

ETHNOGRAPHY, ENVIRONMENT AND THE HISTORY OF THE
NGUNI IN THE EIGHTEENTH AND NINETEENTH CENTURIES

by

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As Guy (1) has demonstrated in a recent paper concerned with the later phases of the Zulu Kingdom, any study of the history of Nguni communities should begin with a thorough appreciation of economy and society at the local level. For the majority of the population in such societies was involved in the processes of primary production; subsistence cultivation and animal husbandry, which directly occupied some 90 per cent of the population. (2) Clearly, unless this sector is fully understood, political developments on the wider scale must remain but partially explained.

However, the economic history of the Nguni in the pre-colonial period has a certain intractability which renders the more established methods of historical investigation inappropriate. For without the direct observations and records of literate travellers and settlers it is necessary to rely on oral tradition, whether it be in the form of documents or synthesis (as with the work of Stuart and Bryant), or collected from informants of the present day. Although such sources provide invaluable information concerning the political history of the past few centuries, the commonplace events of everyday life, the events which, combined, form the economy at the local level, tend either to be forgotten or impossibly enmeshed with the life-style of the present. Data that do survive are too insubstantial for the reconstruction of the economies of the period before White settlement.

Because of these difficulties, historians have tended to turn both to the ethnographic (3) literature and to environmental data as sources of analogies for the past. This approach, however, has led to a new set of problems: problems which tend to annul much of the value of the analogies. In this paper, I shall discuss these difficulties, and attempt to show that they may be avoided by approaching the economic history of the Nguni from a somewhat different angle.

The Problems of Ethnographic Models

The main difficulty in employing ethnographic models in the interpretation of the past is that they lack a diachronic dimension. At worst, the ethnographer regards subsistence farming economies as too primitive to allow the possibility of change, while at best the emphasis is laid on the functional interrelationship of the components of the society rather than change in the nature of these components. Bryant, in The Zulu People, makes the first assumption explicit:

What the Zulus were like one hundred years ago 'before the Whiteman came' (say, in Shaka's lifetime), that they continued to be right up to the time of the Zulu war in 1879 (let us say, right up to the time of our own arrival among them in 1883). And what they were a hundred years ago, that they were, in all likelihood, even a thousand, for the obvious reason that their primitiveness allowed no further simplification. Then, and largely still, they were mankind reduced to its simplest terms. (4)

In Krige's The Social System of the Zulus (5), no such definite statement is made. The bias, however, is similar. For, after a cursory chapter entitled "Zulu History and its Influence", which is concerned with the political history of the more important chiefs and kings, Krige breaks society down into major sectors, subjects such as "The Zulu Village - Food and Narcotics", "Marriage Ceremonies" and "Economic Life", and describes these aspects without any consideration of possible change. Such an approach is indeed well grounded in ethnographic tradition, and could potentially be a fruitful source of models for the past. Such a possibility is, however, denied by the manner in which source material is treated. For, as there is no recognition of the possibility of change, sources are amalgamated without regard to the period which they describe. Thus, for example, her chapter on the economy is a synthesis of information derived from the diaries of Fynn and Isaacs, who described the Nguni of the early nineteenth century, Bryant, who arrived in the area some sixty years later, government officials of the early twentieth century, and personal observations and interviews, collected in the 1930s. If her underlying assumption that the local economy is unchanging is challenged, Krige's synthesis clearly becomes inappropriate as an analogy to aid the understanding of the past.

The problems which develop when the ethnography is used in such a way are clearly illustrated by the role assigned to cattle in the Nguni economy. Ethnographers have always regarded dairy produce as a basic staple. Thus Krige writes:

The cattle in a Zulu kraal are thus regarded not as mere domestic animals kept for their utility, but as an essential part of the village. The Zulu cannot conceive of existence without his beloved cattle ... Of all the activities which are considered the special sphere of men, the most important in tribal economy is certainly the rearing and care of cattle. Cattle provide meat and amasi, the mainstay of the Zulu diet, as well as hides for shields and for clothing, while the wealth of a man is always reckoned in cattle, since it is with cattle that he must acquire wives for himself and his sons and pay doctor's fees when there is illness in his kraal. (6)

