Vitality & diet / by Haydn Brown.

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VITALITY AND DIET

CHAPTER I

DIFFERENCES OF OPINION

A COUNTRY had better have a Constitutional Government and an Opposition. If all Members of Parliament were either Conservatives or Liberals as the case might be, agreeing with one another, meetings would not be worth attending. The laws made would hardly be worth having. The fact is that between extremes we find proper and reasonable means, as a rule.

We find the right course to pursue by allowing extremes to declare themselves as opposed to one another. Differences of opinion are as weeds, chaff, and good corn all mixed up, arguing with one another which is the best, each presenting its claim for support and working for a majority. Human beings cannot exist and develop solely by means of exact scientific

selection : they cannot pick out procedures and arrange plans, confident of the known final perfection of those procedures or plans, confident of their absolute certainty according to some immutable and unfailing great law ; they must progress as survivals of the fittest ; about most things there will be differences of opinion ; the absolutely perfect cannot by any means be attained.

Just as it is with politics so with religions. We have any number of religious denominations ; we have beliefs between those possessed by savages and those of the Archbishop of Canterbury, between those of a General Booth and those of the Professor of Theology in the University of Oxford, between those of the Pope and those of Mr. Kensit. Concerning the saving of souls there are opinions and beliefs without end, some as distant from one another and as opposed as the very poles. Those learned in Divinity would argue, and proceed to substantiate their doctrines, that their knowledge was as exact as knowledge could be, that they were quite convinced, and so on.

Also concerning the body there are differences of opinion. Medical men will stand their ground and declare their conclusions regarding disease, each one under the firm belief that he

is right and the others wrong, that nothing could be more convincing than certain end results derived from apparently clear and well-defined data. But possibly one out of fifty may be found to be finally and incontestably right, this one having had forty-nine who disagreed with him absolutely. Pity it is that in the case of some of the 'ologies we cannot be more exact than we are—as exact as in the case of mathematics, for instance. If we could learn everything clearly without any further doubt—certain theories being proved in two or three ways to be absolutely and finally right—how much happier a great many of us would be: at least this is what many imagine.

Even doctors of law differ very often, but they have precedent to refer to and cannot get very far wrong if they read enough and search diligently.

Philosophers differ, indeed they do! And who shall decide in such cases? In certain respects and instances they agree, "it is true." They agree because they have as nearly as possible reached exactitude in certain conclusions of their scientific research; they disagree when they are not certain after judging final results and examining exceptions which prove rules. In the latter predicament they feel entitled to

form opinions, upon available data, as the only thing left for them to do.

Who shall know the truth when wise men differ? Even the true definition of a wise man will be difficult to find.

Certain words or actions on the part of a really wise man will impress an individual in one way, and they will not be received in the same way by another. The reader might argue that anybody with ordinary sense might be able to judge whether a qualified medical man or a quack were deserving of the greater confidence. The former has had years of scientific study under the most favourable circumstances, while the latter may only have obtained his knowledge by very crude, trifling, and imperfect study. It may safely be argued that the former is a man more to be relied upon. Yet it has been recorded of a certain quack, that he had paid income tax on an annual revenue of £30,000, derived from the exercise of his arts, while no legally qualified medical practitioner in his country earns much more than £6000 a year. This quack could write his own name, but no more, and could read large print fairly well. "But he was a keen student of human nature, and he knew the way of fools." He commanded blind faith. He persuaded a multitude to believe in him. He

enlisted a large number of good opinions somehow. Who shall decide whether this quack was right or wrong in his methods, as opposed to properly trained and qualified practitioners? All one can say is that the latter are far more likely to know about disease scientifically and finally than the former, who was illiterate and unscientific.

Some medical men believe in homœopathy, others in total abstinence; some have faith in the Salisbury cure for certain diseases, others have not, and give the warning that such a treatment is most dangerous, and so on.

In medicine and surgery conclusions are arrived at by observation of a large number of cases. Conclusions thus obtained are handed down and accepted by others as final if the collecting authority has been reliable enough; but still more so, if a set of simple proofs are at any time ready at hand to examine. Many diseases have been studied and fathomed by shrewd scientific observers, and it has remained for students following to accept the conclusions and to test the finality of them.

Different professional observers have had different data to work upon in some instances of differences of opinion, and they have therefore naturally arrived at different conclusions; or

they may not have had a sufficiently large number of cases to observe. Faulty main conclusions are often arrived at through the sifting of a set of minor ones, *which examples themselves had been faulty.* Even so-called final conclusions may be fallacious, being merely convincingly apparent but not real.

Let us look at two of the largest and best books recently published on food, written by two scientists of considerable standing. One of the authors writes as follows :

" From an economic point of view it must be regretted that there exists a prejudice against the use of horse-flesh as a substitute for ordinary meat. It is well flavoured—indeed a Chateaubriand steak is said by connoisseurs to be best when made of horse-flesh—and any toughness can be overcome by suitable cooking. In Paris the use of horse-flesh for human food is increasing every year, and one can only hope the poorer classes in this country may ultimately take to it too. Indeed it is stated to be already largely used in the manufacture of smoked meats.

" There is also a prejudice against the use as human food of the flesh of animals which have died of disease. This again can hardly be

justified on grounds either of science or experience. The shepherds of Scotland have long used 'braxy' mutton, *i.e.*, the flesh of sheep which have died of various diseases—and I am not aware that it has ever been known to produce any harmful results. A French observer has recently put the matter to the test of experiment. He took the flesh of animals which had died of various diseases, including that of a mad dog! Cooked it in various ways and gave it to people who were ignorant both of its nature and source. No bad effects followed its consumption. He concludes fairly enough, that the use of diseased meat is harmless provided it is properly cooked, and that the over strict inspection of slaughter-houses may do more harm by rendering meat dear, and therefore inaccessible to the poor, than it does good by preventing disease."

The other author, while presenting innumerable arguments against the use of flesh as food, thus makes observation :

" For my part, and as one of the results of my researching, I am inclined to believe that mankind are trying to make themselves flesh eaters, when nature intended them to be fruit

and vegetable feeders, and that they will presently wake up to the fact that they are even now paying an enormous price in the shape of mental and bodily disease for their follies."

These two opinions need little comment. The last sentence of the first quotation is perhaps the most astounding of all. How can one be certain that meat is properly cooked by the poor and ignorant classes—who would be the very ones to buy this diseased class of food ? Many people prefer very " underdone " steaks and joints. I give my own humble opinion that the Mohammedan method of selecting sound animals, the consumers killing them themselves, and even cooking them themselves, so that nothing unclean should enter, to be eminently exemplary even to European Christians. You can make certain final calculations by means of figures and samples that you can rely upon as almost invariable, but when you come to human functional variations you will find no two of them exactly alike. This is undoubtedly one great cause of the unsoundness of the sciences of medicine and surgery : this is what so often makes them appear perhaps admirably dependable on one side and supremely unreliable on the other.

In science every stage of reasoning and every correlative help or confirmation should be definitive and unquestionable if final conclusions are to be worth much. But when paths of inquiry have been crossed by red herrings of accident or mistake, then what is the use of comparing notes? Statistics ought to decide, the reader thinks! Just so, but almost every one who has had any experience of the world and its ways knows the danger of unsound statistics—of unscientific statistics. The anti-vaccinator has his own statistics, and so has the vaccinator. Each claims that his estimates are right, and scientific, and final and reliable. Generally speaking, regarding disease or treatment, statistics are dangerously unreliable. They are bound to be when they relate to variable quantities, and when one compiler has made his list with eyes that see preferentially and a mind's eye that examines at a different angle from that of another compiler. Statistics will very often help to bring out truth, provided they are honestly and scientifically collated; but as a rule they are trotted out by the demonstrating scientist in order to prove some pet theory of his own over which he has grown urgently enthusiastic.

There is not a doubt that the best roads to

special knowledge are those of general knowledge. The safest and most reliable specialist is the man who has travelled towards his goal along the viaducts of sound general training. Complainants of the public are sometimes in the habit of trying to learn the truth by consulting more than one specialist. And nobody can actually blame them. Hence the dubiety engendered in their hearts when they hear so many diverse opinions as they go along—dubiety not regarding one or two individuals consulted, but regarding the whole profession. Of certain medical advisers—two will say, "Take whisky, it will do you good." Two others will say, "Stop your whisky, it will do you harm to continue." A fifth will remark that "Both the opinions already obtained were right: leave off your whisky in the day and only take a little in the evening."

The poor general public! How tossed about human beings are between opinions: how hardly they derive their scant knowledge to thrive upon! In law: conviction—reversal of sentence in appeal—appeal to the House of Lords! In religion: a priest calls ministers of all other denominations heretics: nobody can decide which is the holiest of the three, His

Holiness the Pope, His Grace the Archbishop of Canterbury, or His Great Importance the head of the Salvation Army. Each one has very pronounced opinions regarding the other. In the political world: a violent Socialist calls a distinguished statesman a Judas! It is often hard for Mr. Speaker to restrain bitterness of language when a certain heated member does not see eye to eye with another.

CHAPTER II

SEEKING A RATIONAL DIETARY

IN this chapter we shall endeavour to find out what is a rational dietary. There must be a type of food or combinations of foods in proportion more suitable for the majority of human beings than others. It behoves us to search these out. But, to find one type of food exactly suitable for every individual will be, of course, impossible; even a carefully selected or blended combination of the most scientific order would scarcely meet the varied constitutions of all. Abnormal constitutions will require a certain dietary prescribed according as functional departures from the rule indicate.

The question of the advantages of a vegetable diet over animal flesh is an old one; a cult known as vegetarianism has been long in existence. The majority of vegetarians have, in their mostly unscientific way, come to the conclusion that animals' flesh is not suitable

for human food; and a very reasonable conclusion this seems to be in some respects. They have argued that flesh food should not be taken for several reasons: that it is unhealthy and leads to disease; that it is inhuman and inhumane to partake of it, and so on.

Now, are the principles of vegetarianism right or wrong? Are they rational or irrational? My answer is this: Some of them are rational, being principles of common sense, others being unscientific, are unsound and altogether erroneous.

What are the principles of vegetarianism? What foods are included? The answer is that there is at present no real boundary. Some vegetarians include eggs, others rule out cheese, while the most advanced scientists who have made a special study of diet and have arrived at apparently strictly scientific conclusions, contend that eggs are as bad as flesh food for human beings, and that cheese is of the very highest value. Therefore the reader may now draw his own inferences. The principles of what is commonly known as vegetarianism are unsound—all honour, however, to the unscientific vegetarians for their efforts. But the theories of those who advocate a large proportion of flesh food are also unsound, and,

according to nearly every page of this book, very often lead to most disastrous consequences. Therefore we must separate sound from unsound in this chapter, if we can, and find what is a really rational dietary.

In the first place, let us consider whether flesh food should be included under the term rational or not. If many injurious effects can be laid to its charge justly and truly, then we have very considerable reason to contemplate ruling it out of human diet altogether. But first the question: Do many people live to a good old age, having enjoyed healthy and comfortable lives of mental and physical capability, who have included flesh food in their dietary? I am bound to answer that they do. We must be fair and honest in our inquiry, or we deserve to be dubbed faddists, and unreliable enthusiasts. Many do take a certain amount of flesh food in their diet and still remain satisfactorily healthy. Of course their actual degree of health may be a matter of opinion. Many who have *felt*, or *appeared*, quite well, having included flesh food in their diet, might possibly have been somewhat better either without any at all or with much less. But I think it only right to admit that many appear to enjoy the best of health under a mixed diet including cooked flesh food, while

it is notorious that many vegetarians *appear* to be sickly, pale, and weak in comparison with feeders on mixed diet.

When one comes to pure science, and weighs the conclusions of those who have studied deeply and experimented largely, the verdict is very much against flesh food. The verdict of the late Dr. Haig, the author of *Uric Acid as a Factor in the Causation of Disease*, the most scientific and reliable work on diet that has ever been published, is entirely against flesh food—and no scientist can lay claim to have made such an exhaustive inquiry into the relative values of foods of all kinds and their effects on the human constitution and health as he did. Whether I agree with *all* his principles or methods of feeding or not, I am delighted to have an opportunity of expressing an appreciation of the eminent work he did. He stood alone as the greatest experimenting authority on human food in health and disease, and I give this opinion in face of the fact that in some respects the application of his principles was sometimes too strict, too rigid and severe.

How am I to explain so many cases of individuals feeding on large quantities of flesh food in their diet and yet remaining to all *appearance*, and according to their own sensations,

perfectly well, living on to a good old age? My answer is that they have received these advantages in spite of the large amount of flesh food. They have been robust enough to tolerate this amount; their digestions have been sound enough to deal with it. Such have been exceptional instances, however. It has been shown beyond argument that the majority of centenarians are small flesh feeders. Butchers live short lives, as a class. I refer very particularly to this question of *appearance*, for *one of* the best arguments in favour of flesh food seems to be that it *appears* in so many cases not only to do no harm, but to do much good and to confer great advantages.

I would not be quite so strict, in apportioning a dietary for ordinary health that deserves the term rational, as to rule out flesh food altogether. Let those include flesh food who wish, being warned that, absolutely scientifically, flesh food beyond a limited quantity is contra-indicated as a food for human beings, and that in the great majority of cases it causes prejudicial effects in some sort and degree.

If a man is perfectly healthy and eats flesh food, I say to him, "Go away and continue to do so if you feel confident you will always remain as healthy to old age." But when is a man thus

confident? Indeed, when is a man really as healthy as possible? He never knows. He may seem well for the time being, and may have remained well for a long time past, but he never knows when the unfavourable effects of too much flesh food will not appear. He cannot be certain. A distinguished statesman long boasted of the soundest health under a mixed diet, living under no particular regulations as to exercise and Turkish baths, but at last he suffered from attacks of gout. Therefore to limit flesh food is undoubtedly to be on the safer side even with the healthiest and strongest. Much thinking or worry demands a minimum of flesh food; of this I am absolutely convinced.

Cases of strong healthy men who take enormous amounts of flesh food, *leading very sedentary lives* and seeming no worse for it, have always interested me particularly. I have taken the trouble to investigate such cases, appearing as they do to upset the idea that there is any harm in large quantities of flesh food. I have found that their ability to keep well under this strain of excessively stimulating diet has depended upon their having perfect digestive powers under a happy and entirely unworried life. They are, therefore, great exceptions, being generally men of means having no mental vexations or sustained

strain of any kind. *But they are just the ones who are very liable to severe attacks of disease once their evenness of existence is interrupted*; then they are liable to suffer more than the rationally fed. Though they may remain in sound health for many years, they are very liable to apoplexy, pneumonia, or rapidly fatal illnesses of some kind later on in life.

Those who live to a great age are almost invariably careful in their mode of living. Any exception is usually only apparently so. A man may occasionally get drunk and live to ninety years of age, but the habits of his life will on the whole have been regular, abstemious; he will have been inclined to small amounts of everything.

It is for individuals to find out for themselves, by experiment, or advice from those competent to give an opinion, what diet suits them—diet, remember, not only for the time being, but for the future. As most people know, exercise usually enables an individual to take more flesh food than sedentary life. Manual labourers can take more than city clerks—not that manual labourers are really better for it—experiment shows that they are not—but they are able to take a badly proportioned diet with less injurious effects than those who are sedentarily employed. Eustace Miles, the champion athlete and author

of books on diet, is as fine an example as one could find of the success of a diet which does not include flesh food. His case, and many others less noteworthy, but equally convincing, shows that physical power and endurance—and in his particular instance also mental power and endurance—can be at their strongest and most perfect pitch under a scientific diet which excludes flesh food entirely. Some constitutions would be dangerously over-vital under flesh food.

Those accustomed to physical work believe in large quantities of cooked flesh food because they perceive its temporary stimulating effects. They feel they want it, and are not fit without it, largely because it has become a habit with them. They have become trained to require it. But those same individuals would have greater strength and endurance still, if trained and accustomed to a more rational diet. Experiment has proved this without the smallest doubt. Some will thrive better on more flesh food than others, because their digestions will not bear certain substitutes for flesh food. Hence we know of cases which have done better by increasing the amount of flesh food. What is known as the Salisbury treatment of taking hardly anything else but lean meat and water has answered very well in the case of those

whose digestions were stimulated by such diet. The improvement or cure by such treatment is merely relative; and often it is merely temporary and delusive.

Flesh food is best tolerated by those who have good digestions and who have little or no mental strain or excitement. The Nordrach system of feeding on large quantities was once believed to be very successful in the treatment of certain cases of consumption, but here the patients were living a passive, listless, unworried life, happy enough with good appetites and digesting everything eaten, having nothing to do but to eat, sleep, and be hopeful of cure. As soon as these patients resumed a life of worry in business or duty, and began to exercise their brains, they showed signs of ill-health again.

