

BOLEU: FAUNAL ANALYSIS FROM A 19th CENTURY SITE IN THE GROBLERSDAL AREA, MPUMALANGA, SOUTH AFRICA.

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ABSTRACT

Faunal remains from chief Boleu's village in the Groblersdal area, Mpumalanga, South Africa were analysed. The site dates to the terminal Late Iron Age. The sample provided information about the economical strategies employed by the inhabitants. Herding appeared to be very important, and cattle remains dominate the faunal sample. German missionaries lived amongst Boleu's people and their reports provided important information about the economy of the people.

INTRODUCTION

Chief Boleu (known to the Boers as Maléo) and about 3000 of his northern Basotho followers of the Bakopa tribe settled on a rocky hill called Lesjoegoeroe taba nkwanic (Wangemann 1868) (or Thaba Ntsu) in the Groblersdal district of the Mpumalanga Province, South Africa in the mid 1800's.

Missionaries from the Berlin Missionary Society worked amongst Boleu's people from a small house close to the mountain village. The two young missionaries, Alexander Merensky and Heinrich Grütznér, were in contact with the director of the Society, Theodor Wangemann, whom expected regular reports and diaries from all the missionary stations on the subcontinent (Wangemann 1868). Many of these reports were published, introducing the reader to the various missionary stations, the local people and their customs, the successes and failures of the missionaries, and the experiences of those who accepted the Christian faith (Wangemann 1868).

The Zuid-Afrikaansche Republiek (ZAR) was administering the Swazi Kingdom and on 10 May 1864, with the ZAR's consent, the Swazi's attacked Boleu's mountain village. The chief as well as most of his people were massacred and the village was abandoned (Wangemann 1868).

The first archaeological excavations of the site by the Biblical Archaeology Task Group of the University of South Africa under Prof. W. Boshoff commenced in August 2001. Four different areas were excavated on and around Thaba Ntsu (W. Boshoff, pers. comm.). At the

Boleu 1/1 excavation, on the summit of Thaba Ntsu, a 2x1 m square with two arbitrary layers of 10 cm each was exposed. At the Boleu 1/3 midden on the northern slope of Thaba Ntsu three blocks, A1, A2 and A3 were excavated. A 10 cm beam divided the three blocks. Each block is 2x1 m large. The arbitrary layers were 10 cm thick and square A1, A2 and A3 have six, five and five layers respectively. Four squares, A1 (2x1 m), A3 (2x1 m), I1 (2x2 m) and I2 (2x2 m) were excavated at the Boleu 1/4 dwellings on the northern side of Thaba Ntsu. A 1x1 m square in a neck of Thaba Ntsu at Boleu 1/5 was excavated. The single layer from this square was 10 cm thick.

THE FAUNAL SAMPLE

The faunal remains from Boleu's village were identified at the Transvaal Museum in Pretoria. The total sample consisted of 1439 bone and shell artefacts with a mass of 4886,5g, of which 242 specimens or 16.8% of the total sample were identified to species or size level (Table 1). Number of Identified Skeletal (or Specimen) Parts (NISP) and Minimum Number of Individuals (MNI) were used to quantify the faunal remains. Even though all the remains from each square and level were analysed separately, the remains from the excavated squares A1, A2 and A3 were combined for this report. The species list follows the classifications of Meester *et al.* (1986) for mammals and Connolly (1939) for molluscs.

Five fossilized bone and ivory were also submitted for identification, and will be dealt with separately in this report¹.

Table 1: Boleu: total faunal sample.

	Boleu 1/1	Boleu 1/3	Boleu 1/4	Boleu 1/5	Total
UNIDENTIFIED BONE					
Enamel	-	18	-	-	18
Skull	-	33	-	-	33
Vertebrate	-	23	-	-	23
Rib	-	201	-	-	201
Miscellaneous	-	646	13	-	659
Bone flakes	-	245	-	-	245
Polished	-	18	-	-	18
TOTA: UNIDENTIFIED BONE	-	1184	13	-	1197
TOTAL: IDENTIFIED BONE AND SHELL	1	238	-	3	242
TOTAL SAMPLE	1	1422	13	3	1439
MASS IDENTIFIED SAMPLE (g)	0,9	2246,9	-	0,9	2248,7
MASS UNIDENTIFIED SAMPLE (g)	-	2633,0	4,8	-	2637,8
TOTAL MASS (g)	0,9	4879,9	4,8	0,9	4886,5

