SOME THOUGHTS OF THE FUTURE HEALTH OF THE SOUTH AFRICAN BANTU

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In speculating on the future health of the Bantu, especially in relation to nutritional diseases, it seems reasonable to predict that, once these people largely become literate, and their spending power increased, then within the space of a generation or so their pattern of health will resemble that of Whites. If this belief is valid, then in time the excessive sickness and mortality from deficiency diseases and parasitism will belong to past history; expectation of life will increase; and, looking still further forward, doubtless the Bantu will become prone to the various degenerative diseases that are now largely responsible for the high toll of morbidity and mortality found among White populations. This progression of changes has occurred with other similarly placed populations; there would seem to be no reason why the Bantu should prove to be an exception.

Some months ago, in an Editorial in the *American Journal of Clinical Nutrition*,[1] I discussed the extent to which the achievement of literacy and the securing of

higher wages would be likely to improve the health picture of the Bantu. The conclusion I reached was that, even when these conditions shall have become largely achieved, the looked-for beneficial changes may perhaps take longer to arrive at than might be expected. To support this view I propose in the first instance to outline very briefly certain aspects of the present situation among the Bantu, more particularly in urban populations.

Present Situation with Urban Bantu

Among the indigenous inhabitants of Africa we know that changes are taking place at varying speed—from primitiveness to sophistication and from savagery to commerce. In the process the trend, as has so often been observed in the past, is to leave the land and settle in centres of population. This migration has been promoted in part by the mechanization of farming, but more especially by the labour needs of industry, commerce, and private homes, by the ease of travel, not to speak of the greater opportunities, excitement, and other attractions of town life. Of the whole Continent, this movement has been by far the most marked in South Africa and, of the South African cities, in Johannesburg. In 1911, 12·6% of the South African Bantu were urbanized; by 1960 the figure had reached 28%.[2] In Johannesburg, in 1936 the Bantu and White moieties of the population were 260,000 and 246,000; by 1960 the figures had increased to 594,000 and 375,700.

In this movement, it may well be asked, what advantage have the Bantu gained in relation to their health picture? The same may be asked with equal justification regarding the disadvantages, since the past abounds in examples that have shown that 'civilization' has not been an unmixed blessing to populations in under-developed regions.

On the credit side, in urban centres there are better provisions for medical treatment and hospitalization, antenatal, postnatal, maternal and child welfare services, and preventive inoculation (against smallpox, diphtheria, poliomyelitis, etc.). With few exceptions, these facilities are free to the whole of the local Bantu population. It is known that their infantile mortality rate, although still far too high, is falling; in Johannesburg, whereas it was 244 per 1,000 live births[3] in 1951, in 1962 it was 110. Children now are taller and heavier than they were 10 years ago;[4, 5] indeed, in the more privileged groups, present growth data are closely similar to those of Whites.[6] In Bantu housing there have been great changes—about 36,000 dwellings have been built in Johannesburg during the last 8 years. Associated with this building activity is the concomitant provision of piped water, and sewage and refuse disposal. At Baragwanath Non-European Hospital, Johannesburg, in 1953, there were 287 admissions for typhoid fever, resulting in 26 deaths; in 1963 there were 74 admissions with 7 deaths. Seasonal shortages of food, so often a feature of rural life, are no longer to be feared. Virtually free education is available, and the literacy rate among the present generation of urban Bantu children is 90 - 95%. Wages are higher, and employment is much more regular. Capable workers can progress from unskilled to certain semi-skilled or even skilled occupations. Relatively short hours of work—a 5-day week for a large proportion of workers—allow time for entertainment and recreation.