I have mentioned that physical work will permit of a larger proportion of flesh food being taken, although more stamina and endurance could be obtained under rational diet that included a limited amount of flesh food. This is shown by Eastern peoples, who can do an enormous amount of work for long periods upon little more than rice.

I have used the term flesh food to include stock soup, gravy, meat extracts, fowl, rabbit, and fish. All these are stimulating foods.

The reason why they cause diseases and ailments is this, they contain certain so-called poisonous matter, such as uric acid and xanthins. Some have greater food value than others, and some contain more poisonous material than others. The reader need not trouble much about the science of the subject unless he likes. Those who wish to go more deeply, however, may be well satisfied by studying the late Dr. Haig's book.

I give below a list of flesh foods that contain uric acid, beginning with those which have the largest quantity. The reader will then have a guide as to which flesh foods are the most injurious and to be avoided.

	Uric Acid and Xanthin Poison. Grains per lb.
Meat Extract	63
Meat Juice	49½
Beef Tea	7
Liver	6
Kippered Herring	6
Roast Lamb	3½
Veal	3½
Kidney	3½
Mackerel	2
Bloater	2
Fowl (breast)	1½
Soup	1½
Beef Steak	1½
Mutton and Beef	1
Rabbit	1

It will be seen from this table that those flesh foods which contain most of the poisons are the extracts or fluids of flesh. The ones next are liver and kippered herring, which contain a high percentage. It is to be further noted by the reader that those foods which many consider extra nice are the most harmful, such as the last two I have named. Individuals who are suffering from any of the disorders due to too large an amount of flesh food in diet are practically certain to be very fond of either liver or kippered herring for breakfast. The more uric acid and xanthin there is in food the more stimulating it is, and therefore those suffering from an over stimulating diet will crave for these last-named foods. The more you get the more you want is the rule regarding cooked flesh foods as well as alcoholic drinks. It has not been clearly demonstrated that a uric acid condition of the blood results from eating eggs, but Dr. Haig was quite satisfied that these are as bad as flesh food in their ultimate effects, if not worse. This may surprise and alarm the so-called vegetarians who are so fond of eggs, but it is a scientific fact as shown by Dr. Haig's experimentation.

. . . . . .

We are the most important of the living

things on the earth. We are obliged to eat in order to live, and while the least important, animals, birds, etc., still remain natural in their desires and choice, we belong to the world's great unnatural feeders. In confessing ourselves unnatural feeders we might, to our credit, have been able to show how much *superior* art is to nature, we highly advanced brainy humans. We might have been able to demonstrate how far superior to animals we were in our choice and preparation of food. But, by the time the reader has read this and the next chapter, I shall be surprised if he is not rather disquieted and discontented with our efforts. I shall expect him to pray that he may be allowed to take a step or two back to nature and leave some of our art's travesties to the more foolish.

With heavy brains and wise senses we ought in the fulness of development to have distinctly improved upon nature's food provisions, but let us see in this chapter whether we have done so or not. Let us see whether a return somewhat to animal simplicity in this respect would not be very much better for us. What a farce our evolution and rapid advancement seems to have been in the face of certain equally rapidly developed follies! The reader will be compelled to admit that we sometimes use our superior

intellect very badly, eventually to become skilful in obtaining means of doing ourselves as much physical and mental harm as we can. We do our best to make enough money to eat and drink so injudiciously that we spoil ourselves, or die sudden deaths of apoplexy, or live our later lives in the agonies of gouts, rheumatisms, eczemas, neuralgias, corpulencies, and so on. This is really what we do: we *wise* creatures, and we flatter ourselves the while that we are the unblamable wonders of the earth.

In referring to human inducements to overeating, Dr. Harry Campbell has pointed out in the *Lancet*:

"Animals in a state of nature are little likely to overeat—first, because their constant search after food entails a highly active life, and this demands a correspondingly large supply of food; secondly, because their food, except in the case of the carnivora, is seldom in a highly concentrated form; and, finally, because it is of such a simple and monotonous kind that the appetite is appeased when a sufficiency has been consumed; so that, far from having a surfeit, most animals have as much as they can do to obtain the needful supply. Civilised

man, on the other hand, is not only not compelled to lead a muscularly active life, often taking little or no exercise at all, but his food is highly concentrated, consisting largely of such articles as sugar, butter, cheese, and meat, and far from being monotonous, it is of a varying kind, and in the case of the well-to-do is rendered appetising by the manifold resources of the culinary art. While, then, it is practically impossible for a wild animal habitually to overeat, the modern Human has many inducements to tempt him to excess and as a matter of fact he often yields to them. In this respect men are greater sinners than women."

If we have advanced to be monarchs of all we survey, mightiest of all things that move, we have allowed the cravings of our inside to get master of us, we have proved ourselves positively inferior to animals as regards our feeding preparations and choice. The reader need not dispute, for I shall make my contention clearer still.

I assert that animals enjoy superior advantages over man in the matter of food, when by the mere means of natural instinct they are enabled to get enough to gratify their appetites to keep them in good health and comparatively

free from disease. I refer, of course, to animals in a wild state: those domesticated come under the evil regulations of superior man, consequently they do not enjoy such good health and become afflicted with some of men's diseases—consumption, for instance. But man—vastly superior man—on the other hand, develops a thinking brain which fits him to be superior to all animals in most respects, but when it comes to his own feeding does not prevent his becoming a glutton, a slave to food and drink, a helpless, powerless licentiate—worse than an animal—dangerous to himself, committing either gradual suicide or driven to madness and desperation, filling hospitals and lunatic asylums. Oh, man—vain man—ornate and perfect in your own opinion of yourself—mighty in your millions, proud in your high stomachs, how abased you appear before the rest of creation when you lie prone and prostrate as a result of your debauchery, whether with sick-headache or poisoned brain! How can you look Nature in the face with your features distorted, your countenances rubicund, your eyes guilty, and your contour deformed with excess, with gluttony? In everything but your own self-gratification you may seem to be an ornament, you may bear some resemblance to

the Creator's great ideal, but, as perfect as Nature would have you, you prove yourself to be obstinate and criminal in the face of her dictates, you scorn her suggestions and do as you like with yourself. You do not remain a specimen of perfection very long after birth. You run up the ladder of success as fast as you can, sprightly, feeling strong in the sense of your superior ability; but after a few rungs you find it almost necessary to tie yourself on. You falter and slip, and just as you may be congratulating yourself upon your prowess at a creditable altitude, waving your vain exultations to the submerged tenth below, you cry out and fall. You die suddenly, and a clot is found on your brain. Or you may recover partially and live to be a laughing-stock, palsied, or having a gout limp—a lesson to the remainder.

Those who suffer from bursting of blood vessels of the brain or body are your stout and prosperous men, who have earned sufficient success to loosen themselves into self-indulgence. It seems to be the great Creator's penalty for the vanity of human material success that some sort of disaster shall end all, or some chronic painful set-off shall be adjusted *pari passu*. It may be in mind or in body, it may be in one form or

another, but the vanity of human advancement, reached as it so often is through the wilful and reckless ignorance of self-indulgence, appears to be met in the majority of instances with the most relentless and inexorable penalties. Conversely, we observe the greatest comfort and happiness — lengthy and serene life — allowed only to those who have not been vain in their understanding, who have been sensible towards themselves, and who have not scouted nature's advantages and opportunities and introduced art's extravagances and prodigality.

If man could be man in everything else but his feeding, and if he could remain a natural instinctive animal in this latter respect, he would be more admirable than he is as the world's chief inhabitant.

Wild animals have practically nothing else to do but to look after food that is naturally provided. Here we have another reason why man should be a perfect feeding creature; he has so much else to do that he ought by this time to have become absolutely faultless in his care of self, for how can he be to the utmost capable in his works if he be not perfectly fit himself. A critic might remark that man must have taken great care of himself to have advanced mentally as he has, but this is only an apologetic argu-

ment : he would have advanced very much more if he had taken greater care of himself, for investigation and observation show that rationally fed human beings are much more capable than the recklessly fed. Those comparatively few who have for years fed irrationally, but who have discovered their error and become rational feeders, have noted the great change that has ensued for the better in their capabilities.

I would not urge that human beings should make no departure whatever from the natural type, or that they should follow the dictates of nature or instinct as closely as do animals : we are quite entitled to use our great intelligence in the choice and preparation of our food, so that we may have great variety and pleasant advantages. But the fault I have to find with humans regarding diet is this : they exercise their intelligence in the wrong directions ; they seek after what is pleasant to the palate only, not regarding sufficiently whether such food is in any way injurious to the subject, and not considering whether too much of it might be followed by seriously disadvantageous results sooner or later.

So that we may be helped to find out the most appropriate type of food for human beings, let the reader consider for a moment that certain

animals, such as horses, cattle, sheep, deer, live chiefly on grain, or grasses, growth of the vegetable kingdom, while others, such as lions and tigers, live solely on flesh food. Now, in nature, we have distinct reasons for certain diets being peculiar to certain animals; certain animals are anatomically fashioned and physiologically adapted to subsist on certain kinds of food. Thus sheep and cattle have an arrangement of teeth which decides that they must feed on grain and grasses; they have also an internal anatomy very definitely designed for this class of food, far more definitely than the average general reader might imagine. On the other hand, the corresponding anatomy of lions and tigers demands a flesh diet as the most fitting by nature.

Certain birds have their beaks and their digestive apparatus designed for feeding on particular kinds of food. Ducks have flat beaks for selecting soft things in water and mud, while hawks and eagles have very strong hooked beaks for the purpose of feeding on flesh. Throughout the animal kingdom we find this adaptation of anatomical form and physiological function to the food which each can procure, making animals fit in with their environment; and the extraordinarily numerous and finely-adjusted adaptations constitute creation's greatest wonders,

giving scientists unbounded interest in the study of them.

Now, let us ask the question : Is man particularly fashioned to fit any particular type of diet or any particular environment in which he can obtain this diet ? This is a question which has exercised the minds of scientists ever since man became advanced in his thought, and many differences of opinion exist, in answer. Indeed, it is really chiefly to this anatomical question that we owe so many disagreements in theory regarding diet, for if anatomists and physiologists could show without any doubt that man is made for a particular kind of diet and not any other, then human beings generally would be convinced and would select food accordingly. Some say he should have a vegetable diet, others argue that a mixed diet, including flesh, is the most appropriate.

Let us inquire for a moment what reasons there are for believing that each one of three types mentioned, namely, flesh, vegetables, and mixed, is naturally suitable or appropriate. And let the reader understand that in referring to food under these heads, for the present purpose, I mean by flesh, cooked animal food in large proportion ; by vegetables, *all edible material belonging to the vegetable kingdom*, grain, stalk and

leaf; and by a mixed diet, these two classes, animal and vegetable, mixed together; and I give, as examples of creatures that feed on flesh, lions; on vegetables, sheep; and on mixed diet, human beings. Not only are lions anatomically arranged for feeding upon flesh, they are so formed that they may be able to procure such food, they are strong and ferocious. Now there is a curious point to note about this ferocity. Through its existence lions are better enabled to get the food they require; but by this very food their ferocity is to a great extent created or governed. If you feed a lion on less flesh and give it, say, bread and milk, you proceed to tame that lion. Indeed half the secret of taming animals lies in the feeding of them. Take the case of the well-known domesticated ferret, which may be fed on flesh, or bread and milk, or on both. If you feed one on flesh for the most part, it will not be so tame to handle as another fed on bread and milk. In a wild state ferret-like animals feed on flesh, and flesh food makes them hunt for flesh and capable in strength and ferocity to obtain it. You can experiment with dogs and cats and see for yourself that flesh diet makes them more savage, less domesticated, less tame. Now, as flesh-eating animals cannot procure food such as bread and milk, and there

seems no reason why their diet should be altered, we conclude that flesh is a naturally appropriate food for them. Similarly we note that not only are sheep, cattle, and such like animals specially fashioned to feed on grass and grain, they are not fitted in any respect to feed on flesh ; they could not kill and eat flesh and live on it. We could not imagine their doing so. Their temperament, naturally, is one which leads them to run away from enemies ; they are not ferocious and fitted to attack and kill other animals, excepting occasionally in self-defence. Horns of cattle are not made to kill for food, but intended to be used as weapons of defence or aggression in the presence of enemies. And in turn their food does not make them ferocious, but is bland and unstimulating. It is true that grass-eating animals such as bulls can be savage in a sense, but this savagery is for another purpose, and bears no association with the procuring of food.

When we turn our attention to ourselves as feeders on mixed diet, both flesh and vegetable, we note that we are anatomically and physiologically fitted to feed on this class of diet, that it seems at least suggested from the fact that the majority of us do feed so, and certainly thrive remarkably well. But the greatest question of

all in this connection, to my mind, is this: Are we right in attempting to prove anything from the data and suggestions of anatomical and physiological adaptation when we come to man? I am of opinion that we are not right in so doing. According to Darwin and others, animals have become adapted as regards anatomical arrangement and physiological function to their surroundings in process of evolution, but man is, or should be deemed, no longer an animal; *he should be considered as capable of adapting his surroundings to his exceptional constitution.* Nor should he demand a certain food merely because he has a taste for it; he should select those foods which are the best for him for all purposes; he has the power to do so above all animals.

Suppose we allow that man is anatomically and physiologically fitted for a mixed diet of cooked flesh and vegetables, a much more important question seems to be this: Are we satisfied that this diet is the most suitable for him? When taken under certain limitations, as regards quantity, we practically are. But given the mental and physical energies of man in competition; given all circumstances of his life, there is the fact staring us in the face that too great a proportion of cooked flesh together with other prepared food and drink enters into the

diet of the majority of human beings. We want no other proof of the evil adjustment of diet than the diseases which we suffer from, which can be directly traced to this false balance. *Our diseases are our indication.* Quite two-thirds of all cases of disease are either caused directly, or unfavourably influenced indirectly, by improper food.

The reader might argue that he himself is physically and mentally capable enough, though he eats a large amount of cooked flesh. Experiment, however, shows that the average individual does not know how much better and more capable he would be with less flesh food. Some Americans, anticipating us, have been finding out how they may accomplish greater things—just a few of them who have been sufficiently sensible over themselves—and they have found that they can obtain greater mental and physical results under a careful consideration of diet.

Great continents are ever fighting for supremacy, straining every muscle and brain-cell for the top places. Capabilities must in the future be exercised to their utmost in the competition, and the rational feeders will win : Great Britain and American will win as surely as their people find out that in order to get the highest physical and mental results out of man they must be properly

fed—not by food selected merely because it is nice and stimulating, but by that which feeds and fits at the same time, which satisfies appetite and sustains while it affords no disadvantages.

Notes

The fact that the Esquimaux are raw flesh feeders is interesting; that is to say, most of them feed on this alone. And it is reported that they are free from cancer. We shall see later on that fresh food contains more vitamines than cooked. Flesh is all the easier to digest because it is stimulating, while grain is not; therefore the latter is very specially broken up (bread) for man.

We had also better keep in mind the fact that muscular power, stamina, and staying power can be supported by grass alone. The fat buck and sturdy zebra of Africa feed on coarse grass with pickings of grain here and there. Many beasts of burden feed mainly on dried grass (hay).

The regular food of thousands of powerful black men consists of Indian corn boiled in sheep fat.

CHAPTER III

DISEASE AND DIET

THE average reader of the general public has no conception of the extent to which diseases of all sorts are either created or influenced by improper diet. In previous publications I have referred to hospitals, asylums, and prisons, and have stated my opinion that about two-thirds of these institutions would not be necessary if human beings fed rationally. This may seem an astounding and exaggerated estimate, but I ask the reader to go through this chapter carefully, before coming to his own conclusion.

Only those who are not quite sound in intelligence, or who are little better than animals, ought ever to be guilty of frequent indiscretions of diet which may have really serious consequences. In very occasional fits of temporary exaltation of ideas certain individuals might be pardoned for proceeding to excess; but there hardly seems any sane reason why pernicious

feeding habits should be contracted and cultivated—that is to say, if human beings are in the way of knowing how improper food influences the health, and to what extent. Let us inquire in this chapter how improper food—improper in kind and amount—seriously interferes with both mental and physical health. Space does not permit me to do more than superficially survey the data upon this subject; but I hope to give quite enough to convince the reader.

