ECOLOGICAL FACTORS IN THE RISE OF THE ZULU NATION

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The rise of Shaka and the founding of the Zulu kingdom in the first quarter of the nineteenth century, with its tremendous implications for the peoples of the sub-continent, has long been a subject of interest to the student of southern African history. In the *Oxford History of South Africa* Leonard Thompson summarized and assessed the various attempts which had been made to explain the Shakan revolution. He dismissed theories of white inspiration, and expressed doubt that the social revolution was due primarily to the effect of trade between the northern Nguni chiefdoms and Delagoa Bay. He was, however, more sympathetic to the suggestion, first put forward by Max Gluckman, and later adopted by J. D. Omer Cooper, that the social disruption which occurred in south-eastern Africa at the turn of the century was the consequence of "population pressure". Nonetheless, Thomson felt that

"it has not been conclusively established that population pressure had reached a crucial stage by the time of Dingiswayo. The evidence of demographic trends among the Nguni in the eighteenth century is tenuous and likely to remain so."  

Since the publication of the *Oxford History* the demographic evidence has indeed remained tenuous. However, a number of articles have been written which relate to the question of the demography of the region, or the linked problem of the availability of resources, and these have added substantially to the debate.

In 1970 I pointed out that an investigation of the grazing potential of Zululand suggested that the major chiefdoms had their origin in areas where a particular configuration of vegetational types existed, and that a closer study of these areas of origin, and the direction of expansion, of the chiefdoms would possibly reveal that one of the factors behind the social revolution of the time was a struggle for diminishing resources. J. Daniel and Colin Webb supplemented documentary evidence with fieldwork and noted the close correlation between the geographical situation of certain pre-Shakan chiefdoms and the physical environment. Phil Bonner has attempted to combine the trade thesis with the environmental arguments and to study in far greater detail the differences between the
histories of the various chiefdoms in his search for an explanation of the changes which took place. Gluckman published an article in which he substantiated his previous arguments and Martin Hall has produced dendroclimatological evidence on changing patterns of rainfall which has a bearing on the question.

All these studies have given depth to the debate and I have no intention of taking issue here with points with which I might disagree. However, I believe that there exists further evidence, albeit indirect, which suggests that by the end of the eighteenth century an imbalance had arisen between population density and the resources of the region and that this contributed to the radical social changes which took place. To demonstrate this I intend to summarise the evidence which indicates that the physical environment of the region was particularly well-suited to the needs of stock-keeping cultivators but that, by the end of the eighteenth century, the physical resources were breaking down under existing systems of exploitation. I then want to examine certain aspects of the Zulu social structure which suggest to me that the kingdom contained features which enabled its leaders to overcome some of the serious problems which had arisen.

I

Stock-keeping and the physical environment of Zululand

The concept of the "natural environment", as a stable interplay of geological, climatic, vegetational and faunal forces beyond the disruptive influence of human activity, no longer seems to be accepted by botanists. They also question the empirical validity of studying extant plant communities as stages in a steady succession moving towards a stable vegetational climax, for it is now recognised that for thousands of years the hand and the hoe of man and the feeding patterns of his stock have not only deflected, but in places irreversibly altered, the structure of biotic communities. Certain vegetation types, once thought to be stable plant climaxes, are now considered to depend on continuing human interference. An example of this is the great African savanna, an outlier of which extends into
Zululand where it is called variously Thornveld, Bushveld or Lowveld. Ecologist now appear to have come to the conclusion that its basic structure of open woodland with a grass understorey is maintained only by the continual action of fire and grazing which holds back the encroachment of the wooded element.\textsuperscript{14}

However, although "natural vegetation" is no longer considered to exist, except perhaps in the remotest corners of the earth, it is still a concept used by botanists and ecologists. Under the name of "climatic climax community",\textsuperscript{15} it provides a theoretical base from which it is possible to reconstruct the direction which vegetational change has taken, and to speculate on the manner in which it will change under certain conditions.

Acocks, in his classic \textit{Veld Types of South Africa}\textsuperscript{16} was well aware of the effect of man on the southern African environment. Although the focus of his attention was the devastation inflicted on the sub-continent by commercial agriculture, he did realise that man had been changing the region's vegetation patterns long before this. Working on evidence provided by known plant successions, vegetational relics, and also a limited range of documentary sources, he mapped an outline of the possible structure of the climatic climax communities of South Africa, Lesotho and Swaziland. Although the title of this map - "Vegetation in A.D. 1400 reflects his ignorance of the time-depth of farming activity in the area, the map itself is of considerable interest to the historian. On it he indicated that he believed that most of the land between the Drakensberg and the Indian Ocean was covered with "Forest and Scrubforest", while the low lying valleys contained tracts of savanna, this latter feature being particularly prominent in Zululand.

