C68 provided a left calcaneus proximal unfused, also a pelvic fragment, both of them from the hind leg of immature cattle (Fig. 3). In the **pit C_{73}** originate eight splinters from a shoulder blade, saying a large specimen, Bos/ Cervus, and a fragment from a low-sized taxon, ovicaprid/Capreolus (Fig. 4).

Pit C75 was covered with stones, over them was placed a front from Bos primigenius. By the size of the horns, would probably be a female (Fig. 5). The interfront suture is closed, judging

Table 8 – Distribution of red deer, aurochs' bones in sanctuary pits

	Cervus elaphus						**Bos primigenius**					
Complex	C 9	C 13	C 66	C 79	C 80	**Tot al**	C 08	C 13	C 43	C 75	C 80	**Tot al**
Ossa corni										1		**1**
Dentes superior es												
Mandib. +dentes inf.												
Costae		4				**4**						

Vertebra												
Sacrum												
Scapula		1		1		**1**						
Humerus				1		**1**		2				**2**
Radius								1				**1**
Ulna												
Metacarpus				1		**1**		1			3	**4**
Ossa metacarpi												
Pelvis												
Femur		2				**2**		2				**2**
Tibia		1				**3**	1		1	1	4	**7**
Patella								1				**1**
Calcaneus	1					**1**						
Talus		1	1	1		**2**						
Metatarsus				3		**3**						
Ossa metatarsi												
Metapodii												
Phalanx 1					1	**1**						
Phalanx 3					1	**1**			1		2	**3**
TOTAL	1	9	1	7	2	**20**	1	7	2	2	9	**21**
MNI	1	**1**	1	**1**	**1**	**5**	**1**	**1**	**1**	**1**	**1**	**5**

from the heaviness of the walls, the specimen reached adult stage. The maximum length of each horn is about 410-420 mm[3]. The value is below the average estimated for Early Holocene in Hungary (Janossy, Vörös 1981, 90, Tab. II), but the other measurements of the base (GD/SD/Circumf. - 94/77.5/ 277 mm) overcome the

[3] The tip is damaged; the complete piece would not exceed 415 mm.

means[4], closer to the lower limit of males (Fig. 12). And then if it was a female specimen particularly robust. A similar horn was identified in Cârcea "Viaduct" (GL/ GD/ SD/Circumf. - 410/ 91.5/ 77/260 mm), being assigned to a wild female; alike could belong to a domestic bull, according to the writer, Alexandra Bolomey (Bolomey, 1980, 20-23). Not too high values were estimated at Miercurea Sibiului as well, all of them clustering around 91-100 mm, the largest diameter of the base. Simply a higher value of 122 mm suggests a wild male (Diaconescu *et al* 2009, 9).

Table 9 – Distribution of species as MNI in sanctuary pits.

Complex	Cattle	Ovic.	Red deer	Aurochs	Roe deer	MNI	Unio sp.
Gr. 8	1	1		1		3	
Gr. 9	2	1	1			4	
Gr. 13	1		1	1	1	4	
Gr. 14	1	1				2	
Gr. 15	1	1				2	
Gr. 22		1				1	
Gr. 37	1					1	
Gr. 42	1					1	
Gr. 43	1			1		2	
Gr. 64	1					1	1
Gr. 66	1		1			2	
Gr. 68	1					1	
Gr. 75	3			1	1	5	
Gr. 79	4		1			5	
Gr. 80	3	1	1	1		6	
Total	**22**	**6**	**5**	**5**	**2**	**40**	**1**

Among the rocks covering the pit, bones from at least five specimens identified: distal scapula and distal humerus on the right side of an adult roe deer, proximal tibia, potentially from aurochs. The other fragments come from minimum three cattle: a small horn from juvenile; horn splinters, a right tibia, distal unfused, with GL 230 mm and a left distal femur from an animal slaughtered below 2-2.5

[4] For example, diameters and the circumference have the following metric thresholds: DM-77-87, X-84 mm; Dm-63-74, X-69; Circonf.-220-258, X-242 mm, cf. Janossy, Vörös 1981, 90, Tab. II

years. From a third individual killed over 3.5-4 years come a pair of the tibia (shaft parts), a right distal femur and kneecap, a distal left humerus and proximal right metatarsal. Three ribs, remnants from proximal metacarpal, capitate bone, shoulder blade complete the sample from that feature. They could belong to mentioned specimens or another.

Pit C79 provided 60 remains assigned to minimum four cattle and a red deer. The cattle sample is assigned to a calf of 6-8 months (killed at the close of autumn), one of 18-24 months and two of 4-6.5 years and 6.5-9 years. Since the bony elements are disarticulated, they could not be allotted to four skeletons in Fig. 5; consequently the four hypothetical individuals were represented by blurring images. To red deer belong several fragments from the front and rear legs on the right side: scapula, distal humerus, and five splinters from proximal metacarpal, metatarsal, and talus. Other undetermined fourteen fragments may occur from the identified taxa.

Pit C_{80} provided 70 bones from six specimens: three cattle, one aurochs, one red deer and small ruminant. A pair of distal unfused humerus derives from calf, 1-1.5 years old. Of a second specimen, a male killed around 6.5-9 years belong a mandible with M3 erosion-h (Grant 1982, 94) as well as several fragments from distal parts of the rear limb (distal tibia, tarsals, metatarsals, phalanges), and the forelimb (distal humerus, metacarpal) (Fig. 6). The third specimen is over 3.5 -4 years, the major bones being complete. It seems to be a little more gracile than former. A number of items of the pelvic limbs (tibia, tarsals, metatarsals, phalanx II), and the left chest (shoulder blade) belong to it. Likewise, there are pieces of horns, shoulder blade, shafts of metapodials that might derive from identified specimens or others. A posterior phalanx I from cattle has a large perforation (hole?) with irregular contour, on anteroposterior axis, at the distal end. It may have been an unsuccessful attempt to process the phalanx (Fig. 18). Nine fragments, consisting of parts of the distal extremities of the limbs, low meaty parties, as metapodii, phalanges, and tibia were assigned to an adult aurochs. Two phalanges (I, III) come from red deer. From the skeleton of a sub-adult ovicaprid were determined two scraps of a proximal unfused tibia. Thirty-one bones, as vertebrae and metapodials were not just determined, perhaps to derive from identified specimens.

By and large the sanctuary pits contained bones from at least forty specimens, twenty-eight domestics (70%) and twelve wilds (30%). More than half come from cattle (55%). As NISP they record 71.49% (Fig.16). Aurochs ranks the second by twenty one fragments (10.15%) from five individuals (12.5%). A close ratio has the red deer, noted by 9.66% as NISP and 12.5% by MNI. Ovicaprids account for fifteen bones (7.25%) from minimum six individuals (15%). Roe deer is represented by three bones (1.45%) from two individuals (5%). From a clam there is a single valve in C64. To remember that, C13 and C37 contained one single cattle horn-core each other set on the top. C75 contained a part of a bucranium from aurochs, including the front and horns. Splinters from bovine horns were also identified in the pits C8, 75, 79, 80, but is improbable to come from whole or larger parts. The pits C22, 37, 42, 64, 68 contained remainders from one specimen, C14 15, 43, 66 from two, C8, 9, 13, 75, 79, 80, from three-six. Cattle bones were found everywhere except C22, in some cases 2-4 individuals identified (Fig. 10). Small ruminants appear in several pits, C8, 9, 14, 15, 22, 80, and roe deer in C13 and C75. Red deer bones were found in C9, 13, 66, 79, 80, and aurochs in C8, 13, 43, 75, 80. For a suggestive picture of dietary contribution of the identified parts from depositions, we tabulated data in the Tables 4-8, according to major body regions: head, axial, proximal, and distal parts of the limb (Cf. Reitz, Wing 2008, 217). Overall, approximately one third of skeletal elements (34.29%) come from no meaty regions of the limbs, about as much of the fleshy parts (34.79%); head and column represent 12.56% and 18.36% (Table 10). The percentage of the column would be bigger when it comes about the large number of ribs and vertebrae unassigned. But there is disparity between species on this topic. Cattle skull elements are numerous, totalling 24.32% of the sample, a similar value record the distal portion of the rear limbs, 23.6% (low-value meat). It is besides skull, the frequent part (Fig. 7). In general,

Table 10 – Dietary contribution of specimens from sanctuary pits

	Cattle	%	Sheep	Red deer	Aurochs	Roe deer	Total	%
Head	36	24.32	1		1		38	18.36
Axial	19	12.84	3	4			26	12.56
Forequarter	16	14.19	7	2	3	3	31	14.98
Hindquarter	24	16.22	2	5	10		41	19.81
Forefoot	5	3.79		1	4		10	4.83
Hind foot	35	23.65	2	6			43	20.77
Feet	13	8.78		2	3		18	8.69
Total	**148**	**100**	**15**	**20**	**21**	**3**	**207**	**100**

the bones in the hind-limb are almost double (39.86%) than the forelimb (14.19%). In case of aurochs, the rear limb elements represent half of registered items. Overall, data highlights the prevalence of bones from hind-limbs in proportion of 40.5% compared to forelimbs, noted by 19.8%, and a dominant proportion of the bones from distal parts (20.77%). Then there is a preference for deposition of low-value meat parts, some economic "reasons" could be involved.

