NATURE

No. 3777 SATURDAY, MARCH 21, 1942 Vol. 149

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Editorial and Publishing Offices
MACMILLAN & CO., LTD.,
ST. MARTIN'S STREET, LONDON, W.C.2

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T. G. Scott & Son, Ltd., Three Gables, London Road, Merstham, Surrey
Telephone: Merstham 316

The annual subscription rate is £4 10 0, payable in advance, Inland or Abroad

Registered as a Newspaper at the General Post Office

A SCIENTIFIC FOOD POLICY

WAR had brought famine to two of its first victims, China and Spain, before Great Britain took part in it. With the deliberate spoliation by the Nazis, the blockade and the scorched earth policy in the most fertile regions of the U.S.S.R., famine at the end of this War will be far worse than in 1918 and the following years. Some form of international famine relief commission must, perforce, be set up. It may be content to restore the unsatisfactory normal of the years before the War, or it may grow into a permanent organization that will attempt to raise the nutrition of people throughout the world to a satisfactory level—an organization that will differ from the wistful and ineffective League of Nations in having executive powers. If the present determination to make a safer and saner world survives the War, this relief organization will not give up the more ambitious aim.

Of the four freedoms of President Roosevelt, freedom from want, in respect of food at any rate, stands in a class by itself. Such phrases as freedom of speech may have very different meanings in New York and Moscow, in London and in Berlin ; even those to whom the words carry the same meaning, may differ in their estimates of the amount of freedom that should be allowed. But a calorie is a calorie all the world over ; the experts of nine States have agreed on the minimum amounts of various food constituents that freedom from want implies. The requirements are settled. How can the supplies be obtained and how can a fair distribution be ensured ?

We can take it that plans for the reorganization of British agriculture that suited the years before the War will no longer meet our needs. The economic position of Great Britain will have changed fundamentally ; we shall no longer be able to draw food and feeding-stuffs, as tribute, from half the world. Further, as Dr. Platt said at the recent meeting of the Nutrition Society (see p. 318), continued importation of large amounts of feeding-stuffs by Great Britain does not involve a competition for food between different kinds of domestic animals only, or even between men and animals only, but also between men and men ; the food for our animals is taken at the expense of men in other parts of the world. There are huge blocks of human life, in India and China, for example, whose standard of diet is not of the same order as the minimum proposed by the Technical Commission of the League of Nations or as the standard of diet of western Europe. Europe, excluding the U.S.S.R., with a population little more than one third that of Asia, consumes more cereals and six times as much meat. A world of such gross inequalities cannot be stable.

Physiologists have been impressed by the production (over a limited area and for a limited period) of supplies of food in excess of effective demand, and by the deliberate destruction and limitation of productive resources. They have been inclined to believe that there is no physical bar to the satisfaction of their demand for adequate food for all ; that ample is available to order. There is an opposite

view ; in its extreme form it is that human nutrition is a by-product of a cycle—fodder crops, animals, manure—that maintains the fertility of the soil. The exhaustion of the soil, which has reduced fertile land from Saskatchewan to Texas to whirling dust, has made us all realize that the soil cannot supply food in unlimited amounts and kind ; that it is essential to plan the type of food produced so that the quality of the soil will be maintained. If this is not done in the traditional way with animal manure, some other way must be found.

Actually the world, as a whole, has never produced too many calories for human food ; certainly, in the years after this War there will be no excess. It will be necessary to take care of the calories. Now, the largest number of calories for human consumption can be obtained from a given area if crops are grown that can be eaten by human beings. If feeding-stuffs are grown and used to feed animals, the return, in terms of calories, is poor. For example, an acre under potatoes will produce some four million (large or kilo-) calories for human consumption, and some two million if under wheat ; but only one fifth of a million calories if used as grass-land for feeding beef cattle, and two thirds of a million if used to feed milch cows. Animals, like human beings, use up the greater part of their food to supply their daily needs of energy, and store only a small surplus as flesh ; owing to the rapid growth of animals, the return is higher than might have been expected. But, during periods when calories are short, no more animals should be kept than are needed to maintain the fertility of the soil (supposing that no substitute is found) and to meet the special needs of human beings that are not well supplied by vegetables. The conversion factors give a fairly correct estimate of the relation between the amount of energy, for human beings, obtained if crops are used direct as human food and the amounts obtained if the crops are used indirectly for feeding animals which are eaten by human beings ; for a calorie is much the same, whether obtained from animal or vegetable food.

