

The macrofaunal remains of wild animals from Abbot's Cave and Lame Sheep Shelter, Seacow Valley, Cape

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The faunal remains from two adjacent shelters in the Seacow Valley provide evidence of seasonal predation on springbok by hunter-gatherer societies. The unusually high proportion of foetal and neonate remains indicate the hunting of pregnant ewes and/or ewes with newborn lambs. The deposits are disturbed by ground squirrel burrowing, but these did not influence the species representation. The coming of pre-colonial pastoralists and trekboer farmers did not initially influence the availability of game.

Key words: fauna, seasonality, Karoo, hunter-gatherers, springbok, foetal, neonate.

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Introduction

During the Seacow Valley archaeological survey (Sampson 1985), many open air and shelter sites were identified. Unique among the latter are Abbot's Cave (ABB) and Lame Sheep Shelter (LAM) (31°27'S, 24°39'E), adjacent openings of a small cave system. They are connected by a small crawl space and are situated in a low bluff above a tributary of the Seacow River overlooking a seasonal wetland. Lame Sheep Shelter is shallow and the deposits are exposed. Abbot's Cave is a small cave and the deposits are better protected. A painted pebble from Layer 3 of ABB was dated to CAL AD 1270 ± 16 (Sampson & Vogel 1989) and Layer 8 dates to CAL AD 1651–1682, immediately below the first items of European origin (Saitowitz & Sampson 1992).

The ceramic sequence suggests that most of the deposits at both sites accumulated between ca. 700–300 BP, before the coming of white trekboer settlers in AD 1770 (Sampson *et al.* 1989). At ABB this sequence is capped by relatively deep post-contact deposits. The deposits are rich in faunal remains and provide information on past animal distributions

and on some of the activities of the hunter-gatherer and pastoralist populations.

Game was plentiful and large herds of springbok, gnou, and zebra were recorded (Skead 1987). During good rainy seasons the plains were covered in grass, which disappeared during dry spells, leaving only the hardy low shrub, typical of the Karoo. A pattern of quasi-cyclic droughts are recorded for the historic period (Vogel 1988). Longer term fluctuations in the ratio of grass to scrub are visible in the pollen record captured in fossil hyrax dung from about 1200 BP (Scott & Bousman 1990; Bousman 1991). The more pronounced fluctuations are also visible in the changes in micromammal content through the layers of ABB (Avery 1991). As the presence and numbers of different species of large mammals in such an environment depend on the edible plant cover, these would have fluctuated from year to year and from one dry cycle to another.

Method

The material was analysed according to procedures developed at the Transvaal Museum and those that are accepted internationally among archaeozoologists. In the Tables species are listed according to Meester *et al.* (1986).

Table 1
ABB and LAM: Summary of the faunal samples

| Skeletal part | ABB | LAM |
|----------------------------|---------|--------|
| Bovid remains | 7292 | 569 |
| Other remains | 2123 | 168 |
| Total identifiable | 9415 | 737 |
| Enamel and skull fragments | 19108 | 1437 |
| Vertebra fragments | 4540 | 516 |
| Rib fragments | 6812 | 227 |
| Miscellaneous fragments | 81234 | 4317 |
| Bone flakes | 21119 | 8303 |
| Total unidentifiable | 132813 | 14800 |
| Total sample | 142228 | 15537 |
| Mass identifiable g | 17458.8 | 1837.8 |
| Mass unidentifiable g | 47390.1 | 7680.3 |
| Total mass g | 64848.9 | 9518.1 |

Age categories distinguished are foetal/neonate (F/N), neonate/juvenile (N/J), juvenile (J), sub-adult (SA), young adult (YA) adult (A), mature (M) and Aged (Ag):

F/N: deciduous teeth unerupted, metapodia longitudinally, proximally and distally unfused, os centroquartale unfused, proximal radius unfused, bones spongy, epiphyses undefined;

N/J: deciduous teeth erupting or with very light wear, M1's unerupted or erupting, metapodia longitudinally fusing, proximal metapodia and radii fusing, os centroquartale fusing, epiphyses somewhat less amorphous, bones less spongy;

J: deciduous teeth in wear, M1s erupted and in wear, M2s erupting, most epiphyses still unfused, but articulation surfaces well defined;

SA: M2s in wear, M3s erupting, deciduous premolars and incisors due for replacement, epiphyses beginning to fuse;

YA: M3s just in wear, most deciduous premolars and incisors replaced, permanent premolars erupted, most epiphyses fused;

A: all permanent teeth present and in wear, epiphyses strongly fused;

M: heavy wear on all teeth, central islands disappeared on M1s and disappearing on M2s;

Ag: incisors and premolars with very heavy wear, M1s and M2s worn down to gumline, no central islands on M3s, roots resorbing on all teeth, rib cartilage fully ossified, muscle attachments ossified.

