the use of these agents, and we cannot afford to discard them until the precise *modus medendi* is revealed to us. We have to save life and to relieve suffering as we best can in the meantime, and if such practice is empirical it is certainly rational and beneficial; and we may at least be thankful for the advantages which are distinctly obtained by it. We may not forget that empiricism has often anticipated science in medicine. Clinical experience has certified the value of some drugs whose action the scientist has long subsequently learnt to explain, and there are still many remedies of which the efficacy is well assured whose exact action remains to be explained on a scientific basis. Empiricism thus aids scientific medicine by affording suggestions and indications for research.

At this point we appear to reach the boundary line which divides rational empiricism from scientific medicine. There is no room for the former in pathology. Minute study in pathogeny, histology, and in etiology have largely illumined the field here, and are extending our knowledge daily. So much so is this the case that increasing exactness in diagnosis has actually been one of the causes of a diminished faith in the efficacy of many remedies which have been in repute for morbid conditions whose nature and progress are now well ascertained, and therefore afford more precise indications for treatment by other measures. It may be noted in this respect that there has been some tendency to neglect the older means for affording relief to many symptoms during the progress of specific treatment in combating the original malady. Hygienic measures and varied environment have replaced much of the drugging which was the only resource in former days, but these by themselves have by no means covered the whole field of treatment of disease, as is sometimes fondly imagined, nor do they justify us in withholding other therapeutic agents, already well approved by experience in conjunction with them. A good deal of the present loss of faith in drugs is therefore unjustifiable, and no small part of it is due to modern inexperience in the use of them.

In respect of scientific progress relating to diagnosis and therapy, it must be conceded that we are absolutely in the hands of the expert, and must demand from the laboratory nothing less than exactness and precision. Imperfect research can only be misleading.

In so far as modern medicine is scientific, it stands by itself with problems before it which no other science has to face and unravel. We have often to act, sometimes promptly, on probabilities, with no scientific indications to guide us. The personal factor in the individual, not always easy to recognize, has to be reckoned with, and each patient is a new and special problem for us at the bedside.

Empiricism gives way gradually to the clearly ascertained results of to-day which illumine for us so many parts of the body by radiation and other exact measures, and yields to the disclosure of biological conditions of the blood, serum, spinal fluid, urine, and other secretions. As we employ these methods, our work becomes more and more scientific, and the therapeutical indications more precise.

Amidst all this, and looking forward to continued progress and fresh revelations, we shall do well to hold on by our past experiences and to beware that we, as practitioners, do not permit ourselves to be over-engrossed with any particular pursuits in these directions. It has now become difficult to keep a level head, and to see all the developments of modern times in the field of medicine in due proportion.*

Rational empiricism, together with slowly progressive scientific medicine, are now being carried on by the best practitioners. In the immediate interests of the sick this must be so, and there can be no antagonism between them so long as the whole field of medicine is not covered by science. The boundaries which divide them are sufficiently clear to all well-educated members of our profession. It is as possible to be too empirical as it is to be too scientific in daily practice. We have seen that some therapeutic methods urged on an alleged scientific basis have ultimately proved to be unscientific, and of little or no value. In the meantime, I venture to think that we need to be

*I desire to recommend the study of an admirable address lately delivered by Professor Chauffard, of Paris, "Du degré de Certitude de la Médecine" (*Conférence faite à la Société des Amis de l'Université*). It deals largely with the matters touched upon in this paper. *Revue Scientifique*, 4bis, Rue de Châteaudun, Paris.

both more prudently empirical, and more on the alert to avail ourselves of such knowledge as comes to us with the imprimatur of honesty and exact laboratory research. Such research must, however, be carried on with close and prolonged clinical co-operation. In that way only true progress lies.† The task is, indeed, a difficult one, and the outlook for all engaged in it appears likely to become more burdensome for each generation. Such seekers after truth must not expect much sympathy or support from the public, which looks for results quickly wrested from Nature, and is apt to be impatient with slow and persevering research. They know, however, that the true philosopher, who makes his mark for all time, reserves his results till he has covered the whole field of his research, and that he is the last man to seek untimely and sensational publicity for them.