Let us begin with that very common and well-known disease, rheumatism. This is a typical diet disease, dependent upon a certain quantity of poison being present in the blood; and its presence there is due in nine cases out of ten—not to be too dogmatic and enthusiastic in estimate—to improper food. I think I might almost say in nearly every instance this is the cause of the disease, but for the sake of scientific safety I will leave a few doubtful cases.

Of course doctors differ about this disease as about most diseases, and there have been fashionable ideas holding ground that microbes were at the bottom of it. That blessed term micro-organism has held out promises and comforted temporarily those confronted with important problems; but it has been a mere red herring across the path leading to clear judgment and

final understanding. How can any scientist argue that rheumatism is caused by microbes, or germs, or micro-organisms of some kind, when by certain foods the disease can be prevented?

If a microbe were the existing cause of the inflammations of rheumatism, the poison introduced by improper food is the soil—the support of the existence and multiplication of the microbes. That is a certainty. Therefore the prime and readily alterable cause of rheumatism or rheumatic fever is improper food. It is idle for medical scientists to continue to trot out microbe theories in the face of such indisputable facts. There may be microbes, and probably are, in association with every disease under the sun; but in regard to rheumatic fever, as well as many other diseases, we can afford to ignore them as a causation after finding the cause of their subsistence. The prime causes of disease are the various conditions which lead up to that disease; it should be incumbent therefore upon scientists to consider if the cause of these conditions can be easily taken away or avoided. Roughly, ninety per cent. of all cases of rheumatism would be avoided if human beings lived upon a rational diet; for though the nervous system is usually a precipitator, yet this is so largely on account

of its disturbance through hyper-stimulating food.

I need hardly refer to gout as a disease caused by improper feeding. I must spare the reader the ignominy of an assumption that he does not know this fact. But all must recollect that besides painful affections of the joints there are other conditions not uncommonly referred to as being gouty or rheumatic, and rightly so. Dr. Haig drew attention to gout of the intestines in *Uric Acid as a factor in the Causation of Disease*, and was of opinion that many cases of appendicitis were gouty or rheumatic.

Eczemas are skin diseases that are caused by worry and improper food in ninety cases out of every hundred. It is true that certain forms may be directly traced to definitely exciting local influences, but even in these there is generally a predisposing cause in either nerve sensitiveness or pernicious diet—or both. Many cases of eczema are now frankly described by physicians as being of a gouty nature, and as often as not they are at the same time considered to have an hereditary origin. Authorities have arrived at these conclusions after observation of a large number of cases. It has been found that many cases of eczema have exhibited other gouty symptoms at some period of their life, suggesting

some association between these two conditions. It is a disgrace to our scientific acumen and prowess that we did not find out this association sooner than we did. Until quite recently, nay, even to-day, the classic treatments for eczemas are practically all for *outward* application, with utter disregard of diet. Even now great authorities have it laid down in their books—published, and selling still, in this year of grace 1924—that eczemas are very difficult to cure and to understand: all sorts of stuff for *outward* application are recommended, but hardly ever any mention is made of diet as a causation, prevention, or cure. But there are some noteworthy exceptions to this old-fashioned rule.

External irritants may start attacks of eczema, and may therefore be supposed to be prime causes, but practically all degrees and forms of the disease are curable and preventable by diet—not at once, or even soon, but in time, when a changed diet has had time to alter the poisoned blood into good and healthy. *Those who feed on rational diet never suffer from eczemas.* A dietary that will cure gout will also cure gouty eczemas, and we here have another proof of the association in origin of these two affections. Local application will undoubtedly help in the temporary treatment of eczemas, but permanent cure will

only be brought about by a proper dietary. There is only one reason why eczemas have puzzled medical scientists for so many years, and continue to puzzle most of them still : they have never found the real predisposing cause to be in a blood that has been rendered abnormal by what has been eaten. They have recognised exciting causes galore, and they have mentioned certain apparent constitutional tendencies of some people to develop the disease ; but here they have stopped.

Let me take this opportunity of referring to the much misunderstood term heredity. Rheumatism, gout, and eczemas are referred to by medical scientists as instances of hereditary diseases. So was consumption, by the way, at one time ; yes, and also insanity. We now know—we have only comparatively recently determined—that consumption is not hereditary ; the tendency to develop consumption is hereditary, but not the disease itself. This fact has been arrived at through finding out a successful prevention and a successful treatment (to some extent) for it.

I will now endeavour to explain what I mean by tendency. An inherited tendency may be described as an inclination to adopt certain habits of life, in regard to feeding, domestic customs,

employment and to thinking generally. Certain families will be naturally disposed or compelled to certain habits or customs which will include living in stuffy rooms, feeding on improper food, and existing amid depressing or worrying surroundings. Such families will be likely to develop consumption. Similarly, certain families will inherit temperaments disposing them to select highly stimulating diets which will render them liable to suffer from dyspepsia; such will be likely to develop rheumatism, gout, and eczema. These diseases are never themselves inherited, as commonly understood. The tendency to adopt procedures which lead to the development of the diseases is inherited, and the imitation of the habits of parents by progeny is, of course, a very frequent and powerful factor.

Insanity is not so often hereditary as many take it to be. It is much more hereditary than the other diseases just named, because it so often depends upon actual anatomical deformity and physiological peculiarity. It also often depends upon syphilis, the effects of which disease may be transmitted to offspring. A very large proportion of cases of insanity are created by certain habits of life. The tendency to these habits may be, and generally is, hereditary; hence the mis-

understanding that obtains even to this day that insanity itself is such a very hereditary disease. Many cases of insanity have a predisposing cause in a too-stimulating and over-proportioned flesh diet: this inclines individuals to aberrations and abnormal exercises of the mind and body. A large number of the permanently insane need never have become so if diet had been scientifically understood. Hysteria and nervous outbursts are too often treated by an asylum course unnecessarily, such very curable disorders being thus often rendered incurable and permanent. *Diet is the best preventive and curative agent for most cases of insanity.* The proper means of prevention and cure of such cases will be obvious to the laity, but it is not yet fully recognised or put into practice by the majority of those who have the mentally unsound or unduly excitable under their care. A few asylum medical men know this cause of insanity, and its corresponding remedy, but they do not find it easy to make restrictions or limitations; they are afraid they might be accused of starving their patients.

Many medical scientists would be inclined to allow that a certain neurotic disposition or nervous dyscrasia was at the bottom of epilepsy, *but would forget that neuroses themselves are so*

largely provoked by improper food. The reader will understand that if flesh food stimulates an animal or human being to greater energies of all kinds, such energies may be sufficiently powerful to get out of hand and boil over, so to speak. Savages who are unaccustomed to flesh food will become so excited and unruly on eating freely of it as to appear intoxicated. Flesh acts as an "exciter of animal passions." Dr. Clouston, an eminent authority on the treatment of the insane, recommended those who were subject to undue mental excitement to "avoid flesh as the incarnation of rampant uncontrollable force." Fits are energies which have run out of control; the human machinery tends to go so fast, and is wound up to such a pitch, that at times it becomes ungovernable. No treatment of fits, and no preventive, therefore, equals that of properly adjusted diet, continued long enough: medicines will alleviate or temporarily inhibit, but diet alone will permanently cure and prevent in the great majority of cases of excitement that are not due to brain injuries or structural deformities.

A very high percentage of cases of melancholia unquestionably have improper food as their prime causation. Here again critics will argue that neurotic temperaments or dyscrasias

of some kind are the cause. But if properly adjusted diet certainly either prevents or cures excitability, then where do any other causes come in? Improper food has different effects upon different people, it is true, and this is due to some constitutional disposition or idiosyncrasy. But because too much flesh food causes fits or hysteria in one and not in another, this is no reason for arguing that flesh food is not a very common cause of the affection. The fact is, too much flesh food is not good for any individual, and in certain ones it causes definite and serious disorders. Therefore it behoves those who wish to prevent on the one hand or cure on the other, to adopt either a rational or a special diet, as the case may be. A strictly rational but plain and easily balanced dietary should be the first study of all human individuals, whether for those who are normal or abnormal in temperament and constitution. Very particular diets should spring from this common rational one to meet special cases, this being a matter for medical men to study.

Only now is it *beginning* to be realised in our numerous asylums how important a rational and more finely adjusted diet is in the treatment of patients. Very great differences of opinion still exist in the minds of mental experts, and

are likely to exist for a while yet, as to the proportion of flesh food which should be taken by the insane. Indeed, scientific quantities or proportions could hardly be expected in treating disease if the rational and appropraite diet for *health* is so little understood by medical scientists. I have referred in a previous paragraph to a very definite reason why medical practitioners have little inducement to attempt limitations in diet; but, notwithstanding this, the next decade will undoubtedly show great advances in the treatment of the insane by rational diet. It will soon be fully realised that while a properly adjusted diet is one of the very best cures of all—far before medicine or any other remedy excepting psychotherapy — it is the most powerful preventive of this common disorder.

We are made painfully aware from time to time, by records published, of the alarming increase of insanity amongst human beings; now it is very significant that this increase is *pari passu* with an increase in the amount of stimulating flesh food taken in diet; these are the days of foolish feeding, of meat extracts and tinned flesh in cheap quantities. In one of the later reports of the Lunacy Commissioners we read that no advance in the recovery rate has been achieved by physicians in the last thirty

years. What is the reason of this? There is only one answer: it is that methods of treatment adopted are no better than they were thirty years ago. And they never will be better until it is recognised that the first treatment for insanity should be a scientifically adjusted dietary, leaning towards reduction of, and sometimes to the entire elimination of, over-stimulating food and drink.

There are observers who put down increase of disease in general, and insanity in particular, to increased competition and struggle for existence; but let me ask those reasoners to think more deeply, and they will come to the conclusion that it is time for us to feed in accordance with this life of high pressure, not on abundance of badly balanced food, but sufficiently upon that which is carefully chosen and prepared.

When we turn to a consideration of specific diseases and affections of the brain, we find similar havoc played by the same evil agent. Nearly all cases of high blood pressure and apoplectic fits are either directly caused, or greatly favoured by, improper diet.

Those who have any of the aforementioned diseases, excepting syphilis, appearing in their families may be comforted. Their blood is not

so readily and permanently saturated with disease as they imagine, but the *tendencies to habits which conduce to disease* are there; and therefore it behoves those having unsound family histories to learn what their prejudicial habits are, so that they may be corrected. In the case of rheumatism, gout, eczema, insanity, and certain other disorders, the tendency is for families in which these diseases appear in successive generations to "do themselves well," to eat and drink unwisely and without the guidance of common sense or professional wisdom. We bear in mind that gout is very much less common than it used to be. We also know that in 1923 the death-rate was low as compared with former times. These two facts strongly suggest that the feeding of the people generally has improved. But the chief fault remaining still to be corrected is a wrong balance of constituents.

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I should consider myself quite fair in attributing nine-tenths of all cases of liver affections to improper feeding. And I think there are many readers who would at once agree with me to this extent. There are some interesting conditions of disorder of this organ that are brought about by improper food and drink; what

doctors commonly call " hob-nail " liver, is one in which certain lumps develop on its surface. Ordinary congestions are conditions so common that there are comparatively few persons who eat any cooked flesh at all, who have not experienced occasional attacks.

Not only must the reader bear in mind in this chapter that certain diseases are caused by improper food, but the symptoms or further effects of these diseases should be noted which might be understood as separate diseases, dropsy being an illustration. This affection is usually caused by either liver, heart, or kidney disease, which three latter are usually caused primarily by improper food. It is necessary to observe this relationship of disease and symptom, and to bear the order in mind throughout this chapter ; then the great proportion of diseases which I attribute to improper feeding, namely, two-thirds of all cases, will be better understood.

Even jaundice, in its several forms, may generally be attributed to improper feeding, inasmuch as those who suffer from this condition have very often been previously affected with congestion of the liver or nerve strain at various times.

Quite three-fourths of all cases of headache

can readily be traced to improper food as a cause of most undue strains and tensions.

About the same proportion of all cases of disease of the stomach would be prevented by rational diet. Worry is a great cause of ill-health ; and ill-health is a great cause of worry. But improper food is a cause of both, while dyspepsia, any kind of ill-health, and worry all magnify other evils of an ill-chosen diet. Again, more than three-fourths of all cases of insomnia are caused by improper food and drink, when we consider that worry itself is often caused by improper food.

If we are not yet quite able to declare finally that cancer is caused by improper food, we know that this disease has a preference for situations which have been disordered by improper food, such as the stomach and intestines. But we are surely destined to find out before long that cancer is more due to food than the scientists of the past, and many of the present, ever dreamt of. Somewhere between diet and temperament we shall find out finally the real cause of cancer. We shall learn that much of our searching after microbes has been misspent energy upon too narrow lines. We shall find the cause not in micro-organisms, but in soils that grow micro-organisms, which soils are produced in some way

by either flesh food or temperament or by both of these together. Sir W. M. Banks, in an article in the *Lancet*, attributed the increased cancer death-rate largely to richer and more abundant food, males eating more than females, and consequently suffering more from cancer. He, moreover, pointed out certain districts where good living is the habit, which showed a high cancer death-rate. Commercial travellers and butchers are common victims.

It will now be realisable that three-fourths of all cases of disease of the heart and blood vessels are caused by improper feeding. The reader must have heard that rheumatism so often leaves heart disease in a chronic form.

I consider the same proportion of cases of asthma and hay-fever to have the same primary cause; while the origin of a large proportion of cases of bronchitis may be similarly traced. Many diseases are said to be caused by cold in the first instance; and certain individuals are more liable to be attacked with cold or bronchitis than others. Now the small eater of cooked flesh and the abstainer from stimulating drinks do not suffer from cold anything like to the extent as do those who feed on a more irrational class of diet. Not only this, but when attacked the heavy eater and drinker suffers far more

than the abstemious. At Klondyke, alcohol was increasingly disfavoured owing to the fact that those who took it were much more influenced by the extreme cold. *The greatest cause of all inflammations throughout the body is badly digested flesh food.* Hence arose the old-fashioned system of treating most diseases by "bleeding"—by letting out a certain amount of bad blood. The method was a very successful one.

It follows that those diseases which are not clearly caused by improper feeding are generally influenced for the worse by it. The properly fed will always be able to throw off diseases of all sorts better than those improperly fed. Doctors find no patients more difficult to cure of disease than those who are large feeders or drinkers, or both. A direct blood poisoning that is mild in the abstemious may be fatal in those who are addicted to excess. This is so well known that it goes without need for emphasising.

Influenza is now a very common and severe affection, and yet a very old one. Members of the laity are constantly inquiring, Why is it that influenza varies so greatly in character and severity? Here is the answer: the human constitution is now very different from what it used to be. Wear and tear of brain and body

is greater than it was a hundred years ago, when an easy-going life and plain food allowed better digestion to take place.

Human beings ought to feed according to the kind of life they lead. I have already pointed out that all inflammations are rendered worse by excess of animal food; but so also are all fevers. Now, influenza is a feverish disease which often affects various organs of the body severely, sometimes the lungs, at other times the liver, kidneys, and intestines. Hence we have fatal cases of pneumonia following attacks of influenza, also we have appendicitis, kidney, liver, and nervous troubles as sequelæ.

It is a remarkable fact that lunatics frequently become perfectly sane just before death; it is a great question whether this is not due to the more rational diet given them in the sickness which precedes death.

One of the commonest human complaints or disorders is constipation. Now in nine or more cases out of every dozen the bondage, with all its further consequences, is due to improper food. This being the chief cause, a correction of it is therefore the most satisfactory and reliable cure. Provided there has not developed some radical organic disease, some inherited or acquired displacement, or some deformity some-

where in the alimentary system, and provided there is nothing in an individual's constitution which will prevent a proper diet being applied, *there is no case of constipation which will not be permanently cured by a suitable adjustment of diet.* I have referred to this long ago in *The Secret of Good Health and Long Life*, and have received a good many inquiries from astonished readers concerning this asseveration; but cures of the most obstinate and apparently hopeless cases have since shown the correctness of it. Diet will not do it in a day; but it will succeed after a little patience—and permanently so, provided the diet be adhered to. Of course, when stasis has long injured the intestines, then diet alone may not cure; but such damage is exceptional. The best means known to science of correcting constipation quickly, through the functional filip which it affords, is autonomous relaxation, a system known to the more advanced medical men. But even this diet should be adjusted as a future preventive.