More recently, Sansom has examined the "traditional economy" of the Nguni, again, by implication, a structure which has changed little at the local level. Comparing the Highveld of the west with the slopes east of the Drakensberg escarpment, he writes:

... the Eastern ecology permitted a closer integration of cattle into the tribal economy than could be achieved in the west. For Nguni, milk vied with grain to provide the people with their staple food ... Milking was part of the daily round in every kraal and men tried to get sufficient cattle to provide milk throughout the year. Zulu herds were dairy herds ... (7)

Thus, in the ahistorical ethnographic approach, cattle are seen as the linchpin of the Nguni economy. Indeed, historians have tended to make this assumption explicit. For example, Gluckman states:

The Nguni family of Bantu-speaking people who later formed the Zulu nation migrated into south-eastern Africa about the middle of the fifteenth century. They were pastoralists practising a shifting cultivation ... cattle raids were frequent. (8)

Oliver and Fagan, discussing the spread of Iron Age societies, assume that the Nguni were "primarily pastoral", and imply that some of these people arrived in Natal heavily dependent on milk as a staple. (9)

Although primary sources, such as the diaries of Fynn and Isaacs, confirm beyond doubt that cattle were the nucleus of economic life in the early nineteenth century, archaeological evidence from earlier settlements suggests a different picture. This is best illustrated by the ninth century settlement at Ntshokane, built on a tributary of the Mooi River. (10) Food debris recovered indicates that a fair proportion of the meat consumed was from wild species, although the majority of animals were domesticated. This latter group included both caprines and cattle, and, significantly, the former were the more numerous. When these data are converted to a rough estimate of meat yield, domestic cattle are, marginally, the most important single species. However, small stock and wild species combined clearly comprised the larger part of the diet, and the faunal component in the diet of the Iron Age farmers of Ntshokane must be seen as varied; it is clearly unjustified to see cattle as the pivot of the economy. Data from other prehistoric settlements, although less substantial, is consistent. Thus, for instance, excavation of a large midden deposit at the settlement of Ngabeni, on the Babanango plateau, resulted in the recovery of a surprisingly low density of cattle bones; the remains of probably no more than twenty individual animals were recovered from this large settlement, possibly dating from between 1600 and 1800. (11) In contrast, large sections of the refuse tip were rich in carbonized cereal grains, and locational factors suggest that the economy of the Ngabeni community was geared more to agriculture than to animal husbandry. In the face of this evidence, it would appear to be a misrepresentation to see the Iron Age economy as dominated by cattle, the interpretation implied by the ethnographic model.

This disparity between the standard version of the Nguni economy, derived from nineteenth and twentieth century sources, and the archaeological evidence for the earlier period may be explained only by accepting that important changes have taken place in basic structure at the local level. In actual fact, the ethnographic record does supply support for such an opinion. For Bryant, presumably paraphrasing (unnamed) informants, contradicts his own assertion that "what they were a hundred years ago, that they were, in all likelihood, even a thousand". For the place of cattle would seem to have been different in the past:

In olden times in Zululand, prior to the reign of king Ndaba (d. c.1763) a man purchased his wife with a number of hoe blades, or of goats, or, if particularly wealthy, of cattle. (12)

In the later eighteenth century, trade networks with chiefdoms to the north developed, and Bryant states that payment of lobola in iron was replaced by payment in copper. It was not until the early nineteenth century that sufficient people owned cattle to qualify these animals as a viable medium of exchange. Bryant attributes the change to Shaka:

The accession of Shaka to the Zulu throne inaugurated a period of general and continuous conquest and raiding all round, and before very long even the poor man came to own a cow or two. Zululand being a good pasture country the cattle increased rapidly in numbers ... (13)

However, it takes some years to build up livestock herds, and for large-scale cattle raiding to have become a profitable activity the change must have occurred earlier than the 1820s. Thus it would seem that, in the late eighteenth and early nineteenth centuries, a mixed economy in which a number of both domestic and wild animal species were important was replaced by an economy in which both the primary and secondary

products of cattle were of key importance. This transition has tended to be obscured by ethnographic models which deny the possibility of change in the basis of the local economy; if such models are used uncritically in historical interpretation, there is clearly a danger of serious distortion.

