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How To Avoid A Famine of Quality

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WESTERN civilisation is suffering from a subtle form of famine--a famine of quality. This has arisen not from insufficient food to maintain that half-way house between robust health and death (so well described as a living death) which is now so common, but from the poor quality of our nourishment. One consequence of this malnutrition is to be seen in the steady growth of dental troubles which has accompanied the development of the Ministry of Health. To-day another Bill for dealing with the health of the nation has made its appearance, which is to cost some £150,000,000 a year and which will need a vast organisation of doctors and dentists. This will have to be created and controlled by the State.

The purpose of this paper is to suggest that the powers-that-be in dealing with the numerous casualties created by our present-day way of life are beginning at the wrong end, and that their well-meant proposals are certain to fail. This failure, however, will not be in vain: it is bound to lead to a reconsideration of the meaning of health and to a fresh start, beginning with the soil. The realisation of the fact that our most important crop is not so many measures of wheat or so many gallons of milk obtained in the cheapest way, but a race of healthy human beings with sound teeth, is therefore only a question of time.

What is the cause of this famine of quality and how does it operate? If we could answer these questions the door to preventive medicine might be open.

PROTEINS THE MASTER SUBSTANCES

The crux of this matter is to be found in the proteins, looked at in the mass. This collection of complex substances forms the matrix of the structures of all living things--plants, animals and man, as well as the microscopic forms of life. Life resides in the proteins. These bodies then help to confer on the organism the power to reproduce the species and to resist the invasion of parasites of all kinds. Proteins are therefore the master substances in life. They all originate in the green leaf and are created from simple substances--carbon dioxide, oxygen and the materials carried up in solution in the sap of plants by means of the chlorophyll corpuscles and the energy of sunlight. Here we see the atom bomb factory (the sun) in perpetual action, and the creation of complex organic substances starting from carbon dioxide. These organic substances--starches, sugars, fats and proteins--must be looked upon from two aspects: (1) the stored energy they contain, and (2) the chemical elements which go to their formation. The organic materials made by the green leaf constitute the only source of food for all living things. They are also the basis of the power stored up in coal and in oil. There is no energy stored in artificial manures like sulphate of ammonia.

The importance of the proteins made by the green leaf needs no argument. What happens if this item in our food is neglected? The answer is disease, including the diseases of the teeth. Disease in one form or another follows from any neglect in providing the green leaf with the proper materials for synthesising stable proteins. Should this happen the huge protein molecules become weak and unstable: pieces may easily be broken off: these we call viruses. Viruses are therefore not the cause of disease but rather the indications of a famine of quality.

Two main causes are responsible for the production of unstable proteins: (1) growing crops on worn-out soil and (2) introducing into the nitrogen cycle a substitute for humus in the shape of chemical fertilisers. Both, these practices create a weak link in the protein chain between the soil and the plant which is carried forward to the animal, to mankind and then back again to the soil. Obviously attempts to put this right at the human end of the protein chain, by the help of a national health service, are bound to fail. *The new national health scheme therefore merely tinkers with trouble after it has happened and does nothing to get to the root of the mischief--the soil.*

How did this famine of quality originate? In two ways: (1) by improper methods of agriculture and (2) by the murder of our daily bread. These two factors must now be considered one by one.

THE BREAKDOWN OF AGRICULTURE

Ever since the year 1879, when a combination of the worst season on record and the importation of cheap wheat from the New World put an end to the system of mixed farming, which Coke of Norfolk did so much to establish, insufficient attention has been paid to the earth's, green carpet and to the work of the green leaf. We have tried to make our proteins on the cheap side, as it were. A famine of quality has gradually set in which has been accelerated by the vast supplies of bastard nitrogen in the shape of sulphate of ammonia placed on the market by the makers of the explosives needed in the world war of 1914-18.

THE MURDER OF OUR DAILY BREAD

The importation of cheap wheat from the virgin soils of the New World did more than help to put an end to the golden age of British farming. This soon led to the murder of our daily bread by providing the roller mills at the ports with the very thing they wanted to incorporate some six per cent. of water in the flour and to sell the offals (which include the priceless germ, the bran and most of the minerals) separately at good prices. By removing the bran a white flour was obtained: the separation of the germ yielded a flour which would carry six per cent. of added water without going mouldy: To obtain a still whiter flour bleaching with chemicals was introduced--first nitrous oxide and then nitrogen trichloride (used in the so-called "Agene process"). Yeast foods in the shape of phosphates, and latterly chalk have also been added. The worst results of this sophistication have been: (1) interference with the powers of elimination leading to widespread constipation and the consequent autointoxication, (2) loss of the power of reproduction and of resistance to invading bacteria and (3) damage to the proteins by the nitrogen trichloride. The investigations by Dr. Weston Price indicate that one of the great causes of dental troubles is murdered bread. He has

shown beyond any shadow of doubt in his *Nutrition and Physical Degeneration* that when primitive races with perfect teeth take to white man's food including plenty of white flour dental caries set in in a very few months. This is arrested when the patients return to their original way of life. The story of the islanders of Tristan da Cunha confirms Weston Price's findings.

