

NUTRITIONAL ASPECTS.

Some General Observations on Native Nutritional Problems.

In actual practice it is found that nutritional problems have a way of ramifying in the most unexpected directions and hence we have not hesitated to study our subject from various angles. It has been rightly said that "As well as being a problem of physiology, nutrition is also an economic, agricultural, industrial and commercial problem." It is also desirable to mention that throughout this report we are using the terms 'nutrition' and 'malnutrition' in a restricted sense i.e. as conditions brought about by an inadequate supply of suitable food; there are of course other factors which bear closely upon these conditions, and at the present time the loose use of these words is leading to some quite unnecessary confusion.

During the last few years there has been a rather sudden and widespread awakening to the extent to which malnutrition exists in most civilized communities. Moreover, it is becoming realized that this condition is a very expensive luxury when considered in terms of low standards of vitality, capacity for work and capitalization etc.

Whilst the causes of malnutrition are admittedly complex, it will be remembered that, thanks to the progress of our knowledge of biochemistry, there is now practically no scientific problem of nutrition; that is to say, the main theoretical problems of how to secure good nutrition under given conditions have largely been solved.

But malnutrition continues to be a common condition because of difficulties or gaps encountered when attempting to apply the findings to everyday life.

During the last year or two at the League of Nations Assemblies, the urgent necessity for making further headway in this direction has been stressed and valuable data as to ways and means have been

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Scientifically, it has been pointed out very clearly that better utilization would often be to the benefit both of the producer and consumer of foodstuffs.

With regard to conditions in South Africa it is now common knowledge that a great deal of malnutrition exists, both amongst the European and Native population. There are certain general features about the nutritional situation as it affects the Native population which call for consideration before we proceed to a more detailed study.

This subject is discussed at some length in our paper 'Diet and Health in South Africa (2) Malnutrition. South African Medical Journal, 1936, x, 25.

1) Undoubtedly much of the poverty and the malnutrition to which gives rise amongst the Natives can be attributed directly to their lack of industry, improvidence, ignorance and inability or unwillingness to adjust to changes in their environment; however, this must be accepted along with the economic, political and other complications as part of the problem requiring solution.

2) It is usual to assume that the nutritional requirements of the African Native are identical with those of the European. For the sake of accuracy it should be pointed out that this assumption holds because no other standards are as yet available, as a matter of fact we do not, as yet, know enough about the physiology of the Natives to dogmatize on this point.

3) The extreme simplicity of the traditional Native diet, is a particularly favourable feature when considering the promotion of good nutrition, for, given an adequate supply of maize, meat, milk, koo (or wild spinach), and kaffir beer, the large majority will not only be satisfactorily nourished - even according to their conceptions of the adequate diet - but they would also be satisfied with this diet. This is in striking contrast to the state of affairs found in more civilized countries, where the minimum diet, if it is to conform reasonably as regards palatability to local custom, is not infrequently too expensive to be readily acceptable under existing economic conditions.

Because of this marked simplicity in the dietary requirements of the native people it ought to be possible to banish entirely such malnutrition as is due to the consumption of an adequate amount of suitable food.

On the other hand, it must also be remembered that whilst a complex diet allows of considerable elasticity in its actual composition, whilst still maintaining its full nutritional value, this is not the case with these very simple diets, which are absolutely dependent upon an adequate and almost continuous supply of a few articles possessing complementary nutritional properties. It is therefore possible for an apparently trivial change in the diet to give rise to most unsatisfactory consequences. And since the effectiveness of a diet must necessarily turn upon the amount (or least adequately represented constituent) it follows that the defects must be properly appreciated before they can be effectively and economically supplemented.

Contact with Europeans is of course another circumstance which is having an appreciable effect upon native nutrition. The individual who comes home from the mines, or from domestic service, has often acquired new standards and experienced new tastes which will tend to maintain and to popularize amongst his friends. The advent of the store, which has now penetrated to the most remote districts, not only serves to make some of these strange foods actually obtainable, but also provides a tempting array of other new possibilities which can be obtained for money, or by exchanging products which would have otherwise been eaten. At the same time, the store acts as an incentive to labour and as a stabilizing influence in the village as it functions as a kind of bank complete with overcraft payments, or at least takes food available in times of acute shortage, though the economics of many of these transactions may be open to question.

A somewhat striking example of the indirect effects of such changes upon nutrition is seen in Swaziland, where the natives are now taught to sell their milk to the creameries which are springing up, so that even the calves are said to be kept somewhat short,

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whilst the amount available for the children is much reduced; the cash received is soon exchanged for all manner of uneatable treasures, gramophone records included.

