THE LIVER

A Stereopticon Lecture at the Sanitarium Parlor, Battle Creek, Mich., Thursday, August 3, 1911, at 8:00 P. M.,

By,

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My subject tonight is one that lies very near the heart--the liver. The liver is the largest organ in the body. It weighs three pounds and a half. I met a gentleman a while ago who told me he had an awful pain in his liver, and put his hand on this side of his body, and he forgot which side his liver was on. In Mexico some years ago some one started a missionary dispensary, and a great number of ignorant Mexicans came in there, and I was astonished to see how erudite they were in relation to their anatomies. Everybody knew all about the viscera. One man would say, "Doctor, I am afraid there is trouble with my spleen." I was astonished that one of those Indians in the mountains knew he had a spleen. He knew all about it and knew where it was too. And he made a pretty correct diagnosis, for he did have trouble with his spleen. Another one had trouble with his liver, and he knew where his liver was; you know we Americans, I think, have got so civilized that we have come to neglect our bodies to an extraordinar y and a very dangerous degree. In the public schools even the study of health is left almost entirely to the very elementary classes; when we first began to get l aws requiring the teaching of physiology there was a geat deal of opposition. One teacher said, "I think it is very objectionable. It makes the children shudder to see pictures of their insides." He really thought it was almost wicked for the children to have pictures set up before them showing the interior of their bodies, made them into a spectacle, liable to make them hypochondriac. We experienced a great deal of opposition indeed to get laws passed requiring the study of physiology. But yet it is confined to the elementary schools. We

need to have the study of physiology carried away up into the universities. Nobody every ought to be allowed to receive a learned degree who did not know all about himself. Why see how much time is spent in the study of Latin and Greek. A man spends years learning how to read about Caesar's bridge building. A man spends six months learning how to build his own body or how to take care of it. A girl will learn how to say "a little yellow dog" in four or five languages, and it is nothing but little yellow dog then when she has said it. Now, it is a great deal better to have half a dozen ideas and to be able to express them well in one language, useful ideas, than to have half a dozen different ways of expressing one idea--a great deal better. The most useful things are left out of our curriculum. I feel like making a protest whenever I get a chance against our modern curriculum of education, modeled too much still after the old mediaeval ways--too much respect, too much reverence taught for ancient learning, for the dead languages. These dead languages do us just about as much good, the average, practical way as they did a certain quack doctor down in Indiana. He heard of a case in which a man was convalescent, and the doctor said, "Convalescence,--why, I have cured many cases of convalescence." But that wasn't so bad as another case that occurred of the same man. He heard of a patient suffering frompleurisy. No, it was a little bit different. He was telling about these dead languages and these awful words the doctors were using, enough to scare a patient to death. He said, "For instance, there is e pluribus unum. I have cured many a case of it under the simple name of pleurisy. Now, let us have more practical instruction, and let us have more practical knowledge; as I said, everybody that enters a university or a colleg, let us have him required to have a thorough knowledge of himself before ever he receives a degree of any sort. Why, as a matter of fact, the average man doesn't know where his liver is until he begins to have pain in it, and then he may make a mistake and get it on the wrong side of his body.

Now, this liver weighs three pounds and a half, as I was saying, and

it is one of the most wonderful organs in the entire body. It has more different trades than any Jack-of-all-trades you ever met. It does more different things than any other organ in the body. For instance, one thing--it makes bile, and everybody knows that the liver makes bile; but what else does the liver do? I dare say that very few of you know the many wonderful things the liver does. One of the things the liver does is to help to digest food. Now, did you know that? All of the food that is eaten and is absorbed from these great blood vessels is compelled to pass through the liverx before it goes into the body, into the general circulation; and it is a part of the duty of the liver to act as an inspector of food, examine it carefully, inspect every particle of it and not to allow it to pass along unless it is wholesome. That is the duty of a good liver. And the liver does that work as well as it possibly can. Sometimes we heap upon it such enormous quantities of things that can not be utilized, of unwholesome things, of fats, of greasy things, of highly shortened and highly seasoned gravies, pastries, and various things, and mustard, pepper, peppersauce, tea, coffee, beer and other things of a similar sort,t-we heap all these things upon the liver, for every particle that gets down into the stomach must go through the liver before it gets into the rest of the body; and by and by the liver gets overwhelmed with more work than it possibly can do, and then the poor liver falls down in despair, and you say, "Oh, my liver is torpid." The liver is not torpid; it is simply worked to death. There never was such a thing as a torpid liver. You go to the doctor andwant the doctor to give you something to stir up your liver. There never was a liver that needed stirring up. Why it is impossible for the liver to do any less than its duty. It haxxx is an organ that has othing at all to do but work, andx it works, works, day and night, works while we sleep, as some doctors' medicines don't. You have seen that advertisement, I am sure, in the papers--"It works while you sleep." The liver does that very thing; but the medicine may be doing mischief to you; but the liver is an organ which works beneficently for us; it is an altruistic, self-sacrificing organ.

We take in a great flood of poisons into our bodies, swallow a lot of tea and coffee, and what do you think that liver does? It soaks up all that tea and coffee it can, every bit of it. It calls it out of the blood to save your brain and nerves and the rest of the body from the damage that tea and coffee will do; so the liver soaks it into itself and holds it. It may be there is lead in your water, and the lead is absorbed into the water. Now, when you swallow such water with lead in it, that liver takes the lead out and deposits it in itself till it becomes almost a lead organ. It simply takes up that lead and settles it, deposits it in various parts of its anatomy, so that the blood is saved; but by and by the liver gets worn out, gets saturated with lead and can not take it in any more; then the lead goes right into the body, and then you get paralysis, and you get what is called wrist drop or lead paralysis. That happens because the liver can not longer take up the lead.

It may be that you are subject to biliousness, having headaches every little while, and biliousness. You go to a doctor and the doctor gives you a dose of calomel, or blue mass or something of that sort, and you swallow the medicine and you feel better. I will tell you the reason for that a little later. That calomel which you take has got to be taken into the liver, and part of it is discharged from the body, but part of it goes into the liver, and the liver takes it into itself, sacrifices itself, and is damaged by this deposit of mercury in its tissues; so the liver becomes damaged , and every time you take a dose of it, you are doing yourself a little harm, and the more often that harm is repeated, the sooner the liver will be used up, you see. Now, it is more common with the beer drinker or the whiskey drinker. But it is any poisons the liver is endeavoring to protect the body from, by soaking them up into itself like a sponge. That is why the liver is so badly damaged by alcohol--because it does the brain damage; it takes the alcohol into itself until it is completely damaged and can not take up any more; then the alcohol goes on into the rest of the body, and the body gets the damage that comes from the contact

of alcohol with the living tissues. Now, another office the liver has is to destroy poisons--an orgn in the bo dy that has the pówer to destroy poisons. What a splendid thing a garbage destroyer is, a crematory that burns up the garbage. What a blessing to the city it is to have an institution where all the filth is burned up. Now, that is what the liver is. It is a part of its duty to destroy poisons. There are certain poisons you can not destroy. You can not destroy lead; it is a metal; and you can not destroy mercury or arsenic, iron or other metallic substances which are taken into itself--can ot do that, but it can destroy certain poisons. You kow, if you put lead into a stove it won't burn, but if you put tobacco in a stove it will burn, and when a man smokes, and it sometimes burns in a pipe, too. The nicotin and other poisons of tobacco go to the liver, and the liver can actually burn up some of that poison and destroy it. If it were not for that fact, the first pipe or cigar a boy ever smoked would kill him. There is enough poison in a single cigar to kill two men, and the first cigar a boy ever smoked would kill him on the spot if it were not for that fact--that his liver fights for his life and destroys the nicotin and so saves him; and the liver goes on doing that every time the man smokes; every cigar he smokes, every cigar a man smokes, every pipe, every quid of tobacco that is taken into a man's mouth, goes through the liver, and the liver ordinarily saves his life and destroys the nicotin he has taken into h is body. That is one of the wonderful functions of the liver,--all the time destroying poisons. Now, it is the same thing when you take a cup of tea or coffee. The liver takes up the caffein and holds it in itself and helps to destroy it. That is the same thing that happens when you take beefsteak, for example. Part of the business of the liver is to destry uric acid. It burns up uric acid, converts it into urea which is a comparatively harmless thing. When you eat beefsteak or mutton chops or meats of any sort, flesh, fish, or fowl, any kind of flesh, living, animal substances,--when you take it into the body there is uric

acid taken in along with it. There are fourteen grains of uric acid in every pound of beef--fourteen grains. Now, the liver has ordinarily to deal with only six grains--less than that; six grains of uric aid is all the liver has to deal with. The liver can convert six grains of uric acid in a day. That is a day's job for the liver; and beefsteak contains fourteen grains of uric acid to the pound. That poor liver has got to do two and one third days' work for every pound of beefsteak you eat, or mutton chop, or fish, or any other sort of meat you swallow, the liver has to do that extra work. Suppose a man eats two pounds in the course of a day, then the poor liver has got almost five days' work to do for that meat that is eaten that it never ought to have to do at all. Now, if it were a dog's liver, it would be differet, because a dog's liver can do four times as much work as a man's liver. It is accustomed to a meat diet ; it is naturally adapted to a high protein diet that the dog is made to eat, and it has a liver four times as big as a man's; that is, a dog that weighs as much as a man would have a liver four times as big as that man's liver, and that dog's liver has four times the capacity of man's liver; and the turkey buzzard's liver is about a ten horsepower liver. A turkeyxs buzzard's liver can burn up a whole lot of poisons and can destroy a whole lot of uric acid and otherfilth. It is a regular crematory, but a man's liver, not being intended for that sort of diet, has a smaller capacity for destroying these poisons. Its regular job is to destroy six grains of uric acid in a day. Well, now, if a man eats sweetbreads, that is a delicacy I dare say many of you perhaps before you came here, have eaten--sweetbreads, and you thought it was a very nice delicacy. You know it tastes much different from beefsteak--so nice,--because it has more uric acid in it.If you should wash it and wash all the uric acid out of it, it wouldn't have any flavor at all; you wouldn't care for it. It has got a large amount of uric acid in it,--70 grains of uric acid in one pound of sweetbreads--seventy grains. That is a heaping tablespoonful of uric acid in just one pound of sweetbreads.

I told that to a man some time ago, and he fairly blanched, turned pale. "Why, Doctor," he said, "I have eaten two pounds of sweetbreads at a meal. A sweetbread doesn't amount to very much, you know; it all shrivels up when you come to cook it, and it takes about two pounds to make a good meal." He said, "My wife has been getting them for me every day, because she thought they were specially nice for me." But that wasn't very good. His wife had been loading him up with 140 grains of uric acid every day, had been pouring it into him. That is two heaping teaspoonfuls of uric acid his wife had been giving to him. A woman wrote me from Minnesota some time ago that she had made a new discovery, found how to cure dyspepsia, and she wanted me to know about it right away so I could try it you see, because she knew we must have a great many dyspeptics here. She had been trying it on her husband and it worked first rate. Her remedy was a tablespoonful of gravel, small gravel, after dinner every day; not the largest gravel, she said, but just the moderately fine gravel. I have not tried it yet, but I imagine that woman's gravel was so much better than the bread she had been feeding him, and the cooking she was giving him that he thrived on it.

Now, the liver has something else o do, some very important business. Every second of our lives, cells in the body, living things are dying. In the blood there is the blood stream coarsing through the veins and it carries millions upon millions of blood cells. There are thirty thousand million million blood cells in the human body. That is a lot isn't it. And these cells are dying all the time. Eight million of them die every second. Every time the clock ticks eight million are gone. Now, they have got to be disposed of in some way. You know in the big cities they have certain wagons go around and collect dead animals, dead cats, dead pigs, dead horses, cows and so on,--dead things they find lying around the back alleys,--gather them up and carry them off somewhere to be disposed of. Now, the same sort of process is needed in the body, because the blood cells are dying and they must be disposed of. The liver is the place where they are dealt with, where they are disposed of. These

dead animals, you know, in the cities, are taken over to the rendering establishment and there made into all sorts of things. The hides are made into leather, the bristles are used for plaster and other things, combs and things, and the hoofs are made into calves' foot jelly, and the muscles and bones are ground up into fertilizer, and the fat goes into oleomargarine butter. Over in England not very long ago they found a new adulteration of coffee and they could not make out what it was until they made an investigation and found out after while that it was roasted horses' livers. So something is done with the animal. Every patticle of it is used. Old Mr. Armour says he used the whole of the hog and nothing escapes him but the squeal. Most of it goes down the throats of the people too. The liver does the same thing. It deals with those dead cells that come along. Every one of them is a little living creature; it takes these cells and works them over into various useful things. The potash which they contain goes down along with the bile to make soap in the intestine. The fat we eat is made into soap, and it can not be absorbed unless it is made into soap. Now here is a process very similar to what used to happen at the old farmhouse where there was a leach barrel out behind the barn, and you used to carry water out. I remember very well when it was a part of my daily task to carry out several pails of water and pour into the leach barrel, and the ashes would drain out into a kettle which caught the lye; and by and by when sufficient had accumulated, a great big iron kettle was brought out, and the little bits of soap that had accumulated, and the lye were put in together and boiled, and we had soft soap for laundry purposes. Now, the liver does the very same thing. It collects all this potash, alkali, out of these cells, and it sends it down into the intestines, and makes soap of it, converts the fats into soap, and that makes it possible for it to be absorbed. You know you can get fat off your hands when there is alkali on your hands, because it renders it soluble. Caustic potash combines with the fat and makes soap of it, and the soap dissolves in water, so you can wash it away. It is exactly so with the fats we eat; we could not uti-

lize them in the body if they were not first made into soap which makes them soluble so they will be absorbed along with the water. Now, that is a very useful fact. It is an economical arrangement. Another economy that is operated in this way by the liver is in the coloring matter. We have to have some coloring matter to color the hair. As the hair is growing out, we need new coloring matter to color the new hair that is growing; and we need coloring matter in the eye. There is a very curious arrangement in the eye by which we see things. The photographer takes a picture of a thing by the image being formed upon his sensitive plate, and his picture is thrown in dark lines through the influence of the sun. Now, the back part of the eye is an opposite arrangement. There is a dark screen on the back of the eye, a dark curtain, you know, up there on the back side of the eye, and the objects we look at are produced upon this screen by a bleaching process; the rays of light bleach out this dark color which is on the screen, so the picture is made in pure white, bleached out by the light. You know how sunlight bleaches out the spots out of the muslin. You put the things out and let them bleach in the sun so they get white. In the same way, all the rays of light bleach a picture upon this black curtain at the back of the eye. So we need coloring matter to re-color the curtain, to paint it again, to keep this dark room in the eye dark, to keep it black we have to have a continual supply of coloring matter. Now, this coloring matter comes from the liver. The liver saves up all the little particles of color that are found in the red cells that die, gathers them up, sends them back to the body to be used in tinting the skin, the hair, the eyes and other parts of the body. So you see the liver is a wonderful organ.

Most wonderful of all its properties, most useful of all, is this process of poison-destroying, this antitoxic function of the liver by which it destroys poisons. Now, I will tell you some more about that. The liver is not able to destroy all the poisons. Some of the poisons that are taken in escape. Here is this wonderful organ we are talking about, showing its several lobes, you

see; and here is the gallbladder where the bile is stored up; and here is the large vein that brings the blood into the liver, and here is the large vein the blood is discharged into after it has been purified and is carried on up to the heart to be distributed to the rest of the body. This shows the liver cells that do the work, and where the blood is circulated between these rows of living cells which inspect the blood as it passes along through the arteries and permeates the liver, soaks out into the liver where these wonderful living cells inspect the blood and take the poisons out of it so far as they can. Now, here is a wonderful experiment I saw performed at St. Petersburg four years ago when visiting the laboratoryof Prof. Pawlow where I spent a couple of weeks through his courtesy. Prof. Pawlow told his operatives there to make any experiments I wanted made. This was an experiment I didn't ask to have made, but one that was being made by another professor in the city. It was an operation performed upon a dog. Here is the large vein that carries the blood upto the liver, carries the foodstuffs, poisons and everything else collected from the different parts of the body, carried through this large portal vein into the liver to be purified, then goes out of the liver, on up to the rest of the body to be used after the poisons are taken out by the liver. Now, this experiment consisted in cutting this portal vein so that the blood instead of going to the liver would go into this large vein so it would escape the process of purification in the liver, and the vein is tied here you see so that no blood could pass through the liver, and all the blood went at once into the vein. Now, this dog on which the operation was performed got along all right, seemed just as happy as any other dog. In a few days he was eating and getting along just fine, so long as he adhered to a special diet. It was found that so long as this dog ate bread and milk he was in perfect health, just as well as any other dog, had no trouble at all; but as soon as he was given meat, even a small portion of meat, he began to get sick, and if he was fed meat for three days, he was a dead dog. Now, a dead dog doesn't amount to very much. Now, I want to say to you, my friends, that some of you have

livers pretty nearly as bad as that dog's liver. Some of you have livers that have been abused so long, have become so crippled by the long continued abuse by tea, coffee, papper, and the uric acid you have put into your livers, and poisons of various other sorts--mustard, pepper, peppersauce that has to be strained from the liver, the whole thing. These things make a little tickle in the mouth, but that is not the end of it. I met a man some time ago who said he liked pepper, and mustard because they gve his palate a twist. I said to him, "But you have forgotten it doesn't stop twisting with your palate, but keeps right on twisting, gives your stomach a twist, and gives your a liver a twist, and just keeps right on, and by and by gives your liver a nervous twist, and then you think it is lazy. Now, every man who has been a meat eater a good many years, every woman who has been a coffee drinker for a good many years, every man who has been a smoker, everybody who has abused his liver by gormandizing, everybody who has used alcohol, wine, beer, who has been a user of mustard, pepper, peppersauce, ginger, and those unwholesome things,--every such person has a crippled liver. More than that. Every person who has suffered from constipation for years, whose bowels have not been regular, who has had a coated tongue; particularly every person who has lived for years with a coated tongue, has certainly got a crippled liver, and it is important he should know it. If a dog had had this operation performed, and you wanted to keep him alive, it would be a very important thing to know that that dog could not eat meat. As I said, some of you have livers just about in this condition, haven't got to be quite so bad, perhaps, yet I think probablyhalf of this audience, in fact, every person in this audiene, whose life will be considerably shortened by the use of meat, tea, coffee, and these other things; and for the reason that all these things help to wear out the liver. Now, I am not telling you what I am saying upon sentimental grounds; I am not telling you I think it is such an awfully cruel thing to kill the poor beast; that it is such an awfully wicked thing to sacrifice the meek eyed ox. You haven't heard me say a word about it; though I am perfectly

frank to confess those arguments appeal to me very much. I was very much pleased today when I was sitting in my office with Judge Ben Lindsay, and I saw him discover a miller--just come in from outdoors--he discovered a large miller on his coat, and I was exceedingly pleased to see him delicately by the tips of his fingers drop it off upon the floor and let it go. Some people would have smashed that miller the very first thing, but he picked it up in the most delicate way and sent it off flying in the air. He said nothing about it and I said nothing about it, but I could not help observe it. I said to myself, "What a kind heart this man has that leads him to help boys, and it does not stop with boys." He has a fellow feeling for everything that lives. I confess I have something the same sentiment; I would not kill a beast; I would not take his little life away, the joys he is experiencing, the pleasure of living that he has, that God gave to him,--I would not take it away unless it was a dire necessity. But I said I am not presenting those arguments to you at all, but am simply giving you the solid, scientific facts that no physiologist in the world can say a word against--the facts you can read in scientific books, that are produced in laboratories by men who have not the slightest idea of diet reform. My business is to gather up the results of this experiment, to find out the relations of the researches that are carried on, and to gather up these results and present them to you in their proper bearings so I am telling you about the liver here and how it is abused, and what happenes to it when it is abused . Here is a living demonstration in this dog that is so fixed that his blood can not go through his liver; that is, that the uric acid which he swallows with the meat, that the poisons that are produced in his own body, can not pass through his liver,--that dog dies of poisoning in just three days. No dog has been known to live longer than that.

