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ANNUAL REPORTS OF THE NUTRITION COUNCIL
(SOUTHERN RHODESIA) FOR 1957 & 1958.

1. INTRODUCTION:

No annual report has been published since 1956 and this is less of the nature of an annual report than a record of the last days of the Nutrition Council which was established in April 1947 without adequate authority, funds or technical staff to carry out its functions and finally resolved to terminate its existence at a Meeting held on 12th June, 1956, with Miss Mona Doss, Home Economics and Nutrition Adviser to F.A.O. At this meeting (reported in Section 2 of the Annual Report of the Nutrition Council (S.R.) for 1956) it was proposed to re-organize the Nutrition Council as a Committee of the Natural Resources Board. Steps were taken by the Minister of Health towards this end but they were not successful, therefore the Minister asked, in March 1957, that a new Council be nominated of exactly the same constitution as the previous Council. Accordingly a new Council was nominated but no meeting was called by the Chairman (the D.M.S., Southern Rhodesia) in 1957.

In February, 1958, the D.M.S. proposed the reconstitution of the Nutrition Council with representation of the Natural Resources Board on it. This proposal was accepted and 2 representatives of the N.R.B. were nominated, these being the Chairman and one member. The present constitution of the Nutrition Council is given in the following section.

2. MEMBERSHIP:

- Dr. W. Murray, D.M.S. (S. Rhodesia) ex Officio Chairman.
- Mr. P. Gordon Deedes, Chairman, Natural Resources Board -
Representing Natural Resources Board.
- Mr. Philip Haviland, O.B.E. -
Representing Natural Resources Board.
- Mrs. Basil Price -
Representing Federation of Women's Institutes.
- Mr. P.P. Boenders -
Representing Rhodesia National Farmers' Union.
- Dr. B.S. Ellis -
Representing Federal Ministry of Agriculture.
- Mr. E. Watson -
Representing Rhodesia Federated Chamber of Commerce.
- Dr. E.M.B. West, O.B.E. -
Representing Rhodesian Institute of African Affairs.
- Mr. A. Pendered -
Representing S.R. Division of Native Affairs.
- Dr. E. Baker Jones -
Representing Federal Ministry of Health.

The National Council of the Mining Industry was unable to appoint any representative.

3. M E E T I N G :

Only one meeting was held during the 2 years. This was on 19th August, 1958, at Gwelo. The following members were present :

Dr. W. Murray, Acting D.M.B. (Chairman).
Mr. P. Gordon Deedes, Chairman, Natural Resources Board.
Mr. Bruce Mackenzie (Gwelo representative of R.N.F.U.)
Dr. B.S. Ellis.
Mr. A. Pendered.
Dr. E. Baker Jones.

Apologies were received from Mr. E. Watson, Mrs. Basil Price and Mr. P. Haviland.

This meeting agreed unanimously to put the following resolution to Government :

"The Council has been in operation for eleven years and has proved itself ineffectual by reason of its lack of authority, adequate funds and staff, and in addition by reason of its being attached to one single Ministry.

After very full discussion it appears that the most effective organization would be one which, though not within any one Department of Government, is nevertheless closely linked to all appropriate departments of both Governments and other important outside bodies. Without appointing an entirely new organization it appears that the body best equipped to perform such a function is the Natural Resources Board. It is recognised that, as presently legally constituted, this could not be done but a relatively simple amendment to its existing legislation would permit this.

We therefore recommend that the Nutrition Council be re-organized as a Committee of the Natural Resources Board."

It was decided to leave all other major business to the new Committee, including the consideration of Miss Mona Doss's 1956 Report. Thus, for the second time, the Nutrition Council has resolved to terminate its futile existence as an appendage of the Ministry of Health.

4. S T A F F :

No suitable application was received for the advertised appointment of Nutritionist. The reason for this was ascertained to be the salary which was too small to attract women with the necessary qualifications and experience who, in other parts of the world, are remunerated much more generously. Therefore the last meeting of the Nutrition Council strongly recommended that the salary should be raised to that of a Grade 2 Senior Professional Officer.