RESULTS

Species present

Most of the faunal remains were retrieved from the Boleu 1/3 excavation. Apart from the three ostrich eggshell fragments, no other faunal remains were retrieved from the Boleu 1/5 Square D layer 1 excavation. The Boleu 1/1 square A1 layer 1 excavation yielded a single bone fragment. A variety of animal species was identified from the submitted faunal sample and includes both wild and domestic macromammals, as well as a rodent, human, ostrich, tortoise, terrestrial gastropods and freshwater mussels (Table 2).

Domesticated animals dominate the sample with 76 fragments (31,4% of NISP). Cattle were the single largest contributor with 63 fragments (26% of NISP). Most of the bone specimens, 148 fragments (61,2% of the NISP) were bovid, and only five (2,1% of NISP) were equids. Molluscs constitute 62 fragments (25,6% of NISP).

A human (*Homo sapiens sapiens*) is represented by a single deciduous premolar fragment. The common duiker (*Sylvicapra grimmia*) mandible did not have a second premolar.

Taphonomy

Taphonomical processes affects bone matrix between the death of the organism and the time of its recovery. During the faunal analysis of the sample, different alterations were recorded on the bone fragments. A total of 706 or 49% of the total sample were burnt, and the colours ranged from light and darker brown, black, and blue, gray to white. Cut and chop marks was visible on 12 bone fragments respectively. Three ostrich eggshell from the only excavated layer at Boleu 1/5 were weathered to a greater extent than the rest of the sample. Carnivore chew marks were noted on 18 bones, whilst three were gnawed by small rodents the size of a mouse or rat. Rootlet etch marks were recorded on 211 bone fragments and occurred throughout the deposits. The bushveld gerbil identified from the Boleu 1/3 excavation was fresher than the rest of the bone sample.

Bone tools and modified shell remains were recovered from the Boleu 1/3 excavation and are listed in Table 3. Extra bone growth was noted on a third phalanx of an aged *Bos taurus* from A1 layer 6.

Bovoid skeletal part representation and animal ages

The bovid skeletal part representation is listed in Table 4. The age classification for cattle (*Bos taurus*) and sheep/goat (*Ovis/Capra*) teeth proposed by Voigt (1983:47-48, 53) were used. The only sheep/goat tooth was assigned to age class V, whilst those for cattle (*Bos taurus*) are listed in Table 5. The postcranial remains were predominantly of adult animals.

DISCUSSION AND CONCLUSION

Faunal remains from archaeological sites dating from the southern African Late Iron Age are usually dominated by domesticated animals, especially cattle (e.g. Badenhorst and Plug, 2001), except where the distribution of tsetse flies prohibited this (e.g. Plug, 1988). Cattle were central in most Bantu-speaking communities' ritual and social life, and this practice survived well to the present day (e.g. Schapera and Goodwin, 1953; Bruwer, 1956; Tomlinson, 1955). Boleu is no exception to this pattern. The faunal remains from the site indicate a community relying mainly on herding to provide protein as domestic animals, especially cattle, dominates the sample.

According to Wangemann (1868), the Basotho practiced herding, hunting and agriculture. The Basotho had a limited amount of guns in their possession, and pitfalls were also used to hunt. Game was still abundant, and elephants, buffalos, lions, jackals, giraffe, hippos and other animals were hunted. Hunting contributed to the diet, although in a lesser degree than herding. Burchell's zebra, bushpig, duiker and steenbok were all hunted or perhaps trapped.

The leopard tortoise, ostrich eggs and freshwater mussel were collected and supplemented the diet.

Some of the giant African land snail remains were modified, indicating that at least some of these shells are

Table 2: Boleu: species present (NISP/MNI).