There is a liver that is normal, healthy. This is shown over the upper surface. The other day I examined a man whose left lobe was four times as big as it ought to be, as it is here. A few days ago I was operating upon a man

and I had to open the abdomen, and I had to feel his liver, and the liver was away down, and this part of the liver was two or three times as big as it ought to be, and was seriously enlarged and congested. It had become so large by long misuse. Now, sometimes some poisons,--always probably more or less poisons get through, and we have other glands that are necessary and useful in destroying poisons. This gland here in the neck that makes so much trouble is one of those glands. The thxyroid gland is an antitoxic gland which works at the same business the liver does; it only has one branch of it. The business of the thyroid gland is to make a poison-destroying substance which helps to oxidize the poisons that get through, the subtle poisons that escape the liver. The thyroid gland here has for its work to capture these poisons and destroy them, so it produces a peculiar substance known as thyroidin, and this thyroidin is useful in the body as a means of helping to burn up these poisons. Here you see the thyroid gland again. You see just the location of this gland, and notice the shape of it. You see there is a gland on either side, and a little connection here between the two. This is a masculin gland. Here are the lungs just below the larynx. This is a masculin gland, and the next one is a feminine gland, because it has another central portion here. Very curiously, the thyroid gland of women is a little differentx in shape; it has this central portion; sometimes it is larger, sometimes smaller. It is the purpose of this gland, as I have just told you, to destroy poisons. We hear a great deal nowadays about Graves's disease, or expphthalmic goiter that didn't occur very much twenty-five years ago. That is a disease in wäch this thyroid gland enlarges, and becomes very active, and the heart becomes very active, and the heart beats perhaps 13-140 or 150 times a minute. I have seen persons here with a pulse rate of 170, suffering from this disease. Now, these patients are suffering from the results of the over-excitation of the thyroid gland. When an organ in the body is excited, it enlarges. Suppose a boy who is prepared to be a runner, or a sprinter, and he runs too fast, too hard, too long, his heart becomes enlarged, and he has hyper-

trophy of the heart, and it beats so fast and so hard and sends so much blood into his head that he can not go to sleep at night, but suffers from insomnia, too much blood in his head. Now, we have to put that boy in a quiet condition, and apply means to lessen his heart action, and we have to keep him in bed a month, or perhaps two or three months, because of his excessive heart activity, and that allows the heart to get quiet again. Now, the thyroid gland becomes enlarged in the same way; it has worked too hard, and the thing that overworks the thyroid gland, one particular class of poisons is the poisons that are found in meat. Now, you want to kow how we know that? I give you a very good proof of it. In the experiments to find out what thex was the function of the thyroid gland, some German ingestigators removed the thyroid gland in a number of dogs, and these dogs in a few days were dead , died in afew weeks at most. After a few days they began to have peculiar symptoms, and in a little while they began to have fits, or convulsions, and in a few weeks more they were dead. Another investigator made the same experiment upon rabbits, and the rabbits did not die; the rabbits lived. The investigation was taken up again, and it was found that when the thyroid gland was removed from dogs, and these dogs were fed upon arabbit's diet, the dogs lived. The reason why the rabbits did not die was becuse they were vegetarians. These rabbits ate no meat. When the dog ate no meat, the dog did not die. So that was avery significantthing. Now, the man who discovered that made no dietetic use of it, but went on eating his beefsteaks just the same. When I learned of that fact some fifteen or sixteen years ago, I said, "That settles it the meat question for me forever." I was not entirely settled at that time; I didn't now but sometime I might change my views; but I have not eaten a pound of meat in 45 years; still I have been open to conviction all the time, but when that fact was made known, I said to myself, "That settles the question absolutely, forever, because if a dog can live, and live all right on a diet of bread and milk and other things without meat and eggs and such things, and when he begins to eat meat he dies, that is absolute proof

that there is something in that meat, or that something comes from that meat which produces convulsions in that dog, has the effect to produce convulsions, and I didn't care to eat it. It is also proof that a crip led body may be able to get along and to live under adverse conditions on a diet of bread and milk, or other foods when he would succumb at once on a diet of meat. In other words, that shows conclusively that meat is not a strengthening diet, that it is not a wholesome diet for a week person, but is the very last thing he ought to eat; it is a burden to the body, imposes extra burdens upon it, and instead of being a healp to it.

Now, there is another very interesting thing I might tell you right in this connection. The older form of goiter which has been well known a long time, in which there is a large neck and the goiter becomes filled with cysts, but without symptoms of exophthalmoc goiter,--rapid pulse, bulging eyes and other unpleasant symptoms, the cause of goiter has been studied for a long time, and it has not been until very recently, that it has been known what it is. It was thought at first it might be due to climate, or due to a lack of sunshine, ot due to dampness in the air, and various causes were attributed to it. It is a very common disease in certain deep valleys of the Alps. I visited tose valleys partly on purpose to study the subject there. They have people going about with enormous goiters. Men have goiters as well as the women there, but the disease is most common generally in women. I saw one man on the streets with a goiter so large he had to have a band around his neck to hold it up. They are very proud of them, and they go along and compare notes on the streets to see who has the biggest one. They are more or less demented, these people are, in connection with this large gland; there is a mental depreciation. Now, it has been found in recent years that certain wells in tose regions produce goiterous water, known as goiter wells, becauss people who drink the water get goiter. There is no doubt about it, because they took this water, put fishes into the water, and the fishes got goiters. & They gave it to animals

to drink and they got goiters. But other wells right in the same region only a few miles away,--the water of these wells did not produce goiters. A doctor who was also a geologist xkxx made a careful investigation of the matter two or three years ago, and he traced up the strata from which the water came, of all these various wells. He found the water came from various strata. Some of the water came from limestone strata, and some from sandstone strata; but the goiter wells were different from the others. The goiter wells in every case derived their water from old seabottoms, fossil beeftea, fossil extract of meat, don't you see? Certainly it is a very interesting fact. We will know more about that after a few years. Personally, it was a very curious coincidence that the goiter wells should be springs from old fossil deposits that date back many thousands of years.

Here is another interesting gland, the pancreas, that lies behind the stomach, adjacent to the liver. Here is the spleen at one end and the liver at the other end. The pancreas also has something to do with the poison-destroying function of the body, and the lymphatic glands, and the spleen also work in the same business, and the muscles even have something to do with destroying these poisons. So the body is very active in destroying poisons. The destruction of poisons is a function which is very largely provided for. And here is another curious thing--a little apron that hangs down in front of the viscera just within the abdominal wall commonly known as the call, or the omentum, which is the scientific, anatomical name; it is a sort of apron attached xxxxxx along the lower border of the colon, and hangs down over the intestines. Now, whenever I open the abdomen, as I have to do every week, sometimes a number of times, in the number of cases I always look to see where this omentum is, because I expect to get some hint from it. The omentum is active in destroying poisons, and doing various other things. The omentum is called the abdominal doctor. If a man has appendicitis, has pain in his side, when we make an examination, we find this omentum right down there in that corner, gathered up there and the

rest all perhaps will be uncovered. I made an examination and didn't find any omentum at all; there was none here in sight. On further examination I found it all away up here. I said, "There must be some mischief up there, or the omentum would not be up there;" so I went inquiring around and found some gall-stones up there. There hadn't been any symptom of them at all, but there they were, and the omentum was up there taking care of them, looking after them. The next case was a woman brought in from the city who was nearly dead, given up to die as a hopeless case. He had a ery high temperature, and I made an operation hastily hoping to save her life, but I found the gallbladder was surrounded competely with the omentum, and the omentum held the gallstones that were discharging in that case, but the omentum was wrapped around the gall-bladder, so that none of the gallstones got loose in the abdominal cavity; so allI had to do was to put in a little drainage tube and carry it out to the outside; and in a few weeks that woman was perfectly well. There were 107 gallstones in that case. Her life was saved by this wonderful omentum. There is a marvelous intelligence displayed by this very interesting little orgn. It is useful also in destroying poisons; but notwithstanding this wonderful provision made for the destruction of poisons, some of them still escape that we take into our bodies, particularly if we take in larger quantities than these organs are able to deal with. Now, for instance, we have in all our foodstuffs more or less poison substances, that is, in very slight quantities. For instance, when one eats an orange, there is some oil of orange in connection with it that is not wholesome for men to use; it is not food. In the very minute quantities, it does practically no harm, but the foodstuffs wich we eat are converted into poisonous substances to a considerable degree. The process of eating and assimilation is a process of food furnace, a burning. Eating is feeding the furnace, and the process of living is really a process of burning. The food is fuel the body burns up, and the products are poisons just as smoke and ashes are poisons. Now, the smoke goes out through the lungs, and some of the as and the ashes are carried off

through the kidneys. Some of these poisons are destroyed, as I have already indicated, like the uric acid bein converted into urea, so the body has always more or less of this poison-destroying work to do, considerably more to do. When we add to what the body itself makes, others like tea, coffee, pepper peppersauce, alcohol, and various other poisons to which the civilized representatives of the human race have become so much addicted,--when we do this, the result is the poison-destroying organs are overworked, they are worn out, and we become old prematurely, because poisons accumulate and other mischiefs occur to which I will call your attention in a very few moments.

Here is the kidney whose duty it is to carry off what is left of the poisons. Those that can not be destroyed in the body must be carried off in some way, and it is the duty of the liver to carry them off. Here is one little organ I want to call your attention to, at the top of the kidney that we are beginning to hear a great ddal about, and we didn't used to hear anything about--the adrenals, or the suprarenal capsule. It is like an English soldier's cap you see upon the top of the kidney here. Its work is entirely different from that of the kidney. It is very similar in its work to the thyroid gland. It works in conjunction with the thyroid gland, sort of team work between these two organs, and each one does a part of a certain work in the destruction of poisons. Now, one particular thing this suprarenal capsule does is very interesting. Some of you have noticed brown spots on your hands. The most of you have noticed sometimes brown circles around your eyes, noticed perhaps, dingy complexion in yur skin, and when you got bilious particularly you noticed your skin got a yellowish color, and you wondered why it was. I saw a man today whose hands were all covered over with these brown spots, as spotted as a liver. This brown coloring matter is a poison formed in the colon, known as Brenz catechin, a peculiar poisonous matter which is brown in color, and it is the duty of the suprarenal capsules to destroy that particular poison. That is one thing hey do. I do not think that is their original duty, but they are capable of doing

it, and so long as the suprarenal capsules are capable of destroying these poisons, they keep the skin clear, and fresh and clean and bright, its natural complexion; but when the suprarenal capsules become diseased, then the poisons accumulate in the body, and the skin may become even a bronze color. In the disease known as Addison's disease, the suprarenal capsules become degenerated so completely they cease their activity; then this brow coloring matter accumulates and the person becomes bronzed as an Indian. That is the principal cause of this disease. Some time ago a lady came here with that bronze color, thought she had Addison's disease, but when we came to see her tongue, that explained her difficulty. Her tongue was terribly foul, and when we came to examine the bowel contents, to make a fecal examination, we found such horribly putrid stools, such quantities of poisons I said at once this woman was curable and that we would correct tose awful conditions. If she could live in that awful state of things, when we get rid of this trouble, of these terrible poisons, she can live; and she did. She went away with as clear and milk white complexion as anybody could wish, and it was wholly the result of stopping the inflow of these poisons and getting rid of them.

Here is the machinery of the kidney! Here is the artery that brings the blood to the kidney, and the veins that carry back the blod. Notice the arteries are larger than the veins. In every other part of the body except this, the veins have twice the capacity of the arteries, and there is high pressure in the arteries and low pressure in the veins. Now, in the kidneys the situation is reversed, because the heart pumps the blood into the arteries, and the veins are simply like irrigating canals to carry away the blood that has been used. The arteries here are twice as large as the veins, and the purpose of it is so that the pressure in the blood will be twice as high as other parts of the body, and the purpose is to cause the liquid part of the blood to be forced out, and it runs down through this canal here, a long tube. It is quite a long tube, and the blood runs down through this canal, the watery part of the blood, the serum

of the blood without the cells; it has to keep open, and this serum is inspected by cells located all along the line here, and these cells take out of the blood as it comes down all the salt, chlorid of sodium, which is in solution there, and it is taken back into the blood, and the uric acid and urea and other poisons are poured out. There is a swap that takes place. Now, it is necessary, then, that these arteries sould be big enough, and when poisons are circulating through these arteries in great quantities, they become irritated, swelled, their walls become thickened, and they become degenerated; then the whole kidney is hard, and this hardening of the kidneys--that is chronic Bright's disease; that is what it is; and it is due to degeneration of these little arteries, and the obstruction that comes in consequence.

This shows what happens to the liver when the liver is over-worked. You see here cirrhosis of the liver, cancer of the liver, and I have seen all of these different kinds of liver many times in operating upon people who suffered from cancer or other troubles, and have verified these observations I am showing you here. Here is a healthy kidney, a kidney adapted of a beer drinker, a congested kidney, and a gin drinker's kidney. The beer drinker's kidney is almost white because it has lost its natural structure, and is no longer useful for normal purposes.

This shows the colon in its normal position. Here is the caecum and the small intestines drawn aside; here is the appendix and the food that has been swallowed and digested passes down into the colon here for the nutrition of different portions to be absorbed. Here is the sigmoid flexure. Observe the caecum, where it is,--high up in the pelvis, not low down, but away up near the very top part of the crest of the ileum; and it has come down here into the hollow of the hip bone; and it passes straight up here and across, curving up here just a little opposite to the opposite side; then it passes down, and down here to the bottom, before it passes to the rectum, there is a little curve shaped like the letter S called the sigmoid flexure. Now, this is the normal colon.

Here the food is deposited. Suppose, then, that some of the food is left in the colon here, has not been digested and lies here in that colon. What happens to it? If it is starch, it ferments, and the product of fermentation will be simply an acid. If it is sugar it ferments and produces an acid. If it is meat it rots, it decays. A piece of beefsteak lying down here in the colon will undergo the very same change that takes place in a dead rat, in a closet. The very same thing; and that is the reason why some people go around with a dead rat smell in their breath--because they have got something just like a dead rat lying down in the colon. Some people go around with a whole menagerie in the colon of dead things--rabbits, squirrels, dogs, pigs, cows,--well you can not tell them all, I suppose people are going around with fragments of ten or fifteen different beasts lying around there rotting in the colon. It isn't any wonder that the skin is a tan color. It isn't any wonder the tongue is coated when there is such a state of rottenness here. Metchnikoff tells us about the parrot in South America that lives upon bananas, and the fecal discharges of that parrot have the fragrance of bananas, and are no more offensive than bananas. They are simply the portions of the banana. Now, tell me, will some one--you cannot tell me, but I want you to think of it,--tell me if you possibly can any reason why the food which we take into our mouths at the table, clean, sweet, pleasant and agreeable, why in passing through our bdies it should be polluted, so that when the residues escape from our bodies they are so loathsome, so putrid and horrible--tell me why. There absolutely is no reason. There is no reason why the mouth should soil the food any more than the hands. There is no reason why the stomach or the intestine should soil the food or pollute it any more than the exterior of the body. It is because the interior of the body has become corrupt, because it is unclean that these clean stuffs we put into our stomachs are polluted in passing through our bodies. Now, if you should put clean milk in a sour pan you know just what would happen to that milk; it would be sour in a short time. So if we put clean food into a polluted, corrupted,

putrescent colon, the same changes will take place in it. We had a man with us here some time ago, quite a distinguished professor, Prof. Webb, the man who invented the word method of teaching reading to children. Prof. Webb years and years ago came here, an awful dyzpeptic, and he said to me in describing his case, "Doctor, my stomach is an old swill barrel. And on investigation, I found he was pretty nearly correct about it. His stomach was polluted, and everything he put into it became polluted at once, so that if there was clean food, pure, sweet food put into such a stomach, it must be polluted; and if a contrary condition existed, it would not become polluted. When a baby takes its natural food, a baby that has nursed its mother, its bowel discharges can be put away in a bottle and be retained six months without ever undergoing any change at all. When its stoolsbecome putrid, the doctor knows right away there is something the matter with the baby. When the stools begin to have something of a malodorous character such as is common in grown people, the baby is sick; the mother sends for the doctor, and the baby is likely to get sicker and to die, because it means simply that putrefaction processes are beginning. Now, when that baby is born, within six hours in summer time and twenty hours in winter time, the colon here becomes inhabited by friendly germs, germs that take possession of the colon and keep out the unfriendly ones, because the colon is a place where putrefaction can take place only when the conditions are favorable. The friendly germs produce acids, and the putrefaction germs produce alkalis. The putrefaction germs can not grow in an acid medium. I am sorry I neglected to have that beefsteak broughtx up, but we will see the next time that we have it here; it was put into yogurt buttermilk two years ago the seventh day of last June, and it is perfectly sweet and intact yet; and it can not decay, because yogurt buttermilk contains lactic acid products, contains these friendly germs. Now, the baby is fed upon xxxxxx milk, its natural food, and these friendly germs are supplied by the wonderful providential order of Nature; these friendly germs take possession of the baby's interior and produce lactic acid, so the putrefaction germs can not grow unless

they are taken in in very great quantities.

