CATTLE REMAINS IN SOME PRE- AND PROTOHISTORIC SOCIETIES OF THE CENTRAL CATTLE PATTERN IN SOUTHERN AFRICA

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Summary

Cattle are important in the social and ritual life of traditional Bantu-speaking people of southern Africa, in a system known as the Central Cattle Pattern. The Late Iron Age people were ancestral to the modern Bantu-speaking people and had similar social structures. Cattle bones, byres and other structures associated with the Central Cattle Pattern are common finds. The association between Early Iron Age communities and cattle is less clear, but it is possible that the Central Cattle Pattern already existed in some form.

Bosutswe was occupied from 700 AD to after 1450 AD. For most of its history domesticates were important. At uMgungundlovu almost all faunal remains are cattle, but at Randjies (17th-18th centuries) domesticates were scarce. The differences in cattle samples from the sites can be linked to social and environmental factors. Nevertheless it can be demonstrated, that all three sites were operating within the Central Cattle Pattern.

Résumé

Restes de bovins dans des sociétés pré- et protohistoriques du "Central Cattle Pattern" d'Afrique australe.

Les bovins sont importants dans la vie sociale et rituelle des peuples de tradition linguistique Bantu d'Afrique australe, dans un système appelé "Central Cattle Pattern". Les peuples de la fin de l'Âge du Fer étaient les ancêtres des groupes de langue Bantu actuels et avaient des structures sociales similaires. Os de bovins, étables et autres structures associées au "Central Cattle Pattern" sont des découvertes fréquentes. L'association entre les communautés de l'Âge du Fer ancien et les bovins est moins claire, mais il est possible que le "Central Cattle Pattern" ait déjà existé sous une certaine forme.

Bosutswe a été occupé de 700 à plus de 1450 ap. J.-C. Pendant la plus grande partie de son histoire, les animaux domestiques jouaient un rôle important. À uMgungundlovu, presque tous les restes de faune appartiennent au bœuf, mais à Randjies (17e-18e siècles), les animaux domestiques étaient rares. Les différences observées dans les échantillons de bœuf peuvent être liées à des facteurs sociaux et environnementaux. Cependant, on peut démontrer que les trois sites étaient opérationnels au sein du "Central Cattle Pattern".

Zusammenfassung

Überreste von Rindern aus einigen prä- und protohistorischen Gesellschaften des "Central Cattle Pattern" Südafrikas.

Rinder spielen im sozialen und rituellen Leben traditionell Bantu sprechender Völker Südafrikas eine entscheidende Rolle. Das System ist unter dem Begriff "Central Cattle Pattern" geläufig. Die Menschen der Späten Eisenzeit sind als direkte Vorfahren der heutigen bantusprechenden Bevölkerung anzusehen und hatten ähnliche Sozialstrukturen. Rinderknochen, Stallungen und andere Befunde, die mit dem "Central Cattle Pattern" in Zusammenhang zu bringen sind, werden regelmäßig vorgefunden. Die Bedeutung des Rindes in der Frühen Eisenzeit ist weniger klar, aber es erscheint möglich, daß das "Central Cattle Pattern" bereits bestanden hat.

Der Ort Bosutswe war von 700 n. Chr. bis 1450 n. Chr. besiedelt. Haustiere haben hier fast immer eine große Rolle gespielt. In uMgungundlovu stammen fast alle Knochen vom Rind, in Randjies (17.-18. Jh.) sind Haustiere hingegen selten. Die Unterschiede können mit sozialen Faktoren und Umwelteinflüssen erklärt werden. Trotzdem kann belegt werden, daß sich alle drei Stationen innerhalb des "Central Cattle Pattern" bewegen.

Key Words

Southern Africa, Iron Age, Cattle, Tsetse, Central Cattle Pattern.

Mots clés

Afrique du Sud, Âge du Fer, Bovins, Tsetse, "Central Cattle Pattern".

Schlüsselworte

Südafrika, Eisenzeit, Rind, Tsetse-Fliege, "Central Cattle Pattern".

Introduction

Early and Late Iron Age sites in southern Africa have yielded a wealth of faunal remains, including those of domestic animals. However, relationships between various Iron Age communities and their livestock are not always clear. The faunal remains from three Iron Age sites in South Africa and Botswana, occupied by different people at different times, provide insights into the use of cattle during the Iron Age. The cattle remains from the sites vary from small samples to assemblages consisting almost

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exclusively of cattle bones. In this study the differences and the relationships between the communities and the Central Cattle Pattern will be discussed.