Remarks

ON

FOOD AND FEEDING.

BY

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MANY medical and lay writers have contributed to popularize the subject of dietetics, and, as a consequence, a great change has taken place in the attitude of the public. In former times people ate what custom or their appetite suggested; now opinions are as diverse and views are as obstinately held as a couple of generations ago would have sufficed to heat a dispute about politics or religion. The result has not been in all respects bad, for many prejudices have disappeared, and simplicity and temperance in both eating and drinking are now more common. The difference may be noticed at any large club, especially at luncheon, at which meal many take no alcohol, not a few little or no meat, while fruit and vegetables are more in demand than they were a few years ago. It is recognized that obesity is in most cases the result of over-feeding, and it is no longer thought necessary to indulge the appetite to its utmost limits. It is to be regretted that some carry their principles to a ridiculous extreme, which may be a source of danger to health. On the other hand, there are conservatives in dietetics who in these wholesome changes see a risk of national degeneration, and express the fear that when we give up beef and beer we shall lose those qualities which have made the British nation what it is.

The campaign in favour of "standard bread" which has been carried on by a widely-circulated newspaper is a case in point. The view which the public has been asked to adopt and which has received the support of a much-advertised manifesto, signed by certain medical men, is that "white bread" is deficient in nitrogen and inferior to bread made from flour containing the whole of the constituents of the kernel of wheat except the bran. Flour of the latter kind is called wholemeal or Graham flour, while white flour of the best kind is called patent flour. No objection can be alleged against white bread, provided its whiteness be not due to any chemical treatment (bleaching) and that the bread contains weight for weight as good proportions of the nutritive elements, protein, carbohydrates, mineral matter, and fat as "standard" bread. The difficulty of proving this is that there is no such thing as "standard" bread apart from what certain bakers and biscuit makers are now advertising in response to the demand created by this journalistic agitation, a possibly unexpected and certainly undesirable effect of which seems to have been to facilitate the clearing out of large stocks of inferior flour.‡

† Il ne faut pas oublier qu'en matière de traitement, c'est l'observation clinique qui reste le souverain juge, c'est le médecin au lit du malade qui a le dernier mot, et contrôle toutes ces méthodes, c'est lui qui décide de la valeur des progrès réalisés; c'est par lui, c'est par l'observation clinique, que les acquisitions sont jugées durables ou fécondes, ou au contraire tombent rapidement dans l'oubli.—A. Chauffard, loc. cit., p. 30.

‡ See letter from Director of Hovis Bread Flour Company, Limited, *Truth*, April 12th, 1911, p. 907.

I know of no attempt to define what is implied by the name in terms of the components of flour or bread. It is said to be made of the flour formed of all the constituents of the kernel of wheat except the bran—that is to say, of what goes by various names, for example, Graham or entire wheat or whole-meal flour. But the fact that flour is made from the entire kernel of wheat by no means implies that it is uniform in its composition, certain wheats known as "strong" containing a higher percentage of gluten than the softer starchy wheats which are called "weak," but it is the business of the much abused dealers in flour, who are represented as being in a conspiracy to supply the public with an inferior kind of food, to blend the various kinds of flour so as to produce an average which shall make palatable bread and contain those bread-making qualities which are appreciated by the public as well as by the baker. A good proportion of gluten makes a loaf that rises well, but excess interferes with this property, and the resulting loaf looks small as compared with one made from an equal quantity of flour containing more starch. It is, perhaps, of more importance that excess of gluten makes bread which holds a larger proportion of moisture. This last consideration is of the greatest importance to the poor, in whose interests this movement has ostensibly been started; because it is admitted that the well-to-do get plenty of nitrogenous food from other sources than bread. The moisture in bread varies from 30 to 40 per cent. of the whole weight, or to put it in other words, a 4 lb. loaf may contain from 19.2 to 25.6 oz. of water, for which the purchaser pays the price of bread. In the District of Columbia, U.S.A., the amount of water in bread is restricted by law to 31 per cent., but here we have no legal limit. The principal way in which the amount of moisture in the bread is affected is by the heat of the oven; a quick oven consolidates rapidly the outer part of the loaf and so prevents the escape of moisture. This point is one which so far seems to have escaped the attention of our bread reformers, who have devoted their care chiefly, if not exclusively, to the supposed deficiency of white flour in protein and mineral matter. What truth there is in this charge is shown by the following figures taken from Atwater and Benedict's table:

	Protein.	Starch.	Fat.	Salts.
White bread	9.2	53.1	1.3	1.1
Graham bread	8.9	52.1	1.8	1.5

The advantage in the proportion of protein lies therefore with the white bread, but chemical composition is not everything. Some years ago specimens were exhibited in London of a famine bread, which had been used for the food of human beings in Russia; it had the appearance of cattle cake, yet its chemical composition showed a high percentage of nitrogen, though its digestibility was doubtless low. Attempts have been made to determine the digestibility of various articles of food by administering a known quantity, collecting all the resulting faeces, and subtracting the weight of the latter from the weight of the food, moisture in both cases being excluded; so tested we get the following results, showing the proportion of protein and starch digested with each kind of flour:

	Protein.	Starch.
	Per Cent.	Per Cent.
White bread	88	98
Graham bread	76	90

These results are not strictly accurate, as the faeces contain a proportion of matter derived from the intestine, but the error may be neglected in comparing two kinds of nearly similar food. Tested in either way the superiority of white bread in protein digested is manifest and there is little basis left in this respect for the criticisms which have been so widely made. White flour is said to be relatively deficient in mineral matter, and so it is, but the difference is small, amounting to decimal point four per cent., and there is no evidence that this is of any importance.

It may be worth remembering that a distinct connexion has been proved to exist between the occurrence of beri-beri and the eating of completely shelled rice, so that there is evidently something which is removed in the "polishings" which is of great physiological importance to the rice-eater.¹ It is possible that there may be some equally valuable substance which is removed in the preparation of fine white flour, and Dr. Gowland Hopkins seems to have had something of this sort in his mind when he gave his support to the "standard" bread campaign.

This suggestion derives confirmation from the experiments of Dr. Leonard Hill,² extended as they are by the results of the experiments of Drs. Edie and Simpson of Liverpool, which are not invalidated by those of Dr. Chalmers Watson, whose letter³ comes opportunely to remind us that after all white bread is not a poison, although it may be deficient in certain valuable constituents of importance to men or animals who are fed exclusively on it.

The prevalent decay of teeth is said to be due to eating soft starchy food, and "standard" bread is claimed to be tougher, and therefore better for the teeth, but the "standard" bread I have eaten seems to be just as soft as ordinary white bread, and the difference must be slight. The theory that decay of the teeth is caused by eating soft starchy food is open to doubt. South African blacks live on porridge made from mealies (maize), and the natives of India and Japan subsist chiefly upon boiled rice, which is almost pure starch and very soft, yet they have good teeth. Dental caries is more likely to be caused by the excessive consumption of sugar, which has risen from 551,105 tons in 1864, or 30 lb. per head, to 1,604,022 tons, or 89 lb. per head, in 1910. My friend Mr. Mountford attributes the early decay of children's teeth to the practice of giving them biscuits to eat between meals. Neglect of the teeth is an important factor; tooth-cleaning is only a perfunctory performance with many who possess toothbrushes, but by the great majority of the population it is not even thought of, and washing out the mouth after a meal, as the French do, is thought by us to be an indecent habit. The use of a simple and effective toothbrush made by bruising the end of a piece of stick, and the careful rinsing of the mouth after eating, habits practised by every coolie in India, would perhaps do more for the preservation of our teeth than any change in the quality of our food.