Now, when we swallow meat, we swallow a great quantity of putrefaction germs with the meat. Put the beefsteak away in a warm place twenty-four hours, and it would be in a horrible state. It is rotting, it is like a corpse, just like the body of a person that is dead. That dead animal will undergo putrefaction and decay just as rapidly as the body of a dead person. The dressing and removing the viscera helps to preserve it, but nevertheless, beef in cold storage, the putrefaction process is going on, it is advancing all the time, for there are germs that grow almost down to the freezing point, and they produce poisonous matters but do not produce the odorous matters, and consequently the cold storage meat smells all right when it is full of poisons, swarming with this putrefaction. Examinationof meat shows that every morsel of meat, every small morsel not bigger than the tip of your thumb contains anywhere from twelve to fifteen up to two or three hundred million germs, putrefaction germs that are capable of setting up this process of decay in the intestine. When one swallows a live oyster, for example, he is simply swallowing a mass of these living germs which the oyster has collected from the slime and ooze of the ocean bottom, that the oyster lives on, the rotting things that are down therein the ocean bottom, which constitute the oyster's diet and bill of faire, that he gathers up into his interior and his stomach and intestines are just full of these germs. The oysters are taken up into the rivers, fresh water, you know, to take a drink, a drink of fresh water so the oyster will swell up, for in the fresh water they become twice as big as when in the salt water, so it doesn't take so many for a quart , and that is called giving the oyster a drink, and the oyster drinks in with the water the sewage that comes down the river, so he gets typhoid fever germs, and other germs in that way. Well, various sorts of germs are gathered in in this way that are fed, communicated to the intestine, until 161 different species of germs have been found here in the human intestines. That is the way they get in. These germs produce various poisons. Sixty or more of them are poison-forming

germs and they produce various kinds of deadly poisons, and now see what happens to a great number of people/ Their colons become redundant. Through neglect the colons have become overfilled, distended until it becomes redundant. For instance, this man's colon was became so muchdilated that it dropped away down there . That sigmoid flexure that used to rest away over here, rested clear over here to the umbilicus and comes down here. Sometimes the caecum gets far down and presses upon the rectum and forms an obstruction, and in many cases one of the causes of chronic inactivity of the bowels is this thing. Here is a diagram of a case I encountered some time ago, and you see the central portion falls down, and the cecum falls down, and it makes a drag upon the hepatic flexure here of the colon, and a drag upon the splenic flexure. These two points of the colon are attached so that when the rest of the colon falls down it pulls forward and makes a drag upon the corner here, makes an obstruction, and the pain will be felt in the side, a constant pain in the side which will be attributed to the kidneys or some other organ that is nearly always in the colon. Down here you see what has happened to this colon. It is in a state of colitis, and the colon is contracted so it is too small, and that dams everything back. So the caecum is greatly distended. This caecum lying upon the rectum causes the rectum to be obstructed so there is additional mischief. One mischief leads to another. One of the most difficult problems we have to deal with is these redundant colons. Here the sigmoid flexure has come to be five or six times as large as it was originally, and it only needs a little twist to make an obstruction, and that is a form of obstruction of the bowels which is not very uncommon, and it is very difficult to deal with. Here again you see another large colon. I have seen many cases of this sort, and the colon dropped down in the center becomes obstructed in there, then the patient suffers apparently from intestinal inactivity. That is why it is so difficult to overcome some of these conditions. The colon is crippled, it is too long, has extra folds and extra twists and turns that are unnatural, and sometimes it is neces-

sary on that account to use artificial means of some sort, by adding increased bulk to the foods. That is why C olax and Colaxin are useful in helping crippl ed colons; and by means of food and by means of treatment, and by means of abdominal belts and appliances, internal and external, these crippled colons must be helped along. Some of them must be helped along for ever. The important thing is to know bw to manage it, for there is more mischief comes from the colon than from any other part of the body. There is no doubt about it; these poisons that come from the colon, due to coffee, tobacco, alcohol, mustard, pepper, peppersauce-- all these poisons have beenexperimented upon, injected into animals, and the results noted, and it has been found these substances are capable of causing hardening of the cells and of the arteries. Here is the normal appearance of an artery, but the interior has been thickened, and as it thickens this delicate lining membrane which you see here has been inflamed, and the whole wall has become thickened, and the calliper has diminished, and it has got harder; it is like a water pipe that has sediment accumulating inside of it, so you see here the x space through which blood can pass is very greatly diminished, and this condition is that known as arteriosclerosis. That is hardening of the arteries, and it causes rise of blood pressure. And every person who has permanent rise of blood pressure above 140 or 150 has this change going on in his body. It is very important to discover it early. This shows the changes that take place in the arterial walls. They first undergo fatty degeneration, then they stretch, they become weak in spots, and aneurisms form. If this does not occur, then they become chalky and hardened, so that the artery feels in the wrist like a pipestem, and afterxx while like a broken pipe stem. Here is a case in which the X ray showed the artery of a man's leg. Here is the bone, you see, and incidentally it showed also the femoral artery, but you can see the shadow becoming chalky so it is visible to the X ray. Some time ago I had to amputate the leg of a man whose leg began to decay, and gangrene set in. I made up my mind it was due to this. And when I came to cut off the leg my knife came against something which

felt like a stone, and I discovered I was cutting a stony artery, an artery that had changed to limestone, so that the blade was dulled, and it felt gritty and hard under the finger. There you see a picture of it.

Now, this picture shows some of the germs that make the mischief. These are the germs that actually make this sort of mischief. In a case I met some time ago, 95% of the germs found present in the stools were these putrefaction germs. These are put down in the reports which come to you as gram negative. Under the influence of treatment and change of diet, and by means of the friendly germs that we give, the ferment, yogurt, and other friendly germs, that condition was changed. These long bacilli you see here are friendly germs. These are the yogurt germs, and they have driven out in the course of a few days the weaker, unfriendly germs. Now, the difficulty is to keep them there. When one eats meat these putrefaction germs grow because they thrive upon meat and friendly germs do not. The friendly germs are encouraged by starchy foods, by farinaceous foods, and by such foods as malt honey, and sweet fruits, and malt sugar. That is the reason why we recommend those things that you see on our bill of fare. Everybody who has this chronic autointoxication that has a coated tongue, should make free use of these carbonaceous or farinaceous foods so that the friendly germs may be encouraged. Friendly germs may be introduced in various ways. But I see it is bed time, and I must say good night.

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A Stereopticon Lecture on the North-~~West~~ Sanitarium Lawn, Battle Creek, Mich.,

Thursday, August 10 1911, at 8:00 P. M., By,

J. H. Kellogg, M. D.

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I am going to talk to you tonight a little about food. There are a few things we have npt yet talked about. We do not always stop to think that we are made of what we eat. What we eat today is running around and talking tomorrow; so it is important, if we want to talk right, and if we want to walk right--it is important that we should eat right. There is an old German proverb, "As a man eateth, so is he." There is a more ancient proverb, "As a man thinketh, so is he." Putting those two proverbs together, we get another one, "As a man eateth, so he thinketh."

I met a man today who complained because he could not think straight, had not been able to do business for ten years. For ten years he had not been able to do business. Now, an investigation of his case showed that the whole trouble with his business and his inability to do business--the whole cause of it was wrong eating. He had a very coated tongue. He said, "You ought to have seen it when I came here." "Why, it was white from one end to the other--white as a snowbank, completely covered." Well, I could begin to see the edges of the tongue, so he is getting better. Food poisoning is the thing that the American people, the most civilized people, are suffering from more than any other one thing. This gentleman says, "I can not understand it; I have been a temperate man; I have never smoked; I have not been accustomed todrink; I am a temperate man; how is it my food should have made me drunk?" I said, "You have been drunk for ten years, intoxicated the whole time." "Doctor, " He said, "I know that is just so. Whenever I sit down to eat my dinner, within half an hour afterwards

I just feel drunk, feel stupid, can not do anything." Now, this man is getting over it, and when he gets over it, probably he will he never return to that miserable condition again. There is no reason why he should. I want to call your attention to some of these tables here. They are rather dry to look at, but there are some interesting things here.

Please notice what foodshave the highest nutritive value. You see the highest are the cereals. Oatmeal, rye meal, Indian meal, rice, peas, beans, wheat, barley--these are the foods that have the highest value. We come down to the vegetables, parsnips, cabbage, potatoes, the turnip and so on--they have a small value. We come down to meats, and you see they have scarcely one third the value of the cereals. For example here is lean beef with a nutritive value of 28; and here is wheat flour xxixxx just opposite, with 85, and Indian meal, cornmeal, 86. A pound of corn, you see, is equal to three times--its chemical analysis shows it has three times, by weight, as much food in it as a pound of beef. A pound of corn from which the beefsteak was made has three times the weight of food as the beefsteak does. Now, the reason for that is the beefsteak is largely water, about three parts water, you see, three fourths water. So you see what folly it is for us to feed 72 billions pounds of corn to pigs and get back only 18 billion pounds of pig--72 billion pounds of corn to make 18 billion pounds of pig--one quarter as much; and a pound of pig is worth only four fifths as much as a pound of corn, and when it comes to beefsteak, the situation is worse yet, because the beef contains less fat.

Now, look at the digestibility. There was rice with its three times the food value of a pound of beefsteak and digests in one hour, Now, look at the beef and see how long it takes the beef to digest--three hours--lean beef four hours, fried beef four hours, salt beef four and a quarter burs, pork five hours and fifteen minutes; so you see it is a very great differences. Some things that people think are very easily digestible, are very difficult of digestion. For instance, there is the oyster-stewed oysters that people thi are so very easy of digestion.--three hours and a half. Yet the oyster has very little nutri-

tive value. An ounce of milk has twenty-one calories in it, or food units; while an ounce of oysters has oly 11 food units, half as much. A quart of milk has twice the value of a quart of oysters. Now, how much does the milk cost you, how much? How much do the oysters cost you? One pint of milk would cost three or four cents, and a pint of milk would be xxx equal to a quart of oysters. See the difference. We pay our money for that which is not bread.

Here is the nutritive value of some of the fruits. The apple is the king of fruits; no frit equal to it. The pineapple in the tropics is one of the most luscious of all fruits, tough its nutritive alue is comparatively small. Now, let us see the actual alue of some of these foods in calories. Apples have 250 calories to the pound. Dates 1600. The dates are dry, and the apples contain a large amount of moisture. Figs have 100 calories to the ounce, and as we run down the list of fruits, we come to prunes, 1400, raisins, 1600, or about 100 calories to the ounce, because they contain such a large amount of sugar. When we come to strawberries and watermelon, there is scarcely anything but water there, only 140 on an average, or about ten calories to the ounce; so you see there is a very great difference in fruit according to the amount of water which it contains. There are fruits, you see, that have a very high nutritive value. Dates, figs, raisins, prunes have a nutritive value about the same as that of cereals,--about 100 calories to the ounce. And when we come to the vegetables, we find they also have a comparatively small nutritive value. How inviting tose vegetables are; how luscious they look; they make one's mouth water. It is not so exactly when one looks at a dead creature. Who ever hankers for a quarter of beef, for example? Who ever, when he sees an ox going down the street, xxxxxx smacks his lips and says, "I wish I had a bite of him"? Who ever when he looks at a ham or a pig thinks, "Now, I would like to cut his throat and roast him and pick his bones"? But when we see a luscious pear hanging on a tree, it is inviting us to reach up and take it; and if there is nobody looking you are very likely to do it--that is, if it hangs ver on your side of the yart.

Now, the potato, you see, is mostly water. Vegetables are for the most part made up of water, a very small proportion of food value, only one and a half per cent protein, 19 per cent of starch, and as a matter of fact, you see the potato is seven tenths water, and its actual composition is such that the potato has pretty nearly the same value as veal and fish. In nutritive value, a pound of potato is fully equal to a pound of fish--a little more than equal to a pound of fish. Now, when we come to study some of these vegetables, we see the nutritive alue is about the same as fruit, because they contain a large amount of water. There is no vegetable that compares with the date--prunes, raisins--a diet of dried prunds and dried potatoes, for example, as they do in South America where in some of the mountains in the Andees they freeze the potatoes in order to keep them, and afterwards dry them. They will not dry very readily before they are frozen, but after they have been frozen, they dry very quickly, and frozen dried potatoes is one of the staple articles of diet in the Andees--the native, home potatoes. The artichoke is one of the most nutritive of all vegetables. The potato stands at the top, the sweet potato at the very top; then comes green corn, and the irish potato, and squash has quite a high nutritive value, and carrots are very nutritive, and the beets--these are all highly nutritive foods. The beet has 215, you see, or about 15 calories to the ounce. Most vegetables contain an average of about 15 calories to the ounce, while the fruits will average perhaps 20calories to the ounce; so on the whole the fruit is a little more nourishing than vegetables. Now, a word more about fruits and vegetables. We eat fruits and vegetables largely for the salts which they contain, for the alkaline salts. For example, the potato contains forty times as much of the alkaline salts as rice contains. Now, sometimes these alkaline salts are not needed, but in general they are wanted very much, because the resisting power of the body depends upon the alkalinity of the blood. The higher the alkalinity of the blood, the greater the power of the body to resist disease. A man said to me today, "How is it that I catch everything that comes along? Why, I have

sore throats, and I have kidney skin troubles, and I have grip, and I have pneumonia,--everything that comes along, I get it." He said, "Now, why is it? It didn't use to be so." I said, "Well, I think the trouble is your are poisoned." "Well," he said, "That may be, but I didn't know it." "Well, have you been accustomed to use a good deal of meat?" "Yes, Doctor, I am a great meat eater; I have been a great meat eater all my life." "How about your bowels?" "Well, for the last ten years my bowels have been very inactive." Put those two things together, inactive bowels and a large meat diet, and you have got a combination that will kill a man about as quick as anything possible. You might just about as well take arsenic in increasing doses, or do some other violence to your body as to undertake to live in that condition, becaus the meat, undigested material swallowed into his body, remaining there day after day, rotting and decomposing, and everything absorbed into his blod, kidneys lowers the vitality, lowers the vital resistance through this diet by diminishing the alkalinity of the blood. Now, that is the reason why fresh vegetables are so very necessary. If you are going to be a meat eater, you must eat a large quantity of fresh vegetales. That is the reason why the potato and beefsteak have come to be two things which are commonly eaten together. The potato furnishes the alkaline salts which, to some degree, antidote the poisonous effects of the beefsteak. Now, I am ot saying this to encourage you to use beefsteak, but I am only saying this to emphasize the importance of the vegetables, of the fresh vegetables. We do not use enough of them. It is very important we should use vegetables that have not been cooked--I don't mean carrots, potatoes, parsnips and things of that sort that have not been cooked; but those vegetables which are edible and which are digestible in the uncooked state; we should use them more freely than we do. There ought to be something of this sort at every meal--some fresh fruit of some kind at every meal, and some fresh, uncooked vegetable like lettuce, cabbage, or cucumbers at every meal, but not such cucumbers as come out of the brine in pickle; not pickled cucumbers, but the fresh cucumbers as long as we

can possibly get them, we ought to make use of these fresh vegetables; but when we can not get fresh vegetables we should use more or less of the cooked vegetables for the salts which theycontain, which are among the most useful of our food elements outside of protein, fats, and carbohydrates. Now, here is some flesh food, here is beefsteak, porterhouse steak,--1100. Do any of you remember the nutritive value of dates? 1600 calories to the pound, or 100 to the ounce, and here we have porterhouse steak only about two thirds as much, you see; so you see that dates are worth more than porterhouse steak; and that is the reason why the Arab thrives so on dates. The Arab can live well and work hard, endure great fatigue, on a diet of dates, dates with a little camel's milk, dates and a little barley or figs and ripe olives is almost the whole diet of the Arab. Here is salmon, mackerel, and cod, what little nutritive value they have. When we get down to beeftea, you see it has almost none at all--115 calories to the pint, whereas an ounce of almonds has over 200 calories. A tablespoonful of almonds are equal to a quart of beeftea. Just think of it. And two ounces of bread are more than equal to a pint of beeftea,--two slices of bread. So you see there is very little nutritive value in beeftea. This is beefjuice, we are talking about, but beefjuice has four times the nutritive value of beeftea. Beeftea has almost nofood value at all; it is made up of extractives, poisonous matters, and it really, as a French physician said not long ago, is a veritable solution of poisons. As a matter of fact, beeftea contains more uric acid than anything else, a large amount of uric acid and of waste substances. The analysis of beeftea shows its composition to be the same as that of urine. It is the same thing as the excretion of the kidneys. That is what beeftea is; it is simply urine that has not been passed out through the kidneys, but is still in the kidneys, and would have been washed out and excreted if the animal had lived. And beefjuice is practically the same thing. I hope I have spoiled your appetite for beeftea and beefjuice . It is certainly one of the most unwholesome things. Chicken broth is just about the same kind of thing.

