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Food and the Nation

IN those wonder-promising days of the Victorian era, when all seemed well with the world because the *beati possidentes* alone were vocal, there appeared to be general agreement that the functions of the State should be confined to upholding justice, to protecting citizens against aggression, and to providing certain public health services, such as sanitation and preventing the spread of epidemics. As time went on, State intervention was extended to the provision of primary education, old-age pensions, health insurance and unemployment benefit; but it is only recently that the scandal of the slums has compelled Parliament to assist in providing decent housing accommodation for the poorer classes. Last of all, there is now a clear call for the State to take a hand in providing adequate food for the million.

It is strange that this most essential of all the basic needs of man should have been recognised so tardily, except for certain regulations governing chemical and bacteriological purity. It is true that there are some half-dozen Government departments dealing with certain aspects of national nutrition; but there has hitherto been no unified direction, no settled policy and no legislation either based upon, or in any way recognising, the principle that every man who does his duty by the community shall by legal right, and not by charity, be secured from hunger or from the ill-health associated with an inadequate dietary. To-day the word 'inadequate' applies to quality as well as to quantity, for scientific research has shown that man cannot live by calories alone; in addition to proteins, fats and carbohydrates, he needs certain essential vitamins and minerals that are largely to be found in fresh dairy produce, eggs, fruit and vegetables. Was it not Lavoisier who lamented the fact that the very people who needed most food and nutritious food—the labouring classes—were precisely those who were least able to afford it? What Lavoisier said towards the end of the eighteenth century applies with particular force to-day, especially in regard to nutritional quality.

Sir John Orr, in a remarkable address to the British Association at Norwich, told us that estimates show how in this year of grace 1935 there are some twenty million people—more than forty per cent of the population of Great Britain—who, largely owing to poverty, do not enjoy a diet which according to the modern science of nutrition is completely adequate for health, so that diseases due to malnutrition are still rife. In view of the glut of all kinds of food, this state of affairs is disturbing the public conscience. Although there is a great lack of authentic data, recent investigations by the staffs of the Rowett Institute and the Market Supply Commission indicate that consumption of milk, eggs, fruit and vegetables rises uniformly with income; and that physique is worse, and disease is more prevalent, in the poorer classes. The diet of the lowest income group—those earning ten shillings or less a head of the family each week—is markedly deficient from the point of view of health, and a minimum family income of about £1 a head each week is needed.

To bring the diet of the poorer sections of the community up to the standard required for health

would involve an increased food consumption of 10 per cent, representing at retail prices a hundred million pounds per annum, and to bring all diets up to the average of those of the income level of 25*s*. a head a week would require 20 per cent more food and two hundred million pounds greater expenditure at retail prices. The additional food, consisting mainly of fruit and vegetables, and animal products such as milk and eggs, could be produced at home without prejudicing our export trade or the interests of our overseas investments, and, of course, our agriculture would benefit greatly.

The measures that have recently been taken to encourage home food-production, by raising prices to a level assuring adequate returns to producers, suffer from the drawback that they maintain food at prices that retard consumption. Therefore they cannot be regarded as elements of a permanent policy. Sir John Orr would like to see the present marketing boards assume the role of public utility companies, which would control slaughter-houses, bacon factories, milk-depots, etc., buy from the farmer and sell to the distributing trades, making the staple foodstuffs available at a special low price to the poorest classes. Such an organisation would in itself lower retail prices by reducing distribution costs, and the rest of the gulf between the price paid to the farmer and the money received from the consumer would be bridged by a direct State subsidy. The ultimate effect of this subsidy would be to reduce State expenditure on public health and social services; meanwhile, it would promote internal trade, stimulate industries, and bring back money to the Treasury in the form of income-tax and other receipts.

Increased consumption, as Sir John says, is the crux of the problem, and in this connexion attention should be directed to that rare thing, a successful economic experiment, which was carried out early this year by the Potato Marketing Board in the depressed area at Bishop Auckland, Co. Durham*. This area has a population of 19,000, which in February last included 5,000 insured male workers, of whom 2,400 were unemployed. For a period of eight weeks in February and March, potatoes were sold to the unemployed and their dependants (33 per cent of the population) at 4*d*. per stone, as compared with the ruling price of 7*d*. per stone. Each buyer had to get a retailer to stamp a voucher, present it at a central warehouse, pay cash and take away his purchase in his own container. The Board paid to the retailer 1*d*. per stone of potatoes sold, as compensation for loss of trade, and 10*s*. per ton to the wholesale merchants for services rendered. About 94 per cent of the issued vouchers were used; 187 tons of potatoes were purchased by the Board at an average price of 59*s*. per ton, and deducting wastage, 182 tons were sold. The total expenditure of the Board (exclusive of overheads) was £297, comprising £111 for warehouse distribution, £121 for compensation to retailers (13*s*. 3½*d*. per ton of potatoes sold), and £65 for wholesale merchants. It was found that, although sales from retail shops fell to 60 per cent of the normal, total sales increased by 96 per cent above the normal, or 69 per cent if full allowances be made for loss of trade sustained by fish-fryers, and for a big reduction in sales during April. No change in the dietary of the unemployed was observed other than an increased consumption of potatoes.