I have already referred to the neglect of our bread reformers to deal with the question of moisture in the loaf, but an even more important subject upon which in the interests of public health a change is desirable is the general introduction of machinery for bread-making, which I would gladly see made compulsory. The present conditions of many bakehouses, which are over-heated cellars filled with half-naked men from whose bodies sweat pours to mingle with the dough, is not pleasant to think of. Arpin and Ammon assert that a baker loses from 200 to 340 grams in weight while kneading a batch of bread, mainly in perspiration, part of which must certainly go into the dough. A percentage of bakers are phthisical, and although, according to M. Laveran, living tubercle bacilli cannot survive the heat of baking, such persons must cough and scatter their purulent sputum over their work. It is said that there is a prejudice among the people against machine made bread, a French baker stating that he had introduced a machine at night so that no one in the neighbourhood might know about it, or he would lose his custom; but in London the Aerated Bread Company has shops in all districts, and appears to do a large business. I suspect the main obstruction is from the operative bakers, who, like other hand workers, are opposed to the introduction of machinery.

I hope that before long bread will be made in large factories, and that all mixing and kneading will be done by machinery. The whole supply of bread for a large town might be made at a single centre, where efficient inspection could secure its purity and uniformity. Bread is made by machinery in Hamburg by the Workmen's Co-operative Society, and supplied to a large proportion of the industrial population. I am told that it is better and cheaper than the bread that can be obtained at the ordinary bakers' shops. It is astonishing how insensitive we are to the well-known evils of the baking trade as it exists in this country.

Mr. Upton Sinclair, the American writer, and author of *The Jungle*, a novel which drew attention to the evils of the Chicago canned meat trade, and thereby did the State good service, contributed two articles to the *Contemporary Review* during the past year on the virtues of fasting. His enthusiasm makes him speak of it as "the key to eternal youth," the "secret of perfect and permanent health," and "Nature's safety valve." He is a total abstainer from alcohol, tea, coffee, and tobacco, and a vegetarian, but by irregular eating, overwork, and carelessness as to how and what he ate, he brought on dyspepsia, which became so bad that at last he could not digest even cornflour mush. He began by fasting for eleven days, but at the end of that time he felt tired and weak on his legs; on the twelfth day he took the juice of twelve oranges, and repeated it on the thirteenth; on the fourteenth he took a glassful ($\frac{1}{2}$ pint) of warm milk every hour; on the fifteenth every forty-five minutes; on the sixteenth and subsequent days every half-hour, taking, he says, 8 quarts a day—an almost impossible quantity. On this diet he gained 32 lb. in twenty-four days, which is not surprising, if he could take it, as its heat value is 6,400 calories. He was not satisfied with this experiment, as he had given in too soon, so he fasted a second time, and on this occasion felt neither weakness nor hunger. He walked four miles every morning, had a cold bath and rub down twice a day, and lost 9 lb. in eight days; he went another week on a diet of oranges and figs. Since his fasts he claims to have lost his liability to headaches and colds, but he praises the method chiefly for conferring upon him "a marvellous and abounding energy"; yet he has to abandon his vegetarianism and adopt a Salisbury diet of beef and hot water "when he has much work to do," which suggests the want of a sound basis for the "energy." In his second article he complains that he cannot get doctors to be interested in the question, as they believe that no one can go many days without food of some sort, yet he asserts that in American sanatoriums there are thousands of people fasting, and a twenty or thirty days' fast is no more remarkable than a good score at golf. The record case is that of a fat man who fasted for ninety days; he originally weighed 385 lb. (27 $\frac{1}{2}$ st.), but reduced himself by fasting for forty days to 130 lb. (9 st. 4 lb.); on returning to his business as a hotel keeper he became fatter than ever; he then fasted for ninety days, but Mr. Sinclair omits to mention the result. He admits that an individual here and there may have died, but he does not seem to think that of much importance. The danger is not during the fasting but when the fast is broken, as the hunger aroused is ravenous and there is a strong temptation to overload the stomach. He goes so far as to say that it is "absolutely certain that no one ever died of starvation while fasting," his view being that when appetite returns they eat, and "that any one could die of lack of food without feeling a desire for food is absurd"; but we know that there is such a thing as nervous anorexia, in which people lose the normal healthy desire for food and die in consequence if they are not fed. As Mr. Sinclair's writings appeal especially to the neurotic, there can be no doubt that his teaching is dangerous. That this is no imaginary danger is proved by three fatal cases which have come under my notice. The first, a motherless girl, the daughter of a busy doctor, was treated in Dr. Playfair's home, returned home, was not supervised, and died. The second was a woman under the care of an old practitioner who refused to believe in the risk; she also died. The third was a young man whose nurse neglected her duty, and after his death food supposed to have been eaten was found concealed everywhere in his bedroom.

