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ARCHAEOZOOLOGICAL INVESTIGATION OF THE SITE OF SHIRAKAVAN, 3rd-1st MILLENNIA BC, ARMENIA

Lilit MIRZOYAN¹, Nina MANASERYAN²

ABSTRACT

The multi-period site of Shirakavan is situated in north-western part of Armenia, at an altitude of 1480 m above sea level. It includes the settlement, the fortress and burials dated from the 3rd millennium BC to the first decade of the 1st millennium BC. Excavated faunal remains from the site were delivered to the Institute of Zoology of the Armenian National Academy of Sciences for archaeozoological examination. The results of the analysis of 658 identifiable bone fragments show that 86% of them belong to domestic animals and 14% to wild animals. Among the domestic faunal assemblages from the settlement, cattle bone fragments are predominant, while in the burials, the most common domestic animal bones belong to horses. Red deer bones represent the majority of wild animal bones in both locations. Detailed examination of the material reveals: 1) the faunal composition of the region and the osteometric characteristics of the animal bones during that time period, 2) the successful livestock breeding and hunting abilities of the site's inhabitants and 3) the use of certain animals in burial ceremonies.

Keywords: Archaeozoology, Armenia, Shirakavan, Bronze Age, Iron Age.

RÉSUMÉ

Le site de Shirakavan, occupé sur une longue période, se trouve dans la partie nord-ouest de l'Arménie, à une altitude de 1480 m. Ce site inclut une zone d'habitats, une forteresse et une nécropole datées du III^e au I^{er} millénaire av. J.-C. Les restes osseux découverts lors des fouilles ont été étudiés à l'Institut de Zoologie de l'Académie Nationale des Sciences d'Arménie. L'analyse, qui a porté sur 658 restes osseux, a montré que 86 % des vestiges proviennent d'animaux domestiques tandis que 14 % appartiennent à des animaux sauvages. La majorité des restes récoltés dans les habitats se rapportent à des bovins alors que dans les sépultures prédominent les os de chevaux. Les restes d'animaux sauvages sont majoritairement des vestiges de cerfs élaphe et se retrouvent à la fois dans les habitats et à la fois dans les sépultures. L'étude détaillée de ce matériel révèle la composition de la faune locale, les particularités ostéologiques des animaux à ces périodes, et également l'excellente maîtrise de l'activité de la chasse et de l'élevage par les occupants du site ainsi que l'utilisation de certaines espèces dans les rituels funéraires.

Mots-clés : Archéozoologie, Arménie, Shirakavan, âge du Bronze, âge du Fer.

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1. Université Marc Bloch, Institut d'Histoire et Archéologie de l'Orient ancien, Palais Universitaire, 9 place de l'Université, 67084 Strasbourg, France, France, e-mail: lilit.mirzoyan@gmail.com
 2. Institute of Zoology of the Armenian National Academy of Sciences, 7 P. Sevak, 375014, Yerevan, Armenia, e-mail: m_ninna@freenet.am

INTRODUCTION

The multi-period site of Shirakavan is situated in north-western part of Armenia, at an altitude of 1480 m above sea level, on the left bank of the Akhurian river (*fig. 1*). It occupies a surface area of about 10 ha. It includes the settlement, the fortress and burials dated from the 3rd millennium BC to the 1st millennium BC.³ Excavations were carried out by the Institute of Archaeology of the Armenian National Academy of Sciences (ANAS) in 1977-1981 (Torosyan *et al.* 2002).

During the excavation of the site, many animal bone fragments were found in the settlement and the fortress, as well as the bone remains of sacrificed animals from 5 burials. Excavated faunal remains from the site were taken to the archaeozoological team of the Laboratory of Zoology of Vertebrate Animals of the Institute of Zoology of the ANAS for analysis. The results of analysis of 658 identifiable bone fragments are presented in this paper, providing a complete archaeozoological picture of the site.



Fig. 1—Location of the site of Shirakavan.

THE FAUNAL MATERIAL BY PERIOD

In total, 86% of the bone remains from Shirakavan belong to 4 species of domestic animal and 14% belong to 8 species of wild animal (*table 1*).

For a clearer understanding of the fauna on the site it is better to present the results of the faunal analyses in terms of context and period.

