

COUNTY PALATINE OF CHESTER  
LOCAL MEDICAL AND PANEL COMMITTEES.

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**Medical Testament**

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After more than a quarter of a century of Medical Benefit under the National Health Insurance Act we, the Local Medical and Panel Committee of Cheshire, feel that we are in a position to review our experience of the system.

Constituted by the statute to represent the panel of an area, such a Committee is in touch with all the family doctors—in the case of Cheshire some 600—within and on its borders.

How far has the Act fulfilled the object announced in its title—"the Prevention and Cure of Sickness"?

Of the second item we can speak with confidence. If 'postponement of the event of Death' be evidence of cure, that object has been achieved: the greater expectation of life which is shewn by the figures of the Registrar General is attributable to several factors; but certainly not least to the services of the panel.

The fall in fatality is all the more notable in view of the rise in sickness. Year by year doctors have been consulted by their patients more and more often, and the claims on the benefit funds of Societies have tended to rise.

Of the first item, "the Prevention . . . of Sickness" it is not possible to say that the promise of the Bill has been fulfilled.

Though to the sick man the doctor may point out the causes of his sickness, his present necessity is paramount and the moment is seldom opportune, even if not altogether too late for any essay in preventive medicine. On that first and major count the Act has done nothing. ←

We feel that the fact should be faced.

Our daily work brings us repeatedly to the same point: ←  
"this illness results from a life-time of wrong nutrition!"

The wrong nutrition begins before life begins. "Unfit to be a mother"—from under-nutrition or nutritional anaemia—is an occasional verdict upon a maternal death. For one such fatal case there are hundreds of less severity where the frail mothers and sickly infants survive.

The reproach of the bad teeth of English children is an old story. In 1936 out of 3,463,948 school children examined 2,425,299 needed dental treatment.<sup>1</sup> Seeing that the permanent teeth develop from the 17th week of pregnancy and that certain foods, accurately known since 1918,<sup>2</sup> are the condition of their proper growth, that is a reproach which should be removed. With it would go the varied host of maladies that spring from diseased teeth. That its removal is practicable is shewn by Tristan da Cunha. Most of the population of the little island, people of our race, living on the product of sea and soil, have perfect teeth which last them their lives.

Rickets, for which England was a bye-word when Glisson described it in 1650, is still with us. Gross deformities are rarer, but the big heads, tumid abdomens, flaccid skins, bulged joints and pinched chests are a commonplace of infancy; and even at school age 3,457 cases of rickets with 6,415 others of spinal curvature were found in 1936 by the School Medical Officers in 1,727,031 inspections.<sup>3</sup>

Yet its prevention by right feeding is so easy that every dog breeder knows the means.<sup>4</sup>

Rickets is a heavy contributor to the C 3 population. The Maternal Mortality Committee found that there is much less in Holland where butter, milk and cheese are plentiful and the women, by virtue of their generally healthy skeletal development, are protected against the risks that are commonly faced by women in the industrial areas of England.<sup>5</sup>

Nutritional anaemia is of two kinds, one subtle and apt to happen during pregnancy, the other simple and due to too little iron in the food.<sup>6</sup> It is known that anaemia especially of the latter kind is common, especially among children, and women, who need much more iron in their food than men. An enquiry into the food of 1,152 families shewed that 10% spent 4/- a week per head on food, 10% spent over 14/- whilst four more groups, of 20% each, spent 6/-, 8/-, 10/- and 12/- respectively. The food of the three

<sup>1</sup>—For references see separate pamphlet.

lower groups was definitely deficient in iron.<sup>7</sup> It is certain from this that nutritional anaemia amongst the poorer classes is far commoner than is recognised. Here is an example:—The blood colour was tested in two groups of school children, one a 'routine sample' of children, the other specially selected on account of poverty. Only half the poor children and only three-quarters of the supposedly normal children had a blood colour of 70% of normal.<sup>8</sup>

The final item of our indictment is constipation. Advertised aperients are a measure of its prevalence and the host of digestive disorders which result from it are a substantial proportion of the conditions for which our aid, as doctors, is sought. Yet the cause in every case—apart from rare abnormalities—is the ill choice or ill preparation of food. It is true that we are consulted on these conditions when they are established and have to deal with the effects,—gall stones, appendicitis, gastric ulcer, duodenal ulcer, colitis and diverticulitis—of years in which the body has been denied its due of **this** constituent of food or burdened with an excess of **that**. Others means of cure than proper feeding are called for at this late stage; but the primary cause none the less was wrong nutrition.