The macrofaunal remains

The large mammal remains were sent to the Transvaal Museum where the remains of domestic animals were extracted and sent to E.A. Voigt for description. The macromammal samples were analysed per square and spit. The results were combined into the layers suggested by Sampson (*pers. comm.* 1991). At ABB 16 layers were identified and at LAM 13.

The sample from ABB consists of more than 140 000 bone fragments and the LAM sample of more than 15 500 fragments (Table 1). A wide variety of species is represented in both samples (Tables 2 & 3). Level 16 is the uppermost level at ABB and Level 13 at LAM.

Results and discussion

Integrity of the deposits

Bioturbation occurred in both shelters, particularly at ABB. It is caused mainly by ground squirrels, *Xerus inauris*. Remains of these burrowers occur in all layers of ABB, but are less common in LAM where their remains occur in five layers only. Some of the *Xerus* remains are relatively fresh. In addition, fresh

Table 2
 ABB: Species represented, number of identified skeletal parts/minimum number of individuals (NISP/MNI)

| Species | Level | | | | | | | | | | | | | | | |
|--------------------------------|-------|------|-----|------|-----|------|------|------|-----|-----|-----|-----|-----|-----|-----|-----|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| <i>Homo sapiens sapiens</i> | | | | 1/1 | | 1/1 | | 1/1 | | 1/1 | | | | | | |
| <i>Papio ursinus</i> | | | | 3/2 | | 2/1 | | 2/2 | | 1/1 | | | | | | |
| cf. <i>Otocyon megalotis</i> | | | | | | 1/1 | | 1/1 | | | 1/1 | | | | | |
| <i>Lycyaon pictus</i> | | | | | | | | | | 2/1 | | 1/1 | | | 1/1 | |
| <i>Vulpes chama</i> | | | | | | 4/1 | | 1/1 | | | | | | | | |
| <i>Vulpes/otocyon</i> | | | | | | 1/* | | | | | | | | | | |
| <i>Canis mesomelas</i> | | 8/2 | 1/1 | 8/3 | | 41/9 | 3/1 | 13/3 | | 1/1 | | 5/2 | | | 2/2 | 1/1 |
| <i>Canis</i> sp. | | 1/1 | | 4/* | | 8/* | 1/1 | | | 2/* | | | | | | 1/* |
| Canidae sp. indet. | | | | | | 2/* | | | | | | 2/* | | | | 1/* |
| <i>Ictonyx striatatus</i> | | | | 2/1 | | 9/1 | 2/1 | 3/1 | | | | 1/1 | | | 1/1 | 3/1 |
| <i>Saricata suricata</i> | | 4/1 | | 9/1 | | 15/2 | 2/1 | 2/1 | | 1/1 | | 1/1 | 2/1 | | | 1/1 |
| <i>Cynictis penicillata</i> | | 5/1 | | 11/3 | 1/1 | 35/3 | 1/1 | 3/1 | | 2/1 | | 2/1 | | | | 1/1 |
| <i>Galerella</i> sp. | | 1/1 | 1/1 | 13/1 | 1/1 | 25/4 | 2/1 | 7/1 | 1/1 | 2/1 | 1/1 | | 1/1 | | 1/1 | 1/1 |
| cf. <i>Ichneumia albicauda</i> | | | | | | 1/1 | | | | | | | | | | |
| cf. <i>Atilax paludinosus</i> | | | | 2/1 | | 5/1 | | 1/1 | | 1/1 | | 1/1 | | | | |
| Viverridae gen. et sp. indet. | | 12/* | 2/* | 29/* | 4/* | 61/1 | 20/* | 24/* | 4/1 | 4/1 | 1/1 | 7/1 | 3/* | 4/1 | 3/1 | 7/1 |
| <i>Hyaena brunnea</i> | | | | | | 2/1 | | | | | | | | | | |
| <i>Panthera pardus</i> | | | | 3/1 | | 1/1 | | 1/1 | | | | | | | 1/1 | |
| <i>Felis caracal</i> | | 1/1 | | 1/1 | | 3/2 | 4/1 | 4/2 | 1/1 | | | 2/1 | | | | |
| <i>Felis lybica</i> | | | | | | 1/1 | | | | | | | | | | |
| Felidae gen. et sp. indet. | | | | 6/* | | 6/* | 1/1 | 11/* | | 1/* | | 2/* | 1/1 | | 1/* | 1/* |
| Carnivora gen. et sp. indet. | | 3/* | | | | | 2/* | | | | | | | | | |
| <i>Equus</i> cf. <i>zebra</i> | | 1/1 | | 2/2 | | 10/6 | 6/3 | 8/3 | | 5/3 | 1/1 | 3/2 | 6/3 | 4/2 | 6/3 | 2/2 |
| <i>Equus burchelli/quaaga</i> | | 3/2 | | 6/2 | 1/1 | 36/1 | 2/* | 8/1 | 1/1 | | | 3/1 | | | | 5/1 |
| <i>Equus</i> sp. | 1/1 | 3/2 | | | | | | | | | | | | | | |