Referring to kill-off patterns of specimens from pits, few teething preserved, due to taphonomic processes in land. Consequently, in order to outline an image about the slaughter ages, we also used the timing of fusion of long bones (Reitz, Wing 2008, 194). Related to cattle, the "early-fusing" class (Table 11, Fig. 8), contains 93.54% fused elements versus 6.45% unfused, suggesting a small proportion of juveniles (animals culled in spring, summer). The „middle- fusing" class includes 56.25% fused bones and 43.75% not. This category does not provide clear information on slaughter ages (Reitz, Wing 2008, 194). The "late-fusing" category includes 47.37%, fused bones and 52.63% unfused. That is a rate of 47% skeletal elements from an adult specimen

Table11 – Timing of fusion in cattle bones from sanctuary and if "House of the dead" (C_{24})

	Sanctuary			"House of the dead"		
Fusing	Fused	Unfused	Total	Fused	Unfused	Total
Early-fusing	**26-93,54%**	**2-6,46%**	**31-100%**	**45-97,83%**	**1-2,17%**	**46-100%**
Humerus distal	7		7	5		5
Scapula, distal	3		3	6	1	7
Radius proximal	1		1	2		2
Acetabulum	2	2	4	3		3
Metapodii prox.	7		7	15		15
Ph. I, II	9		9	14		14
Middle - fusing	**9-56,25%**	**7-43,75%**	**16-100%**	**16-72,73%**	**6-27,27%**	**22-100%**
Tibia distal	5	2	7	3	2	5
Calcaneus	2	2	4	4	2	6
Metapodii distal	2	3	5	9	2	11
Late-fusing	**9-47,37%**	**10-52,63%**	**19-100%**	**15-39,47%**	**23-60,53%**	**38-100%**
Humerus prox.	1		1	1	5	6
Radius distal	1		1	3		3
Ulna, prox., dist.	1	1	2	3		3
Femur proximal	1		1		1	1
Femur distal	1	2	3			
Tibia proximal		3	3	1	3	4
Vertebrae	4	4	8	7	14	21

(over 3.5-4 years). Anyway, these data are not really consistent (Reitz, Wing 2008, 194) but offers somewhat a perspective on slaughter stages. According to dentition five cattle were presumed; they were killed at 6-8 months (in autumn), 18-24, 4-6.5 years and two at 6.5-9 years. Overall, the proportion of calves is 22.73%, 45.45% that of sub-adult, and 31.82% of adults. Despite the high rate of immature, one third of the stock aimed animals exploited for many years (Fig. 11). I could say some economic reasons at cattle slaughtering. As to small ruminants exploitation there is only general information, in the absence of supporting dental series. On the whole, six individuals presumed, of which one is 8-10 months old, and the others did not accomplish the adult, being slaughtered between 1-2/2.5 years. Four of the six individuals are sheep (animals of the pits C9, 14, 15, 22) and two ovicaprids, from C8 and C80. Only five aurochsen from sanctuary arrived at maturity. Two roe deer identified in two pits, were probably full-grown, we bear no clear indication of that. Regarding red deer, five specimens presumed, they will have reached an adult age; most of the bones seem to be fused at the ends.

"The house of the dead" (C_{24}) is the name of a sector of a partially depth dwelling, with dimensions of 7x11 m and seven human skeleton inside. "The final consecration of the mortuary deposits was accomplished by posing the remnants of large-bodied animals, a fragment of an anthropomorphic vessel, a large ledger of grit stone in the middle of the feature, at an equal distance from the dead" (Luca *et al* 2012, 61). The recognized bones in that "bunch of large animal bones" sums up 92 fragments from three cattle, a ram, a red deer, an aurochs and a roe deer. 23 indeterminate splinters also belong to listed individuals. 61 bones originate in two cows, one male, slaughtered below 2-3 years and over 3-4 years. One of them was about 6.5-9 years old. The cattle sample includes fragments of skull (bazioccipital, maxilla, mandibula, horn walls), numerous cervical and lumbar vertebrae, ribs, four distal shoulder blades, distal ends of metapodials, carpal, tarsal bones (Table 13, Fig . 9). From one of the mature specimens, we observe a much flattened distal metacarpal (Fig. 19, the third upper- right). He has Bd- 74 mm, a value that enters the domain of the aurochs, reported to a thickness of 38 mm (value assigned to cattle). Perhaps, the widening of the metapodials to be the outcome of animal using as burden beast. An axis and a part of occipital bone come from a ram. A proximal metacarpal, a couple of centroquartals belong to a red deer, a distal left scapula and a proximal phalanx suggest an aurochs. From a roe deer buck hunted during the warm season preserved an antler on pedicle (Fig. 20). The antler was removed, presumably for processing, keeping the pedicle; notches on the border of the coronet emphasized. Few dental remains preserved within C_{24} so that the timing of fusion of long bones was employed for the slaughter profiles. Thus in the case of cattle bones, the timing of fusions (Table 11) show that: the class „early-fusing" includes 2.17% unfused elements, meaning specimens below 12-18 months. Category „middle-fusing" includes 72.73% fused bones and 27.27% not. The category „late-fusing" includes merely 39.47% fused bones and 60.53% not. That is, a ratio of 40% bony elements comes from adults that exceeded 3.5-4 years.

According to numerous dentition nine specimens were identified (Table 12), slaughtered as per the scheme: one cattle between 1-4 months (spring), four between 28-34 months (44.44%), most likely in summer-autumn, and four individuals (44.44%) from 4-5 years upwards. The last class includes three specimens killed at 6.5-9 years and one at 9-11 years (Fig. 11). Whatsoever is the criterion, dentition or bone fusions proportion of adults is 40-45%. Equally for the rate of specimens, things are questionable. According to dentition, they make up 45% and only 27% to skeleton. Obviously the larger and uncertain limits of the class "middle fusing" caused these differences. Still it is noteworthy the occupants of the site will be trying to bring off

Table 12 – Cattle age estimation according to dentition at Cristian I.

	Left/Right.	**Pd_4/P_4**	**M_1**	**M_2**	**M_3**	**L M_3**	**M^1**	**M^2**	**M^3**	**Age**
C 24	R			k	g	38		k		6,5-9 years
C 24	R			j	g	39		k		6,5-9 y
C 24	L						K, I-0,95			6,5-9 y
C 24	L		N	l	k	40		l; I-1,09	j/k; I-1,23	9-11 y
C 24	L	P4-C							Erupt. III	28-30 months
C 24	R+L	P4-V, P3 erupt. III		d					eroz +	30-34 m
C 24	R+L	P4-V	D	c						30-34 m
C 24	R+L	Pd4-b	C							1-4 m
C 24	L	P4-g	k; I-1,21				I-1,09			6,5-9 y
C 24	R		D	c						32-36 m
C 23	R				d	41				4-6 y
C 23	L			j	g	38,5				6,5-9 y
C 25	R+L	Pd4-f	E							6-7 m
C 25	L							I-1,82		4-6,5 y
C 40	L				h	43			eroz ++	4-6,5 y *

C 40	L						E			6-9 m
C 40	L							I-1,47		6,5-9 y
C 40	R+L								eroz +	30-36 m
C 44	R							erupting		16-19 m
C 90	R	P4-g	J							6,5-9 y
C 79	R+L		a/b				b			6-8 m
C 79	R+L.			g	f	41		I-1,53	I-1,8	6,5-9 y
C 79	L						I-1,50	I-1,69		4-6,5 y
C 79	R+L			b						18-24 m
C 80	L				h	39				6,5-9 y

I: Index H/DT (cf. Ducos, 1968, apud Lepetz 1996, 13); * - Bos primigenius

the herds efficiently. There are few bones from calves in deposits, keeping mature animals, after their use many reproductive cycles. Regarding small ruminants were identified bones from a goat.

Table 13 – Distribution of bones in C_{24}.

Complex	**Cattle**	**Cattle next to vessel**	**Sheep**	**Red deer**	**Aurochs**	**Roe deer**	**Total**
Neurocranium	2	1	**1**				4
Ossa corni	3	1				1	5
Viscerocranium	2			1			3
Dentes superiores	8	1		1			10
Mandib.+dentes inf.	11	3	2	1	1		18
Vertebra	35	17	1	4			57
Sacrum		1					1
Atlas	3				1		4
Axis	6	1	1				8
Costae	9	13					22

Scapula	5	4	2	4	2		17
Humerus	10	1	3	5	2		21
Radius	8			3	9		20
Ulna	2	1		1	1		5
Metacarpus	7	3		6	4	1	21
Ossa metacarpi	4	2		4			10
Pelvis	5	1		4			10
Femur	1		2		1		4
Tibia	8	3	2	4	1	1	19
Calcaneus	4	2			2		8
Talus	3			2	1		6
Metatarsus	16	2		4	1		23
Ossa metatarsi	3	3		5			11
Metapodii	1			1			2
Phalanx 1	10			1	4		15
Phalanx 2	8			1	3		12
Phalanx 3	5	1			2		8
TOTAL	179	61	14	52	35	3	344

and three sheep. The goat was killed between 6-10 months (probably summer-autumn), considering a mandible part with M2 in eruption and a distal humerus partially fused (Zeder, 2002, 107, Fig. 15). Two sheep were slaughtered at 6-12 months and 18-30 months (distal tibia with visible suture, cf. Zeder, 2002, 107, Fig. 15) or 12-18 months (Barone 1976; apud Udrescu *et al* 1999, Tab. 3, 7). A third specimen was 3-4 years old (a fused axis from ram). Red deer bones come from, at least four animals, one is 6-8 months old (captured at the end of autumn), and three over 1-2 years[5]. The aurochs sample is dispersed to four individuals, one of which is approximately 2-2.5 years old, (metacarpal with distal visible suture), another 3.5-4 years (distal radius just fused) and two exceeding 2-3 years. Some bones show signs of incisions, cutting namely. A right talus from wild cattle (dimensions-LL/Lm/GB-83/75/57 mm) shows fine and parallel incisions on the dorsal side of trohlea (Fig. 20). They were executed for skinning. Likewise, a portion of the proximal right radius from aurochs (BFp/Bp/Dp de 95/102/54 mm) shows below the joint, on medial side fine traces of cutting to incise the ligaments and dismembering the carcass. A distal metacarpus (Bd/Dd - 62/36 mm) bears fine incisions above the

[5] Presumption of the three individuals is made on four centrotarsale, two of which are pair

epiphysis, probably made for removing skin on the front legs. And last piece is a sacrum from cattle with fine incisions on dorsal side, below the proximal end, made for cutting the ligaments and coxal disjointing. The bad preservation of bones din not allowed the outline this kind of human action. In that respect are several bones, with burning traces. It is a hip from red deer and six cattle bones. It is about two fragments of the left humerus, a pair of metatarsals, and a distal right metacarpal, all from cattle. The burning is not complete just stains. We notice that all those bones were found in the filling of C24, but not close the vessel.