Chicken broth, beef broth, mutton broth, beeftea and beefjuice are simply poisons, extracts poisonous extracts from meats. A dog fed upon these things died sooner than a dog that had nothing at all. It is an actual fact that the dog that was fed on extract of beef did not live so long, died several days before another dog that had nthing at all to eat; so you see it is an actual poison. Now, look at the cereals and legumes, see what wonderful values they have. Hardly os of them has less than 1600 calories to the pound. Here is a long list of splendid foods. Somebody said to me the other day, "Well, Doctor, you won't let us eat meat, what shall we eat?" So I am showing you that there are some things to eat besides meat. Meat is only a secondhand food of which we have a few varieties, but there is a great variety of beans, peas, and cereals, and all these things; we have a very great variety, and there are practically 100 calories to the ounce in the dry state; but now when we come to nuts, look at the nutritive values; see how they come up. Beefsteak was at the head of the list of flesh foods, with a nutritive value of 11 00, and most of them were less than that, and some of the fish went down to less than 400, but look at the nuts--almonds 3000, almond butter, 3384 which is three times that of beefsteak. One pound of almond butter has all the food value of three pounds of beefsteak. It does not cost so much. You can buy a pound of shelled almonds at wholesale for from twenty-eight to thirty-five cents a pound. There is a high duty on them or they would be cheaper, while one pound of beefsteak, good steak, tenderloin, choice cuts, would cost us about the same thing by the time you got the bone trimmed off and the fat trimmed off and got down to the beefsteak, you would find that that beefsteak would cost just about the same thing as almonds would cost; yet that pound of almonds is worth three times as much as a pound of beefsteak. People talk about the non flesh diet being expensive, but here almonds are the most expensive of all the nuts, yet you can live on almonds at a cost to you of less than the cost of living on beefsteak, and there would be another difference if you lived on almonds, you would keep right on living, and

if you lived on beefsteak or tried to, there would be a funeral before very long, because human beings absolutely can not live on a strictly carnivorous diet for any considerable length of time; but a diet of nuts may be continued for an indefinite time, and the nuts have from 3000 calories per pound up. Here we have chestnuts with considerable starch which brings that down. Nuts contain a large amount of protein. For example, pine nuts here, 2800. See the amount of protein in the pine nut, 34%--more than one third of pine nuts is protein. Why, there is fifty per cent more protein in a pound of pine nuts than there is in a pound of beefsteak. Protein corresponds to the lean part of meat, and to the white of egg. It is the muscle building material. There is only 21% on an average in meat, and there is 34% in pine nuts; so you see pine nuts have got a pound and a half of beefsteak to the pound, and besides that have half a pound of butter in them. So when you get a pound of pine nuts and pay twenty cents or more when you buy them at wholesale, in large quantities--they have to be purifiedx somewhat, washed, etc., but when you get the pine nuts at wholesale and pay 25 or 30 cents you have got a pound and a half of beefsteak, and a half pound of butter. So you see you can live on pine nuts, and it will be far loss expensive than living on beefsteak. These natural foods are not expensive. Besides, there are other considerations. If you were in Cicago looking on and saw those cattle eatins xxxxxin the yards, apparently happy, you would say they were really happy, beautiful creatures; but now a few moments later you find some of those cattle driven into little yards, then through doors into little stalls, each oe in a stall by himself; then comes along a man with a hammer and assassinates him, slips up behind, you knos, out of sight, and assissannates the animal. Here you see the same picture again. Here is a beautiful creature. Pretty soon there will be a blow right in his forehead there, and down he will fall; and while it is still quivering, it will be dragged out and disemboweled, while the muscles are still shaking and quivering--the skin torn off; then it will be hung up to cool, and by and by it will be served up on your table, and

you will eat it along with all the tapeworms in it, and the tuberculosis in it, and the actinomycosis and the cancer that goes along with it. And a pig comes along. Here is a man stands xkxthz there and attaches the pig to this big wheel, and the wheel turns over, and as the pig goes down here on this line there stands a man in that pit that thrusts a long knife into his throat and out rushes a torrent of blood. The man stands there with very scanty garments on his body, and his body all covere d with blood, and grinning like a fiend, taking the lives of these creatures as they come along; and while that hog is still quivering, and his legs are still kicking, he is dashed down into a vat of boiling hot water, thenix his bristles are scraped off; then he is disemboweled while his tissues are still alive and quivering.

Now, this shows what we are eating every day. There is a xwqxk cow that had this enormous great sore on it, which was a parasitic disease, actinomycosis--aparasitic disease which is communicable to human beings. I have met a great number of cases in which persons had this awful disease known as lumpy jaw. Now, when this cot is slaughtered, that sore will probably be cut off and the rest of it will pass right along into the market and be sold. They never think of condemning that creature. Last year, the statistics published by the United States government show that out of 35 million hogs that were slaughtered, seven million, or one inf five, were found to be diseased. Of the cattle, it was found quite a considerable percentage of them were diseased. Here is a picture of trichinae found in pork. Two per cent of all the hogs slaughtered have trichinae. More men have trichinae than pigs. Investigations made in the post mortem room have shown that six per cent of men have trichinae, and only two per cent of hogs. Why do more men have trichinae than hogs? Because there are more men that hat hogs than there are hogs that eat men. That is the reason, and that is the only reason. We never can get trichinae in any way except by eating the flesh of an animal. Hogs, chickens, and fish have trichinae. Most men that get it get it from hogs, and the hogs get it from rats or other hogs,

because a hog will eat a dead rat, or a piece of dead hog if it has a chance. A hog eats a rat and gets trichinae, and the hog dies; man eats the hog and gets trichinae, and man dies; and the rat gets a bite of him, and he gets trichinae; and another hog eats that rat and gets trichinae; so one scavenger eats another and passes the parasite around. That is the way it goes. Think of that next time a piece of pork is offered to you. The next time you are sitting at a table where there is a piece of roast pig, perhaps, think of what may be inside that pig, and you can not see it with your naked eyes. A pig with trichinae looks just like another pig. Adam Clark was asked once to ask a blessing at a table where roast pig was the center of the feast on the center of the table. He paused, looked very solemnly at the pig, then raised his eyes to heaven and said, "O Lord, if thou canst bless under the gospel what thou didst curse under the law, bless this pig." There is no record that the pig was blessed. The same authority, the great commentator, said if he was asked to prepare a sacrifice for the devil, his sacrifice would consist of a pig stuffed with tobacco.

That is a piece of pig's liver with trichinae in it which have formed these great masses of tubercle germs, forming enormous tubercles. Now, what do you suppose the butcher does with that liver? He doesn't throw it away. Why, it is worth too much money. He throws it into a dump along with a lot of other things of the sort, and it makes the finest kind of sausage. Why not? Now, here is an assortment of things. Here are trichinae, a young tapeworm, and when you eat the beefsteak, that little wall is digested off, then the little tapeworm gets loos, attaches itself to your intestine, and then it grows, and grows, and grows. The head end is the small end, and the other end is always, as you see, larger. It looks as though it had been broken off because it keeps breaking off. It grows out a yard or two and then breaks off. These tapeworms are laying eggs at the rate of millions and millions every day. The eggs find their way into the water, are carried down into the sewers and on into the rivers,

and the cattle drink the water in the rivers so the cattle get some more tapeworm, you see; so the man and the ox together are multiplying tapeworms very fast. It can not be otherwise; and if we go on in this way, after while,we get to be in the same situation as people in Iceland who lie with their dogs. The dogs live in the same hous along with the people, and the dogs have tapeworm. In that case it is the man that has the little cysts, and the dog has the adult worm. With us the man has the adult worm, and the ox has the small worm. In Iceland it is the man who has the little worm, and the dog the big one. And the dogs and the people live together there, and every dog has a tapeworm, and every man has hydatids due to the little cysts formed by tapeworm growing in the ody. Go down to the meat shop and look around, and you notice meat that has different colors. Some looks a little pale. That ox, or old cow probably, had tuberculosisx when it died. You can tell by the looks of it when it was made into beefsteak whether it was an old cow or an ox; but the old cows have to be disposed of somehow, and when the farmer finds the old cow is getting thin and he can not fat her up, he hurries her off to the butcher shop; and in the State of Michigan, and in most states of this country, any old farmer can kill any old cow that ixx has got any old disease of any sort, and can carry the carcass off to market and sell it for any price he can get for it, and there isn't anything to hinder him from doing it, and it xxx is being done continually. Down South some time ago I heard the story from one of the mountain regions in the South where they have a school but could not afford to pay the teacher in cash, and the teacher had to take his pay inxkxxxx trade of various sorts, and a little boy said to the teacher one day, "Teacher, Father told me to ask you if you would like a shoulder of pork." "Yes," he said, "It would be very acceptable." "All right," the boy said. The teacher waited two or three weeks and didn't get that shoulder of pork, and he asked the boy about it, and said, "How is it I didn'tget that shoulder of pork?" "Well," he said, "Pa hasn't killed the pig yet." "Why not?" "Because he got well." There is a whole lot in that story.

Whenever there is an outbreak of hg cholera in Illinois, you will see the shipments f pigs from those counties in Illinois are enormously increased. They will be doubled, tripled, and quadrupled as the farmer thinks if he manages to get his hog to the slaughterhouse and gets a knife in his throat before he dies of hog cholera, it is all right. It may be the butcher will cut out a foot or two of the small intestine where the cholers looks the worst, but the rest of it goes right along for you to eat. That is the way the thing is done. I have had men down there in the slaugher houses watching--years ago, before "The Jungle" was published, I had a doctor go down there ad stay there a week and watch the whole thing and report to me; and I didn't dare publish all the Doctor saw; I didn't have witnesses enough to prove it all; but one of our doctors stayed in the slaughterhouse and watched them day after day, and he got specimens and sent them up to me, specimens of a cow that had a cancerous jaw, tuberculosis, trichinae in pigs, and all sorts of diseases . I got permission from the United States government to send my man there, and he was protected there, he had a right to see everything that was going on, and to bring away all the specimens he wanted.

Now, here is a piece of meat, and here is another piece of a different color, you see. This means tuberculosis or some other wasting disease, and this means fever; a dark purplish color means the animal had fever; it means a feverish ox that was driven on the cars sometimes. A yellowish color means the ox had jaundice. Gallstones, you know, are quite common among cattle. In the Paris market some years ago I saw quite a larg pile of great, round balls that looked very curious, and I asked what they were and found they were gallstones. I bought a few and brought them away. In this country they are gathered up by the Chinese and sent back to China as medicine. They are regarded as very wonderful medicine. So you see if you are going to eat meat, you ought to keep a sanitary inspector in your employ to inspect every morsel before you eat it. The animal should be inspected before it is killed, the meat should be inspected after it is killed,

it should be ispected in the market, and it should be ispected before you eat it at your home, because every little morsel may open up something new. I remember very well the last piece of beefsteak I ever ate in my life. I was about fourteen years old. A portion of meat was cut, a slice was cut off from a piece of meat and prepared for breakfast, and the next morning another slice was cut off from the same piece, and cut into a large abscess, and I realized I had been eating meat within a quarter of an inch of that horrible, ill smelling abscess. I didn't have any appetite for meat any more. That was the last beefsteak I ever ate. I have abstained from meat now more than 45 years. Within that time I have not eaten a pound of meat, and I think myself a great deal better off without it.

Now, this shows tuberculosis of the intestine, shows how it looks on the inside of the intestine. Animals are being killed and served for food all the time whose intestines are in that state. Just think of the poison that must be circulating through the blood in the tissues of these animals. Why it is considered perfectly lawful to do it. There is no law preventing it. The law only requires that the diseased part of the animal should be cut off; it doesn't require that the whole animal should be condemned. Now, suppose you taste an apple one side of which has got a big rotten place an inch in diameter, perhaps, and you taste the other side of the apple- you can taste the flavor of decay in the apple. Now, it is exactly so with the flesh of an animal that is diseased in one part--the whole animal is tainted. Here is a heart that has tuberculosis in it; the pericardium is enormously thickened and diseased. This is tuberculosis of the lungs affecting the heart, yet that animal was all right. That tuberculous membrane was peeled off and the heart sent right along, and doubtless countless numbers of tubercles in the heart. There is another piece of small intestine with the ugly ulcers on it. Here it is still there. You see the little masses of tubercles growing there all through the chest. This is a big tuberculous spleen. Now, that spleen would make splendid sausage. I suppose

the people who ate it thought it was a little extra nice, perhaps, because there is nothing particularly characteristic about the taste of tuberculosis.

Here is an interesting table giving the comparative cost of food, and I would like to have you take a good look at it. It shows the amount of energy that can be gotten ~~exxxaf~~ for one shilling or twenty-five cents. For instance here is beef. That has about three ounces and a half of actual dried nutriment after the water is taken out, and egg about the same amount. Now, cheese has a little more. But you come to apples as compared with beefsteak, which is less than a thousand, come up here to apples and apples have 3000; you can get nearly three times as much nourishment for a shilling in the form of apples as in the form of beefsteak, and better--three times as much. Milk more than three times as much; and when you come to potatoes here, you can get almost four times as much of food in the shape of potato as in the form of beefsteak--almost four times as much energy; and when you come to peas, it runs up to nine thousand, ninetimes as much. And when you come to bread, you get up nearly to the top, nearly 11 thousand, or eleven times as much food value for a shilling in the form of bread as in the form of beef. Now, in bread we have wheat in a vert expensive form. The wheat perhaps costs a cent and a half a pound, and when you put it up into a pound of bread, you pay five cents for it, and you have only got three fifths of a pund of nourishment; it is ~~xhxx~~ two fifths water,--put in plenty of flour, but the actual comparative values would be large; you see it would be about eight cents for a pound of actual nutriment in the form of bread, whereas in the form of cornmeal, you can get a pound of corn meal for three cents; so if we compare cornmeal, it would be about 25 times as much food value in the form of corn for a shilling, 25 times as much as in the form of beefsteak; so when you consider economy, there is no economy at all in eating meat. The price of meat is rising all the while because of the increase of disease among animals, and because of the enormous wastes of foodstuffs in feeding the animals and taking it at secondhand. You give the hog five pounds of corn, and you get back only one pound of nutriment. Give him four pounds of

corn, and you get back only one pound of pig which is worth only one fifth as much as corn.

Now another very important consideration is the extra work given to our bodies on this high protein diet. When you take a large amount of beefsteak, you get more protein than you need. Here we have two tables showing the results of the examinations of urine of persons who live upon a mixed diet and those who eat no meat at all. Here is the low protein diet in the further column, without meat, and in this column with meat, an ordinary mixed diet, you see the work the kidneys have to do. The quantity is two thirds as much in the low protein diet. When you come down to acidity, it is less than half as much in total nitrogen, which comprises all the excretory substance; the poisonous excrement is six compared with sixteen--less than half as much; and when we come to the urea, there is only about one third as much. When we come down to Ammonia, that is an antidote which is prepared from the meats, we have only a little more than a quarter as much; and here is creatinin, half as much, and the chlorids half as much, and the phosphates half as much, and the sulphur which is due to the presence of poisonous matters one third as much, and so on through; and when we come down to indican which is a poisonous substance from beef, from the decomposition of meat, it is 77 compared with 5. Now, as a matter of fact, there ought not to be any at all; it ought to be zero, and a good many of you have proven that by your change of diet. You found when you got your second reports it was zero instead of being away up. We had a man here the other day whose report showed indican 200. The wonder was that man was alive. He suffered from headaches, ad it wasn't any wonder; it was simply indican that was contaminating his blood, irritating his brain and bringing on these headaches.