Such changes are bound to continue and at an ever increasing pace and some of the inevitable effects can already be seen both in the typical diet of the 'Dressed' Native, and in a more extreme form in the town locations.

(6) Again, whilst superficially the nutritional position in a given area may appear to be more or less satisfactory, as judged for example by the present health of its inhabitants, or the number of well nourished recruits that may continue to offer themselves at the depots, the actual position may be far less satisfactory than it seems; for it may be maintained in its present outwardly stable state by means of a number of make-shifts carried out at the expense of the future. The destruction of the vegetable cover through overgrazing, and fuel collecting, is a case in point. The effect of these make-shift solutions is cumulative and in some areas may be reasonably expected to bring about comparative rapid deterioration of the carrying capacity of the land in the not too distant future. For instance the ignorant cultivation of steep hillsides may for several seasons produce sufficient food to prevent entirely any evidence of malnutrition amongst those consuming it, but in a few years the rains will have entirely denuded the soil from such ground and recovery of fertility will be almost impossible.

(7) As is to be expected the actual nutritional position varies greatly in different parts of the Territories, in different years and in different parts of the same year. With the limited time at our disposal it was impossible to do more than gain general impressions of the sample districts that we visited, hence no attempt at anything more than broad generalizations concerning these differences will be made. In some few districts an adequate supply of home grown food may be available, but in most this is far from being the case, and an annual shortage of grain before the new season's harvest, is almost universal. The fact that this is

often due to the Native's own improvidence makes no difference to the effects produced.

Moreover, as has already been noted, even where the position may appear to be superficially satisfactory, the real basis is not infrequently a precarious one.

Speaking generally it may be said that there was not a district we visited which would not stand to gain considerably from efforts designed to increase its stability, whilst some districts might be regarded as approaching nutritional bankruptcy.

Qualitative Notes on the Principal Available Foodstuffs.

In the following notes we have dealt with some points of interest regarding the more important foodstuffs in common use, dealing more especially with their availability, nutritional value, and the manner in which they are prepared for use. Other aspects have been left out of account, such as the use of foods to demonstrate rank and hospitality as well as taboos based on sex-difference or mourning obligations, which scarcely come within the scope of this enquiry. Although some of these customs are tending to lose their former importance they still undoubtedly exert a good deal of influence on the actual food available or consumed by the individual. For instance there is the curious refusal of the Xosa male to eat 'mfino' and the tendency amongst some tribes for the supplies of milk when limited to be given to the head of the kraal, rather than the children. Taboos regarding the use of eggs and milk are also somewhat unfortunate, since they lead to a quite unnecessary shortage of good quality protein.

Fuel.

The staple fuels are wood and dried dung; there is no need to emphasize their absolute necessity both for cooking and for warmth in winter.

Wood.

Constant cutting of trees and bushes, large and small, with no thought for to-morrow's supplies, aided by the depredations of goats has played havoc with the available supplies. As a result in some areas great distances have to be covered in search of wood, whilst even timber on European land is liable to be stolen or barked.

Collecting firewood is a heavy task. The women chop dead wood in the forests and carry back enormous bundles. On an average a woman may go for firewood four times a week. In some districts wood is obtainable within half a mile of every 'uzisi'; in others it has to be carried five or six miles.

(Hunter (1936), p. 103.)

* Uzisi - Local kinship group and the huts in which they live.

This is in Pondoland, where wood is much more plentiful than in some other parts; for instance around Tsolo we were told that a distance of 8 or 9 miles was not unusual.

Excellent work is being done by the Bunga and the Forestry Division of the Department of Agriculture in the preservation of old forests and the creation of new ones, but the Natives are apt to regard such fenced in areas as so much valuable grazing land stolen by the powers that be. Young plantations are also difficult to maintain owing to droughts and trampling by cattle, whilst fencing is expensive and resented by a people who regard grazing land as the inviolable property of all.

At these forests women are charged small sums for as much dead wood as they can carry away; even these pence are begrudged by the older men who command their womenfolk to produce wood for nothing as in the olden days. As might be expected there is a continual warfare between forest supervisors and wood carriers as to the definition of dead wood.

As in other parts of South Africa this steady denudation of the vegetable cover for fuel is having a most serious effect on the ability of the land to hold up the rainfall and deliver it gradually to the streams and rivers. More and more do the heavy downpours hurry to the sea instead of flowing more gently and more gradually throughout the greater part of the year.