* individuals probably included under species

Table 2
(continued)

| Species | Level | | | | | | | | | | | | | | | |
|---|-------|--------|------|--------|------|---------|--------|--------|------|--------|------|--------|------|------|------|------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| <i>Procavia capensis</i> | 11/3 | | | 2/2 | 2/2 | 30/4 | 13/2 | 18/2 | | 1/1 | | 9/1 | 4/1 | 5/1 | 10/2 | 5/2 |
| <i>Phacochoerus aethiopicus</i> | 7/2 | 1/1 | | 12/3 | 3/2 | 13/2 | 3/2 | 18/3 | 2/1 | 1/1 | | 12/2 | 3/1 | 3/1 | 4/1 | 3/1 |
| <i>Suidae</i> sp. indet. | 2/* | | | 4/1 | 1/1 | 3/* | | 3/* | 1/* | 2/1 | | 1/* | 1/* | | | |
| <i>Connochaetes gnou</i> | 6/2 | | | 10/2 | 1/1 | 7/3 | | 6/1 | | 2/1 | 3/1 | 3/1 | 4/3 | 1/1 | 2/1 | |
| <i>Connochaetes</i> cf. <i>gnou</i> | | 1/1 | | | | | | | | | | | | | | |
| <i>Connochaetes</i> cf. <i>taurinus</i> | | | | | | | | | | | | 1/1 | | | | |
| <i>Alcelaphus buselaphus</i> | | | | 2/1 | 2/1 | 4/2 | | 1/1 | | | | | | | | |
| <i>Connochaetes/Alcelaphus</i> | 7/2 | | | 13/2 | 4/* | 15/2 | 4/* | 10/2 | 4/2 | 5/* | 1/* | 3/1 | 3/* | 1/* | 1/* | |
| <i>Damaliscus dorcas</i> | 4/1 | | | 15/2 | 3/2 | 14/1 | 3/2 | 9/2 | | 1/1 | 5/1 | 4/1 | | 1/1 | | 1/1 |
| <i>Alcelaphinae</i> sp. indet. | | | | | | | | | | | | | | | | |
| <i>Philantomba monticola</i> | | | | 1/1 | | 1/1 | | 1/1 | | | | | | | | |
| <i>Sylvicapra grimmia</i> | 1/1 | | | 1/1 | | 6/1 | 5/1 | 1/1 | | | | | | | | |
| <i>Antidorcas marsupialis</i> | 22/4 | 299/17 | 26/5 | 680/28 | 34/6 | 1846/53 | 348/15 | 665/24 | 81/7 | 114/11 | 46/4 | 189/10 | 67/9 | 40/4 | 77/9 | 48/7 |
| <i>Antidorcas bondi</i> | | | | 4/1 | | | | | | | | | | | | |
| <i>Antidorcas</i> sp. | | | | 2/* | | 4/2 | | | | | | | | | | |
| <i>Oreotragus oreotragus</i> | 1/1 | | | 2/1 | | 2/* | 1/1 | 2/1 | | | | | 1/1 | | | 1/1 |
| <i>Raphicerus campestris</i> | 1/1 | | 1/1 | | 1/1 | 3/1 | 3/1 | 3/1 | | | | | 1/1 | | | |
| <i>Raphicerus</i> sp. | | | | 2/1 | | 3/1 | | 2/1 | | | | | | | | |
| <i>Oreotragus/Raphicerus</i> | | | | | | 5/* | | | | | | | | | | |
| <i>Pelea capreolus</i> | 2/1 | | | 8/3 | | 1/1 | 3/1 | 16/2 | 1/1 | | | 2/1 | 1/1 | | | |
| <i>Tragelaphus strepsiceros</i> | | | | | | 14/4 | 1/1 | | | | | | | 2/1 | | |
| <i>Taurotragus oryx</i> | 5/1 | | | 2/1 | | 3/1 | 3/1 | 1/1 | 1/1 | 1/1 | | 3/1 | | | | |
| <i>Redunca arundinum</i> | | | | | | 3/1 | | 2/1 | | | | | | | | |
| <i>Redunca fulvorufida</i> | | | | 2/1 | | | | 1/1 | | | | | | | | |
| <i>Redunca</i> sp. | | | | 1/* | | 1/1 | | | | 1/1 | 1/1 | | | | | |
| <i>Pelea/Redunca</i> | | | | 1/* | | 3/1 | | 3/1 | | | | | | | | |
| Bov I (small) | 1/1 | 19/1 | 3/* | 3/1 | 2/* | 9/* | 9/* | 33/26 | | 2/2 | 4/1 | 11/2 | 3/* | 6/1 | 9/1 | 7/1 |
| Bov II (medium) | 14/2 | 164/* | 27/* | 343/3 | 18/* | 84/5 | 106/* | 303/1 | 32/1 | 76/1 | 41/1 | 63/* | 62/* | 25/* | 34/1 | 26/* |
| Bov III (large) | 2/1 | 20/2 | 4/* | 39/2 | 1/* | 556/* | 20/2 | 30/1 | 4/* | 10/1 | 6/1 | 10/3 | 9/1 | 7/* | 5/* | 6/1 |
| Bov IV (very large) | 1/1 | | | | | 93/* | | 2/1 | | 1/* | | | | | | |

