APPENDIX 2

The faunal assemblage from Wosi in the Thukela Valley

by

Elizabeth A. Voigt[1] and **Joris H. Peters**[2]

INTRODUCTION

Wosi is an extensive early settlement which was identified and then excavated during a regional survey of a section of the lower Thukela River Valley. It is particularly interesting because of the spatial differentiations on the site; each faunal assemblage was dealt with separately in order to identify differences which might be related to different activity areas.

The Wosi report is concerned with only one of a group of three sites situated close together – Mamba and Ndondondwane being the others. The latter site is the subject of a major study; the three together provide an interesting insight into the relationships between man and animals in the Early Iron Age (EIA) in the Valley. The method of analysis was similar to that used for other Natal Iron Age sites (eg. Voigt 1984) except that the taphonomy of the collection is not included here. Detailed records of the collections are housed at the McGregor Museum, Kimberley, and the collections themselves are housed at the KwaZulu Cultural Museum at Ulundi.

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Twenty two middens were identified on the Wosi site, of which eleven were relatively undisturbed. Each midden unit consisted of a well-defined mound of ash-soil matrix containing potsherds, faunal material and other cultural remains. The maximum number of discernable layers was four, representing two periods of occupation. Layers 3 and 4 represent the earlier occupation period with dates clustering around AD 650. Layers 1 and 2 represent the later and terminal occupations respectively with dates of around AD 800. Van Schalkwyk noted a stylistic shift in pottery styles between the two periods of occupation, notably Msuluzi phase in the earlier occupation with an increasing affinity for Ndondondwane pottery in the later levels.

During the excavations poorly preserved human burials and debris-filled pits were located in six of the midden deposits. No evidence for cattle dung was found; therefore the faunal samples described below are not believed to relate to cattle enclosures, but rather to domestic contexts. The individual excavations are referred to as Grids 1–6; the analysed faunal sample consists of all the faunal material retrieved during the excavations (Tables 1–2)

[1] McGregor Museum, Kimberley, South Africa.
[2] Institut für Palaeoanatomie, Domestikationsforschung und Geschichte der Tiermedizin, University of Munich, Munich, Germany.

TABLE 1

Wosi: Analysed bone sample.
(* Includes ivory fragments)

Description	Early	Late		Terminal			Probably early			Test pit	Total	% of Total sample
	G2:3/4	G2:2	G1:2	G2:1	G1:1	G3	G4	G5	G6	G2		
Domesticates												
Bovid teeth	451	495	73	388	10	299	109	32	140	57	2 054	7.3
Bos taurus skeletal parts	8	9	32	15	6	27	15	4	19	4	139	0.03
Ovicaprine skeletal parts	898	824	193	736	27	373	132	59	115	78	3 435	12.2
Canis familiaris	1	0	2	6	0	0	1	0	0	2	12	0.04
Homo sapiens	1	1	3	3	0	2	0	0	3	0	13	0.04
Total domesticates	1 359	1 329	303	1 148	43	701	257	95	277	141	5 653	20.0
Non domesticates												
Bovids	82	68	30	69	2	27	9	7	12	4	310	
Primates	5	4	0	3	0	2	2	0	0	0	16	
Carnivores	8	8	0	4	0	5	0	0	0	0	25	
Other mammalian vertebrates*	201	11	16	9	1	61	2	1	7	35	344	
Birds	1	1	0	0	0	5	6	0	1	1	15	
Reptiles and amphibians	13	18	14	11	0	13	5	0	1	2	77	
Fish	8	5	3	6	0	5	5	0	2	0	34	
Invertebrates: Terrestrial	61	94	26	43	1	30	26	3	11	9	304	
Freshwater	5	3	1	0	0	1	2	1	0	0	13	
Marine	4	6	1	3	2	1	0	1	0	0	18	
Total non domesticates	388	218	91	148	6	150	57	13	34	51	1 156	4.1
Total NISP	1 747	1 547	394	1 296	49	851	314	108	311	192	6 809	24.1
Bovid bone fragments												
Skull	619	451	35	388	1	358	136	51	129	—	2 118	
Vertebrae	269	83	50	174	9	130	68	20	78	—	881	
Ribs	1 275	912	108	537	15	690	200	104	252	—	4 093	
Bone flakes	3 130	2 240	379	2 097	65	1 660	434	209	459	—	10 679	
Miscellaneous skeletal parts	576	1 066	362	994	61	409	106	28	122	—	3 724	
Total fragments	5 869	4 752	934	4 140	151	3 253	944	412	1 040	—	21 495	76.0
Total sample	7 616	6 299	1 328	5 436	200	4 104	1 258	520	1 351	192	28 304	100.0

Grid I

Level 1 yielded a relatively small faunal sample, much of which belonged to domesticates. Cattle and sheep were identified with ovicaprine material being more common than cattle material.