The question was discussed, at the last meeting of the Nutrition Council, of the appropriate department to which staff should be appointed whose duties are entirely related to nutrition because the Natural Resources Board employs no professional or technical staff. It was eventually decided to leave this question to the new Committee. Employment by the Federal Ministry of Agriculture appeared to be preferable to employment by the Federal Ministry of Health. The latter Ministry is concerned with the detection of malnutrition and its treatment but its long-term prevention comes within the province of other Ministries and departments such as Agriculture, Economics and Education. On the other

hand human nutrition is the primary practical province of the Ministry of Agriculture which already carries out research in animal and plant nutrition. The history of all national nutrition organizations which have been attached to or dependent on their health departments has been sufficiently uniform to deter even the most optimistic advocates of such a course.

None of the technical assistance from F.A.O. recommended by Miss Mona Doss in 1956 has been sought or secured by Government pending its consideration by the national nutrition organization which, as indicated above, has referred the matter to a new organization with sufficient authority to command attention to its recommendations.

5. NUTRITION EDUCATION:

This was the main subject of Miss Doss's 1956 Report but, as the adoption of her recommendations depends primarily on securing staff and technical assistance, no action has yet been possible.

Pamphlet No. 9 (Revised 1956) "Foods and Facts" (Correct Feeding of Children) and Pamphlet No. 11 (Revised 1956) "Meals Make Money" (The Feeding of African Labourers) have now been reprinted. Reprints of Pamphlet No. 12 "The Wise and Foolish Brothers" (A Story for African Teachers and Demonstrators) have not yet been obtained but have been promised by the printers in the near future. It is over four years since these reprints were ordered, (as mentioned in the Annual Report for 1955).

A pamphlet written in the vernacular by an African, Jonah Muswe, entitled "Zvekudya Zvakanaka" (nutrition) has been published by the Conference on Health Education of the Methodist Church of Southern Rhodesia (Rhodesia Mission Press 1956). This pamphlet is unique in that it is not a direct translation from English but an original account of the principles of nutrition by an African (after suitable instruction) in his own chosen words. It is believed that this is more easily understood by Africans with little or no experience of English than a direct translation which omits the repetitions and other peculiarities of African speech. A subsequent publication of the Rhodesia Mission Press is a pamphlet in English for African readers entitled "Good Food Makes Healthy Families" by Dr. Clara A. Nutting (Price ninepence).

Education of Africans in the value and use of dried skimmed milk has been carried out since the establishment of a roller-drying factory by the Dairy Marketing Board in Gwelo early in 1958. This product is supplied in bulk to the African population displaced by the Kariba Dam project on the Zambesi River to new homes on higher ground where food production has not yet had time for full development. Apart from the staff of the Ministry of Health and voluntary workers, a European Sales Promotion Officer is employed at Salisbury and a Dietitian at Bulawayo by the Dairy Marketing Board to promote the sale of their products. The local dried skimmed milk is sold at 1/6 a lb. wholesale and 2/- a lb. retail. This is less than half the price of similar imported products but the latter can readily be obtained at every African store whereas the local product is almost unknown in the Native Reserves.

The Rhodesian Association for the Prevention of Tuberculosis held a Fair at Gwelo on 31st May, 1958. The Executive Officer, Nutrition Council, availed himself of this opportunity for nutrition education by exhibiting the daily rations recommended by the Council for an African labourer together with their retail cost. Typical European comments were: "they would not eat it" and "absurd - no employer could afford it!" On the other hand, Africans asked: "how can a man live on that? Where is the tea, sugar, bread and butter?"

The approximate food value of the rations (or the listed alternatives) was :

<u>Calories.</u>	<u>Protein (g.)</u>	<u>Fat (g.)</u>	<u>Calcium (mg.)</u>	<u>Iron (mg.)</u>	<u>Vitamin A (Int.Unit)</u>
3,465	135.8	68.4	347	27.3	5,200
<u>Thiamin (mg.)</u>					
<u>Riboflavin (mg.)</u>		<u>Niacin (mg.)</u>		<u>Vitamin C (mg.)</u>	
4.32		1.24		29.9	
				87	

The retail cost (in small quantities was 1/8 but this would be considerably less if purchased in bulk by an employer for a large labour force. In detail, the exhibited daily rations consisted of :