Here is still another consideration. We talk a great deal about pure food these days. We want pure milk, and we want clean water. But when we want some beefsteak, we never ask any questions. When you go to the butcher, you don't ask him, "Now, then, is this meat free from germs? Is this pure, fresh meat, just killed this morning?" No, you don't want it just killed this morning,

because it would be tough, because when an animal is killed, rigor mortis or death stiffening occurs, and this causes the flesh to become tough. Living flesh is very tender. It is almost as delicate and tender as jelly, but when the animal is dead, a chemical change takes place, the beginning of decomposition, and the flesh becomes tough, and it never becomes tender again until the animal decays. Decay is the only thing that will cause it to become tender. So whenever you get a piece of meat at the butchers, it is always in a state of decay. It hasn't got far enough along so you can smell it perhaps, but a dog can smell it, a turkey buzzard can smell it. Put it out in your back yard, if you live in the South, and you will see pretty soon a turkey buzzard circling around in the air, and he will come down and carry it off. Get a nice piece of meat at the butcher's you think is all right, and put it out at the back door, if you live in the South, and see how long before there will be a turkey buzzard around there looking for his breakfast. That rotting beef belongs to him; he is a scavenger, knows what belongs to him, and he attends to his business almost better than any other inhabitant of the country. I am glad to see we have laws in the southern states protecting the turkey buzzard because he is a good scavenger. It is a splendid thing. The turkey buzzard has an enormous liver, which is ten times as active as yours. If you ever dissected a turkey buzzard, you would be astonished at the enormous liver he has got. It is so large it is able to cope with these poisons, to burn them up, destroy them. But man is made to live on a different sort of diet; he is made to live on the ambrosia of the gods, and these delicate sweet substances that are distilled from the dews of heaven and created from the air. The hydrocarbons that are formed out of carbonic acid gas and water--these pure things--these were the things man was intended to subsist upon. He is not prepared to deal with these poison laden foodstuffs as does the turkey buzzard. Suppose we have a gram of meat. A gram of meat is a piece about as big as the tip of your thumb. It takes four grams to make a dram and eight drams to make an ounce. It takes thirty grams to make one

ounce; so you will have to multiply these figures by thirty to get the number of drams in an ounce, and you see what it will be. You see a large sausage has eighty-two drams in an ounce of it,and a small sausage that was examined had eighteen billion germs, and so on all the way through. One had thirty billion germs in an ounce. Some of these specimens had been coked, and after they were cooked they had more than they had before. Here was a tenderloin which was rare and had 168 milliongerms. That was the inside of it where it was cooked rare. The outside where it was well done had 25,000 germs; so you see cooking does not kill these horrible putrefactive germs, and it is no wonder when we swallow them into our bodies that they take root there and grow just like moulds that grow in a pantry when they have a chance. If you let your pantry get damp and warm moulds will grow on bits of food there. So these germs, getting into the intestine in undigested foodstuffs there, especially undigested meat, feed upon those foodstuffs and grow and multiply and produce coated tongue, and biliousness and horrid, foul smelling stools, neuralgias, neuritis, tin and dingy skin, and the dark circles around the eyes, dark brown spots on your hands, and the bad breath. These things are only a few of the minor things that come from these putrefactions in the intestine. Besides that, we have Bright's disease, a disease which comes from the wearing out of the kidneys through their effort to eliminate these poisons and keep the blood clean; and there is the thymus gland and the thyroid gland, and all these glands become degenerated because of the influence of these poisons. N

Now, we come to another phase of the question. Here is the heart. It is the duty of the heart to circulate the blood. Here is the blood itself as you see it under the microscope, and these wonderful white cells defend the body against the attacks of disease. You see what marvelous structure these cells have. The duty of these living animals, for that is what they are, is to pursue germs in the blood, to capture them and destroy them by eating them up. Now, in order that they should do it, they must be well, healthy; but under

certain conditions they become diseased. Here you see some diseased specimens. We have several forms of disease here which I will show you. Here are diseased white blood cells. They are ot fully able to cope with germs, not able to fight them off, so the germs multiply in the body. And you see degenerating leucocytes as the result of a flesh diet, and of the use of alcohol, tobacco, mustard, pepper peppersauce, and other unwholesome things, and an inactive state of the bowels, because of the absorption of putrefying materials. These taken ito the body produce this destruction of the blood cells, and they cause at the same time destruction of the thymus gland which lies up here about the throat which I showed you the other night, and cause weakness of the heart and destroy the resisting power of the ody. Now, this shows how the white cells get out of the blood vessels and capture the germs. When these poisons are circulating in the blood, the white cells become paralyzed so they are not able to do this, and in consequence the body is open to disease. That is why you have skin diseases. That is why we have boils, that is why we have pimples on the face; that is why we have colitis, and it is why we have gastritis, why we have diphtheria and pneumonia, in many cases,--because the resistance of the body has been lowered by the injury to these wonderful white cells, and when the process goes on long enough, by and by certain of these white cells attack the body itself. When the body is deteriorated, they become diseased and take on a morbid action, attacking the body. Here we see them attacking one of the tubes of a kidney. That is what makes Bright's disease, is these diseased cells attacking a kidney. Here they are attacking a brain cell. That is why people lose their memories. This shows how we get gray hair. These white cells, you see, are climbing up into the hair and carrying off the coloring matter. They steal it away from the hair, and that is the way we get gray hair. Now, in the same way they attack other tissues of the body, attack the nerve cel , as you see here , and that causes paralysis. They attack the walls of the blood vessels, and that is the way we get thickening of the blood vessels. They attack the muscles, and that is the way we get fatty

degeneration of the muscles, and why the muscles become weak under the influence of autointoxication. Now, on a pure, clean diet of vegetables and fruits, this process of degeneracy does not occur. It can not occur, so one can hope to live to more advanced life. We can hope to live more years and enjoy more years of health and vigor and efficiency when we live upon a diet which is natural, a clean and wholesome diet which excludes these horrible, putrefactive poisons.

These fruits, as I said before, contain the alkaline salts which neutralize the poisons from flesh to some degree and so help ot keep off old age. Now, I hope, my friends, you will take to heart a few of the things I have told you tonight. I am not telling you fables; I am ot telling you stories, but scientific facts that every scientific man knows and will verify, facts that have been brought out by recent discoveries in bacteriology and physiology and chemistry, and they show us beyond any possibility of mistake that a flesh diet was never intended for human beings, that we can not live on a flesh diet and maintain health, strength and vigor. Very few of you would be here if you had ot eaten meat, taken tea and coffee, and smoked cigars or cigarettes, and indulged in mustard, pepper, pepper-sauce, pickles, and unwholesome things of that sort. If you had eaten naturally and properly, very, very few of you would be here. Most stientists who have studied the subject are agreed that nine tenths of all human diseases are due to errors in diet. Now, that is a thing that we can easily correct, and the Sanitarium here is a health university in which we hope to teach a considerable number of people dd from year to year how to live, how to live right; and right living, my friends, is the key to long life and to efficient life.

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8-18-11.

LECTURE 37.

August I7,I9II.

I E C T U R E 37.

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Lecture 37

QUESTION BOX LECTURE

On the Sanitarium North-East Lawn, Battle Creek, Mich., Thursday, August 17, 1911, at 8:00 P. M., By,

J. H. Kellogg, M. D.

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The electric light bath which you see here and which was originated in this institution is found to be very superior to the Turkish bath and to the old fashioned Russian bath, because the application of heat extends not simply to the surface, but to the interior of the body as well. The radiant energy, luminous light rays, pass through the skin and permeate the body to the depth of two or three inches. Impressions have been made upon a sensitive plate after the light had passed more than two inches through the human tissues, so with the electric light bath the whole interior of the body is illuminated. You know what the Bible says,--"Let your bodies be filled with light." In the sunlight, our bdies are filled with light provided we wear light clothing, but if we dress ourselves in black clothes, then, of course, the light can not penetrate, but white clothing is easily penetrated by the rays of light to a very considerable degree. You know the difference in the conditionof a room with white curtains or with black curtains. Withblack curtains at the window, the light will be almost entirely excluded although the curtains may be thin, whereas with white curtains of the same texture and thickness will allow a large amount of light to enter. The same is true of the skin. It is more or less permeable to luminous rays of heat, and the actinic rays of the sun. The application of the electric light bath is tonic as well as eliminative. It is also derivative. Many people, especially those who have suffered for many years from intestinal autointoxication, have dry skins, and the reason why the skin is dry is becausethe thyroidgland is degenerated, because it has had such an enormous quantity of toxins to deal with. It is poisoned and has finally become degenerated. An overworked gland, or an

overworked organ always degenerates sooner or later. A man who overworks his muscles, an athlete overworking his muscles, after while gets a degenerated muscle. When the stomach is overworked it undergoes degeneracy, and while, at first, it makes an excessive amount of gastric juice, after while it makes no gastric juice at all; its glands have degenerated. The same thing is true of the thyroid gland. Its duty is to destroy toxins, poisons taken into the blood. When these poisons are taen in in excessive quantity, the result is degeneracy of the gland. Now, the thyroid gland has charge of the skin. The activity of the skin is due to the influens of the thyroid gland. When the thyroid gland is active, the skin is active. When the thyroid gland degenerates, the skin becomes dry. You know boys and girls are very enthusiastic students of hydrotherapy whenever they have a chance to play in the water. One of the best things you can do for a boy or a girl is to dress them up in some thin, plain garments and send them out when it rains. Theyenjoy the water and the exercise immensely. One purpose of the electric light bath is to tone up the skin; that is, it is to excite the blood vessels by creating a circulatory reaction, so that the blood will be fixed in the skin. The skinis capable of holding two thirds of all the blood in the body. Now, ordinarily the skin, especially in cases of chronic disease,--the skin contains not more than one tenth part as much blood as it may contain. Persons whose skins are pale--that is true generally--and sallow, and with all persons suffering from chronic disease, there is too little blood in the skin, and consequently there is too much blood in the liver, a great excess of blood in the liver and the brain and entire internal organs; and one way in which this excess of blood can be gotten out of the liver is by getting more blood out of the skin. That is one reason why these hydriatic processes are so very valuable in chronic disease; they stimulate the skin and increase the activity of the skin. Anybody who has a pale, dry skin should know that that means disease of the liver, or disease of the kidneys, or disease of the blood vessels, and premature death. No one should ever allow such a condition to exist. The skin should be active, moist, smooth and

slightly oily. Those are indications of a healthy condition of the skin. When the hands and feet are cold and the skin is dry and sallow, it is an indication of chronic disease which is certainly producing premature old age and premature death. The thing is to take time by the forelock, to cure the disease before it has become incurable. If we wait until our livers are shriveled up and dried up and hardened, it is too late; nothing can be done for such a liver. If we wait until Bright's disease has come, it is too late. Bright's disease can not be cured. All we can do is to prolong the patient's life. When a person is suffering from Bright's disease, the trouble is not in the kidneys alone, but the entire body is diseased, and the disease of the kidneys is only a local manifestation of the disease which is universal. The kidneys are a little more diseased than the othe r organs, but they are not the only ones which are diseased. We can arrest the disease as we can arrest a fire in a hou se. We can put out the fire, but there has been some damage which, in the case of the body, can be pretty well repaired, but not wholly repaired.

Every person suffering from chronic disease may be likened to a house afire. Now, we have two kinds of fire in a hou se. We may have a fire in he house, or we may have a fire of the house. We may have a fire in the hou se, or we may have the house on fire. Now, for instance, a kerosene oil lamp tips over and gets on fire; that is a fire in the hou se. You can throw the lamp out of the house and the hou se will be all right. Or perhaps you have an alcohol lamp upset; there is a little flame on the floor, but it burns up quickly, and there is a burned spot on the floor, but that is all there is; the house is not afire. But there is another sort of fire. Something goes wrong with the chimney and sets the house afire; or something goes wrong with a furnace pipe away down in the basement and the fire gets into the partitions, creeps slowly up through the partitions clear up through the roof of the hou se, and by and by xixi your neighbor shouts to you over the telephone, "Your hou se is afire." You run out into the street, and sure enough you can see the flames bursting out through the roof.

Now, the house did not just get on fire; it has been burning a long time, but it has been slowly burning up through the partitions and now it has burst out through the roof and everybody can see your house is afire, and you know it yourself. That is what is true of chronic disease. When a person gets albumen in the urine, it means the fire has been burning a long time, and the flames are bursting out through the upper story windows. When a person gets cirrhotic liver, gets great sallow blotches on his face and hands and circles around his eyes, and a dry, hard skin, that means his house has been burning a long, long time, and there is general disorder through the body. When you get the arteries hardened, and th the blood pressure up to 180 or 200 degrees, that means the house has been burning a long time and the flames are now bursting out through the upper stories, and the whole house is gutted. Now, it certainly would indicate that something ought to be done right away quick. I certainly wish that I could appeal to persons suffering from chronic disease so that they will understand it. It seems impossible to make the average man understand the importance of doing something for himself. The average business man has been educated to look aftr his business. His business is almost his god. His business he lives with, he sleeps with his business, he dreams about his business. It is the whole object of his life—is to succeed in business. Getting on in the world is supposed to be one of the Christian virtues. Boys and girls are taught in school how to get on in the world, how to get ahead of somebody else, how to get to the head of the line. That is the thing that most people are striving for, and so when it comes to the matter of health, it is hard to divert attention from these things that havebeen occupying the minds so exclusively. The body has been sacrificed. Men work when they are weary, work when they ought to sleep, when they ought to be giving attention to themselves in various ways, when they are hungry, and the body is so habitually neglected that by and by when the time comes when it is necessary to do something, it is hard to become reconciled to the idea that we must make a serious business of it. Why, my friends, the average sick man imagines that he can run away to

a mineral spring somewhere and spend a week or two, and he will be all right. I knew a man some time ago who was abusing his stomach in the most outrageous fashion. A friend spoke to him and he said, "I don't care what I do to my stomach, because I know a doctor that has got a medicine that will cure any stomach no matter what is the matter with it. I knew a man went to him, who had the worst stomach ever was, and he got entirely cured; he is all right now, so I am sure he can cure me. So when my stomach gives out, I am going to Dr. Jones, and he has got the medicint that will knock out any kind of stomach trouble; and that is what I am going to do." Now, I know people away off, a thousand miles from here, 500 miles from here, 100 miles from here--I know a whole lot of people in the United States that are sayingx to themselves, "Now, I am not afraid to drink whiskey, because if ever it gets the better of me, and I get where I can't stop, --I can stop any time I want to, but if I get where I can't stop, I am going down to the Keeley Institute, at Dwight, Ill, and get cured. I know a man who was cured there, so if it ever gets the advantage of me, I am going there to be cured." Many people are deceived by that. You know, I believe quite a numer of people in the United States, quite a number in the State of Michigan, and maybe right here, say to themselves, "If I ever get really sick, get to be badly off, I am going up to Battle Creek and they will cure me." They say, "Why, I knew a man up here who was just about dead, hardly alive, and he got well, and I am sure I can get there before I get so bad as that; I am going to be cured." Now, my friends, that is the greatest mistake in the world. It is the greatest mistake in the world to suppose that you can be cured when you have once gotten so bad off as that. It is impossible to cure you. That man that you saw that was all right had been here on the brink of the grave and got cured, he was only apparently cured; he was not cured at all. He just had a few more years to live, but he was better, he was better; he was helped out of his immediate emergency, but he was a long ways from being cured. Here is a man who has got pernicious anemia, for example, and his blood has gone down to fifteen, and he has been in that condition perhaps

for two or three years. That man can never be cured. We may be able to get his blood up and may help him to live ten years; maybe he has got five or ten years more to live, maybe only a few weeks; but he has lost fifty years of life, and it never can be restored to him; and when a man is suffering from chronic disease, as I said before, it is like a house that is afire; the house itself is burning, and every moment some part of the house is being consumed, some beautiful, expensive pictures are being burned up, perhaps some very lovely work of art is being consumed in the house. So it is exactly so with the body. This damage may be just reaching some delicate part of the brain, may just be reaching the heart, may be just getting to the vital part of the liver or the kidneys; it may be just attacking the blood vessels and creeping along some blood vessel which supplies some special part of the brain; for instance, there is a blood vessel that goes up and supplies a part of the brain where the gift of language is located, where the memory of words is located, and it may be that degeneration is working along that particular blood vessel, and it may be it has got within a quarter of an inch of that particular portion of the brain, and that little convolution of the brain, and if it stops right there, the gift of language will not be destroyed. If it goes on that other quarter of an inch, goes into that convolution, where that precious gift is stored, that is the end of language; memory is gone. I met a man some time ago who really could hardly remember his own name. We had a lady here some time ago whose blood vessels had become degenerated in that way, and she was from the state of South Carolina, but she could not remember the state she came from. I asked her when I first met her, "From what state did you come?" She said, "Let me see, let me see; Doctor, what did I say was the state I came from" She had told her doctor, and she had to appeal to Dr. Johnson for help. Now, just think of it. She had lived in that state twenty years, and she could not tell the name of it, because that part of the brain had been damaged; the fire had gotten into that precious department of the body and had destroyed it almost entirely. Now we see, as I said before, with every person that has a chroic

disease, there is severe burning in his body, and it is burning with inexorable certainty; it is burning and destroying every hour and every day, and the thing is to stop it entirely if you can, and to repair some of the damage; and if you can not do either, to slow it up so it won't go so fast.