The presence of two *Nerita* shells indicate coastal contact.

The assemblage from Level 2 is dominated by ovicaprine material; there is no evidence for *Capra hircus* in the sample. Evidence for a humped specimen of *Bos taurus* occurs in the form of a bifid thoracic vertebra. Domestic dog is present in Level 2 and the associated Floor Feature 1. Isolated human remains were found in the collection; this is not unusual in faunal samples and probably is the result of biotic activity in the vicinity of burials which were excavated separately or from burials which were disturbed in prehistoric times.

The wild bovid remains are mainly from small species. The presence of *Philantomba monticola* reflects a bushy environment. It is likely that most of the Bov I material is from *Sylvicapra grimmia*, a savannah duiker which is well represented in all the samples.

TABLE 2

Wosi: Composite Species List

	Early G2: 3,4		Late G1:2 + Features		G2:2		G1:1		Terminal G2:1		G3		G4, 5 & 6		G2 Test pit		Total
	MNI	NISP	MNI	NISP	MNI	NISP	MNI	NISP	MNI	NISP	MNI	NISP	MNI	NISP	MNI	NISP	NISP
Domestic mammals																	
Bos Taurus (cattle)	2	11	6	48	6	21	3	12	7	33	5	40	7	44	2	4	213
Ovis aries (sheep)	20	398	7	12	18	322	1	2	15	280	14	167	19	157	6	34	1 372
Capra hircus (goat)	2	26	0	0	3	19	0	0	2	17	0	0	1	1	0	0	63
Ovicaprines (sheep/goat)	45	932	21	237	49	966	3	29	48	824	56	471	61	404	10	101	3 964
Canis familiaris (dog)	1	1	2	2	0	0	0	0	2	6	0	0	1	1	2	2	12
Total domestic mammals	70	1 368	36	299	76	1 328	7	43	74	1 160	75	678	89	607	20	141	5 624
Wild species: mammals																	
Philantomba monticola (Blue duiker)	2	16	1	1	1	9	0	0	2	4	2	7	4	8	1	1	46
Cephalophus natalensis (Red duiker)	1	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
Sylvicapra grimmia (Common duiker)	2	30	3	8	3	26	0	0	5	55	2	18	6	16	1	3	156
Aepyceros melampus (Impala)	0	0	0	0	0	0	0	0	1	2	1	1	0	0	0	0	3
Tragelaphus scriptus (Bushbuck)	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1
Redunca fulvorufula (Mountain Reedbuck)	0	0	0	0	1	2	0	0	1	1	0	0	3	3	0	0	6
Redunca arundinim (Reedbuck)	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	2
Connochaetes taurinus (Blue Wildebeest)	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1
Bovid size Class I (small)	3	25	3	17	3	27	1	1	0	0	0	0	0	0	0	0	70
II (medium)	1	4	2	3	1	4	1	1	1	3	0	0	0	0	0	0	15
III (large)	1	1	1	1	0	0	0	0	2	3	0	0	1	1	0	0	6
Papio ursinus (Chacma baboon)	1	1	0	0	1	1	0	0	1	3	1	1	1	1	0	0	7
Cercopithecus aethiops (Vervet monkey)	1	4	0	0	1	3	0	0	0	0	1	1	1	1	0	0	9
Lepus/Pronolagus (Hare)	1	1	0	0	0	0	0	0	1	2	1	2	0	0	1	1	6
Hystrix africae-australis (Porcupine)	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1
Thryonomys swinderianus (Greater cane rat)	1	1	0	0	0	0	0	0	0	0	1	1	1	1	0	0	3
Unidentified rodents	5	9	8	16	2	2	0	0	0	0	0	0	1	2	5	29	58
Felis caracal (Caracal)	1	1	0	0	0	0	0	0	0	0	1	1	0	0	0	0	2
Felis caracal/Felis serval (Caracal/serval)	1	3	0	0	0	0	0	0	0	0	1	2	0	0	0	0	5
Felis silvestris (African wildcat)	0	0	0	0	1	2	0	0	1	1	0	0	0	0	0	0	3
Canis mesomelas (Black-backed jackal)	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	2
Aonyx capensis (Cape clawless otter)	0	0	0	0	1	1	0	0	0	0	1	1	0	0	0	0	2
Genetta genetta (Small-spotted genet)	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Atilax paludinosus (Water mongoose)	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	2
Unidentified carnivores	3	3	0	0	2	4	0	0	0	0	1	1	0	0	0	0	8
Orycteropus afer (Aardvark)	0	0	0	0	1	1	0	0	0	0	1	2	1	1	0	0	4
Loxodonta africana (African elephant)	X	179	0	0	X	3	X	1	0	0	X	36	X	68	X	4	291
Procavia/Dendrohyrax (Dassie)	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1
Equus burchelli (Burchell's zebra)	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1
Potamochoerus porcus (Bushpig)	1	5	0	0	0	0	0	0	1	1	1	1	1	1	0	0	8
Phacochoerus aethiopicus (Warthog)	0	0	0	0	1	2	0	0	1	1	2	2	0	0	0	0	5
Potamochoerus/Phacochoerus	0	0	0	0	1	2	0	0	1	3	1	1	1	1	0	0	7
Hippopotamus amphibius (Hippopotamus)	1	6	0	0	1	4	0	0	2	5	2	6	3	4	1	1	26
Birds																	
Bostrychia hagedash (Hadeda ibis)	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1
Numida meleagris (Helmeted guineafowl)	1	1	0	0	0	0	0	0	0	0	3	3	3	3	0	0	7
Francolinus swainsonii (Swainson's francolin)	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	2
Francolinus sp.	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1
Other birds	0	0	0	0	0	0	0	0	0	0	0	0	3	3	1	1	4
Reptiles																	
Varanus sp. (Monitor lizard)	0	0	1	1	1	1	0	0	1	3	0	0	1	1	1	4	10
Tortoise	1	12	1	2	1	15	0	0	1	8	3	12	3	5	1	1	55
Crocodylus niloticus (Nile crocodile)	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Snake	0	0	1	4	0	0	0	0	0	0	0	0	0	0	0	0	4
Amphibians																	
Xenopus sp. (Platanna)	0	0	1	7	0	0	0	0	0	0	0	0	0	0	1	1	8
Pyxicephalus sp. (Bullfrog)	0	0	0	0	1	2	0	0	0	0	1	1	0	0	0	0	3
Fish																	
Barbus sp. (Barbel)	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	2
Clarias sp. (Catfish)	1	8	1	3	1	5	0	0	1	4	3	5	4	7	0	0	32
Crustaceans																	
Freshwater crab	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1
Marine Mollusca																	
Oxystele sinensis (Periwinkle)	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1
Oxystele sp.	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Turbo coronatus (Turban shell)	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Turbo sp.	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1
Nerita sp.	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	2
Polinices didyma	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1
Nassarius kraussianus	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1
Perna perna (Brown mussel)	1	2	1	1	2	5	0	0	1	1	1	1	0	0	0	0	10
Freshwater Mollusca																	
Unio caffer	5	5	0	0	0	0	0	0	0	0	0	0	1	1	0	0	6
Bivalve	0	0	1	1	1	3	0	0	0	0	1	1	2	2	0	0	7
Terrestrial Mollusca																	
Achatina immaculata	4	16	5	12	11	24	0	0	6	19	10	18	8	17	0	0	106
Metachatina kraussi	8	18	3	5	9	29	0	0	7	12	4	10	8	10	1	5	89
Achatina/Metachatina	3	25	2	9	6	41	1	1	3	12	1	2	7	17	1	4	111
Total wild species	55	386	35	91	60	223	6	6	49	154	50	140	67	176	16	55	1 231
Total identified sample	125	1 754	71	390	136	1 551	13	49	123	1 314	125	818	156	783	36	196	6 855