<u>Item.</u>	<u>Ounces.</u>	<u>Cost (in pence).</u>
Maize Meal.	20	3.9
Potatoes.	16	4.0
Meat.	3.6	3.5
Groundnuts (shelled).	2.3	1.0
Dried Beans.	4.6	2.0
Dried Skimmed Milk.	1	1.5
Fresh Vegetables.	4.6	3.0
Pumpkin and Fruit.	4.6	1.0
Salt (iodized).	1	0.1
		<u>20.0</u>

Nutrition education of the European farming community took the form of two addresses in the Mazoe district by the Executive Officer. One of these, entitled "Human Nutrition Needs and their Relation to Federal Agriculture" dealt with food requirements in detail in relation to federal agriculture, while the other, entitled "The Future of African Nutrition in S. Rhodesia" was a call to European farmers to supply the rapidly increasing industrial population with locally produced food instead of imported. It was fully explained that this market was a potential one and would not become a reality until the industrial population's tastes were guided by nutrition education instead of commercial propaganda.

A film on African nutrition designed for African audiences is at present being produced in Salisbury. The commentary will, of course, be in the vernacular.

A broadcast record on nutrition was made by the Executive Officer for the Voice of America in 1958.

6. THE FEEDING OF AFRICAN LABOUR:

Recommendations on this subject appear in Pamphlet No. 11 (Revised 1956) "Meals Make Money". These were formulated in collaboration with Miss Mona Doss of F.A.O. A disquieting development during 1957 was the attempted legal enforcement of minimum diet scales for Africans employed in industry which had been drawn up with no regard for economy, dietary need or tradition. The published scale provided over 5,000 calories a day instead of the more than adequate 3,000. The purpose was allegedly to force employers to pay their labourers cash instead of providing the absurdly expensive scale of rations. This

system of cash instead of food is now almost universal. Its protagonists claim that it inculcates the labourer with a sense of responsibility for his own subsistence and that, in any case, that it is impossible to enforce the provision by employers of a statutory scale of rations. (In the latter event, the promulgation of regulations to enforce a new scale of rations seems a curious way of persuading employers to give their labourers cash instead of food!) The argument against this system is that it is premature; it should be preceded by nutrition education to enable the labourers to use the cash to their best advantage. Ignorance is no foundation for responsibility. The associated rise in the importation of food and of malnutrition may be as much of a coincidence as the relationship between cigarette smoking and cancer of the lung.

7. ENRICHMENT OF FOOD:

The scheme to enrich maize meal with riboflavin and niacin in a diluent of chalk, which has been under consideration by Government and the Millers' Association of Rhodesia since 1953, has come to nothing. The Millers' Association demanded legislation for the compulsory enrichment of maize meal as a pre-requisite for its production. The Minister of Health was unable to concede to this demand.

The enrichment of crude salt with potassium iodate is still carried out in Salisbury but its distribution can be augmented only by an extensive system of nutrition education. Refined salt is now becoming more popular in the African market. On this account arrangements were made in 1958 to discuss the production of a cheap packet of iodized, refined salt for the African market with the visiting representative of the Cerebos Salt Company. Unfortunately this representative was taken ill and returned to England before the intended discussion.

Mr. W.R. Carr, Food Technologist, is making arrangements for the enrichment of the locally produced skimmed milk powder with Vitamin A at a remarkably low cost.

8. MALNUTRITION:

In the absence of a nutrition survey it is impossible to estimate the relative prevalence of malnutrition among the various communities. Estimation from hospital admission figures is of some value but little reliance can be placed on any information obtained from the patients such as age, address, occupation and food habits which only objective investigation can determine. However, there is little doubt that the incidence of malnutrition among Africans, particularly Kwashiorkor, is rising. In some areas, notably the Chilimanzi Reserve (almost in the centre of S. Rhodesia) the incidence has given rise to disquietude among the Government and Mission Medical Officers.

Cursory surveys have been carried out by the Food Technologist and the Executive Officer in those areas where malnutrition has been reported. Generally these have been areas where a sudden change has taken place in the customary methods of food production. This has arisen through re-settlement of a community on a different type of soil in one case and, in other cases, through prohibition of gardens on pasture land and de-stocking of cattle. All these measures were essential for the long-term welfare of the communities involved but the immediate, temporary effects were undesirable and steps have been taken to remedy these.