Metric assessments

Few measurements of the species at the site were done because of the high level of the bones' breaking. As regards the aurochs, average values of parameters sampled from Cristian I seem a little lower than those from the early Holocene in Hungary (Janossy, Vörös 1981, 90-96; Bökönyi, 1972, 17-56). The graph in Fig. 13 we plotted data from cattle at Cristian I by a red cross and those of the aurochs by black rhombus. No gap between them exists; the values with few exceptions are closed suggesting accidental crossbreeding. For example GL of M3 starts variation from 43 mm for aurochs and 41 mm seems to be the upper limit for cattle. Similarly, a distal metacarpal of 74/38 mm was assigned to a domestic bull, but 77.5/ 37 mm to a wild cow or mongrel? On the four graphs in Fig. 14 is shown the dispersion of parameters aurochs- cattle at Cristian I. Kernel density shows a bimodal distribution of cattle, and unimodal for aurochs if metacarpus, metatarsus and distal tibia. Specifically, the upper dispersion peaks indicate the clustering of female values, the lowest, those of domestic males. In case of aurochs the unimodal distribution seems to indicate rather a clustering of values typical to females. In case of phalanx I it is characteristically a tri-modal distribution, with a maximum, suggesting domestic males; the differences are given by gender or impediment to separate the fore from back phalanges in some

Table 14 – Species frequencies in Starčevo-Criş - IB sites in Transylvania.

	Cristian I-pit-houses	**Miercurea-Sibiului-*Petriş*, Ia**	**Gura Baciului I**	**Cristian I-pit-houses**	**Miercurea-Sibiului-*Petriş*, Ia**	**Gura Baciului I**
Bos taurus	77.7	63.7	48.09	59.09	65.38	37.14
Ovis/Capra	4.31	25.9	26.72	13.64	13.46	25.71
Sus s. domesticus			2.29			5.72
Domestics	82.01	89.6	77.1	72.73	78.84	68.57
Cervus elaphus	15.11	2.1	9.92	18.18	3.85	17.14

Bos primigenius	2.88	7.8	5.34	9.09	15.38	2.86
Capreolus c.		0.5	6.11		1.92	8.57
Sus s. ferrus			1.53			2.86
Wilds	17.99	10.4	22.9	27.27	21.15	31.43

examples. Comparisons between distributions of parameters aurochs-cattle in some early Neolithic sites from Miercurea Sibiului –level Ia (El Susi 2008, 55-58), equivalent to Starčevo Criş IB (Luca *et al* 2006, 9), or Gura Baciului level I (Lazarovici, Lazarovici 2006, 83-84) highlight close values to aurochs. On the scatter diagram of horn core diameters (Fig. 15) is clearly shown this tendency. There are no estimates of the height at the withers for any species missing the complete bones. It is guessed based on the proportion of bones that cattle are large, robust, excepting for some small specimens (females of brahycerus-type), with values easy to recognize. Regarding horns of bovines, others to be sizeable but those from pit C73 were not set up. However, on that point are some fragments of walls that are not utilitarian. About the size of sheep very little could say. Only two distal humeri, BT- 26-28 mm and a distal tibia with Bd- 26 mm, commonly to early Neolithic preserved. The dispersion of the distal tibia and humerus values in samples from Cristian, Gura Baciului (huts B1, 2a), Miercurea Sibiului (level a) is relatively homogeneous; the data are dispersed between the same thresholds, talking about a common small and gracile sheep. A height at the withers of 62.37 cm estimated on a talus from Gura Baciului but the size is not fully true[6]. Insufficiently measurable, the red deer sample comes mostly from males, with several robust specimens, with values close to cattle. The distal humerus emphasizes a variation of 57-61 mm, average - 59.7 mm; two distal radii measure 56 and 58 mm, and the GL of talus, 53.5 -59, average of 57.1 mm estimated. Not many things about roe deer stature can be said. Some identified specimens were relatively robust, maybe as with red deer a selective hunting of males was performed

Conclusions

Since the pit-huts on the terraces I, II belong to the same chronological horizon, we set them together when making statistical comparisons with CM (C24) and sanctuary pits. If we look at the statistics by NISP, almost everywhere cattle prevail with 70-77%. The percentage of small ruminants is reduced about 7.2% in the sanctuary and 4% in the CM (Fig. 16). Distribution as NMI reconfigures everything, such as ovicaprids record 13.6% in dwellings and 15-18% in the sanctuary and CM. Cattle reached a maximum of 59% in dwellings (beef was the

[6] Coefficient expresses a weak correlation between bone length and withers' height value; cf. Teichert, 1975, 60-61.

basic element of the diet), 55% in the sanctuary and 41% in CM. The rate of hunting little varies between 18% in dwellings and 21 - 26% in the sanctuary, red deer being the main wild taxon integrated into the economy from Cristian I. Its percentage is identical (15%) in dwellings and CM (C24), reducing by 9.6% in the sanctuary. Aurochs comes to 10.1% in the sanctuary and only 2.88% in dwellings. About one third of the presumed individuals from dwellings is given by hunting, especially by red deer. In the other contexts, something more, 30% in the sanctuary and 41% in CM (as MNI); obviously, the replacement of domestic species, especially cattle in deposits would be an explanation. An appropriate analogy for Cristian I (inhabiting level), is offered by sample from Miercurea Sibiului- level Ia (huts B10/ 2003, B19/ 2005, Pit 26). In both cases few taxa identified, from domestic mammals pig and dog are missed. The rate of cattle at Miercurea Sibiului is around 60-65%, that of ovicaprids 13.5% and the rate of wild is 21-27% (NISP, MNI), which should not surprise; it comes to settlements, close in space and time, enjoying the same resources and surroundings. Alluvial and wet soils on rivers' terraces favoured good vegetation for grazing without implying seasonal oscillation of herds (Bailey 2000, 135). The age profiles indicates that cattle and ovicaprids (even if fewer), slaughtered throughout the warm season and fall. On the other hand, the slaughter of cattle in autumn might suggest missing of fodder in winter. The only difference between the two situations lies in the report red deer/ aurochs. Red deer prevails in Cristian I by 18.18% and reverse, aurochs dominates in Miercurea Sibiului by 15.38% (Tab. 14; Fig. 17). It looks that the beef was the basis of meat supplying, sheep, goats, and hunting, albeit with real contributions were secondary. Statistics on 157 bones recovered from huts B1 and B2a (level I, the earliest) in Gura Baciului shows a higher proportion of small ruminants both NISP and MNI; We are talking close to 25-26%, cattle reaching about 37-48%; pig as a new element only 2.29-5% (El Susi 2008, 95). The rates of the game increases with approximately 10 percent from the previous sites; do not forget that Gura Baciului developed in the north-eastern foothills of the mountains Gilău; the environment was more suitable for ovicaprids, red deer, roe deer than aurochs, as matters statistics. The boar appears in wild fauna. Perhaps the depletion of cattle rate was set up by hunting. It seems that the claim holds the true for the Balkan Neolithic sites (Orton 2012, 30). It is possible that, the earliest Neolithic communities in Transylvania to exploit in particular cattle, the small ruminates ranking the second. There are significant differences between faunal composition of sites in southern and northern of the Balkans. The southern sites are linked to contemporary ones in Greece, while the latter reflects a clear adaptation to temperate-continental environment, with prevalence of cattle. Statistical processing of faunal samples from the Middle East, Greece and the Balkans shows that one cannot establish correlations between the early Neolithic settlements in Greece and those of Karanovo and Starčevo-Criş type from Bulgaria, Serbia, Romania, Hungary. Sheep and goat rate in early Neolithic Greek is roughly 77.5% and 5.9% that of cattle (Manning *et al* 2013, 240-242, Tab. 12.2). Small ruminants dominate by 43.8% and cattle rank the second with 34.1% in sites of Karanovo type. Ovicaprids rate is unexpectedly high - 53.8% versus 25.7%, the rate of cattle in Starčevo-Criş settlements. The researchers concluded that Karanovo and Starčevo-Criş communities developed a mixed economy with cattle and sheep/ goat. Granting to the same sources, it should be even more ovicaprids in the sites of the two cultural areas, but lower resistance of their bones relative to those of cattle, pig greatly mattered. On the other hand, it is known that there are a large variation of species frequencies in concerned areas; for example, the game is quoted by 55% in Golocut, contrasting with the low share in Starčevo-Criş, 11-12% or Locusteni (Oltenia, Romania) with 80% cattle (Manning et al 2013, 242). Despite this variance, the Balkans sites are dependent on small ruminants. Still, some preliminary data indicated that in NW Anatolia there is a prevalence of cattle (it is connected with the early exploitation of milk); if further corroborated this fact, one might hold up the theory of continental route of penetration of agriculture towards SE Europe[7]**.** It is set up that samples of the early Neolithic sites from SE Europe are poor in taxa compare to SW Asia. The increased percentage of cattle in settlements from western Anatolia and SE Europe is explained by differences in ambient conditions between the two areas. A recent report (Connolly et al 2012, p. 997-1010) examining the impact of ambient factors on bovines' rate in southern Balkan and Middle East sites, from aceramic until late Neolithic times claims that, just 25-50% of cattle variation could be explained by regional differences in temperature, rainfall regime, and so on..... In some instances, a certain percentage of cattle could also be explained by environmental factors, not so much in others. Sporo-pollinic analyzes in Piriu Mountains (SW Bulgaria) established that going with early Holocene until about 8000 BP there were an arid and steppe environment. The lowlands in southeastern Bulgaria, the climate was drier, the forest later extending (Apud Feurdean et al 2014, 15). Habitats will have been conducive to cattle rising on the northern regions of the Balkans and the aurochs was a common taxon with significant densities. European aurochs were apparently better adapted to an opened landscape but wet, which should not be excluding the forest with swamps and slops (Connolly et al 2012, 998). Definitely, the surroundings of Cristian I and Miercurea Sibiului met those demands. The relatively forested milieu is suggested by the steady occurrence of red deer in our samples. Also, European temperate environment was more suitable to cattle (and to an economy focused on them), the taxon being less tolerant to drought than ovicaprids. Up-scaling the results of pollen analysis of peat bogs from Avrig (village in southern Transylvania, at 400 m altitude), some clarifications have been reached on conditions wherein developed Cristian and Miercurea Sibiului. Thus, on the sequence 8500-8000 cal. BP Corylus

[7]Continental route linked The central and NW Anatolia from Thrace and eastern Bulgaria; the maritime one (associated with ovicaprids breeding) linked the Levant from Cyprus, the Aegean coast of Turkey, Greece apud Manning et all, 2013, p. 237

records a maximum over 40% (thermopile element)[8]; the oak rate is 10%, ash 5%, elm 15%, birch about 15%, alder 5% and wild grasses 5%. Spruce rate is also 5% (Tanţău et al 2006, 55, 59; Feurdean *et al* 2014, 11, Fig. 4). Thus, the landscape was dominated in proportion of 70% by deciduous forest with much hazel much, less oak, elm and ash; characteristic elements of a colder climate (alder, birch) drop to 15% and conifers to 5%; meadows with grasses and shrubs represent about 10%. The indicators of anthropogenic actions on the landscape (deforestation, agricultural crops, grazing) record low values at an altitude of 440 m, around 8000-7000 cal BP. Correspondingly, there are the lowest values of the open landscape indicators, according to the same pollen analysis (Feurdean 2013, 7, Fig. 4). But after 7000 cal BP the cereal type-pollen occurs and is reckoned the main indicator of plants' cultivation in the same area. So the environment was not real dry and cold, it was more suitable for cattle than sheep, the forest was well distributed, favoring a diverse wildlife.