Grid 2

The faunal samples from all levels of Grid 2 were dominated by domesticated bovids, of which ovicaprines constituted the major part. *Bos taurus* and *Capra hircus* are poorly represented. Isolated human remains occurred in all levels. Domestic dogs of two sizes occurred in Levels 1, 3 and 4.

There is a wider range of non-domesticated bovid species, with reedbuck, bushbuck and red duiker being new additions to the Wosi species list. Small bovids are the most common; the general environmental conditions reflected in the bovids is of bushy, relatively closed country.

The presence of zebra in Level 1 is interesting as it is the first record of zebra from the EIA in the Thukela Valley.

Small carnivores were hunted sporadically and an aardvark is present in Level 2. A large quantity of ivory-trimming fragments came from Levels 3 and 4; worked ivory was present in all three levels. Ivory is less common in the other excavations.

There is an interesting variety of molluscan species in Grid 2 which includes five marine species. *Turbo* sp. has not previously been recorded in other samples analysed by the authors.

The presence of *Achatina immaculata* in the deposits as complete specimens, may indicate recent intrusions on the site. *A. immaculata* is a species generally associated with relatively drier, open environments than the bushy, damp environment associated with *Metachatina kraussi*. This raises the question as to whether these species are contemporary. The switch in species may be a reflection of increasing bush clearance and a drier, sparser ground cover as the environment began to suffer the effects of a heavier population.

