THE NATION'S LARDER IN WARTIME

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THE DEVELOPMENT OF THE HOME PRODUCTION OF FOOD

BY

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We have got to produce more food; everybody knows that. But it is not only more food that we must get. We must get the best food, measured not by its money value but by its body-building and health-giving power.

Such foods are well known. Apart from bread they are milk, potatoes, vegetables, fruit, with a reduced ration of meat and as many eggs as can be produced without the use of more than a modicum of imported feeding stuffs. The first five are the principal foods of which we must grow more—much more—and which we must be prepared to consume in place of other foods to which we are accustomed. Meat must not be left out of account altogether, though we must be content with less, nor must eggs be forgotten, though they should be earmarked for women and children. But this is only one part of the food problem. There are the dairy cows to be fed, as well as other cattle and sheep and pigs and poultry. To kill our live stock off wholesale is out of the question. Milk we must have, some fresh meat and some fresh eggs too, and the land must have manure. Any food policy must face the problem as to how many and which kinds of live stock we must try to keep.

The first thing to do is to take stock of our resources. The shortage of labour on the land must be overcome. Machines can do much to save labour, but they cannot replace it altogether. Both general and specialized labour must be recruited. We have lost a proper balance between industry and commerce on the one hand and farming on the other. In France the proportions are 70:30; in Germany, 80:20; but in the United Kingdom, for every ninety people earning their living by town occupations there are only ten countrymen, and one of those is, as likely as not, just leaving the country for the town.

Home-grown versus Imported Food

This indifference to the claims of the land must be overcome, for our farmers require our help if they are to give us the food we need so badly. There are in all about 573,000 farms and holdings in the United Kingdom, and two out of every three is a little one of 50 acres or less. What can be the resources of these 396,000 smallholders? How can they put up the money needed to recondition their farms and make the land more fruitful? More intensive cultivation means money—money for labour, for seed, for fertilizers, for cleansing ponds and repairing farm buildings. Our farmers are the best in the world. They produce more food to the acre than any others, except the Dutch. The German farmers, who come next to us, need 121 acres to produce as much wheat as we grow on 100; 116 acres to grow as much barley, and 120 acres to produce as many potatoes, as our farmers get from 100. Only with sugar beet—a sunshine crop—do the Germans beat us.

Yet in spite of their skill, all that our farmers can do at present is to fill the national larder for week-ends. For the rest of the week we have to go out to the restaurant—in other words, to fare on imported food. Of our food 30 per cent. is home-grown and 70 per cent. imported.

Our Agricultural Estate

There is yet another and more disconcerting way of regarding our colossal appetite. Wheat is grown in every country in the world from the Arctic to the Tropics. It is harvested every day of the year. Many countries grow more than they need and export the surplus. Of all the wheat exported by all the countries of the world we take one-half. What if the rest of the world found itself needing more and the world's wheat crops were below the average? We live on a dangerous margin, requiring half the world's wheat surplus, six-sevenths of all the meat (beef and veal) in the export market, and four-fifths of all the dairy produce—and that with imports from Denmark and Holland cut off. Is it not certain that we shall have to do without foods to which we have been accustomed and make up with other foods instead? Luckily the foods which we shall have increasingly to rely on are good for us, and at the same time are those which our soil is best at producing—milk from grassland, potatoes and other vegetables from ploughland, corn, kale, and forage crops to eke out grass for cattle-feeding, and the fruit of orchards and plantations.

The farmers' annual contribution to the national larder is as follows:

	Million tons
Cereals	4½
Potatoes	4
Fruit and vegetables	4
Roots (mangolds, turnips, swedes, etc.)	20
Milk	(over) 1
Meat and eggs	1½
Sugar	21,000 tons

And to this has to be added the grass of our meadows, which, besides our pastures, makes eight million tons of hay.

Our agricultural estate in the United Kingdom occupies rather more than 30 million acres. One-sixth is mostly poor grassy land; much of the remainder is good or fairly good. The area permanently under grass is 15 million acres, and 10 million acres are ploughland. During the last seventy years arable and grass have changed places. No wonder that whenever we are at war the first thing we do is to plough up grassland to grow corn. We did it in Tudor times and we are doing it now; there are two million more acres under the plough this year. But what was good enough for our fathers may not be good enough for us. Much has been learnt since Tudor times, and even since the last war, about the food-producing value of grass, but this question must wait until another even more fundamental one has been answered.

On What does Increased Food Production Depend?

On what does a continued increase of food production ultimately depend? It depends on the fruitfulness and fertility of the soil—fruitfulness to give bigger crops and fertility to keep on growing them. Therefore our food

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policy must aim at two things: the growing of more food now and the keeping up of the fertility of the earth.