The permanent effects of the Native Land Husbandry Act 1951 should be the division of the African population into two communities, one employed in agriculture in the Native Reserves and Purchase Areas and the other employed in industry and other occupations mainly in the European area. Hitherto there has been no such absolute division and each African has been a part-time farmer, spending several months a year on his lands and the remainder in employment in the European area. This practice inevitably led to inefficient farming in the Native areas and inefficient labour in the European area so a remedy was long overdue. An additional stimulus to industry can be expected from the cheap power which will soon be available from the Kariba hydro-electric plant. However, no policy has yet been formulated for the feeding of the rapidly growing, landless, industrial population in the European area which is being encouraged from all points of view (except nutrition and economics) to rely on imported food. It will be many years before African agriculture can be expected to supply this potential market so, meanwhile, European food production is the only possible substitute for importation.

Now that the dependants of an African labourer in the European area can no longer conveniently be left to fend for themselves in the Native Reserve, the problem of their subsistence is becoming a grave one. No legal responsibility has ever been put on employers to provide food, fuel or cash for the subsistence of the wives and children of their labourers although many have done so to stabilize their labour forces. A labourer's wages and allowances together with the produce of his part-time farming may have been sufficient in the past to maintain his wife and children in the Native Reserves but a little arithmetic will show that it is impossible for a large proportion of labourers to maintain their dependants entirely on their wages and allowances in the European area. Examples of this were the subject of a report by Mr. A.E. Nixon, P.G.H.I., Midlands, on the malnourished families of road labourers in 1958. A precedent has been set by the granting of marriage and children allowances by Government to employees and taxpayers. It seems that this principle will have to be extended greatly to meet the new circumstances arising from the enforcement of the Native Land Husbandry Act although polygamy is a complication.

There has been no remission in the ominous rise in incidence of tuberculosis among Africans. This is as reliable an index of defective nutrition as is the incidence of typhoid fever of defective sanitation but, instead of attempting to raise natural resistance to this disease (and others) by good feeding, the mass vaccination of susceptible Africans with B.C.G. is under way. There is much to recommend this method of increasing resistance as a temporary stop-gap provided that there is a corresponding serious attempt to improve nutrition. B.C.G. vaccination is therefore more analogous to a walking stick than to a crutch but it has the fascination of an initiation ceremony to the primitive Africans (and perhaps the doctors too!) and is therefore an easy (although expensive) approach to the problem. It has drawn the attention of the educated Africans to tuberculosis so naturally gives rise to the question: "why do Africans (but not Europeans) get tuberculosis?" Tuberculosis is radically an economic disease but it would be imprudent to explain this while making no practical attempt at a radical remedy, particularly since this depends more on the economic use of available resources, which are at present wasted through ignorance, than on increased public expenditure.

Night-blindness was reported at Kariba in 1958 but this proved to be malingering by labourers who wanted to evade the night-shift.

9. FLUOROSIS:

The occurrence of this condition was mentioned in the Annual Reports for 1953 and 1954. In 1958, analysis of the bore-hole water supplies in several areas where the population displaced by the Kariba Dam project has been re-settled revealed a toxic concentration of fluorine. Since toxic symptoms take many years to develop in man these were not evident and appropriate treatment of the water should ensure that these never develop.

No interest has been shown in the fluoridation of public water supplies (to prevent dental caries) since the enquiry mentioned in the 1953 Annual Report from one Municipality.

10. SUPPLY OF ADDITIONAL FOOD TO THE MALNOURISHED:

As mentioned in the 1949 Annual Report, the additional food supplied to European, Asian & Coloured school-children has depended since 1st January, 1950, on the report of a medical officer of its necessity to improve the nutrition of individual malnourished children. This scheme has obvious, grave defects which were mentioned in the Annual Report for 1949 when it was first proposed but, although its administration has now passed from the Ministry of Health to the Ministry of Education, the scheme is essentially the same and no evidence has yet been produced of its value in improving nutrition. It has cost the taxpayers from £6,000 to £7,500 a year both before and since the establishment in 1947 of the Nutrition Council. This money would have been sufficient to pay the salary of a Nutritionist and to institute a programme of nutrition education under her guidance. An important feature of such a programme is a scheme for school meals and gardens which may be partially or wholly self-supporting under efficient guidance. It is not too late even now to divert the money to such a progressive programme.