Although the samples at Cristian I are not so large they brought particular information to species exploited by the earliest Neolithic communities in our area. As evidenced by paleo-environmental analyzes, the surroundings in the hilly area of Sălişte-Sibiu Depression, on the Cibin River terraces were more suited for cattle and hunting. Communities have specialized in cattle exploiting, which ensured the most part of meat, dairy products, hides, and bones for processing. Their prevalence results as well from the major proportion of their bones in sanctuary and CM deposits. Similarities between age profiles from the sanctuary and CM (C24) suggests that we are speaking about the same community with the same food customs. The capture of large artiodactyls (red deer, aurochs) supplemented the animal protein (particularly during cold season) and beside hides, bones, antlers for processing. If ovicaprids' rate was or not large, there is no saying. As a remark, even not assigned sample (which represents about 27% of the total) also comes from large specimens. Remind that small ruminants do not gain an excessive proportion at Miercurea Sibiului, site which offered a consistent assemblage. They outnumber in Christian I, but do not surpass a fourth part of determining bones. Statistics of samples from the earliest pit-houses in Gura Baciului show more ovicaprids' bones but not exceedingly. For the time being the question in hand remains in perspective, perhaps new faunal data to shed light on this issue.

[8] Its expansion marks the beginning of Atlantic in Romania

LIST OF FIGURES

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Metric assessments cf. A. Von den Driesch, 1976

Coarne Context	**Gl**	**GD**	**SD**	**Circomf.**	**42a/Lţ. interc**	**I. GdxSd/100**	**Taxon**
Cx. 75	410/415	94	77,5	277	197	82,45	Bos p.

Mandibula

Context	**M3**	**Taxon**
Cx. 24	38	Bos

Maxilla

Context	**M3**	**Taxon**
Cx. 40	31	Bos t.

		t.
Cx. 23	38,5	Bos t.
Cx. 80	39	Bos t.
Cx. 24	39	Bos t.
Cx. 24	40	Bos t.
Cx. 23	41	Bos t.
Cx. 79	41	Bos t.
Cx. 40	43	Bos p.

Cx. 24	35	Bos t.
Cx. 79	35	Bos t.

Ulna

Context	**BPC**	**Taxon**
Cx. 24	59	Bos p.

Axis

Context	**BF cr.**	**SBV**	**LCDe**	**GB dens**	**Taxon**
Cx. 24	97	51,5	128	43	Bos t.
Cx. 24	43				Ovis

Scapula

Context	**SLC**	**GLP**	**LG**	**BG**	**Taxon**
Cx. 24		89	72	58	Bos p.
Cx. 24	73	88	71		Bos p.
Cx. 80				46	Bos t.
Cx. 24				49	Bos t.
Cx. 40		70			Bos t.
Cx. 40		75			Bos t.
Cx. 24		76	62,5	49	Bos t.
Cx. 08	49				Bos t.
Cx. 24	55	78	66	55	Bos t.
Cx. 24	69	85	72,5	53	Bos t.
Cx. 24				54	Bos t.
Cx. 13		29,5	24		Capreolus
Cx. 75	18				Capreolus
Cx. 24	38	59	48		Cervus

Cx. 79	40	62,5	48,5		Cervus
Cx. 13	50,5				Cervus
Cx. 24	17				Ovis

Humerus

Context	BT	Bd	Dd	Taxon
Cx. 25	91,5			Bos p.
Cx. 24	91			Bos p.
Cx. 14	95			Bos p.
Cx. 24	97			Bos p.
Cx. 25			87	Bos t.
Cx. 24	74		81,5	Bos t.
Cx. 75	76	81	88,5	Bos t.
Cx. 80	80	85		Bos t.
Cx. 08	81			Bos t.
Cx. 24	82			Bos t.
Cx. 75		29,5	29,5	Capreolus
Cx. 24		57		Cervus
Cx. 20		60	60	Cervus
Cx. 24	61/	61		Cervus
Cx. 24	61/	61		Cervus
Cx. 24	26,5	29	25	Ovis
Cx. 14	28			Ovis

Radius

Context	Bd	Dd/Taxon
Cx. 24	86	Bos p.
Cx. 24	75	Bos t.
Cx. 24	56	38/Cervus
Cx. 23	58	40/Cervus

Femur

Context	DP	Taxon
Cx. 24	60	Bos p.
Cx. 25	41,5	Bos t.

Radius

Context	BFp	Bp	Dp	Taxon
Cx. 24	95	102	54	Bos p.
Cx. 24	97	104	53	Bos p.
Cx. 40			54	Bos p.
Cx. 24			52	Bos p.
Cx. 24	78	87,5	42,5	Bos t.
Cx. 24	80	88	44	Bos t.

Cx. 79		94,5	46	Bos t.
Cx. 25			42	Bos t.

Metacarpus **Metacarpus**

Context	Bp	Dp	Taxon	Context	Bd	Dd	Taxon
Cx. 24		43	Bos p.	Cx. 24	76		Bos p.
Cx. 13		45	Bos p.	Cx. 80		41	Bos p.
Cx. 80		46	Bos p.	Cx. 24	77,5	37	Bos p.?
Cx. 24		41	Bos t.	Cx. 24	78	42	Bos p.
Cx. 24	57		Bos t.	Cx. 24	62	36	Bos t.
Cx. 80	61	38	Bos t.	Cx. 24	63,5	34,5	Bos t.
Cx. 24	66	34	Bos t.	Cx. 24	63	36	Bos t.
Cx. 24	68	39,5	Bos t.	Cx. 25	66	34	Bos t.
Cx. 24	19	14,5	Capreolus	Cx. 90	67	36,5	Bos t.
Cx. 23	45,5	32	Cervus	Cx. 24	74	38	Bos t.?
Cx. 24	48,5	31,5	Cervus				

Metatarsus **Metatarsus**

Context	Bd	Dd	Taxon	Context	Bp	Dp	Taxon
Cx. 24	75	41	Bos p.	Cx. 24	48,5	48,5	Bos t.
Cx. 09		36	Bos t.	Cx. 80	49,5	51	Bos t.
Cx. 24		35,5	Bos t.	Cx. 24	50		Bos t.
Cx. 20	58	35,5	Bos t.	Cx. 24	52		Bos t.
Cx. 24	59	34	Bos t.	Cx. 75	52	53	Bos t.
Cx. 20	60	33	Bos t.	Cx. 20	56,5	54	Bos t.
Cx. 79	61	36,5	Bos t.	Cx. 20	56,5	54,5	Bos t.
Cx. 24	62	34,5	Bos t.	Cx. 24	58	56,5	Bos t.
Cx. 24	66	37	Bos t.	Cx. 80	58		Bos t.
Cx. 20	66	37	Bos t.	Cx. 40	59,5		Bos t.
Cx. 20	66	37	Bos t.	Cx. 24	60		Bos t.
Cx. 24		29,5	Cervus	Cx. 14		18,5	Ovis
Cx. 24	47	31	Cervus				

Talus

Context	GLl	GL m	Bd	Taxon
Cx. 24	83	75	57	Bos p.
Cx. 20	69			Bos t.
Cx. 66	70	63	42	Bos t.
Cx. 20	71	66	44	Bos t.
Cx. 20	74,5			Bos t.
Cx. 24	74,5	65,5	46,5	Bos t.
Cx. 09		55,5		Bos t.
Cx. 09		55,5		Bos t.
Cx. 24		63		Bos t.
Cx. 23		58		Bos t.
Cx. 23		58		Bos t.
Cx. 24	58	53,5	37	Cervus
Cx. 66	60			Cervus
Cx. 79	65		41	Cervus
Cx. 24		59		Cervus

Centrotarsal

Context	GL	Taxon
Cx. 80	54	Bos t.
Cx. 24	61,5	Bos t.
Cx. 24	63,5	Bos t.
Cx. 24	64	Bos t.
Cx. 24	51,5	Cervus
Cx. 24	56	Cervus
Cx. 24	56	Cervus
Cx. 24	56	Cervus

PH I

Context	Gl	Bp	Taxon
Cx. 43	76	43,5	Bos p.
Cx. 24		42	Bos p.
Cx. 24	69	40,5	Bos p.
Cx. 09	59	30	Bos t.
Cx. 24	62,5	32,5	Bos t.
Cx. 09	65	33,5	Bos t.
Cx. 25	65,5	30	Bos t.
Cx. 24	68		Bos t.
Cx. 24	69	32	Bos t.
Cx. 20	69	33	Bos t.
Cx. 20	69	33	Bos t.

Pelvis

Context	LA	Taxon
Cx. 43	67,5	Bos t.
Cx. 24	68	Bos t.
Cx. 80	71	Bos t.

Tibia

Cx. 80	72	35,5	Bos t.
Cx. 24	72	37,5	Bos t.
Cx. 79		30,5	Bos t.
Cx. 24		32	Bos t.
Cx. 24		33,5	Bos t.
Cx. 79		34,5	Bos t.

Context	Bp	Taxon
Cx. 13	78	Cervus
Cx. 24	88	Bos t.
Cx. 43	105	Bos p.
Cx. 80	108	Bos p.
Cx. 75	112	Bos p.