How important this is can be shown from the fact that for the past forty years, in spite of the efforts of our farmers to keep their land in good heart, the fertility of our soil has not increased, but if anything has actually decreased. Like so much agricultural land all the world over, but not nearly so much as elsewhere, our soil has been taxed beyond its strength. It begins to get tired because it has begun to get hungry. It must be fed if it is to yield bigger crops. The fertility of the soil depends on the life in the soil which preserves the stores of plant food ready for the use of crops.

The first thing to do is to feed the earth. If we do not it cannot feed us. It needs first aid and then careful nursing. The first aid it needs is feeding. To show what feeding the soil does, here are the results of a large-scale experiment with fertilizers on farms totalling over 1,000 acres. The farmers agreed liberally to use the fertilizers that they knew their land needed. The increases in yield were: wheat $2\frac{1}{2}$ cwt. to the acre, and barley and oats 4 cwt. to the acre. We calculated that if fertilizers were used in this fairly liberal way on all the farms in the United Kingdom the total increases would be 8 million tons of food, or, leaving hay out of account, 5 million tons, including $1\frac{1}{2}$ million tons of cereals and potatoes. Every available pound of fertilizer should be got on to the land. The right fertilizers should be earmarked for the right crops. Our agricultural men of science with specialized knowledge should be used to give help to farmers in their fertilizer programmes. Crops are always taking food out of the soil, and food must be always put back.

All plants must have enough food and fresh air, water, and a roomy home in the soil for their roots. They cannot grow well and yield abundantly if they do not. Fertilizers are needed for plant food, and farmyard manure for soil fertility, because only by natural manures can the soil be made fit for plants to live in. They enable the soil to strike the right balance between air and water. They and they alone will make the soil into a good larder for keeping soil food in, and they and they alone give the roots of plants plenty of room in which to move about.

If our arable land, well cultivated as it is on the whole, lacks food our grasslands lack it far more. At present much of our permanent pasture lacks both food and air. All or nearly all our 15 to 17 million acres of permanent pasture can be made to produce much more than they do now, and be made to do it quickly and relatively cheaply. Our policy must be to embrace not only ploughing up but also improvement of grassland, with proportionately liberal inducements both to those who plough up and those who set about improving.

Improving the Grasslands

Here is an example—one of hundreds—of what well-fed grassland can do. One set of plots in a field got a liberal allowance of complete fertilizer (nitrogen, phosphatic and potash, and lime as well), another set of plots got none. The first set yielded 18 tons of fresh grass per acre, the second only $10\frac{1}{2}$ tons. The result was even better than these figures show, for the grass on the fertilized plots was richer than on the unfertilized ones, with more food in it, both nitrogenous food and carotene, the mother of vitamin A. The nitrogenous food for the unfertilized plots was 122 lb. per acre, for the fertilized it was 246 lb.,

or double. Furthermore, as we proved, the rich young grass growing on the fertilized plots is a complete food for dairy stock. Cows of good average milk yield can make as much milk from grass alone as they can when they are given concentrated food. This means home-produced milk instead of imported milk, for the concentrated food which is turned into milk is imported.

Ours is mostly a grassland climate, and for that reason it is not a haymaking climate. Grass needs plenty of rain, hay detests it. Therefore hay should be made only when the sun shines; and when it does not, particularly in the dull autumn days, the grass aftermath should be turned into ensilage instead, which has double the value of good average hay. I see, therefore, next year, if not this autumn, a new and less picturesque but more appetizing feature in our landscape—squat, dark brown stacks of ensilage instead of the blond beauty of the haystack.

Our salvation is to be sought in grassland: in cultivating it and fertilizing it, turning it over to arable if local conditions advise it, and putting it back to grass in the usual way or keeping it down to grass and doing the land properly and well; or else ploughing it up and sowing grass and clover on the sod to give grass its proper chance.

"Waste not, Want not"

An essential part of food production is to put the food that is produced to its full use. We misuse and waste incredible quantities. We ask our farmers to grow another million tons of potatoes when we are already throwing not far short of a million tons into the kitchen bucket in the form of peelings—and the best part of the potatoes too. We are told to eat more green vegetables, and so we ought; but cooked as they are now, and the water they are cooked in thrown away, much of the goodness does not get into our stomachs but goes down the sink—something like 30,000 tons of nutritious minerals every year.

Again, why not restore to bread all the good things, nerve-tranquillizing as well as body-building, that the wheat grain provides for us? As things are the miller removes a lot of these valuable foods from the grain he grinds into the flour for our bread. They go to feed the pigs and other livestock, and our bread goes without them. It is claimed, and I believe rightly, that a new process makes flour from the whole of the wheat grain. The whole-wheat flour certainly makes an appetizing loaf and claims to have all the goodness of the wheat grain in it. Must we not therefore put into large operation this invention and also other well-known devices so that our daily bread becomes what it should be—the staff of life instead of a broken reed? Food production means more than bulk and weight; it means also the right food and the thrifty use of food. It means wisdom and energy in food production and forethought in the use of food. Cook for victory as well as grow for it! Scientific knowledge has given a new and profound meaning to the old saw, "Waste not, want not."

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