

## THE CYCLE OF LIFE—SOIL, PLANT, MAN

THE PRIMARY aim of human life should be that man's body should enjoy perfect health so that body and mind may both function properly. That men in this and other 'civilized' countries are far from that ideal is evident from the high incidence of disease and premature death. Two valuable contributions to the literature of this subject are Lord Northbourne's *Look to the Land* (J. M. Dent & Sons Ltd., 7s. 6d.), and *The Nation's Larder* (G. Bell & Sons Ltd., 2s. 6d.), the latter being a series of lectures given at the Royal Institution in the spring of this year by Prof. J. C. Drummond, Sir Robert McCarrison, Sir John Orr, Dr. J. C. Spence and others. Perhaps it may be useful to try and summarise the leading points.

Man, like all other living things, is the result of a long evolution, during which he has gradually adjusted himself to his environment. He lived for the most part upon simple foods which were produced in the locality where he resided, and which were eaten without being subjected to processes of 'refinement' or kept for long periods under artificial conditions of cold or sterilization. The demarcation between the life of the countryman and the life of the townsman was not sharp. Manufactures of woollen and other goods were carried on in the country, while even in the largest towns no one lived under conditions so far divorced from the natural as those that now prevail. These conditions prevailed in this country until two centuries ago.

Since that time an enormous change has taken place in the conditions of life, a change to which the constitution of man has had no time to adapt itself and to which it may never be able to adapt itself. It is customary to ascribe this change to the Industrial Revolution, but that explanation is inadequate. The tremendous technological development of the last two centuries began at a period when wholesale enclosures were driving men out of the countryside with ever-increasing speed. The rapid growth of manufactures, combined with the possibility of importing food for the operatives, conduced to an extraordinarily rapid growth of the town populations and generations grew up who had known no other life and who had lost the traditions of living which had gradually developed over a long period. Invention made it possible to supply denatured foods more cheaply than simple natural ones, and the use of condiments and other stimulants to appetite helped to overcome any instinctive choice of healthy foods.

It is only in recent years that it has become evident that proper nutrition depends upon much more than supplying certain quantities of proteins, carbohydrates, and so on. The maintenance of health depends upon numerous constituents of natural foods, some of which it has been possible to isolate as vitamins. Prof. Drummond points out that the diet of a labourer in the North of England in the eighteenth century contained more calcium, iron, vitamin A, vitamin B, and vitamin C than are even considered necessary as a result of recent research, whereas Sir John Orr's mean values for families spending less than 8s. per week per head on food are far below the proper standard.

The diet of the English labourer in 1737 on which the comparison is based included for himself and his wife and two children half cwt. of potatoes, 15 quarts of milk, and nearly half a pound of butter a week. He ate wholemeal bread and had plenty of vegetables. It is abundantly clear that such peasant diets of wholemeal cereals, mixed vegetables, and dairy produce provide what is necessary for health. Sir Robert McCarrison referring to the various races of India each with its own national diet, says:—

"With the exception of those whose staple article of food is rice—the nutritive value of which is usually debased by the various treatments to which it is subjected before use—the national diets of these races are composed of the unsophisticated foodstuffs which their fields and pastures provide. Some of them, notably certain peoples of northern India are unsurpassed in perfection of physique, powers of endurance and of resistance to disease by any races of mankind. Others, particularly the rice-eating races of the west and south, are of poor physique, low powers of endurance and subject to much disease."

He quotes McCay's conclusion that food was the all

important influence in determining the difference between these various peoples—a conclusion borne out by his own experiments.

There is, however, a more subtle factor to be considered. We must not only have the right kinds of food but they also must be properly nourished, must be grown on suitable soils. "The foodstuffs must be produced on soils that are not themselves lacking in essential mineral and other substances—such, for instance, as iodine, calcium, or phosphorus—and on soils that are not themselves rich in substances harmful to the human body, such, for instance, as fluorine." There is abundant evidence that the soil of this country is suffering from lack of humus—that portion of the soil which arises from the decay of organic matter. The problem of soil erosion, as Lord Northbourne points out, arises largely from the denudation of its humus and that in turn arises from methods of farming which exhaust the humus and do not replace it, for example raising the same crop year after year, failing to manure the land, and applying nothing but artificial fertilisers. The traditional agriculture of many countries returned to the soil all the organic waste materials which were needed to maintain its humus content. Most of our urban civilizations fail to do so, because a large part of the produce of farming is consumed far from the farms and the waste products are carried by sewers to the sea, or are incinerated, or otherwise disposed of in such a way that the humus is not replenished. The farmer is able to stimulate his crops for a time by doses of artificial fertilisers, but the humus continues to diminish.

Lord Northbourne suggests that one of the consequences of this is the prevalence of disease of animals and plants, resulting in the slaughter of many animals on account of tuberculosis and foot and mouth disease and an enormous annual expenditure on multiple sprayings of fruit, hops, potatoes, and other plants to combat the diseases to which they are liable.

The problem to be solved is more than an economic one. It involves a re-education of the people to make them understand the importance of fresh, whole, natural foods. But it is an economic problem. Lord Northbourne writes: "So far as land is concerned, the important thing is that speculation in land values should become impossible. . . In so far as attention has been paid to speculation in land values, it has mostly been directed to the profits arising from the increase in land values in the neighbourhood of towns; and rightly so, for that is where the main increase has been taking place. But when farming comes into its own, similar speculative opportunities must arise on agricultural land, because such land would tend to increase rapidly in value." This is true. No one can prevent land from increasing in value if the demand for it increases, but we can at least ensure that the value of the land goes to the community instead of to some individual who has done nothing to earn it. At the same time we must ensure for the cultivator security of tenure. Without that he is likely to try to get as much as he can out of the land in a short time by exhausting its fertility. It would be interesting to know to what extent soil erosion in the United States and elsewhere is co-related with short and insecure tenancies. It may be remarked in this connection that the Danish method of estimating the land value of agricultural land requires the land to be valued as if it were in an average state of cultivation; the owner obtains no reduction of valuation by letting down the fertility of his land. Thus the system of land value taxation fits the economic aspects of this problem of soil, nutrition and health, and is a condition of its solution.

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The late Sir George Alexander Cooper, Bart., left £3,001,027, the estate duty amounting to £1,634,103. Sir George was practising as a solicitor in Elgin more than 40 years ago, when he and his wife inherited over £4,500,000 from her cousin "Chicago" Smith, an eccentric, who was as notorious for his great wealth as for his miserly habits. "Chicago" Smith emigrated from Scotland to the United States and acquired large holdings of land on the site where Chicago was afterwards built.—*London Star*, 11th April, 1940.