Dung collected from the veld is the only alternative to wood fuel and is very largely used throughout the Territories because it costs nothing, is obtainable nearer home and can be collected by the children. On the Basutoland border dung is sometimes dug out from the cattle kraal in blocks, placed on the kraal walls and used when dry. It has other uses, such as for the smearing of the floors of the hut and is always much in demand.

Obviously the use of dung in this way is detrimental to the pastures, which need the assistance obtained from this natural manuring; hence the evil results of overgrazing are intensified by under-manuring.

Natives are not altogether unaware of this, but as one said to us, when questioned on the point "if our children do not pick up the dung others will." Even the valuable ash from the dung fires does not appear to be used. The smoke from dung fires is of a most irritating kind. The same problem of the use of dung for fuel is well known in India and whilst it is easy to condemn, the fact remains that fuel must be found.

Water.

Compared with many parts of South Africa the Territories, and the Transkei in particular, are still well watered by streams and rivers that do not usually become dry even in late winter.

According to Hunter "in Pondoland it is seldom necessary to go more than a quarter of a mile for water;" but in other parts, especially in the Ciskei the usual distance would be much greater.

The quality of the water, however, must often leave much to be desired, partly because of the lack of any attention to the disposal of excreta and partly because of the lack of appreciation of the importance of as well as the cost of protecting springs and drinking places from pollution by cattle etc. Dr. Allan mentions that he saw a Native woman scooping water from a puddle in the road after displacing a pig which was wallowing in it and any traveller in these parts could say the same.

There is, however, some progress in this matter since the Burga fenced and protected 29 springs in 1906 and altogether has done this to some 330 others. The value of a clean water supply was not infrequently referred to by the more educated Natives in the course of conversation.

The Mealie.

There is no need to stress the fundamental importance of the mealie in the Native diet. It forms the principal item at most of his meals and, after his cattle, is his first consideration. As has already been mentioned cereals were formerly more in the nature of

an addition to the meat and milk that made up the bulk of his diet, so that the change over to a predominantly cereal consuming basis represents a very great change from the nutritional point of view.

In spite of the fact that he depends so largely upon his maize crop the fact remains that he is very casual about its cultivation and obtains wretchedly poor yields. Whilst 6 to 10 or even more bags per morgen are well within his reach the average cultivator seldom obtains more than 3 to 4 bags. With an improved yield he could have enough and to spare for himself, could feed his cattle and so improve the supplies of milk, as well as keep his animals in better condition for ploughing. The causes for these poor yields are discussed elsewhere in the report. On a previous occasion we have dealt with the value and limitations of the mealie as a food. Undoubtedly it is a very valuable foodstuff but it needs to be supplemented by others that are richer in good quality protein, mineral salts and certain other constituents.

Probably it is true to say that the health of the Native people would have been very much less satisfactory if, as in parts of India, the staple cereal had happened to be rice, which is in many ways definitely inferior to maize when used as a main constituent of the diet.

The importance of using the whole grain has often been noted and there can be no doubt that the tendency to substitute mealie products in which part of the food value of the original grain has been removed is one which needs to be closely watched.

Storage problems:

Various simple methods have been devised by the Native people for storing their mealie crop; as might be expected these vary from district to district and we believe that a good deal might be done to popularize the more suitable methods in areas where at present these still remain unknown, or at any rate unused.

One of the simplest methods, apparently most popular with the Xosha is to pile the cobs into an open crib constructed of poles

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placed in such a way that air can circulate freely amongst the cobs; a crib can be any length, but must not be more than six feet in width, otherwise ventilation is inadequate. Such cribs are simple and inexpensive to make, last well and seem to reduce the attack by weevil; however, we seldom if ever noticed them outside the Xosa areas.

A second method is to thresh the cobs and store the grain in loosely plaited baskets placed in an airy position out of doors and sealed on top by means of a flat stone cemented with cow-dung. Some of these baskets are of large size and may hold as much as 40 bags of grain. Weevils are said not to develop in mealies stored in this manner, even after a season's storage. We only saw these baskets in use on the edge of Basutoland.

Another method in common use is to dig a pit about 5 feet deep and 2 feet wide, if possible in gravelly soil; this is smeared out with cow dung, filled with the grain, covered with a flat stone and cemented with dung. Some prefer to use a number of smaller pits, say three to four feet deep. Provided the soil is dry mealies will keep in such pits for many months, but in very wet weather, or in unsuitable ground, the pits may become flooded and the whole contents spoiled. Estimates of average losses varied from ten to twenty per cent., or even higher; the danger from water is considerable and may be a source of constant anxiety to the owner. The grain also acquires a somewhat musty taste, but this is appreciated by most Pondo, who consider that porridge or beer made from pit mealies is more tasty than that made from fresh grain. (Hunter).