However, many results of the urbanization of the Bantu are disquieting, to say the least. Under *kraal* conditions, delinquency, especially among the young, presents little problem, being dealt with by robust, if rough and ready, tribal justice. In town life crime is more prevalent, both petty and serious, and there are more traumatic injuries and deaths. Understandably, the instability of family life is greater, with adverse ramifications, especially in the well-being of the young. With many workers, much time, money and energy are spent in transport to and from places of employment. Easy facilities for credit encourage spending beyond means, unfortunately with frequent sequestration of hire-purchase articles. In regard to nutrition—with which this paper is primarily concerned—breast feeding is almost invariably successful among Bantu mothers; yet because of increasing employment of women, and from pressure of plausible advertising, the practice is giving place to the adoption of processed foods. These, almost invariably, are prepared in too dilute a manner,[7, 8] predisposing to, if not causing, kwashiorkor, a disease by no means uncommon in urban centres. The intake of vitamin D is low, so that the over-clothing of babies (who in *kraal* life are semi-naked), with consequent insufficient exposure to available radiation, causes rickets (sometimes severe) to be common.[9, 10] The considerable replacement of coarsely ground or lightly milled maize by white bread, and the decreasing consumption of fermented porridge (*magou*), have resulted in a reduced intake of the B-complex vitamins. This change, together with increased consumption of illegal alcoholic concoctions supplied by the 'shebeens', has contributed to an increase in alcoholic pellagra and, to a much lesser extent, beriberi. According to Dr. H. C. Seftel[11] (of Baragwanath Hospital), whereas a generation ago the majority of pellagrins were suffering from the disease in its classical form, at present almost all pellagra is of the alcoholic type. Wild spinaches and greenery (*m'fino, morogo*) are far less abundant in urban areas, so that there is a decrease in the intake of certain mineral salts and vitamins. The familiar iron 'kaffir pot' is being superseded by enamel and aluminium vessels, thereby lessening the intake of iron. In a survey covering 2,000 homes in representative Bantu townships, we found less than 10% of families to be using the 'kaffir pot' for cooking purposes. We have found, too, the haemoglobin levels of Bantu women servants in White households to be significantly lower than those of poorer Bantu women living on their customary diet.[5] Despite improvements in hygienic conditions, our sample studies indicate that about one-half of Johannesburg urban Bantu children are infested with parasites; yet in the somewhat sparsely populated local *highveld*, and even in parts of the *lowveld*, helminthiasis (excluding *S.mansoni*) may be as low as 5%, providing correspondingly lower nutritional handicap.[5, 12]

Need for Health Education

What can be done to deal with the unsatisfactory aspects described? The immediate reaction (as it would be when considering the poorer section of any population) is this: If their socio-economic level be raised, to what extent can we look forward to improvements? If increased spending power means better housing and hygiene, more nourishing food, and so forth, then we can confidently expect benefit to health and nutritional state. If, however, much of the increase in money goes into expensive clothing, cigarettes, gramophone records, transistor radios, public amusement, 'fah-fee', and, so far as food is concerned, on more white bread, sugar, soft drinks, and European liquor, then the results of increased spending power will be disappointing. What has just been written is, unfortunately, already taking place, and it is feared that it will continue to be the pattern for the future. Therefore, until we are able to educate these people in the economics and practical aspects of health and nutrition, and until we can help them to become more self-reliant and provident, the efforts of State and community (as outlined above) to alleviate the position will partially fail to achieve their object. The drawbacks indicated will not largely be overcome simply by teaching these people to read and write, since the majority of urban Bantu already are literate.

This urgent need for imparting effective health education is so important that even were there no immediate increase in spending power, major improvements in health in certain population groups might still be feasible. Jelliffe,[13] in Uganda, has written: 'If, in Baganda, mothers could be persuaded to feed their young children with animal and

vegetable protein foods that are, in fact, available to them in their *shambas* and in the *dukas*, together with the prestigeful (but nutritionally unfortunate) steamed plantain (*matoke*), there would be a dramatic fall in the occurrence of kwashiorkor, at present such an unnecessary scourge of this relatively wealthy part of the country. Similarly, but perhaps even more difficult, if mothers, in peri-urban areas especially, could be persuaded to breast feed their infants solely for the first semester and, thereafter, with other foods added, up to the age of at least one year, the present rising tide of diarrhoeal disease in young children might be halted. This is due for the most part to ill-advised, quite often unnecessary, bottle feeding by mothers who can neither afford to buy adequate amounts of tinned milk, nor have the education or home facilities to prepare the feeds in a cleanly fashion.' Many other quotations of this type could be cited from other parts of Africa concerning not only infants but adults also. Thus, there are numerous reports bearing on the abstinence from valuable foods by girls and pregnant and lactating women, due to tribal customs.[14] The young adolescent Zulu girl is forbidden to consume eggs, since it is believed that females (especially young adults) become excessively fond of men as a result of consumption of this foodstuff. Eggs, moreover, are believed to lead to barrenness. Among certain Bantu tribes, mothers go without milk throughout pregnancy, this foodstuff being taboo.

That there are difficulties in imparting health education is well recognized, and there has been much to discourage the efforts that are being made in different parts of the world. The question may be asked, are the Bantu, in their own time and in their own way, simply conforming to the pattern of change, for good or for ill, that has characterized the transition of other populations, both White and non-White?