The diseases enteric and dysentery are in ninety or more cases out of every hundred caused by improper feeding and drinking. If micro-organisms are the exciting cause, a state of unsoundness or loss of tone of the alimentary tract—caused by improper food—is usually the

predisposing cause. Two people may partake of certain water from the same stream, one will develop enteric fever and the other will not. Other things being equal, the habitually foul feeder of the two will get the disease, while the rational dietest is more likely to escape. Experiment with the properly fed and the improperly, side by side, both having the same micro-organisms added to food, shows that the improperly fed tend to contract diseases of all kinds sooner than those who have adopted rational habits of feeding. Twelve months' study of enteric fever and dysentery in the Anglo-Boer war convinced me that faulty food as a predisposing causation lay at the bottom of most of the cases. Dysentery especially was due to too large a proportion of tinned flesh food in diet, taking into account variations in digestion which were found to occur under stressful and rough conditions. A very large number of men in this war also suffered from what are known as veldt sores. These were due to feeding so much upon tinned flesh food, the evil effects of which were not sufficiently neutralised by fresh vegetables and fruit. I also saw a good many cases of scurvy having the same origin. Therefore, while in some cases, the outside skin shows the effects of improper

food, under circumstances of war, in others the inside surface of the bowels tends to break down and ulcerate ; micro-organisms have been given a favourable reception by a state of the whole body that has been produced by unsuitable food.

Such indications regarding food serve to guide the investigator inquiring into the question as to what is suitable for troops on active service. In preparing for war where food is difficult to provide, rigid scientific conclusions are subject to alterations according as local circumstances, climate, etc., may vary. Up to the time of the Great War convenience and practicability were studied rather than the scientific feeding of troops. It is certain that in the future the food of those on active service will be still more scientifically adjusted. We are now learning more of the science of diet under all conditions civil, and advantage will sooner or later be taken of this further knowledge in our preparation and equipment for troops in war. It would seem that under most circumstances of war flesh food may be admitted in rather larger quantities than might be practically scientific in civil life, for flesh food might occasionally be so much easier to obtain in fields of battle that are overrun with sheep, oxen, or wild animals suitable for food, than any other kind ;

again, a flesh-food diet, being stimulating and taken under healthy outdoor and active routine, may be quite suitable for troops in war as a fighting food provided it is fresh enough and not taken beyond a certain amount, or as long as its deficiency effects are neutralised by other forms of food accompanying. Disease has been known to kill more soldiers in war than swords and bullets, and therefore the necessity for scientific as well as practicable diets for armies is obvious. Nor can the after-effects of diet in war be overlooked.

Were one to treat of the subject of improper diet as a cause of most diseases at all fully, more than one volume would be necessary; but, while quite enough has been dealt with in the foregoing to indicate to the reader the trend of my argument and to substantiate to some extent my contentions, I should further like to touch shortly upon the influence of food upon temperament and ordinary sensation, both as affecting individuals immediately and in the long-run. And in order that I may give the reader some idea of this influence, I want him first to understand thoroughly one simple fact about flesh food: *it is a stimulating food.* Beer and whisky are stimulating drinks, but intoxicating also. Flesh food is stimulating but not immediately

intoxicating; it acts something like tea does as a drink, let us say, for the simple purpose of offering sufficient explanation which need not be too scientific. A good example of a non-stimulating food is bread. It is necessary for any one interested in diet to grasp this stimulating effect of flesh food, because in this characteristic lies the explanation of a strong desire which human beings have for it: it is nice and pleasant to taste. This quality accounts for the tendency many human beings show for gradually increasing the amount they take. Those who allow their appetites for food to get master of them are liable to take more and more flesh food in proportion, until they develop dyspepsia or liver complaints. Then, feeling ill, they fast for a while; or it may be suggested to them that they are eating too much, when they will moderate their amount.

Flesh lovers increase the amount they take gradually, and usually ultimately develop such a taste for this form of food that they will eat three times the amount that is necessary to keep them in good health. Three to five ounces of cooked flesh food a day should be the regular amount for an average man or woman. The great majority of English-speaking people take three times this amount. And this large

quantity will not itself sufficently satisfy; the cooking must be of an order which enhances the stimulating power, there must be sauces and gravies and condiments in addition. Cases are common in which excessive meat-eaters daily pour over their food quantities of meat-extract sauce, as though they could not get enough stimulant with their food. Nearly everybody tends to increase the proportion of flesh food as time goes on, unless some derangement of the internal organs puts a check on the amount. A few maintain good health for many years and eat flesh food in enormous quantities. Such individuals are very exceptional, however; they lead regular lives without worry, having perfect digestions. But even they will be fortunate if they reach forty-five years of age without feeling symptoms of either dyspepsia, liver, gout, or rheumatism. They will often boast of their good health for a long time, but get caught in the end, and then they will live perhaps many years in discomfort from agonising joints and dyspepsia, worrying away their years under a good deal of congested liver and bad temper. If such individuals get any definite disease — pneumonia, bronchitis, or fever — it will generally go very badly with them. The highly stimulated feeder and drinker manages

to ward off most of these diseases very successfully, but if he does get them they are all the more severe and difficult to cure; the doctor does not get good results from any stimulating treatment, that is indicated by weakness, in those who have been highly stimulated to begin with.

I am quite ready to admit that stimulating food, such as cooked flesh, has its advantages as well as disadvantages. It is easily digested, very supporting for the time being, pleasant to the taste, and gratifying. So also brandy, champagne, and other alcoholic drinks have pleasant qualities as well as disadvantages when taken to excess. Flesh food is therefore tempting, and many look for it with a preference and a desire that no other food will create.

The effect of cooked flesh on the temperament or feelings of an individual will now to some extent be divined by the reader. It gives physical and mental power of a temporary rather than permanent order. It makes a person feel well and in good spirits while its effects last. Like the effects of stimulating drink, the advantages of flesh food do not last more than a certain length of time, while the most disadvantageous effects are perceived in the long-run. This fact constitutes the greatest pitfall of all to scientists and laymen alike, who

argue that because a person feels well after a big meal this meal has done good and can never do harm. The truth is that it has done good for the time being, as a stimulating food, but the harm is to come. I recently had occasion to discuss diet with a distinguished scientist who was then suffering from a mild attack of gout. I told him he would find it necessary to diet himself in future and to take less flesh food and stimulating drinks. He replied that he had already tried less and had felt worse for it. I doubted the soundness of this evidence, and asked him how long he had tried the change of diet. I found it was a comparatively short time. He had imagined that he ought to get favourable results in a few days, while I could have told him that he would almost certainly be sure to get poor results in this time. He would equally certainly have got the very best results if he had stuck to a more rational diet for several months—having reduced gradually.

An individual accustomed to feeding on a highly stimulating diet of a large proportion of flesh food will desire this amount as meal times come round, just as one who habitually takes stimulating drinks; any appreciable diminution will be unpleasantly felt at first; but he will find that by degrees diminution will

bring safe and sure results without punishing him too much, until at length he reaches a comfortable level again and lives happily and contentedly under only a slightly stimulating diet. My gouty scientist above referred to could not stand the unpleasantness of what seemed to him to be a sudden and marked reduction. Others have complained of similar reduction having the effect of lowering them.

Stimulating flesh, as a food which in quantity leads to those disorders and diseases referred to above, is usually increased by those who have healthy appetites, by degrees over a number of years. A young man may at one time take flesh foods for two meals a day, in moderate quantities, but by the time he is thirty-five years of age he will very likely take twice that quantity, and so on. It will suggest itself to the reader, therefore, that such stimulating diet must be reduced gradually, so as to avoid feelings of unhappiness and weakness; and this gradual reduction must be made until a certain stage or proportion is reached, and when reached it will be necessary to persevere for many months, perhaps, before the bad effects of the former proportion entirely leave the system.

The stimulated flesh feeder who is taking too much, may possibly *feel* in the best of health,

and therefore be very ill-disposed to make any difference regarding his diet, but he would undoubtedly feel better, and be more capable mentally and physically, if he took a less proportion. A man who is stout, and has a red face and a happy countenance, may appear in perfect health and may imagine himself to be so, but he cannot be so in reality if he is taking too large a proportion of flesh food. He is only *stimulated* up to a healthy-looking pitch, and he takes what food he does to keep himself up to that pitch: good health is often a matter of comparison, and it sometimes requires a person to feel better to make him believe that he had ever previously ailed anything. *A man is not really perfectly and safely healthy who is only kept so by large quantities of stimulating flesh food and drink.*

It is very hard to induce some big flesh feeders to believe that human beings would be much healthier with a great deal less. They will not hear of any reduction in amount, or change in kind, because they have become addicted to large stimulating quantities and imagine they could not feel well and happy without, not realising that only for a time will the reduction be disagreeable. Once the beneficial effect of less in amount is believed in, and perceived ever

so little, a reduction becomes more simple and tolerable, until at length one who has the brain, the strength of character, the common sense sufficient to exercise a little self-denial, ultimately takes a pleasure in adhering to the reasonable and comfortable new regulation.

Dr. Henry Campbell wrote the following in the *Lancet*, which shows that there are other men living besides the present author who have studied dieting :

" Chronic over-eating is apt to cause trouble by leading to an undue accumulation and evolution of energy in the body, and in such cases the surplus energy may seek outlets in abnormal ways, such as in fits of irascibility and hysterical convulsions. The desire of the irascible man to break the furniture and of the hysterical woman to scream and rush wildly about, must surely be exaggerated by the storage of an excess of energy in the body. I do not want to overestimate this as an exciting factor—other factors, such as toxæmia, play their part—but it must certainly be conceded that surplus energy is apt to find an abnormal outlet. If a well-fed horse is not taken out to exercise, he will kick his stable down; and over-fed prisoners may, by the very fact of their being over-fed, be

incited to insubordination. These considerations suggest that when an individual has a tendency to convulsive seizures we must be careful to keep his diet within due bounds.

"Over-eating materially hastens that fibroid encroachment which is a natural senile change. As we should expect, the liver and the kidneys are especially apt to suffer; chronic over-eating causes chronic engorgement of the former organ, and imposes upon it an amount of work far in excess of its powers: it also increases the work of the kidneys, and exposes them to constant irritation by the toxins which are perpetually passing out through them.

"The toxæmia of over-eating may set up a variety of nervous disturbances, such as headache, giddiness, tinnitus, irritability, depression, drowsiness, lassitude, numbness, flushings, pains about the body, weakness, or even partial paralysis of muscles; while neuroses of all kinds—epilepsy, angina pectoris, asthma, etc., —tend to be aggravated by it."

In hot countries flesh food should be taken in very limited quantities. Yet it is a notorious fact that in our colonies—Australia, South Africa, and others—the amount of flesh food taken is even greater than at home. The climate

of these places causes feelings of lassitude which the colonists combat in the worst manner possible, by stimulating food and drink. Want of energy and other effects of great heat are not felt so much by those who habitually feed themselves carefully. On the West Coast of Africa, Europeans who are free feeders and drinkers do not live many months. Only those who are careful manage to live more than a year. Stimulating food and drink may be valuable in some instances, as a supporting treatment for debilitating illness, but hot countries require a regular diet which is bland and unheating. If Europeans fed more rationally in India, there would not be so many return home with enlarged livers.

Stimulated mental activity leads often to excess of action and strain of calculation. Thus a large flesh feeder will be over energetic in his determinations very often, and will be inclined to rash performances that he would not undertake in calmer moments. Level-headedness and clear judgment are produced by rational diet. Stimulated with flesh food a mind may at the time be more active, but it will be less reliable as a rule; it may be speculative and strong at times, but it will not be of the finest even quality all along; it may be endowed with

forcefulness, but of a fitful nature, dependent on repeated plenteous supplies, while the mental endurance of the rationally fed is equable and more to be depended upon, not requiring any stimulating support at any time.

The rational feeder rarely ever does anything or determines anything that he regrets afterwards; he is led into no excesses of action of any kind. His brain is always running at a firm level. He never wants a pick-me-up to keep him up to the thinking point. Indiscretions of conduct are common amongst those who have the large stimulating diet habit—all sorts of indiscretions. Crime is very largely the result of a too-stimulating diet: sexual ardour is also rendered fitful and liable to excessive outbursts by it, which often lead an individual into dangerous and even criminal paths.

Occasionally one finds boarding-school boys being fed upon a too stimulating diet, with the result that they are badly behaved, showing a tendency to display inordinate sexual impulses and developing injurious habits. Cases of almost insane recklessness and prodigality, on the part of youngsters who inherit large means, are generally to be explained in the same manner; often a youth will run through a fortune in a few months while stimulated almost

to madness. The cause of the alarmingly increasing inclination nowadays shown by individuals to take morphia and other kindred drugs, is the present-day tendency to increase the amount of stimulating food taken in various forms and preparations.

Stimulating diet is penny wise and pound foolish. The large eater of flesh food borrows energy and strength at a high rate of interest from usurers. He gets temporary advantages which in the long-run he may have reason to bitterly regret. As to enjoyment, one might excuse human beings to some extent for occasional departures from wisdom; but after all, what can be pleasanter than the sensation of the soundest mental and physical vigour dependent not upon so many varied cooked flesh meals a day, and so many strong drinks, but resulting from the simplest food.

I myself have lived my days enjoying all sorts of varied experiences, both mental and physical, engaged in scientific work, artistic work, gymnastics, athletics, and sport, each in turn. I have lived and had my being under all sorts of variations as to food and domestic environment, in different climes. I have put up with the bare ground of the battlefield and enjoyed the luxuriousness of a Cecil or a Savoy Hotel. But

I never knew my best health and vigour until I made a study of diet and fed myself for mental and physical condition. I had wonderful opinions at one time about champagne, *pâté de foie gras*, and such like things, but have found in the long-run that the nearer a human being keeps to the simple order of things, the more pleasant and profitable will be his existence. I do not write as one who has known nothing else but abstemiousness, but as one who has tried all sorts and degrees and found out what is the best; I have, therefore, all the more confidence in presenting to the general public the argument of this book.

NOTE

Depraved, unusual, eccentric appetites are pathologic, often nervous or mental; they are usually curable by "suggestion."

RATIONALE

Whole grain is masticated by animals, which necessitates free glandular flow slowly; it is ground and cooked by humans before consuming, and therefore there is correspondingly little glandular flow. Rusks, dry toast, or biscuits had therefore better be eaten with cooked grain puddings.

CHAPTER IV

VITAMINS: THE ESSENTIAL FOOD OF VITALITY

IT is greatly to the interest of the commonweal that teeth should be kept from early destruction. It is human erring for any one to forget that this is a first condition making for good digestion and general well-being. Of late, there has been a great deal written in both medical and lay journals on the subject, so much so that the question of kind of food for young and old has been studied by well-known experts with a view to finding true causation of decay of teeth if possible.

Dr. Leonard Williams, for instance, has repeatedly laid emphasis upon the fact that a preponderance of soft foods is bad for the teeth. Now, while this may be true to some extent, we are nevertheless faced with the fact that certain Oriental and black peoples who feed mainly on soft foods do not appear to exhibit so many bad

teeth as are seen amongst Western people.[1] Dr. Williams further believes that those vital constituents of food called vitamins are too scarce in European food as commonly consumed.

Dr. Harry Campbell is also very emphatic in his denunciation of so many forms of soft foods in British dietary. He advocates biting exercise for the teeth; he considers that this serves to maintain healthier gums and tooth sockets.

Without a doubt, both these authorities are giving good advice. The question is, therefore, Have we an easy remedy which will meet the arguments of each? My own study of the question enables me to answer readily that we have.

I have inquired closely into examples of good teeth in those past middle age, and I have found that in a large proportion fruit has been eaten as a habit; while in many instances of bad teeth fruit has not been regularly taken.

People have often asked me, "What is the best dentifrice?" My reply has been "Apples," for here you have a food that is not only cleansing to the teeth on account of its juices,

[1] The habit of rigorously cleansing the teeth, even by hard instruments, such as wood, may serve to save them from decay to some extent.

but just hard enough to act mechanically by pushing back the gums so that the borders are cleared of deposits. But fruit also contains fresh vitamins in pleasant quantity. It is absolutely true that so much soft food causes flabby gums which favour deposits.

What about sweets? They are about as bad as fruit is good. I should hardly imagine that any one needs this information: I was told that sweets were "bad for the teeth" as a child, since when I have learned to believe it more than ever.

Nor should we forget the vicious circle. Once teeth begin to decay they hurt, and hard things are consequently avoided, making the lodgment of unhealthy particles and fluids all the more likely.

Dr. Harry Campbell has been hunting for the cause of adenoids, and he believes he has found that they also are the result of the habit which Europeans have of eating too much soft food. But I am of opinion that sweets cause enlarged tonsils and adenoids more than any other agency, while secondarily—and again the vicious circle comes in—blocked noses due to foul throats and flabby soft palates are neglected. Thus chronic inflammations about the nose and throat result from want of clearance of these regions, which

become stuffed up with mucus and micro-organisms.