PH II

Context	Gl	Bp	Taxon
Cx. 24	48	41	Bos p.
Cx. 24	51	38,5	Bos p.
Cx. 24	36,5	26	Bos t.
Cx. 80	40		Bos t.
Cx. 24	40	31	Bos t.
Cx. 14	41	30	Bos t.
Cx. 09	41,5	31	Bos t.
Cx. 24	42,5	29,5	Bos t.
Cx. 24	43	35,5	Bos t.
Cx. 20/	45,5		Bos t.
Cx. 24	46	38	Bos t.
Cx. 20/	46	33	Bos t.
Cx. 20/	46	33	Bos t.
Cx. 24	47	36,5	Bos t.
Cx. 20/	49	34,5	Bos t.
Cx. 40		30	Bos t.
Cx. 79		32	Bos t.
Cx. 24		32	Bos t.
Cx. 25		40	Bos t.

Tibia

Context	Bd	Dd	Taxon
Cx. 08	75	56	Bos p.
Cx. 24	76,5	55,5	Bos p.
Cx. 24		52	Bos t.
Cx. 25	61	42,5	Bos t.
Cx. 08	62	45	Bos t.
Cx. 80	67	50	Bos t.
Cx. 24	68	53	Bos t.
Cx. 15	27,5	20	Capreolus
Cx. 24	26	21	Ovis

Patella

Context	GL	Taxon
Cx. 13	74	Bos p.
Cx. 75	56,5	Bos t.

Calcaneus

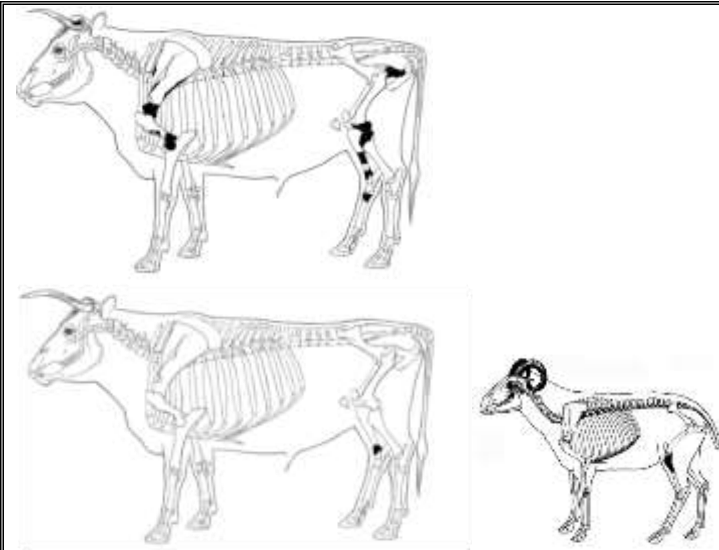
Context	GL	Bd	Taxon

PH III

Context	DLS	Taxon

Cx. 24	173	*68*	Bos p.
Cx. 24	173	*68*	Bos p.
Cx. 80		46,5	Bos t.
Cx. 23	124	37	Bos t.
Cx. 80	136	41,5	Cervus

Cx. 24	86	Bos p.
Cx. 80	88	Bos p.
Cx. 80	95	Bos p.
Cx. 25	68	Bos t.
Cx. 24	70	Bos t.



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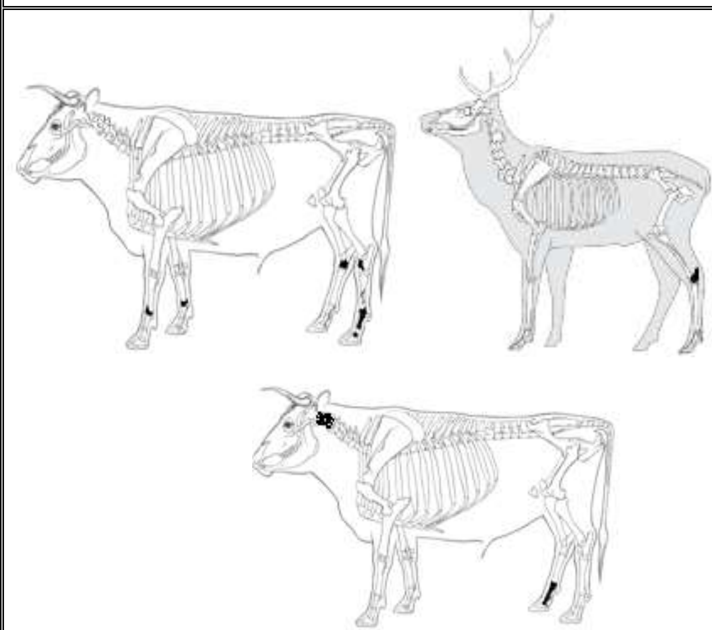
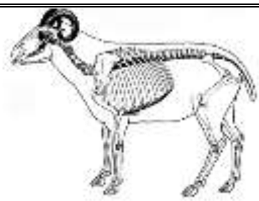
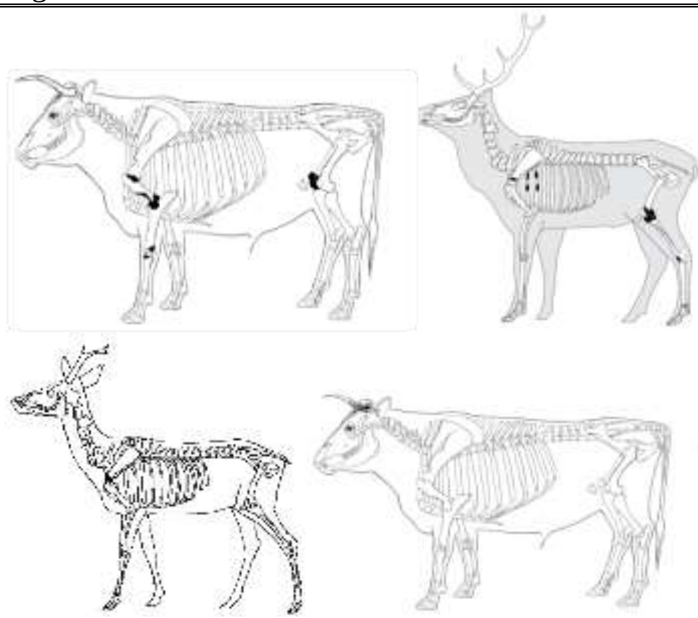




Gr. 09

Fig. 1



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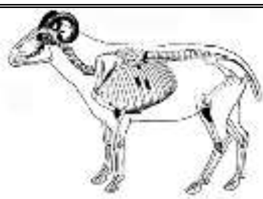
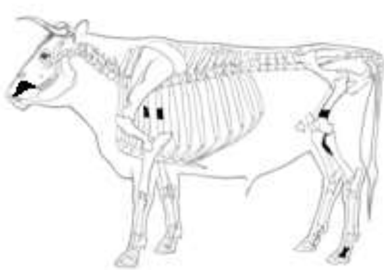
Gr. 13





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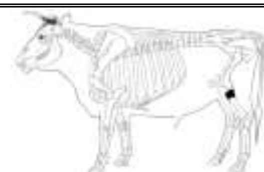

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Fig. 2

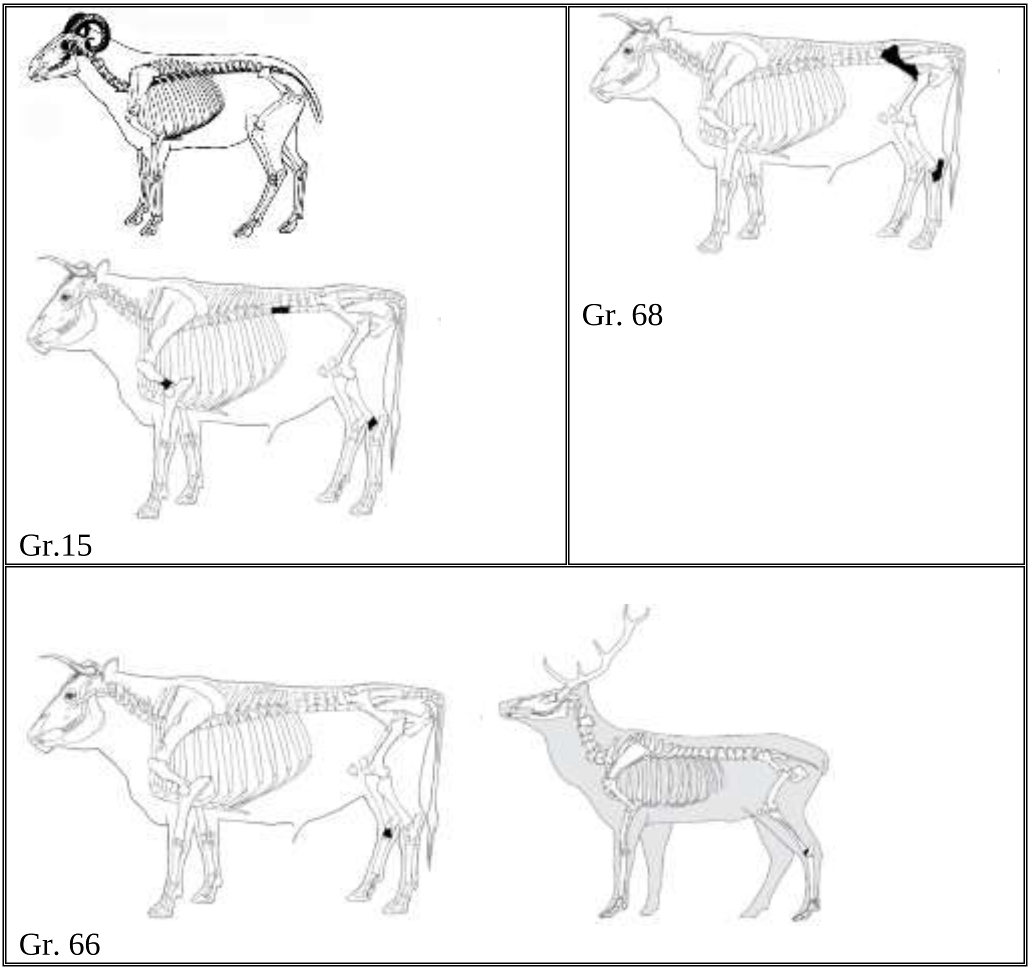
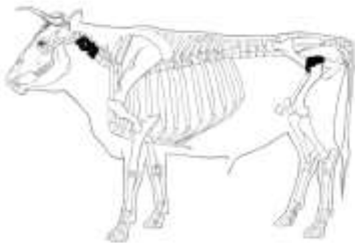
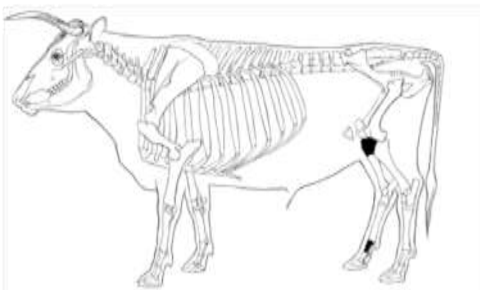