* individuals probably included under species

Table 2
(continued)

| Species | Level | | | | | | | | | | | | | | | |
|---------------------------------|-------|--------|-------|---------|-------|----------|--------|---------|--------|--------|--------|--------|--------|--------|--------|--------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| <i>Xerus inauris</i> | 3/1 | | | 85/7 | 6/2 | 216/18 | 49/5 | 43/3 | 6/2 | 10/2 | 16/2 | 8/2 | 5/1 | 13/2 | 2/1 | 5/1 |
| <i>Pedetes capensis</i> | | 65/5 | 2/1 | 7/1 | 1/1 | 17/2 | 5/2 | 1/1 | 1/1 | 10/2 | 16/2 | 8/2 | 5/1 | 13/2 | 2/1 | 5/1 |
| <i>Hystrix africaeaustralis</i> | 1/1 | 6/1 | 1/1 | | | 3/1 | 1/1 | 1/1 | 1/1 | 1/1 | | 9/2 | | 1/1 | | 4/1 |
| <i>Cryptomys hottentotus</i> | | | | 2/1 | | | | 1/1 | | | | | | | | |
| Rodentia gen. et sp. indet. | | | | | | 1/1 | | | | | | | | | | |
| <i>Lepus saxatilis</i> | | 6/1 | | 9/2 | | 44/3 | | | | | | | 24/2 | | | |
| <i>Lepus cf. saxatilis</i> | | | | | | | | 11/2 | | 2/1 | | 1/1 | | | | |
| <i>Lepus sp.</i> | | 9/1 | | 8/1 | | 37/* | 4/1 | 9/1 | | 2/1 | | 2/* | 2/1 | 1/1 | 2/1 | 2/1 |
| <i>Pronolagus rupestris</i> | | 1/1 | | 11/1 | | 3/1 | | 1/1 | | 2/1 | | | | | | |
| <i>Lepus/Pronolagus</i> | 6/1 | 41/1 | 1/1 | 62/* | 1/1 | 139/3 | 25/2 | 44/* | 7/1 | 7/1 | 12/2 | 14/1 | 5/* | 17/2 | 8/2 | 13/2 |
| <i>Struthio camelus</i> | | | | | | 2/1 | 1/1 | | | | | 1/1 | | | | 1/1 |
| Aves gen. et sp. indet. | | | | | | | | | | | | | | | | |
| <i>Diplopoda sp.</i> | | | | | | | | 1/1 | | | | | | | | |
| Coleoptera dung beetle | | | | | | | | 1/1 | | | | 1/1 | | | | |
| <i>Unio/Aspatharia</i> | | | | | | | | | | | | | | | | |
| <i>Unio caffer</i> | | | | 1/1 | | | | | | | | | | | | |
| Total | 53/14 | 719/57 | 71/13 | 1482/91 | 75/18 | 3439/152 | 656/54 | 1339/82 | 147/21 | 260/28 | 142/20 | 378/36 | 209/27 | 130/18 | 171/31 | 144/27 |

* individuals probably included under species

remains of other animals, including those of post-contact livestock, also occur in each layer of ABB and in some layers of LAM. Some remains even have tissue adhering, indicating that they are of very recent origin. These fresh remains are often complete bones, whereas the bone flakes in the rest of the samples are very fragmented with a median length of 18 millimetres.