3. Dating was carried out by archaeologists at the site of Shirakavan.

The number of bone remains from the settlement dated to the 3rd millennium BC is 139 fragments, of which the following domestic animals were identified: cattle 54%,⁴ horse 23.7%; the wild animals: red deer 6.5%, roe deer 1.4% and badger 0.7%. Bone remains of rodents, 9.4%, were also found. Besides the mammals, 4.3% of the recorded finds are fish mandibles and vertebrae, although not identified to species.

Bone remains from the 2nd millennium BC settlement are few, 15 fragments in all, belonging to cattle, horses and red deer.

The highest quantity of bone remains from the settlement dates to the 1st millennium BC. For the 402 skeletal elements of domestic animals, the percentages are the following: cattle 63.9%, sheep/goat 7.5%, horse 13.9% and dog 1.7%. Wild species are represented mainly by ungulates: red deer 11.4%, roe deer 0.2% and gazelle 1%. Among the material from this sector, 0.2% was identified as tortoise.

A very special find, the proximal part of the radius of a camel, was found in the settlement area (fig. 2). This is the first find from a camel in the subfossil bone collection of the Institute of Zoology of the ANAS found in an archaeological context in Armenia. The question of how and why this camel bone is present in the settlement remains open.

Species	3rd mill. BC		2nd mill. BC		1st mill. BC		Burials*	
	NR	MNI	NR	MNI	NR	MNI	NR	MNI
<i>Bos taurus</i>	75	11	12	3	258	47	31	9
<i>Ovis aries /Capra hircus</i>					30	12	2	2
<i>Equus caballus</i>	33	4	1	1	56	8	57	5
<i>Canis familiaris</i>					7	3	5	2
<i>Cervus elaphus</i>	9	5	2	1	46	18	1	1
<i>Gazella subgutturosa</i>					4	3		
<i>Capreolus capreolus</i>	2	1			1	1		
Camelidae	1	1						
<i>Meles meles</i>	1	1						
<i>Martes foina</i>							5	1
Rodentia	13	2						
<i>Testudo graeca</i>					1	1		
Pisces	6	2						
Total	139	27	15	5	403	93	101	20

* MNI from the burials by periods see table 2.

Table 1—Faunal list for the site of Shirakavan.



Fig. 2—Camel radius-ulna fragment from Shirakavan.

4. All percentages are presented in relation to the number of bone remains from the given period.

The necropolis of Shirakavan is situated in the eastern and south-eastern sectors of the site. There are 120 burials dating to the Middle-Late Bronze Age and to the Early-Late Iron Age as well. Faunal material was found in five burials (*table 2*). Domestic animals are represented mostly by horses, then cattle. Other species such as dog, sheep and goat, red deer and marten also appear in some burial contexts.

DOMESTIC SPECIES

With the above-mentioned factors, the following picture appears: in the domestic faunal assemblages of the settlement in all periods, cattle bone fragments are predominant, followed by horse remains, while in the burials the reverse is true: the most common domestic animal bones are from horses.

Sheep/goat remains are identified only in the 1st millennium BC layers and in the burials, although in very low quantities.

Especially interesting are the dog bone remains which, like the sheep/goat bone fragments, have been identified in the 1st millennium BC layer and in the burials. The material is not abundant (7 fragments from the settlement and 5 fragments from burial 13), and is represented mainly by skull and mandible fragments. There are three individuals in the settlement and two in burial 13.

Cattle bone remains are represented mainly by astragalus, calcaneus and phalanx bones. Comparing these bone measurements with those from Lori-berd (Bronze Age-Early Iron Age) and Beniamin (Antique) sites, it is evident that among the Shirakavan bones there are quite large specimens, although their parameters mainly fit within the range of variation for bone characteristics from the mentioned sites. It is also possible that some very large bone fragments may belong to wild individuals such as aurochs (*Bos primigenius*) and bison (*Bison bonasus*). Atlas, epistropheus, metacarpal and metatarsal bones were also found in very low quantities. Mandibles from cattle belong predominantly to juvenile or subadult individuals; only two of them being from adult animals. This fact is confirmed also by the size of the cattle horns. Thus, in general, cattle were slaughtered in the juvenile and subadult stages.

Sheep and goats, as mentioned above, are represented by some fragments of skeletal elements which were not well preserved.