Cattle in southern African Bantu-speaking communities

Cattle are of great importance in the traditional Bantu-speaking societies of southern Africa. They are closely linked to social and religious systems and are used in ancestor worship, exchanged for wives and given as tributes to chiefs (Quin, 1959; Krige, 1974; Kuper, 1982). This system, known as the Central Cattle Pattern, is characterised by settlements where, ideally, the cattle enclosure is the centre of the village. Oral traditions, historical accounts and archaeological evidence show that the Central Cattle Pattern was present in most Late Iron Age communities in southern Africa.

The southern African Iron Age dates from c. 200 AD to the end of the 19th century. It is arbitrarily divided into the Early Iron Age from c. 200 to c. 1200 AD, and the Late Iron Age from c. 1300 AD. It is characterised by settled communities, agropastoralism, skills in mining, ore reduction, metal working and pottery manufacturing. According to archaeological evidence cattle was already of social importance during the Early Iron Age. The Central Cattle Pattern could therefore already have existed in some form at the time (Huffman, 1990).

The sites and their environments

Bosutswe, Randjies and uMgungundlovu combined, cover the Early as well as the Late Iron Age. At Bosutswe, in eastern Botswana, the excavators identified four different occupation phases based on the pottery traditions (Denbow pers. comm., 1992): Taukome 700-800 AD, Toutswe 800-1200 AD, Mapungubwe 1200-1300 AD and Zimbabwe from c. 1450 onward. Randjies in the northwestern Transvaal dates to the 17th-18th centuries AD and relates to the Birwa, a Sotho-speaking people (Van Schalkwyk, 1994). uMgungundlovu in KwaZulu-Natal was the military headquarters of the Zulu king Dingane. It was built in 1829 and abandoned and destroyed on the king's order in 1839 (Plug and Roodt, 1990). It was a male society created to train an army and consisted of soldiers and their helpers. The only females were the king's women. Economic activities such as growing crops were not part of the priorities. Cattle were send to uMgungundlovu as tributes to the king, while other foods were sent to the soldiers by their families. The king daily selected those animals that were to be butchered for food or to provide hides for the shields of new regiments (Gardiner, 1961).

The sites are in bush-savanna environments and are geographically far apart (fig. 1). The vegetation around Bosutswe is dominated by grasslands, mopane and thorn trees (Smithers, 1971). West of the site lies the semi-arid Kalahari. Rainfall at Bosutswe is generally below 400 mm per annum.