Fig. 3





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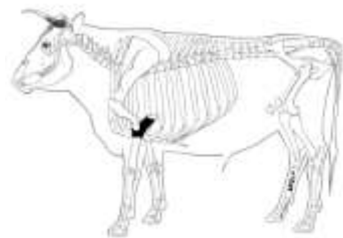
Gr. 43



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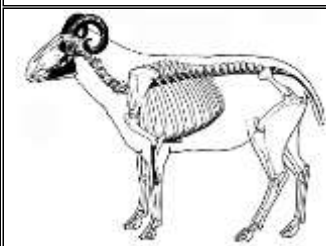

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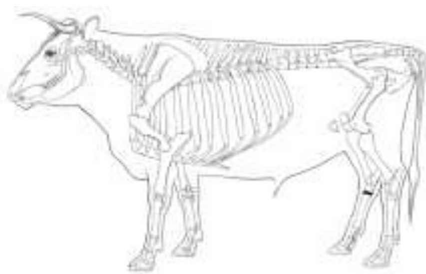

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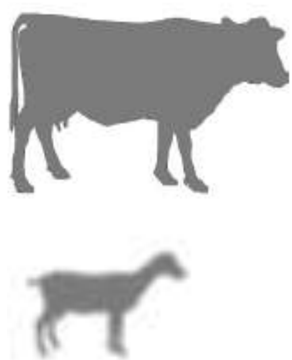


Gr. 73

Fig. 4

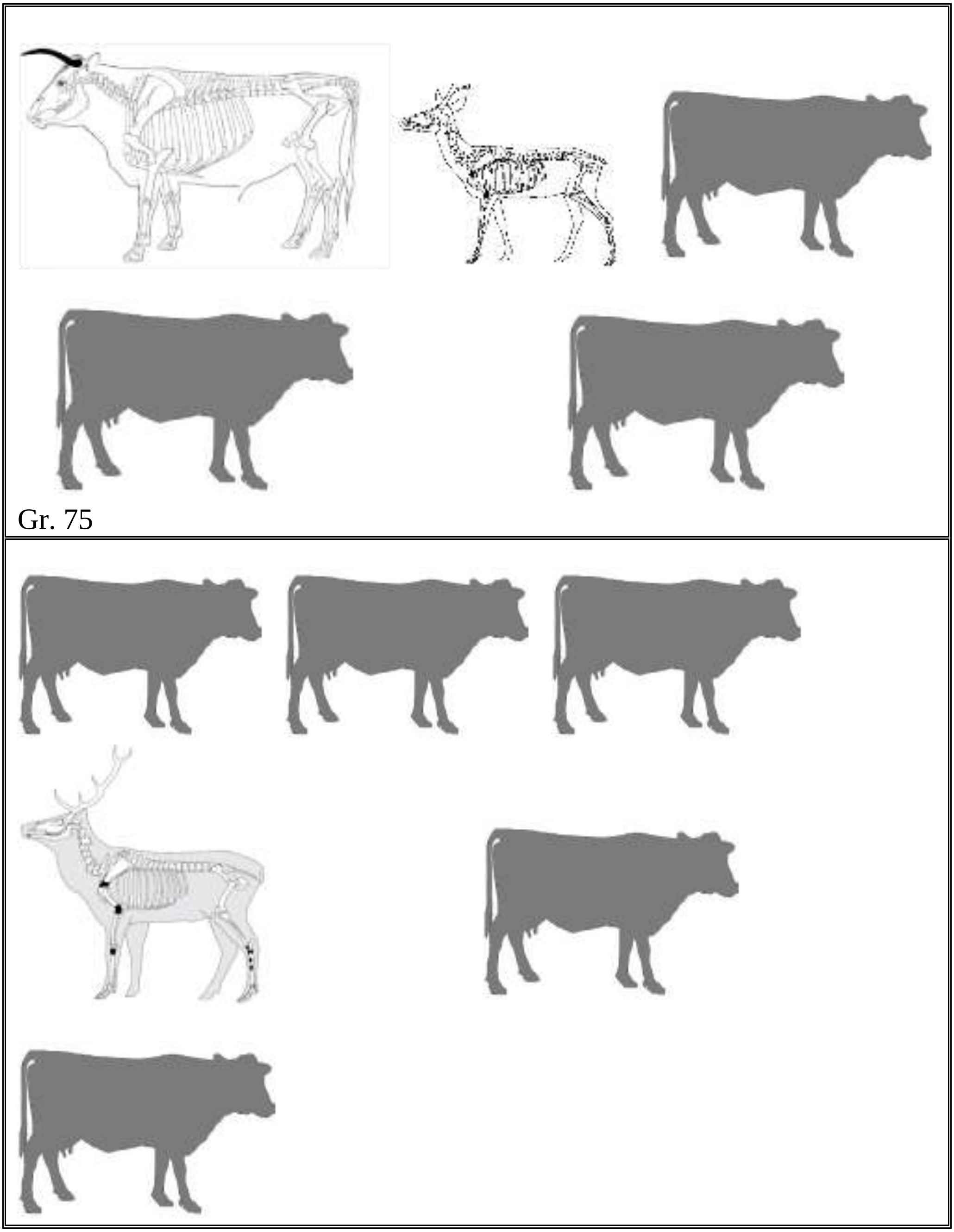
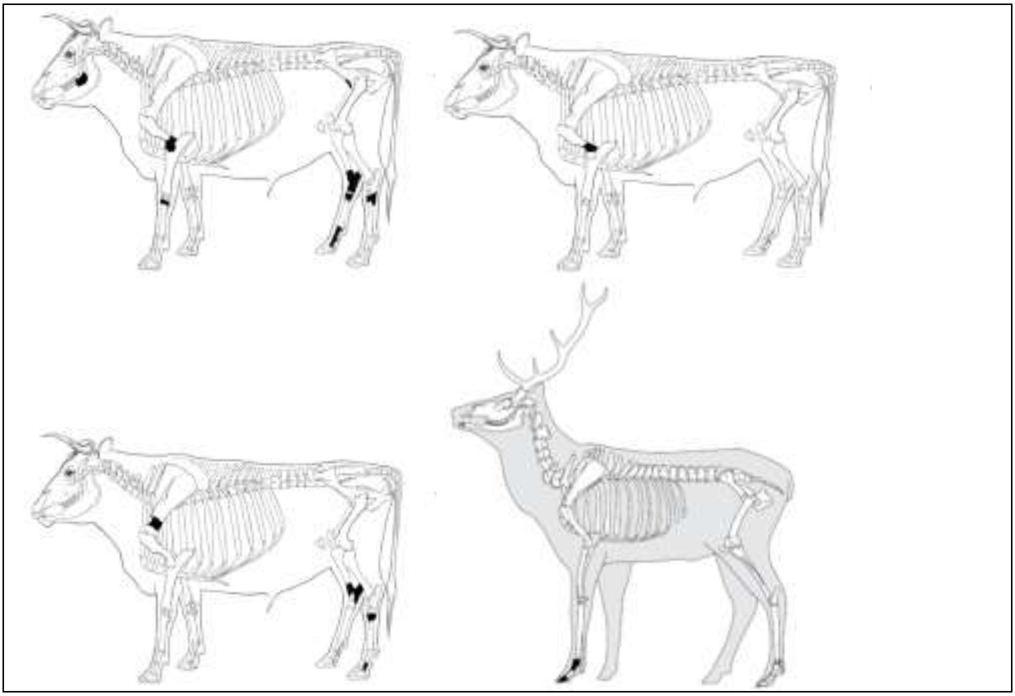


Fig. 5



Gr. 80

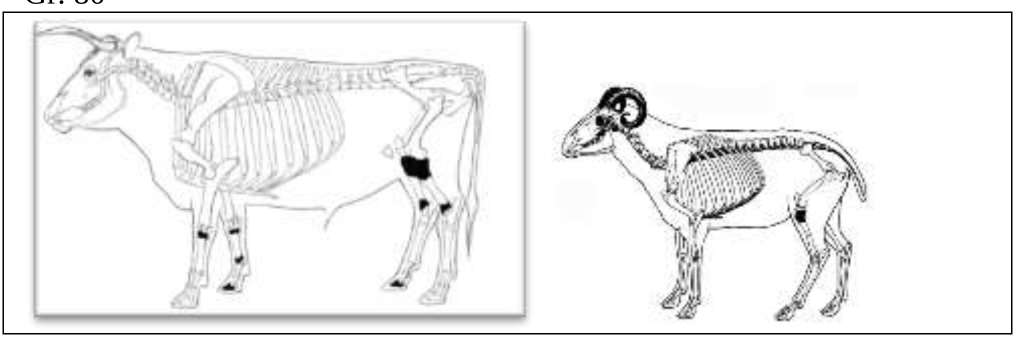


Fig. 6

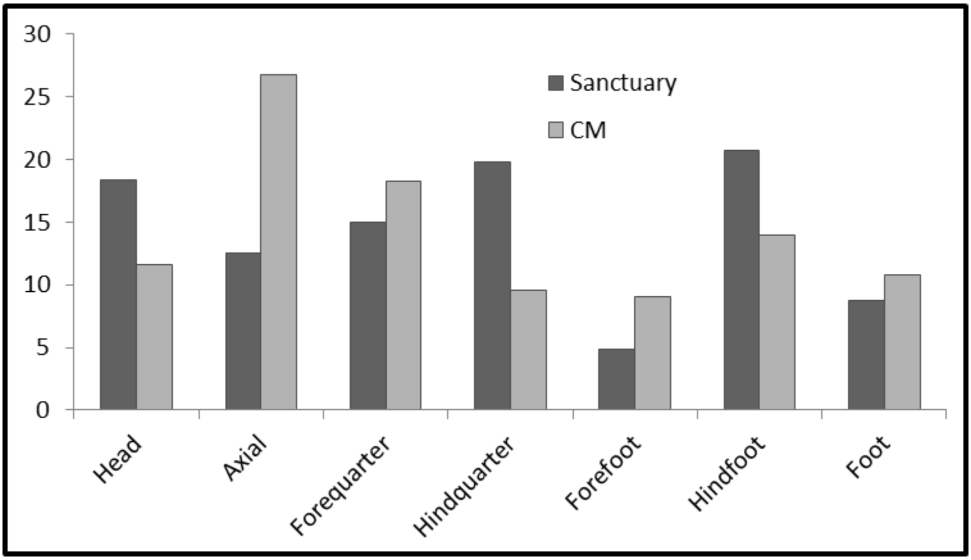

30
25
20
15
10
5
0
Sanctuary
CM
Head
Axial
Forequarter
Hindquarter
Forefoot
Hindfoot
Foot