Now, one of those three things can be done in practically every case. I do not suppose there is a person in this audience here tonight who could not be substantially cured. That is, the disease could be arrested, and to a very considerable degree repair secured; but every person that has chronic disease must know that a perfect cure is absolutely impossible. Now, I am saying this because I want to impress upon your minds--some of you will be going away pretty soon--the importance of doing, when you go home, just what you are taught to do here. If you have had a diet marked out for you when you come here, then when you go home stick to it; do not go back to beefsteak, do not go back to chicken, fried chicken, bacon, and all those horrible things. You have learned a better, cleaner, sweeter way; you have learned the natural way. A couple of weeks ago I was talking with a gentleman about the low protein diet, the no-beefsteak diet, no-meat diet. He said, "Now, look here; I admit that people who eat the non-flesh diet, who do not eat meat, many of them are very strong, very enduring; I admit that, but look at Roosevelt. Now, where can you find a man that lives a more strenuous life than he does, and that is more vigorous and more enduring than Roosevelt?" "Well," I said, "That is true." "Now," he said, "Mr. Roosevelt is a very remarkable man; there is no doubt about that." He said, "He is an enormous meat eater; he eats enormously of meat, eats great, big beefsteaks, and he thinks it is necessary to eat great beefsteaks." I said, "Now, I admit Mr. Roosevelt seems to be an exception, but he is not. One of these days he will go down all of a sudden. One of these days you will find Mr. Roosevelt going down hill very fast, because a man living in that way, gets along to his age, he will have to pay off some mortgages pretty soon. The time is not very far away when Mr. Roosevelt will begin to have to pay some of the mortgages he has been putting upon his future, and then he will

begin to grow old, and when he does begin to grow old he will grow old very fast. I shall be sorry to have that time come. I was really not very much surprised when I read in a newspaper yesterday--it was a Chicago newspaper for Monday, but I happened to get it yesterday, as I have been away up in the north woods for three or four days; and I read a description of Mr. Roosevelt as a man found him the other day who had not seen him for a year. He said that instead of his rosy cheeks he found a man with a pale face. Instead of a strong, vigorous countenance such as he used to have, and a vigorous looking jaw, he found the man with a wrinkled face, sad, and looking as though he had lost a large part of his energy, round shouldered, stooped, and apparently apathetic and not very much interested in affairs, an entirely changed man, not the Roosevelt he knew a year ago at all. Now I am not saying that the diet is the only thing that can bring about such a change in a man, but certainly it is just the sort of change I should expect to see in Mr. Roosevelt or any other man who continues the use of meat in large degree while living ~~in~~x a not very active life. The wood chopper can eat a great deal of meat and stand it for a long dime, yet it is a notorious fact that wood choppers, these large meat eaters, are men of short life. One of the most noted men of modern times was Cheuveril, the great French chemist, who discovered the chemistry of ~~coal~~ coal tar dyes. You know what a marvelous variety of colors comes from coal tar. All sorts of colors are now made from coal tar. We do not have to make colors with the old, uncertain methods any more, but we get fast dyes from coal tar. Cheuveril was the man who worked that out, and he was a man of marvelous mind, wonderful insight. He died just two or three years ago in his 103d year, near the anniversary of his 103 birthday. And he died without pain, without suffering, absolutely free from disease. He was working right up to the last moment in the laboratory, and one day he said to his collegues, "Good bye, good bye." "Why, you aren't sick are you?" "Why, no, I am not sick, I am not sick; but then I think I have lived out my life . I feel that I am getting old, and I feel that I am at the end of my life. I am not sick, I am not suffering;

I am perfectly well apparently, but I feel that I have reached the end." So he said good bye. The next morning he was found in his bed apparently sleeping peacefully with a smile upon his face. He had passed away--a beautiful way to die. That is the proper way to die--to live your life out clear to the end. Now, Prof. Cheuveril and Mr.--you know who I mean--the man who has been for so long senator from New York State,--Mr. Depew--you will say my arteries are getting hard, must be degenerating, up toward the memory center; but I stood upon the platform and talked six hours yesterday steady, and I worked all the rest of the time, and rode on the cars all night, and got home here just in time to get into the operating room, and have been standing at the operating table every minute since--haven't had either breakfast, dinner or supper (Applause), so I am perfectly willing to admit I am not quite at my very best; but still I have been doing a pretty good day's work yesterday and last night and today. I think I have done twelve or fifteen operations, and some of them very bad ones, and I just escaped from the operating room after standing at the operating table for nearly eight hours steadily; and, as I said, without even having my breakfast. I had half a dozen peaches and a slice of graham bread which I picked up between times. (Mr. Chauncey Depew lived, as most of you know, the life of a gourmand. Everybody knew it. He was the great after dinner speaker in New York. He was in all the clubs and at every dinner, and at every great banquet; Mr. Depew was always there; and there is a club over in Brooklyn, the Montauk Club, that celebrates Mr. Depew's birthday every year; they have a great banquet and celebrate his birthday, but for a number of years Mr. Depew was not there. He disappeared. But three or four years ago he reappeared, and he came without cane or crutches. He had been going around on crutches for several years, and he explained he had been so ill he had not been able to come. But he said, "I am well again. My rheumatism is all gone." "What has cured you, Mr. Depew?" So he told the story. He said, "In Paris, I sat at the table on the 100th anniversary of the birthday of Cheuveril" the great chemist I have just been telling you about"and I said

to Prof. Cheuverlix, 'How is it you have preserved your wonderful activity and strength and intellectual vigor for such a long term of years, till your 100th year, still active and apparently in splendid health--how is it?" He said, "It is by a simple life. I have never taken wine; I have never used tobacco, I have taken no tea and no coffee, and have used no meat. My diet consists of fruits, grains, nuts, buttermilk and bread, black bread." Now, here was the great chemist living on those simple things because he thought it was worth while to preserve his vigor and his strength and his energy for useful work, for efficient service to his fellow men, rather than to throw it away on the mere gratification of appetite. Now, my friends, you need not think that there is any sacrifice; there isn't a particle of sacrifice. I can stand here without any pangs of hunger, and without any distress, without any great feeling of fatigue, and I know I have got four or five hours of work ahead of me yet when I get through here--got people waiting in my office that have come hundreds of miles to see me on very important matters; and I have got very hard work ahead of me to keep me sitting up in bed ~~before~~ until one o'clock in the morning, and yet I am able to stand here, although I am naturally a frail man, without having had a meal today; two slices of bread and half a dozen peaches is what I have eaten today, and I have not really had a chance to stop to get a drink of water. I have been so busy and driven from morning to night, the whole day, and I simply hurried off my operating clothes and got down here as quick as possible, for I knew you were waiting for me, and I dislike above everything to keep anybody waiting. I am able to do this andto go on doing it right along year after year, and year after year, and I know I could not do it at all if I ate beefsteaks and things of that sort. I know I could not do it at all. I feel sure I could not do it because I find that even when I eat eggs sometimes, I am not quite as enduring as I am when I do not eat eggs; I get a little headache, and I can not work as fast as I can otherwise, and can not think as rapidly, can not dictate as rapidly, can not write as rapidly, or as lucidly when I depart at all from very, very simple living. I know if there

is anything at all that pays, it is that thing. Now, let me ask you a question. I am going to suppose a case. Suppose there was an archangel came, uninvited camda down here and came into our midst, and the archangel said, "I am prepared to cure all human ills; if anyxhax anybody is sick, let him come and be healed." I do not sup ose that there is a person here that would not be willing, in order to be made perfectly well, restored absolutely to good health, to give almost any sum of money that might be asked if there came here a person who had the power to heal all diseases. Money would be no consideration at all. Everybody would be willing to surrender anything. Suppose the archangel should say, "Now, in order that you should be healed, it is not only necessary that you should pay the price, but you must follow a few simple rules." Wouldn't you be willing to do it? Now here is the real situation. Men and women who are well, men and women who inhabit the splendid bodies which God gave them, if they would only follow the rules of health, the rules that are laid down in this institution, there would be very little sickness, there would be scarcely any occasion for anybody to be sick ever. Now, a few minutes ago I was operating upon a lady who had had appendicitis, had suffered most horribly, had most horrible sicknesses so she had almost died, and I made an examination as soon as I got home, and I found a little lump in the right side, and I knew there was a diseased appendix there; so I operated and found an appendix which was in a dreadful state. It must have been the seat of dreadful suffering and distress, and was really threatening the woman's life. I removed it, so it won't make her any trouble any more. Now, I suppose almost every one of you here is liable to have appendicitis. You certainly are with your old habits of diet. Appendicitis is a meat eater's disease. If meat eating could be abolished from the world, there would be scarcely such a thing as appendicitis known, yet it is gaining ground in this country rapidly. The number of people dying from appendicitis is increasing, has increased nearly thirty per cent in ten years, notwithstanding all the lives that have been saved by surgeons. I mention that merely as one illustration. If we did not eat meat, we would not

have appendicitis. We have a very good proof of that in a circumstance that has been observed by Dr. Messenu(?), a veryeminent French surgeon who went down into Africa and studied the Arabs and the French soldiers thre, and he found the French soldiers had a great many attacks of appendicitis, and many of them died of it, and many had to have operations performed; but the Arab soldiers were entirely free from it; it was almo st enti ely unknown among the Arab soldiers. The difference was in the meat diet. The French soldiers ate a great deal of meat shipped down from France, canned meat and other sorts of meat, while the Arab soldiers lived on dates, wheat, barley and simple fare and ha d no meat practically, only used it on very rare occasions. The same doctor made an investigation in France. In France they do not give the prisoners any meat. You know the great poet Byron said that when he ate meat it waked the very devil in him. Now, some people believe Byron had the devil in him and only needed to be waked up sometimes. Certainly he did not behave very well all the time. And he said that whenever he ate meat, it waked the devil in him, and he had to starve him out. So he refrained from meat eating only when he went off on his wild sprees and plunged into all sorts of dissipation--those are the only occasions upon which he ate meat. He abstained entirely from meat, and he was obliged to do it in order to be decent, because he had such a peculiar organization and temperament. That is the way he found it was a great help to him; he was able to be decent when he ate no meat. Now, the prisoners in France receive no meat at all, and the non-flesh diet is a very good thing for them I am sure, and they do not have appendicitis. There is no appendicitis in the prisons of France except in cases of persons who have ju st been brought in. And in Fran ce there are certain Catholic institutions of women, and some of men, in whih meat is never used; vows are taken against the use of meat, and appendicitis is absolutely unknown. In this country there are several trappist monasteries where meat is never eaten. I wrote some time ago to four or five of these in stitutions, and I found that appendicitis was absolutely unknown in those in stitutions. I asked what they died of, and they said there was

only one thing they died of there, and that was old age. There is a Shaker community at Mt. Lebanon, N. Y., where meat has never been eaten, and for nearly 100 years meat has not been used, and the people of that establishment know nothing about cancer, they know nothing about appendicitis, and the people live to a very, very great age. There is another institution of the same sort in Massachusetts, and they report the very same thing to me--that they have no cancer and no appendicitis. Now, I am glad to be able to cite our own experience here. We have 900 to 1000 employees, and among the thousand employees we have here going on year after year, we do not have one case of appendicitis in five years, among our employees, and when we do have a case of appendicitis among our employees, it is of some person that has just come in, or in some person that has been home on a visit and has been enticed into a little meat eating. We have only had two or three cases in the last ten years, and they were cases of that sort. So you see it pays to be good; it pays to obey some of these rules of hygiene and so prevent disease. Now, Mr. Chauncey Depew heard this story of Prof. Cheuveril, and he said, "Now, it may be there is a chance for me to get over this awful rheumatism of mine. There is Prof. Cheuveril with all his joints supple, straight as an arrow at 100 years old, while I am only a little more than half his age, and I am all crippled up with rheumatism." So he stopped the use of meat, and he told the people of his club, of the Montauk Club, of Brooklyn, that he had given up the use of meat, and it made a new man of him. Some of you have heard of General Bob Evans, fighting Bob Evans, I think he has been called many years, and you know he is a man who is well known throughout the country, and a very eminent man and a very energetic man, a man who has lived a very strenuous life, but he got rheumatic a while ago so he had to go around with a cane, had to use two canes; and profiting by the example of Chauncey Depew, he abandoned flesh meats, and not very long ago he published the statement that by throwing meat away he had gotten entirely well of his rheumatism. Then don't you see that if he hadn't eaten meat in the first place, he would ot have had any rheumatism? There is no doubt at all that the use

the use of flesh food is one of the chief causes, at least, of the chronic rheumatism which is becoming more and more common throughout the entire country. If one finger joint begins to sell first, and the fingers get a little stiff in the morning and then they begin to swell and get painful, and the wrist gets painful, then the knees become painful. I met a very interesting woman yesterday, up at Bay View, a woman eighty-six years old, and she did not look a minute older than 55 years. Her hair was not white; it was about half gray. Her face was not much wrinkled; her complexion was quite fair. She had no big, brown spots on her hands, and had o brown spots on her face, didn't have any brown spots around her eyes,--86 years old and one of the brightest women I met on the grounds up there, a bright, capable woman, walking as erect as an arrow, and as spry as a girl. After I had been alking on the subject of meat eating, she came up afterwards and said to me, "Doctor, I have never been a meat eater. I have rarely tasted it, and I have rarely tasted coffee. I am 86 years old, enjoying good health and enjoying life immensely." Now, it is worth while, my friends. We occasionally meet instances of this sort, so we have a good proof and a good illustration of the fact that it pays to be good. (Now, I was sorry to tell you what I did about Mr. Roosevelt. That may prove in the end to be nothing but a newspaper story, and I should be glad if it would be so. But I feel perfectly certain that my prediction of Mr. Roosevelt will be true if he doesn't change his habits of life. Now, why do I think so? Because such a large number of men who come to this institution, many thousands of men who had lived just that same sort of life, vigorous, rosy cheeked, robust, strenuous men, all of a sudden they begin to find themselves going down--coated tongue, a bad breath, headaches, find themselves getting sallow skin, able no longer to keep up with the double duty of taking care of, removing the normal wastes of the body, no longer able to take care of this enormous load of poison that is loaded onto it by the decomposing remnants of undigested meat.

(Q. What makes men snore? Is there any cure?) p-11-

A. I suppose ladies never snore. Now, I know of a case in which a

woman did snore. There was a gentleman here who was here for sleeplessness. He came from the southern part of the State, and he came here afterhe had been here three or four days, came to me and said, "Doctor, I think I will have to go home." I said, "What is the trouble?" "Well, I can't sleep here." I said, "I think we can arrange matters so you can sleep." "Well," he said, "I am afraid not." "I think I can give you some treatment so you can sleep." "Oh, I don't think it will do any good. I am going home. I have got my trunk packed." I said, "What is the difficulty?" "Oh, there is so much oise about." "Well, what is the noise? I will see if I can not stop it." "You can't stop it, you can't stop it." "Well, what is it?" "Well, Doctor, I will tell you. I don't like to say very much about it, but I am going home, and you press me so hard I will just tell you. The lady who has a room next to mine snores so loud I can't sleep at all." "Now," I said, "I can stop that." "Oh, no, you couldn't stop it." "Certainly I can." "Well, but she would find out I told you about it." "No, I won't say a word about it." "But you will have to ask her about it. How will you do it?" I said, "Oh, I will examine her throat, and after I examine her throat, I will know that she snores, don't you see? At any rate, I will stop it." "Well, what good will that do?" "Why," I said, "I can fix an arrangement so she won't snore." "How will you do it?" "I will have her make a night cap and a chin cap to supplement the night cap, then fasten the chin cap on the head cap so tight that the jaw doesn't drop down, and then she could not open her mouth and could not snore. Nobody can snore with the mouth shut; you always have to have the mouth open when you snore. When the mouth is closed, it is impossible, because the snoring is due to a vibration of a column of air produced in the throat by two currents of air meeting, one coming through the nose and one coming through the mouth. Now, no one can snore with the nose closed or with the mouth closed, but with the air coming in through both nose and mouth, the two currents meet in thr thoat, and that is what snoring is; that is the philosophy of it." You try the experiment, and you will see you can not snore with the mouth closed or with the nose closed.

This man said, "I will try one night more Doctor." So I immediately sent out to find the lady, found her in her room, and I examined her throat, told her about the awful effects of snoring, how it changed the features, and how it made the nose flatten, made a person look very homely, and so on, and she became very much interested. "Doctor, what can I do, what can I do to stop snoring?" "Well," I said "I think I could suggest a plan that would relieve you." So I told her and she immediately started off and found some cloth and went to work on her cap, and had it all ready before night. I didn't know of the circumstances that happened until the next day.but the next morning I found this gentleman packed up again going home. I said, "What is the trouble?" "Why," he said, "the snoring was just as bad as ever!" "Why," said I, "I don't see how that could bex, because I told the lady howto fix it." He said, "Well, you know I got tothinking about it, and I felt ashamed of myself for having complained of that thing, and I went to the lady and apologized for making her so much trouble." The gentleman took his hack and went home. The lady discovered me about fifteen minutes later and gave me a terrible tongue lashing for having her go to the trouble of making a night cap and a chin cap just to accommodate a man.& She was a spinster, an old maid, and she didn't propose to go to so much trouble for any man. She said, "And do you think I used it? No, indeed, I threw it in the waste basket." That is one way to stop snoring. Another way os to ~~xkeep~~ slip a thin piece of rubber or celluloid. If you use celluloid or anything of that sort, and have it in your mouth, you better not light cigars or anything of that kind, because you might set the celluloid afire and burn you up. It is of a combustible, sort of semi-explosive nature, under some conditions, but it is about the best thing for the purpose that I know of. Get an elliptical piece of celluloid about an inch or aninch and a quarter wide and about four inches long and slip it in front of the teeth, and bend it around to place, fit it to the edge of the mouth and slip it just under the lips, and bend it around. Now, with that in place, it is impossible to snore. There are little rubber arrangements made nowadays that are put over the mouth to

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inhibit mouth breathing, so it is not a very difficult thing to obtain something that will relieve the difficulty. In general, snoring is caused by partial obstruction of the nose, incomplete, and this obstruction sould be overcome. In the case of children it is always due to obstruction of the nose, and indicates vegetations or adenoids in the nose or enlarged tonsils, and the children should be taken at once to a nose or throat specialist.

Q. What is the cause of adenoids?

A. Adenoids are due to the infection of the nose, and are the result of lowered vial resistance. Children that are brought up in the open air, have daily cold baths, the cold air baths, and are allowed to grow up in a natural way, and lie upon natural food do not have adenoids; but if they do because of some heredity or some neglect, then they should be attended to at once.

Q. What causes high acidity in the stomach?

A. Autointoxication. The poisons absorbed from the colon are excreted into the stomach. That is a discovery that has only been made within recent years. If a quarter grain of morphis is injected under the skin, half of the morphia will be found in the stomach within half an hour. In fact, within an hour, nearly all of it will be found in the stomach. It is excreted into the stomach and to protect the body from the baneful effects of such a poisonous drug. So the poisons in the colon are excreted into the stomach to save the body from the effects of these deadly poisons, then slowly eliminated afterwards.

Q. What is autointoxication?

A. It is poisoning of the body with poisons generated in the bdy itself, generally putrefactive poisons from the colon.

Q. Are milk and eggs natural foods for man?

A. No, milk is a good food for calves; that is, cow's milk. Every animal produces a milk exactly adapted to its own kind, but not adapted to any other kind of animals. Some time ago an experiment was made by taking a puppy and feeding this puppy upon cow's milk alone, nothing else. The puppy died. An animal can not be reared entisly upon the milk of another animal. The animal

will be defective because the milk of one species of animal differs from the milk of every other species of animal. This fact has not been well understood until recent times. An animal may be gradually accustomed to the milk of another animal, so if a child is to be put upon cow's milk, sometimes the best the mother can do, it must be gradually accustomed to the mulk. The milk must first be diluted with water; it should be boiled if it is animal milk, and water ~~xxxx~~ added to it, about one half water. You must not be afraid of getting the milk too dilute. There is far more danger of getting it too concentrated. There is also great danger of having too much fat in the milk, of having the milk too rich. Skimmilk will sometimes be better for a young child than milk that has a great deal of fat in it, but buttermilk is often best of all for a baby.