Of course a reconstruction of this kind, on a small scale map, and on a sub-continental level, can only outline the most general vegetational features, and it is probably most useful to consider the map, not so much as a reconstruction of previously existing, pre-human, vegetation of the region, but as an indication of the tendency for the plant communities of the eastern escarpment to move towards wooded vegetation types. However, this tendency has been constantly deflected by
the interference of man and a comparison of this map with later known vegetation patterns indicates a high degree of human activity over a considerable period of time.

We can obtain a rough idea of the vegetation of Zululand in pre-colonial times by making use of Acocks' detailed vegetation map and combining it with what we know from historical accounts and our knowledge of the present situation. The forest and scrub forest which dominated Zululand had been drastically reduced leaving forest relicts on high wet ridges, and scrub in areas protected from fire, along water courses and on the coast. In those places where it had been removed, it had been replaced by sour grass. The savanna vegetation types had spread from the depths of the river valleys, and the wooded elements had been reduced by regular burning which favoured the grass understorey. The pronounced deflection of patterns of plant succession was the result of farming activity over a prolonged period of time. We have little detailed information about the manner in which this took place; however, archeologists have shown that this process had been going on for well over a thousand years before Shaka, and that agriculture probably started in the savanna areas and coastal regions.

This human activity created a complex pattern of interlaced vegetation types which were of particular value to the stock-keeper. Two basic types of "natural" grazing are recognised by stock farmers in southern Africa and both are found in Zululand. "Sourveld" is the characteristic grass cover of the higher rainfall areas; its most striking feature is that its nutritive value and palatability decreases as it matures. In the spring and early summer, after the first rains during the growing stage its food value is high and the grass is of great importance to the herdsman. But it can only be fully utilised for about four months in the year before its food value becomes depleted and it loses its palatability. "Sweetveld" is characteristic of the drier areas. It is usually found in association with scattered trees in savanna vegetation types, where it forms the understorey. It is sparse and easily damaged but it retains its palatability and
nutritive value throughout the dry winter. Sweetveld is therefore of particular importance as winter grazing if cattle are to maintain condition. Between these two extremes of sweet and sourveld lie transitional areas of mixed veld which can be profitably grazed from six to eight months in the year. 19

The occurrence and the distribution of these grazing types is determined largely by the amount of rainfall which is in turn affected by topography. Zululand is a country of high relief. Rivers and streams have cut through sandstone layers to the granite beds beneath, and as they retreated westwards, left huge spurs of more resistant material jutting towards the sea. The Thukela, Mhlatuze, Mfolozi, and Phongolo rivers are therefore separated by high lying ground, at times 2-3000 feet above the river beds, with the sides of the valleys deeply incised by feeder streams, creating much broken country 20 (see Map: "Zululand Topography").

This high relief leads to great variation in rainfall over short distances. Rain bearing winds, coming off the Indian ocean, deposit over 50 inches a year on certain parts of the coastline and there is a general decrease as the distance from the sea increases; but the isohyets are severely distorted by the spurs reaching out from the west, and the deep river valleys lie in rain shadow where precipitation can be less than 25 inches a year. (See Map: Zululand: Rainfall). And like most of the sub-continent unreliability of rainfall is a climatic feature.

In the third map appended to this paper, I have grouped together a number of Acocks' vegetational types to give a rough idea of the distribution of the sweet and sourveld. The coastal belt, with its sour to mixed grazing, is heavily watered, the climate sub-tropical, with hot humid summers and warm winters. The vegetation in pre-colonial times consisted of large areas of coastal forest, interspersed with coarse, heavy grass which was matted, tick-infested and difficult to burn. In the south, between the Thukela and the Mhlatuze, the 1300 foot contour lies near the coast, but north of the Mhlatuze it swings further inland creating a broader coastal plain with reduced rainfall in the western and northern areas.
In these drier regions coastal forest and bush gives way to thornveld with an understorey of mixed grasses.