Fig. 7

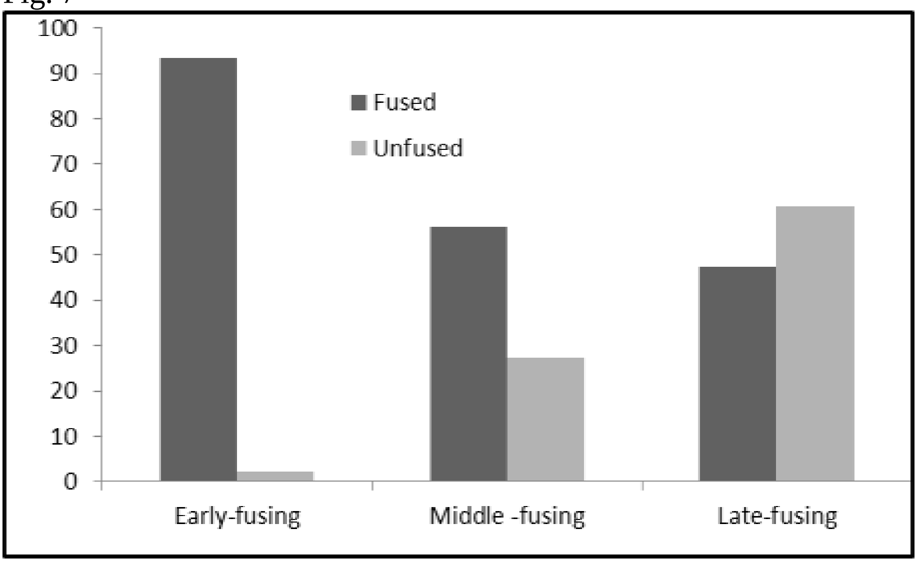

100
90
80
70
60
50
40
30
20
10
0
Fused
Unfused
Early-fusing
Middle -fusing
Late-fusing

Fig. 8

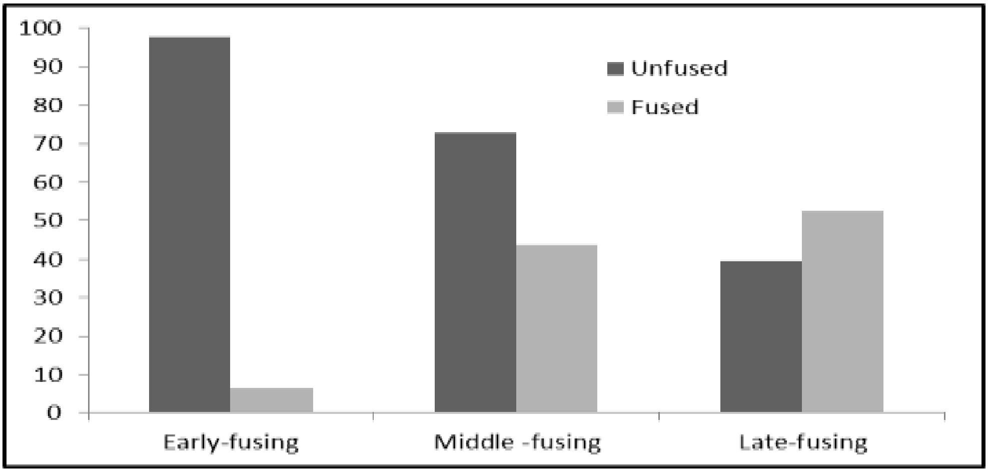

100
90
80
70
60
50
40
30
20
10
0
Unfused
Fused
Early-fusing
Middle -fusing
Late-fusing

Fig. 9

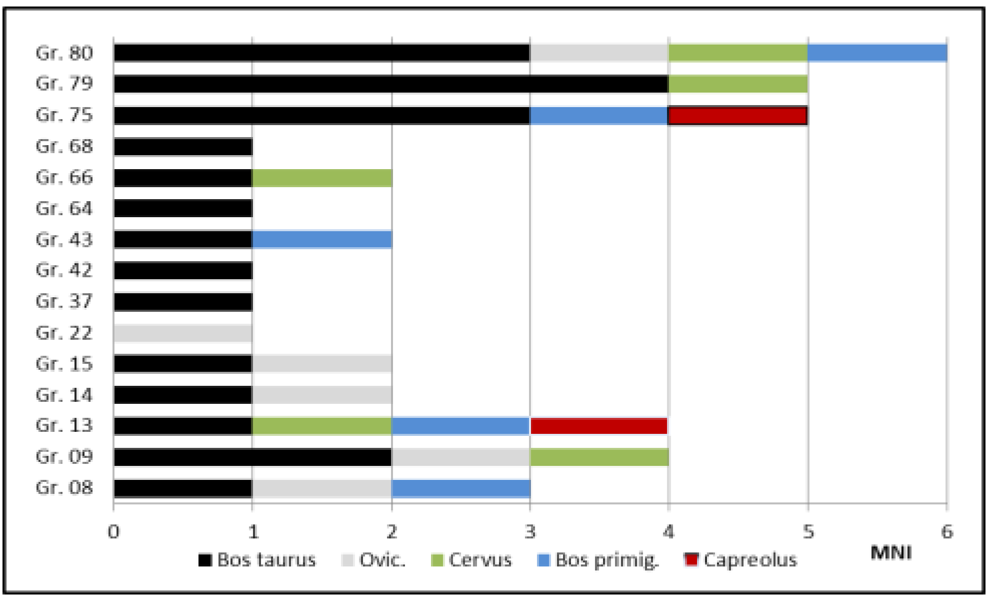

Gr. 80
Gr. 79
Gr. 75
Gr. 68
Gr. 66
Gr. 64
Gr. 43
Gr. 42
Gr. 37
Gr. 22
Gr. 15
Gr. 14
Gr. 13
Gr. 09
Gr. 08
0
1
2
3
4
5
6
MNI
Bos taurus
Ovic.
Cervus
Bos primig.
Capreolus

Fig. 10

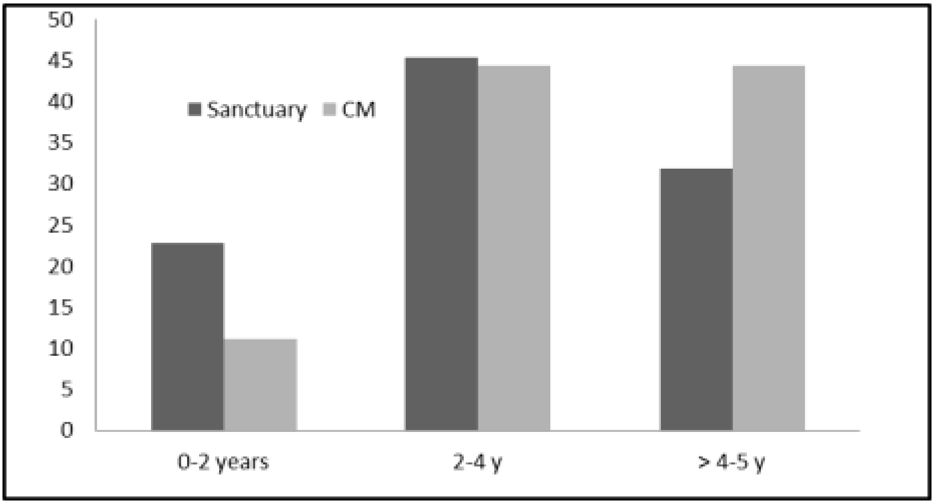

50
45
40
35
30
25
20
15
10
5
0
Sanctuary
CM
0-2 years
2-4 y
> 4-5 y

Fig. 11

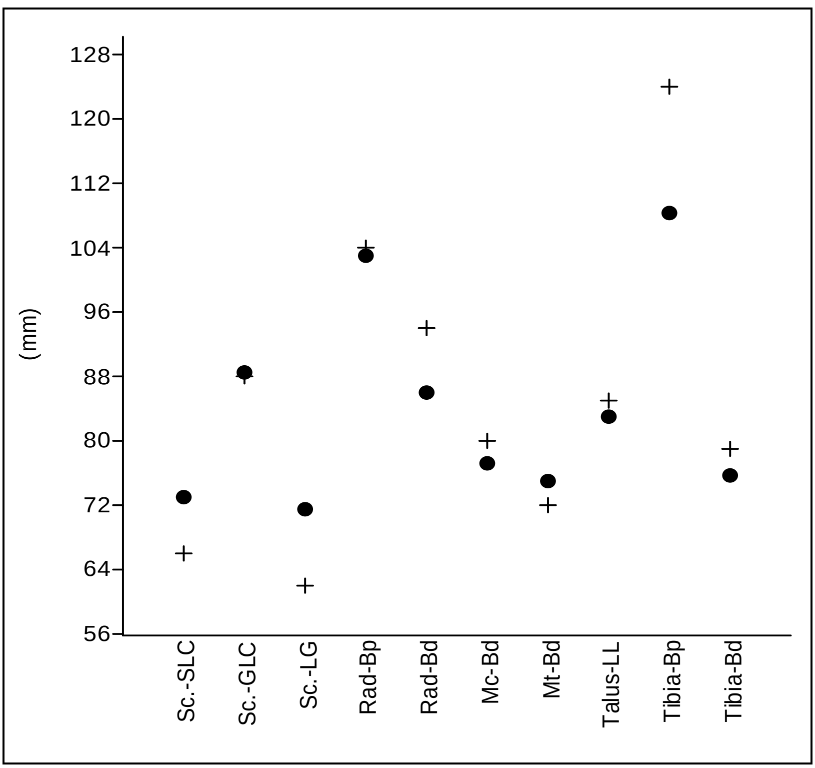

(mm)
128
120
112
104
96
88
80
72
64
56
Sc.-SLC
Sc.-GLC
Sc.-LG
Rad-Bp
Rad-Bd
Mc-Bd
Mt-Bd
Talus-LL
Tibia-Bp
Tibia-Bd