The therapeutic value of fasting is certain, and it is true that it has been neglected. Baglivi noticed the disappearance or amelioration of many of the chronic ailments of his patients in Rome after Lent, and a similar satisfactory result of prison diet was pointed out to me by the medical officer to the Birmingham Prison many years ago. Von Noorden recommends the interposition of a fasting day from time to time in the regimen of diabetes, and Guelpa advocates fasting combined with purging for three days in the treatment of diabetes and gout. Oscar Jennings, writing to draw attention to the good results of Guelpa's practice, says that he noticed a chronic lacrymal ulcer became soundly healed during Succi's forty days' fast.

That the application of the method presents difficulties cannot be doubted, as even the modest restrictions universally recognized as needful in diabetes and gout are too often disregarded, or at least imperfectly obeyed. Those most willing to control their appetites are the temperate or ascetic people, whose nervous ailments are often amenable to dietetic treatment.

The Salisbury diet, in the form used by me, is almost a starvation regimen. I allow 12 oz. of minced mutton, served as collops, divided into three or four meals, followed two hours later by half a pint of hot water. The calorific value of this diet is only 420 heat units, and as the body during repose consumes 32 heat units for each kilo of body weight, a patient weighing 8 st. (56 kilos) requires 1,742 heat units. But, whereas Mr. Upton Sinclair says that during his fasts his tongue is coated and his breath foul, I find that a coated tongue becomes clean and gastric trouble rapidly disappears on the above-described regimen, which I maintain only for two or three days, during which my patients are kept at rest.

A variant of the fasting method is the no-breakfast plan, started in America, but which has its advocates and followers in this country. According to the account published by a disciple⁶ in this country the patient is recommended to take a glass of hot water on rising, and no food until 1.30 p.m., when the meal should consist of vegetables, fruit fresh and dried, wholemeal biscuits, nuts, and brown bread, with nothing to drink; at 6.30 or 7.30, a similar meal with butter, and a drink of good soft water or oatmeal drink made by pouring boiling water on a teaspoonful of oatmeal. As this dietary contains no oil, olives, milk, or cheese, and only a little butter at the evening meal, it would appear to be insufficient, but he gives no quantities, so that this cannot be demonstrated. He claims, however, to find it enough for him, and he has taken long bicycle rides on fruit, nuts, and biscuits. He never eats unless he is hungry; he masticates thoroughly every mouthful of food, and he drinks nothing at meals. So far as the diet is concerned, it is a variety of vegetarianism, and the abstention from breakfast is a feature which is only of importance because it is at variance with our habits. Many, perhaps most, people would say that they would rather go without the mid-day meal than start their daily work without a good store of food, and in these busy times many have little opportunity in the middle of the day for more than a snack, so that there is force in the objection. On the other hand, breakfast shrinks to minute proportions in hot countries, and is a modern practice in England. It originated with the use of chocolate by ladies, who had a dish of chocolate before rising. In the minute account of his daily doings which Mr. Pepys gives, breakfast does not figure at all, but he mentions going to a tavern to get his morning draught. Some food was taken occasionally before setting out on a journey, but there was no recognized meal until dinner, which was in Mr. Pepys's time taken at noon. Our feedings depend mainly upon habit, but Marcel Labbé⁶ holds that in cold climates—he is speaking of France—abstinence from food until mid-day involves burning up the reserves. As these are in most cases abundant, I do not know that it matters if we do burn them, but the times at which food is taken must be regulated mainly by social habits and convenience. Two good meals a day are sufficient for most people, and the modern interposition of two in addition is a luxury which can be dispensed with. There are many people, especially women, who say that they feel faint if they do not get food often, but this is the result of habit, and probably depends upon the secretion of gastric juice at the accustomed time, which is attended by some nausea and faintness if there is no food for it to attack.