As can be seen from Table 2, the range of species is wider for the earliest level; this is unlikely to be a result of sample size differences as the size of the assemblages from Levels 3 and 4, and Level 2 are very similar. These species lists reflect a rich and varied environment, a cameo of the pristine fauna in the Thukela Valley when the first Iron Age settlers moved in.

The assemblage from the Test Pit is very similar to the rest of G2.

Grid 3

The excavator indicated that the nature of the pottery retrieved from the three levels excavated within this grid suggests that the material dates from the terminal occupation of the site. Small stock dominate the assemblage. There is no direct evidence for the presence of *Capra hircus* or *Canis familiaris* and *Bos taurus* is poorly represented. A wide range of wild species is present. Two species of birds are present. The two felids were possibly hunted for skins and body parts.

The sheep material in a pit associated with the deliberately buried pots came from five individuals. These included a subadult male, a large adult male, two juveniles and what was probably a female, the latter being represented by a hornless skull. It should, however, be borne in mind that hornless skulls do not necessarily indicate females among indigenous breeds in the South African context.

The identification of blue wildebeest, *Connochoetes taurinus*, is based on the size of the specimen, which was larger than the *C. gnou* material available at various institutions, but matched *C. taurinus* material. Blue wildebeest are an open woodland

species as opposed to the black wildebeest which shows a preference for drier grasslands. The presence of this species in an Iron Age assemblage is of interest as it establishes an historical range.

Grids 4, 5 and 6

The deposits of these three middens were divided into two levels. The dating of the material is unfortunately problematical; stylistically the pottery is, in the opinion of the excavator, more closely allied to the Msuluzi tradition than to the pottery from Ndondondwane. The faunal assemblages are similar to that of Grid 3 and are again dominated by small stock. *Capra hircus* is present in Grid 5 and domestic dog in Grid 4. There is an interesting variety of birds represented in Grid 4. Aardvark (*Orycteropus afer*) occurs again in Grid 6, along with mountain reedbuck (*Redunca fulvorufula*).

DISCUSSION

Animal husbandry of domesticates at Wosi

The number of individuals according to each age group in the two main groups of domesticates is shown in Table 3.

The majority of cattle in the Wosi assemblage are young or mature, the older age class (VIII) being only represented in G1/2 and age class IX being absent completely.

Among the small stock at Wosi there is a slight peak in the mature (Classes IV and V) groups. There is, however, a large number of young animals represented. The situation where young animals are strongly represented in assemblages from pioneering EIA sites has been noted before at Happy Rest (Voigt & Plug 1984), Msuluzi Confluence (Voigt 1980), and Magogo (Voigt 1984). At Magogo it was suggested that the Class I group was unlikely to be edible, based on a comment by a local informant. At Wosi this group is present in all except two assemblages. The presence of a high proportion of young animals in the small stock group (29 % of the sample less than 10 months old, 45 % less than 16 months) was interpreted as reflecting high mortality rates borne by pioneering small stock farmers until both herders and animals became accustomed to the environment and were able to better control stock losses due to environmental hazards. The age distributions at Wosi are less strongly biased towards very young animals than at the other very early sites. It is possible that environmental factors were playing some role, but alternate explanations for almost half of the animals being younger than 16 months do need to be sought. Plug & Roodt (1990) and Watson & Watson (1990) have interpreted over-representation of certain age groups in terms of cultural biases which can be supported by ethnographic evidence. No such evidence exists for small stock. Younger meat is certainly more tasty, and where no secondary product, such as wool, is to be gained from an older animal there may have been little reason to retain animals until they were older. In addition, weight gain in small stock slows after reaching maturity. It could be argued that the occupants were culling young males, but where it has been possible to identify the sex of animals there is no evidence for selective slaughtering of male animals in any of the samples. Thirty

TABLE 3

Wosi: Age at death of cattle and ovicaprines on basis of tooth eruption and tooth wear