These four items, bad teeth, rickets, anaemia and constipation will serve as the heads of our indictment; but in truth they are only a fragment of the whole body of knowledge on food deficiencies which different investigators from Lind<sup>9</sup> and Captain Cook<sup>10</sup> to Hopkins<sup>11</sup> and the Mellanbys<sup>2, 4</sup> have unlocked.

But it seems to us that the master key which admits to the practical application of this knowledge as a whole has been supplied by Sir Robert McCarrison.<sup>12</sup>

His experiments afford convincing proof of the effects of food and guidance in the application of the knowledge acquired.

In describing his experiments, which were made in India, he mentions first the many different races of which the population, 350 million, is composed.

"Each race has its own national diet. Now the most striking thing about these races is the way in which their physique differs. Some are of splendid physique some are of poor physique and some are of middling physique. Why is there this difference between them? There are, of course, a number of possible causes: heredity, climate, peculiar religious and other customs and endemic diseases. But in studying the matter it became evident

that these were not principal causes. The principal cause appeared to be food. For instance, there were races of which different sections came under all these influences but whose food differed. Their physique differed and the only thing that could have caused it to differ appeared to be food. The question then was how to prove that the difference in physique of different Indian races was due to food. In order to answer it I carried out an experiment on white rats to see what effect the diets of these different races would have upon them when all other things necessary for their proper nutrition were provided. The reasons for using rats in experiments of this kind are that they eat anything a man eats they are easy to keep clean, they can be used in large numbers, their cages can be put out in the sun, the round of chemical changes on which their nutrition depends is similar to that in man, and, a year in the life of a rat is equivalent to about twenty-five years in the life of a human being. So that by using rats one gets results in a few months which it would take years to get in man. What I found in this experiment was that when young, growing rats of healthy stock were fed on diets similar to those of people whose physique was good the physique and health of the rats were good; and when they were fed on diets similar to those of people whose physique was middling the physique and health of the rats were middling." 12†

A special group which he fed on the food of Travancore, in which there is a considerable proportion of tapioca, disclosed a far higher percentage of gastric and duodenal ulcer cases than the other groups. This was informing as the people of Travancore suffer with peptic ulcer very much more commonly than the other peoples of India.

"Good or bad physique as the case might be was, therefore, due to good or bad diet, all other things being equal. Further, the best diet was one used by certain hardy, agile, vigorous and healthy races of Northern India." [Note: The Hunga, 13 Sikh and Pathan]. "It was composed of freshly ground whole wheat flour made into cakes of unleavened bread, milk, and the products of milk (butter, curds, buttermilk), pulses (peas, beans, lentils), fresh green leaf vegetables, root vegetables (potatoes, carrots), and fruit, with meat occasionally.

Now in my laboratory I kept a stock of several hundred rats for breeding purposes. They lived under perfect conditions; cleanliness, roomy cages, good bedding, abundant fresh water, fresh air and sunlight—all these things they had; and, they were fed on a diet similar to that of a race whose physique was very good. They were kept in stock from birth up to the age of two years—a period equivalent to the first fifty years in the life of human beings. During this period no case of illness occurred amongst them, no death from natural causes, no maternal mortality, no infantile mortality except for an occasional accidental death. In this sheltered stock good health was secured and disease prevented by the combination of six things: fresh air, pure water, cleanliness, sunlight, comfort and good food. Human beings cannot, of course, be so sheltered as these rats were, but the experiment shows how important these things are in maintaining health.

#### DIET AND DISEASE.

The next step was to find out how much of this remarkably good health, and freedom from disease, was due to the good food: food consisting of whole wheat flour cakes, butter, milk, fresh green vegetables, sprouted pulses, carrots and occasionally meat with bone to keep the teeth in order. So I cut out the milk and milk products from their diet or reduced them to a minimum, as well as reducing the consumption of fresh vegetable foods while leaving all other conditions the same. What was the result? Lung diseases, stomach diseases, bowel diseases, kidney and bladder diseases made their appearance. It was apparent, therefore, that the good health depended on the good diet more than on anything else and that the diet was only health-promoting so long as it was consumed in its entirety, so long, in fact, as it contained enough milk, butter, and fresh vegetables.

