On Some Points in Dietetics

by

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To the Resident

Fetteshead-on-Tyne.
On some points in the feeding of infants and children.

The subject of dietetics is such a wide one and so difficult that I shall deal only with those points that have come under my especial consideration, and that from experience gained in practice I have found to be of value.

The ignorance displayed by many parents as to the food suitable for the sick is astonishing, and hardly less so I think the stupidity and neglect manifested by most medical men.

The tendency of the day is to spend time and care over the diagnosis and Castiglia and treatments, and to pass over lightly the matter of diet, which is of quite equal importance to the patient. Infant feeding has received most attention, and everyone is aware how by a few simple hygienic directions vomiting and diarrhœa are often stopped, and the child begins to thrive.

I am convinced that the same satisfactory results may often be obtained
by the careful dieting of the adult in his various maladies, as are better known in the case of the infant.
In this first paper I intend to say a few words about the feeding of infants and children. I shall deal only with nine points that I believe to be most important. As regards infants the first is overfeeding. This is exceedingly common. The child cries, and is immediately put to the breast or bottle. If over-fed it starves, vomits, and cries again. Again the breast or the bottle relieves it for a time, and then up it comes in cards. Recently not only vomiting but diarrhea sets in, with offensive green motions, often stringy. Then the Doctor is sent for.
Here little at a time is the remedy. The way I put it to my patients is: That if the child vomits they must take that as an indication that they are still giving too much, and they must reduce the quantity till they find the amount which the particular child can keep down and digest. If the quantity is very small that the child can keep, then every hour it may be fed, otherwise every two or three hours.
as the case may be.

So much for quantity. Now as to quality.

Often the mother's milk is poor, and the mother herself is not well, and it disagrees then the child must either have the bottle entirely, or partially. Each case must be treated on its own merit.

If the bottle be decided upon, it is best to order the old-fashioned boat-shaped bottle. Do what you will you cannot keep thoroughly clean and pure the tube of the ordinary bottle. Often in the hands of labor and careless parents they are simply foul, and however good the quality of the milk, it is contaminated before it reaches the child.

The old-fashioned bottle simply has a bent in the end, which you can take off after each time of using, and turn inside-out, like the fringes of a glove, and clean. I always order two bottles, one to be soaking while the other is in use. The bottle after use is to be cleaned with very hot or boiling water, and then left to soak in cold water with a little soda in it till it is required.

When the child is hand-fed from the commencement, in my own practice I order half milk, boiled first, and half water,
Sweatshirt with a little powdered lump sugar for very poor people, and with milk sugar for those better off.
In cases of severe vomiting and purging, it is best to use half milk and half linseed water, and where there is vomiting without purging, half milk and half barley water, and little at a time.

There are some cases where the difficulty consists in keeping the bowels open. The infant is obstinately constipated, and the mother in despair keeps giving small doses of castor oil, which open in the time, and then lock up the bowels worse than ever afterwards.

I have recently learnt an exceedingly simple and efficacious method of removing this constipation. It consists in sweetening the milk with coarse brown sugar, and when the child is relaxed, returning again to the powdered lump.

But there are cases in which milk does not seem to agree at all, or the child does not thrive. Then we must try the artificial Infant Foods. Frequently food after food must be tried before we get the one that suits the child. I have found that the artificial food that suits one child, will not do at all for another.
In one case of an infant, aged four months, that I attended, no food seemed to agree.
There was vomiting and slight purging, which I controlled greatly, but still the child went down and down, and was simply a bag of skin and bones, and perfectly starved. At last I tried making what the变为ists that go by that name, but they "consist of tea-cakes, which are made from flour, butter, milk, and sugar, cut into slices, and the slices are placed on two and introduced for a few minutes into a cheap oven. They are turned to as to produce a little scorchling of both surfaces, and after wards put into a drying oven for three or four hours in order to drive off all moisture." Day by day the child at once began to thrive, and is now quite and plump. I expected each day to see the child dead. The moral is, never give a cure up, but try food after food till the right one is found.
I generally begin with Melons; and in these children that suffer from real asphyxia always rub them the rubbed with boiled linen oil all over every night and morning, and the clothes warmly with flannel, as that they may not suffer heat loss.
Some children do remarkably well in the oil; with others it does not seem to be so efficacious.
How it acts I cannot say. I think however it is from a combination of causes—
1st. The oil is absorbed by the skin, and is to
much fatty food.
2nd. The mere friction is of value
3rd. The oily covering prevents heat loss.
Most of what I have so far said is generally
known and reiterated upon, but in the feeding
of older children, there is a point that is not
sufficiently known, viz.