Environmental and Historical Explanation

Environmental information has been a further important secondary source for the historian concerned with Nguni societies. Omer-Cooper, for instance, stresses the importance of landscape, climate and veld (14), while Daniel has suggested that the configuration of grasslands was a crucial factor in early nineteenth century political developments. (15) Indeed, the structure of the environment must be seen as closely related to the economy of communities engaged principally in subsistence activities, for in the absence of large-scale capital investment and developed market systems, which would serve to insulate communities from variations in local productivity, the well-being of individuals must be seen as tied closely to the nature of the local environment: an environment which must in turn strongly influence the form of the economy. However, just as that economy must be seen as amenable to change, so too must the structure of the environment. Factors such as soil quality, the abundance and distribution of vegetation types and climate are not fixed, and changes in such parameters may be expected to stimulate associated changes in the economic strategies of human communities. Thus the rigid environmental model may be, historically, as misleading as the rigid ethnographic analogy.

This may be demonstrated best by presenting a critical appraisal of a recent study with a strong ecological orientation. Returning to Sansom (16), it is clear that, although he writes as an anthropologist, he sees his interpretation as possessing an historical validity, for, in linking both the economy and political structures in two different areas closely to their contrasting environments, he is clearly suggesting a causal relationship. Briefly, his argument is this. In the "west", the high plateau lands in the centre of southern Africa, the lack of variability in the landscape means that large tracts of land contain only a single veld and soil type. Since a mixed farming economy demands a variety of such types to meet the requirements of different crop plants and both summer and winter grazing for livestock, the community must control large blocks of land to satisfy economic needs. As a result, settlement is concentrated into "towns", for co-operation is necessary to maintain authority over large areas. In this situation, the chief's authority rests on the balance of different interest groups against one another. His authority is represented by a mandate to redistribute the "means of production"; in other words, access to land and resources. Thus centralized political authority is necessary as the individual producer alone cannot control the dispersed resources which he requires against his neighbours. In the "east", the area between the Drakensberg escarpment and the Indian Ocean, the pattern is completely different. For here the topography is broken into many units, and as a result the environment is extremely variable. Consequently, soil and veld types occur in small units, and a small segment of the terrain contains a variety of resources. As a result, decentralization of homesteads is the norm, for each local community can control, in a manageable area, the variety of resources necessary for the mixed subsistence economy. As a result, there is little need for co-operation on the larger scale, and the chief must continually counter anarchistic tendencies among his subordinates. Hence the development of the Shakan method of control, in which the population was controlled by the fear of random destruction.

Sansom's model has an immediate appeal, since, by introducing environmental factors, he has succeeded in bringing some order to the multiplicity of political forms in southern Africa. However, when his model for the Nguni of the east is considered in detail, serious difficulties become apparent. For, why, if the environment comprised "small scale repetitive configurations that contained a variety of natural resources", was there a move towards larger political units in which power was centralized? It is not sufficient to demonstrate that Shaka maintained control by employing terror tactics, as there is no indication of the means whereby the power-base necessary to achieve such superiority was constructed in the first place. The

only possibility would seem to be that one local chiefdom happened to control superior resources, and could thus gain a commanding position, but even this is precluded by the terms of Sansom's model, as the productive potential of the segments of the environment are seen as essentially equal, and significant economic specialization non-existent. In general, then, there is a serious discrepancy between Sansom's conception of the "traditional economy" and the historical record. The "chequerboard" of the Nguni should have continued to produce many small-scale political units, with forces running counter to centralization and alliance, and not the large chiefdoms of, for instance, the Hlubi, Qwabe and Ndwandwe, the Mthetwa confederacy and, eventually, the Shakan kingdom, the forms which did in fact emerge.