West of the coastal plain the high ridges of Zululand create rain shadows in the river valleys. It is here that sweetveld occurs as an understorey to scattered thorn trees and bushes. Sweetveld does not occur in areas above 3000 feet, or in areas where the rainfall is higher than 30 inches per annum. Although the rainfall is low and there is a long dry season, the sweetveld regions are comparatively well-watered by the rivers and streams running down from surrounding hills and ridges where the rainfall is higher. While there are huge tracts of sweetveld in the low rainfall areas of southern Africa, few of them appear to have this somewhat paradoxical feature of being dry, but well-watered. Moreover, because of the high relief, it is only a short distance from these hot, low-lying pastures, to the cooler, mixed and sour grazing on the sides and crests of the surrounding valley walls and this creates a variety of grazing types over a comparatively small area. The 3000 foot contour marks the limit of the sweetveld and above this line pastures become mixed tending towards sour. In Zululand this area included tracts of open sour grassveld on the higher plateaus, while in the wetter regions sour grasses have replaced forest.

It can be seen from the appended map that these grazing types interlace through much of the region. As a result, herdsmen had to be able to move their stock freely if they were to take advantage of the country's grazing potential: to higher areas of sourveld in the spring, to mixed grazing as the summer advanced, and to the low-lying sweetveld in the winter. Because the river valleys penetrated the hinterland, most parts of the country had a sufficient variety of grazing with a radius of some 20 miles of any point. But, because of the unreliability of rainfall, in times of local drought the distance which stock would have had to be moved must have increased.

I have suggested elsewhere that this configuration of different grazing types had a direct bearing on the geographical situation of the pre-Shakan chiefdoms, and
the direction of their expansion. Daniel and Webb have established, with consider­able precision, the environmental requirements of three pre-Shakan chiefdoms in terms of rainfall and access to different grazing types. Furthermore, during the later history of the kingdom it is clear that favoured members of the royal house and leading officials were placed in districts which were particularly well-favoured on account of their proximity to a variety of pastures.

It can be argued that, compared with the rest of the eastern escarpment, Zululand was a particularly suitable environment for stock-keeping cultivators. The region can perhaps be regarded as a transitional area lying between the tropical and temperate zones, with many of the advantageous features associated with both regions. The humid coast and the hot, low-lying valleys can be seen as a southward extension of the more tropical region, with the fecundity associated with it, and yet without the debilitating human and animal diseases of that environment. A botanist has recently suggested that, when considering tropical vegetation it is useful to move away from considering the "solar tropics" as the boundary, and he introduces the concept of the "biological tropics" which lie between 30° N and 30° S latitude. The 30° S latitude cuts the coast just south of Durban. As mentioned above there are vast tracts of sweetveld in southern Africa. However, in the past they could not have been exploited with the intensi that was possible in Zululand. Large areas were infected with tsetse fly whereas in Zululand this only occurred on the margins of the country or in isolate-patches in the deep valleys towards the coast. Furthermore, few other sweet­veld regions were as well watered as those in Zululand.

Apart from the fact that the climate becomes more temperate towards the south, there are some indications that changes in the geological structure have a bearing on sweetveld distribution. The different qualities of the rock strata further south have the effect of creating narrower, more deeply incised river valleys with the result that the rain shadow areas necessary for the production of sweetveld, are considerably reduced. Detailed research on the physical environment of pre-colonial farmers in southern Africa would, I suspect, reveal important regional differences which might, in turn, be linked with differences in social development.
Up to this point I have considered the vegetation of Zululand in a somewhat static manner. However, there are indications that the change from climatic climax communities of forest, scrub forest, and savanna, to sub-climax es of grassland, savanna and forest relicts, was only the initial stage of the series of changes that man wrought on the environment.

It seems possible that once it was no longer easy to convert forest into grassland with the axe, or to increase the grassy elements of the savanna through fire, that severe degeneration of the vegetation might well have taken place. The region is liable to severe soil erosion, a process which it is difficult to reverse. This can originate in overgrazing, trampling round water sources and kraals, and too frequent or unseasonal firing of the veld. Sweetveld is particularly vulnerable and once the plant cover has been reduced and the top soil lost, the area is open to invasion by unpalatable bush and thicket. Even under-stocking can lead to pasture deterioration because selective grazing favours unpalatable grasses which eventually invade the pastures. It seems unlikely that the peoples of south-eastern Africa had established a long term ecological equilibrium with their environment. A society without a scientific knowledge of plant life and nutrition, without the means to control grazing and cattle movements by fencing, or to store and pump water, could not avert pasture degeneration, or bring about pasture regeneration. Concentrated grazing by domestic stock over an extended period of time would, I feel, have necessarily set in motion an irreversible process which steadily reduced the carrying capacity of the pastures.