The great importance of fat.

We know how important fat is to healthy
nutrition. We know for certain that the fat of
the body does not by any means all come from
the fat in the food, but that it comes also from
nitrogenous, and particularly carbohydrates,
food; but still we know that fat is important
to healthy nutrition, and especially so in the
strumous. We also know how frightfully
common struma is in towns.

I do not think that we sufficiently impress
upon parents the paramount necessity of
fatty food for children.

We order plenty of milk for them and then
we stop; and when they are palpably ill we
order cod-liver oil.

Now there are two easily digestible fats
That are not sufficiently understood.

One is butter. Children should not be started in butter; but instead of that they too often get "break and scrape" - a maximum amount of bread, and a minimum amount of butter. This is through their ignorance.

I have asked numbers of parents of what use they thought the butter was. In nearly all the answer was to the effect that it was simply a delicacy to make the bread taste nicer.

They seemed quite surprised when I told them it was a most valuable food, and that it was like giving cod-liver oil to a child to give it plenty of butter. Let the bread be cut thinner, and the butter spread thicker, and we shall have fewer obnubians and phosphorized patients.

The other is fat bacon. Encourage children to take that - especially the gravy. Let them soak their bread in it. It is a healthy breakfast dish within the reach of nearly all.

Then there is dripping, which is certainly not to be despised, and may serve for those who cannot afford the more expensive butter.

Milk of course should occupy a prominent place in the diet of all children. Its value depends, in part, on the fat it contains.
II

On the importance of feeding in phthisis.

What ever may be the experience of hospital physicians, I think I am not far wrong in saying that the general practitioner approches a phthisical patient with feelings of despair. He looks upon the patient as doomed; prescribes a stock prescription, and takes no interest in the case.

Such at least is the opinion I have formed from conversing with my professional brethren, and such was my own practice till within the last few years.

The cause of this apathy, and want of interest in these cases is, I venture to think, not difficult to find.

We have relied solely or almost solely upon drugs, and have treated with scant attention other items in the treatment.

I will place at the beginning of this paper what should be our aim in the treatment of this disease especially though of course it applies to other diseases.

It is this — the phthisical patient, keep up the nutrition to the highest possible pitch, so that the power of resistance of the organism shall be greater than the
destructive power of the disease.
In general practitioners attend the
whole family. We know often the family
history, and this means we also know the
family tendencies.
I need not repeat here what I have said
in the first essay on the importance of 
fat for children. All I have said there, I
would say again here, with double
emphasis for those with known tubercular
tendencies.
I will pass on at once to those who are
brought to us with commencing wasting
and with perhaps little if any cough, but
when we could hardly say from mere exam-
ination of the lungs, there is a case of
commencing phthisis, but if we know the
family history, or even if we do not, there
is sufficient for our purpose in other signs.
Here is the golden opportunity. And, if
only we are on the alert, we may save
this astic.
Now is the time when we should act with
the same energy that we so often show when
it is too late and of no use.
When I was visiting the Royal Agricultural
Show held last year in Newcastle, I could
not help thinking when I saw the animals,
and the care that was taken of them,
That if only the same care was taken of our consumptive patient, how many valuable lives might be saved.

At this early stage we should insist upon the parents and friends that now is the time that trouble must be taken.

This is the first difficulty that we meet with. In their minds there is no danger.

To them the patient goes about his work as usual; is just a little below par; can easily be set right; and the case certainly does not seem one of para second importance.

To them it is the doctor's part to attach great importance to such a trivial ailment.

Now this difficulty must be overcome.

We must, in season and out of season, insist upon the importance of the case, remembering that in all probability a life is hanging upon the success or failure of our appeal.

If the patient spends his time in a close stuffy school-room, or works all day in a close stuffy office, we should remove him; we should insist upon well ventilated rooms, and plenty of out-of-door exercise in fine weather.

Our patient should wear warm flannel or woolen underclothing. This hours and
This meal should be regular, and he should commence Codliver oil at once.

If it disagrees immediately after food, it is well to give it an hour or an hour and a half afterwards, as then the food is passing out of the stomach into the duodenum, and it will pass out with it (Lauder Brunton, Disorders of Digestion p. 134 and Wilkie Fuquill, Manual of Dietetics, article on food in Indigestion p. 234).

Plenty of fat in all its forms must be taken. Plenty of butter, plenty of milk, plenty of bacon-fat.

Too often however the patient is taught when there is little doubt that being insistently has commenced.