But estimates of the amounts of protein produced by animals from a given amount of protein in feeding-stuffs cannot be used without qualification ; they do not take into account the difficult question of biological value. Meat is of special importance in nutrition because animals pick out the indispensable amino-acids, which we cannot make ourselves from their food, and concentrate them in their flesh. The concept of biological value is unsatisfactory. It appears that wheat protein mixed with a small amount of animal protein may have the same value as an equal weight of animal protein. We cannot calculate the proportion of vegetable food to meat that will give the highest nutritive value per acre until we have a more exact knowledge of the metabolism of amino-acids and of their interplay. However, milk is in a class by itself ; milch cows give a fairly high return, even of calories ; the protein of milk has a high biological value ; cows concentrate calcium and riboflavin in their milk ; they return the carotene of their food mainly as pre-formed vitamin A, which is better absorbed by human beings. Taken all round, milch cows are by far the most efficient converters of vegetable feeding-stuffs into valuable food for human consumption. In times of shortage they are the only animals that should be allowed to compete with human beings for food ; other animals, male calves, for example, should be killed young.

This concentration on vegetable crops, for direct human consumption, and on milk and milk products, gives the diet recommended by Sir John Orr both for war-time and during the reorganization of the world's food supply. So far as our present knowledge goes, it will supply everything that is needed.

At the end of the meeting of the Nutrition Society on February 28, Sir Joseph Barcroft stressed the importance of the flavour and interest of food. But there is no reason why milk products and vegetables should be flavourless or dull. There is a wonderful choice of cheeses, and no two Cheddars even taste quite the same. There is no need to cling to the narrow range of badly cooked vegetables that is traditional in Great Britain. What is wanted is better methods of transporting and storing vegetables, something comparable with the improvement in methods of storing fruit. As it is, however, the diets of many people are so dull that they must enliven them with crude flavourings. The Indian corrodes his stomach with curry and the Englishman spoils his palate and ruins his digestion with pickles and spices. The first edition of 'Blitz' soup, prepared to suit the taste of Londoners, was so fiery that it might have been used externally as a counter-irritant. Further, tastes are changing. British soldiers patronized milk bars, so long as they supplied milk. Experiments on children have been extended to adults eating in canteens ; one can now see sturdy draymen sampling Oslo meals.

Vegetables and milk are best produced on the spot, whereas cereals are well suited for transport. The most effective policy would be one similar to the breadstuffs policy of the War of 1914–18. Peoples, such as those of India and China, who now wring just enough or not enough calories from the soil, might be supplied with cereals from areas such as Canada and the Argentine that can expand production and produce a surplus over their requirements. In this way, land in the over-populated countries could be set free for growing other crops and for feeding animals, with benefit to the health of the people and the fertility of the soil.

If the amount and quality of food is to be raised, agricultural machinery must be supplied. This will involve an increased demand on manufacturers, who will have to meet other demands to supply pressing needs—machinery for transport and building, for example. The Nutrition Society is a valuable meeting-place, in which physiologists can discuss with agriculturists how best their demands can be met. Should there not be a means devised of enabling agriculturists to meet manufacturers, state their requirements and learn the difficulties that may lie in the way of their fulfilment ?

There are political difficulties, too. Small farms cannot use agricultural machinery economically. There must be some form of amalgamation, whether

in State farms, collective farms, co-operatives or large groups of family units under one management. In China some 40 per cent of farms are less than 1⅞ acres; in Japan two thirds are less than 2½ acres. These little plots cannot produce proper food for the farmers' families. Some means must be found by which the density of the agricultural population can be reduced.