Species	Boleu 1/1	Boleu 1/3	Boleu 1/5
<i>Homo sapiens sapiens</i> human		1/1	
<i>Equus burchelli</i> Burchell's zebra		5/1	
<i>Potamochoerus porcus</i> bush pig		1/1	
<i>Bos taurus</i> cattle		63/4	
<i>Ovis aries</i> sheep		3/1	
<i>Ovis/Capra</i> sheep/goat		10/-	
<i>Sylvicapra grimmia</i> common duiker		14/1	
<i>Raphicerus campestris</i> steenbok		15/2	
Bovidae I		12/-	
Bovidae II	1/1	19/3	
Bovidae III		11/-	
<i>Tatera leucogaster</i> bushveld gerbil		16/1	
<i>Struthio camelus</i> ostrich		2/1	3/1
<i>Geochelone pardalis</i> leopard tortoise		4/1	
<i>Achatina</i> cf <i>zebra</i> giant African land snail		4/2	
<i>Achatina</i> sp. giant African land snail		19/2	
<i>Euonyma</i> sp. terrestrial gastropod		10/10	
<i>Xerocerastus/Edouardia</i> sp. terrestrial gastropod		2/2	
<i>Biomphalaria/Segmentina</i> sp. terrestrial gastropod		4/4	
Small terrestrial gastropod		1/-	
Freshwater gastropod		4/1	
<i>Unio caffer</i> freshwater mussel		18/1	
Total	1/1	238/40	3/1

contemporary with the inhabitation of the site. These snails aestivate during the dry periods and their presence in an archaeological deposit can be ambiguous (Plug, 1990).

The human remains, bushveld gerbil and the small terrestrial molluscs did not contribute to the protein diet of the inhabitants. The single human deciduous premolar could possibly be of a disturbed grave, but this seems unlikely, since the isolated fragment is from a midden. It would rather seem as if this tooth fragment was simply discarded. Gerbils burrow in soft deposits and were self-introduced. The small terrestrial molluscs are too small to be a source of protein and were also self-introduced.

All the mammal and reptile species identified from the sample occurred in the vicinity of the site either in historical times or the present day (Du Plessis, 1969; Smithers, 1983; Branch, 1988). The species identified from this sample have been identified from archaeological sites in the vicinity of Boleu's village within the last 500 years (Plug and Badenhorst, 2001).

The colour of the burnt bone fragments indicates the temperature of the heat source. Grey and white calcined bone was exposed to temperatures above 420°C (Gilchrist and Mytum, 1986). This suggests direct exposure to fire or very hot coals, rather than to warm ash disposed of on a midden.

The cut and chop marks noted on some of the specimens are a result of skinning and butchering practices.

The unmodified weathered ostrich eggshell were exposed to the elements longer than the rest of the specimens.

The carnivore chew marks are consistent with those made by dogs. Virtually all Iron Age people kept dogs (e.g. Gallant, 2002) and chew marks by dogs are therefore not unusual.

The single cattle distal phalanx that has extra bone growth is from aged individual and could be the result of old age, disease or trauma, or a combination thereof.

All the bone tools identified from the sample can be regarded as non-formal bone tools. According to Voigt (1983:109), "These [are] not bone tools in the sense that they had been shaped for a specific purpose, but rather pieces of bone (often bone flakes or ribs) which had been picked up and used for a short time for a specific job before being discarded. The most common type of utilisation was polishing and in these cases sharp or natural edges had been smoothed by abrasion. Occasionally, abrasion would form a very rough point but more usually it merely smoothed the edge of the piece into a convex line."

In modern times, bone knives made of cattle ribs similar to those identified from the sample, are used in the production of marula beer. The bone knives are used to prick the marula fruit in order to remove the fleshy pit and to extract the juice (Moifatswane, 1990). It is also possible that some of the bone tools from the sample have probably

Table 3: Boleu: modified bone and shell fragments.