All domestic animal remains, from both ABB and LAM found below the upper three to four layers are intrusive and are usually associated with *Xerus* remains.

Although the integrity of the stratigraphy at the sites is spoiled, this does not influence the skeletal parts representation or the species composition of the sample. The burrowing replaced some objects vertically or even laterally, but there is no evidence to suggest material was destroyed or removed from the shelters.

Because LAM is in a much more exposed position than ABB, the deposit was damp and penetrated by rootlets, whereas the ABB deposits were dry and free of roots. The post-depositional conditions between the two deposits varied greatly with natural attrition processes more active at LAM than at ABB. The effects of unequal bone weathering, bioturbation and preservation will be discussed in a paper by Plug & Sampson (*in prep.*). It seems that the main bone midden of LAM is older than the midden from Abbot's Cave.

Species composition

The species represented in the ABB and LAM samples are very similar, but the variety at ABB is greater as a result of the larger sample. Most of the species present still occur or have been recorded from the area in historical times, including rhinoceros and kudu (Barrow 1801; Du Plessis 1969; Raper & Boucher 1988; Skead 1987). There are two exceptions, namely *Antidorcas bondi* and *Philantomba monticola*.

The most surprising finds were teeth and a phalanx of *Antidorcas bondi* from ABB Layers 4 and 6. The fragments were partially mineralised. Another unidentified bone fragment of an animal the size of a large bovid from Layer 6 is also mineralised. These objects co-occur with stringers of fresh ground squirrel remains, displaced pot sherds and patinated stone tools of a type dated elsewhere to 8000 BP and older (Bousman 1989). The anomalous bones and teeth were probably derived from the thin basal deposit of early Holocene/terminal Pleistocene age, and were recovered from ground squirrel burrow fills. Evidence from Kruger Cave suggests that *Antidorcas bondi* became extinct sometime after 8000 BP (Brown & Verhagen 1985). If the objects were carried in from elsewhere, it suggests the existence of a deposit somewhere in the area with a much older faunal assemblage than those of ABB or Lame Sheep Shelter.

There are no historical records of the tiny blue duiker, *Philantomba monticola*, from the area. There is one record from the Holocene (Deacon 1976), but this identification is now doubted (R.G. Klein *pers. comm.*) The specimen from ABB conforms osteomorphologically and osteometrically to the modern species. This tiny antelope lives in forest areas, thick bush and coastal shrub. Modern records show that these animals occur along the Cape east coast from George to the Mozambique border (Smithers 1983). There is no climatological or ecological evidence to suggest that the distribution of these animals was much different to that of the present. Their presence at ABB and LAM suggests that the people who used the shelters either had contact with people living near the coast, or visited the coast themselves. *Philantomba monticola* remains have also been found in other Later Stone Age deposits in areas where these animals did not occur (Plug 1990). They would have been unimportant as a food source, but may have had some important meaning to the hunter-gatherer societies.

Table 3
 LAM: Species represented, number of identified skeletal parts/minimum number of individuals (NISP/MNI)