The experiment may, therefore, be held to show that increased consumption of a cheap and valuable commodity like potatoes will follow a drastic reduction in price. The Board does not suggest that the method is of general application; nevertheless, as an emergency measure for the relief of the unemployed, or for disposing of surplus stocks, for example, of milk or meat, it might well receive the consideration of public bodies. Nor would it be maintained that all the evils associated with an unorganised distributive system, or those due to maldistribution in general, could be solved by such means.

One of the most important questions of the day is whether the existing economic system can be modified and amended in such manner that the satisfaction of primary human needs no longer remains subservient to the making of profits. Such schemes as that of Sir John Orr, which has been publicly approved by the Minister of Agriculture, may suffice to raise the general standard of living to a level commensurate with the abundance of supplies that modern industry, based upon modern science, has placed at our disposal, and in accordance with the dictates of the modern social conscience. Failing their success, the only alternative, short of pure communism, appears to be an amount of State control of trade and finance likely to provoke widespread opposition in a people still retaining a degree of liberty of action. After all, there seems to be no reason why, with abundance knocking at the door,

* An Experiment in the Distribution of Potatoes at Bishop Auckland, February–March, 1935. Potato Marketing Board, Miscellaneous Publications, No. 2. 1*s*.

every working citizen should not be guaranteed a sufficiency of the basic necessities of life, namely, food, housing, light and fuel, without prejudicing the interests of those who are more fortunately placed.

Those who look askance at the encroachments on personal liberty which such a policy would appear to entail, might consider the dictum of Huxley: "The only liberty I care about is the liberty to do right". Is there not a moral obligation on the part of the State to ensure the bare minima of the means of subsistence to all who render service to it? And what a brave new world might arise, what developments might follow if the thoughts of even a fraction of those who are now at their wit's end to meet the requirements of daily life could by such means be diverted into the cultural channels of art, science, philosophy and letters! Many no doubt will urge that it is one thing for the State to provide such means towards a fuller life, but quite another for men to use them in the way intended. The answer to that contention is that man, in the mass, has not yet been given the opportunity, and that his future progress depends primarily upon his ability to master and improve his environment, and to provide the young with the best all-round education that his wits can devise.

Original Sources in Physics

A Source Book in Physics

By Prof. W. F. Magie. (Source Books in the History of the Sciences.) Pp. xiv+620. (New York and London: McGraw-Hill Book Co., Inc., 1935.) 30*s*. net.

TWO great efforts to present to the physicist and chemist the *ipsissima verba* or translations of some of the fundamental contributions to science come to mind as one turns the pages of this latest 'source book'—Ostwald's *Klassiker* and the publications of the Alembic Club. He is fortunate who has easy access to a full set of the *Klassiker*—its hundred-odd reprints represent a remarkable attempt to collect in one group those contributions to the advancement of the physical sciences which may be regarded as classic. The publications of the Alembic Club are fewer in number and more restricted in character—they cover certain of the classics of chemical science—and it is interesting to note that a term has not yet been set to the activities of the Club, as reprints, sponsored by Dr. Leonard Dobbin, are still appearing under its name.

It is, perhaps, impossible to consider the publication in English of a series of reprints covering so wide a field as Ostwald has surveyed, and until such a venture becomes possible, we must be content with the very good second-best which Prof. Magie has provided for us. He has shown conclusively—and some of his audience were inclined to be sceptical about it—that it is possible to give something of the atmosphere of a physical paper by selections, brief enough to keep his book within moderate compass, yet chosen so as to illustrate the central thesis of a theoretical analysis or the essentials of a piece of experimental work.

The main sections of the book are headed mechanics, properties of matter, sound, heat, light, magnetism and electricity; selections from some one hundred and fifty papers are given; and the authors range, in time, from Stevinus, Galileo, Huygens and Newton, to Maxwell, J. J. Thomson, Zeeman, Röntgen and the Curies. A brief account of the life of an author precedes the selection from his papers.

The selections are far from being snippets; they convey something of the method and outlook of the author, and they provide a reference book which serves to elucidate certain obscure and doubtful passages in the ordinary texts. Once again we are privileged to hear Boyle telling how he took "a long glass-tube which, by a dexterous hand and the help of a lamp, was in such a manner crooked at the bottom that the part turned up was almost parallel to the rest of the tube"; and how, having closed the shorter end of the tube, he imprisoned air therein, and "began to pour quicksilver into the longer leg of the siphon, which . . . did . . . streighten the included air: and continuing this pouring in of quicksilver till the air in the shorter leg was by condensation reduced to take up by half the space it possessed (I say, possessed, not filled) before", how he "observed, not without delight and satisfaction, that the quicksilver in that longer part of the tube was 29 inches higher than the other".

We may read for ourselves what Grimaldi really saw in 1658; and if we want to know whether Römer did or did not enunciate a sort of Doppler principle, regarding Jupiter as a body sending