The commendable schemes for the free and subsidized additional feeding of African children and mothers instituted by certain Municipalities and voluntary societies are still progressing.

11. LIAISON WITH OTHER NUTRITION ORGANIZATIONS:

A Nutrition Seminar was held by W.H.O. and F.A.O. in Kampala, Uganda, in November, 1957. This was attended by the Executive Officer and the Food Technologist both of whose travelling and subsistence costs were paid by W.H.O. Another seminar is being held in Bukavu, Belgian Congo, by F.A.O., W.H.O. and C.C.T.A. in May, 1959, which will be attended at the invitation and expense of F.A.O., by the Food Technologist. The 7th meeting of the Panel of C.C.T.A. Nutrition Correspondents (of which the Executive Officer is a member) has been called at Bukavu at the same time but Government has not agreed to his attendance because no funds are available.

A Technical Meeting on Grain Legumes was held by C.C.T.A. and F.A.O. at Bukavu in November, 1958. Although the attendance of nutrition workers was particularly requested, none was sent by Government which, nevertheless sent 4 representatives of other departments. As mentioned in previous Annual Reports of the Nutrition Council, a considerable amount of experimental work on grain legumes has been carried out by the Executive Officer and the Food Technologist and it was recommended by the Nutrition Council at its meeting in August, 1958, that a nutrition worker should be sent to the Meeting by Government.

C.C.T.A. is holding a symposium on child welfare at Lagos, Nigeria, in March, 1959. No nutrition worker is being sent by Government but papers may be presented in absentia.

The Executive Officer presented a paper on research in connection with health education of the public for technical discussion at the forthcoming World Health Assembly in 1959.

12. FOOD TECHNOLOGY:

The Report of Mr. W.R. Carr, Food Technologist, is attached hereto.

13. C O N C L U S I O N :

In the normal course of events this should be the last report of the Nutrition Council of S. Rhodesia as constituted at present. Of the necessity for such an organization there has never been any doubt in the minds of those who recommended it, namely :

- (1) the United Nations Conference at Hot Springs, Virginia, in 1943;
- (2) Mr. F.T. Russell, Social Security Officer (S. Rhodesia) in 1944;
- (3) the National Health Commission (S. Rhodesia) in 1945;
- (4) Dr. E. Baker-Jones, Assistant Health Officer, S. Rhodesia, in 1946; and
- (5) an ad hoc Inter-departmental Committee in S. Rhodesia in 1947.

It was unfortunate that the recommendations of (4) and (5) were adopted only partially by the S. Rhodesia Government when it established the Nutrition Council in 1947 but omitted to grant it statutory authority, adequate finance and staff to carry out its functions. Consequently the nutrition of the African population has gone from bad to worse during the Council's frustrated existence and an effective organization is more urgently required now than ever before.

To the members of the Council who have patiently co-operated with me all these years under impossible conditions I express my sincere thanks and hopes for a brighter future with a new and properly constituted organization.

E. BAKER JONES.

EXECUTIVE OFFICER:

NUTRITION COUNCIL.

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P.O. BOX 8042, CAUSEWAY,
SALISBURY.

3rd February, 1959.

The Executive Officer,
Nutrition Council.

ANNUAL REPORT, 1958 : FOOD TECHNOLOGIST.

1. Kwashiorkor.

Due to staffing difficulties and the move to the new African Hospital in Salisbury, no further studies have been made on this disease. The diet has remained the same, although it has proved difficult to control, and it is doubtful whether instructions given have been properly followed. The lack of a trained dietician in the African Hospital has meant that special diets remain completely in the hands of the nursing staff, who are constantly changing, and, at any rate, have more than sufficient to do without organizing special diets. As a result of work carried out by Dr. R.F.A. Dean, an attempt has been made to increase the amount of fat, and at the same time increase the Vitamin A content of the diet. Therefore in the latter part of the year patients have been dosed with groundnut oil containing a day's supply of Vitamin A. This has been supplied as a "medicine", as it is easier to control in this form. It is too early to state whether this treatment has improved the prognosis.