The case even now is by no means hopeless. I think the tendency is to pay too much attention to the local manifestations of the disease. Of course that is necessary and must be done, but as regards the prognosis and treatment of the case, the exact form of the disease, the exact cause of the disease, and the size of the cavity or cavities, are of small importance compared with the state of nutrition of the patient.

Is he wasting quickly? Does he take his food well, especially milk and...
fatty foods? These questions are of immense moment. Men cracked for roundness and tubercle bacilli.

Of course in this paper I have not to do with the drug treatment of the patient, but if the patient, that must be put a stop to. If he suffers from diarhœa, it must be checked. If a woman, and she suffers from leucorrhœa, or if she is suckling, the whites must be stopped, and the child taken from the breast.

He should, anything which tends to weaken and weaken the patient, must receive our earnest attention, and be checked as soon as possible.

In addition to all this, and here I wish particularly to emphasise what I say, we must keep the digestive organs in good working order.

We should not be too ready to give opiate to relieve the cough for two reasons—
1st. They tend to upset the digestive organs.
2nd. The cough is useful in getting rid of the material which is breaking down, and which, if not expectorated, acts as an irritant to the lung, and is a source of fresh mischief.

I have an idea that phthisical patients treated in hospital often do better than
our patients outside. If this is the case, I think it is due to putting them to bed and keeping them there, earlier than we do in private practice.

Now in a decidedly phthisical patient who is wasting, the food they take may not be sufficient for their nutrition while they are going about. It then goes to the production of mucus, instead of forming healthy tissue.

On the contrary, when they are put to bed, it does not go to the production of mucus, but is stored up in the form of tissue.

I have seen examples of this.

You see the same thing in anaemia.

In some cases you may give iron, and they do not improve. You put them to bed, and then give iron, and improvement comes. Mr. Fothergill in his "Manual of Dietetics" mentions a case of this kind in his article on anaemia.

The point of all this is, to keep up and preserve the strength of our patients. He has sufficient to contend with in his disease, and our efforts have to be concentrated in making him stronger than the disease. He may just be able to conquer the disease by itself, but add something else, while may be preventable, and then the two together
are too much for him.
Is there not in these cases a mean that we can keep up? Some people seem to waste for some time, and then a time comes when expenditure and income are balanced, and life is prolonged indefinitely. Just as in the history of the individual, at first repair is in excess of waste, and the child grows. In middle age waste and repair are balanced, and then in old age waste is in excess of repair, and the journey downhill commences. So in phthisis, you can keep to a line below that of health, but compatible with moderately comfortable life, and below which comes the downhill path to death.

If the patient is unable to take much food at a time, he should not be restricted to regular meat courses. He may with advantage have between meals, biscuit and butter. He then gets an easily digested carbohydrate and fat.

The value of this milk may be increased by chopping malted meal into small fragments, and warming it up in the milk. He should also have something during the night, when he first wakes up.

The long past often exhausts him, and he has no appetite for breakfast. If, as soon as he wakes up in the morning, he takes
Some cream and milk, or tea, he possed, he will then be able to enjoy his breakfast.

I have under one at the present time, a phthisical patient was previously could not take at his breakfast, but how by taking the rum and milk whenever she wakes she is able to enjoy the meal.
Eggs beaten up with milk are very valuable, and may be taken once a twice during the day.

If the ordinary Codliver oil disagrees in the patient turns from it, then the Kepler Extract of Malt and Codliver oil is very good, and that may be varied in its turn with Malt Extract alone.

The oil Cunulcious too must not be principal.

If we must not confine ourselves to fatty food, because Cholobin cannot be healthy without a combination of the protid and carbo-hydrate foods and as well as fat.

Fat however is the food par excellence in phthisic, and in one form or another we must have plenty of it.

We must keep up in every way the nutrition of the patient, and watch anxiously for digestive troubles. Then we must give the food made rest, and the simplest food must be given, and little at a time, as
in the case of the infant. Mellow's food, a teaspoonful at a time, or a teaspoonful of malt extract, will be useful. Small quantities of milk also, which if necessary may be sweetened with Refe's Condensed Mellow's food, or malt extract, in the milk. When the stomach has again regained its tone, milk and fatty foods must cautiously be given. It is, however, these attacks of jaundice irritability that we have to dread. We must watch for them, and endeavour to avoid them, but if they do occur, we should carry out the great principle of rest. This is not a disease for which there is a specific remedy.

What I wish to insist upon, and what I firmly believe is, that success in its treatment will depend upon our recognizing the importance of early treatment; checking all drains in the system; and above all keeping up the strength of the patient by careful feeding.
On the Carbo-hydrates and Food in Acute Disease.