This method is simple and inexpensive and practically theft proof if well hidden as is usually the case. Moreover it has the advantage that no one knows the extent of your stores, which in these days of almost perpetual shortage is unfortunately becoming a somewhat desirable feature.

Lastly, there is the more up-to-date way of storing in galvanized tanks; this is used to a very small extent by more progressive

farmers and co-operative buying is not unknown. The cost of a tank to hold 30-40 bags was quoted as being about 25-30s delivered near Engobo; if properly protected from the weather such a tank should last many years. This is of course the best method, since the contents can be fumigated.

Temporary storage, after reaping, and pending threshing is usually made in the food hut, but as with cribs, baskets and even tanks there is always the possibility of loss due to petty pilfering on the part of some member of the household; thus a child or wife may repeatedly take small quantities to the store to exchange for immediate needs, and this sort of thing is apt to be a frequent cause of friction in the kraal. The obvious suggestion that store rooms, tanks and even cribs could be locked was met by one old Native with a shake of the head and the remark that "locks have keys." except near Basutoland we did not hear of any remedies for weevils such as the wood ash commonly used by Natives in Bechuanaland and some other parts of Africa; if this simple remedy is as effective as is claimed its use would be worth popularizing. We have read that in parts of Bechuanaland the chiefs have in the past exerted a valuable influence on their people by insisting on the creation of a reserve of maize sufficient to meet at least one whole season's requirements before any is allowed to be sold to the trader, but no such foresight appears to have been forthcoming in the Territories. Moreover, we gathered that the existence of such a reserve tends to reduce the zeal with which the current crop is cultivated.

During the last few seasons, presumably owing to the acute shortage of food a custom has become more common which is the reverse of the above, namely the eating of young green mealies almost as soon as it is possible to do so. From such green mealie cobs a very delicious 'bread' may be prepared and indeed from the standpoint of immediate nutritional value there may be much to recommend the consuming of mealies in their green stage. However it is a very wasteful way of using the grain and is regarded as such by the Natives themselves. An agricultural Supervisor told us that thi

last season he had seen whole lands dripped of mealies in this way, a thing he had never before witnessed.

The coming of the trader has introduced an entirely new method of 'storing' grain i.e. by converting it into other commodities. This is discussed elsewhere, but mention may be made of an aspect which may be of significance, suggested by Haines (1933). Commenting on the growth of the sale of grain to the trader this writer says:-

"Communal feeling is still strong enough to make it incumbent on a Native who has large stocks to feed any of his relatives who may be short. As a feeling of individualism, the result of contact with Whites, arises, there is bound to be some conflict between public opinion and individual inclination in this matter. Sale to the trader gives an easy resolution of this conflict; money and blankets and cattle can be held by the individuals much more easily than grain, the first necessity of life."

Saving mealies for seed.

A dozen or more cobs are usually hung from the rafters of the great hut. These become very dry and take longer to germinate than cobs in the store, so they are used as seed for early planting in dry weather. When a store hut gets damp in wet weather, two or three of the damp cobs may be hung over the fire to dry, in the belief that their drying will help the other cobs in the store to dry also. (Hunter 1936, p. 86.)

In some parts yellow mealies are most commonly grown, whereas elsewhere they are regarded with much disfavour. This is interesting because it is now well established that the yellow pigment present in yellow mealies, like carotene, is transformed by the body into vitamin A. Since the Native diet is not too well supplied with this indispensable constituent, it will readily be realized that the consumption of large amounts of even a rather yellow type of mealie will greatly increase the intake of the pro-vitamin.

We made many enquiries about this matter and as far as we could judge there is little to choose between the two types as far as flavour goes, though some say that the yellow variety "does not rest so well in the stomach;" the reason for the preference of yellow mealies amongst those who share it, seems to be based more on the fact that it is more drought resistant and also keeps better when pitted. Even with the women this outweighed the fact that yellow mealies are undoubtedly somewhat harder to grind. Others

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told us that they would prefer the yellow mealie when young i.e. as 'green' mealies, but gave preference to the white for meal, and for products derived from meal. No doubt also those who are more closely in contact with Europeans are affected, even if unconsciously, by the similarity between the whiteness of mealie meal made from white mealies and that of wheat-flour or bread.