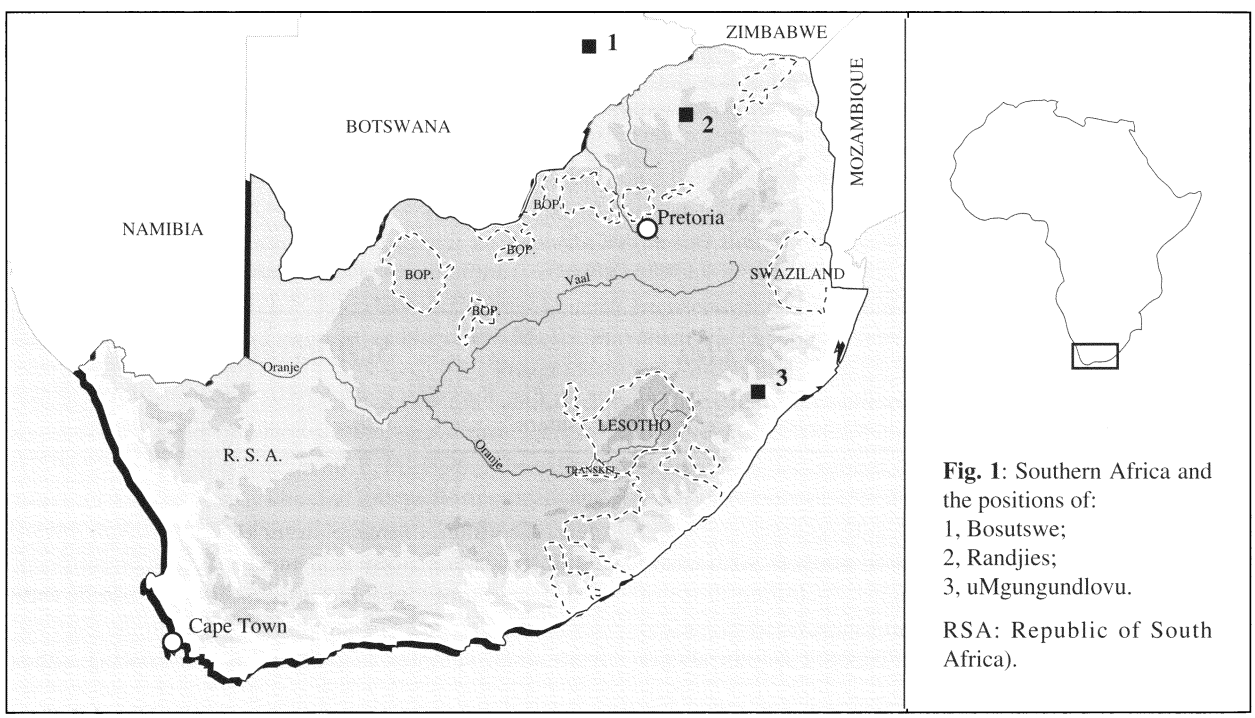

Fig. 1: Southern Africa and the positions of:
1, Bosutswe;
2, Randjies;
3, uMgungundlovu.

RSA: Republic of South Africa).

Table 1: The domestic bovids and wild macromammals of the phases of Bosutswe, Randjies and uMgungundlovu: QSP, Quantifiable skeletal parts; NISP, Number of identified skeletal parts.

Site		Cattle		Sheep/goat		Wild mammals	
		QSP	%	QSP	%	QSP	%
Bosutswe	Taukome	95	23	70	16.8	250	60.2
	Toutswe	953	41.8	618	27.2	706	31
	Mapungubwe	971	56	419	24.2	343	19.8
	Zimbabwe	175	53.5	94	28.8	58	17.7
Randjies		73	4.2	86	4.9	1598	90.9
uMgungundlovu		2258	98.4	8	0.4	28	1.2

Site		Cattle		Sheep/goat		Wild mammals	
		NISP	%	NISP	%	NISP	%
Bosutswe	Taukome	101	22.4	76	17.0	273	60.6
	Toutswe	1125	41.5	698	25.8	886	32.7
	Mapungubwe	1197	53.6	554	24.8	481	21.6
	Zimbabwe	175	53.5	94	28.8	58	17.7
Randjies		77	2.8	96	3.5	2595	93.7
uMgungundlovu		2576	99.3	8	0.3	10	0.4

Randjies lies in the Arid Sweet Bushveld (Acocks, 1988) where rainfall is below 500 mm per annum. Most grasses are sweet and palatable throughout the year. The surroundings of uMgungundlovu support different veld types with mostly sour grasses on the high lying regions, a veld type with forest and scrub of tropical affinity and a lowveld type with mostly sweet grasses. Rainfall varies between 500 and 1 500 mm per annum, depending on the topography.

The faunal samples

The numbers of the cattle bones from the sites differ markedly. At Randjies cattle remains are relatively scarce, on Bosutswe they are common and at uMgungundlovu almost all the remains are cattle. The Bosutswe and Randjies samples are heavily fragmented and only some teeth and small bones are found complete. The uMgungundlovu material is better preserved, but complete longbones are scarce.

The species compositions of the different samples reflect the natural environment as well as human exploitation patterns (Plug and Roodt, 1990; Plug, 1994a, 1994b). Table 1 presents the numbers of fragments from cattle, sheep/goat, and wild macromammals. Both NISP (Number of Identifiable Skeletal Parts) and QSP (Quantifiable Skeletal Parts) counts are given, where the former are fragment number counts and the latter compensate for fragmentation (Plug, 1988).

Cattle skeletal parts representation

There are differences in the representation patterns of the various skeletal elements between the sites (tab. 2). The differences between Bosutswe and Randjies can be attributed to the small sample of the latter. The uMgungundlovu sample has relatively large numbers of skull (maxillary and cranial) fragments. Bone densities (Lyman, 1992) and skeletal parts representations on the three sites do not correlate with either Lyman's figures or each other's.