The source of this discrepancy can be traced to Sansom's characterization of the physical environment: a model which contains two major faults. Firstly, the idea of "repetitive configurations" is clearly an over-simplification. Indeed, the needs of the annual farming cycle are met repeatedly in the Nguni area, for the valleys of the major rivers all contain the rich thornveld which provides excellent winter grazing, while the watersheds provide nutritious summer-veld. Similarly, within each such unit there are varied soil types which meet the needs of crop production. However, there are still important differences in the quality of the various areas - differences which Sansom ignores, and which, as Daniel emphasised, must be seen as important in the economic history of the Nguni. (17) At one end of the scale were the poor soils and associated sourveld of the upper catchment of the Black Mfolozi, exploited before the Mfecane by various factions of the Kumalo. At the other extreme was the rich cattle country around the junctions of the Black and White Mfolozis - the heartland of the Mthetwa in the late eighteenth century.

Whereas this over-simplification is an error of fact, the second fault in Sansom's argument is an error of theory. For, in describing the contrast between east and west, he holds that "... the separate adaptations of the two regions were to immutable - to altitude, climate, soils and associated plant cover". (18) It is this concept of the immutable environment which creates the problem, for, just as the traditional ethnographer has denied the possibility of change in the basic assumptions of his model, and thereby distorted economic history, Sansom has forced his data into a strait-jacket concept of the environment which is equally unjustified.

For, if the environment is seen as comprising a set of variables rather than constants, then its productivity may be seen as similarly variable. Such variability will clearly have affected the economic strategy of subsistence farmers, and hence will have influenced the economic history of the communities involved. Thus I am suggesting that by denying the possibility of changes in the environment, Sansom is applying another form of unjustified distortion, which in this case has resulted in a dislocated version of history.

This may be expressed in a different way. Both the economic and environmental models which have been used to abet the scanty historical data on the economic and social history of the Nguni have tended to be employed in a deterministic manner. That is to say, they have been taken as rigid structures and imposed on the historical period in question. This is because the procedure has been one of analogy, and the analogies themselves lack a historical dimension. If, however, the environment and the economy are seen as two sets of variables, which interact, some new interpretative insight is possible. This is best shown by detailed example. For, if variations in one aspect of the environment, climate, are taken into account and set against some aspects of eighteenth century Nguni history, some interesting associations become apparent.

Climate as a Variable Factor

The two most important components of climate are precipitation and insolation, and it has been shown that they are closely linked in an inverse relationship. (19) Together, they influence many other factors in the environment.

For example, the amount of rainfall will determine the amount of run-off through the river systems, and hence the pace of soil erosion and formation. Similarly, precipitation and insolation will together affect the quality and distribution of vegetation, and this, in its turn, will affect the distribution of faunal species. Tsetse are closely dependent on the density of vegetation for survival; hence climate-induced changes in bush cover will affect the prevalence of trypanosomiasis. The formation of locust swarms has been shown to be triggered off by climate. Thus it is clear that the effects of change in one of the major components of climate would be manifold. Here I wish to show that precipitation totals have varied in the last few hundred years, and that such changes have had a major effect on Nguni communities.

It has often been suggested that the rainfall of the past was different from the regime of the present. For example, Kokot (20) reviewed information from early travellers and settlers, while Mason (21) and Maggs (22) have both suggested that the climate during the Iron Age cannot be assumed to be the same as the present. However, it is only in recent years that definite evidence has become available for the nature of such changes. In the first place, it would seem that, in the summer rainfall region of southern Africa, there are regular short-term cycles in precipitation totals. Secondly, there is evidence of a different sort for longer term changes.

Statistical analysis of rainfall records in the twentieth century has shown that variation is not erratic, but follows a cycle with a periodicity of between fifteen and twenty years. (23) Thus between five and seven droughts, separated by periods of abundant rainfall, may be expected to occur in every century. It has been suggested that there could be a causal relationship between this pattern and the known cycles of sun-spot activity. (24) However, although this pattern is now well documented, extrapolation from the present to the past must clearly be tentative. In order to gain more substantial data for the historic and prehistoric periods, a dendroclimatological study has been carried out. Variations in the amounts of annual growth increment of a Yellowwood some 600 years old have been recorded and plotted. This study has shown that the short-term cycle was a feature of the past, and that variation at this scale has been superimposed on longer trends. (25) We must consider the effect of both patterns on farming economies.