On passing through the Territories we were somewhat surprised to learn that the custom of 'steeping' mealies in wooden or stone mortars, which is almost ubiquitous amongst the Yoes and Toubas is less common amongst the Fende. Moreover, we learnt from several reliable Natives that although common to-day this custom is a comparatively recent one; no one seemed to know from whence it originated. We have endeavoured, so far without success, to account for this.

Milk.

It is hardly necessary to emphasize the importance of milk in the diet of growing children. Even so far as adults are concerned we are aware of no single food which can so satisfactorily compensate a diet consisting largely of cereals, and hence so deficient in good protein, mineral salts and vitamins A and C.

In days gone by the Native people had an abundant supply of milk; in fact milk and meat was their principal diet, supplemented with the small amount of cereals grown by the women in their patches of cultivated ground. Even some of the place names in the Territories refer to the abundance of milk that was then available. Now all that has changed. Again and again, as we moved from place to place, we were told the same story of the diminishing supplies of milk and we were to emphasize most strongly the serious nature of this change in the diet. The causes of this decrease have already been considered in some detail, but it may be convenient to summarize them very briefly here:-

- (a) The deterioration of the pasture.
- (b) The cattle are allowed to graze with small stock.

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- (c) They are of very poor quality.
- (d) Owing to communal grazing, cattle breed too young.
- (e) Owing to their poor condition the cows no longer calve as often as formerly, probably only about once every three years.
- (f) The lactation period is also reduced.
- (g) The average yield of milk is poor in summer and becomes exceedingly low during the winter months.
- (h) This low yield is adversely affected by regular dipping.
- (i) The importance of winter feeding is not recognized.
- (j) Hand rearing of calves is unknown.

It may also be mentioned that the quality of the milk produced from cows feeding on poor pastures is affected, certainly with regard to its content in vitamin A.; it may however contain less water, which leads to an impression of greater richness.

Moreover the value of milk as a food is but dimly appreciated by the average Native; cows must be kept to obtain calves. This outlook is illustrated by a typical remark made to Hunter:-

One man replied when I enquired whether no fathers aimed at getting a few good cattle rather than many poor ones as ikhazl "People do not wish for milk, they wish to be rich."
(Hunter (1936), p. 68.)

In the sorat areas we were told that "milk was a luxury in summer and non-existent in winter", "milk is out of the question," "milk is never tasted again after a child leaves the breast" and so on. Such remarks came with depressing frequency.

On the other hand the position in Pondoland is evidently better for Hunter (1936), p. 69, writes :-

All informants are emphatic that formerly less land was cultivated, and that milk and meat played a greater part in the diet of the people than they do to-day, yet even to-day they are principal items in Pondo diet. Making a survey of the milk-supply during the winter months of scarcity I found that out of 57 imizi 43 had some milk. In summer every umzi would have some milk, and most a considerable quantity.

The importance of the dipping system in improving the health of the cattle is not to be questioned, but it has a definitely

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* ikhazl = cattle exchanges by groom and bridegroom's group.

harmful effect upon the milk supplies, both per se and because of the long trek to the dipping tank; if this occurs every two weeks the effect may be quite considerable. One doctor told us that the yield of milk from his cow was reduced by 25-30 per cent. for the next few days after dipping. Small additional supplies of milk are obtained from the goats and even sheep; the herd boys help themselves. Custom varies widely, but where milk is scarce the regular milking of goats is practised even by the Reds, who usually regard them more as animals for ritual purposes. Dressed people tend to use goats milk more freely, both as a sour drink and in tea, but in spite of the large number of animals kept it has been calculated that in the Middledrift area, for example, the daily yield would not exceed 1 gill per head of the population; even this small amount if reserved for the use of the children would however play a significant part in their diet.

The idea of introducing milch goats is at present under consideration in Basutoland.

Two further aspects remain to be considered. In the first place it is by no means necessarily the case that such supplies of milk as are available go to those who most need them, namely the children, invalids and women during pregnancy and lactation. On this point our evidence was somewhat contradictory, no doubt because tribal customs vary and so does the appreciation of the value of milk as a food. Undoubtedly in some cases the children get a definite preference, especially the infants, but elsewhere it is the head of the kraal who is offered the milk. Briefly his point of view is "if I don't get milk what shall I drink?" and that settles it.