Comparisons with White Populations in the Past

It is important to bear in mind a fact we are apt to forget, namely, that even among White populations the present outwardly favourable health situation is only of comparatively recent origin. On nutrition, and diets consumed in the past, books are available, such as *The Englishman's Food*,[15] *The Scotsman's Food*,[16] and papers such as 'The changing feeding habits of the nation'[17] (England), 'The American diet, past and present',[18] and numerous other publications. In perusing these it is startling to realize that real poverty affecting a considerable proportion of White populations prevailed well within the lifetime of many of us. In Britain, in the period just after World War I, there were still conditions of real hardship, especially in the slums of the larger cities. In 1920, the British Medical Research Council deputed two eminent research workers, Professors Noel Paton and Leonard Findley, to investigate certain aspects of the health of the people. In their report entitled *Poverty, Nutrition, and Growth*,[19] which dealt primarily with 'studies of child life in cities and rural districts in Scotland', they described their investigations of families in Glasgow, Edinburgh, and Dundee. It is surprising to learn that at that period half the *total* number of families in these cities were living in *one*-roomed dwellings, and over 93% of families were living in one- or two-roomed dwellings. More than half of the families studied were earning incomes of 5s. to 10s. per week per member of family. As might be expected, the diets consumed were high in carbohydrate (mean 385 G.), and low in fat (mean 73 G.) although not in gross protein (mean 76 G.). In these respects the environment and diet conformed in measure to that of the Bantu.[20] The position regarding morbidity and mortality among the young from nutritional and infectious diseases was not depicted adequately, but a decade previously it was reported that the infantile mortality rate in Britain among the lowest social class (Class V) was 153, i.e. double that among the highest social class (Class I),[20] namely, 76 per 1,000 live births. It was also reported that the mortality rate for 'nervous and nutritional diseases' was 5 times as high in families dwelling in 1 and 2 rooms as in those dwelling in houses of 5 or more rooms.[21] Detailed information on infantile malnutrition was not given in the MRC Report,[18] but contemporaneously, kwashiorkor, known of course under other names (Mehlnahrschaden, distrofia pluricarencial), was by no means uncommon in certain central European countries. Some years later, dissatisfaction again was expressed over the diet commonly consumed by the working classes in Britain, by Mellanby[22] (1931), and later by McCarrison[23] (1936), who decried the regimen of '. . . white bread, margarine, sweetened tea, boiled potato and cabbage, tinned meat and cheap jam'. Both writers were inclined to blame much of the ill-health prevalent in the British people, directly or indirectly, on the habitual consumption of such a diet. Turning now to this country, some will recollect the *Report of the Carnegie Commission on the Poor White Problem in South Africa*,[24] which was published in 1932, now 32 years ago, and which concerned a serious national problem that at that time involved about 15% of the total White population. The Report comprised 5 volumes, one of which dealt with health and nutritional matters. Unfortunately, objective information on the occurrence of diseases linked with unsatisfactory nutrition and hygiene was not given. But it was indicated that pollution of drinking water supplies was very common, and that illness and death from gastroenteritis, especially among the young, was a major health problem. Regarding diet it was stated: 'The great majority of the rural population live mostly upon farinacious food, chiefly bread and porridge (mielie pap or 'tiger' oats); eat meat once a day or less often, and use a little milk, but little else of flesh-forming food; cultivate a small amount of vegetable, chiefly pumpkins and sweet potatoes, and eat fruit when locally grown.' The chief causes of inadequacy of diet were listed as '(1) ignorance as to the choice and proper preparation of food, (2) poverty and unfavourable natural conditions'. Without going into further details, it will be understood that these people were consuming a Bantu type of diet. The 'poor Whites' of a generation ago in measure were characterized by the same type of food habits, food preferences and prejudices, and nutritional ignorance, that are seen today in the Bantu and similar peoples.