On this island where food consists largely of potatoes (raised with organic manures), seabirds' eggs and fish, dental troubles are almost unknown. When the islanders visit South Africa their teeth begin to decay. When they return decay stops and some of the cavities begin to repair themselves.

Both causes of this famine of quality influence the protein. Chemicals lead to bastard protein: murdered bread means insufficient and even ruined protein. Either is followed by disease: a combination means disaster.

The present time is not the first occasion when England has suffered and then recovered from a famine of quality. This occurred in the fourteenth century when the manorial system of farming--created by the Saxons and afterwards converted into the cast-iron framework of the Feudal System by William the Conqueror and his Domesday Book--collapsed in total ruin. The fertility of the open arable fields of the manors gradually wore out, the yield and quality of the wheat both dwindled. All kinds of diseases of crops, livestock and mankind, as well as rural unrest, followed, till, in 1347-8 and the succeeding years of the century, the Black Death, by wiping out some one-third to one-half of the rural population, compelled reform. Afterwards the Black Death, which was known as the Plague, died clown in rural England but lingered on in the ports till the last outbreak of 1665 (followed by the Great Fire) occurred in London.

The Feudal System which had a place for everybody and kept everybody in his place broke down for want of the manpower to run it. Service to the Lord of the Manor gave place to rents: a new system of farming had to be devised. The worn-out arable fields were gradually enclosed by hedges and laid down to grass to feed the sheep which provided the wool for the looms of Flanders and Lombardy. After more than a hundred years under grass the vegetable residues of the earth's green carpet, activated by the urine and dung of the livestock, restored the humus content of the soil. When these fields were ploughed up the yield of wheat increased threefold or more. That an end was also put to the famine of quality which helped to cause the Black Death is suggested by two things--the gradual disappearance of this pestilence in rural England and the development of quality in the human population, as is indicated by the achievements of the men and women of the Tudor period. The genius of Shakespeare, the achievements of the rulers, statesmen and scholars of this epoch were only possible when the famine of quality of the fourteenth century was removed by the properly synthesised protein of the centuries which followed.

THE RESTORATION OF FERTILITY

To put an end to the present-day famine of quality we must follow in the footsteps of Medieval England and restore the fertility of our worn out and over-stimulated soil. At the same time we must provide a supply of whole-wheat bread from the humus-filled soil. To achieve these two results the humus content will have to be rapidly

increased. Attention must also be paid to the quality of this humus. As this undertaking proceeds we must reduce the quantity of artificials now used by some 25 per cent every year and thus get rid of them altogether at the earliest possible moment. To produce the large quantities of high quality humus needed, we must convert all our vegetable wastes, all our animal and human residues, all our town and market wastes (past and present) and all our seaweed into humus. This will involve the reform of our manure heaps on the farms, the full utilisation of sewage, the improvement of green manuring and a much better use of the temporary ley. By such means every acre of this island, including the hill lands, could be brought into full production. In five years Great Britain could feed her population and even begin exporting high quality food. In the meantime the famine of quality will disappear. The transformation of the new scheme for a National Health Service into a system of preventive medicine could then begin. The dental profession would have less tinkering to do and more time for real constructive work.

DENTAL RESEARCH OF TO-MORROW

The greatest danger to avoid in future work is fragmentation--that curse of science, of administration, of education and of our present way of life. It has arisen because knowledge has grown at the expense of understanding. The inevitable result has been a plague of so-called experts, for the most part men and women who have wasted their lives in learning more and more about less and less, all sublimely unconscious of the fact that at the end of the road along which they are traveling will be found the ideal expert--an individual who knows everything about almost nothing.

In the dental investigations of tomorrow, therefore, there must be no fragmentation. It must never be forgotten that our teeth are joined up with the solid framework of our bodies and are therefore part and parcel of mankind. They cannot therefore be considered apart and as a closed subject in themselves. Any diseases to which they are subject are mere symptoms of some deeper cause, one of the most obvious of which is the malnutrition which results from improper feeding. It may very well turn out to be the chief cause. It follows, therefore, that the dental investigations of the future must embrace the protein chain from the soil to man and back again, and the investigators must see to it that no defects in this cycle occur.

This brings the investigator into contact with the soil. The land which produces the food must be in the best possible fettle. The produce of that soil must reach the stomach fresh, whole and unsophisticated.