Shortage of land, decrease in palatable grasses, and population pressure on resources are all aspects of the same problem and they aggravate each other, and can set up a process of continuing environmental degeneration. The increasing rivalry between social groups in Zululand at the beginning of the nineteenth century and the social revolution which took place may have been a response to such a situation. There is evidence that the insecurity and violence of this time was the result of a shortage of resources. In the first decade of the nineteenth
century the region experienced a disastrous famine, known as the "Madlathule", which was long remembered for the suffering it caused and for the fact that, unlike subsequent periods of shortage, it affected the whole country. It seems to have been this famine that James Stuart's informants were referring to when they gave accounts of cannibalism and the grouping of people in large villages for the purpose of defending their grain stores from starving marauders. Martin Hall, using dendroclimatological evidence, has argued that there was a steady decline in rainfall during the 1790s which reached its lowest point at about the time of the "Madlathule" famine. Certainly the "Madlathule" occurred at a crucial juncture in Zulu history, at about the time Dingiswayo returned from exile, and Shaka was wandering through Zululand, an outcast looking for protection.

Of course, even if it is assumed that this suggestion is valid, and that by the beginning of the nineteenth century there was a serious shortage of resources in the region, it does not necessarily follow that this should lead to an increase in the size of the social unit. However, as I have mentioned above, there does seem to be a connection between the source and direction of the chiefdom's and expansion and the most desirable grazing areas. There would be advantages in assuming political control over a larger area of land and an increased number of people; in societies where human energy is the main source of social strength, there is a considerable degree of correlation between demographic magnitude and coercive potential, making the violent appropriation of foodstuffs more effective. Moreover, an extension of territory would give members of the group access to a greater range of grazing and arable land, which is an important factor in a region where local differences in climate create major variations in productive capacity over comparatively small areas. Shaka, of course, continued and extended the centralisation process initiated by such leaders as Dingiswayo and Zwide. The most obvious consequence of this was the reduction of population by warfare. But beyond this, the kingdom he founded was sufficiently large to redistribute cattle over a much greater area than was previously possible. This allowed the Zulu to
avoid local concentrations of stock, and to utilise more effectively seasonal variation in the quality of pasturage. Furthermore, by moving herds more freely over a wider area, it was possible to avoid the effects of localised drought and overgrazing. Control over cattle over a large area could not, in the long term, reverse the process of pasture degeneration; but it could retard it allowing certain areas to rest and regain their grazing potential. This only became possible after the power of the small localised social units had been broken and the peoples of the region brought under centralised control.

II
Production, reproduction and the Zulu military system

Max Gluckman, in an article written in 1969 and published in 1974 gave additional evidence to support his theory that population pressure was the major factor in the rise of the Zulu kingdom. He argued that an examination of the journals of mariners shipwrecked in the 16th and 17th centuries "reveals a description of an increasingly populous land". The fertility and suitability of the land, he asserted, allowed a rapid population growth but by the mid-eighteenth century there was no more room for expansion. As a result there were a series of rapid changes, initially as individuals built up chiefdoms through conquest, and which culminated in the rise of Shaka who "solved the land population problem, as tens of thousands of people must have died." "There may have been" Gluckman continued "a process of slowly accumulating quantitative changes in the ratio of population to land, culminating in a rapid change of pattern..." However, Gluckman emphasized that "the new pattern was still restricted within the limits of the basic technology", for close examination of the changes in social structure brought about by Shaka reveals that they were changes largely of degree. The area in which Shaka did bring about substantial alteration was the Zulu military organisation and this, Gluckman argued, could be traced to the fact that
the Zulu king "was a near psychotic and had a very disturbed psychosexuality". This demonstrated itself both in his individual actions and, on a wider scale, "in the extreme development of the military system, with its long term celibacy..."

I am not convinced that the journals of the shipwrecked sailors reveal as clearly as Gluckman believed that there was a steady increase in population, and find his arguments relating a population crisis with social change mechanistic. Nonetheless, Gluckman's article does tend to confirm the situation suggested by a study of the physical environment, as well as the oral evidence of severe shortage in the region at the beginning of the nineteenth century. However, I disagree that the "extreme development of the military system" can be explained in terms of Shaka's "psychosexuality". Indeed, I would like to suggest in this final section, that a study of the military system in the context of the production processes within the kingdom gives further evidence that the struggle for resources was a major factor in social changes taking place at this time.