Cattle age categories

Age categories were determined on the basis of tooth eruption and tooth wear as described by Voigt (1983), and also on epiphyseal fusion. The results are listed in table 3. Indigenous Sanga/Nguni cows reach breeding age between 24 and 30 months (Classes IV-V; Osterhoff *et al.*, 1979; Maree and Casey, 1993)

Discussion

The cattle remains from Bosutswe increase from the earliest phase to the later phases and suggest increased emphasis and greater dependence on domesticates. However, if the phases represent different culture groups and not the gradual evolution of one group, then the increases may represent cultural differences.

The Randjies fauna is unusual because of the small cattle sample. The Birwa were part of the Central Cattle Pat-

Table 2: Bone densities (Lyman, 1992) and cattle skeletal parts representation. Note that not all bones have density values. (BOSU: Bosutswe; RAN: Randjies; UMG: uMgungundlovu).

Skeletal part	Density	BOSU		RAN		UMG	
	g/cm	QSP	%	QSP	%	QSP	%
Horncores		19	1.1	0	0	5	0.2
Skull		82	4.6	2	2.8	646	24.9
Mandible/hyoid	0.57	61	3.4	1	1.4	68	2.6
Teeth		476	26.7	18	25.4	318	12.3
Axis	0.16	8	0.4	0	0	8	0.3
Atlas	0.13	6	0.3	0	0	3	0.1
Scapula	0.36	50	2.8	1	1.4	10	0.4
Humerus proximal	0.23	12	0.7	1	1.4	10	0.4
Humerus distal	0.39	36	2.0	0	0	19	0.7
Radius proximal	0.42	41	2.3	1	1.4	25	1.0
Radius distal	0.43	33	1.9	2	2.8	18	0.7
Ulna proximal	0.30	79	4.4	2	2.8	21	0.8
Ulna distal	0.44	1	0.1	0	0	1	0.1
Pelvis	0.27	56	3.1	2	2.8	16	0.6
Femur proximal	0.36	34	1.9	0	0	24	0.9
Femur distal	0.28	42	2.4	0	0	12	0.5
Tibia proximal	0.30	29	1.6	0	0	12	0.5
Tibia distal	0.50	70	3.9	3	4.2	29	1.1
Os malleolare		27	1.5	2	2.8	0	0
Patella		5	0.2	1	1.4	4	0.2
Metacarpal proximal	0.56	34	1.9	3	4.2	180	6.9
Metacarpal distal	0.49	9	0.5	0	0	134	5.2
Metatarsal proximal	0.55	44	2.5	0	0	179	6.9
Metatarsal distal	0.46	9	0.5	0	0	84	3.2
Carpals		88	4.9	3	4.2	75	2.9
Calcaneus	0.64	33	1.8	4	5.6	51	2
Talus	0.47	52	2.9	0	0	50	1.9
Os centroquartale	0.39	33	1.9	1	1.4	99	3.8
Tarsals		18	1.0	0	0	87	3.4
Sesamoids		40	2.2	2	2.8	73	2.8
Phalanx 1	0.42	129	7.2	13	18.4	41	1.6
Phalanx 2	0.25	69	3.9	5	7.1	159	6.1
Phalanx 3	0.25	55	3.1	4	5.7	133	5.1
TOTAL		1780		71		2594	

Table 3: *Bos taurus* age categories. MNI based on tooth eruption, tooth wear and epiphyseal fusion. (BOSU: Bosutswe; RAN: Randjies; UMG: uMgungundlovu).

CLASS	BOSU	RAN	UMG
I (neonate)	8	1	1
II (juvenile)	8	1	1
III (juvenile)	16	3	2
IV (sub-adult)	11	0	6
V (young adult)	7	1	3
VI (adult)	11	0	6
VII (adult to mature)	18	3	14
VIII (mature)	18	1	18
IX (aged)	18	0	10
TOTAL	115	10	61

tern and needed cattle to provide bridewealth, and to fulfil ritual and social obligations. However, according to Holleman (1952), these functions can be maintained without a community having large herds. Oral tradition and historical evidence indicate that the Birwa took care of other people's cattle from time to time (Sonntag, 1894; Van Warmelo, 1953). This would have limited their access to cattle, but the few remains in the samples suggest that they were apparently able to obtain sufficient animals to cater to their needs.