Sansom has commented that economic strategies may be seen as largely determined by the evaluation of risks; thus the farmer steers a course which guarantees a level of production which is not dependent on resources which could fail. (26) As the short-term climatic cycle has a mean periodicity of only about seventeen years, it may be assumed that the farmer was aware of the recurrent drought risk, and planned accordingly. Such planning would involve an avoidance of dependence on "marginal" lands: lands with comparatively low precipitation which would become unsuitable for crop cultivation and grazing during periods with less than average rainfall. Indeed, there is definite evidence for such an awareness. Bryant comments:

There was a saying with the Zulus, ku-Kahlele uHlalwane (Isoglossa Weedii), ko-Ba yi-Ndlala (the uHlalwane has blossomed; so there will be a famine). This shrub, it was said, came out in flower only once in every ten or eleven years. This seems to suggest a cycle of some sort noticed by the Natives in local climatic conditions and the re-occurrence of drought. (27)

Although our evidence indicates that the cycle was somewhat longer than eleven years, it would seem that variability in the climate was noticed by Nguni communities.

Of more interest in the present context, however, are the longer term trends, for it would seem unlikely that these could have been taken into account by farmers during forward planning, and could thus potentially cause dislocations in the economy. The dendroclimatological evidence for the eighteenth and early nineteenth centuries, with which we are presently concerned, indicates that during this period there were three major phases of climatic change. In the first half of the eighteenth century, the overall trend was of decreasing precipitation, and in consequence the droughts

caused by the short-term cycle consistently became more severe. About 1750 this trend was reversed, and overall precipitation increased, until by the last quarter of the century droughts would seem to have been less severe than the peaks of rainfall some fifty years before. Towards the end of the century, this trend was reversed, and a rapid decline in overall rainfall culminated in the droughts of 1801-1802 - droughts which would seem to have brought about the severe Madlahtule famine, which was recalled by both Stuart's and Bryant's informants many years later. (28) As I have stressed, changes in climate have profound effects on other aspects of the environment, and this must particularly be the case in southern Africa, where rainfall is often a critical resource. Thus the productivity of the environment, both for crop cultivation and for livestock grazing, may not be seen as a constant during the past but as a factor subject to considerable variability. This may be shown by examining some aspects of Nguni economic history in detail.

Economic Response to Climatic Variation in the Eighteenth Century

Let us first return to the problem of the changing role of cattle in the Nguni economy. I have suggested previously that cattle became the centre of farming economy only in the late eighteenth century; prior to this, there was a broader base of resources in which cattle did not necessarily assume a major role. Although meat was clearly important, the principal value of cattle was in their secondary products, milk in particular. Thus it is reasonable to assume that the late eighteenth century increase in the size of cattle herds was associated with the development of milk as a staple - a status it had achieved by the early nineteenth century. This basic change in the economy is explicable when the climatic trend of the time is taken into account, for the increase in the quantity of precipitation would have resulted in an increase in the quality of the better grazing lands: a circumstance which would have meant both that an increase in cattle holdings was viable and that lactation would have increased sufficiently for milk to become a major item in the diet.

The second half of the eighteenth century was, however, a period of change in other sectors of the economy. For the recorded oral evidence suggests that maize, introduced to south-east Africa by the first settlers at Delagoa Bay in about 1700, was steadily adopted as an important crop-plant by Nguni communities during this period. Maize has the advantage of a considerably higher yield than sorghum, the staple it replaced, yet it demands higher rainfall than this earlier crop. It has been suggested elsewhere that the ascendancy of maize was closely allied to the climatic trend of the second half of the eighteenth century (29), and, when this is taken in conjunction with the evidence for the changes in livestock husbandry, this period must be seen as a time of fundamental change in the Nguni economy.

The influence of climate was not, however, restricted to the economic sector, for it is possible to trace the effect of the major trends on political developments. The eighteenth century was a period when larger entities began to emerge from the many smaller chiefdoms of earlier times. By attracting small clan-groups to a clientship relationship, by conquest and the imposition of authority or by completely expelling incumbents, a limited number of chiefs came to control far larger areas of land. This process clearly resulted from a complex interplay of factors, some of which have already been traced. Here I should like to suggest that, at least in one early case, an important cause was a change in productivity linked to variation in climate.