Species and age class	Early	Late		Terminal			Probably Early				Total	
	G2:3/4	G2:2	G1:2	G2:1	G1:1	G3	G4	G5	G6	G2 Test pit	MNI	%
Immature												
Bos taurus (cattle)												
I: Less than 6 months	0	1	0	1	0	0	0	0	0	0	2	7.4
II: 6–15 months	0	2	0	2	0	1	0	0	0	0	5	18.5
III: 15–18 months	0	0	1	1	0	1	0	0	0	0	3	11.1
IV: 18–24 months	0	1	1	1	1	1	0	0	1	0	6	22.2
Mature												
V: 24–30 months	0	1	0	1	1	1	1	0	0	0	5	18.5
VI: 30–42 months	0	0	1	0	0	0	0	0	0	0	1	3.7
VII: 42 months plus	0	1	1	1	1	0	0	0	0	0	4	14.8
VIII: Mature	0	0	1	0	0	0	0	0	0	0	1	3.7
IX: Teeth in advanced wear	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	6	5	7	3	4	1	0	1	0	27	99.9
Immature Ovicaprines												
I: Less than 3 months	6	6	2	9	0	4	2	1	2	0	32	11.3
II: 3–10 months	7	11	2	5	0	7	5	2	5	3	47	16.7
III: 10–16 months	9	9	1	6	1	8	5	2	4	2	47	16.7
Mature												
IV: 16–30 months	8	11	4	11	0	8	3	0	7	3	55	19.5
V: 30–60 months	11	7	3	11	1	16	6	2	5	1	63	22.3
VI: More than 60 months	4	5	4	6	0	10	3	2	3	1	38	13.5
Total	45	49	16	48	2	53	24	9	26	10	282	100.0

five of the Wosi ovicaprines were male and thirty were female. Hornless skulls occurred as well as skulls with poorly developed horns; these were described as being female rather than male animals although personal observations of indigenous breeds have shown that male sheep frequently have poorly developed horns.

The small stock remains from Wosi reveal little about the type of animal involved. Measurement of bone material suggested that some of the goat material was from relatively small animals while among the sheep there were the remains of some extremely large individuals. A similar situation was noted at Ndondondwane (Voigt & von den Driesch 1984); the evidence suggests that the presence of a dwarf breed of goat in the area needs to be considered.

Two pathological cases were noticed among the ovicaprine material. One was a rib

with a healed fracture, the other the proximal articulation of a left femur with cut marks on the caput from butchering. The one side of the femoral head showed polish which could have been caused either by arthritis or by injury to the limb which resulted in atypical movement in the socket.

Grid II, Level I, yielded the right and left mandibles of a domestic dog. Overcrowding occurred of the right P3; this has not been noticed previously in dog material from South African Iron Age sites, the tooth rows usually displaying no overcrowding (Voigt 1983). Such overcrowding of teeth is a distinctive feature of domestication among early domesticated dogs in Europe and Asia.

The taphonomy of the assemblage

Breakage patterns and butchering damage in Iron Age assemblages have been extensively recorded. The Wosi assemblage displayed the normal range of butchering marks – shallow parallel cuts, chopping damage, scraping damage – as defined by

TABLE 4

Wosi: Proportion of burning in waste bone. (* Includes G2 Test Pit waste bone)

	Early	Late		Terminal			Probably Early			
	G2:3/4	G2:2	G1:2	G2:1*	G1:1	G3	G4	G5	G6	Total
Unburnt	5 338	4 298	850	3 831	140	2 988	882	377	955	19 658
Burnt	531	454	84	309	11	265	62	35	85	1 836
Total	5 869	4 752	934	4 140	151	3 253	944	412	1 040	21 494
% Burnt	9.1	9.6	9.0	7.5	7.3	8.2	6.6	8.5	8.2	8.5

Voigt (1983). These details were noted on the record cards for all identifiable material.

The preservation pattern of skeletal parts was not in any way unusual in any of the excavations; a summary of the preservation pattern is given in Table 4. Large numbers of ovicaprine mandibles occur in several of the samples.

Burning was also noted as the collection was analysed, and the results are presented in Table 5.

The lower levels of Grid II show the highest proportion of burning; the excavator specifically noted that there were ashy layers with a large amount of charcoal in this section of the excavation. However, the overall amount of burning is low compared to a site such as Magogo, where material from the Ash Heap and from pits displayed between 26 % and 16.8 % burning (Voigt 1984).

It was noted during analysis that numerous specimens were burnt only on part of their surfaces; this phenomenon has been recorded before, but not specifically mentioned. The interpretation of this phenomenon is that the specimens were partially buried and were damaged either by a veld fire or even by the deposition of hot ash on the midden. Thus only part of the bone would be burnt. Burning damage in such cases may, therefore, have nothing to do with the primary processing of the bone, but may be a secondary result of the later history of the site.

TABLE 5

Wosi: Preservation of Bovid skeletal parts. O/C = Ovicaprine B.t. = *Bos taurus*.

