A TROPICAL DIETARY

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The dietary below was drawn up by me and accepted by the Nutrition Committee of the B.M.A. in Jamaica as an immediate target at which to aim for the population of the country, which is essentially an agricultural labouring community. With the committee's permission it is now submitted for comment, as it is felt that a quantitative minimal basic dietary based on tropical foodstuffs should be worked out as a guide to medical personnel in these areas.

The Position in Jamaica

We have recently had the pleasure of a visit from Dr. Platt, who is the adviser on nutrition to the Secretary of State for the Colonies. It has proved a great stimulus to us, and his standards for an immediate aim in nutritional policy have been accepted. The standards are included at the bottom of the

duction. (c) Only yellow maize should be grown, because it gives valuable vitamin A in large amounts. (d) The various sorghums are not mentioned. Their high digestibility is to be remembered. The "victory rice," which is a local sorghum product, was very popular with school-children, to whom one of us fed it for two school terms, and their general health improved. The development of these grains, especially dwarf guinea corn and pearl millet, should be pushed for both man and his animals.

Starchy Roots.—If there is not a constant supply throughout the year the calorific value of the diet will drop seriously. The large amount of vitamin A expected from yellow sweet potato is to be noted.

Pulses.—Beans, peas, peanuts, and soya beans can be regarded as the "poor man's meat" and must be pushed. An immediate improvement in the supply of first-rate protein is to be expected from these crops while meat production is being developed.

Meat or Fish.—Immediate improvement is to be looked for in the rapid development of small stock. We would stress the value of pork because of its quick production rate, high calorie (energy) content, and richness in vitamins B₁ and B₂.

Oils.—On the diet as submitted there is no necessity to have the oils and fats fortified with fat-soluble vitamins.

Item (Edible Portions)	Amount		Calories	Protein (g.)	Ca (mg.)	Fe (mg.)	Vitamins				
	Oz.	Grammes					A (i.u.)	B ₁ (mg.)	B ₂ (mg.)	Niacin (mg.)	C (mg.)
Cereals:											
Wheat flour, 70% ..	4	125	439	12.5	20	2.5	0	0.07	0.06	1.25	0
Cornmeal (yellow), 98% ..	2	56	171	4.7	6	2.5	500	0.15	0.06	0.75	0
Rice (parboiled) ..	2	56	176	3.7	4	0.5	0	0.10	0.05	2.0	0
Starchy roots:											
Yams ..	16	450	450	9.0	45	2.2	0	0.22	0.27	3.2	?
Sweet potatoes (yellow) ..	8	120	150	2.5	25	0.8	5,000	0.12	0.07	0.6	25
Pulses:											
Beans ..	2	56	164	11.6	74	2.0	0	0.24	0.18	1.2	0
Peanuts ..	1	28	188	7.8	17	0.6	0	0.30	0.04	5.8	0
Meat or fish ..	2	56	106	10.2	6.8	2.0	2	0.06	0.14	2.8	0
Oils (dry) ..	2	56	510								
Sugar ..	1 lb. per week		280								
Molasses ..	$\frac{1}{2}$	14	27	0	35	8.0					
Vegetables:											
Citrus ..	3 $\frac{1}{2}$	100	28	0.35	20	0.35	0	0.35	0	0.2	52.4
	one orange or half grapefruit										
Green leafy and yellow ..	4	112	48	4.6	156	2.6	10,000	0.16	0.28	0.64	15
Tomatoes, onions, fruit ..	1	28	9	0.3	8.5	0.1	57	0.01	0.03	0.03	4
Milk ..	4	112	76	3.6	138	0.3	760	0.20	0.20	?	0
Totals ..			2,822	70.85	555.3	24.45	16,339	1.98	1.38	18.47	96.4
Dr. Platt's standards ..			2,500	50-60	800	15	8-9,000	1.20	1.20	12-15	30

table. The committee was set up at the invitation of the Agricultural Policy Committee for Jamaica, which sits under the chairmanship of Mr. John Wakefield, the Inspector-General of Agriculture in the West Indies, and among the terms of reference was the question whether Jamaica can produce all the foodstuffs necessary for a balanced diet.

The main deficiencies in the Jamaican dietary at present, in the order of their importance, are protein, riboflavin, niacin, thiamine. It was found, using the Hot Springs Plan I as a yard-stick, that Jamaica would require over three million acres to feed herself on her present system of food production, even when half the cereal needs were met by importing wheat flour. The total cultivable land is given in the census as being about 700,000 acres.

It had to be borne in mind that the export crops must increase if Jamaica's economic position is to improve. The necessary corollary was the recommendation that there should be a complete revolution in the agricultural policy of the island and that the slopes of five-sixths of the country should be devoted to grass culture in the main, with a rapid expansion of the stalled dairy cow and small stock. Intensive mixed farming seems to be the only hope of the island.

During his visit to Jamaica Dr. Platt proposed a diet scale which would measure up to his standards by the addition of food yeast, calcium carbonate, and ferrous sulphate to the 70% wheat flour. I am still as much a believer in natural foodstuffs as ever, and accordingly the suggestion was not incorporated in the diet.

Comments on the Dietary

The following comments on the dietary are self-explanatory.

Cereals.—(a) Your committee considers that whole wheat should be imported and the milling done in Jamaica. Wheat offals are necessary for the production of small stock and milk. The recommendation of white flour is temporary. (b) We hope that the rice requirement will be met to the fullest possible extent by local pro-

Sugar.—One pound a week is ample as a flavouring. The increased cereals and roots are the basic sources of carbohydrate energy.

Vegetables.—(a) *Green leafy and yellow* will not be eaten up to the ration without widest publicity. Although there is a good deal of "back-yard" cultivation, the total requirements will not be met by this method alone, and these vegetables must also be grown as field crops. (b) *Citrus*: One orange or half a grapefruit is a unit which can be handled easily. (c) *Other vegetables and fruits*: Our estimate is absolutely minimal. The large mango crop and the bananas and breadfruit are not calculated. They add considerably to the total, but their seasonal incidence precludes their inclusion in a daily ration. Bananas will be exported and not eaten (as before the war). The value of guavas, green peppers, pawpaw, and the avocado pear should be widely publicized.

Milk.—As an immediate target we recommend only one-fifth of the Hot Springs standard. The butter value of the milk is quite unnecessary in the present diet, and so we advocate the erection of creameries to extract the butter for export and the use of dried skimmed milk in the ration. No expansion of the manufacture of condensed milk should be permitted, as this island must find export crops, and butter would be no loss to the dietary of the people if it were manufactured and exported. In the first instance the skimmed milk should be used in giving children a midday drink, with two biscuits. One ounce of dried skimmed milk per child is recommended.

Molasses or Wet Sugar.—This is necessary for its iron content. In a tropical country which is full of parasitic diseases iron is probably the most important mineral constituent of the dietary, and the rich available iron in molasses should not go to waste. We recommend that the biscuit for the mid-morning snack should be made to contain at least one drachm of molasses. Expectant and nursing mothers should also be able to get these biscuits.

Calcium.—We are not afraid of the small amount in the dietary. In this country of sunshine there can be no lack of vitamin D, and so we assume maximal absorption of this element. As the diet supplies ample phosphates there will be the maximal utilization of these substances, and 100 mg. in excess of minimal maintenance requirements will be adequate.