2. The Biochemistry of Africans and Europeans in Salisbury.

Examination of blood sera referred to in last year's report of Africans suffering from a number of diseases which may be due to malnutrition or parasitic infestations soon shewed that the most important part of this work would be the figures obtained from apparently healthy individuals, and a large number of Africans and Europeans have been tested during the year. The Africans have been chosen from different social conditions, ranging from labourer to University students. Marked differences have been detected in different social groups, but this work has recently been complicated by a climatic or seasonal difference which will require further elucidation. Most of the laboratory work in this year has been concentrated on this problem and the study is by no means complete. Although this work consists largely of monotonous hackwork which could be left in the hands of technical assistants, it must be regarded as highly important, as it may provide the clue to diseases caused by faulty nutrition in both the African and European. A statistical study of the figures obtained is being prepared for publication. I am not prepared to comment on the significance of the figures so far obtained at this stage as it is easy to place a false interpretation on incomplete results. One thing, however, stands out clearly: the proteins of the blood sera of the "average" African are grossly abnormal compared with that of the "average" European, or vice versa.

I must express my thanks to Dr. R. Baird and the staff of the Public Health Laboratory for their willing assistance in this project, which would have been otherwise impossible.

This work will be continued in 1959, and it is hoped that Dr. Gelfand, Dr. Baird and myself will be able to produce a series of publications which will add a little to the sum of knowledge in this important field.

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3. Resettlement.

This year has been marked by outbreaks of serious malnutrition and diseases caused by malnutrition, particularly amongst tribesmen moved from the Zambesi banks due to the construction of Kariba Dam, and a number of surveys have been carried out and action taken in an attempt to prevent any repetition.

The reports of dysentery amongst the Batonga in the Chungu Valley of the Binga area late last year indicated that faulty nutrition was causing an increased death rate from this disease, and there were reports of a very high incidence of kwashiorkor in Urungwe Reserve amongst those mKorekore who had been moved from the Kariba area. Report F.T.102 gave the findings of a survey in the Urungwe Reserve, and, as a result of this, a close liaison was achieved between the Under Secretary for Native Lands and Townships and this Department. Certain funds were available for feeding resettled Africans for limited periods and in the past this had always been in the form of maize grain. As a result of discussions, beans and groundnuts were included in the ration and steps taken to make green vegetable seeds and seedlings available. To prevent a repetition of the kwashiorkor epidemic, it was decided to make non-fat milk solids available to all resettled children at the rate of $\frac{1}{2}$ lb/week/child up to the age of eight years for the period November 1958 to February 1959. This applied to all Africans resettled as a result of the Kariba hydro-electric scheme, and the milk ration was also supplied to mKorekore moved out of the Urungwe non-hunting Reserve to Urungwe Native Reserve in compliance with recommendations made in a survey carried out before the move took place (Report F.T.105). A survey (F.T.109) of the Urungwe Reserve after the initial distributions of milk showed that the scheme was proceeding reasonably smoothly and also indicated how important Health Demonstrators were for the success of schemes of this nature. The Binga area was visited with Dr. M.L. Westwater at the time of the first distributions of milk powder (Report F.T.110). Here the problem is more difficult owing to poor communications and extreme inaccessibility, but every attempt was made to ensure that the milk went to the children.

The milk distribution scheme is, as yet, of unknown value, and the results can only be assessed in March or April 1959, but it is worthy of note because it must be the first large scale attempt to supply milk powder to a section of a population of primitive tribesmen.

4. Surveys.

Apart from the surveys mentioned above, only the Chilimanzi Reserve has been visited (with Dr. Baker Jones), as a result of reports of malnutrition in the area. This was found to be due to excessive beer drinking causing neglect of children and generally the unsettling effect of destocking combined with implementation of the Land Husbandry Act. It was noticed in this area and in other areas where the Act was operating that officials were frowning on vegetable gardens to some extent. This has been pointed out to the Native Affairs Department and they have issued as a circular to all officials concerned a copy of my letter on this subject.

5. Indigenous Fruit Survey.

The paper, referred to in last year's report, on the baobab was published this year in the Central African Journal of Medicine (September 1958). Pressure of work has made it impossible to undertake any work on indigenous fruit in the year under review. However, as a result of the finding of remarkable stability of the ascorbic acid in the Marula plum (Sclerocarya birrea), an American firm of Vitamin manufacturers has requested that a large sample of this fruit be sent to them by air for further investigation into the reason for this stability.