Skeletal part	G1:2		G2:1		G2:2	G2:3/4	G3	
	O/C	B.t.	O/C	B.t.	O/C	O/C	O/C	B.t
Cranial fragments	2	0	61	3	42	104	13	3
Atlas	2	0	8	0	9	11	1	0
Axis	0	0	6	0	10	9	1	0
Scapula	8	2	53	0	70	63	34	0
Humerus	17	1	53	3	61	70	23	1
Radius	20	0	74	2	77	86	33	2
Ulna	8	2	52	0	46	44	24	0
Pelvis	20	1	70	1	59	76	20	0
Femur	9	2	22	1	29	23	10	1
Tibia	15	3	48	3	55	59	20	1
Metapodials	44	2	136	5	143	121	57	4
Astragalus	3	0	25	1	33	34	22	2
Calcaneum	7	4	40	0	35	31	15	0
Naviculo-cuboid	1	1	3	0	12	15	3	0
Carpal/tarsal	0	4	6	3	16	17	8	6
Phalanges	20	8	86	1	128	133	47	5
Total	176	30	743	23	825	896	331	25

Fauna and environmental utilisation

The faunal lists from the different grids consistently reflect the utilisation of both bushy and more open environments by the occupants. *Philantomba* and *Potamochoerus* specifically indicate bushy/wooded environments such as gallery forests which would be expected along the river bank and up against the bases of the surrounding hills. Aardvark (*Orycteropus afer*), warthog (*Phacochoerus aethiopicus*), and zebra (*Equus burchelli*) indicate that more open habitats such as those found above the valley were being utilised for hunting. This is the first record of zebra from the EIA in the Thukela Valley. The presence of impala (*Aepyceros melampus*) is interesting. Plug (1990*a*) records impala from Mhlwazini Cave in the Drakensberg so this species may have occurred more widely in this area in the past.

Riverine species such as clawless otter (*Aonyx capensis*), cane rat (*Thryonomys swinderianus*), and *Clarias* sp. indicate utilisation of the river resources for food.

The presence of complete achatinid shells in deposits is an ongoing archaeozoological problem. Beads were being made out of small fragments of both *Achatina* and *Metachatina* material, so that both species of Mollusca were being utilised by the inhabitants. Whether they were a food source or not is more difficult to determine; there are records of their being used as food and it is possible that, if boiled, the animal could be withdrawn from the shell without breaking it. However, the habit of these creatures of aestivating in soft soil means that many, if not all, of the complete shells could be intrusive (Plug 1990*b*).

The presence of both *Metachatina kraussi* and *Achatina immaculata* on the site has been commented on by the excavator and the present authors. An examination of the mollusc beads showed that both genera were used. *A. immaculata* is a species usually associated with drier more open environments, while *M. kraussi* is a forest/bush dweller. Van Bruggen (1966) comments that *A. immaculata* is not found south of the Thukela, but does occur in Zululand. The relative proportions of the two

species may therefore be of limited usefulness in environmental reconstructions. It is also possible that complete shells are later intrusions (Plug 1990*b*); if *A. immaculata* is not contemporary with the Earliest Iron Age it might also not be contemporary on the later sites, such as Ndondondwane, where *Metachatina* has been identified as well as numerous achatinid fragments. These aspects of the terrestrial Mollusca should receive special attention during the continued analysis of the Ndondondwane material. There is also a possibility that *Achatina immaculata* beads were being traded in from further north through trade with nomadic San groups.

Cultural modification of bone, shell and ivory

Bone tools in the form of points and link-shafts are found on many EIA sites, although the quantities differ. The K2 assemblage on Greefswald was an exception, with over 600 bone tools being recorded; the collection was interesting in that it was clear that the tools were being made on the site (Voigt 1983). The occurrences argue strongly for a continuing San-Iron Age inter-relationship. The bone tool component decreases and changes in form in the Late Iron Age assemblages, with a decrease in the number of 'formal' tools and an increase in the number of what could be rather referred to as utilised bone pieces.

Wosi was no exception. Table 6 lists the number of bone tools found during sorting of the faunal material. The bone typology numbers used by Voigt (1983: 101) are used for identification; a broad description of each type is given for easier reference.

Wosi yielded 29 formal tools and five fragments of tools. Most of these were points of various kinds (17 specimens) with seven probable linkshafts.

The needle from Wosi is rectangular in section; the shaft is incompletely polished with the base cut across at an angle. The perforation was drilled from one side only.

The bone tubes are interesting; they have been formed by cutting both ends off a shaft (Bov II size); the ends and shaft are polished from use. One specimen from Grid II at Wosi is decorated with 16 grooves across the diameter of the shaft. Grid II also yielded an ovicaprine tibia shaft with an intact distal epiphysis. The shaft was polished from handling and the epiphysis perforated for suspension. One likely use for these tubes is as whistles for controlling stock, a well documented practice.

When the horizontal distribution of the bone tools in Grid II was listed it was found that most of the tools came from Q4(12) and Q1(10).