| Species | Level | | | | | | | | | | | | |
|-------------------------------------|-------|-----|------|------|------|-----|------|------|------|------|------|------|------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
| <i>Vulpes chama</i> | | | | | | | 1/1 | | | | | | |
| <i>Canis mesomelas</i> | | | | | 1/1 | | 1/1 | | | | | | |
| <i>Canis cf. mesomelas</i> | 1/1 | | 2/1 | | 3/8* | | | | | | | | |
| <i>Ictonyx striatus</i> | | | | | | | | | | | | | |
| <i>Suricata suricatta</i> | | | | | 4/1 | | 5/1 | | 4/1 | | | 9/1 | 2/1 |
| <i>Attilax paldanius</i> | | | | | 1/1 | | | | | | | 1/1 | |
| Viverridae gen. et sp. indet. | 1/1 | | | 2/1 | 2/8* | | 1/1 | | 6/1 | 1/1 | | | |
| Carnivora gen. et sp. indet. | 1/8* | | | | 2/1 | | | | | | | | |
| <i>Diceros bicornis</i> | | | | | | | | | | | | | |
| <i>Equus burchelli/quatagga</i> | | | 1/1 | 3/2 | 1/1 | | 4/3 | | 2/1 | | | 1/1 | 1/1 |
| <i>Equus</i> sp. | | | | | 1/8* | 1/1 | 2/1 | | | | | 2/2 | |
| <i>Procavia capensis</i> | | | | 1/1 | 4/1 | | 1/1 | | | | | | |
| <i>Phacocoercus aethiopicus</i> | 1/1 | | 2/1 | | 5/1 | | 3/2 | | 1/1 | | | | |
| cf. <i>Phacocoercus aethiopicus</i> | | | | 1/1 | | | | | | | | | |
| Suidae sp. indet. | | | | 2/8* | 1/8* | | 1/1 | | | | | | |
| <i>Connochaetes gnou</i> | 1/1 | | | | | | 1/1 | | 2/1 | | | 1/1 | |
| <i>Connochaetes taurinus</i> | | | | | 3/1 | | 1/1 | | | | | | |
| <i>Alcelaphus buselaphus</i> | | | | | | | | | | | | | |
| <i>Connochaetes/Alcelaphus</i> | 2/8* | 1/1 | 1/1 | 44/1 | | | 3/8* | 5/1 | 3/1 | 1/1 | 2/1 | 3/1 | 4/8* |
| <i>Damaliscus dorcas</i> | | | | | | | | | | | | | |
| <i>Philantomba monticola</i> | | | | | 2/1 | | | | | | | | |
| <i>Sylvicapra grimmia</i> | 1/1 | | | | 1/1 | | | | | | | | |
| <i>Antidorcas marsupialis</i> | 3/2 | | 10/2 | 16/5 | 45/4 | 1/1 | 27/3 | 6/2 | 60/9 | 11/2 | 21/6 | 24/5 | 3/1 |
| cf. <i>Antidorcas marsupialis</i> | 2/8* | | | 1/8* | | | 8/8* | 2/8* | | | | | |

* individuals probably included under species

Table 3
(continued)

| Species | Level | | | | | | | | | | | | |
|--------------------------------|-------|------|-------|-------|--------|------|--------|------|--------|------|-------|-------|------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
| <i>Oreotragus oreotragus</i> | | | | | 1/1 | | | | | | | | |
| <i>Raphicerus campestris</i> | | | | | 2/1 | | 3/1 | 1/1 | 1/1 | | | | |
| <i>Raphicerus</i> sp. | | | | | 1/** | 1/1 | | | | | | | |
| <i>Sylvicapra/Raphicerus</i> | 1/1 | | | | 1/** | | | | | | | | |
| <i>Pelea capricollis</i> | | | | | | 1/1 | | | | | | 2/1 | 1/1 |
| <i>Taurotragus oryx</i> | | | | | | | | | | | | 1/1 | |
| <i>Antidorcas/Pelea</i> | 1/** | | | | | | | | | | | 1/1 | |
| <i>Pelea/Redunca</i> | | | 1/1 | | | | | | | | | | |
| Bov I (small) | 9/1 | 9/2 | 5/1 | 1/1 | 9/** | 2/** | 4/1 | 7/** | 1/** | 6/1 | 3/1 | 15/1 | 6/** |
| Bov II (medium) | | | 10/1 | 11/** | 62/1 | 3/** | 33/2 | | 22/** | 1/** | 12/** | 3/1 | 2/1 |
| Bov III (large) | | | 2/1 | 1/** | 11/** | | 8/** | | 5/** | 1/** | 2/1 | | |
| <i>Xerus inauris</i> | 4/1 | | | 2/1 | 4/1 | | 3/2 | 2/** | 1/1 | 1/** | | 1/1 | 8/2 |
| <i>Pedetes capensis</i> | 1/1 | | 6/1 | | 2/1 | | 1/1 | | 6/2 | 1/** | | 10/2 | 2/1 |
| <i>Hystrix africanustralis</i> | | | | 1/1 | 1/1 | | | | | | 1/1 | | |
| <i>Lepus/Pronotagus</i> | 1/1 | 1/1 | | 1/1 | 10/2 | 2/1 | 3/1 | | 1/1 | | 1/1 | | |
| Reptilia: lizard | | | | 1/1 | | | | | | | | | |
| | 29/11 | 11/4 | 40/10 | 47/15 | 181/23 | 11/5 | 114/25 | 23/4 | 115/20 | 21/6 | 42/10 | 76/19 | 25/8 |