The production of sufficient food is only half the battle. The producer must know that his crops will find a market; the consumer must be able to buy the food produced. The whole reorganization must involve fundamental changes of custom and conflict with vested interests. Opposition may be less than it would have been a few years ago. All the world over, people are becoming familiar with food control; in Great Britain they are beginning to realize its possibilities. Also hunger is a strong argument, and hunger is one of the few things of which there is prospect of plenty at the end of the War. An International Famine Relief Commission will wield a convincing weapon—food; if it uses this weapon justly and efficiently it can do much to reconcile people to profound changes. Difficulties are great; they must be studied now. For only those who know clearly what they want and how to get it are likely to achieve anything worth having in the welter of conflicting policies at the end of the War.

INTERNATIONAL ECONOMIC EQUILIBRIUM

THE meetings of the Inter-Allied Council render one signal service in respect of reconstruction—they stress its international aspect. This has to some extent been overlooked in the studies and discussions on reconstruction which have so far been initiated in Great Britain, and for all the attention that has been given to the work of the Leith-Ross Committee and the establishment of the Leith-Ross Bureau to deal with problems involved in the storage of surplus foodstuffs and their distribution after the War to the peoples in enemy-occupied Europe, the economic aims stated in the fourth and fifth points of the Atlantic Charter have not received much emphasis. The political, economic and social aspects of international reconstruction cannot indeed be entirely separated. They are as interlocked as the international and the national or internal aspects of reconstruction, and our hopes of a new and stable world order depend largely on our exploring the situation now so as to lay bare the principles for a constructive policy in readiness for the time of action.

Much of that action must of necessity be deferred until after the War, though in certain matters preliminary action as well as the determination of broad lines of policy are already required. Demobilization, for example, clearly must receive consideration before the fighting ceases. Plans must be in readiness, and the experience of 1918 is with us as a warning that a sudden and unexpected collapse of the enemy should not again find us unprepared. Unpreparedness can as assuredly endanger the winning of the peace as it has hindered the organization of victory.

In the last year or so, the discussions which for the first year of the War were so prominent on Federal Union and the exact form of the organization of a collective security system have rather fallen into the background. It has been recognized that the final form of organization to be adopted is a question to be determined later. On the other hand, there is a wider recognition that forms of co-operation established to serve the common purpose during the War can equally contribute to the final purpose of winning the peace. Even before the United States entered the War, there was unmistakable evidence on both sides of the Atlantic of Anglo-American determination to maintain that co-operation, and the machinery now established will not be recklessly scrapped unless it is proved to be no longer serviceable.

Besides this, attention is being concentrated, not first on the machinery to be established, but rather on the problems to be solved, with the object of elucidating first principles and from them arriving at the methods and organization most likely to provide a solution. In the field of international reconstruction there is, for example, the problem of the relation of Great Britain to Europe. There is the problem of the place of Germany in a new European system. There are the questions of the colonial peoples and of raw materials, and there is the problem of reconstructing world trade.

All these problems are, of course, related and have at least some bearing on the organization of post-war relief in occupied Europe, as well as on the establishment of a new system of collective defence. None the less, they can each serve as the starting-point for an attempt to arrive at first principles and to remove some of the causes of international friction which contributed to the outbreak of the present struggle. This is admirably illustrated in the survey of international economic relations which Prof. J. B. Condliffe has written under the title "The Reconstruction of World Trade"*.

Prof. Condliffe's volume falls naturally into three parts. The first analyses the collapse of the international trading system that was restored, on the pre-war model, after the War of 1914–18. The second, including much the most technical chapters, examines the challenge now presented by the totalitarian methods of bilateral trade. The third surveys the problems that must be faced in any attempt to reconstruct world trade after the War comes to an end. The book is based largely on material drawn from research studies undertaken in preparation for a conference called to meet at Bergen on August 27, 1939, and much of it would normally have formed a report of the International Studies Conference on "Economic Policies in Relation to World Peace". It has, however, lost nothing of its pertinence in the interval, and this lucid exposition could scarcely be bettered as a guide to the discussion of trade policy

* The Reconstruction of World Trade: a Survey of Internationa Economic Relations. By Prof. J. B. Condliffe. (Prometheus Library.) Pp. 427. (London: George Allen and Unwin, Ltd., 1941.) 12s. 6d. net.