It follows that eating more fruit generally, from childhood up, would prevent local troubles of various kinds, and would make for a better state of health—in the present and in future generations.

Therefore the old saying that "an apple a day keeps the doctor away" seems to have had a double foundation in fact.

Some ten years ago I found on examining a number of cases of dental caries that, roughly, in every hundred people exhibiting one or more excavated and unstopped teeth, only one or two complained of pain. I also found that pain, which indicates active destruction, takes place in those who are below par—who feel rather "out of sorts." It follows that a good state of general health inhibits to some extent the process of dental caries. Inasmuch as low states of general health favour dental caries they surely make a strong appeal for vitamins, which serve to purify the blood and render it resistive to the growth of toxic micro-organisms.

I also found that perchloride of iron often rapidly corrected the state of being below par; in a large percentage of cases it stopped active decaying process and the ache of it—sometimes

after a few doses. But the tonic effect of vitamins appears to me to be a better preventive than any pharmacopœial product can possibly be.

In studying diet and digestion it is a matter of first importance to bear in mind that, next to the fact that there should be serviceable teeth to grind food, there must be a moisture in the mouth, so that grinding is rendered easier, but also that it shall help digestion. Moisture helps in forming soft masses that may be swallowed easily. This may seem so very elementary and commonplace as hardly to be worth mentioning, until I explain that in all "nervy" people this moisture is too scanty, owing to the salivary glands not secreting enough. And they are all the more likely not to secrete enough when they are insufficiently trained because of improper food.

It is well known that the drier food is, the more moisture is wanted, and *vice versa*. Therefore dry food trains the glands to secrete; moist foods cause the glands to be lazy.

People who wash mouthfuls of food down by drinking, deprive themselves of the advantage of the salivary fluids, because this washing down persuades the glands that they need not act.

Hence drinking constantly in order to get food down is a bad habit. It has been found by

sufficient authority, however, that drinking occasionally during a meal, provided it is not done in order to wash down, is comparatively harmless; it may clear the mouth and be refreshing.

I have found nothing so good as fruit to prevent and cure the craving for excessive use of alcohol and drugs. When a craving for alcohol comes on, fruit eaten either in the ordinary way, or the juice of it with water, not only stimulates, but it feeds with vitamins. I must warn sufferers, however, not to take juice of oranges or lemons without being diluted. The natural fruit is the best; when taken in the ordinary way it is mixed with saliva. When swallowed as " neat " juice it is too concentrated in acidity.

I consider that pyorrhœa is due very largely to diet being short of fruit vitamins, the blood becoming abnormally impure in consequence. I do not believe that an habitual apple eater (one to three a day) could possibly develop pyorrhœa.

Also the question of stimulating drinks arises. These undoubtedly aid digestion; they have the effect of stimulating the glands to produce fluids. But here we are confronted with an undesirable abnormality, for the glands in natural health ought not to require such stimulation; which is an argument in favour of abstaining from

stimulants. Yet one would not absolutely condemn stimulants, for the whole life of advanced man is one of adaptation of aids. People may take stimulants if they choose, and in sensible amounts, without much harm; nay, with advantage, if they cannot easily digest without.

But the strong person's pride is in the fact that he or she can beautifully digest without stimulants. The pride is in having the power —the health—to do so.

Another factor to be borne in mind is the kind of life led, which may either be one that tends to make healthy powers of digestion or not—and there are all degrees between extremes. Worry asks for stimulants.

Thus some people may live longer if they drink some stimulant with their meals.

But have we not a most valuable aid both to good digestion and towards the making of good blood, in the juice of fruits? These not only naturally stimulate the flow of salivary fluids, on account of the slight acid nature of them, but they contain valuable food elements as well.

We are bound to be repeatedly confronted with the question of concentration and amount. Too much added acid will stimulate excessively and will produce acidity. I have known of

people who have conceived the value of fruit juice and have squeezed lemons and oranges in order to drink the juice as it is. This has produced a feeling of even soreness of the alimentary tract.

Therefore let us sum up the above points. We shall be obliged to conclude that if the food is well-balanced and contains fruit and vegetable juices taken by eating the whole vegetable or fruit—that is, not merely taking the expressed juice alone—we really need nothing more than water to drink—perhaps, if liked, harmlessly flavoured water.

Depend upon it, whatever is habitually taken by eating and drinking has certain sustained effects. There is, of course, a big latitude allowed us, both in regard to kind and amount, but going beyond a certain degree is bound to produce some sort of disturbance to the digestive apparatus—and therefore to impurify the blood—which lessens the degree of our most valuable asset—our health. There is no such thing as habitually taking excess of anything whatever without incurring some sort of appreciable disadvantage.

Some people fondly imagine that they are strong enough to eat anything, according as only their appetite dictates ; but sooner or later

an illness will come on, which will cause them and their doctor to think and puzzle out reasons.

This point must be very carefully borne in mind: the favourable effects of fruit eating begin at once to a slight degree, but the most valuable effects are due to cumulative influences on the quality of the blood. Therefore fruit should be eaten regularly for weeks, months, and consequently for years—for a lifetime, indeed.

Some people imagine they are doing wonders when they take an apple or a lettuce a week. There are even people who imagine (who persuade and mock themselves) that they are "believers" in fruit eating when they "always have fruit on the sideboard." The best fruit-eaters are those who buy it for themselves, selecting it as a purchaser goes in to choose sweets, or as some go in for drinks at bars; such people "will have it"; they will not wait to see what comes on the table or sideboard, they will indicate and know what should be there.

All should develop the fruit habit so that they "won't be happy till they get it." Then they are "doing themselves well": you will not find much the matter with their constitution at any time: their blood will be rich in vital elements

and colour; they will usually have a good complexion.

Much self-hoodwinking has taken place by people persuading themselves that they take fruit, and "believe in fruit," who only take perhaps an orange occasionally. Every living person should take *not less than* the equivalent of two apples a day—every day.

A great deal is to be said about vegetables, of course, and about uncooked salads. But most people know the value of these. It is the value of fresh fruit that is urged, because so little is taken—and yet it is so convenient to consume. I think that a good rule would be this: that as much fresh fruit ought to be taken a day as potatoes per head; and half as much green vegetables per day as bread (roughly calculating).

These lines have been written, not to help trade, but in the public interests. Indeed, the essential teachings have been "on the stocks" some years before the fruit trade organisers moved in the matter of educating the public.

Everybody has known for many decades past that people who suffer from gout or rheumatism are victims of blood fault. Most people now know that there is a systemic acidity at the bottom of these two very common disorders. It is equally well known that stomach acidity

is a feature of some forms of failure as regards food. The scientist knows that certain food constituents favour acidity and others the opposite, namely, alkalinity. It is true that too much acid in food begets acid; but it is a fact that fruits and vegetables taken in a properly admixed manner produce an alkalinity of the blood.

Again, in order to show the importance of a properly balanced dietary, the nervous system is viciously affected by hyper-acidity of the system, causing a "highly strung" state, and this in turn affects the digestive apparatus, causing more dyspepsia. Thus, worry will favour a gouty or rheumatic attack; but the attack in turn—in what is known as positive circling—causes more worry. The victim is therefore always placed more or less in a cleft-stick. He is indeed in a pointed trident if he is badly advised as regards food.

Mental and nervous disorders are increasingly common. This increase is due to stresses and strains in competition, both within small communities and as between whole peoples internationally concerned. But let the question of food and nerves be properly and fully considered; it would soon be proved that a balanced dietary reduces worry and keeps to a minimum

the acerbities that arise largely from acid systems. All medical scientists would then be bound to realise that diet is worthy of the very fullest consideration, in all the sincerity of their common declaration that " preventive medicine is the chief study for medical men of the future."

Fruit tends to make people sweet tempered. Nor is it now necessary for us to ask why ? If acid systems are worried with eczema, gout, rheumatism, then common sense bids us that we should at least set to work to neutralise this by foods which make the system less acid.

Preventive medicine nowadays must therefore receive the chastening of common sense rather than be taken up superiorly by any special sense. It is possible to study intestinal disorders so deeply and so enthusiastically that nothing but tube lavage or the surgeon's knife can be thought of : enthusiasm in grooves can so blind the rest of areas of consideration that the question as to how people should feed to prevent internal troubles is lost sight of altogether. Great surgeons are not likely to tell any one how to prevent trouble ; it is their business to deal with trouble that exists ; and remarkably cleverly they do it. If half the energy were exhibited in studying how to avoid cancer that is afforded by surgeons and X-ray people in trying to cure

it, it is more than likely that in a few years there would be a very great deal less work for surgeons. But this proposition ought not to make true scientists wince; only business men should worry about banking accounts when they know only one means of swelling them.

Most physicians now know that many cases of epilepsy can be treated successfully by diet alone, the reason being that less exciting food produces a more even temperament, that bland blood helps towards a better balanced nervous system and brain power.

The example of a lady who could not take fruit of any kind is well worth considering. Carefully judging such a dreadful example of unnaturalness (as it seemed to me) in order to find out the cause, and entering into her life history, I found that dyspepsia had led her into perverted—almost depraved—tastes. She had been dieted, and ordered to take those things which required no effort of mastication and which seemed to digest well. She found that meat-extracts were the easiest things to take, in the form of soups, which were so stimulating that the taste for anything less stimulating was not fancied; all the ordinary, natural, wholesome foods, such as puddings, breads, fruits, or vegetables, were disliked. Hence her hopeless

predicament, for not only did the dyspepsia get worse, but insomnia and nervousness became alarming, causing her to resort to drugs. Insomnia and drug-taking finally compelled her family doctor to ask for further advice. After a month's treatment she could take fruit like an ordinary, healthy individual.

The earlier in the day fruit is taken the better. It is wiser to eat fruit twice before six in the evening than once after eight.

But most people in good health can take an apple at bedtime with pleasure and advantage. I do not recommend this as a rule, but I see no reason why one should not try an apple "last thing" if there is any healthy inclination. Many have found that they can sleep uncommonly well after it. It certainly is good for the mouth and teeth if it can be taken then.

The inside of grapes is the best food-laxative for a baby. Later on it should have the juice of oranges or grapes taken either in the fruit itself being eaten (according to a mother's discretion) as it is, or after it has been broken up. The juice may be diluted and taken by the spoonful if preferred.

Children should no longer be deprived of fruit because of the cost or of any difficulty in eating it. It could be cheaper if more were

grown. Dried fruit is valuable, but not so valuable as fresh. Nothing has as yet persuaded me that the drying does not destroy some of the best vitaminic values. Demand would cheapen freight.

Nor is stewed fruit so good as fresh. It is far better than none, however. Also partly dried or long-kept fresh fruit must have some considerable value as a food, but here again I deem it to be somewhat less valuable than the more juicy fresh.

Weight for weight, oranges are about the most valuable fruit we possess, and when eaten in the ordinary way the fibre renders it necessary to get the juice slowly enough to be well mixed with the salivary juice, which latter is given forth in all the fuller amount owing to the slightly acid taste of the former.

Some scientific authorities have proved by experiment that the teeth are the first structures to be unfavourably affected by lack of fruit and vegetable juices—from early childhood up.

Very great questions have arisen lately as to the value of different sorts of vitamins, and authorities seem to have made great progress in studying animal and vegetable foods with a view to finding out their value, but as yet far too little attention has been paid to the vitaminic value of fruits as compared with any other foods

containing vitamins. I have no hesitation in saying that if enough fruit be taken the vitaminic value of all other kinds of food need hardly be considered at all.

Still More Important

Sir Arbuthnot Lane has given his opinion that sluggishness of the bowels is the cause of many most grave diseases and disorders, including cancer. An absorption takes place through the stagnation that goes on in the colon, so that poisonous material gets into the blood and a soil is created that is most favourable for disease germs developing.

Now what causes this sluggishness more than anything else, if it is not the quality of food that is taken ? It is true that shocks and strains to the nervous system check the peristaltic action of the alimentary tract and cause constipation. This may be the greater cause, but which actually comes first it is very difficult to decide. Anyway the two causations together undoubtedly work more mischief by far than all other factors put together.

To get rid of this condition of bondage and stasis we must attack both of the chief factors. A better-balanced dietary will help in curing

nerve strain, apart from the fact that it will favour regular and free action of the bowels.

I have not the slightest hesitation in concluding—after years of observation and close inquiry—that appendicitis is caused mostly by errors in diet. Even if we were to allow that defective digestion is also a great cause, then we are bound to admit that a poor state of the blood due to lack of vitaminic diet will favour the absorption of intestinal poisons. I am equally certain that, though worry is the greatest cause of dyspepsia, the ingestion of fruit vitamins would tend to such sweetness of the system that dyspepsia caused by the worry would not be so severe.

Indeed, the eating of fruit is the best of all preventives of worry—to recapitulate.

Pure blood is the chief preventive of disease.

Stimulating non-fruit food leads to an agitated temperament and conduces to the drinking of stimulants, and therefore provokes to crime.

It is extremely likely that many cases of consumption, rickets, neurasthenia, and anæmia are first caused by lack of vitamins in diet.

I do not advocate what is called a vegetarian diet. Fresh butcher's meat is an extremely valuable food, because it contains nourishment that is easily digested; it is also palatable, and

palatable because stimulating to the digestive glands ; it also contains vitamins.

Certain foods, such as cheese, are of as high, or higher, food value than butcher's meat, but they are not so easily digested. I am further of opinion that a higher degree of mental work is to be derived from a diet containing butcher's meat than from any that does not, because of the fact that the former is easier to digest. Severe mental work hinders digestion ; mild mental work aids it. I am, nevertheless, able to agree that great physical work can be done by man on a vegetarian diet ; in this respect he can be much like certain domestic animals which subsist solely upon vegetable foods that are specially chosen for their nutritive and small-bulk character (*e.g.* maize and oats).

. . . . . .

Dr. Harry Campbell has written wisely in the Medical Press :

" Whatever injures the health of the nursing mother or disturbs the tranquillity of her mind, interferes with the normal mammary secretion. A cow worried by flies fails to yield the normal supply of sound milk.

" If the mother has unhealthy teeth the secretion of milk may be disturbed and the

infant fail to thrive in consequence. If in such a case the offending teeth are adequately treated, the beneficial effect on the mammary secretion may show itself by a rapid increase in the weight of the child.

"Sometimes the nursing mother is advised to drink an abundance of milk in the belief that milk has a special tendency to make milk. This is a fallacy. As Dr. Sim Wallace observes, the cow, that most abundant producer of milk, lives for the most part on grass. The best food for the nursing mother is that which is best for the ordinary adult, and the ordinary adult does not need to be deluged with infants' food.

". . . Ninety-nine per cent. of British children suffer from caries of the milk teeth. If they were properly fed they would be wholly exempt from dental caries. It is of the utmost importance to preserve these teeth, inasmuch as they help to guide the permanent teeth into their normal positions. Their premature loss is a fertile source of irregularity of the permanent teeth."

I have myself proved some interesting facts regarding mothers' milk; some of these have been referred to in my book *Advanced Suggestion* (published by Bailliere, Tindall & Cox, 8 Henrietta

Street, Covent Garden). I have shown years ago that mothers' milk is greatly influenced by her state of mind. Any worry she may have causes the milk to become sufficiently abnormal to affect the child. I also found that both amount and kind, when defective, could be most favourably influenced by "nerve-relaxation" treatment. Thus those who had not been able to feed their baby formerly were able to do so after this treatment.

. . . . . .

In the foregoing pages we are apparently confronted with a paradox; we have concluded that the acid of fermenting food is absolutely bad for the teeth, while the acid of fruits is equally well known to be good for them. What is the explanation?

F. M. Holborn, the dental surgeon, writes in *The Gateway to Health*, edited by C. E. Hecht:

"Eat a piece of cake and a quarter of an hour afterwards examine your mouth. You will see a line of food all along the gum margin, and most of the interstices between the teeth absolutely blocked with food. Take a piece of blue litmus paper and put it into one of the interstices. It will turn pink immediately, showing that the gums are not only exposed to the impaction of

food upon them, but to the acid products of fermentation. Take a toothbrush and brush the teeth in the usual happy-go-lucky way of most people and examine the gums and interstices again. Food will probably still be there. Chew a raw apple or a slice of tough meat thoroughly all round the mouth and the cake has gone. The apple and the meat will not stick unless there are already defective contact points between the teeth.