Horses in the material are represented by the remains from the extremities. The comparison of the osteometric parameters of these bones with those from Lori-berd and Beniamin shows that there is no particular difference between the average sizes of animals from the indicated sites (Manaseryan, Mirzoyan 2000, p. 34-35). However, it must be mentioned that at Shirakavan, horse metacarpals and metatarsals from Burial 2, dated to the 1st millennium BC, are larger than the ones from the settlement (*fig. 3*). The same size difference between the specimens from the burial and those from the settlement is also noted for the skull and mandible fragments of dogs from the site: in Burial 13, dated to the 1st millennium, the size of the cranium and that of the mandible is larger than those from the settlement. This could indicate a choice of particular specimens for deposit in burials and suggests an interesting detail in the sacrificial ceremonies of the ancient inhabitants of Shirakavan.



Fig. 3—Horse metacarpals from the burial and the settlement.

WILD SPECIES

The wild fauna identified from the bone remains of Shirakavan is quite diverse: red deer, roe deer, jeyran (gazelle), badger, marten and tortoise.

Bone remains of red deer were found in all periods of the settlement. This species is extinct in Armenia today. The remains are mainly antler fragments, mostly from subadult or adult individuals (*fig. 4*). Among the numerous antler fragments of red deer are both shed antlers and cut antler parts. The circumference range of the base of the shed antlers varies between 184 and 255 mm. Some of the antler fragments had been worked, which is evidence of the use of red deer antlers by the inhabitants of the site for manufacturing tools and for various other purposes in their everyday life. Interestingly, one of these worked fragments was found in Burial 30 (Mirzoyan, Manaseryan, in press).

Evidence of cut marks has also been noted on an astragalus of roe deer (*Capreolus capreolus*) and on a horn core of a jeyran (*Gazella subgutturosa*) from the settlement, indicating the exploitation of these animals both for the antler and horn objects industries and as a source of meat in Protohistoric times (*fig. 5*).



Fig. 4—Shed red deer antler from Shirakavan.



Fig. 5—Horn core fragment of jeyran (gazelle) with cut marks.

One badger bone, a humerus, was found in the 3rd millennium BC settlement levels. This bone is the only find of this species in Shirakavan, and belongs to a large adult. The proportions of the humerus are larger than those of recent individuals in the collection of the Institute.

Wild animal remains from the 1st millennium BC settlement are mainly represented by the significant quantity of well preserved antlers and extremity elements of red deer. As for the 3rd millennium BC settlement, here also a few bone fragments of roe deer were found. But only from the 1st millennium BC layer of the site was a small quantity of gazelle bone remains and tortoise shell pieces found.

In the burials a few skeletal elements of marten belonging to one individual were found. The skull and some mandible fragments have proportions almost identical to those at the sites of Lori-berd and Benjamin sites and to recent specimens as well (Manaseryan, Mirzoyan 2005, p. 197-199).

All possible measurements of domestic and wild animal bones from the site of Shirakavan are presented below (*table 3-11*).⁵

5. Measurements are taken according to Angela von den Driesch's methodology (1976).

CONCLUSIONS

In conclusion, the investigation of faunal remains from all periods of the site of Shirakavan demonstrates the successful livestock breeding and hunting abilities of its inhabitants and the use of certain animals in burial ceremonies. The research shows that from the beginning of the 3rd millennium BC the main source of meat for the inhabitants of the site was cattle. Sheep and goats at Shirakavan seem to have played a secondary role in the breeding strategy before the 1st millennium BC. Inhabitants of the site used horses in their daily life and for burial ceremonies. Supplementary sources of meat included red deer, roe deer and gazelles. Small carnivores such as badger and marten were hunted as well. Examination of the material also reflects the region's faunal composition and the osteometric characteristics of animal bones from that period.

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1st mill. BC		
	NR	MNI
Burial 1		
<i>Ovis aries / Capra hircus</i>	1	1
Burial 2		
<i>Equus caballus</i>	20	2
Burial 13		
<i>Bos taurus</i>	2	1
<i>Equus caballus</i>	36	2
<i>Canis familiaris</i>	5	2
<i>Martes foina</i>	5	1
Total	69	9

2nd mill. BC		
	NR	MNI
Burial 25		
<i>Bos taurus</i>	15	5
Burial 30		
<i>Bos taurus</i>	14	3
<i>Ovis aries/Capra hircus</i>	1	1
<i>Equus caballus</i>	1	1
<i>Cervus elaphus</i>	1	1
Total	32	11

Table 2—Animal species, number of bone remains (NR) and minimum number of individuals (MNI) from the burials.