Although Nguni social organisation underwent radical alterations at the end of the eighteenth and beginning of the nineteenth century, one element remained substantially unchanged up to the time that the Zulu were forced to become part of the South African capitalist system. This was the patrilineal system and the basic reason for its longevity and resilience was that it was an expression of productive processes which themselves were not altered substantially over this period. Kinship relations were an expression of production relations and must be considered together. All Zulu belonged to exogamous lineages, membership being determined by common descent through the male line from a founding ancestor. The lineage structure was given material expression in the homestead (umuzi/imizi) of the kingdom. Every man in Zululand on, or soon after, his marriage would set up a homestead of his own. As homestead-head (umnumzana/abanumnzana) he would rank his wives in segments within the homestead. In time these segments, under the eldest son of each segment, would break from the homestead and establish
homesteads of their own. Thus every homestead in Zululand had sprung from a previously existing one and contained within it the seeds of new ones. The process of continual homestead formation gave physical expression to that much abused, but most useful concept, the patrilineal segmentary lineage system.35

Production in Zululand took place in the homesteads and their immediate environs. There were different types of homesteads, their size reflecting the status and wealth of the homestead-head, but they were all organised on similar principles. If we consider the homestead of the "common man", that is, the type of homestead in which it was estimated that 90% of the population lived,36 then it would consist of the homestead-head, two or three wives and their children. Each wife would have her own hut, its position reflecting her status.

Each segment (a wife and her children) formed a production unit within the homestead, the production community. The homestead-head provided each segment with milch cows, plots of agricultural land, and a place for storing the grain it produced. Meals took place within the hut of each wife. Each segment was therefore able to provide its own means of subsistence while a portion of the surplus contributed to the subsistence of the homestead-head.

Labour power within the homestead was principally expended in the production of cereals and dairy products which formed the basis of the Zulu diet. Supporting activities included hunting, and metal and leather working. There was a rigid sexual division of labour within the production units of the production community with women involved in agricultural production and men with the other major aspect of production - stock-keeping.

Each homestead was to a large degree materially self-sufficient with one exception - the homestead did not reproduce wives. These had to be obtained by exchanging cattle for women from other lineages, while cattle could be obtained from other lineages for daughters of the homestead. In this manner, through the exchange of surplus from the process of reproduction and production (daughters and cattle) the process of reproduction and production was continued. The ultimate
materialisation, or actualisation, of labour power in cattle is an obvious consequence in an economic formation with few forms of storeable or alienable wealth.

Although I cannot discuss it here in any detail, this function of cattle as a self-reproducing store of labour-power seems to me a question of great importance. The major relationships in the kingdom were marked by the movement of cattle; between homesteads in exchange for women, from client to overlord, and overlord to client. The accumulation of cattle was directly related not only to political power, but also to material power as it allowed the cattle-owner to increase his number of wives - that is ultimately the size of the lineage, homesteads, production communities, and number of producers.

As we have seen Zululand was particularly well suited for cattle raising, and centralised control over cattle allowed more effective utilisation of pastures; thus part of the reason for the strength and resilience of the kingdom must have been the physical conditions which allowed for a direct transformation of human productivity into cattle and cattle into labour and further productivity.

At the level of the homestead, the correlation between the kinship and lineage systems and the way in which social production was organised, is striking. Production groups and lineage and kinship groups were virtually co-terminous: the production community consisted of a father, his wives and their children; production units within the community consisted of ranked segments of wives and their children; wives were introduced into the homestead through exchange of the homestead's surplus cattle; the homestead (production community) had been a lineage segment (production unit) within a previously existing homestead and each homestead contained incipient production units.

The laws regulating the distribution of property amongst segments within the homestead and inheritance when these segments became production communities, were defined in terms of the segmentation of the patrilineal lineage.