The vertical distribution of the ivory pieces showed a concentration in Levels 3 and 4 of GII, and in GIV. GII Level 1 has the third largest sample of ivory; there is, therefore, no correlation between the working of ivory and the presence of bone tools.

Two bones with polish due to utilisation were found in the assemblage. These were a rib and an ulna fragment. Two rib fragments had notched edges. One is very irregular and worn, the other has six distinct V-shaped notches cut into it. The latter specimen is broken at both ends; it is difficult to see what the function of it could have been.

Two perforated teeth were found, presumably to be used as ornaments. One came from a young adult jackal; the other was too badly damaged to be identified. Similar specimens are known from Ndondondwane and Magogo.

A much more sophisticated ornament is a flat, triangular bone fragment 26 mm

wide and 24 mm deep with a perforation at the apex. The edges are carefully decorated with small, drilled holes.

A number of faunal collections, Schroda in the Northern Transvaal (Voigt & Plug 1981), Magogo (Voigt 1984), and Ndondondwane (Voigt & von den Driesch 1984), to name a few, have produced ovicaprine astragali which have been abraded laterally and medially, often to the point that all distinguishing features have been obliterated. The Wosi collection produced a sheep right and a left astragalus which showed this kind of modification. A study of divining sets in ethnographic collections indicated that it was likely that these formed part of a divining set. Plug (1987) studied a number of divining sets and listed the species present. Marine Mollusca, baboon, suid, aardvark and carnivore all occur frequently in such sets, associated with bovid and other remains. It is therefore likely that several specimens from this site, including the aardvark, might come from such a set.

The assemblages yielded a wide range of molluscan species. An achatinid fragment and a specimen of *Oxystele sinensis* were drilled for suspension.

Most of the ivory from Wosi came from elephants. Grid II yielded two pieces of hippopotamus tusk, each with a cut, flat edge. In Grid III we found a rectangular piece of hippopotamus ivory, 31.8 x 29.7 x 9.6 mm, with two flat cut edges and convergent 'flaking' from three sides. The centre of the flaked face is rough and weathered. The piece looks like a blank for a pendant of some sort.

Table 6 lists the elephant ivory finds from Wosi. Both narrow and deep armband fragments occur. Most have two flat edges, but in some cases one edge is slightly

TABLE 6

Wosi: Culturally modified bone and ivory pieces.

	G2:3/4	G2:2	G2:1	G1:2	G3	G4	G5	G6	Test pit G2	Total
Bone points										
Type 502	0	3	0	0	1	0	0	0	0	4
503	2	0	4	0	0	0	0	0	0	6
505	0	0	1	0	0	0	0	0	0	1
509	0	0	1	0	0	0	0	0	0	1
518	2	1	1	0	0	0	0	0	0	4
527	0	1	0	0	0	0	0	0	0	1
Linkshafts										
512	4	0	1	0	0	0	0	1	0	6
513	0	0	1	0	0	0	0	0	0	1
Eyed needle										
523	0	0	1	0	0	0	0	0	0	1
Bone tube										
534	0	1	1	0	0	1	0	1	0	4
Polished mid-sections	2	1	0	0	0	0	0	0	0	3
Total	10	7	11	0	1	1	0	2	0	32
Ivory										
Bangle fragments										
5–15 mm	2	1	0	6	2	4	0	1	1	17
+ 15 mm	8	8	5	0	2	8	0	0	0	31
Trimming flakes	179	30	61	0	37	57	3	8	4	379
Total	189	39	66	6	41	69	3	9	5	427

convex. Two armband fragments of 18 mm deep show wear on the inside. The more finely finished specimens have a convex outer face.

Each large collection of ivory from an Iron Age site throws a bit more light on manufacturing processes, although we are still not sure how such totally flat edges and smooth exteriors were obtained. Two large fragments from Wosi which appear to be incomplete armbands show shallow cut marks on the inside and on the outside faces. Another thick fragment with two flat edges has two deep, V-shaped cuts converging across the surface, as if a knife blade was being used to trim the ivory. Another piece shows careful flaking along one edge, possibly in an attempt to reduce the depth of the piece.

The two most interesting pieces, both from Level 3 in GII, throw some light on the preparation of ivory for armband making. One is a cut section from the solid end of a tusk. It measures 33 x 27 x 17 mm. One face is rough, the other cleanly cut, as are two edges. The fragment looks like a piece cut off the top of a damaged tusk.

The other specimen is a small (12.2 mm diameter) half circle of ivory with one cut face. The centre has been neatly drilled out and then the 'plug' broken out of a solid piece. This specimen suggests that armbands might (sometimes) have been made from a section cut off the solid end of the tusk. The centre of the solid piece was then gradually worked out, first by drilling a small hole and removing a 'plug' such as this specimen, then widening the centre by flaking and cutting. Certainly preparing an armband must have been a laborious process, as evidenced by the very large number of trimming flakes found in the collection.