In dieting the sick it is of the utmost importance to bear in mind, that it is not the amount of food that is put into the mouth and swallowed that is to be taken account of, but the amount that is digested and absorbed. Two very different things. The first step towards easy digestion rests with the cook. So much cooking is done too hurriedly, particularly vegetables. Saffrons are great sinners in this respect. A large part of their evil reputation depends upon the fact of their hurried cooking, and instead of a floppy mass with its starch granules cracked, they form hard and irritating lumps.

This bursting of the starch granules is of great importance, because without it, the ptyalin of the saliva, and the trypsin of the pancreatic juice cannot act upon them so effectively, for their conversion into sugar. The value of this bursting of the starch granules is seen in the case of Sago, tapioca, and arrow-root. Their wholesomeness and
Digestibility are well known, and are due to their gelatinized state.
Starch is insoluble in cold water, and when raw is digested with difficulty, as the external layer of the granules is firmer and harder than the internal ones, and so offers greater resistance to the diastatic ferment.
This property of starch of being insoluble in cold water is of the greatest importance to the growing plant, because it is the one from which it derives its nourishment. When a seed germinates, a body called diastase is formed which converts the starch into soluble sugar, and this sugar is given off as the plant requires it (Biot's Chemistry, p. 486 and Mr. Foster's Manual of Dietetics, p. 8).
In this action, the germinating seed resembles the liver, which converts the insoluble glycogen into soluble grape sugar for the body needs.
In cases where the patient cannot digest even milk puddings of rice, tapioca or sago - they can be pre-digested by adding a teaspoonful of malt extract to an ordinary helping. The malt extract should not be added before the pudding is baked, as too great heat destroys the action of the diastatic ferment.
I have tried it myself, and can vouch for...
its palatability.

In the treatment of acute disease, I am now and more convinced of the value of careful feeding, and especially in the exhibition of the carbohydrates.

It was indeed an article of Wilmot Merrills in the British Medical Journal for Sept. 5th 1885, entitled "When a patient dies from exhaustion, from what does he die?" that first directed my attention seriously to the subject of dietetics.

In that article he says: "Starvation is a slow form of burning up. But what is burnt up? The fuel food of the body clearly. The fuel food of the body is glycogen and fat - the stored form of fuel".

How this seems to the common sense, and we know that the carbohydrates are the principal course of the glycogen.

Milk of course should be given. Long experience has proved its value, and it may also be made a useful vehicle for the predigested carbohydrates, of which there are so many in the market.

In the young and robust, at the commence- ment of the fever process, there is already a supply of fuel food that has not been used up - plenty of fat in the tissues, and plenty of glycogen in the liver.
At this stage, when the fever runs high, and the pulse tension is great, the food should be of the simplest and least stimulating character, such as barley water merely, or very weak milk and water, or toast water.

In my experience, in private practice, in the class of cases I am referring to, where unfortunately we cannot always be sure our directions are carried out, I have found on enquiry, the patient "would not take anything but water".

Nature seems in these cases to cry out against all food, but a few days later they will easily take more nutritious diet. I have many cases in my mind, but this must be as familiar to every one that has no need to quote one.

This fact was so impressed upon me, that I turned to Grases, the great teacher of the feeding of fevers. He says in Medico-Phytopathological Society Vol 1 p. 159, "Food must be given with great care and judgment, particularly in the beginning of fever. In the first three or four days, particularly if the patient be young and robust, water, weak barley water, and whey will be sufficient. After this it may be well to begin with some mild nutriment."
In weakly old people, and asthenic cases, however, we must pursue a different course.

What I wish to point out is, that in these asthenic cases our dietetic treatment should go hand-in-hand with our drug treatment, that is, the depressant rather than stimulant, and we should simply give bland fluids with small food value. Not, in fact, add fuel to the flame that is raging.

But the amount of fluid should not be unlimited, for as Graves well says, "The continued quenching of even the most innocent fluids will bring on heaviness of stomach, nausea, pain and flatulence, and predispose to congestion and intestinal irritation."

The fluid is of value not only as quenching thirst, but it helps to wash away the undigested waste which is coming on so rapidly.

But though in these cases we act as above, we must be exceedingly watchful, and look forward, and not let our patient feed too much on himself, and feel so depressed that he cannot fight through a long illness.