Q. Riding in a streetcar or ther conveyance usually gives me severe headache and causes nausea. Can you tell me why, and how I may overcome it?

A. Now, that may be a peculiar individual idiosyncracy. We are all of us born with more or less defects, and this person may have hypersensitive nerves. That may be the cause of it. The probability is that improvement of your general health and the building up of the nerve tone will overcome this condition.

Q. Is pellagra communicable?

A. Probably not. There is no evidence that it is communicable.

Q. Do you deem it advisable to have children's tonsils removed?

A. Yes, if they are diseased.

Q. Is it harmful to eat grapes and swallow the seeds?

A. The seeds are of no use, and it is much better to reject the seeds. There is very little danger, at least of the seeds getting into the appendix unless the appendix is diseased. A healthy appendix always keeps the door shut so they can not get in, but in a diseased appendix, the little opening between the appendix and the bowel is often open, left open, and then the seeds may drop in and might become a source of damage.

Q. Is St. Johns' Bread a form of vegetable, or a fruit?

A. It is a fruit, similer to the locust.

Q. Please state which you think is the best tooth wash, that is, paste or liquid. Give the name of the same.

A. The very best that I know of, the one that I use, is known as aqua pura. A person who eats properly, does not need any sort of lotion for his teeth, he doesn't need any powder, nothing but pure water and a brush. That is all I ever use, and I am sure that if you askDr. Vince he will tell you I have a remarkably good set of teeth, and he rarely finds it necessary to do anything to them. I see him perhaps once a year, and he can hardly find anything at all to do to my teeth when he comes to clean them. Tartar does not accumulate on my teeth, and I have no difficulty at all in keeping them clean and polished by using my brush and water. Now, when you use meat and eat a lot of greasy food and all sorts of abominations, of course the fluids of the mouth are vitiated. Particles xigxtxxxxxxixxxx of meat remain between the teeth and undrgo putrefaction, and the fluids of the mouth are vitiated to such a degree that the teeth readily become diseased. If you eat a good deal of fruit, your teeth may be stained a little, but that will be easily rubbed off with a brush if care is taken to wash the teeth immediately after eating. Immediate and good brushing is the nly thing that is necessary, with pure water. If you are going to use anything more than that, there is nothing better than ordinary chalk, not French chalk, but precipitated chalk. If you want a tooth lotion, there is nothing so good as cinnamon water. Get a little essence of cinnamon at the drug store, and put three or four drops in half a tumblerfull of water, stir it up thoroughly, scrub the teeth with the water. There isn't any dentifrice of antiseptic of any sort that is half as good as cinnamon water. If the teeth need a little polishing, use ordinary, precipitated chalk. Don't use French chalk; that is quite another thing; but precipitated chalk.

Q. Is raw milk considered a laxative?

A. Sour milk is.

Q. What is the cause of pellagra?

A. We don't know.

Q. What is the cure?

A. We are trying to find out. We sent a lady home the other day apparently entirely cured of pellagra. She made marvelous progress from the day she came here. We put her first on a diet of strawberries, milk, buttermilk, and malt honey, not another thing. When we tried to change the diet to some other thing, she didn't do as well. She gained 27 pounds while here, and went home without the slightest trace of the disease about her. Her hands looked like raw beefsteak when she came, but when she went away she seemed to be in blooming health. From my own standpoint, it looks to me as though the seat of the disease is in the intestine, and the intestine produces poisons which vitiate the blood, and which set up these awful eruptions and other changes in the nerves, and produce the horrible results we see. And that is a form of autointoxication.

Q. Is beet sugar more nutritious than cane sugar?

A. They are one and the same thing. Cane sugar is found not only in sugar cane, but in sorghum, as you know, and in sweet corn, and in sugar beets, and the maple tree, and the birch tree, and the hickory tree, in the sap, and in the sugar palm.

Q. Is there any medical school that does not teach that drugs are indispensable in the treatment of disease?

A. I am glad to say that there isn't any medical school in the world that I know of that teaches that drugs are the only method of curing disease. The old faith in drugs which existed 100 years ago has been gradually fading out. The skepticism that has been coming into the world with reference to almost everything that was considered old and well established has gotten into medicine, and at the present day there are very few of doctors indeed that have faith in more than a very few drugs. Now, there are a few drugs that are very indispensable and very valuable indeed. While most all drugs are poisons and do more or less damage

to the body, at the sme time they are sometimes the lesser of two evils, so we should make proper use of them. We have very little use for drugs here at the Sanitarium because we have other things that are better.

Q. Is cream more digestible than milk?

A. No and yes. Sometimes the casein of the milk is the part whichis not well digested. We have new methods of testing, so we can find out whether a person can use milk properly or not. Examinations of the bowel passages determine that question. If you find in your report what is marked as undigested casein plus, that means casein is not well digested, and you better avoid milk, and in such cases cream taken in moderation can be digested more readily than milk and vry well, because cream consists largely of fat.

Q. Does not malt honey go through the same process in being digested as cane sugar?

A. No, malt honey is already digested. Malt sugar may be injected directlyinto the blood and will be utilized. That is not true of any other sugar, of milk sugar or of cane sugar. It is true of malt sugar;in the process of digestion it is convered into dextrose, a form of fruit sugar which may be utilized even absorbed without this latter process of digestion, because this part of the digestion of malt sugar may take place in the blood in itself, or in the tissues of the body.

Q. Is mercurial poisoning possible two weeks after three grains of calomel have been taken and the bowels moving three times a day?

A. Probably not. I would not think a person would get poisoning from a single sugh dose as that.

Q. In the case of malarial fever, what would you recommend to take the place of beef tea? In other words, briefly outline the diet or nourishment.

A. Now, the worst thing you can possibly use is beeftea. Use almost anything else rather than beeftea. A very good thing is grape-juice, or raspberry-juice, or fruit juice of any sort. Orange-juice you can always get, or lemon-juice.

You can always get lemonade. There is far greater value in a glass of lemonade than in the same quantity of beeftea, far more value. An ounce ofbeeftea has only three calories of food value in it, only three calories. Just think of it. An ounce of milk has twenty-one calories; an ounce of grape-juice 24 calories, or eight times as much as beeftea. An ounce of orange-juice has more than six times the food value and the nutriment which is contained in beeftea. Besides, beeftea has practically the same composition as urine, so it is a poison, and can not do any good at all, and might do some harm.

Q. Whis is best for a boy to wear, a belt or suspenders?

A. Neither belt nor suspenders; a waist is the thing for a boy to wear--a waist. That is the best thing.

Q. What is the objection to retaining food in the lower bowels, as Fletcher does, for several days?

A. Fletcher doesn't do it any more. I am very sorry he ever did it, and I had a letter from him recently in which he tells me that his bowels are behaving physiologically now. I have been laboring with Mr. Fletcher on that point for a good many years, and I have met a good many people who have been damaged in tryng to follow some of his earlier teaching on the subject. But he doesn't teach it any more, and he certainly suffered harm from it, and I proved it to his satisfaction--that he was getting harm from it.

Q. Why are some people unable to digest starchy foods?

A. They are not, but they think they are. Starch is the most readily digestible of all food elements. People who think they can not digest starch are persons who have sour stomach, and when they eat starchy food they suffer from sour stomach. It is not because they can not digest starch, but because they have been accustomed to eat meat, and a great deal of protein, and this protein neutralizes the gastric juice. They have more gastric juice than is necessary for digesting starch, and the gastric juicenot being absorbed by the starch is not absorbed by the protein and remains free in the stomach and irritates it and produces acidity. The trouble is not with the starch; it is with the

stomach. Now the thig to do is to persuade the stomach notto make so much gastric juice, and there are several ways in which it can be done. One is to stop eating salt, because the acid of the gastric juice is made from salt, so the more salt, the more irritation. Now, the next thing is to eat more fat along with the starch. A tablespoonful of olive oil at the beginning of the meal is a very good plan, and eat plenty of fresh butter, but becareful not to eat butter that is theleast bit strong, because when butter has the slightest rancid flavor in it, it makes the stomach produce more acid than it should produce. It is as active, or nearly as active as meat is in stimulating the stomach. Now, another thing too, is to swallow the food without very much mastication, without chewing. There are some people who ought not to chew their food. Pesons who have too much acidity of the stomach, should take their food without chewing. That doesn't mean you should swallow it in lumps, as you do pills, it doesn't mean you should bolt it in that way; but it means you should take food that does not require chewing, that you should take bananas in the form of pulp that can be swallowed at once; that you should take bread, for instance, in the form of breakfast toast softened with a little hot water and spread over with butter, or with thick cream, and swallow it at once; or such food as granola mush which is a very excellent food, or gluten mush, or cornmeal mush, if you like it, and it should be swallowed at once. Now everybody should not do that. For most people it is a damaging thing to do that; the food needs to be chewed; but when a person has too much gastric juice, already, he doesn't want tostimulate the stomach to make more by chewing, for chewing stimulates the stomach to make gastric juice. That is a good thing for those whose stomachs are slow to practice, and whose stomachs do not make enough gastric juice. It pays to chew the food well and in that way encourage the stomach to make more gastric juice.

Q. Why does sciatic rheumatism pain only one when standing or walking?

A. Because it is only in that position that the nerves are brought under strain.

Q. What promotes the flow of the digestive juices?

A. There are certain substances in the food which call forth the digestive fluids which are necessary for the digestion of those particular foods. That is a most interesting fact. For instance, fat causes the stomach to make no gastric juice, because the gastric juice does ot digest fat. Fat is digested down below the stomach, by the bile, whereas the protein causes the stomach to pour out gastric juice because gastric juie is necessary for the digestion of protein. This is a very important fact.

Q. In what way are headaches caused from toxic poisoning?

A. The membranes which cover thebrain are irritated. The nerves of the membrane covering the brain are irritated.

Q. Why is a person awfully thirsty after a meal and drinks, drinks, drinks and yet gets no relief?

A. That person has a dilated stomach that is hanging away down low, and wen he drinks, he has to drink, and drink and drink until he fills the stomach brimful, until it runs over in order to get any good out of it, because the stomach does not absorb water. The stomach is not an absorbing organ. It absorbes only a very little. The stomach is a digesting organ. The bowel is the absorbing organ. When you drink several glasses of water into the stomach, you haven't got it where it will do you any good as yet. It has to get out of the stomach and down into the intestine in order to do yuany good. In such a case, it would be a good plan to lie down on the right side and draw up the knees clear up as near the chin as you can, and then take four or five deep breaths in quick succession, then rest a little while, four or five minutes, then do it again, and continue in that way until you have taken fifty deep breaths, and that is a very, very excellent way of unloading the stomach. Lie on the right side, draw the knees up as near to the chin as you can get them, then take deep breaths; or lie on your face over a pillow and take deep breaths, and that will squeeze the stomach and compress the liquids out of it into the intestine and so promote absorption. That is a good plan for anybody that has a slow stomach.

Q. What causes a deep white coat on the tongue?

A. It is because your blood is out of order. A deep white coat on te tongue means germs growing on the tongue like mould growing on the wall. When the blood is in proper condition, the liquids of the mouth prevent the growth of germs. So it is very important to get the blood into condition again, and the thing that gets the blood out of order chiefly is the use of improper food and inattention to the bowels, The bowels should move after everymeal. Don't forget it. Thebowels should move two or three times a day, better four tiaes than two times.

Q. How long does it take to effect a cure of sciatica of six months' standing?

A. I have seen cases get well in a week.

Q. What causes sciatica?

A. Sometimes due to inflammation of a nerve. Sometimes it is a reflex due to irritation in the stomach or bowels. Very frequently it is associated with colitis.

Q. Can a thin person who otherwise leads a wholesome life, eat meat and be well?

A. Nobody can eat meat and be well. At Bay View the other day we were having a lecture from Dr. Hurty, secretary of the State Board of Health of Indiana. Somebody asked him the question, how long will meat remain fit to eat in cold storage? What do you think the doctor's answer was? "Less than fifteen minutes." The Doctor then went on to tell that meat is not fit to eat any way; that it always contains putrefactive germs, and the less that is eaten the better. Dr. Hurty doesn't eat any meat.) The manager of the assembly there gave us a dinner, invited a number of doctors ~~xxxxxxx~~ there to come in, and we had dinner at the hotel, and had various meats on the bill of faie, and I observed Dr. Hurty didn't touch meat of any sort; neither did I, of course. I haven't eaten a pound of meat in forty-five years, as I was telling you the other day. I

never take it away from home nor at home. We never had a particle of meatin our house. I think some got pretty nearly into the house once when a neighbor's dog dragged a bone into the back yard; but we had it carried off and burried, for we didn't want anybody to see a bone there and think it was a remnant from our table.

Q. Are canned fruits and vegetales O K?

A. Yes, they are all right.

Q. My bowels are inactive. Wold it hurt me to eat anything that looks good to me, provided I masticate it well and do not over eat?

A. Now, if this person's taste was natural; if this man had never eaten anything wrong, never formed any bad habits of diet, it would be perfectly safe to say, yes, because our natural instincts lead us right if they have not been perverted; but when one's instinct has been perverted, it might lead him into a wrong way. Now, a man might say, "Doctor, will it be all right for me to put into my pocket anything that looks good to me?" Now, that depends on how you have been educated, what sort of conscience you have, how you look at things. It might be you saw a man's purse that looked good to you and you would think it would be a nice thing to put it into your pocket. So, if you looked at a dead hog, for example, and thought it looked good to you, you would like to put some of it into your stomach, and that is a great mistake. Avoid dead hog; it belongs to the turkey buzzard. It is all right for him.

Q. Explain the process by which tobacco produces the detrimental effect attributed to it.

A. Tobacco is a deadly poison.

packs and sweating baths, and the wet sheet, a whole week after he arrived, still smelled of nicotin. He was pretty well pickled with it. When a smoker gets to the point where the tobacco odor hangs on his breath, he has already passed the danger line a long ways. The kidneys of a young man, a young smoker, are still able to destroy and eliminate the poison almost as rapidly as it is taken in, so that in a few hours after he has ceased smoking, the odor is gone. Within an hour or two it is very likely gone, but when it hangs on the breath so that the breath shows it, the next day, for example, that man's body is saturated with it, the kidneys have lost their power to eliminate it, the liver has lost its power to destroy it, in large degree, and the poison is accumulating in the body, and he is preparing very fast for a funeral. Now, I want to tell you a little experiment you can make with the smoker, by which you can demonstrate to him the poisonous effects of tobacco even when he thinks it is not doing him any harm at all. It is a very simple experiment.

Q. What is the cause of vast quantities of gas in the bowels but no odor?

A. The fecal matters are retained, und ergoing fermentation. Gas in the bowels is always an indication of an accumulation of materials which are undergoing fermentatin.

Q. You have convinced a patient here that beefsteak is not desirable, but he uses chops and crisp bacon when away from here. Please convince him,now in this audience, that bacon and chops are just as bad as steaks.

A. Now, all I have said about beefsteak and about ~~kxaas~~ its unwholesomeness, etc., all applies to bacon and chops. So if you are convinced ~~kxaixbaf~~ on beefsteak, you must discard therest also.

Q. What is the cause of dropsy?

A. Generally a diseased condition of the heart, the liver, the kidneys, of a generally ~~axxxaxaa~~ anemic conditin.

Q. I am 54 years old. I have no courage and at times am very much depressed.

A. You are neurasthenic. That condition of things is very unnatural. Wht you wantis to get rid of the poisons that have been making you old and are depressing you and making you cowardly,--get rid of those poisons and go back to yourself, and you will find yourself rejuvenated and renovated and inspired, and will hardly recognize yourself perhaps.

Q. Do you think milk and eggs are unnatural foods?

A. Yes, they are not the best foods. We can use them in moderation, but many people are a great deal better off without them.

Q. What is the cause of floating specks in my eyes?

A. The most common cause is autointoxication.

Q. What is blood pressure?

A. Blood pressure is the means by which the blood is circulated. The heart puts the blood into the arteries with considerale force, and thus the blood is driven around through the arteries, just as water is sent to us through the

water pipes through pressure. High blood pressure is a condition in which the arteries have become small, contracted by hardening, so the heart must work harder to get the same amount of blodd through the smaller openings, and the pressure is raised.

Q. What is hypopepsia?

A. It is too little pepsin and too little gastric juice.

Q. What is hyperpepsia?

A. It is too much.

Q. What is the cause of headache?

A. The most common cause is poisoning of the brain cells, irritation of the coverings of the brain.

Q. What is the cause of paralysis?

A. Hardening of the arteries, and degeneration of the arteries or of the nerve centers.

Q. How can one be relieved of autointoxication?

A. By adopting an antitoxic diet and adhering to it, keeping the bowels active, living the outdoor life, drinking a great deal of water. Those are the main things. Drink three or four quarts of water a day.

Q. How does the application of water on the outside affect the inside of the body?

A. By bringing to the surface of the body the surplus blood in the interior, and giving the internal organs that have been overloaded with blood an opportunity to be relieved and to do their work under better conditions.

Q. Can consumption be cured?

A. Yes, consumption is curable by the outdoor life. Sixty per cent of all the people who go to these state institutions for the cure of consumption, get well. And probably half of the balance would get well if they had a correct diet. Meat is not necessary for a consumptive. A diet of milk, cream, yolks of eggs, and especially of cereals and fresh vegetables is the proper diet--and a great deal of fruit.

Q. Can an advanced case of general paresis be cured?

A. No, the time to cure paresis is before it begins. It can sometimes be arrested, but it is incurable when it is far advanced.