The overall impression is that ivory working was practised at several of the occupation areas and the waste material dumped on the middens, the lowest levels of GII being the most productive.

CONCLUSIONS

The faunal assemblage from Wosi is of great interest because of the early date and the specialised nature of the site. The composite species list for Wosi (Table 2) shows a wide range of species which reflects a rich fauna in an area which had probably not been utilised by agriculturists for very long. It is therefore useful as a reflection of the fauna of the Thukela Valley before the development of large settlements. Most of the wild species support the excavator's view of a relatively closed, bushy environment. A few species indicate more open country nearby, warthog and zebra particularly, and the probable presence of blue wildebeest is of interest to zoologists. Impala and zebra are both on the southern limit of their known distribution.

There is little difference between the species lists for the early, late and terminal phases at Wosi. The only difference lies in the proportions of the two main groups of domesticates, cattle and ovicaprines. In Levels 3 and 4 cattle are half or one third less frequently represented than in Levels 2 and 1. It is this disproportion among the stock which is of most interest.

In all the deposits excavated at Wosi, ovicaprine remains outnumber cattle remains. The disproportion is too large and too consistent on a site in which the excavations were really extensive, to be a sampling problem. The same disproportion has been recorded on other EIA sites in Natal. The argument has been put forward that cattle are present on these sites, but are not found because no excavation is done

in the areas relating to the *isibaya*. Certainly all the Wosi deposits are identified by the excavator as being occupation deposits; extensive sampling did not reveal evidence of a central or even a peripheral *isibaya*.

It may be that Ndondondwane will provide some clues to the problem of horizontal distribution in relation to activity areas; at present we believe that the argument holds true that, in a large scale excavation, the proportions found in midden deposits are a realistic reflection of the proportions of species present.

If one is to argue that cattle are present, but invisible, the same argument would have to be applied to goats, which are even more poorly represented in the sample. A number of sites in Natal have shown the same low number of goats as opposed to sheep; it is difficult to explain why sheep, which are generally more susceptible to disease, should be the dominant small stock. Goats as browsers would presumably be more suited to the more closed vegetation of the EIA valley; in addition, they require less attention when grazing than do sheep. While goats are assumed to be the hardier breed, it was noticeable that, during the droughts of the 1980s, it was the sheep which survived and very few goats were to be seen. If the sheep were similar to the present-day Nguni sheep, they would have been a hairy rather than a wool breed, so that they would not have been producing wool as a secondary product. The only useful secondary product might therefore have been fat as deposited in the tail of some of the indigenous breeds. The importance of fat has been discussed by a number of researchers and may provide the answer to the importance of sheep to the early Iron Age pioneers. Present-day Nguni sheep are not, however, consistently fat-tailed. The fauna from Wosi is clear evidence for small stock farming at this period of time. The same picture emerged at Magogo, but changes at Ndondondwane. The relatively high number of young animals is particularly noteworthy; this may reflect pioneer stock farmers and their flocks coming to terms with a new environment or the beginning of some form of flock management. During the analysis of the Magogo assemblage, domestic dog was tentatively identified and was quoted as the earliest evidence for dogs. The Wosi material is firmly identified and should be seen as the earliest sure identification of domestic dog in the Iron Age of South Africa. The functions and the possible presence of more than one size of dog on even the early Iron Age sites is an aspect which is receiving further attention. Research on present-day indigenous breeds is urgently needed and is fortunately now receiving attention with the start of an ethnographic study by a researcher in Natal. With regard to the other main domesticates we are already able at this early date to identify both Sanga and Afrikaner cattle and it is possible that distinct types of sheep and goat are present as reflected in differing sizes of long bones.

Wosi is interesting not only for its early date, but also for the evidence of specialised crafts, with the utilisation of talc, schist and ivory. The ivory-working tradition continues at the later site of Ndondondwane, providing a similarly long record to that of the Northern Transvaal Iron Age. The extensive use of ivory and evidence for the manufacture of ivory ornaments largely disappears after 1000 AD; perhaps by this time most ivory was being traded out of Africa via the East Coast.

Wosi provides us with well-preserved evidence for an early specialised large-scale settlement in the Thukela Valley. This tradition continues at Ndondondwane and other sites; the analysis is therefore of great use in providing a glimpse of the faunal

spectrum during the earliest settlement of the Valley. The Ndondondwane analysis will enable us to continue with the reconstruction of Iron Age subsistence in the Thukela Valley.

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