Location	Length (mm)	Skeletal Part	Notes
Boleu 1/3, Square A1			
Layer 3	112	Bovid II tibia shaft	Both ends of the shaft snapped and polished
Layer 4	48	Freshwater mussel shell	Rim and outer shell surface smoothed
	97	Bovid III lumbar vertebrae	Polished at end of transverse process where it attaches to the body
	49	Rib fragment	Polished at one end
	45	Rib fragment	One end polished convex
	103	Rib fragment	Polished at one end and partly one side
	45	Rib fragment	Polished at one end
Layer 5	62	Rib fragment	One end polished into a point like shape
	45	Rib fragment	Polished at one end
	38	Bone flake	Polished at one end
Layer 6	42	Land snail shell	Outer lip of shell smoothed
Boleu 1/3, Square A2			
Layer 2	34	Freshwater mussel shell	Shell rim and outer surface smooth
	30	Freshwater mussel shell	Shell rim and outer surface smooth
Layer 3	67	Rib fragment	Polished at one end
Layer 4	30	Freshwater mussel shell	Shell rim and outer surface smooth
	12	Freshwater mussel shell	Shell rim and outer surface smooth
	18	Freshwater mussel shell	Shell rim and outer surface smooth
	52	Bovid II radius	Shaft polished into point like shape
	62	Rib fragment	Polished at one end
	16	Scapula blade	Polished at one end
Layer 5	47	Rib fragment	Polished at one end
	28	Rib fragment	Polished at one end into a convex line
	161	Rib fragment	Polished at one end into a convex line
Boleu 1/3, Square A3			
Layer 2	170	Rib fragment	One end polished into a convex line
	151	Rib fragment	Polished at one end into a point like shape
	58	Rib fragment	Polished at one end
	44	Land snail shell	Outer lip of shell smoothed
	52	Cattle mandible ascending ramus	Part of ascending ramus below condyle/neck polished into flat line
Layer 3	176	Rib fragment	Both ends polished convex
	16	Freshwater mussel shell	Shell rim and outer surface smoothed with small hole drilled through near rim

been used in the hide working process.

The tibia shaft of a Bovid I size animal of which both ends were snapped and polished, is similar to bone flutes still in use today.

Some of the giant African land snail shell fragments were utilised as either scoops or in the pottery manufacturing process, in addition to their possible exploitation as food source (Voigt 1983:120). The freshwater mussels, also possibly used as food source, were sometimes used to burnish pots (Voigt 1983:120). This type of utilisation was noted, for example, from a military outpost dating from the Anglo-Boer War in the Kruger National Park, South Africa (Badenhorst *et al.* 2002). From Boleu the freshwater mussel fragment with smoothed edges and a hole drilled through near the rim was probably strung on a leather thong and worn as decoration.

The bovid skeletal part representation does not suggest any unusual trends. Teeth have a high survival rate and the adult bovid have 32 permanent teeth. It is therefore to be expected that teeth should dominate the bovid skeletal list.

Although very few cattle teeth were identified, the majority of the postcranial material is from adult animals.

The environment seems to have been optimal for domestic stock herding. Tsetse has not been present in this part of South Africa during historical times (Fuller 1923), and the dominance of cattle remains supports this.

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Table 4: Boleu: bovid skeletal part representation.

Skeletal Part	Bovid I	Bovid II	Bovid III	Total	Total %
Horn core			4	4	2,7
Skull & mandibles	7	5	14	26	17,5
Teeth	23	4	8	35	23,5
Scapula	2	2	2	6	4,1
Humerus	1	1	2	4	2,7
Radius	1	4		5	3,4
Ulna		4	1	5	3,4
Pelvis			6	6	4,1
Femur	3		7	10	6,8
Tibia	2	5	4	11	7,4
Metacarpus			4	4	2,7
Metatarsus	1	3	2	6	4,1
Metapodial			3	3	2,0
Os carpi			3	3	2,0
Os tarsi	1		1	2	1,4
Sesamoid, Patella		1	2	3	2,0
Proximal Phalanges		1	5	6	4,1
Medial Phalanges		3	3	6	4,1
Distal phalanges		1	2	3	2,0
Total	41	34	73	148	
Percentage (%)	27,7	23,0	49,3		100

Table 5: Boleu: cattle age class representation per NISP/MNI.

Age Class	NISP
III	3/1
VII	1/1
VIII	3/1

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Foot note

1. Five fossilized bones, exposed by farmer Jan Hessels on his cultivated land on the farm Diepkloof in the Groblersdal district, were also submitted for identification. These were a complete left astragalus of the extinct horse, *Equus capensis*, that had a wide distribution across southern Africa before it became extinct between 10 000 and 8000 BP (Plug and Badenhorst, 2001). Three ivory incisor fragments were from a hippo (*Hippopotamus amphibius*). A large post cranial bone fragment could not be identified.

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