We must watch for the right moment,
and then give some nourishing food. This moment cannot be fixed by days or
weeks. Each case must be taken in its own
merit, and it is true where thoughtful ex-
perience is of so much value.
We must remember that in the denunci-
ing ill, the stomach becomes much a conduit
to pour the liquid food to the duodenum
—a continuation, as it were, of the oesophagus.
(See Dr. Roberts-Dickies and Dyspepsia 2nd Ed.
p. 68.)
It is with the duodenum and intestine that we have to deal, though there is no doubt
that their functions are greatly interfered
with in acute disease.
Now what foods are we to rely on? Solid
foods? No. The stomach deals with them,
and it is practically at a standstill.
Liquid foods? Yes.
When the pulse turgescence is lowered, and
the fever is less, supply nutritious liquids.
One of the most valuable is milk. It is
valuable all round, for it contains Vitreous
Nourishment (tissue food) - Fatty Matter
And Sugar of Milk (fuel food) - Mineral Matter
And Water. Moreover people who cannot
take milk in health, often can well in
acute disease, because the curdling takes
place in the stomach, and in acute disease
The stomach is digestive, and it passes almost directly into the duodenum, and is then exposed upon (Roberts).

Milk is universally relied upon as our chiefstay in acute disease; but we must be cautious in its administration, and not give it in unlimited quantities, because of its nitrofluous matter.

Here the question comes up, Are the tissue built up in acute disease?

We know that there is a rapid tissue waste, but we are by no means so sure that there is a building up as well as a pulling down.

How nitrofluous food is a tissue food, and if it does not go to build up the tissue, will it not break down and increase the amount of apotred waste?

Milner Fothergill, in his Manual of Diets, is stern on this point. He says (p. 140) "The tissues are melting down under the high temperature, and the danger to life is that the blood is becoming charged with nitrogenised waste, until a condition of malaria (the typhoid condition) is set up. It is the amount of such waste in the blood which is the danger from scalding. To meet this we try to lower the temperature, to reduce the wasting process.
And keep the kidneys in action to get rid of the excrementitious to be matters. How to force ample supplies of nitrigenous food to meet the waste poisoning, is a distinctly dangerous practice, it appears to me, and tending to increase the amount of excrementitious matter in the system.

How we can be on the pill side, and do well in the British Medical Journal Apr 24 1885 also argues against tissue repair in acute disease.

This should act as a warning to us at all events to be careful of the amount of alcohol we order.

Beef tea is one of the crudest we rely on. The common opinion seems to be that all the nourishment of the meat is extracted. This is a great mistake. Robert of Manchester has spoken sharply on this head.

As ordinarily made, it contains the extract of

and others, but its nutritive value is very small—though it acts as a pleasant stimulant. The same remarks apply to

and the meat extracts, such as Litchis, which are edible.

In cases where there is a tendency to diarrheea, beef tea and animal broths should be avoided.
Beef-tea however may be made a vehicle for articles of food value. If corn flour is well baked in an oven for an hour or two, the starch granules are cracked, and partially converted into soluble dextrin (starch) and this can be warmed up again in the beef tea. That is how I generally order it. The flour is partially digested and rendered digestible, an important matter when the digestive ferments are impaired, and it is a valuable fuel food. It is most important to supply fuel food, so that the body may not feed on itself, and so preserve strength, and prevent wasting.

The milk also may contain more fuel food by adding to it the predigested infant foods so largely advertised, as Mellin's, Ridge's, etc., or by adding malt extract or milk lecith. In such a disease as typhoid fever it is important to watch the motions, to see that no culds of milk are present which may irritate the ulcerated bowel. This may be prevented by adding an effervescent water, or baked flour.

A most refreshing drink is a mixture of half milk and half toast-water. Toast water is useful on account of the conversion of the insoluble starch into soluble
dexter, and to the fever-stricken patient relieves his thirst, and at the same time takes a soluble curds-hydration.

Another refreshing drink is lemonade, Made by squeezing the juice of half a lemon into half a pint of water and well sweetening with with sugar. Then it has food value.

In old people and in those feeble to begin with, we must stimulate from the beginning. Let there be no tampering with barley-water alone then. They cannot stand a large call on their strength, and we must look forward, and not merely at the case at the time.

How many a one would weather the disease if only we could support his strength!
The kind of food that is most needed is fuel food. This should be given little at a time, and often.

In the old, especially, we should beware of much nitrogenous food in acute disease. Their kidneys may not be over efficient, and capable of eliminating the nitrogenous waste.

With them in particular we should pay attention to the bowels, skin, and kidneys. We should fain alcohol, and avoid moving the patient once there is necessary.