Moreover, the growing popularity of tea and coffee, even amongst the 'Reds', is another reason why milk is tending to gravitate towards the grown ups. We even heard that 'Dressed' people sometimes go round to the 'Red' kraals to buy milk for this purpose. To keep one cow going 'for the coffee' is the new tendency. However, we do not wish to convey the idea that Natives are not very fond of milk,

if they can get it; indeed several of them assured us that the 'Dressed' people are beginning to realize that 'we cannot rear our children without milk;' the trouble is to get it. We had good evidence that they will flock to the European cheese and butter factories to purchase skim milk, butter milk and whey, either with money or for labour. A poor Native will also milk or churn for another Native, and may be paid for his services in milk or whey. In the parts of the Ciskei where European dairy farms are established alongside Native locations there is almost certainly much more milk or milk products available in these ways; this is doubtless an important factor in maintaining the present level of health. Fortunately, so far, only a very few have begun to sell their own supplies to the creameries, but this will no doubt develop as time goes on. Everything points to the position with regard to the supplies of milk becoming steadily worse as time goes on. Actually it is arguable that a shortage of milk is of more importance than a shortage of mealies, since the latter can be bought with money earned elsewhere, whereas at present, except for the sale of condensed milk at high prices in the stores, milk is unavailable unless produced on the spot.

Taking everything into consideration we believe that it is no exaggeration to say that this single factor ^(which is) if it continues is capable of bringing about a serious deterioration in the health of these people, within a comparatively short space of time. This does not mean that we regard milk as an indispensable item in any diet, but at present it is an indispensable item in the diet of the Native people, owing to their lack of adequate substitutes.

Mfino (Wild Spinach).

Throughout the Territories it is a common practice, more particularly amongst the 'Red' Natives, to collect and cook the leaves and shoots of various wild plants. During the winter months, according to Hunter "most pagan women eat mfino every day."

We have reported previously on the high nutritive value of

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these leaves and need only mention here that they are exceedingly rich both in mineral salts, such as calcium and iron, as well as in vitamins A and C. In fact next to milk it would be hard to find any single food which acts as a more valuable supplement to their high cereal diet.

Many of these *mfino* grow wild on the veld, or as weeds in cultivated lands, whilst others such as the shoots and laterals of pumpkins are gathered in the 'gardens'.

The following are amongst those most commonly used in Pondoland, but we have collected many more which are valued in other parts of the Territories:-

Isiqwashumba (*Sisymbrium capense*), Nongotyezana (*Hydrocotyle asiatica*), Imbuya (*Amaranthus paniculatus*), Imitwane (Pumpkin tips, or laterals), Iguzu (Cape Gooseberry, *Physalis peruviana*), Imbikicane (*Chenopodium album*), Irwabe (*Sonchus oleraceus*), Umsobo (*Solanum nigrum*), Cwetekazi (*Aizoon glinoides*), Nondlomboyi (*Amaranthus paniculatus*), Mhlabangule (*Bidens pilosa*), the tender tips of potato plants and Ububazi (*Urtica urens*).

Not only are the plants used in the fresh state, but as we have previously reported they are also dried and stored away for use when fresh material is no longer available. This does not apply to an area such as Pondoland however.

The real appreciation shown by 'Red' women for these plants is somewhat astonishing. All over the Territories we were told of the eagerness with which they are sought; indeed it is not uncommon for a 'Red' woman to ask permission to pick *mfino* which she had noticed growing in a town garden, or farm lands, in return for some service. Better cultivation of the lands following better ploughing and the use of cultivators is tending to reduce the supplies of these weeds.

In East Griqualand we learnt that they were already adapting the common turnip top to the same use and we even obtained some of a dried *mfino* prepared from this plant.

One of the favourite plants is 'msobo', whose little black

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berries are also well known to European children; this leaf is said to be used particularly by women during pregnancy, which is interesting in view of its high calcium content and the fact that pregnant women are often restricted in the amount of milk they are allowed.

A peculiarity about mfino is that it is seldom taken by the men or older boys, who regard it as a most effeminate food. The exact position varies from tribe to tribe; thus the Basutos are not very particular about the custom, whilst the Xosas are. As for the Pondoo Hunter (1936) writes:-

Men may eat the boiled greens, and occasionally do so, but it is taboo for them to touch the more popular isigwampa, spinach mixed with mealie meal. (p. 104).

Again and again we tried to learn why it is that such valuable foods should be so despised by the male sex, but although various superficial reasons were suggested we remained unsatisfied; perhaps, as some said it was only a matter of custom, the origin of which had long been forgotten. If so it is a most unfortunate custom, which must be responsible for a good deal of ill health.