The uMgungundlovu cattle remains reflect the uniqueness of the site. Although uMgungundlovu was also part of the Central Cattle Pattern, it was a specialised community and therefore not typical of southern African Late Iron Age sites of that period.

The positions of the cattle byres at Bosutswe, as well as of the huts, suggest that the site was part of the Central Cattle Pattern, from the earliest period of occupation onward. Evidence from other sites (Voigt, 1983; Plug and Voigt, 1985; Huffman, 1990) shows that this pattern probably already existed by 800 AD. The Bosutswe material suggests that it could have been firmly established well before 800 AD.

Animals such as hyaenas, crocodiles, anteaters and leopards are at present associated with rituals, traditional healers and diviners in Bantu-speaking societies (Plug 1987, 1994a). Their presence in the Bosutswe units of the Toutswe and Mapungubwe phases supports the evidence that these people were part of the Bantu-speaking complex of southern Africa.

The butchering ages at Bosutswe and uMgungundlovu show that 31% at the former and 46% at the latter site were mature to aged animals. The Randjies samples are too small for comparison. Juveniles constitute 28% of the sample at Bosutswe, but only 5% at uMgungundlovu.

At Bosutswe animals in the non- or low productive categories (either too young or too old) were more frequently slaughtered than the adult fertile animals. It is possible that young bulls and old cows were utilised the most, leaving the main breeding stock intact.

At uMgungundlovu the young animals butchered were limited to the royal enclosure, but cattle slaughtered for the warriors were adult to aged. In his diary Gardiner (1961) observed that the king selected old animals for slaughter. He also mentioned that the king was of the opinion that tough meat makes tough warriors. Cattle ages reflect therefore the specialised function of the site. Herd management for purposes other than to cater to the immediate needs of the king and the soldiers were not considered.

Randjies and Bosutswe were not sufficiently spatially excavated to establish meat distribution patterns, but at uMgungundlovu various activity areas were sampled and patterning of meat distribution was demonstrated (Plug and Roodt, 1990). This include associations of different cuts with the status of the consumers. Limbbones were associated with the low status, young helpers of the smiths and the skull fragments with the master smiths. Traditionally Zulu people regard the legs as inferior cuts and the heads as status food suitable for adult men (Krige, 1974). Traditions on meat distribution as witnessed from the uMgungundlovu samples still exist amongst Zulu people today.

All three sites occur in regions where tsetse fly is or was endemic and spread nagana, a disease deadly for cattle (Fuller, 1923; Dicke, 1932). Even today tsetse prevents animal husbandry in affected regions (Maugh, 1982). Only the dwarf cattle of West Africa has some resistance to nagana (Vermeer, 1982; Oldfield, 1983), but these animals were not present in southern Africa. The population dynamics of tsetse is not fully understood, but climate and human activities play a role. Expansions and contractions of tsetse populations have been recorded in modern history (Dechsler, 1960; Lambrecht, 1964; Buyst, 1977), and would have occurred in the past.

The abundant cattle remains at Bosutswe and uMgungundlovu indicate that tsetse was not a problem at the time the sites were inhabited. At Randjies the situation is not clear and tsetse could have been active when the site was occupied (Fuller, 1923).

If tsetse infestation is light, cattle can be kept, provided they are penned during the times of day when the fly is most active. Tsetse can also be controlled through bush clearing, again only if infestation is not severe. However, keeping large herds under such conditions is not feasible. The people of Randjies could have had a few animals by managing their cattle as mentioned, but it is more likely that they took care of other people's cattle during those seasons or periods when the flies were not active.

Conclusions

This study has shown that the strategies associated with cattle keeping and cattle use can vary markedly within societies of the Central Cattle Pattern, and that the system was flexible in some respects. It allowed for specialised communities, as in the case of uMgungundlovu, and also functioned where cattle keeping was peripheral, as at Randjies.

The size of the herds, or even ownership of cattle were apparently not determining factors. However, access to cattle in sufficient numbers to allow a people to fulfil essential social and ritual obligations as defined within the Central Cattle Pattern was important. The Randjies sample shows that those numbers do not need to be large.

The distribution of the tsetse fly was a factor in cattle keeping. However, the distribution of tsetse is erratic and areas where flies occur at present, or during historical times, could have been free of infestation at other times.

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