6. Nutrition Education.

Discussions have taken place with the Central African Film Unit regarding the Nutrition film, but, as yet, no notification of commencement of filming has been received. The Native Affairs Department are apparently not proceeding with a simple book on nutrition instruction in the vernacular. A number of publications on nutrition and methods of nutrition education have been obtained from the Central Council for Health Education in London. It is hoped that these may prove useful to Provincial Medical Officers of Health.

7. Vitamin A and Skimmed Milk.

The main shortcoming of skimmed milk, whether it be in the liquid or powder form, is its lack of Vitamin A. In collaboration with the Dairy Marketing Board and Roche Products, tests are being undertaken to determine the best ways of enriching with this vitamin.

Liquid skimmed milk was found to be easily enriched immediately before consumption with a water miscible form of the vitamin by a method which would cause no difficulty to, say, the African Headmaster of a school. An analysis of samples actually being drunk by school children shewed that 88 % of the vitamin added was present.

Further investigations are proposed of the feasibility of enriching dried skimmed milk manufactured at the Gwelo Dairy with Vitamin A before drying, and thus making it possible to recommend the D.M.B. product for baby feeding.

8. Miscellaneous.

(a). Analyses for Vitamin A in a cattle concentrate and a baby food have been undertaken.

(b). Professor Jytte Muus, a Fulbright Scholar at the University College is collaborating with Dr. Gelfand and myself in studying the biochemical changes apparent in Africans suffering from cirrhosis of the liver and hepatic coma.

(c). In collaboration with a local baker, test bakes have been prepared of brown bread enriched with the enrichment premix used in the Union of South Africa. This bread had remarkably good keeping properties and proved immensely popular when given to African patients in Salisbury Hospital. However, as in the Union of S. Africa, government assistance would be required to make it possible to sell enriched bread, but it is safe to say that this bread would soon become very popular with the African if it was widely available at the same price as white bread.

(d). A simplified food table of foods commonly consumed by the Africans of the Federation has been prepared and distributed to those requesting copies. No requests for copies from the two Northern territories have been received.

(e). The Government Analyst discovered that a number of boreholes in the Gokwe area had a rather high fluoride content, and it is understood that arrangements have been made by Head Office for a large number of boreholes in the resettlement areas to be tested. As the inhabitants of these areas will consume borehole water only when there is no surface water, it is unlikely that any serious chronic toxicity will make itself known. However, it is obviously necessary to make sure that none of the boreholes contain excessive quantities of the fluoride. As many other areas are dependent on borehole water, it would seem advisable that a survey of fluoride content was carried out over the whole country.

(f). A review article on S.Rhodesia was prepared at the request of the Editor of the American Journal "Food Technology" and it appeared in the May 1958 issue.

At the FAO/CCTA meeting on legumes in Bukavu in November 1958, Dr. Saunder presented a paper on the use of grain legumes as a human food in S.Rhodesia. It is hoped that it may be possible to undertake collaborative studies on the amino acid content of grain legumes with other workers in Africa, South of the Sahara.

(g). At the request of the Director of Medical Services and the Secretary for Health, studies of a number of different ration scales in both Southern and Northern Rhodesia have been undertaken. Many of the scales were extremely badly balanced and a so-called "Tuberculosis Mixture" consisting of cream, 1 pint; powdered milk, 8 tablespoons; syrup, 4 tablespoons; and 6 eggs is remarkable in its poor nutritional value combined with its great expense. It appears that many medical men still regard only the luxury foods as being of high nutritional value.

9. Staff.

The Government Analyst has applied for an African Technical Assistant to work in the Food Technology Laboratory as it was felt that an African would be able to act as interpreter as well as undertake laboratory work. The lack of assistance in Food Technology means that much valuable work cannot be undertaken and a great deal of time spent on routine analyses which could be carried out by semi-skilled workers.

10. Summary of Analyses.

	<u>No. of Samples.</u>
Biochemical studies on blood sera.....	254
Vitamin A in cattle concentrate.....	1
Vitamin C in reconstituted dried Kaffir Beer.....	1
Vitamin A in "Protena" Baby Food.....	1
Vitamin A in enriched skimmed milk.....	2

TOTAL :	259
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FOOD TECHNOLOGIST.

WRC/ME.

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