Another of Mr. Upton Sinclair's dietetic projects is the abolition of cooking, which he says⁷ destroys the health-giving properties of food, excites to gluttony, and is the cause of 95 per cent. of the diseases of the human frame. To convert mankind to this doctrine he has founded a co-operative community whose diet consists entirely of food in the state in which it is found in Nature, with no preparation whatever save washing. These conditions place great limitations on the available sources of food, as all cereals and most vegetables are indigestible until they have been boiled, but they allow nuts, ripe olives, salad vegetables, and a variety of fruits, both fresh and dried.

He claims that his wife and he have been cured of many ailments since they adopted this dietary. Whether it is as harmless as he supposes is doubtful; at any rate, Metchnikoff⁵ points out the danger of acquiring harmful intestinal parasites from raw fruits and vegetables, and urges that they should be at least scalded before being eaten. The frequency of bowel complaints in countries where fruit is abundant tends to support this view.

How far it is possible to supply the needs of the body on such a dietary can be answered with some precision. Professor M. E. Jaffa, of the California Agricultural Experiment Station, has studied the dietaries of the fruitarians of that State. He gives the following as a sample of the day's rations: Apples, 475 grams (1 lb.); bananas, 110 grams (3½ oz.); oranges, 850 grams (28½ oz.); dates, 5 grams (¼ oz.); olive oil, 10 grams (½ oz.); almonds, 55 grams (1½ oz.); pine nuts, 70 grams (2½ oz.); and walnuts, 50 grams (1¾ oz.). I have added the approximate equivalents in avoirdupois weights. The average amount of protein was 62 grams, and the heat value 2,493 calories. The average coefficients of digestibility were high, "no more effort being required to digest the fruit and nuts than is required for milk and bread." Jaffa's observations were made at first on two women and four children, but a second series was made on one of the women, two of the children, two elderly men who had been vegetarians for years and had limited their diet almost exclusively to fruit and nuts, and two young men, university students, accustomed to ordinary diet. Our English "fruitarians" are by no means so exclusive in their diet. In the *Penny Guide to Fruitarian Diet and Cookery* the following is a sample of a day's ration:

Breakfast.—Porridge and honey or bread and milk, toast and butter with a little vegetable or olive oil, a dozen stewed raisins, an apple and a few nuts, a small cup of cocoa.

Dinner.—Potatoes and greens and butter with an occasional fried egg, a milk pudding or a little cheese and salad and oil, half a glass of water.

Tea.—A cup of cocoa, a slice of bread-and-butter, and a piece of currant cake or jam or fruit salad.

Supper.—Bread and milk or cold rice pudding with raisins, or bread and cheese with a glass of hot milk or oatenade (rolled oats simmered in milk and strained).

This is much modified "fruitarianism," but our climate is not favourable to the cult. While it is possible to construct a strict fruitarian dietary which fulfils all theoretical requirements, I know of no actual experience to show that it can be followed here without injury to health.

An advocate of another form of vegetarianism is Dr. H. Tissier, who was led to his present views by his study of the causes of infantile diarrhoea. He believes the cause of at least one form of this disease to be a specific organism, the *B. perfringens*, which gives characteristic frothy green stools. Its growth is inhibited by substituting vegetable for animal albumen in the food, so he replaces milk by solutions of sugar or starch. The effect is enhanced by administering at the same time one or two teaspoonfuls of a living culture of the *B. paracalcici* of Kosai. He holds that animal proteins favour the occurrence of intestinal putrefaction, with consequent formation of toxins. Therefore he abstains from meats of all kinds, milk, eggs, and cheese, but takes butter, bouillon, and meat extracts, with, in certain circumstances, a little grated cheese. He and another adult member of his family have lived on this diet for two years, and during this time have followed their usual occupations, and have taken regular daily exercise by walking and cycling, including, on one occasion, a cycle ride of 120 miles.