At the beginning of the eighteenth century the abakwa Qwabe occupied a small territory some twenty kilometers south of present-day Melmoth. Although the evidence for precise distribution is insubstantial, they would seem to have controlled some 400 km² of land, centred on the middle valley of the River Mhalatuze (30). By 1750,² the picture was very different, for the Qwabe chief, Lufata, now presided over 3,000 km² of land, stretching from the middle Mhalatuze to the sea, and from the estuary of this river southwards to the Tugela. This process resulted in the displacement of several smaller incumbent chiefdoms, such as the aba-s-emaNgangeni, the abakwaCele and the abakwaLutuli. (31) This would seem to have been more than the replacement of existing rulers by Qwabe nominees, or the development of a tributary relationship between

politically dominant and subordinate groups, for Bryant records that the displaced chiefs moved south of the Tugela with their peoples, where their domains were re-established. Equally unacceptable is Bryant's own theory that the expansion was due to "the internal pressure of natural increase" (18), for a territorial expansion of over 700% in virtually a single generation would reflect a population explosion indeed if due only to demographic factors.

The logic of the abakwaQabe diaspora becomes apparent when it is set against the botanical and climatic regimes of the area involved, and here use may be made of Phillips's detailed ecological map of present-day Natal and Zululand. (33) The early eighteenth century nuclear area of the Qwabe consisted of two contrasting zones: "bioclimatic subregions" 10b and 2a, respectively "subarid riverine and lowland mixed scrub and wooded savanna" and "coast hinterland evergreen forest, scrub forest, bush and wooded savanna humid to sub-humid". (34) Area 10b, restricted in this case to the Mhlatuze Valley, has a low rainfall, owing to rain-shadow effects, and is therefore poor for crop-plant production. It does, however, contain excellent grazing for livestock. Area 2a is better watered, and is therefore more suited to plant cultivation. The veld, however, is less nutritious and more suitable for summer grazing than for perennial occupation. Under favourable climatic conditions, the combination of these two zones would have provided an excellent grounding for a mixed economy. This configuration is a feature of the Mhlatuze catchment, both above and below the Qwabe nuclear area, and logically it could be predicted that political expansion would be aimed at the control of a larger portion of the valley environment. It is apparent, however, that this option was not taken, for the direction of movement was out of the valley and to the south-east. By the mid-eighteenth century, this had resulted in the control of larger areas of sub-region 2a and, more significantly, of sub-region 1a, which by 1750 comprised more than half of the Qwabe lands. Described by Phillips as "coast lowlands: evergreen forest, scrub forest and wooded savanna - humid to subhumid", subregion 1a is regarded as less favourable for crop production and animal husbandry than the coast hinterland. (35) High humidity fosters crop and livestock diseases and parasites, probably including trypanosomes, while malaria could well have been endemic. Although such hazards were not insurmountable (36), it is interesting that Lufata went to considerable lengths to expel the abakwaCele and the aba-s-emaNgangeni from the coastal lowlands, while he ignored other small chiefdoms to his north and west - peoples who were domiciled in the rich veld of the Mhlatuze Valley and its surrounds.

The attraction of the coastal lowlands becomes apparent when the general climatic trend towards increasing aridity in the first half of the eighteenth century is taken into account. For, in comparison with inland areas, the coast has significantly higher precipitation and, as a result, droughts are far less severe on the littoral than in the interior. This may be demonstrated by taking a sample of the rainfall figures for the two regions into account. Between 1945 and 1950, the average rainfall at the mouth of the Mhlatuze was 1000.5 mm, while for Melmoth, just to the north of the Qwabe nuclear area, the average for the same period was 795.8 mm. (37) This 20% difference is likely to be an underestimate, since high humidity on the coast produces significant precipitation in addition to rainfall, a phenomenon which is considerably less marked in the interior. Clearly, in times of drought, such a contrast could well be critical, and it is thus reasonable to suppose that the Qwabe expansion was motivated by the need to control areas of higher precipitation at a time when increasing aridity had reduced the productivity of the interior.