Unfortunately the dressed Natives are taught, or have come to associate the eating of these mfino with other primitive customs from which they have turned away, and hence a cheap and most valuable supply of good food is neglected by the very people who need it. On several occasions in such kraals, where food was very inadequate, we found that the idea of making use of these plants had never entered their heads. This would not, of course, matter in the least if such European vegetable as potatoes, cabbage, carrots etc. were available and took their place. So far however this is by no means usually the case. Recently we learnt how many of these common weeds were also used and similarly valued in Europe, before the coming of the more modern vegetables which we now take so much for granted.

It is doubtful if much can be done to reverse the process which has already set in; and encourage the use of mfino by the 'Dressed' people, but a real effort to maintain the custom amongst the 'Reds'

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would be worth making. Unfortunately anything which involves the retention of old customs is apt to be regarded with suspicion as only another means of keeping the Native people back.

Yams are of course universally grown and are much liked. Natives distinguish many kinds :-

Itanga, with bright yellow flesh, used for cooking with whole mealies, mealie meal etc.

Usenza, with a harder outer coat and not so yellow; usually cut into quarters and cooked by itself.

Iselwa. is the one used for making calabashes; not eaten except when very young.

Except for their vitamin A content (pro-vitamin) they have not much to contribute to the diet, but no doubt the former is important, more particularly where white mealies are the rule. Small amounts of vitamin C are also present, but probably mostly disappears on cooking, owing to the active oxidase present.

Amadumbe (*Colocasia antiquorum*) are grown to some extent along the coastal belt, but do not appear to flourish further inland; at any rate they are seldom grown. The tuber is similar in composition to the potato, though containing less water and is of course an entirely different plant.

Monkey-nuts (Groundnuts), can be grown at any rate in some parts and as with many other crops could no doubt be made much more use of if grown on a small scale in the 'garden' as a supplement to the food supplies. Their extraordinary high food value is well known.

Beans. Kaffir beans are frequently grown on a small scale throughout the Territories, but not sufficiently to give them any value as a rotation crop.

Mushrooms. A very large variety of mushroom known as Ikwa (*Agaricus* sp.) is much appreciated by Natives, though they regard the smaller ones as poisonous.

European vegetables.

Efforts are being made by the Agricultural Department to teach Natives to grow European vegetables and a certain amount of success

is being obtained, more particularly around the towns where they can be sold to Europeans. At one township we were informed by the market-master that some of the best fruit and vegetables in the district was being grown by Natives; that, however, is just the trouble, for the bulk of these crops are grown for sale rather than for home consumption; however, once the habit of growing them has been established it may be assumed that the taste for eating them will follow in due course. Carrots and green peas grow easily and well in many of these districts where supplies of water are adequate. A suggestion was made to us that suitable river banks might be utilized for the intensive cultivation of vegetables, which could then be sold or exchanged locally.

The use of European vegetable is generally encouraged at the schools and training colleges, but we were told that whilst they are appreciated when cooked there is little demand for salads or other uncooked vegetables, with the possible exception of carrots and onions. It is important to remember that men can be induced to eat European vegetables, such as potatoes, carrots and onions because they are not considered to be 'ukutya kwabafazi' (women's food) like mfino. No doubt cabbage occupies a somewhat intermediate position.

Shallots. One recruiter told us that Natives in his area were very fond of shallots; they are usually eaten raw though may be boiled and mixed with mealie meal. He said they were asked for by men who have scurvy in preference to other vegetables prescribed by the white doctor. We tested some of these shallots and found them to have an activity of about 0.1 mg ascorbic acid per gram.

Fruit. So far not much has been done to explore the possibilities of fruit growing in these parts, but judging by isolated trees in European gardens and occasional small orchards some kinds should do well. We learnt that citrus fruit grows readily in Eastern Pondoland, but although it was difficult to keep any fruit in European orchards it was still more difficult to persuade Natives to take the trouble to grow their own supplies.

Meat.

Formerly:

the country was full of game, elephant, rhinoceros, hippopotamus, lion, leopard, zebra, jackal, hyena, many varieties of buck and game birds, so game must have been a considerable item in the diet of the people. Any man was free to hunt buck and birds as he chose and no part of them was due to the chief

Now the only game to be found in Pondoland are a few bush buck and blue buck, a monkey or two, some cats and birds; so hunting no longer plays an appreciable part in the domestic economy of the people. (Hunter (1936) p. 95-6.)