The amount of scientific support which vegetarianism has recently received is remarkable. There is scarcely a modern standard work on dietetics or metabolism which does not yield some part of the old ground, and such writers as Marcel Labbé in France, Umber and Otto Cohnheim in Germany, Chalmers Watson in England, and Chittenden in America, express more or less definitely opinions in favour of the need for restricting the consumption of animal food, and encouraging a greater use of vegetables, fruit, milk, and cheese.

In spite of the cheapness of imported meat, it is doubtful whether the food actually eaten by our workers is as good as it was two generations ago. Tea, bread, tinned meat, and jam form the chief elements of the diet of the unskilled labourer and his family. Ignorance and neglect

of the art of cooking render the women unable to take advantage of the abundance of cheap food, an exaggerated belief in the strengthening and sustaining properties of meat leads to a proportional want of appreciation of other kinds of food; the teapot is looked upon by the most temperate as a harmless source of stimulation; the craving for sweet things so natural to children is indulged too freely, while fats are overlooked; good dripping is relished by children, but there is no market for it among the poorest class, in spite of its cheapness—but this probably accounts for its unpopularity, for among the classes to which I refer food is appreciated very much in proportion to its supposed costliness, and despised if it is cheap. Hence the objection we often hear made by domestic servants, hospital patients, and soldiers in barracks to American beef or Australian mutton. Cods' heads, which contain so much nourishment, are not saleable in Birmingham, and are destroyed as offal!

For these reasons the labours of the National Food Enquiry Bureau to popularize oat-foods seem doomed to failure. The report shows that at present they are largely used in better-class homes (84 per cent.), but in the congested areas, where on economical grounds their introduction is so desirable, they are seldom seen (26 per cent.). The quicker cooking of rolled oats should facilitate their use, as the old-fashioned oatmeal required more time and care than the present-day labourer's wife would give to it, but it must be thoroughly boiled. There can be no doubt of the high nutritive value of oatmeal, and porridge should be the universal form of free breakfast which an unwise philanthropy provides for elementary school children at the cost of the ratepayer. It is tabooed by the supporters of the "soft starchy food" theory of dental caries,⁹ and I fear this argument may be used by those who object to it because it is cheap.

REFERENCES.

¹ See BRITISH MEDICAL JOURNAL, June 4th, 1910, p. 1371. ² Ibid., May 6th, 1911, p. 1068. ³ Ibid., May 13th, 1911, p. 1151. ⁴ See Perfect Health and the Humours of Fasting, *Contemporary Review*, April and November, 1910. ⁵ *The No-breakfast Plan*, by T. Owen. ⁶ *Régimes alimentaires*. ⁷ *British Health Review*, December, 1909, and January, 1910. ⁸ *The New Hygiene*. ⁹ J. Sim Wallace, *The Child*, April, 1911.

CANCER, CREDULITY, AND QUACKERY.

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In the course of the past eight or nine years a very large number of communications have been addressed to the Imperial Cancer Research Fund by persons claiming to possess a "cure," a "certain cure," "an infallible remedy," "an absolute cure," a "never fail cure," or "the only cure" for cancer. The first step towards investigating the value of these communications has invariably been to ask the senders to furnish a written statement divulging the exact nature or composition of the alleged remedy. When required, a guarantee that the information asked for would be regarded as confidential has been given. Further, a statement has also been demanded of the nature of the evidence on which the claims of cure were based, and of the reasons which led to the diagnosis of cancer being made. Many correspondents flatly refused to comply with these conditions, alleging in extenuation that they were unjust. In all such cases no exact conclusion as to the value of the alleged remedies is possible; but it can be inferred with considerable probability, from the nature of the information vouchsafed, that the claims made would not have been substantiated had opportunity been afforded for submitting them to adequate examination. It is surprising how many people are unconvinced that the scientific examination of such claims presupposes exact knowledge of the ingredients of the remedy. In the absence of this knowledge negative conclusions could always be ascribed to error, such as failure to recognize the presence, or to give due value to the potency of an alleged efficacious ingredient, in the event of an analysis having been made and particular ingredients investigated. Where claims have been made with a view to obtaining pecuniary reward—specific