" The moral is obvious. Our teeth and gums (especially the gums between the teeth) are arranged by Nature to cleanse themselves on fibrous food. The tongue and cheeks, so far from rubbing off the teeth the soft starch paste which so much of our food becomes when chewed, fail to get any hold of it, owing to its semi-liquid and slippery nature, especially as such foods do not encourage mastication. On the contrary, the tongue and cheek tend by their pressure to drive the food between the teeth and against and beneath the gums, as also does the mere act of biting. Can we wonder that this frequent pressure of fermenting starch paste on and under the gum margin causes inflammation, with pyorrhœa as a possible sequel ? The wonder would be if it did not."

Skin Diseases and Cancer

Professor Rutherford Morison has defined inflammation as—

"The reaction of irritated and damaged tissues which still retain vitality, or a series of vital changes which occur in the tissues in response to irritation. The irritants are either non-infective or infective; the former comprising mechanical, electrical, chemical, and thermal agents, and such things as X-rays, etc., the latter including the micro-organisms."

Charles F. M. Saint, F.R.C.S., has given "some examples of tumours certainly or probably depending on irritation of some kind for their production," such as lipomata, fibromata, fibro-myomata, and papillomata, and has pointed out how prone some of the latter are to become epitheliomatous.

Sir James Goodhart may also be quoted:

"Are we wrong to expect that, if a complex body is possessed of energy or many centres of energy for orderly growth and development, this disposition or force will not now and then

slip its leash and run off on its own account? An analogy of this kind seems to me to convey a workable conception of a scheme of malignancy, where ordered growth diverges by successive steps of variation, of indulgence in function, until cancer appears, until malignancy becomes the insanity, shall I say, of function."

Dr. J. Thomson Shirlaw writes to the *British Medical Journal*:

"I hold that the force for orderly growth and development is the chemical action of the secretions of the ductless glands."

Mansell Moullin writes, April 27, 1914:

"There are certain clinical facts which seem to me to point with no uncertain finger. The secret of the origin of tumours (including cancer) lies not in trying to find influences or agents that will stimulate growth and reproduction, but in isolating and investigating the action of substances that possess the power of checking development and interfering with functional activity. Development controls growth and reproduction. If development is arrested (as, for example, the development of epithelial cells

is arrested under certain conditions by arsenic and soot) the functional activity of the tissues is arrested ; the power of growth and reproduction, or so much of it as the cells still retain, is freed from control, and if there is the least provocation, such as may be caused by continued irritation, cells and tissues at once begin to increase and multiply at their own free will. The result is a shapeless, formless mass of cells, resembling more or less closely the parent that gave them birth, never advancing beyond it in development, never doing any useful work, but growing without ceasing, so long as there are supplies of food—in other words, a tumour."

Dr. H. G. Adamson writes as follows in the *Lancet* for March 21, 1914 :

" A striking feature in the etiology of squamous cell epithelioma, in contrast to that of rodent ulcer, is that it arises always upon skin or mucous membrane which has been previously damaged by injury or which has been the seat of long-continued local irritation. Among these ' pre-cancerous ' conditions are scars from burns, old syphilitic scars or the scars of lupus, chronic irritation of the lower lip from pipe-smoking, leucoplakia of the tongue or vulva, the scars of

X-ray burns, and perhaps, most common of all, the results of chronic dermatitis produced by frequent exposure to sunlight and known as keratosis senilis, sailor's skin or tropical skin. The same may be said of carcinoma, which occurs at the pylorus, in the gall duct or gall bladder, at the cervix uteri, and in the lower part of the bowel. All these parts are liable to chronic inflammation or ulcerations, and carcinoma in these spots is probably consecutive to these conditions. The theory of dormant embryonic masses cannot explain these facts. The formation of carcinoma can be more reasonably attributed to an irregular proliferation of the epithelial cells, as a result of the loss of normal relations between the epidermis and the subjacent tissue. The anatomical balance between different tissues which normally prevents the epithelium from invading the connective tissue is disturbed by damage and partial repair. Disturbance of the anatomical balance is assisted possibly by an upset of the bio-chemical balance, owing to alterations in the nutrition and metabolism of the cells due to age or to the harmful action of agents such as light or X-rays.

" In sections of keratosis senilis and of X-ray scars one may study this gradual disturbance of

the balance of growth, beginning with irregular restoration of the epidermis, through warty growths, to the final stage, in which the irregular growths of the epidermis advance completely out of line and invade the spaces between the connective-tissue cells. The study of these affections of the skin would seem to suggest that true carcinoma, in whichever situation, is the result of a disturbance of the normal balance of growth between epithelial and adjacent tissues as the result of previous damage, and there seems to be no need to invoke the aid of embryonic cell-rests or of microbic invasion."

The above-quoted passages are far more directive than anything that I could write, and I leave them to speak for themselves, being only too thankful for their help, so that we may pass on to another consideration.

It has long been known amongst psycho-therapists that quite localised stigmata such as petechiæ or minute aneurysmal varix could be produced on the skin by "suggestion." Dr. Gilbert Scott has obtained photographs of instances from experiments made. He, moreover, found that these stigmata would develop without the skin being touched. I quote from an article written by him :

"Whilst in the somnambulistic state, the patient's eyes were opened, and she was shown the half of a four-pointed, star-shaped piece of paper, and was ordered to reproduce the pattern on her arm in points of stigmatisation. Her arm was not touched in any way. Soon after, a figure, more or less similar to the pattern, was produced in a faint manner on her arm."

I offer this experiment made by Dr. Gilbert Scott for our study in these pages in absolute confidence of its having been *bona fide*; it is an indubitable proof of a scientific fact. Not only have he and others produced stigmata, but such may be produced by any one employing a similar technique, which is one not at all difficult for the uninitiated to learn.

Such experiments prove some central control over the vasomotor mechanism of the skin.

Let us now consider certain cases of my own which carry the subject further, and which are instances of precisely the opposite kind to those of Dr. Gilbert Scott. Take one of pustule on a patient's neck. By means of neuro-induction I elicited the sense of shrinking of this pustule, and of the reddened area around it, with the result that in the course of twelve hours it showed definite signs of retrogression, until in a day or

two it entirely disappeared, save for a slight mark. I do not say or know that all pustules would do so, but this did. I have not wasted valuable time in trying experiments upon other patients suffering from pustules, for I have been very busy treating many disorders for the past few years. But, after some three weeks' interval, a pustule again developed in the very same spot, the mark of the first not having entirely gone. Again I treated it, and it disappeared in a similar manner, leaving for a week or two just a very small scar to mark the place. It is now five years since then, and the patient had has no recurrence.

Amongst my nervous patients, eight years ago, was one having a wart on the knuckle of a finger, so large and inconvenient ($\frac{3}{4}$-inch in diameter at the base) that I recommended her to a local surgeon, for it seemed that any of the superficial applications would take far too long a time. The surgeon cut it off. But to my amazement the patient came to me a few days after healing was complete, and showed me the back of her hand, with twenty-five to thirty other warts developing. I concluded that these must be neuropathic, and decided that this would be conclusively proved if neuro-induction, designed to effect retro-

gression, were successful. I treated about half the number at the first sitting; and each of these showed signs of shrinkage within twenty-four hours; while the remainder were unaffected, and I dealt with these at a second sitting. In a week the whole skin had a level surface. Analysis revealed the fact that a scare had entered the patient's mind; she thought that "it would be awful if many warts came, and if they all had to be cut away under chloroform." In my opinion this idea constituted the central initiating factor which produced the crop.

I must apologise for referring so much to the writings of others; I am, however, doing all I can to convey my message in as little space as possible, although the subject might easily be found worthy of a large volume all to itself.

Ruben Duval has pointed out that—

"Many of the malignant tumours removed by the surgeon contain abundant microscopic evidence that the organism has been reacting to the irritation they cause, and has done what it can to cause their spontaneous regression. The sclerosis of the fibrous tissue round a cancer often leads to the death of masses of the cancer cells, as Sampson Handley and others have

pointed out, and this may be regarded as a ' defensive reaction ' of these connective tissues by pathologists. The blood-vessels join in the defence by obliterative processes, which still further cut off the supply of nutrition to the cancer cells."

The *British Medical Journal* has commented :

" As regards the modifications exhibited by the carcinomatous cells themselves, loss of vitality may be indicated in several ways. This is well shown by the results of treatment with radium. Radium causes the rapid necrosis and dissolution of some of the cancerous cells, others are similarly destroyed, but more slowly, while others exhibit a phase of hypertrophy as a preliminary to rapid disintegration ; and, as a final condition, some of them appear to be converted into norma cells (epithelial cells in the case of an epithelioma), and to ripen and run the natural course of evolution characteristic of the cells from which the malignant neoplasm originally arose."

I wrote the following ten and a half pages some years before this present book, and I offered them to two of the leading medical

journals. They were declined—for what reason I shall probably never know; but I can only think, in all charitableness of heart, that the time was not ripe for them.

Cancer and some Cogent Arguments

At a moment when the treatment of cancer and other conditions by radium is receiving much deserved attention on the part of the public and medical profession, and while enthusiasm is running high, I desire to put on record some conclusions which I have arrived at during the past five years.

I am aware of instances of spontaneous reduction and disappearance of abnormal growths. I have also heard of some few favourable results having been claimed by certain experimenters in treatment by suggestion, who have not known how their effects were produced, even if they really obtained any at all, and who have not been able by applying *definite* technique in manipulation or speech to obtain the results. I have sought to obtain results beyond these, which *could* be explained. I must humbly enter my claim to be the first medical man who has succeeded in obtaining definite results of a curative nature in cases of organic disease and

new growths by means of psychotherapy, while being able to explain the technique and rationale employed in a manner which could be readily understood and adopted by other scientists.

Having for many years been interested in psychotherapy, and having made a special study of its beneficial effects in nervous and mental disorders, I found, incidentally, that some remarkable effects were to be obtained upon the heart and the circulation. In 1908 I began to study the results of suggestion upon the sympathetic nervous system—upon the vasomotor mechanism and the blood circulation, both general and local. In the case of various organic conditions and new growths I succeeded in reducing size and in altering consistency in a hopelessly advanced case of cancer. At the same time, in cases of benignant new growths, I caused a decrease of the blood supply, a reduction of the swelling, and in a short time the disappearance of the abnormality. In 1909 I obtained still more encouraging results, and was successful not only in preventing further obvious development in a recurrent case of cancer of the breast, but in causing nodules actually developed to regress and disappear. In 1910 I was further successful. I did not have the

nodules microscopically examined : it is immaterial to me at the moment whether they were cancerous or no.

In 1911 I sent a letter to the *British Medical Journal* referring to my work and results, for which this journal could not find space, though I wrote again expressing astonishment that such an important communication should be crowded out. I am of opinion that the editor did not regard my observations with any confidence. I thus realised that the time was not ripe for such advanced work to be seriously regarded. Humble representations to certain other authorities, and the dilatory responses elicited, did not encourage me to press my claims any further at the time.

By no means the least difficulty I had to contend with at this period was the lack of material in respect of which I could extend my inquiries and experiments. Prompt surgical operation being the best form of treatment then known, having been fully tried and proved, every patient had a right to be allowed the benefit of it. The nature of my experiments was so little understood by others, and so sceptically regarded, that it was naturally not easy for me to find help anywhere. I had no other alternative but to accept this state of

affairs with patience and forbearance, but with quite a healthy confidence that time would show.

In 1912 I made inquiry into the effects of Roentgen rays and radium; I visited the Radium Institute for the purpose. I sent a case there for treatment, a woman suffering from advanced uterine cancer. As a result my conception was strengthened of the great likelihood that radium and Roentgen rays acted to an appreciable extent by suggestion.

It will therefore be noted that my work in respect of new growths and cancer has necessarily proceeded very slowly; in fact, since 1911 it has not been continued, partly for the reasons explained, but also because I have been deeply engaged in other work—which I can hardly count of less importance, looking over the results. I have all the time been quite content with the belief that while organic conditions had better wait awhile, the work I continued to pursue in other directions would ultimately serve to help me to prove my contentions whenever I might return again to the question of abnormal growths. Meanwhile, I have to note:

1. In the absence of any better explanation we have a right to view some cases of spontaneous cure as being possibly brought about by auto-suggestion. One of the greatest surgeons

and authorities on cancer (Butlin) wrote as follows (*British Medical Journal*, June 18, 1910):

"Internal tumours disappear in persons who have been condemned to death by the most capable surgeons . . . as if by magic, . . . as we occasionally know to our chagrin. . . . I would ask whether it is not possible that a power of resistance may, once in many thousand cases, be acquired under the influence of a mental condition." And in referring to cases of spontaneous cure, he declared: "We are obliged to accept them as facts, but we are unable to explain them."

2. I have observed that the more genuinely cheerful a cancer patient is the longer will he live, other things being equal. In one case which was the object of particular observation, recurrence ceased when the person developed the disposition to worry less. It seems that idea of growth (including gloomy apprehension) tends to further growth. Indifference towards growth tends to the maintenance of the *status quo*, other things being equal. Indifference towards abnormal growth plus a sense of healthy well-being and easy thinking, tends to diminu-

tion and disappearance, other things being equal. The idea of a cure—a smiling inkling of betterment—has a curative tendency, not only as regards morbid growths, but in the case of any disorder which is curable, other things being equal.

3. Many new remedies have created a favourable impression on the patient; they have appeared to give some benefit for a time. In some instances this has been on account of great concentration of the thoughts upon the idea of a cure which has resulted from their use.

4. In the method of treatment by radium there are conditions which are highly favourable to the entry of the curative power of suggestion :

(*a*) Lying very still for some time in a quiet room, thinking hopefully of a wonderful treatment so very highly spoken of, and so impressively and cleverly applied.

(*b*) Mental concentration upon the diseased spot in a happier plane of thought, which is more marked when remedial applications are employed, tangible and visible instruments affording obvious sensation and perception.

5. I have myself, at will—knowing how to act and what to expect—obtained unquestionable results by psychotherapy, in dealing with examples of organic disease and abnormal growth,

which could not be exceeded by radium in similar cases.

6. The blood supply can be very powerfully influenced, generally and locally, by neuro-induction — visibly so, in fact. Now, the influence of radium on the blood vessels and in checking hæmorrhage has been found to be very prompt and definite.

7. It was reported that the bottles of radium emanations sent forth to patients in large numbers were producing "very encouraging effects." This report is to me extremely suggestive of the fact that suggestion has been at work under this method of application.

8. I have indisputable proof of organic disorder and the development of new growth having been *originated* by suggestion. In one such case I have reversed the causative impression, and the new growth has regressed and disappeared.

9. In all inflammatory conditions, and in cases of functionally uncontrollable arterial dilation or contraction, suggestion, when applied in certain ways, will act most powerfully either to increase or to diminish.

10. I have watched a case of inflammatory swelling which appeared and disappeared, afterwards becoming definitely periodical, and, later

on, permanent; and I have little doubt that operation would have been found necessary had not the patient been treated by suggestion which first caused regression to the point of disappearance and then prevented recurrence.

11. I know how suggestion acts upon the blood supply, and can demonstrate that it does so act. Now nobody knows as yet absolutely and finally how radium acts. There are many who are not satisfied that radium possesses all the virtues it is credited with. Not a scientist could be found to dispute the effect and the explanation of my application of psychotherapy, for obvious effects can be produced, in some instances immediately.

12. Psychotherapy, as I am able to demonstrate, acts in three ways: firstly, locally, influencing the vasomotor mechanism; secondly, generally, influencing the vasomotor mechanism; thirdly, "sympathetically," producing remarkable improvements in the functioning of the glands. Psychotherapy readjusts, permits, and encourages the *vis medicatrix naturæ*.

13. The effects of psychotherapy on the organic conditions and new growths referred to have not only been studied separately, they have been observed in connection with a profound

study of the nervous system ; hence a rationale of the treatment has been the more readily forthcoming. Many equally striking and convincing conclusions may be recorded respecting the effects of psychotherapy in certain mental and nervous disorders, and, indeed, in other specific organic conditions.

14. In opening a discussion on radium and cancer at the annual meeting of the British Medical Association in July 1913, Sir Alfred Pearce Gould said :

" I shall never say otherwise than that any case of cancer which seems to have been cured by surgical operation has really been cured as a result of the combined work of the surgeon and of the great power of natural tissue resistance."

On the same occasion Dr. Frank Fowler, in referring to results, concluded :

" The relief that assurance gives to the patient helps to prevent the downward course that often follows the diagnosis of cancer. I do not attempt to discriminate the good that is done by the X-rays, and that done by my confidence in their beneficial effect."