<i>Bos taurus</i> : Mandible													
	1	2	4	5	7	8	9	10	11	12	15a	15b	15c
1st mill.	224	232	-	-	-	-	-	-	-	-	-	34	22
	217	226	-	-	-	-	-	-	-	-	-	42	26
	208	-	-	-	-	-	-	-	-	-	-	31	23
	260	272	-	-	-	-	-	-	-	-	-	43	27
	-	-	-	-	-	-	-	-	-	-	-	36	25
	-	-	-	-	-	-	-	-	-	-	-	34	22
	-	-	-	-	-	-	-	-	-	-	-	33	22
	-	-	-	-	-	-	-	-	-	-	-	30	19
	357	369	240	245	131	84	51	34 / 15	85	162	69	45	33
	89	94	-	223	-	-	56	61	-	140	-	52	36

<i>Bos taurus</i> : Horn	
Base circumference	
1st mill.	163
	162
	148
	218
	153
	140
	158
	155
200	
158	
153	

<i>Bos taurus</i> : Astragalus					
	GLI	GLm	DL	Dm	BD
3rd mill.	66	63	36	33	44
	69	62	38	-	47
	69	63.5	38	39	45
	67	61	36	35	42
average	67.8	62.4	37.0	35.7	44.5
2nd mill., burial 30	63	59.5	36	33.5	43
	63	60	36	33	42
	68	61	38	34	45
2nd mill., burial 25	72	66	37	36	50
	64	58	35.5	29	40
	60	54	33	29	41
	58	53	32	29	37
	63	57	34	31	42
	60	55	33	30	40
	58	54	32	29	39
61	57	32	30	38	
61	60	36	35	48	
average	62.6	57.9	34.5	31.5	42.1

<i>Bos taurus</i> : Astragalus (suite)					
	GLI	GLm	DL	Dm	BD
1st mill.	66	59.5	36	34	43.5
	65	59.2	34	33	41
	59	56	32.8	30.5	39
	67	62.5	37.5	35.5	46
	63	59	35	33	43
	63	58.5	35	32.5	43.2
	64	60	35.5	32.5	43
	63	58	35.5	32	43.2
	64	60	36	33	43.7
	68	62	38	36.5	45
	64	56	35	32	40
	64	60.5	35.2	32.5	43
	64	60	36	32	41
	66	61.5	36	33	43.5
	67	62	38	35	46.2
	64	58.5	35	32	41
	69	63.5	36	34	43
	60	53.5	34	31.5	39.5
	66	61	37	32	43.5
	68	62.5	37	34.5	47.5
	70	64	38.5	37	47
	68	61.5	36.5	35	45
	64	58	34	32	42.5
	59	54	32.5	29	38
	71	65	39	35	44
	67	61	37	36	46
	63	58.5	35.5	33	42
	66	60	36.5	33	42.5
	62	57	34	33.2	41
	58	53	31.5	30	36
	59	55.5	32	29	37.5
	66	59	-	-	42.5
65	60	35	32	40.5	
64	60	36	33	41.5	
average	64	59.5	35	33	42

<i>Bos taurus</i> : Astragalus (suite)					
	GLI	GLm	DL	Dm	BD
1st mill.	59	54	33	30.5	39
	61	55	34	29.5	39
	54	50.5	31	28	36.5
	67	62	36	34	44
	59	54	31.5	29	37
	64	60	36	34	45
	58	54	32	31.5	40
	59	55	33	31	39
	64	60	36	34	45.5
	58	53.5	32	29	37
	66	60	37	35.2	46
	65	60	36	34	44
	62	56	34.5	34	43.5
	61	57	33.5	31	42
	67	61	38	34.5	41
	64	61	35	29	42
	61	58	33	30.5	39
	72	65	41	37	50
	65	59.5	35	36	45.5
	67	61	37.5	36	44.5
	64	59	34	33.5	40
	60	57	34	33	37.5
	53	50	30	-	34
	68	61	37	33	46
	66	61	37	33	43
	56	54	31	28	38
58	55	34	29	38	
66	63	38	33.5	43.5	
65	60	38	32	40	
67	62	37	33.5	42.5	
60	56.5	32.5	31	38	
60	55	33	31.5	39	
62	57	32	32	37	
59	55	33	30	38	
average	63.43	58.58	35.04	32.57	41.75

<i>Bos taurus</i> : Metacarpus				
	GL	Bp	Bd	SD
3rd mill.	206	62	59	32
	186	55	56	30

<i>Bos taurus</i> : Metatarsus				
	GL	Bp	Bd	SD
1st mill.	229	51	59	32
	211	44	50	-

<i>Bos taurus</i> : Calcaneus	
	GL
3rd mill.	130
2nd mill., burial 30	132
1st mill.	146
	124
	126
	123

<i>Bos taurus</i> : Epistropheus		
	BFcr	SBV
1st mill.	83	45

<i>Bos taurus</i> : Atlas	
	BFcd
3rd mill.	107
1st mill.	75
	100

Table 3—*Bos taurus* measurements.