Other Handicaps to Health Improvement in the Bantu

The securing of improvements in the Bantu may well be more of an uphill task than has been the case with the poorer Whites. The Bantu will have to overcome their tribal food and other prejudices and taboos,[14] some of them deep-rooted. They will also have to control the inclination to spend excessive money on non-essentials, some of which are definite status symbols. But quite apart from these formidable obstacles (to which much more space could be devoted), there are others that are little appreciated. Perhaps the best examples concern their water supply and personal hygiene. At one of the Bantu schools near Rustenburg, Dr. V. Bokkenheuser and Mr. N. J. Richardson, of this Institute, at the writer's suggestion, made serial observations every 6 weeks on the stools of 100 children during a period of a year. They found that 3 out of 4 children had one or more episodes of salmonella or of shigella.[25] Next, they made observations on a peri-urban child population at Witkoppen Farm School, 15 miles north of Johannesburg, and obtained much the same results.[26] It is proposed finally to carry out a further study under the most favourable conditions, that is, at a school where the surrounding children's homes have piped water

and where dwellings are near a hospital or clinic. From the information already given it may be conjectured that the major proportion of Bantu children (adults have not yet been investigated) are continuously handicapped by the infections described. Also to be taken into reckoning are the helminthic parasite loads which are a feature of populations in certain parts of the country, and which, as with bacterial infections, may take a very long while to overcome. The importance of remedying this state of affairs is well recognized. In a recent publication, Logan[27] has discussed the quantitative relationships between community water supplies and economic development. He refers to the economic justification of public water supplies discussed by Wagner and Wannoni in Venezuela in 1948. They calculated that, for an annual expenditure of about 6·5 million dollars to cover the amortization of small municipal water supplies, Venezuela could obtain an annual return of some 50 million dollars—about 800% on the investment. These figures were based on the provision of safe water to an additional 2,000,000 people in the rural area of Venezuela (75 litres *per capita* per day); the economic benefits were calculated on the man-days of time that could be saved by avoiding premature death and sickness and by savings in medicine and medical service. The calculations are said to be conservative. C. H. Atkins (1953) of the US Public Health Service has also calculated the economic benefits of water supplies in a number of different countries, on the basis of the cost of typhoid fever, diarrhoea and enteritis. Atkins reports that in many countries the entire cost of water supplies and latrines could be recovered from savings in from 2 to 5 years.

Some Aspects of Future Bantu Health

Bearing in mind what has been described and discussed thus far, what then are we to expect in the future? It is certain that the constructive efforts now being made by teachers, hospitals and clinics, State and municipal health departments, welfare bodies, etc., will assuredly bring some reward. Doubtless we can look forward to improvements in the Bantu infantile mortality rate. As stated above, in Johannesburg in 1951 it was 244; at present it is 110.[3] This latter figure is deemed to be reliable; in former years, the much higher figure reported was due at least in part to the inadequate reporting of births. To provide perspective for the current figure, the following comparative values for certain *White* populations are given:)[28] for 1921 - 1925, Malta 270, Canada 98, USA (total population) 74; for 1952, Canada 38, Chile 134, Malta 72, Portugal 94, England and Wales 27, Sweden 30; for 1961,[20] Portugal 91·5, Mexico 68·5, South Africa (Whites only) 28, South Africa (Asiatics) 43, South Africa (Coloured) 127, Netherlands 16. We can surely look forward to a considerable decrease in the occurrence of kwashiorkor, and the classical deficiency diseases, pellagra, rickets, and scurvy. In the southern states of the USA, where pellagra once was common among the Negroes and poor Whites, the disease disappeared in the space of less than a generation.[30]

With the attaining of these improvements, it must be realized that concurrently there will be a progressive worsening of certain aspects of health. The state of the teeth will deteriorate. In our own studies we have found that, whereas Bantu children in rural areas (Rustenburg Native reserve region) have roughly 10% of carious teeth, in urban schools in Johannesburg the figure approaches 50%. Diabetes undoubtedly is higher in urban than in rural populations,[31, 32] and almost certainly will increase in the future. Mortality from coronary heart disease is still extremely low; it is doubted whether more than 10 Bantu die annually from this cause in Johannesburg, from a Bantu population approaching two-thirds of a million, at least 10,000 being over 65 years of age.[33] Nevertheless, data from Baragwanath Hospital do suggest that mortality is higher now than it was 10 years ago.[34] These two types of changes—a fall in deficiency and infectious diseases, and an increase in degenerative diseases—have occurred in every population that has experienced transition from a more primitive state to westernization of diet and manner of life. It is little appreciated that when the progressive decreases in mortality from the former diseases are exceeded by progressive increases in mortality from the latter, then expectation of life ultimately will begin to fall. It is noteworthy that, even at present, the average man at 60 years has approximately the same life expectancy (about 14 years for White males) as he would have had in 1900.[35]

Limited Effectiveness of Past Lessons and Research Findings

Are the above changes inevitable? Can they not be retarded? Are there not lessons from the past that could be profitable for the present and the future? More apposite, has history shown that Whites (let alone non-Whites) are apt to learn from these lessons?