15. In referring to the action of X-rays in certain skin diseases, Dr. Ernest Dore has mentioned (*British Medical Journal*, October 18, 1913) more than one case in which certain patches had been treated with success, while other patches, *not treated*, in the same patients, and at the same time, *had also been cleared up*.

16. Different authorities have written as follows: "Depression, grief, mental shock, worry or fear, appear to be predisposing causes of cancer." . . . "Perverted or weakened nerve influence and impaired resistance are probably the determining factors." "A cancer growth is sick protoplasm worried by abnormal innervation."

17. Authorities have found that adrenin applied to cancerous growths has resulted in "unquestionable cure in some cases." We have thus two distinct and important claims—(*a*) that the X-rays influence the blood supply, and possibly also local nerve supply; and (*b*) that adrenin influences the blood supply. I do not hesitate to advance the possibility that the X-rays or adrenin, plus psychotherapy—specially modified and administered—might be found to act even more favourably than any one of these agencies employed alone.

18. It can hardly be doubted that cancer is a

disease arising from both a local and a general cause. It would further seem that cures have been effected by agencies which have attacked both. When the X-rays have been successful, the local application has probably co-operated with an unintended mental suggestion which has happened to be of a sufficient character. Similarly in the case of adrenin. When spontaneous cure has taken place, are we not entitled to consider that some unknown influence has been at work both generally and locally? When psychotherapy has acted favourably, are we not justified in concluding that both local and general effects have been produced?

Having long ago established the fact that cancer and new growths can be readily affected by suggestion, all I humbly ask at this juncture is that the reality of psychotherapeutic effects should be borne in the mind while considering other treatments.

In the recurrent cancer case referred to on page 104, it may be that the disease only *appeared* to be recurrent. I have no desire to make any undue claim. It might be that I merely reduced the swelling. I am satisfied for the time being that very soon after the publication of these particulars the truth will be forthcoming. Meanwhile I can only say that

the case seemed to me to be one of the recurrent type.

I should like to add a few further contributions to the argument. Barling wrote (July 30, 1910), in the *British Medical Journal*:

"We can recognise one striking feature in the distinction of cancer (epithelial) common to the experimental production of immunity, to the disappearance of the growths under radium, to spontaneous recessive processes in the human body. This is the active part played by the connective tissues; we have an irritative overgrowth and subsequent contraction which appears to determine the death of the epithelial cell."

The following is also worth quoting from a leader in the *British Medical Journal*:

"Just as the functional diseases underlie certain mental states, so disturbances of the mind or spirit may cause or aggravate certain bodily ailments. This is especially the case in the region of nervous diseases, but depression, grief, and mental shock, worry or fear, appear to be predisposing causes of cancer and other organic affections."

We may well ask : Does a local strain, injury, or irritation exhaust the local tone of the nervous or vascular supply, and so induce cell proliferation ?

Dr. Aspinall Marsden writes (*British Medical Journal*) :

" I believe that in cases of malignant growth, perverted or weakened nerve influence and impaired resistance on the part of the tissues are probably the determining factors.

" In my view the changed nerve influence brings about a resuscitation of the ancestral reproductive faculty."

Dr. Thompson Shirlaw writes (*British Medical Journal*) :

" I fear that I do not see eye to eye with Dr. Brock where he considers that cancer is ' a dissociation of personality ' somewhat similar to that found in hysteria and allied neuroses. In the latter, I agree that ' the psychic condition of the patient is one of anarchy.' In cancer, on the other hand, there is no psychic condition to be considered, but a material pathological state, which can only be explained in a material way. . . . I believe that the ' controller ' or ' governor ' is of the nature of a secretion, and that it is a

combination of the secretion of the thyroid, the adrenals, and the pituitary body. The President of the Royal College of Surgeons in Ireland has published a case of glandular recurrence after extirpation of a carcinoma of the larynx, in which the growths disappeared on treatment with thyroid extract, and asked some important and interesting questions.

"1. What is the nature of the influence of the thyroid extract, and by what process did the tumour melt? (My answer is that the thyroid furnishes a large part of the governing secretion; the mutinous cells are checked and are brought into line with the loyalists, whose good example softens their hearts).

"2. How far does the existence of such cases go to prove that one of the conditions necessary for the occurrence of cancer in an individual is some defective or abnormal internal secretion? (In my opinion it goes a long way in verifying such a hypothesis.)

"3. Why does thyroid extract cure a few cases and leave others unaffected? (For the simple reason that the thyroid furnishes only one of the necessary secretions.")

Our consideration of the problem is no less assisted by those who have recorded their experi-

ences of X-rays and radium in the treatment of new growths.

Dr. Dawson Turner, in a recently published volume, has enumerated certain conditions in which radium emanation treatment has been found beneficial, such as " gout, chronic articular rheumatism, gonorrhœal rheumatism, rheumatoid arthritis, neuralgias of all kinds, certain diseases of women, high blood pressure, premature old age." Now, we know to-day how much the nervous factor contributes to causation in all these, particularly in cases of gout, rheumatism, rheumatoid arthritis, and high blood pressure. As to premature old age, this is so often the result of untoward circumstances of living that it may well be described as a big " arc " of " vicious circling."

Dr. Fernand de Verteuil writes :

" A third theory, propounded by Deane Butcher, is that radium possibly acts as a vaccine, its rays exciting the leucocytes to the production of antibodies. In support of this it might be stated that the opsonic index has been found raised after applications both of X-rays and radium.

" I have been using radium in my practice during the last two years, and the chief thing

that has struck me about it is its wonderful influence on blood-vessels and lymphatics. The remarkable power that radium has in arresting hæmorrhage was referred to by several speakers at the last annual meeting of the British Medical Association. It may, in fact, be stated that its chief utility in therapeutics is its power of obliterating blood-vessels or spaces, as witness the way in which it removes various forms of nævi and angiomata. Now it seems to me that this action of radium on vascular tissues will equally explain to a large extent its beneficial influence in new growths. The obliteration of the blood-channels which ramify in and supply the growth would in great measure tend to cut off its source of nutriment, which must eventually result in the death and disappearance of the growth."

Just what determines the character of the local sign in pemphigus, eczema, psoriasis, and herpes, it may be very difficult at the moment to decide, but that the vasomotor mechanism can be influenced in these diseases by neuro-induction cannot be questioned.

I know that neuro-induction produces vasomotor contractile effects on local blood and lymph vessels and on secretory apparatus; it is proved also that a normal disposition of parts

can be induced under the influence of a central impression. The reason I offer is that the central aid is of the nature of a correction of association; negative conceptions become positive, and produce sympathetic reflex effects accordingly.

Cancer and Central Control of Blood Supply

Having on occasion been specially interested in the nervous system as a factor in the causation of new growths, and having at all times of neurological study considered that this influence was well worth recognising in the searchings amongst possible therapies, I now venture to pick out certain passages from recent contributions of other workers which appear to have a distinct bearing upon my own views expressed long ago—views which to-day seem to me to be still more significant.

Sir G. Lenthal Cheatle writes, in *The Medical Press and Circular* of April 5, 1922: "John Hunter set out to show that an increase of blood supply led to an increase of growth." In the same issue, Dr. Shaw Mackenzie refers to trophic or nerve influence, and says: "Removal of a large mass in the cervical region, secondary to laryn-

geal cancer, was partially effected. In doing so a portion of the phrenic nerve was accidentally removed by the operating surgeon. All sorts of respiratory troubles were expected. None followed, but the rest of the cancerous growth disappeared."

In an annotation of the *Lancet*, March 18, 1922, reference was made to certain views regarding spontaneous cure which the German authority, Sauerbruch, had recently published. He believes that in these cases "the tumour cells become cut off and eventually strangled by newly-formed fibrous tissue," and he has further suggested that "through a study of the process of spontaneous healing we should arrive at some means whereby we can stimulate the normal tissue to activity."

. . . . . .

Water has been running under bridges since 1908–11 when I made what I considered then, and what I consider still more now, some important experiments in regard to new growths.

Interested in a contribution written by the special medical correspondent of the *Observer* of February 26, 1922, on cancer and the difficulties of dealing with it, I looked at notes of my experiments made with regard to new growths to be found in a chapter in *Advanced*

Suggestion, published in 1918 (2nd edition, 1921). I propose now to refer to certain contributions from others and sentences of my own from this chapter, and I shall ask readers who are much better acquainted than formerly with the nature and possibilities of psychotherapy to consider carefully the whole question again.

What I have especially noted since 1911 is this : the significant effects of psychotherapy in skin disorders, manifestly as regards growth and health of hair, and most obviously in health of skin. In fact, in at least hundreds of instances of quite broad observation of the effects of neuro-induction, without my having referred to the skin at all in treatment, an improved condition, from blotchy, " earthy," " unhealthy," " poor-colour," has resulted. This has been particularly noted not only by myself and by patients, but also by others who have not looked out for it at all.

This improvement has very likely been due to better digestion, but it may also have been caused by better balance in polyglandular action on account of the correction which general relaxation tends to produce—as a contrast to former stresses and strains in particular regions.

Neuro-induction makes for natural recovery

generally, not only of the glandular, but of the circulatory system, on account of this relaxation.

. . . . . .

All I here and now claim—all I have ever claimed—is, that psychotherapy, as already but most tentatively and slightly employed, has proved that new growths, depending as they must on blood supply, can be easily and most definitely influenced towards regression by nerve control. I also equally confidently declare that others may quite readily find this to be the case—by their employing the same means as I have done. I have noted, as also have others, effects in contraction of blood vessels at once, the change in colour having been instantly observable, the continuance of such instant effects being seen afterwards in obvious regression. Inflammatory surfaces and substances are probably the best local material for demonstrating the effects of neuro-induction; the results being so measurable, so obvious and clearly comparable with the effects of other methods of reducing sizes.

As regards the healing of parts ulcerated, it would seem that neuro-induction acts by producing normal impetus at the diseased vessel terminals, allowing them to extend, finally to meet other extensions, to complete the circuit, to fill up and restore. Just as superficial

skin vessels are toned towards health when there is no actual disease of the surface (complexion), so when an ulcer is present the same tone resists disease at the vessel terminals, possibly by contracture alone, while healthy circulation pushes forward, the tone serving to cut off disease on the one hand, and to favour growth of the normal on the other.

I am quite content to leave explanations, however, to other workers.

. . . . . .

I am of opinion that X-rays and radium strongly affect abnormal circulation because it is not so vital as the normal. But normal circulations may also become abnormal by X-rays and radium, to the extent that disease is sometimes established of a cancerous nature, as from irritation. Hence improvements have so far been observed from X-rays and radium, but there has been lacking the additional improvement to general vitality that neuro-induction produces—which helps local reparative process.

Psychotherapy, therefore, proves itself capable of limiting without destroying, and of restoring by inducting natural recovery of healthy circulation — "other things being equal," that is to say, provided disease has not

so far invaded parts that possibilities of recovery have become over-taxed. Spontaneous recovery gives us to realise that very definitely established disease can be recovered from—intestinal examples, for instance—apparently without any external assistance being brought to bear of an artificial or designed nature.

A lady who suffered from recurrent nodules in the cicatrix of a breast and axilla about twelve years ago, and who was treated by neuro-induction at my hands, is now living in perfect health. The nodules diminished in a day or two. But I make no claim beyond what the bare facts afford : the nodules were not examined microscopically ; I merely formed opinions about them. The fact that they were nodules of something, and that they possessed a blood supply, and that I reduced them quickly, was all I cared about for the time being. It goes without saying that I am prepared to demonstrate the same results in other cases, provided I get a proper chance, and given that I have reasonable observers who are normally interested.

What conclusions am I to draw from the data presented ?

I am of opinion that abnormal growths result from a deficiency of local vascular control due

to predisposing and exciting causes. The lack of control I believe to be primarily in the nerve element, which allows local extension of vascular impulse, both inflammatory and proliferatory, which itself may cause proliferation of cell growth—at least, it must favour it. Cell growth, however, is also favoured by external influence, for epithelium tends to proliferate on being chronically irritated (skin thickens and warts develop), and by being acutely damaged. Moreover, it is more than likely that once irritation or damage has conferred weakened resistance, this has led to unhealthiness and less power of resistance owing to the invasion of micro-organisms at the spot, which would cause further irritation, proliferation of cells, and blood-vessel extension.

I am further of opinion that, in cases of spontaneous regression of tumours and of betterment or cure following psychotherapy, and also following X-rays and radium, it is the vascular system that is affected through nerve influence, the rays serving to contract the vessels in abnormal spots—the psychotherapy acting both locally and centrally, on account of sensation as a result of manipulation and through the sympathetic effect of suggestion over the vessels.

In spontaneous cure there has doubtless been

some unknown central and general influence at work which has favourably altered the whole state—possibly something which has brought hope and a healthy feeling in the place of former depression.

Authorities on ray treatments have been compelled quite recently to recognise the possibility of favourable effects having come from "suggestion" in their own particular work. (See *Annual Report of the London Radium Institute*, published March 4, 1922.)

Cancer: a Probable Cause

The chief reason for my contributing the following short notes is that the recommendations which I have to make may be acted on forthwith to very great advantage, for the general health would certainly be improved, and therefore increased resistance against all diseases, including cancer, would be established.

In 1910, while specially studying the nerves and brain, I made experiments on new growths, including cancer. I discovered for the first time that arterioles could be influenced at will by the brain; I found that contraction could be demonstrated quickly and easily, and that certain growths could be made to shrivel and disappear in consequence.

In several cases of cancer, so advanced that death was certain soon to occur, I found in each case that general complete relaxation of the whole system, *plus* the toning-up by contraction of the blood vessels of the actual parts diseased, resulted in obvious regression, as shown locally and generally, to an astonishing extent. I learnt that this regression could be repeated so often as to prove the rule. Such have been the results that I am bound to recommend the same procedure in early cases when surgical operations are impossible, in order to find further positive conclusions.

I have also found, since 1910 to the present day, that when the whole muscular and vascular system of the body is treated by a special form of relaxation, in certain people who are suffering from falling off of the hair and loss of tone in the skin, with tendency to spots, the healthfulness of the hair and skin and the alimentary tract is soon restored.

Now we know that wrong balances in dietaries cause skin disorders, eruptions, and erythematous patches. Scurvy with mouth bleeding and skin sores are thus caused. We know that the whole alimentary tract, from the mouth downwards, can be affected by improper food, so

that dyspepsia, constipation, and some amount of blood poisoning result.

We know that sugar and salt taken beyond a small amount will cause the skin surface to be abnormally rough and dry, and sometimes eczematous. We know that psoriasis is often caused by a dyspepsia that is due to worry.

Moreover, noting that cancer is commonest from later middle age onwards, we bear in mind that the teeth have in this period usually become defective, and that this has led to less fruit being eaten, while meat dishes have been preferred because easier to digest. And we have observed that those who have a tendency to eat heartily of butcher's meat develop a dislike for fruit and a taste for stimulating drinks, such as tea, beer, wines, and spirits.

Thus it is clear that after middle age there is a drifting away from vitaminic food to non-vitaminic, especially when less and less fresh-killed butcher's meat is eaten by most people.

Colonists abroad need not be alarmed at this stage of my argument, for if the day came when less cold-storage flesh food were eaten, we should be demanding from them fresh fruit in greater abundance—to keep sweet our business relationships.

Cancer affects mostly the epithelial parts of

the body—that is, the skin and the mucous membranes from the mouth downwards. When it attacks the breasts and generative organs, there is a general vascular insecurity in these regions ; they are thus weakened in resistive powers. The mammary glands are more given to aberrant development than any other part of the body, as shown by the wide range of differentiation from being apparently wanting in some people to reaching a size so immense in others that they are out of all proportion to the rest of the body ; they are also subject to unnatural conditions, either by commission or omission, which cause unhealthy nipples on the one hand and suppression of milk on the other. The generative organs are subject to very unnatural functioning, or lack of functioning : artificial aids are far more common in human than they are in animal birth.

Bad teeth are a sign of deficient resistance through defective regimen.

I am fully aware that the general health rate has improved in the last fifty years ; but this has probably been due to the better education of the public, and to fuller knowledge regarding preventive measures, so far as means of maintaining health *other than dieting* have been concerned.

For many years certain medical men have suspected errors in diet as a cause of cancer.

My own broad deductions are that too few vitamins are taken these days by way of really fresh meat, fruit, and vegetables. When used, the latter have often very valuable constituents cooked out of them; uncooked salads should be eaten more than they are; even common green foods should be studied for eating without cooking; experiments should be made in order to find out suitable kinds and methods of preparing.

The effects of different sorts of sweetening material from cane-sugar to acid and other derivatives should be studied most carefully, when it would probably be found that honey is the most valuable form of sweet food of all.