These conditions have hardly ever been realised in the many nutritional studies of the past. Insufficient care has been taken to secure quality food. The consequence is that the literature of the subject is littered with results which have no solid foundation and on which no firm conclusions can be based. They merely confuse the issue by a fog of technicalities.

How many investigators on nutrition realise the simple fact that it will take at least three years to convert any ordinary piece of land into a condition when it will produce quality food? This is only possible in this brief period if ample supplies of good farmyard manure or high quality compost are available. After three years under the new management vegetables and fruit, for example, acquire their full taste and flavour

and the power to resist the onslaught of insect and fungous pests. The same applies to milk, milk products and meat, Only when the condition of an average herd of Jersey cows is raised to that standard when disease almost disappears is the best possible milk produced.

So much for the soil and its products. But what of the patient? Similar conditions apply. The patient, as is well known, contains reserves tucked away all over the body. Before a condition of robust health is reached these reserves must be raised to such a pitch that *under normal climatic and other conditions* the power to resist infection is the rule.

Only when real food is available and when the patients are fighting fit has the time come to observe the relation between nutrition and normal healthy teeth. If the investigation begins before these two conditions are satisfied the soil and the patients are both in a pathological phase and there is no firm base line from which the results can be measured.

Among the few dental investigations I have studied besides those carried out by Weston Price (on isolated communities in Europe and on primitive tribes in the New World and the Pacific) and by the dentists who have studied the teeth of the islanders of Tristan, there is one which is noteworthy in that the food used was grown on soil in the very highest condition as regards fertility. I refer to the work done during the last war by Mr. Brodie Carpenter at the Royal Commercial Travellers' School at Hatch End. Here the vegetables came from land which for many years had been heavily manured with night soil. I saw the land and the vegetables in 1945 and at once understood why Mr. Carpenter had obtained such dramatic results in such a short time. There had been no delay as far as the produce was concerned: the only time factor was the period needed for the children (who had obviously been suffering from a famine of quality) to build up their depleted reserves. Once this was done the excellent vegetables soon put an end to the caries. The result was so sudden that Mr. Carpenter himself was almost taken unawares. It was reminiscent of the way patients often pass from the condition of convalescence to normal activity.

THE NEXT STEP

Where can the future investigations that are needed on teeth be best conducted? The answer is simple--in our preparatory and other schools and in training centres of all kinds which possess sufficient land alongside for growing their vegetables, fruit, milk and other foods on soil in good fettle. Attention should also be paid to the bread and wheat porridge. These must all come from humus-filled soil to which no artificials are applied. No flour should ever come into these private bakeries--only wheat which should be ground as required and used for bread and other purposes. In such institutions an ample supply of quality food is essential because it is needed for nutrition and also for growth and development. The dentists attached to such centres can do much to help the cause of preventive medicine.

Some of the depots of the Navy, Army and Air Force already possess the land and labour needed for growing a large portion of their own food. An outside supply of compost-grown wheat could easily be arranged for their bread. Here large-scale demonstrations on nutrition could be carried out. The results obtained with whole-

wheat bread, for example, could easily be extended to ships at sea, which should always carry their stocks of cereal in the form of wheat and grind it as required. The dentists who work in these defence organisations could do much to initiate reforms in feeding which would in due course filter through to the general public. Much attention is now being paid to the education of our defenders. It would be easy to use these defenders on their return to civil life to educate their masters--the taxpayers.

Two other openings lie ready to hand--in the meals provided in our Elementary Schools and in the activities of the Boy Scouts and Girl Guides.

At a few carefully selected Elementary Schools real meals should be the rule. *The produce including the bread and the milk should come from humus-filled soil and should be consumed fresh.* At the beginning and again after the reserves of the malnourished children have been built up, their teeth should be examined and the figures recorded. The results will tell their own story: they will need no argument: a case for resolute action will have been provided.

At one or two selected centres similar ideas should be introduced into the Boy Scout and Girl Guides movements. But here the demonstrations should go far beyond the provision of quality food. The members of these organisations should learn how to grow and to cook high quality produce. Only in this and in similar directions can these two movements hope to realise the dreams and the ideals of the great man to whom they owe their existence. They must avoid stagnation: they must devise new and fruitful undertakings in which they can constantly learn by doing.

What can be done to secure the support of public opinion? I suggest that a beginning should be made by the British Dental Association by gathering together the pioneering work of Weston Price, Brodie Carpenter and others into a handbook which would not only establish a case for action but also help the public to realise what vast possibilities for good preventive dentistry has in store. If this is not possible, then an ample supply of copies of Weston Price's book might be imported from the U.S.A. and stocked in all the lending libraries of the country. But the ideal would be a shortened edition of *Nutrition and Physical Degeneration* brought up-to-date by means of an inspiring introduction.