Every movement is losing up the patient's strength. On the other hand, it is not wise to keep the patient too much on his back, or we may have not only bedsores,
but also hypertonic congestion of viscera. Turning the stool from side to side every few hours will tend to prevent edema and this congestion.

Attention to all these matters may make all the difference between success and non-success. We must also consider the action of alcohol, tea, and coffee. In my opinion, all of these have a marked relation to peptic digestion, and in the evening we have not much to deal with, but principally with pancreatic digestion. The alkaline reaction of pancreatic digestion neutralizes their inhibitory action. We say (p. 67, Diabetes and Dyspepsia) "It may therefore be concluded that with re-

food accessories are practically nil. In no
case did I find evidence of the possibility of
that embarrassment and arrest which occurred in so many instances in the case of salivary and
peptic digestion."

The question of alcohol is too large to take up now. I believe there are no better rules to guide us
in the use of stimulants, if fever than those laid down by Armstrong.

1st. If the tongue become very dry and tanned, alcoholic stimulants generally do harm; if it
become moist they do good.
2. If the pulse become quicker, they do harm; if it become slower, they do good.

3. If the skin become hot and flushed, they do harm; if it become pleasantly moist, they do food.

4. If the breathing become slow and regular, they do harm; if it become rude and rude, tranquil, they do food.

To these Wine adds a 5. Alcoholic does good when it produces sleep, and quells delirium.

At the same time however we must remember that, though to a certain extent alcohol is curiously oxidisable food, it is using up the patient's strength, and that unless we are giving other easily oxidised foods, be our burning without paying back, and the wasting will be greater. It should not therefore be given indiscriminately, and its effects should be watched as carefully as we watch the effects of powerful drugs.

Small quantities at a time of predigested Carbohydrates (e.g. Ducks' or Melli's food, or Malt Extracts) should be given frequently in the milk or beef-tea at the same time.

We can wing the changes in the various foods. Tea and coffee are not contra-indicated, and though they cannot be classed as food, yet as stimulants, and especially as variations from
The necessity rather demonstrate dist the fever-stricken patient is limited to, they will find their cure.

I think this is hardly sufficiently recognised at the present time. We have the great authority of Graves for their use. He says (Clin. Med. p. 142) "You are aware that we use sedatives and narcotics to tranquillise, to produce a species of stupefaction of the mental faculties, and to bring on sleep; and I do not see any reason why we should not also administer appropriate ones, or remedies calculated to maintain intellectual activity, and keep the patient awake. Among the medicines most frequently employed for the latter purpose are tea and coffee." Briez administered therefore, when the patient tends to become lethargic, when his nervous centres are becoming poisoned, they may be of great value.

During acute disease therefore our endeavour should be to supply easily oxidised carb-hydrates, and we should not confine ourselves to one, but vary them; and we should give little at a time and often, as the rule. We should be cautious of giving unripe nitrigenous food, but never. The less milk has stood too long a trial to yield its place as one of the great street auctions
In acute disease.

When, however, the crisis comes; when the troops begins to clear; when the appetite returns and the temperature falls, then there can be no doubt about the necessity of giving nitrogenous food for tissue repair.

But even now our cautious watchfulness must not cease. We must be sure that the organs which execute the waste-laden blood are in good working order. The kidneys in particular should receive our earnest attention, especially in such a disease as Reagal fever, where they have been implicated. In patients past middle age, and the. young, and indeed in all in whom there may be grounds for suspecting unhealthy kidneys, nitrogenous food should be given with exceeding caution.

In estimating the condition of the kidneys, we should not merely trust to the presence or absence of albumen. Now-a-days we are getting clearer conceptions of kidneys diseases, and one of the lessons we have learned is, that the absence of albumen in the urine does not by itself mean a healthy kidney.

In convalescence from typhoid fever,
When the appetite is ravenous, I have often been exercised as to how much solid food to allow, and have erred, as it is my nature generally to do, on the side of caution. The patients have taken it into their own hands, and taken meat when I have been fearful of relapse, or something worse, such as perforation of an unhealed ulcer.

I have seen a good deal of typhoid fever, and the conclusion I have come to is, that in strong young subjects, solid food may be ordered sooner than is usually the case—at least than has been the case in my own practice. In older people, however, more caution should be exercised.

There is a point of great importance that modern physicians are opening our eyes to, in reference to the feeding of typhoid fever.

Lander Brunton in his Disorders of Digestion p. 278 says, Breeger has also found that the typhoid bacillus, when cultivated in peptone, forms no poison, but when cultivated in meat jelly or meat infusion, it forms two poisons which hitherto not yet isolated completely. One of these causes salivation, diarrhœa, and
paralysis; the other causes violent and exhausting diarrhoea. The importance of an exact knowledge of the substances which are produced by the decomposition of various foods by the action of typhoid bacilli on them is obvious.