* individuals probably included under species

Isolated human teeth from ABB Layers 4, 6 and 8 are two incisors of different adults (Layers 4 and 8) and a deciduous premolar of a child (Layer 6). The premolar has light wear and well-developed roots, suggesting that it was not lost due to replacement. There are no traces of burials or of other human remains. It appears therefore that the teeth were pulled, probably relating to some ceremony or belief. Barrow (1801) and Raper & Boucher (1988) noted that some of the hunter-gatherer groups amputated the extreme joints of fingers in case of sickness. The pulling of teeth, particularly incisors, could also have had ritual meaning (Bleek & Lloyd 1911; Schapera 1930).

Carnivore remains are common in both deposits representing various species. Many of these were hunted or trapped not only for food, but probably also for ritual purposes and for their skins. Barrow (1801) mentions that jackal skins were commonly used in the manufacture of items of clothing by the Khoi living in the Graaff-Reinet district. Jackal skins were also found among the possessions of hunter-gatherer groups during the time of Barrow's visit. Ethnographic studies indicate that certain animal species, including carnivores such as caracal, jackal, lion, viverrids and others, were important in rituals (Orpen 1874; Bleek & Lloyd 1911; Bleek D. F. 1935, 1936; Vinnicombe 1972; Lewis-Williams 1984a, 1984b; Noll 1985; Dowson 1988; Guenther 1975/76; Parkington 1989).

Most of the carnivores represented would not have lived in the shelters. However, the leopard, caracal and wild cat remains from ABB may have been self-introduced. It is possible that some of the hyraxes were leopard or caracal prey (Thackeray 1990).

The introduction of domestic animal remains into the upper layers of the deposits, indicates the coming of European settlers and possibly of pre-European pastoralists. The faunal remains do not indicate that the supply of wild animals diminished significantly after the first decades of contact. This supports obser-

ations by Barrow (1801) and many others up to 1860 (C.G. Sampson *pers. comm.*).

Most numerous of all the macromammal remains from ABB are those of the springbok, *Antidorcas marsupialis*, constituting 49% of the identified remains, with numbers fluctuating between 31% and 55% in various levels. If one assumes that a large proportion of the unidentified Bov II remains could also be springbok, it is clear that the hunters of ABB were predominantly preying on this species of antelope. At LAM springbok were also important, averaging 32% of the identifiable remains.

Ages of animals at time of death

Foetal/neonate (F/N) remains are seldom seen in archaeological fauna samples. These remains are very frail and subsequently preserve very poorly, in addition it may be argued that F/N animals are not sought food items as their flesh is usually of poor quality.

At ABB there is an unusually high occurrence of F/N bones, mostly springbok. Of the total bovid sample, 13,5% of the remains are F/N, 2,4% N/J, 1,3% SA, 0,6% YA, 74,5% A, 3,6% M and 2,1% Aged.

At LAM the pattern is different and F/N remains constitute only 1% of the samples, N/J 1,9%, J 1,4%, SA 1%, YA 0%, A 90,4%, M 3,3%, and Ag 1%. These differences may be attributed to the apparent older age of the LAM deposits, and could reflect different strategies over time. The virtual absence of foetal and neonate remains may also relate to the unfavourable conditions for the preservation of such fragile bones. Such attrition would also lead to underrepresentation of springbok at the site.

Springbok usually lamb in the spring. Jacob Gordon mentions that the springbok of the Karoo lambed from August to September (Raper & Boucher 1988). Although some springbok occurred in the region most of the year, he notes that the vast herds moved onto

the plains near the Sneeuberge from September to November, trekking south into the wind.

From the above information it may be deduced that the F/N springbok of ABB were hunted possibly in September. If predation on the springbok herds was random at that time of the year, one would expect that the samples would contain a significant proportion of YA to SA animals as well. These animals would have been approximately one year old during spring. There is, however, no such pattern present. It may therefore be argued that predation was specifically aimed at pregnant ewes, or ewes with new born lambs. Such animals would have had reserves of body fat, which would have made them preferred prey.

Of the non-bovid remains less than 3% of the samples are F/N remains. Most of these species have no strong seasonal reproduction patterns.