I have emphasized the importance of the lineage/productive system in the Zulu kingdom because it is often assumed that the lineage system is somehow of lesser significance in a centralised state like the Zulu kingdom.
often analysts approach the subject of their study through the state, or kin-
ship, and thereby obscure the fundamental fact that the "driving force" of the
social formation was the surplus created by labour within the homestead, and
also that production within the homestead was given social expression in the
patrilineal segmentary lineage system. At the same time we must remember
that the Zulu state consisted of between 100,000 and 200,000 people who con-
sidered themselves members of the kingdom through their allegiance to a king
who was supreme political, military and religious authority in the land. He
ruled in association with a number of territorial chiefs who, within their
chiefdoms, delegated their authority to local administrators. There were a
large number of other state officials (induna/iziduna) who had a variety of
specialised roles. The Zulu kingdom was a stratified state with great diversity
in status, wealth and power. Nevertheless, it must be realised that all
married Zulu males, regardless of status, were members of lineages and the heads
of their own production communities.

The basis of the king's power lay in the surplus labour he extracted from
every homestead within the kingdom, by means of the military system. All Zulu
men were members of the state army. From the time they reached puberty and
were recruited into an age-set, or "regiment" (ibutho/amabutho) until the king
gave the age-set permission to marry, perhaps fifteen to twenty years later,
they spent much of their time working for the king. In the early part of the
history of the kingdom they were raiders, going beyond the kingdom's borders
and bringing back cattle. When raiding ceased during the last thirty-five
years of the kingdom's existence, they concentrated on herding the royal cattle,
sowing and reaping the king's lands, and acted as a coercive force within the
country. Thus, through the "military system" the king was able to draw on the
labour of all Zulu men for perhaps a third of their productive lives. And even
when the regiment to which a man belonged had been given permission to marry,
they were liable to a certain amount of service every year.
Women were also formed into age-sets but they did not perform service for the king at the royal homesteads. However, they were not allowed to marry until the king gave them permission, which occurred when an associated male regiment had received permission from the king to take wives.

It seems to me that if one understands the fundamental productive processes of the Zulu kingdom and their relationship to the kinship system, then this power of the king to withhold marriage through the military system becomes crucially significant. Let us examine the case of the women first. The rate of population growth is directly dependent on the fertility of women and obviously if the amount of time between puberty and marriage is increased, this reduces marital fertility. Under the heading "Age of marriage and fertility" a well-known historical demographer has written:

"One need hardly emphasize the importance of this variable to the fertility levels of any community which does not practise of fertility within marriage. In such communities the fertility of women is mainly a function of their age. If therefore they spend many of their child-bearing years outside marriage, much reproductive potential is permanently lost. Other things being equal this in itself can result in total fertility levels which differ from each other by a factor of two between a community in which the average age at first marriage is the very early twenties and another where it is about 30" (37)

Krige wrote that

"In Shaka's days there were sometimes women of thirty years of age unmarried". (38).

and Sir Theophilus Shepstone reported in 1873 that

"The Zulu Country is but sparsely inhabited when compared with Natal and the increase of its population is checked more by its Marriage Regulations than by the exodus of refugees . . . During our visit we saw large numbers of young women apparently from 20-35 years, all unmarried . . . " (39).

No doubt the age at which women married varied at different points in Zulu history. It is nonetheless clear that Zulu women married several years after puberty and this necessarily reduced the potential increase in population,
and that by means of the female age-set system the king restricted the rate of demographic expansion.

Restriction on the age at which males can take wives and have children does not have this direct effect on population increase. However, "marriage" in the Zulu kingdom was so much more than taking a wife and conceiving children. It meant that kinship relations were extended, that there was further segmentation of the lineage and that a new productive community was established. The power to control the rate at which this took place lay with the king. Through the "military system" the Zulu king was able to influence the most fundamental processes of the kingdom - the processes upon which the very existence of the kingdom was based. He could control to an important degree the intensity with which the environment was exploited, the rate of demographic increase, and the rate and direction in which the processes of production could expand. The Zulu military system gave the king the means to control the process of reproduction and production within the Zulu kingdom.

Once this fact is grasped one can understand the inadequacy of the many attempts to see the Zulu military system in crude Freudian terms: that the military system was the consequence of Shaka's disturbed "psychosexuality", or that it led to an accumulation of sexual energy which was then transmuted into military vigour. While not in any way dismissing the importance of the Zulu army as a military force, we must also appreciate that it gave the king fundamental powers of control over the manner and the rate at which the physical environment of Zululand was to be exploited. And this is surely significant when taken into account with the evidence that suggests that indiscriminate exploitation of grazing had led to a serious deterioration of resources by the beginning of the nineteenth century.