This should make us careful all through the feeding of typhoid fever. In all probability it explains why a milk diet is so beneficial, though its use has been empirical. When nitrosoean food is indicated, I do not believe in giving the bloody looking compound that results from making beef tea or mutton broth in the proper way—when not only the extractives and valuces but albuminous materials are obtained. If what I have been contending for is correct—if nitrosoean food is harmful during the fever process—then it is not needed. When the fever abates and convalescence commences, the patient will be able to take it in a more palatable form, such as white fish, baked or boiled—not fried as the fatty matter coagulizes into the fibre may prove too much for a stomach just regaining its powers.

Then with puddings, in eggs beaten up
with milk, or alone lightly boiled, or a little chicken, would all be suitable. After a time will come the mutton chop and so on to the normal diet.
IV

ON ANIMAL FOOD.

In this last paper I propose to say a few words about animal food.

My thesis I fear is already too long, so that I shall not discuss the subject at length, but shall as briefly as possible mention a few points that will guide us to a right selection of the kind best suited to the case we are treating.

When we order, or forbid, a particular article of diet it should be from some intelligent reason, and not haphazard.

Before I mention a few broad rules that will prove of service, I would point out the importance of idiosyncrasy. It is always well to respect taste and dislike in the matter of diet. It may be only fact, but it may be more than that. It often is instinctive and nature loathing what will do her harm.

Some people are unable to take fish. A relation of my own for years could not take any without severe disturbance, but lately she has been able to do so. Some change has taken place whereby fish is no longer acted on as a poison. The same lady now can not eat liver.

In one family that I attend none of the
Males can take inulin. This peculiarity is inherited from the father and grand-father.
The females can take it as a rule, but a few of them also are affected by it.
Parry quotes Dr. Penck (p. 48) of a person known to him on whom inulin acted as a poison.
"The could test" says Druck "eat inulin in any form. The peculiarity was supposed to be due to caprice, and the inulin was repeatedly disguised and given unknow to the individual, but uniformly with the same result of producing violent vomiting or diarrhea, and from the severity of the attacks, which were, in fact, those of a virulent poison, there can be little doubt that if the use of inulin had been persisted in, it would soon have destroyed the life of the individual."
Dissimilarity there should be borne in mind.
We should also remember the different degrees of digestibility not only of the flesh of different animals, but of different parts of the same animal. This difference is not only dependent on the coarseness or fineness of the fibres, but also on their closeness. For example, there is a great difference in the digestibility of a prune-chip and a beef-steak, due in part to the relative fineness and coarseness of the fibres; or again a neck of inulin is not so digestible as the meat in the sheep's head, while the
fibres are particularly coarse.
The fibres of the flesh of the rabbit are fine,  
but they are close, and therefore not so digestible as is commonly supposed.
Pork is most indigestible, but this is due to another reason viz. the large amount of fat it contains.  
In addition to these points we must remember  
that though "the flesh of young animals is  
much tenderer than that of old, but experience  
shows that it is more resistant to the digestive  
powers." Parp. p. 143. The instances are  
chicken.

There is a broad rule that applies both to  
birds and fish. It is this — that the  
flesh of those trees are white is more digestible  
than those of darker colour e.g. among  
birds, the flesh of the fowl and turkey are  
much digestible than that of the duck and  
goose; and among fish, may be instance  
the whiting, haddock, sole of cod, as against  
the salmon and Mackerel. The Whiting is  
the "chicken" of the fish tribe, while cod is  
a coarse fibred fish, and therefore not so  
easy of digestion.

But however food the food and tender the  
meat, if it is left out of order digestion  
will be difficult. Especially will this be  
the case if there remain just a few widely  
depressed teeth. Mastication is then far
more imperfect than if there were none at all, as
the gums cannot come together, and the teeth that
are left are almost useless. In these cases the
dentist's aid must be obtained before we proceed
to prescribe any kind of food that needs chewing.
Through Mastication of the food is necessary, not
only that the saliva may perform its work on
the scarcely foods, but that the other proteins
may be broken up as small as possible, for
rapid and easy digestion depends on the extent
of surface exposed to the digestive agent.
A hard lump will take a long time being acted
upon, but if that be broken up into a number
of small fragments digestion and solution is
quickly effected. The same thing is seen in the
case of toast, which it is better at once cold than
hot because in the one case it is easily broken
down into small fragments that are rapidly
digested, while in the other, the butter coats it
forms a pulpy mass that will hinder and inc-
pede digestion.