<i>Bos taurus</i> : Phalanx I				
	GL	Bp	Bd	SD
	53	27	27	25
	61	35	32	33
	56	28	26	24
	63	29	30	29
	66	34	32	27
	61	32	33	31
	61	31	31	28
	59	30	30	27
	57	30	31	26
	60	28	28	26
	58	31	29	26
	57	27	25	24
	57	29	28	27
	57	30	28	26
	55	28	27	26
	53	27	25	24
	55	27	24	23
	50	26	23	22
	57	34	33	32
	57	37	36	32
	57	35	35	34
	60	35	30	28
	58	34	32	32
	64	31	30	30
	57	29	28	28
1st mill.	58	31	29	27
	59	29	28	26
	54	30	27	28
	58	29	25	24
	55	27	25	24
	53	27	25	24
	57	25	28	25
	52	26	24	23
	53	25	25	24
	60	32	31	29
	58	37	34	32
	56	32	32	29
	58	32	30	28
	60	32	31	30
	61	30	29	28
	61	31	32	30
	57	27	25	24
	57	27	27	25
	52	30	28	26
	54	29	28	26
	53	29	27	25
	58	29	28	26
	58	25	25	24
	50	26	25	23
	56	34	32	31
	55	31	26	25
average	57.1	29.9	28.6	27.0

<i>Bos taurus</i> : Phalanx I				
	GL	Bp	Bd	SD
	63	35	33	30
2nd mill.,	59	30	28	26
burial 30	60	30	29	24
	59	28	25	23
	59	27	26	23
2nd mill.,	66	34	31	30
burial 25	74	36	37	35
	62	28	27	25
	55	30	28	27
	58	27	26	25
	59	28	27	26
average	61.3	30.3	28.8	26.7

<i>Bos taurus</i> : Phalanx II				
	GL	Bp	Bd	SD
3rd mill.	42	32	27	26
1st mill.	35	28	24	22.5
	32	24	19	18.8

<i>Bos taurus</i> : Phalanx III		
	GL	LD
1st mill.,	73	60
burial 13	53	44.5
	62	50

Table 3 (continued)—*Bos taurus* measurements.

<i>Equus caballus</i> : Humerus				
	GL	Bp	Bd	SD
3rd mill.	298	92	75	38

<i>Equus caballus</i> : Metacarpus				
	GL	Bp	Bd	SD
3rd mill.	228	51	48.5	37
	229.5	51	48	36
	227	52	49	35
	226.5	-	51	35.5
1st mill.,	236	52.5	53	38
burial 2	234	53	52	38
	240	53.5	52.5	38
	236	54	52	36

<i>Equus caballus</i> : Radius						
	GL	Bp	BFp	Bd	BFd	SD
3rd mill.	343	85	77	78	-	40.5
	344	-	75	72	61	38
1st mill.	341	86	78	79	63	40
1st mill.,	354	80	76	-	-	40
burial 2	352	92	84	88.5	72	46
	351	84	76	79.5	67	42.5

<i>Equus caballus</i> : Metatarsus				
	GL	Bp	Bd	SD
3rd mill.	271	51	53	54
1st mill.,	277	46	50	52
burial 2	281	30	32.5	35

Table 4—*Equus caballus* measurements.