It will be remembered that during the last war many European countries had to adopt rationing and make certain alterations in national diets. It will be remembered, too, that in many countries, excepting those where there was a real insufficiency of food, there were reports of improvements in health.[36] It is not, of course, implied that all the improvements were due to dietary changes. In Britain, for example, according to Magee,[37] one of the most conspicuous and surprising phenomena of the war was the way in which the health, vigour and stamina of the population were maintained in spite of all the stresses, physical and mental, to which they were subjected. The rates of infantile, still-birth, neonatal and maternal mortalities, and the general death rate, reached the lowest level ever. A feature was the low mortality of children from disease. The growth rate and the condition of the teeth of school children improved. The incidence of anaemia declined. There was no evidence of an increase in the incidence of illness, especially of infectious diseases. There was an increase in the population at the ages most liable to fatal diseases, yet the period 1942-4 showed reductions in a long list of causes of death, such as tuberculosis and pneumonia. In another country, Switzerland, the general standard of health remained 'astonishingly good'. Several of the vital statistics remained steady; the crude death rate at 12 per 1,000, infantile mortality at 44, and maternal mortality at 2·3. School children grew taller and heavier than their peace-time contemporaries; there was a decrease in dental caries. Finally, the frequency of illness or sickness days decreased. Professor Fleisch,[38] who was in charge of rationing, stated at the British Swiss Medical Conference in 1946 that war-time observations showed that '. . . the large amounts of calories, proteins, and fat formerly considered as the optimum and which were eaten in such civilized countries as United States, England and Switzerland, are surely no necessity. They probably do not represent the optimum for health and capacity. For a long time, paediatricians have admitted that somewhat scarce feeding is better than over-feeding. This seems true for adults as well. Instead of 2,400 calories claimed by the League of Nations for adults with no special manual work, 2,100 calories seems sufficient at the average. The standard figure of 1 G. protein per kg. of body weight seems right to us (70 G. for an 11-stone man).

Although we have lived for years with 40 - 50 G. fat, I think that the most suitable amount of fat would be 1 G. per kg. body weight. The large quantities of fat consumed before the war (100 G. and more per day) are not only not necessary, but even injurious . . . A large part of the meat and eggs eaten before the war and a large part of the refined foods such as cooking fat, sugar, white bread, macaroni, etc., can be advantageously replaced for health by potatoes, vegetables, fruit and darker bread. Today the world is imbued with the spirit that an agreeable taste goes hand in hand with biological value. The food of peace time, which was concentrated, strongly refined, rich in protein and fat, flatters the palate but it is not the optimum for the organism.'

I do not know to what extent, if any, these lessons from war-time experiences have been profitably applied by White populations. Concerning fat, the amount consumed nowadays in many White countries far exceeds 100 G. daily, and is nearer 150 G. It is interesting to note that in a recent survey of the nutritional attitudes of 100 London housewives, two tentative conclusions were reached by Yudkin and associate workers.[39] 'The first is that knowledge of nutrition amongst London housewives is not extensive and is often wrong. The second is that nutritional beliefs, such as the superiority of brown bread over white, or the inferiority of canned food over fresh, or the harmfulness of sweets in causing tooth decay, do not seem to have any great effect on food choice, since most people eat white bread, canned foods are used extensively and increasingly, and more sweets are eaten in this country (England) than any other.' If this is the situation in a country from which so much fundamental and practical knowledge of nutrition has been forthcoming, what can be expected of the poor unenlightened African torn between the influences of traditional habits and high-pressure advertising? Among Whites, we know from current research that caloric overnutrition is common, and that obesity is a major health problem in a proportion of the community, with associated ramifications in decreased expectation of life, increased operative risk, and increased proneness to diabetes, cholelithiasis, and coronary heart disease. We know, too, that Whites have been enjoined to reduce smoking, lead less stressful lives, exercise more, drink less liquor. And yet we know how meagre has been the response to enlightened propaganda on these subjects—information, or rather teaching, that is not new, but in principle was well appreciated by the ancients. Thus, according to Plutarch, 'There are two sentences inscribed upon the Delphic Oracle, hugely accommodated to the usages of man's life: "Know thyself" and "Nothing in excess".'