Thus, from a study of the physical environment of Zululand we know that it underwent fundamental changes as a result of the activities of stock-farming
cultivators, and that this led to the creation of an environment particularly well-suited to their needs, but one which was also fragile and breaking down under pre-Shakan modes of exploitation. A study of the process of production in the Zulu kingdom reveals that the king had the ability to influence the rate of demographic increase and the creation of new productive communities, thereby solving, by the redistribution of human and animal resources, some of the environmental problems that had arisen.

Although I am suggesting in this paper that specific aspects of the physical environment of Zululand and certain developments in the social structure of the Zulu kingdom are related, I do not believe at this stage it is possible to identify with any precision the causal connections. I do not believe that we can assert that environmental changes "caused" the Shakan revolution, or that Shaka necessarily realised that there was a population crisis and solved it by slaughter abroad and celibacy at home. To establish the connections between the productive process and ideology in a social formation, or between social being and consciousness in an individual is the most important and the most formidable of the historian's tasks. At present our ability to identify and conceptualise the most significant elements in pre-capitalistic formations is inadequate, and in the case of pre-Shakan Zululand the paucity of empirical information and our ignorance of the chronology of the development of social change before the nineteenth century, makes the task all the more difficult. Nonetheless, I do believe that the key to understanding the rise of the Zulu kingdom and the events associated with it, lies in the first instance in a study of the productive potentialities of the physical environment and the way in which it was exploited and changed by southern Africa's pre-colonial farmers.

2. Ibid. 339-340.


6. By "Zululand" in this paper I mean the geographical area which became the "core" of the Zulu kingdom: that is the area which is bounded, roughly, by the Thukela, Msinyathi and Ncome rivers in the south and west, to the Phongolo valley in the north, eastwards to the Lubombo range.


12. I have not been able to deal with the demands of cultivation on the Zululand environment. It raises many problems one of them being that information on such important aspects as yield and growing-period usually refers to modern hybrid types. The introduction of maize to Zululand in the eighteenth century was obviously important, and not only because of its larger yield but also because it is far less labour-intensive than sorghum or the millets. I suspect that the limiting-factor on cultivation in Zululand was not availability of land but availability of labour-power, although I admit that is a difficult and controversial point.

Martin Hall has recently written a paper in which he quite rightly criticises the historian's uncritical acceptance of historical ethnographic data on the Zulu. He goes on to argue that there is evidence which suggests that it is a "misrepresentation to see the Iron Age as dominated by cattle...." I do not doubt that the numbers, and the role of cattle changed during the course of Iron Age history in Zululand,
and that the ethnographic data cannot be applied indiscriminately. At the same time I am not convinced by the way Hall uses the archaeological evidence to suggest that cattle were not "important" and not the "pivot of the economy". The frequency of cattle remains in settlement middens is not a necessary indication of their "importance" to a society. Nonetheless Hall's paper raises interesting issues and deserves more consideration than I am able to give it here. See M. Hall, "Ethnography, environment and the history of the Nguni in the eighteenth and nineteenth centuries". I.C.S Postgraduate Seminar, unpublished paper, 1976.


15. Ibid., 10.


17. J.P.H. Acocks, Veld Types of South Africa (Pretoria, 1951), 1:500,000.


24. C. Fuller, Tsetse in the Transvaal and surrounding territories, a historical review (Pretoria, 1926).


27. C. de B. Webb and J. B. Wright (eds.), The James Stuart Archive (P.M.B and Durban, 1976), I, Evidence of Jentshi, 201; D. M. K. Malcolm, "The Bantu", transcripts of broadcast talks, Killie Campbell Africana Library. For other accounts of the Modlethule famine see A. T. Bryant, Olden Times in Zululand and Natal... (London, 1929), 63 and 88, and H. Callaway,

28. Hall, "Dendroclimatology", 701-702

29. The sections on production have been drawn from an unpublished paper, J. J. Guy, "Production and exchange in the Zulu kingdom" History Workshop on pre-capitalist social formation and colonial penetration in southern Africa, National University of Lesotho, July 1976.

30. Gluckman, "The Individual in a Social Framework".

31. Ibid. 137.

32. Ibid. 139.

33. Ibid. 140.

34. Ibid. 143.

35. See also Guy, "Destruction of the Zulu Kingdom", 21ff.

36. A. T. Bryant, The Zulu People... (Pietermaritzburg, 1967), 438.


40. Furthermore sexual relations between unmarried persons were permitted but they were of a kind that did not lead to conception. See J. Stuart and D. M. K. Malcolm, The Diary of Henry Francis Pym (Pietermaritzburg, 1969), 295.