Fig. 12

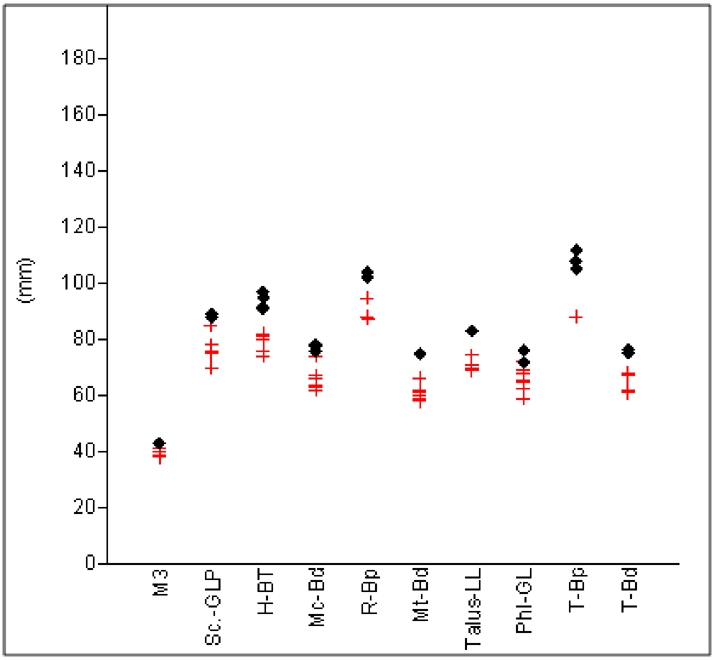

(mm)
180
160
140
120
100
80
60
40
20
0
M3
Sc.-GLP
H-BT
Mc-Bd
R-Bp
Mt-Bd
Talus-LL
Phl-GL
T-Bp
T-Bd

Fig. 13

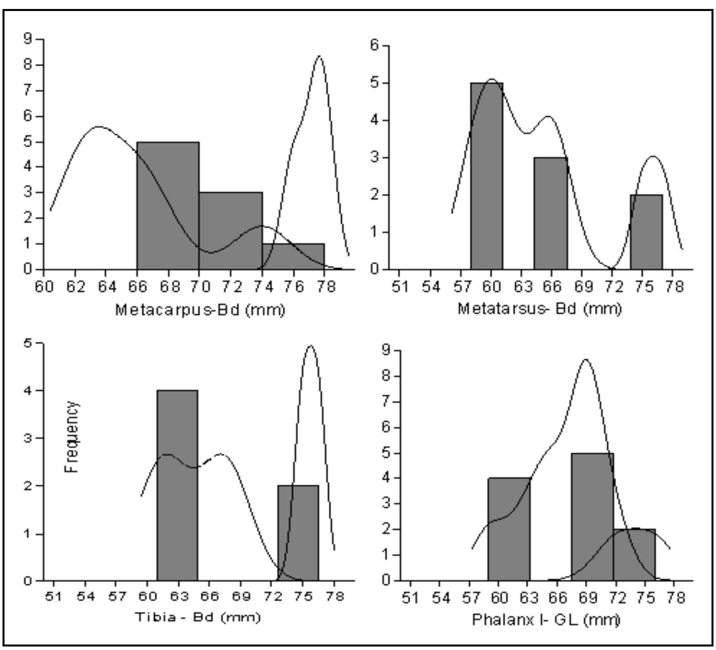
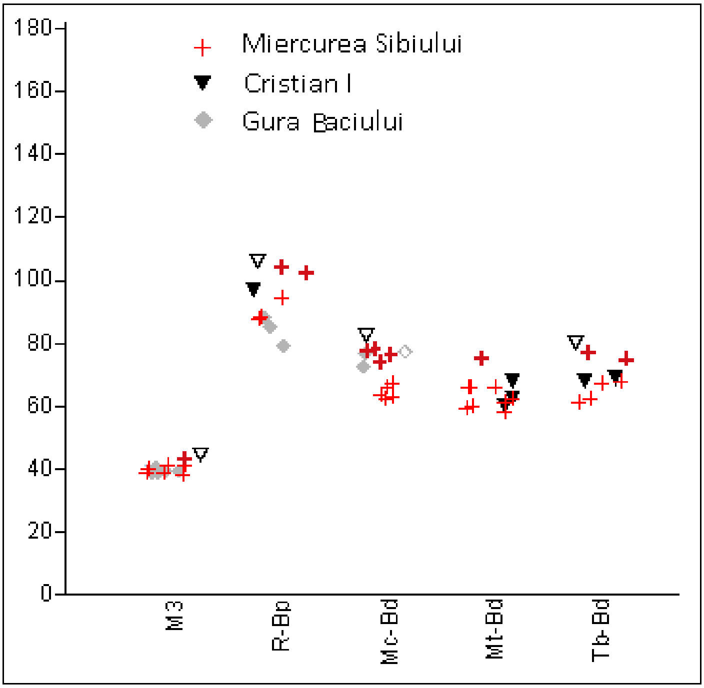
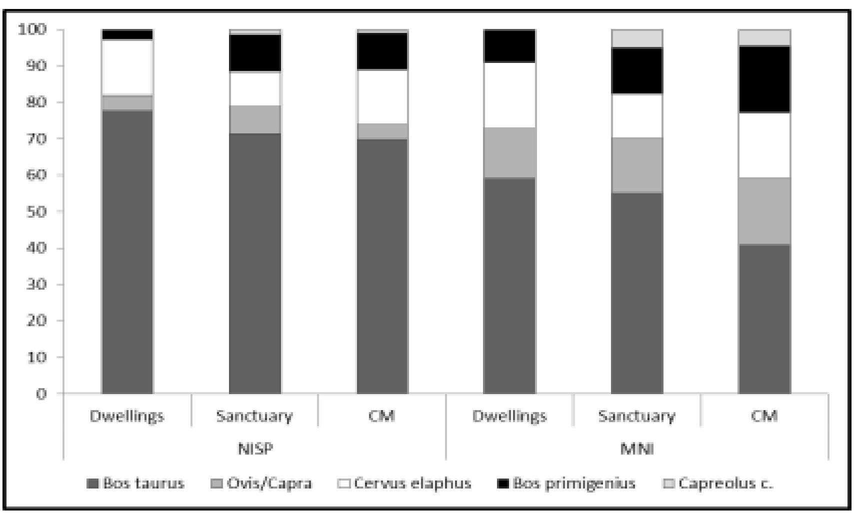

Metacarpus-Bd (mm)
Metatarsus- Bd (mm)
Frequency
Tibia - Bd (mm)
Phalanx I- GL (mm)

Fig. 14



180
160
140
120
100
80
60
40
20
0
Miercurea Sibiului
Cristian I
Gura Baciului
M3
R-Bp
Mc-Bd
Mt-Bd
Tb-Bd

Fig. 15



100
90
80
70
60
50
40
30
20
10
0
Dwellings
Sanctuary
CM
Dwellings
Sanctuary
CM
NISP
MNI
Bos taurus
Ovis/Capra
Cervus elaphus
Bos primigenius
Capreolus c.

Fig. 16

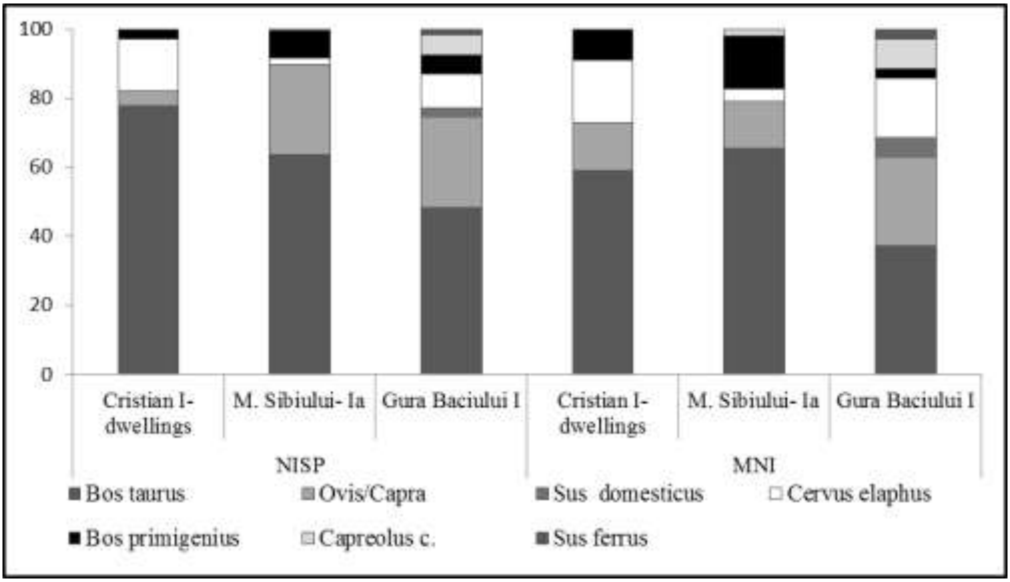

100
80
60
40
20
0
Cristian I-dwellings
M. Sibiului- Ia
Gura Baciului I
Cristian I-dwellings
M. Sibiului- Ia
Gura Baciului I
NISP
MNI
Bos taurus
Ovis/Capra
Sus domesticus
Cervus elaphus
Bos primigenius
Capreolus c.
Sus ferrus

Fig. 17

Fig. 18

Fig. 19

Fig. 20

Fig. 21

Fig. 22