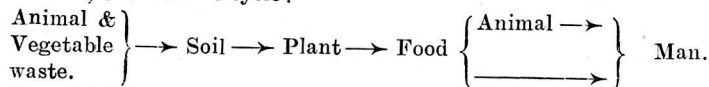
Many more experiments were done which showed that when rats or other animals were fed on improperly constituted diets, such as are habitually used by some human beings, they developed many of the diseases from which these human beings tend to suffer. Diseases of the bony framework of the body, of the skin covering it and of the membranes lining its cavities and passages; diseases of the glands whose products control its growth, regulate its processes and enable it to reproduce itself; diseases of those highly specialised mechanisms—the gastro-intestinal tract and lungs—designed for its nourishment; diseases of the nerves. All these were produced in animals under experimental conditions by feeding them on faulty human diets. Here is an example of such an experiment: Two groups of young rats, of the same age, were confined in two large cages of the same size. Everything was the same for each group except food. One group was fed on a good diet, similar to that of a Northern Indian race whose physique and health were good, and of which the composition is given above. The other was fed on a diet in common use by many people in this country: a diet consisting of white bread and margarine, tinned meat, vegetables boiled with soda, cheap tinned jam, tea, sugar and a little milk: a diet which does not contain enough milk, milk products, green leaf vegetables and whole meal bread for proper nutrition. This is what happened. The rats fed on the good diet grew well, there was little disease amongst them and they lived happily together. Those fed on the bad diet did not grow well, many became ill and they lived unhappily together; so much so that by the sixtieth day of the experiment the stronger ones amongst them began to kill and eat the weaker, so that I had to separate them. The diseases from which they suffered were of three chief kinds: diseases of the lungs, diseases of the stomach and intestines, and diseases of the nerves; diseases from which one in every three sick persons, among the insured classes, in England and Wales, suffer." 12†

These researches were minutely made on a large scale and, but for the food, the conditions of each group were identical and ideal. Their results to our minds carry complete conviction—especially as those of us who have been able to profit by their lesson have been amazed at the benefit conferred upon patients who have adopted the revised dietary to which that lesson points.<sup>14</sup>

It is far from the purpose of this statement to advocate a particular diet. The esquimaux, on flesh, liver, blubber and fish; the Hunza or Sikh, on wheaten chappattis, fruit, milk, sprouted legumes and a little meat; the islander of Tristan 14† on his potatoes, seabirds' eggs, fish and cabbage, are equally healthy and free from disease.

But there is some principle or quality in these diets which is absent from, or deficient in, the food of our people to-day. Our purpose is to point to this fact and to suggest the necessity or remedying the defect.

To descry some factors common to all these diets is difficult and an attempt to do so may be misleading since knowledge of what those factors are is still far from complete; 22 but this at least may be said, that the food is, for the most part, fresh 23 from its source, little altered by preparation and complete; and that, in the case of those based on agriculture, the natural cycle:



is complete.<sup>25</sup>

No chemical or substitution stage intervenes.<sup>23</sup>

Sir Albert Howard's work on the nutrition of plants, initiated at Indore and carried from India to many parts of the world seems to constitute a natural link in this cycle.<sup>16</sup>

He has shewn that the ancient Chinese method<sup>17</sup> of returning to the soil, after treatment, the whole of the animal and vegetable refuse which is produced in the activities of a community results in the health and productivity of crops and of the animals and men who feed thereon.

He has discovered the principles of the treatment of that refuse. These principles are complex, but the treatment is simple, though precise. The following quotation from his writings embodies in practical form this factor of inestimable value to human health and economy:—

The Indore process is simple. A layer about 6 in. deep of mixed vegetable wastes is lightly covered with about 2 in. of farmyard manure followed by a good sprinkling of earth. If any wood ashes are available these are added with the soil. The proportion of mixed wastes to farmyard manure must not exceed 3:1 by volume. The sandwich process is repeated until the material in the heap or pit is after fermentation 3 ft. thick. The layers must be kept moist, but not wet, lest the air supply be interrupted. The moistened heap should resemble as far as possible a pressed-out sponge. The temperature rapidly rises to about 150° F. and the whole mass becomes covered with greyish-white mycelium. After two or three weeks the heaps or pits are turned and watered if necessary. A second turn and watering follows at the end of six weeks from the start, by which time the mass has crumbled and turned black. In three months from the beginning the carbon: nitrogen ratio falls from 33:1 in the original mixture to about 12:1, when the humus, which resembles old leaf mould, is ready for the land.

Over-acidity, faulty aeration, too much moisture, or an unsuitable site—any of these may present a passing problem in this country. Such problems must be tackled bearing in mind the special circumstances giving rise to them. In no case yet have they proved insoluble.