Goals to Press for with the Bantu

I do not, of course, think that the inevitability of the adverse side of the future health picture of the Bantu should in any way inhibit the positive efforts now being made in health and nutritional education, even if increase in their spending power is slow in coming. Thus, every effort should still be made to stress the value of antenatal care and to encourage perseverance in breast feeding; to try to make the young prefer milk to 'soft drinks'; to encourage a diet based on a mixture of cereals rather than reliance on one; to press for the greater consumption of legumes at the expense of the inordinately increasing consumption of sugar; to hinder the replacement of *magou* and kaffir beer by European liquor; and to encourage the buying of the cheaper but still nutritious cuts of meat. Many other goals worth striving for could be added. In relation to nutrition in particular, we must not assume that these people will continue to have an inferior bill of health until such time as they are able to afford and eat precisely the same kinds and amounts of food as the White population. As Cathcart[40] was wont to urge, it is possible to be well and to keep well on very simple diets as long as they contain the dietary essentials—these need not be as expensive as is usually thought to be the case.

Changes in Disease Patterns whose Imminence calls for Intensive Current Research

Finally, there is one point that it may be pertinent to emphasize at this stage. Present-day Bantu suffer from certain diseases, abnormalities or conditions that are likely to become rare, if not to disappear, in the future, yet whose aetiology or significance, or both, are as yet unknown or little understood. There is cryptogenic heart disease,[41] formerly called nutritional heart disease,[42] which at Baragwanath Hospital accounts for over a third of hospital admissions for cardiac diseases and which, according to a recent follow-up study, may well account for the death of 75% of patients in a 5-year period.[43] There are hepatic siderosis[44, 45] and hepatic fibrosis,[46] each of which affects about one-half of urban Bantu adults. There is primary carcinoma of the liver,[47] gynaecomastia,[20] onyali,[48] tropical ulcer.[46] The time available for the investigation of these and kindred problems is limited, and obviously research work on them should be given priority. The same urgency applies, although perhaps in lesser measure, to certain diseases or conditions that are less common than might be predicted,[49] yet whose incidence is likely to change with increasing sophistication. Why is scurvy[50] so infrequently seen in Bantu infants? Why is fatty liver[51-53] so rare among Bantu alcoholics? Why are renal and vesical calculi[48] so uncommon? Why is cirrhosis less common among Cape Coloured than Whites,[54] when the reverse would be expected? The time remaining to answer these questions is running out.

What has been written and discussed in this paper simply touches on a few aspects in which the writer is interested. Many important aspects have been omitted, or dealt with superficially. In spite of incompleteness, there is no doubt about the general pattern of health that the Bantu will experience within the next generation. We can but hope that the efforts of the State and community, together with those that must be made by the Bantu themselves, on the one hand will promote the improvements in health that have been referred to, and on the other hand tend to avoid the adverse aspects, which even White populations appear reluctant to control or overcome.

SUMMARY

Prediction of the health of the future of a population such as the South African Bantu, especially in relation to nutritional diseases, is simplified by considering what has transpired with other emerging populations. In this paper, a brief account has been given of certain aspects of the current health picture of the Bantu in relation to the advantages and disadvantages accruing from urbanization. To afford comparisons, the nutritional and environmental circumstances of certain White populations in the past have been discussed. It has been concluded that present-day Bantu are confronted by problems somewhat similar to those that faced the poorer moiety of White populations one to two generations ago. On the basis of these comparisons, it would seem reasonable to predict that among the Bantu we can look forward to a falling infantile mortality rate, and to a considerable reduction in the incidence of nutritional deficiency diseases (kwashiorkor, pellagra, rickets, scurvy) and infectious diseases (gastroenteritis, certain parasitic diseases). When this stage is reached, however, the increased

expectation of life undoubtedly will be accompanied by an increased incidence of degenerative diseases (deterioration of teeth, diabetes, coronary heart disease). These increases are not wholly inevitable; nevertheless, since White populations are loth to profit by lessons from past history and from research findings, it is too much to expect a more enlightened reaction from the somewhat primitive Bantu. Among these people, moreover, the looked-for health improvements will be retarded by a variety of factors, including tribal food practices and prejudices, and infections from overcrowding and unhygienic practices (impure water, food handling). To achieve the best results, the practical help now being afforded by State and community must be matched by equally intense help in health and nutritional education, particularly in relation to engendering within the Bantu a greater desire and ability to help themselves.

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