The importance of using the condition of the teeth
is too often over looked.
The teeth however may be in good condition,
and the stomach may be tolerably capable
of performing its work, but the liver is
incompetent and the patient is bilious.
Generally, though, when that is the case
the stomach will be more or less out of order,
and Vice Versa. The one can hardly be
deranged without the other suffering as well,
owing to the establishment of what Landau
Prelutsky, in his 2nd Confederate Lecture, calls
a "Vicious Circle."
My experience certainly bears out the teaching
of Niclaus to the effect that in biliousness,
animal food should be taken very sparingly.
He argues that the composition of the bile and
varies from the albuminoid elements of our food, for both contain nitrogen,
animal food should be taken very sparingly.
He argues that the composition of the bile and
variants from the albuminoid elements of our food, for both contain nitrogen,
and the same sulphur. He further points
to the fact that persons who are bilious in
their early years are apt to become pasty
in middle age and advanced life." Manual
of Dietetics p. 242.
Another reason for care in the administration
of prostrated substances in bilious subjects
arises from the fact that biliousness and
diabetes may be caused by the splitting
up of albuminoid substances into poisons
by the action of bacilli, even of the diple-
the ferments.
But whatever the explanation may be, I
am certain, from ample experience, that
bilious individuals do best with very
limited supplies of animal food.
But even in the healthy, there is no doubt
that much more nitrobiuous food is taken.
The economy requires that as long as the line is able to deal with its "external consumption," no harm is done. The harder a man works, the more muscles he exercises, the greater will be the quantity of protein food he will require, and the easier will the nitrogenous waste be eliminated. Nine oxygen will be brought to the lungs; the waste products will rapidly enter the lymph stream, and be squeezed out of the muscles by their continued with the mean of sedentary occupation the case is different. If the partakes liberally of protein food, sooner or later he must suffer. His bowels will feel sluggish and constipated in their action. The lymph stream will not convey away the waste matters from his nervous system, and he will feel depressed and dull. In the active frame, the excitement of the circulation, and the increase of the respiratory movements, generated by exercise, pump the lymph stream and carry away the waste products from his nervous centers, the brain and spinal cord (Disorders of Digestion p. 251). In the inactive frame this does not happen, his bowels get hampered in its work, indigestion sets in, and he suffers either
from biliousness in a foul, and in course of time he may develop a cataractic kidney. The diabetic patients it believes in the exceedingly wasteful, particularly when they are strict in their diet, because of the relatively great amount of nitrogenous food they partake of. The codaia they take hinder the elimination of nitrogen- vied waste by constituting the bowels, and hampering the usual elimination of urine, and so tends to uremic poisoning. I will mention a case in point.

I have had under my care for over two years a young lady aged 28, who for the last six years has been the victim of diabetes. She dieted very strictly and regularly, and was very susceptible to codaia. So much so, that I began with a trial dose and gradually increased it up to two. During the whole time she was taking it, she was exceedingly dull and listless. She had great difficulty in keeping her bowels open, and under the codaia the quantity of urine that she passed greatly diminished as also did the sugar. She looked also was very light, showing a deficiency in the elimination of urine. She then began to have tremblings when in bed at night. There were symptoms
But they left her very weak next day.
So much so that she used to dread
bed-time coming.

How these in my opinion were chiefly symptoms
of uremic poisoning, and if allowed to
continue would have gone on to uremic
convulsions. I of course stopped the
codlax and diluted out the kidewp with
hot water warming and warming. This
treatment entirely did away with the
attacks. This case has taught me to be
very careful in watching the effects of codlax
on patients who are taking it.

There is another point that I have also
learned from this case. She is a thin little
woman with small viscera, and I have
seen in this case the importance of frequent
meals, and of having something during
the night such as a cup of tea, or a
little milk and pure biscuit. In fact
like pleurisy, diabetes is a wasting disease
and we have to keep up the nutrition well,
only of course unlike pleurisy we cannot
carefully eliminate the carbo-hydrates
from the food.

There in a previous paper referred to
the cure with which cereal food should
be used in kidney disease.

I do not refuse food because the diet
If the point is so well understood.
I am well aware that much is left
unaided in this paper, but I have dwell
only on those points that I have found
of most value in practice.

In conclusion, I may say that the
study of diabetics lends a great
additional interest to the practice of
medicine, and is the source of suggestive
thought in cases that otherwise might
seem barren, dull and uninteresting.