The fact that negroes do not suffer from cancer one-tenth so much as white people need give us no surprise when we bear in mind that they not only feed mainly on cereals, vegetables, fruit, and animal flesh, all containing vitamins, but they have no reason or disposition for any sort of despondency; they are light-hearted. This mood reciprocates with vitaminic feeding to give magnificent digestion and a vitality that is resistive to blood diseases.

Cancelling down what I have written about

cancer at various times, I would consider that it is caused by defective tone in local arterioles, which permits extension from them towards the proliferating cells. Defective tone is caused by irritation, but also by an abnormal quality of the blood. My contention is that abnormal cell proliferation can only proceed malignantly through incurring its own abnormal blood supply.

Mere irritation of the skin, as from working, or walking barefoot, causes epithelial thickening, in which there is no special blood provision by way of extension from the normal. In a case of common warts in youth there has been an irritation, *plus* sufficient local laxity to permit extension of blood vessels, but the blood is healthy enough in quality to keep the cell-proliferation wholly superficial and sweet, and to help in restoring normality once the irritation and laxity ceases.

In common skin disorders, the local vascular disturbance is not one of extension of lumen ; it is rather of a distensive nature ; there is usually some amount of local inflammation coincident with bacterial development of one kind or another.

When we tone up the blood vessels of a region by neuro-induction we strengthen the nerve supply ; we thereby limit vascular extension,

probably through inducing a terminal contraction, of the normal vessels, while the abnormal extensions are also contracted to their regression — because they are abnormal. We also tone up the whole system so that the quality of the blood may to some extent be improved. For, though improper food may cause impure blood, yet this is only a part-process in negative circling. Illness causes dyspepsia through the worry of it; if we improve the dyspepsia by means of suggestion, or by any other hygienic procedure, we so far lessen the power of the sum of all factors making for impure blood.

In cases of spontaneous cure of cancer, when no favourable change of diet has been known to have been at work, something has adventitiously occurred either to the mind or body—or to both—to make the resistive powers stronger.

NOTE

One of the most important object-lessons regarding abnormal growths is, that hæmorrhoids, which are so often supposed to need surgical operation, can be cured quickly by painless neuro-induction. But the great preventive is, of course, diet and avoidance of worry.

CHAPTER V

FINAL OBSERVATIONS

WHAT clear conclusions do we arrive at when we accept the main teachings and suggestions of the foregoing data to be sound enough ?

Those of us who are real scientists, who are not faddists, who have no vested interests, are bound to appreciate to some extent the following points, regarding quality and balance in dietetics :

(*a*) That wild animals are properly fed when living in their natural and normal environment.

(*b*) That some wild animals feed solely on vegetable material, being fashioned to do so—(i) anatomically, and (ii) habitually through their having time to eat over many hours by picking up little bits and eating slowly.

(*c*) That it is natural for animals to eat fresh food rather than preserved, counting seeds as

always fresh when the germ is potential; and that therefore it is healthy to do so.[1]

(*d*) That human beings had better feed on fresh food, because the value of this has been proved—(i) from time immemorial by faunal survival of the fittest, through animals to man; (ii) having regard for the pathological arguments of the foregoing pages.

(*e*) That human beings have developed to an advanced degree over animals while they have gradually increased their fresh flesh ration over the amount commonly taken by the higher apes, the latter having been typically mixed feeders living on about two-thirds vegetables and one-third animal food (eggs, birds, insects), or three-quarters vegetable and one-quarter animal. We can only judge these quantities approximately. It follows that the higher development of man has depended largely upon flesh food, because of the concentration of nutriment in it and his capability of easily digesting it. Man came to think and act; he required high nutrition *plus* rapid ingestion and digestion: he could not be nibbling all day like an ox or a monkey. He

[1] Very few creatures live on carrion, and even then there is enough vitaminic value remaining. It is doubtful whether vultures would live long on canned food. I am of opinion that the Zoo experts would be sorry to try it, either for birds or flesh-eating animals such as lions.

found out the best way of feeding to suit his growing intelligence, until the present day, when he is now concentrating his mental energies in finding out more about the effects of wrong balance and of excesses of various kinds. He no longer can depend upon the dictates of slow evolution; he must evolve further knowledge out of the data he is much more capable of selecting in these days when knowledge is more plentiful.

Having found that flesh food is good and helpful for advancement, he is now realising that it can even be too good—that is, it may produce effects that are not entirely toward, if it is not pure, fresh, and if it is taken in undue proportion.

He is finding that his own blood is regulated in quality according to what he eats, and that life depends greatly on quality of blood.

He is realising that human beings (average men and women) only consume about one-sixth to one-tenth of the fresh fruits and vegetables that a healthy higher ape consumes; also that serious skin diseases affect those who neglect fruit feeding (fruit juice cures scurvy).

He is realising that man suffers from an appalling amount of disease due chiefly to bad feeding.

He is beginning to believe that a better knowledge regarding diet would reduce this appalling amount down to a fraction while promising still greater mental and physical development for the future.

He is beginning to see the danger to himself of being led by people who have vested interests when the matter of feeding is considered. He can appreciate the remark of a canned-food merchant to the present writer. The latter said to the former: "Very nice for your wife and household to have so many beautiful delicacies of meat and fruit at your hand, for special choice!" The merchant replied, "Dear me, no! We never eat them. It is bad enough to have to sell them!"

(*f*) That we are certain to be able to increase our health and efficiency rate mightily when it is so clear that the improvement in our death-rate recently has taken place in spite of very considerable ignorance in the past as to food suitability. We have reached a high general hygienic state of efficiency while growing gradually worse as regards our food balance: we have reduced the incidence of enteric and diphtheria and small-pox, while cancer has increased. In fact, everything has improved excepting our standard of feeding.

It is true that infant mortality has decreased, but this is due largely to greater general care, and to special care over the milk supply—over storage and feeding-bottles rather than over actual quality, however.

The reader will see the possibility that general hygienic betterment has reduced the death-rate while feeding generally has been detrimental and has needed better regulation; also he will appreciate the fact that food may be more plentiful now among the poor than aforetime, causing, say, one-fifth advantage, leaving still one-fifth disadvantage to be got rid of on account of false-balance in the sufficient quantity.

The food of man, both of high and poor classes, in its appropriateness and in true proved value of each variety, ought to be scientifically known, so that we may be certain of a standard which could confer nothing but the desirable and necessary sustaining effects for the best of health and fitness. By very little testing and sifting the effects of varieties can easily be known—and when known, then all interests should be swept aside to make way for the greatest benefit of all, which would concern every living individual, indeed, in the whole world.

(*g*) An approximate and safe balance can

easily be arrived at once it is accepted, as a primary failing, that the majority of English-speaking people eat too much flesh and not enough fruit and fresh vegetables. Finer proportions can be worked out, but roughly one to three apples a day (or the equivalent in other kinds of fruit), half to one lettuce a day (or equivalent), and 3 to 5 ounces of flesh a day, with a reasonable amount of bread, should forthwith be recognised as the sensible idea—safe, easy, and bound to be immensely favourable to the million.

This is provisionally recommended as a more healthy type of dietary than has been for many years eaten by the million in Great Britain—and is to-day and every day. A more exact amount of flesh food can be judged according to age, sex, occupation, and height; a navvy may be allowed extra—although milk, porridge, and cheese have made many a magnificent Scotsman.

As regards the relative value of cheese, beans, and various other foods, analytical tables of nutritive qualities have long been in existence; but it must never be forgotten that final estimates as to health value will depend greatly upon individual powers of digestion. The protein (which is the essential element) of cheese in the lump is not divided for quick

assimilation as is that of flesh ; nor does cheese stimulate digestion in the way that flesh does. Some people can digest cheese and beans, others are not able.

. . . . . .

The various authorities are now becoming very alive to the importance of *the great food question*, but more especially as regards purity. Let us hope that a study of poisons in food, by way of bacteria and even chemical so-called preservatives, now being forced into the arena of earnest consideration—and doubtless even of bitter contest when businesses and dividends have to be jealously defended—will lead to the still more important matter of a balance in constituents of food that is altogether sound.

Or will it be that the latter study will bring out the subject of food poisons as a matter of course ? This would seem to be the better order in the long-run. Before long we shall be wondering how it came about that poisonous and adulterated food was for so many years allowed to be sold at all.

Let us now examine some quotations taken from two types of leading journalism, issued January 1924.

In the *Times* is a column written by its Scientific Correspondent containing this :

"Foods preserved in sealed vessels form a large and rapidly increasing proportion of our diet. According to Dr. W. G. Savage, who has published his recent Milroy lectures as a little book in the Cambridge Public Health Series (*Canned Foods in Relation to Health*; 8s. 6d. net), the art of canning arose in response to a bounty of 12,000 f. offered by the French Government during the Napoleonic wars for a method of preserving food that would reduce waste in naval and military stores. The success of canning in the American Civil War gave a further stimulus to the new industry. Since then, in war and in peace, preserved foods have been employed more and more.

"Dr. Savage, summing up his own researches and those of others, has come to the rather surprising conclusion that neither the initial selection of food, the kind of treatment it undergoes before canning, nor the final 'processing' or subjection of the sealed tins to heat suffices to produce absolute sterility. There are bacteria or their spores, or both, in practically every sample of canned food. When these are of the kinds which cause fermentation or putrefaction, and when the subsequent conditions are suitable for their growth, the deterioration is usually plain to the sense of sight, by alterations in the appear-

ance of the food or by distortion of the tin from liberated gas, or to the sense of smell. Existing safeguards secure the destruction of a large proportion of such spoiled food. It is doubtful, moreover, if food merely fermented or putrefied does much harm, and certainly it is not responsible for the serious cases of poisoning.

" Dr. Savage found little to justify the common fear of danger from metallic substances in tinned goods, and so far there is no basis for the popular preference for foods preserved in glass. But there is a disadvantage in diets chiefly composed of preserved food depending on their deficiency in vitamins. These accessory substances are unstable when subjected to heat, and, further, if not destroyed by the actual processes of manufacture, may be still further reduced by oxidation unless the materials are consumed quickly. Fat soluble A, deficiency of which is associated with rickets, is most tolerant of heat, but gives way to subsequent oxidation, so that old tins of preserved milk may be quite deficient in this respect. The two other groups of vitamins are readily destroyed both by heat and by oxidation. Fortunately, only small quantities of vitamins are required, and these can be added easily to a diet consisting mainly of preserved substances."

An editorial comment in *John Bull* is headed "The Poisons We Eat," and it begins as follows :

"The widespread interest aroused by the publication in *John Bull* of the articles relating to the use of preservatives in all kinds of foodstuffs will presumably be revived by the issuing of the report of the Committee which is investigating the matter.

"Meantime we welcome the support of Dr. James Fenton, medical officer of health for Kensington, who in a lecture before the Institute of Hygiene, declared that in scores of foodstuffs and drinks he had found, as preservatives, drugs which might impair health and shorten life if taken over long periods. Not one of these chemicals could be defended as a normal ingredient of food."

. . . . . .

Medical men generally and the laity alike are compelled to give greater attention to the Great Food Question when its importance is so clearly urged from different angles and by authorities whose conclusions are absolutely trustworthy. It is not sufficient that certain specialists and research workers may themselves learn what is advisable by way of conclusions arising from deep study and experimentation ; it is rather

that the multitude shall learn big but easy principles to carry out, having become convinced that if it pays to study the food of a horse it pays still more to be most studious over that of man.

What are some of these trustworthy conclusions, as emanating from the judgment of hard workers in the public interests and which so eloquently assist in crystallising the main contentions of this present book ?

Dr. Delf (D.Sc.) has made very special studies in experimental scurvy. Her work indicates the very great value of fruit as a preventive and curative of disease (see *Lancet*, March 25, 1922).

The *Lancet* of October 20, 1923, in an editorial, says :

" The importance of vitamin deficiencies in promoting morbidity and mortality from infectious conditions has often been urged in recent years. Their real rôle in this respect can be determined only by the massive data of hygienic studies, for effects which are substantial enough in the returns of medical officers of health are often outside the practicable range of experimental investigation. It would, for example, be difficult to reproduce and analyse in the laboratory a reduction of infantile mortality from 100

to 80 per thousand births. But the belief that moderate vitamin defects are responsible for a definite increase of infections is much encouraged by the demonstration that, under the exaggerated conditions of experimental work, animals fed on grossly defective diets are found to be much more susceptible to infection by inoculation than are similar animals normally fed. In the last number of the *Journal of Pathology and Bacteriology*, Dr. G. M. Findlay describes a series of experiments on pigeons deprived of vitamin B, and shows that after a deprivation of two or three weeks they readily succumb to inoculation with the pneumococcus and the meningococcus to which they are naturally completely resistant, and are much more than normally susceptible to doses of B. coli and Gaertner's bacillus. Getting an indication of an explanation of this difference from the work of Strouse on the natural immunity of birds to the pneumococcus, he shows that the vitamin defect leads to a considerable lowering of body temperature, that the effect of any one inoculation can be predicted from the temperature of the bird at the time, and that artificial lowering of temperature with the drug pyramidon induces a similar susceptibility. The same facts have been described independently by

C. H. Werkman.[1] Under the conditions of these experiments a marked fall of body temperature has a 100 per cent. effect; it is at least not unlikely that smaller deviations from the normal level of heat will have results important enough in the scale of human morbidity."

Dr. Barton, of the Infant Welfare of the Infant Department of University College Hospital, London, has contributed a valuable article recently in a medical journal on the value of vitaminic fruit feeding of infants.

He has written:

"Before we leave this subject it is wise to remember that deficient anti-scorbutic in the early months of life may have very definite influence on the rudimentary second teeth. Zilva and Wells have shown that in guinea-pigs the growing teeth are some of the first structures to be affected by deprivation of anti-scorbutic. Guinea-pigs have no second dentition, and arguing from analogy the rudimentary permanent teeth of an infant should show signs in after-life of faulty nutrition during infancy. In the present days of artificial feeding this faulty nutrition may possibly be one of the many causes of bad teeth in the adult."

[1] *Journal of Infectious Diseases*, vol. xxxii. p. 253.

Our leading dental surgeons, from Sir Harry Baldwin right through every rank, are unanimous as to the value of fruit when the growth and preservation of teeth are questions constantly coming up for special consideration at conferences. There is no lack of scientific conclusion, whatever may be the particular reasons for making special study on the part of various practitioners concerned with preventing disease, whether as doctors or dentists. There may be disputes among them regarding micro-organisms, but none as regards blood to be rendered inhospitable by proper dietary.

NOTES

Roughly speaking, for every two ounces of fish, every egg, every ounce of cheese, every helping of bean food (pulses, boiled or thick in soup) or suet pudding, every half-pint of milk, taken daily, half an ounce of flesh food should be cut out, given that fruits and vegetables are taken.

Whole-meal bread is naturally of greater food value than ordinary white, for the latter has been deprived of important vitamins.

Fruit is best taken ripe, between meals. Cooked vegetables should be eaten with their juices. More salads should be eaten if fruit is disliked. Stewed fruit with sugar is not half so valuable as fresh ripe fruit.

RATIONALE

In the vicious circles of rheumatism, gout, dyspepsia, and mental derangement respectively, the factor of causation which precipitates attacks is unquestionably nerve tenseness favoured by a general systemic over-sensitiveness that is often inherited. The latter imposes some amount of strain upon the thinking capabilities ; which strain causes a diminution of salivary and other glandular flow (from liver and pancreas) ; which diminution in turn favours fermentation (often pain also) in the alimentary tract. Moreover, anxiety and agitation or urge often lead not only to haste but to excess in eating and drinking—all of which hinder digestion and favour fermentation.

Vitaminic food is undoubtedly less given to fermentation than non-vitaminic ; the former certainly invites a more natural and generous glandular flow than the latter, on account of the essential flavour values if for no other reason.

Pleasant human interest, leading to purposeful impulse towards general activity, increases glandular and peristaltic action, while sustained depression and worry diminish these ; the former encourages bowel evacuation, the latter delays it. Corresponding instinctive phenomena have been observed also commonly in animals.

Strained conversation before, during, and after meal times ruins digestion, while pleasant and easy exchange of ideas helps it. The former hinders glandular activity, the latter favours it.

Fruit is occasionally found by some people to be " too acid " ; this is probably due to glandular sluggishness, either because too much soft food is taken, or because a state of habitual anxiety possesses the individual.

The appalling amount of rheumatism in children is chiefly caused by daily sweets and hardly any fruit or vegetable vitamins from infancy up.

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