In this paper, then, I have tried to show that although secondary sources, such as ethnographic models and ecological data, are essential to support the rather insubstantial direct evidence for the earlier history of Nguni societies, such sources tend to be compiled without the historical perspective in mind; both ethnographers and ecologists have tended to be concerned with the functional interrelationships of the systems with which they are concerned, rather than changes in the nature of components through time. This lack of alignment between the various disciplines involved creates the danger of historical distortion. If, however, the components in the models are seen as variables rather than as constants, and allowance is made for the possibility of important changes in, for example, economic structure and climate, then historical developments can be examined from a new perspective.

Notes

- (1) J. J. Guy, "Production and Exchange in the Zulu Kingdom", paper presented at the workshop held at the National University of Lesotho, July 1976.
- (2) A. T. Bryant, The Zulu People As They Were Before the White Man Came (Pietermaritzburg, 1967), p. 438. Quoted by Guy, op. cit., p. 2.
- (3) The term "ethnographic" is here used to include descriptive accounts of African societies.
- (4) Bryant, op. cit., p. 72.
- (5) E. J. Krige, The Social System of the Zulus (Pietermaritzburg, 1965).
- (6) Ibid., pp. 23 & 185.
- (7) Basil Sansom, "Traditional Economic Systems" and "Traditional Rulers and their Realms", in W. D. Hammond-Tooke (ed), The Bantu-Speaking Peoples of Southern Africa (London, 1974), pp. 150-151.
- (8) Max Gluckman, "The Kingdom of the Zulu in South Africa", in M. Fortes and E. E. Evans-Pritchard (eds), African Political Systems (London, 1969), p. 25.
- (9) Roland Oliver and Brian M. Fagan, Africa in the Iron Age (Cambridge, 1975), pp. 116-118.
- (10) Timothy M. O'C. Maggs and Mary A. Michael, "Ntshokane: an Early Iron Age Site in the Tugela Basin, Natal", Ann. Natal. Mus. 22 (3), 1976, pp. 705-739.
- (11) Hall & Maggs, in preparation.
- (12) Bryant, op. cit., p. 416.
- (13) Ibid., p. 590.
- (14) J. D. Omer-Cooper, The Zulu Aftermath (London, 1966), pp. 10-11.
- (15) J. B. McI. Daniel, "A Geographical Study of pre-Shakan Zululand", SA Geog. Journal, Vol. 55 (1), 1973, pp. 23-31.
- (16) Sansom, op. cit.
- (17) Daniel, op. cit.
- (18) Sansom, op. cit.
- (19) B. R. Schulze, Climate of South Africa. Part 8, General Survey (Pretoria, 1965).
- (20) D. F. Kokot, An Investigation into the Evidence Bearing on Recent Climatic Changes over Southern Africa (Pretoria, 1948).
- (21) R. J. Mason, Prehistoric Man at Melville Koppies, Johannesburg (Johannesburg, 1971).
- (22) T. M. O'C. Maggs, Iron Age Communities of the Southern Highveld (Pietermaritzburg, 1976).
- (23) P. D. Tyson, T. G. J. Dyer and M. N. Mametse, "Secular Changes in South African Rainfall, 1910-1972", Quat. Jour. Roy. Met. Soc., 101, pp. 817-833.
- (24) T. G. J. Dyer, "Solar Activity and Rainfall Variation over Southern Africa", South African Journal of Science, Vol. 71, 1975, pp. 369-372.
- (25) Martin Hall, "Dendroclimatology, Rainfall and Human Adaptation in the Later Iron Age of Natal and Zululand", Ann. Natal Mus. 22 (3), 1976, pp. 693-703.
- (26) Sansom, op. cit.
- (27) Bryant, op. cit., p. 252.
- (28) Hall, op. cit.
- (29) Ibid.
- (30) A. T. Bryant, Olden Times in Zululand and Natal (London, 1929), p. 537.
- (31) Ibid., pp. 499, 537 & 545.
- (32) Ibid., p. 537.
- (33) John Phillips, The Agricultural and Related Development of the Tugela Basin and its Influent Surrounds (Pietermaritzburg, 1973).

- (34) Phillips, op. cit., pp. 83 & 151.
- (35) Ibid., p. 68.
- (36) John Ford, The Role of Trypanosomiasis in African Ecology (Oxford, 1971).
- (37) Weather Bureau, Climate of South Africa. WB 19, Climate Statistics (Pretoria, 1954).