The process is a partial reversal of the work of the green leaf. In the cells of the leaf simple substances obtained from the soil and the atmosphere are synthesized by means of the energy of sunlight into carbohydrates and proteids. The fungi and bacteria in the compost heap practically undo this synthesis until a comparatively stable condition of organic matter is reached in the shape of humus. This is the real food of the soil and of the crop. The second stage in breaking down the materials made by the leaf is only reached when the soil organisms oxidize humus into simple substances once more which can be absorbed by the roots of plants. The wheel of life has then completed a single revolution.

It is not difficult to understand that the use of artificials in feeding the crop direct side-tracks a portion of Nature's essential round; artificial stimulus applied year after year, and at the same times, must inevitably breed evils, the full extent of which are as yet but dimly seen. The relation between quality and yield, for example, does not lend itself to scientific formulæ. The time may come when yield will depend entirely upon quality, but quality can never under any circumstances depend upon yield. Factory-made manure is the weak link in the chain of agricultural economics.

It seems obvious to us that the new knowledge of nutrition compels our profession to return to the Hippocratic view—in so far as it has abandoned it—that a physician is a naturalist (*phusikos*) and to take cognisance

of the other three links of the cycle of nature as well as of man, his patient. For only so can he understand his patient. Without pretention to agricultural knowledge we can appreciate the bearing of Sir Albert Howard's discovery on our work.

Whether his discovery can be harnessed to the problems of public health, to the sanitary disposal of municipal and village waste has, we understand, been investigated. That side of the matter does not closely concern us; but we understand that the disposal of town wastes on a large scale at Nairobi<sup>18</sup> on these principles has succeeded; and that Mr. E. F. Watson, O.B.E., superintendent of the Governor's Estates, Bengal, has applied the Indore method to the house refuse and night soil of smaller Municipalities.<sup>19</sup> Whether the heat, 150.0°F., will kill the ankylostomum is a question to be answered.

Turning to England, we learn that at Bodiam, in Sussex, at the large hop garden of Messieurs Arthur Guinness, Son & Co., Ltd.,<sup>20</sup> the system disposes of many tons of the crushed refuse of Southwark with results satisfactory in all respects; and Capt. R. G. M. Wilson's Icen Estate in Lincolnshire<sup>21</sup> provides another illustration of this method of turning waste to wealth.

Though we bear no direct responsibility for such problems, yet the better manuring of the home land so as to bring an ample succession of fresh<sup>23</sup> food crops to the tables of our people, the arrest of the present exhaustion of the soil and the restoration and permanent maintenance of its fertility concern us very closely. For nutrition and the quality<sup>23</sup> of food are the paramount factors in fitness. No health campaign can succeed unless the materials of which the bodies are built are sound. At present they are not.

Probably half our work is wasted, since our patients are so fed from the cradle, indeed before the cradle, that they are certain contributions to a C3 nation. Even our country people share the white bread, tinned salmon, dried milk régime. Against this the efforts of the doctor resemble those of Sisiphus.

This is our medical testament, given to all whom it may concern—and whom does it not concern?

We are not specialists, not scientists, nor agriculturists. We represent the family doctors of a great county, the county, said Michael Drayton, of "such as soundly feed"; a county which gives its name to a cheese than which there is none better, though to most Englishmen, alas, only a

name; a county where the best farming is still possible, which should minister to the needs of its own industrial areas and of a far wider circle.

We cannot do more than point to the means of health. Their production and supply is not our function. We are called upon to cure sickness. We conceive it to be our duty in the present state of knowledge to point out that much, perhaps most, of this sickness is preventable and would be prevented by the right feeding of our people. We consider this opinion so important that this document is drawn up in an endeavour to express it and to make it public. And the occasion on which it is to be announced has been organised in the hope of ventilating it; and we are happy indeed that Major-General Sir Robert McCarrison and Sir Albert Howard have agreed to be present and to address the Meeting.

We wish to say finally, that the interest taken in the matter by the Lord Lieutenant of Cheshire, Brig.-General Sir William Bromley Davenport, K.C.B., C.M.G., C.B.E., D.S.O., who will be present, is sincerely appreciated.

*(Signed by the Members of the Local Medical and Panel Committees).*

John Kerr (*Chairman*).

N. A. Boswell (*Vice-Chairman*).

J. Barry Bennett (*Hon. Treasurer*).

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