<i>Equus caballus</i> : Tibia				
	GL	Bp	Bd	SD
3rd mill.	391	101	76	46.5

<i>Equus caballus</i> : Phalanx II				
	GL	Bp	Bd	SD
2nd mill., burial 30	49	56	52	47
1st mill.	50	54	53	48

<i>Equus caballus</i> : Calcaneus	
	GL
1st mill.	109
1st mill., burial 2	112

<i>Equus caballus</i> : Astragalus		
1st mill.	BFd	LT
	53	60

<i>Equus caballus</i> : Phalanx I				
	GL	Bp	Bd	SD
1st mill., burial 2	86	55	46.5	35
	89	57	48	36
	91	57.5	-	31.5
3rd mill.	83	54	45	35
	80	41	38	27
1st mill.	77	51	40	30
	88	56.5	48	36
	86	51	46	33
	86	56	50	39
	87	55.5	49.5	35.5
	86	55	47.5	39
	84	52	43	36

<i>Equus caballus</i> : Phalanx III		
	GB	Ld
	77	48
1st mill.	84	51
	84	54
3rd mill.	83	51
	78	55
	82	56
	77	58

Table 4 (continued)—*Equus caballus* measurements.

<i>Ovis aries</i> : Mandible									
	1	2	3	4	5	7	8	9	10L
1st mill.	179	187	56	122	127	71	48	35	23
	-	-	-	125	-	74	50	22	-
	179	186	-	122	-	71	48	22	-
	-	-	-	127	-	74.5	52	22	-
	-	-	-	-	-	-	-	22	-

<i>Ovis aries</i> : Horn	
Base circumference	
1st mill.	154
	150

<i>Ovis aries</i> : Metacarpus				
	GL	Bp	Bd	SD
1st mill. burial 1	125	24	26	14

<i>Ovis aries</i> : Astragalus					
	DLI	DLm	DI	Dm	Bd
1st mill.	31	30	18	19.5	21
	30.5	28.8	16	17.5	20

Tabl. 5 – *Ovis aries* measurements.

<i>Canis familiaris</i> : Cranium																			
	1	2	3	7	8	9	10	12	13	14	15	16	17	18	18a	20	20a	21	21a
1st mill.	187	177	168	90	96	109	76	89	93	35	66	17	49	19	9	12	15	7.5	11
	204	191	182	100	98.5	114.5	73	88	101	37	72	20	53.5	19	9	12.5	17	8	11
1st mill., burial 13	-	-	-	-	-	-	-	-	-	35	71	20	53.5	21	10	13.5	19	9	13

<i>Canis familiaris</i> : Cranium																			
	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
1st mill.	22	66	64	38	49	19	14	51	102	37.5	53	37	61	32	35	30.5	57	54.5	43.5
	24.5	72	70	41	56	22	14	52	-	38	-	-	68	39	42	-	62	58	52
1st mill., burial 13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

<i>Canis familiaris</i> : Mandible													
	1	3	5	7	8	9	10	11	12	13	18	19	20
1st mill.	136	130	112	77	75	69	37	38	33	23	-	24	21
	139	133	115	78	73	68	35	37	32	20.5	56	25	18
1st mill., burial 13	153	144	127	85	78	73	40	41	35.5	25	59	28	21.5

Table 6—*Canis familiaris* measurements.

<i>Cervus elaphus</i> : Antler	
Circumference	
2nd mill., burial 30	184
1st mill.	224
	224
	185
	255
	210
	203
	216
	210

<i>Cervus elaphus</i> : Mandible	
	22
1st mill.	56

<i>Cervus elaphus</i> : Phalanx I				
	GL	Bp	Bd	SD
1st mill.	62	24	22.5	20
	65	25	24	20
	62	24	22.5	20

Table 7—*Cervus elaphus* measurements.

<i>Capreolus capreolus</i> : Tibia				
	GL	Bp	Bd	SD
1st mill.	195	39	24	13

<i>Capreolus capreolus</i> : Astragalus					
	GLI	GLm	DI	Dm	BD
3rd mill.	32	30	18	19	21
1st mill.	32.5	30	18	21	21

Table 8—*Capreolus capreolus* measurements.

<i>Gazella subgutturosa</i> : Calcaneus	
	GL
1st mill.	59

Table 9—*Gazella subgutturosa* measurements.

<i>Martes foina</i> : Cranium																		
	1	3	13a	15	17	21	22	25	27	28	29	31	32	34	35	36	37	38
1st mill., burial 13	82	73	40	25	21	8	16	21	13	11	35	16	27	30	17	18	13	23

<i>Martes foina</i> : Mandible							
	1	4	7	10	11	18	19
1st mill., burial 13	53	46	28	13	17	24	11

Table 10—*Martes foina* measurements.

<i>Meles meles</i> : Humerus				
	GL	Bp	Bd	SD
3rd mill.	101	23	32	9

Table 11—*Meles meles* measurements.