Indeed, owing to the persistent attention of small herd boys, even the birds are becoming scarce and would no doubt be exterminated if the Natives had their way, owing to the damage they do to the crops.

Fortunately the situation is being relieved to some extent by the forest reserves and by a few bird sanctuaries that have been set aside by the Europeans.

Cattle small stock and poultry are therefore the only substantial sources of meat. These are killed, however, with reluctance and mainly on ceremonial occasions, in honour of some important visitor, or when a beast dies from disease or starvation. Richer men, or those owning sheep may kill every now and then merely to provide themselves with meat; in fact from the nutritional point of view there is something to be said for the encouragement of sheep on the grounds that it does at least provide a smaller unit which may be killed as required. Even such occasional supplies of meat must be of importance in supplementing the deficiency of protein in the more usual diet, whilst the fat and fat-soluble vitamins contained therein will also be of value, though the amount of fat on most Native animals is apt to be extremely low.

Undoubtedly animals dying from disease, or even from starvation, must provide quite an appreciable amount of additional meat, so that in times of drought or during epidemics of disease amongst stock the Native may actually be better off as far as supplies of fat and animal protein are concerned than under normal circumstances. In fact the care taken by the veterinary department with animal diseases

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and the introduction of dipping has actually reduced supplies in this direction by saving the life of many an otherwise healthy animal, which formerly might have died and been eaten.

We witnessed the cooking of a sheep's liver that had been removed from an animal that had died from gall sickness, and were also told the usual stories about Natives who eat anthrax meat after suitable treatment.

The unequal nature of the distribution of cattle is dealt with elsewhere, but it is a fact that very many families have no cattle at all, whilst another large group have only the barest minimum required for draught purposes and for the supply of milk. To use them for meat is clearly out of the question. Even with the more well-to-do the slaughtering for meat is not very common. Thus in the Engcobo district a moderately rich Native told us that in the absence of deaths amongst his stock he would slaughter a goat or sheep about every ten weeks; in a kraal near Butterworth one or two sheep were killed per month, whilst a peasant at Tsolo reckoned that somehow or other he would eat meat about once a fortnight.

We witnessed a feast arranged to celebrate the completion of a new cattle kraal at which a sheep had been killed, and no doubt, as with beer drinks, such periodical feasts combine economy in supplies with the maximum amount of social obligation and enjoyment. To-day I am the guest, to-morrow the host.

It is clear from the foregoing that if the inhabitants of these Territories may be regarded almost as vegetarians it is not choice but economic reasons that are the deciding factors. Though undoubtedly the richer men could slaughter more often than they do, and with great benefit to the overstocked commons, the low consumption of meat amongst the average family is unavoidable. No poor European farmer could afford to kill an ox and share it with his friends and relations very often, whilst even a sheep must be regarded as something of a luxury.

On the borders of European Territory sheep and cattle stealing is frequently reported to and is very troublesome to the farmers

.../ concerned

concerned. The craving for meat is undoubtedly one of the causes of such exploits. We heard of one case where the man got away with no less than 100 sheep in one night, successfully driving them over the border into Basutoland.

Obviously the difficulty is to obtain small but regular supplies of meat and on more than one occasion Natives told us quite frankly that they wished it were possible to obtain meat in this way.

Presumably this need is the origin of primitive butchers shops which are beginning to spring up and at which a Native will kill and sell to any who care to come and buy. The following information regarding prices etc., was kindly obtained for us in the Quzbu district, the details being copied as received.

An old ox when found to be useless for work is disposed of as follows :-

(No scale is used, the animal being merely cut up into joints or eighths).

4 legs exchanged for 6 dishes of grain per leg. (a dish contains about 10 lb. grain) equivalent to 5/-	£1. 0. 0	
Brisket, or whole chest	6 dishes, or say	5. 0
Ribs	6 dishes	5. 0
Neck	2 dishes	2. 0
Back-bone	6 dishes	5. 0
The hide is taken to a trader and may realize about	10. 0	
	<hr/>	£1. 7. 0

1/4 is kept for the owner to eat.

A fatted ox when butchered for sale to neighbours generally realizes as follows :-

4 legs sold at 8 dishes of grain per leg, cash value	£1.12. 0	
Brisket, or whole chest	6 dishes	5. 0
Ribs, cut into 3 sections	3 dishes	10. 0
Neck, sold whole	3 dishes	3. 0
Back-bone	6 dishes	5. 0
Value of hide when sold to the trader	12. 0	
	<hr/>	£3.13. 0

1/4 also kept for owner of ox to eat.

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