Trapping and hunting were used by the indigenous population of the Seacow Valley (Barrow 1801; Raper & Boucher 1988). The age distribution patterns of springbok suggests that selection of prey took place, indicating that these animals were hunted rather than trapped.

The presence of F/N material of other bovids at ABB also supports spring predation. Although some species drop their lambs during the year, most species show a peak in lambing during spring.

Sexing

Pelvic fragments, sufficiently large to enable sexing, represent 14 females and eight males. The females are eight springbok, three medium-size bovids, two gnus and a duiker, and the males are two springbok, four medium-size bovids, one large and one small bovid. Two female baboons were identified on the size of the canines. The pelves of female animals are less dense than those of males and females are probably underrepresented. The

female to male ratio supports the suggestion that predation of bovids, springbok in particular, was aimed at gravid females and females with newly born young.

Taphonomy

The samples are very fragmented, probably due to marrow extraction activities and trampling. In the lower layers of ABB carbonate crystals were present in cracks in a number of bones rendering them particularly friable.

Approximately 30% of the bones in the upper three layers of ABB and LAM and over 90% in the lower layers are manganese-stained. It may be assumed that the relative high incidence of manganese precipitation on bone fragments in the upper layers is due to the activities of ground squirrels and that those fragments were kicked out of burrows.

Eleven fragments from ABB, layers 2, 4, 6, 7, 15 and 16, are gnawed by carnivores and indicate leopard and/or caracal activity. Rodent gnawing occurs on 17 fragments from ABB. Of these one was gnawed by a porcupine and the others by small rodents, probably ground squirrels.

Termite activity was present at ABB and 24 bones in layers 2, 4, 5, 6, 8, 15 and 16 were damaged. At LAM no termite activity could be detected.

The incidence of burnt bone is relatively low for shelter sites, averaging 14.6% at ABB and 20% at LAM. At Bushman Rock Shelter over 70% of all fragments are burnt (Plug 1978) and at Tloutle in Lesotho approximately 60% of the samples are burnt (Plug *in press*). If ABB and LAM were mainly used as hunting shelters, it may be argued that much of the cooking was done elsewhere.

Human damage occurs on a few specimens only. Percussion flaking, indicative of splitting of bone to extract marrow, occurs on three fragments from ABB and on one from

LAM. Cut marks are visible on two specimens from Abbot's Cave.

A sliver of a springbok metatarsus is partially faceted and is probably an unfinished point. A jackal metatarsus was cut and snapped and the shaft polished. Both are from Abbot's Cave.

Skeletal parts representation

The two sites differ in the composition of the waste bone categories (enamel, skull, vertebrae and rib). Rib fragments constitute 13,2% of the waste bone at ABB, but only 2,2% at LAM. There is also a difference in the frequency of skull fragments: 1,9% at LAM and 28,0% at Abbot's Cave. The low frequency of rib and skull fragments at LAM may be related to the fragility of the bone and the unequal weathering patterns between the two sites (Plug & Sampson *in prep.*).

Preservation of identified remains, which are also those bones with a dense structure, is similar on both sites. As has been observed before (Plug 1988) teeth and lower limb bone elements preserved best.

Pathology

A proximal metatarsus of a medium-size bovid has thickening of the bone and exostosis on the plantar side near the articulation surface. The distal radio-ulna of a springbok also has exostosis. A broken rib of a medium size bovid had knitted, but the broken ends were misaligned. The pathology present suggest trauma rather than disease and may be attributed to herd behaviour, where trampling and kicking can occur. All three bones are from Abbot's Cave.

Conclusions

The presence of foetal and neonate lambs show that the sites were used during spring around September. It also shows that the annual springbok migrations passed through the Seacow Valley during that time of the year,

corroborating observations made by Barrow (1801). It seems as if pregnant ewes and ewes with newborn lambs were specifically selected.

The samples do not reflect a significant change in the availability of wild animals when the contents of the upper and lower layers are compared. The influence of pastoralists and trekboer groups did, therefore, not have an immediate effect on the game populations.

The isolated human teeth as well as the variety of canid and viverrid species represented may reflect aspects of ritual behaviour.

The blue duiker remains indicate either contact with coastal communities, or reflect group mobility. The animal may also have had special meaning in these hunter-gatherer societies. A few semi-mineralised remains, including those of an extinct species of springbok, suggests an older and much earlier faunal assemblage from the basal deposits of ABB, churned up by burrowing activities.

The faunal samples from ABB and LAM differ in various aspects. These differences may be explained by different post-depositional conditions and unequal weathering.

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