Q. Which do you regard as less harmful, the chewing or the smoking of tobacco?

A. Which is the most harmful, stealing or safebreaking? It just depends upon the size of the stealing and the size of the safebreaking, doesn't it?

Q. What is neurasthenia?

A. It is chronic poisoning of the nerves, generally as a result of the absorption of poisons from theintestine. Neurasthenics nearly all have coated tongues and bad breaths, and sweating palms, and cold hands and feet, and those are simply symptoms of autointoxication.

Q. Can you cure high blood pressure permanently?

A. Well, I suppose we would all get to it after while, because old age brings high blood pressure after while. When a person has high blood pressure at fortyhe is old while he is still young; it is premature old age. High blood pressure before the arteries have become chalky can generally be very considerably improved, butwhen a person's arteries are chalky, hig blood pressure is the only thing that saves his life. He must keep it up, because when it falls, his body will not be properly supplied with blood, and he will die from lack of blood supply; so it is very important the blood pressure should be raised. Nobody ever has blood pressure higher than he needs to have it for hisconditions.

If the arteries are contracted, we must relax this contraction. Sometimes it is the result of nervous irritation, of poisons acting upon the nerves, and this kind of blood pressure is very readily curable, but the very high blood pressure that comes from natural hardening of the arteries can ot be improved so much, but can be improved some. I met a gentleman just the other day who came here with a blood pressure of 240 and it is now down to 180. And that is a fine improvement, isn't it, a fine improvement? He may improve considerably more yet. A person who has a high blood pressure should work at it continuously, should fight it continuously;if he finds something will bring it down a little, he should keep right at it that thing, and not stop, because it must be a perpetual fight for the balance of his life. I fear I have talked a little over time. I wish you all a good night's sleep and happy dreams.

Voice: Same to you, Doctor.

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THE LIVING TEMPLE or THE MIRACLE OF LIFE

A Lecture at the Sanitarium Parlor, Battle Creek, Mich., Sabbath, August 26, 1911, at 4:00 P. M., By,

J. H. Kellogg, M. D.

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The apostle Paul once in talking to ax company of heathen people said to them, "Know ye ot that your bdies ate temples of the H_ly Ghost?" Now, I am afraid hat there are a great many heathen in the world today who do ot know that their bodies are temples. I was just that sort of a heathen myself once. When we stop to inquire into our beginnings, when we try to let our minds go back, away back in the ages to the very begining of things, and we try to think of the first man and how he came to be, we find ourselves bewildered; the mystery of creation, the mystery of the beginning is beyond all comprehension. That is a thing that the philosophers from the most ancient times have been puzzled about--the beginning of things. We see an established order and it does not seem ~~xxxxxx~~ anything very remarkable that things go on as they have been going on; the seasons continue one after the other; we sow seed, and the seed grows and develops, and by and by we have a harvest. It seems proper, natural, it is naturel. We inquire how this happens, and we are told Nature, Mother Nature is doing these wonderful things. We look around to see where this Mother Nature is and inquire about Mother Nature, who Mother Nature is, where she is, and what she looks like, and we discover bat Mother Nature is an abstraction; that Mother Nature is a myth; that Nature is simply a term that has been formulated to hide the mystery of being. Nature, in the way in which the term is used, is not a person at all; it is not a force; it is simply an abstraction. Nature is simply the panorama that we see passing before us; it is ~~xxx~~ simply the order of events we see taking place in what we call the natural world all about us.

We see at once when we think about it that there must be some power

greqter than Nature, some power that is not a mere abstraction, something that is more than a mere blind force; there must be some intelligence, some being with qwill and purpose and intelligence at work in the universe; and that that must account for our beginning.

The Good Book gives us really the only authentic account, and the only account of any sort that we have of the beginning of the race, and the Bible tells us that God made man in his own image, and breathed into him the breath of lives--the margin reads "lives",--the breath of lives; that is the breath which is the breath of all lives. He made man in his own image and breathed into him the breath of lives, and he became a living soul. Now, when we take man and analyze hi, we see there are some things about him that we do not recognize at once, and do not recognize under superficial observation. For instance, suppose we take an animal, something lower than a man, and we undertake to take away its life, we see that life is a much more complicated thing than it looks upon the surface.

Now, as an illustration, I might tell you a little story from my own experience. I was down at Key West about 25 years ago, and stopped over night at Key West,--was going over to Cuba the next morning, and in the morning early I was going down to the boat, to my steamer, and as I was going down hill to my wharf, I saw a man coming up the hill carrying over his head a wooden tray, and on this wooden tray there were what I supposed to be chops, or pieces of steak; but I observed that this man kept putting his hand upx and pushing these steaks back upon the tray; they seemed to be slipping off, or somehow getting off the tray, creeping off, and he was pushing them back. I kept looking at him to assure myself that my eyes had not deceived me. It looked as though those steaks were creeping off the tray, and he had to push them back to keep them from getting away from him; they were trying to escape, apparently.

When I got down to the foot of the hill, I had to pass through an arcade there to get to the wharf, and as I was passing through the arcade, I observed a counter at the side and there were spread out upon the counter cuts of meat of various kinds--roasts, chops, steaks and various cuts of meat laid out there; and

I observed that the keeper of the stall was doing the very same thing,--he was so to speak herding his steaks; every little while he would pass along the counter and push them back, for they were creeping off the counter, and he had to gather them up and keep them on the counter, keep them from getting away. They seemed to be disposed to flee from him. There in the midst of those steaks was a great heart beating, beating regularly as though it were in the an animal's body. I felt alarmed for a moment. I said, "This is uncanny--steaks that are creeping about--everything alive here." It reminded me of the passage in one of the old Greek poems, "The very hides began to creep." I thought this was like it. I said to the man behind the counter, "What does this mean--these chops seem to be creepingabout here? If I can believe my eyes, these steaks and chops and roasts are sally alive. What does it mean?" "Why," he said, "this is the turtle market. Just look out the door." And I looked out the door, and there were several great turtles lying on their backs there, their tails and lets all moving in the air, and they were trying to turn themselves over but they couldn't. This was the turtle market. These steaks the man said, "will not be dead until they are put in the pot and boiled." I bought the heart and took it away with me and the next morning it was beating still. I took it over to Cuba, and the next morning the heart was beating yet. So we know that when a turtle's head is cut off it is not dead. The heart continues to beat after death and after it is taken out of the body, after it was removed from its body and its muscles, it continued to throb for hours and hours after the animal's head had been cut off; and as the man said, death did not actually come until the flesh was put in the pot and boiled. So we see hat there are two lives, one life the turtle had when it was crawling about; when its head was cut off that life ceased. That was the life that required the whole body to be intact; and then there was another life that was in the tissues of the animal, and these tissues remained alive, were contracting, the heart still continued to beat after it was emoved from the body; so there were two lives, we see, and not one; there is the life which weknow, the

intelligent, conscious life; and then after death, here is still a life that is in the tissues, that continues for some time. Even when people die the ~~xxarx~~ body remains alive for some little time afterwards. When a French criminal had his head cut off some time ago, the body was turned over to some doctors, and the doctors made that head and face and body go through all sorts of evolutions for hours after the man was dead--turned over to the doctors for experiment. The eyes opened, and the face drew itself into various forms, smiled and scowled, and gave expression to all sorts of states of mind, although the man's head was cut off and the head was standing there all alone by itself; so the muscles of the body were made to contract; the heart has been made to beat after death, after being remoed from the body--the heart of animals, warm blooded as well as cold blooded animals. So there is the ody life that is called by the scientists the somatic life; then there is the life in the tissues, the organs of the body, the tissue life which is, of course subordinate to the body or somatic life, the intelligent or conscious life.

Back of all these thing there is another life. Paul spoke about this life--"Your life is hid with Christ in God", and the old prophet spoke of it, the body returns to dust but the spirit returns to God who gave it. So there are three lives you see. There is the body life, the individual life, the conscious life; then there is the tissue life; then there is another life that is back of it all--lifewhich directs and governs all. Now, let us see the ~~xxxxxxxx~~ evidences of this life. One of the best evidences we have is in the heart. When the heart beats, it acts simply as a hollow muscle. When it beats it contracts and lessens the calliper, its capacity, lessens the size of its interior, the size of its hollow space, and the blod is forced out of it just as we force the air out of the bulb of an atomizer--pin just the same way the heart forces blood out of itself. Now, it is the same thing when the arm contracts. It is a musclar action; heart action is a musmular action just like contraction of the arm. Now, in order that the arm shall contract we must send an order to it to contract. The arm does not

work of itself independently. Sometimes the arm does run away, or the foot, and then it becomes very inconvenient. Sometimes we find such a thing as the arm sort of running wild and working independently of the brain, but it becomes very inconvenient for us when that happens. In the physiologic state, in a state of health, when the arm moves, it is because the brain, the will commands it to move; there is an order sent to it; there is a will, there is an intelligence behind that will; there is a command that xxiixxixxxxxxiixxxx emanates from the will which causes the arm to move. Now, the same thing is true of the heart. The heart is a muscle. No muscle can act without an order to act, no muscle can move without an order to move, without an impulse to move. The muscle is really a reservoir of force like a loaded gun; there is a reservoir of energy in the gun. The percussion cap must explode and set fire to the explosive in the gun in order that the gun shall be fired off. Now, the same thing is true of the muscle. The muscle is a magazine of energy and it is necessary that there should be an impulse sent to that muscle which will explode the energy, so to speak; for every muscular movement is a sort of explosion; so there must be somebody to pull the trigger of the gun inx order that the gun shall be exploded; there must be an intelligent will, which xxxxxxxxxx has a purpose which causes the muscular movement.

Now, this is just as true of the heart as it is of the muscle. I shall never forget a visit I had in my office once, I should think about fifteen years ago. A lady came into my office, a very intelligent woman, who had been for a good many years a teacher, and was the preceptress of a large seminary for yound ladies in the East. She came here to recruit her health, came into my office and sat down one day, burst into tears, and I told Her I was glad to do anything I could for her if I knew what her troublex was. "But, Doctor," she said, "my trouble is too deep; nobody can help me, nobody can help me; my trouble is too deep." "Now, what is the difficulty?" "Well, Doctor," she said, "I feel that God has forgotten me. I feel that my life is a failure and all my plans have been wrecked and my life is a failure, and I am just in uter despair." "Well, why do you think

God has forgotten you?" "Well, God is so greathe has no time to think of me." "Well," I said, "I think I can prove to you thxxx that God is thinking about you and that he does care for you; that he knows all about you and is looking after you. It may be that it was God that sent you here to this place. I would ot be surprised if you would find out that it was really the case. Just stop, now, to think for a moment and consider. How did you happen to come here? Did you sit down a year ago and say toyourself, 'Now, then, in a year from now I am going to be at the Battle Creek Sanitarium'? Have you been planning everything ever since, from that time to now, to draw yourself here?" "Oh, no," she said, "Oh, no, it was just an accident that I happened to come here. A friend said to me one day, 'You are not verywell, why don't you go to Battle Creek?' I never had thought of it before. I had known about Battle Creek, but I never thought about it." "And you say this was an accident? Are you sure about that? How did you happen to meet that friend? Was that an accident?" "Why, yes,--I don't know, I just happened to be visiting at another lady's house, and this lady came in and so I happened to come here." "How do yu know that all that was an accident? You could not have planned this thing out yourself. How do you know? Let us get right down to the actual fact in the case. I will prove to you that God remembers you, and that God is looking after you every minute. You could not live a minute if it was not for the fact that God was looking after you. Now, let us see about it. Let me feel your pulse." I took her pulse and counted it, seventy times a minute the heart was beating. I said, "There, your heart is beating just seventy times a minute. Now, suppose you make it beat a little faster." And I counted it again--"Why, it is seventy times a minute still; it is not beating any faster than it was before. Hurry it up a little, make it beat a little faster." "Oh," she said, "But I can't make my heart beat any faster." "Well, then, make it beat slower; slow it down a little if yu can't make it go faster." "Well, I can't do that either." "But your heart is beating; now your heart is a muscle. When your hands are going you can make them go faster or make them go slower, as you like.

Your heart isnothing but a muscle. Why can't you control your heartx as well as your arm?" "Well," she said, "I never thought about that." "Your heart can't beat without an order; it is beating seventy times a minute, and seventy times a minute it has an order to beat; just as if your hand was striking the table there seventy times a minute, and seventy commands from your brain would have to be sent out to it in order that it should do that. Now, your heart is working under orders just as much as your hand would be, just as much as any other muscle of the body would be, is working under orders, gets an order seventy times a minute, otherwise it could not beat, could not beat; it is only a muscle, nothing but a machine, and it has to have a director to manage it, you see, to direct it, has to have an engineer to control it, just as an engineer controls a locomotive." "I never thought of that." "Now," I said, "when you go to sleep at night your heart will keep right on beating all night, won't it? You wake up in the morning, and your heart is still beating; you have nothing at all to do with it; your heart is still beating. Did you ever think of it?" I said to her,--"did you ever think that when you go to sleep at night, how you are going to wake up in the morning? How are you ever going to wake up in the morning? It is easy enough to go to sleep. One is so tired he can not keep awake, and he falls asleep, so to speak, but one doesn't fall awake. One can not wake himself up. How is it we wake up? If you open the Psalms and read what David says about that, you see he knew how he wakened up in the morning. He said, 'He wakeneth me morning by morning." 'He', capital H,--He, the great He, the great Power that made us, wakens us morning by morning when we have had sleep enough, when our bodies have been refreshed. So while we fall asleep because we are exhausted, there is a Power that notifies us when to wake up, that wakens us. No physiologist can tell why one wakens up in the morning. It seems one of the most simple things, it seems one of the most commonplace things of our lives, yet there is no physiologist can xxxxxx offer any explanation of how we awake. The physiologists tell how we go to sleep--fatigue poisons accumulate, paralize the brain, they tell us,

they narcotize the brain so we can not keep awake; but how do we awaken? There are theories about it, but there isn't any theory that is generally, universally accepted, and no physiologist pretends to know; but David did know. He said, 'He wakeneth me morning by morning.'

"Now, we look into our body and we find another very interesting thing; that this process of creation which began when we were first made, is going on today just as much as it ever was, because we are dying, we are dying every day, every moment, every instant of our lives. Blood cells of our bodies, of which there are something like thirty thousand million million--of these red blood cells in our bodies,--these cells do not live forever. We are continually dying, and that is why we eat. We eat food to furnish the material out of which to rebuild that part of the temple that has been destroyed. We are temples, but we are going to decay dontinually. Some physiologist has said that an animal is a stream of matter passing through a certain form. So man is othing but a stream of matter flowing through a certain form. The form is the shape of our bodies, and the matter consists of the food that we eat--that comes in and goes out continually. Why, through the breath alone there goes out not less than ten ounces of solid carbon, the same sort of material that is in coal, and graphite, and in the diamond, solid carbon going out through our lungs every twenty-four hours, through the skin, through the excretory organs, material, matter is escaping and must be replaced. Now, this matter that escapes consists of portions of our bodies that have been destroyed, broken down in part, and we must have material with which to rebuild it. We eat our own weight about once a month to furnish material out of which to rebuild the body that has been torn down, the temple that has been broken down, worn out and passed away. Eight million blood cells are dying every second of our lives--just think of that a moment. Eight million blood cells every time the clock ticks,--eight million,--eight million,--eight million,--eight million more,--in five seconds forty million of these blood cells; in twelve seconds 100 million, and 500 million going out of our bodies every minute of our

lives. Now, that is something tremendous to contemplate, isn't it? Just think of it. So many millions of deaths occurring in our bodies every second of our lives, and they are replaced by a process of creation. Eight million cells die every second, and eight million cells must be created, must spring into being, must be brought into life--eight million blood cells, to take the place of those that die. Now, that is only one part of our bodies. The blood constitutes only about one tenth part of the body, or one fourteenth part of it, only a small part of the body is in the blood. Here are the living cells, muscle cells, gland cells, brain cells- these cells are all the time undergoing change, breaking down, and they must be reconstructed, must be made alive. So you see the process that was begun away back somewhere in the ages did not stop. When God made a man he had to keep right on making him. When God made man, he had to stay right by him, because the man he made was so frail, and so fragile, so delicate in structure that he needed the same divine omnipotent power that created him in the first place--he needed that very same power to stand right by him, and sustain him in life. That is the reason why the Apostle said, 'In him we live and move and have our being! The God that made us; the Power that made the universe, that same Power is still working within us. If it is working within us, the Power itself must be there."

I shall never forget a conversation I had with a little boy on a railroad train once. The little fellow's father had gone off and left him, and he was all alone; his father had some business somewhere in the train, was taveling wth his little son alone, a little fellow about seven years old, and the father was absent in the train somewhere, and the little fellow seemed a little lonely; so I gave him a pencil and a piece of paper to amuse himself with; and I looked upon his paper, and I saw he had drawn a picture of a watermelon, and I said, to myself, "Now here is a good chance to get an idea into this boy's mind that maybe will stick by him." There he had a little outline of a watermelon, the stem attached to it. I asked him what it was, and he said, it was a watermelon. I said, "What does a watermelon have inside of it?" He said, "It has something

sweet inside of it; it has sugar in it." I said to the little boy, "Where does that sugar come from? Where does the watermelon come from?" He said, "Oh, God makes the watermelon." He had been properly taught. That is literally true, not metaphorically true, but actually true. God makes the watermelon. "That is right", I said, "but what has the watermelon got inside of it?" "Sugar." "Where does that sugar come from?" "Well," he said, "I think it comes out of the ground." "Well, did you ever find sugar in the ground?" He said, "Now, there are salt mines in the ground, and there must be sugar mines in the ground too." I said, "It would be very nice if that were true, but I am afraid it is not." "Well, then, I think the sugar gets in through the stem," he said. "Now, if that were true, that the sugar came in through the stem, the stem ought to be the sweetest part of it, oughtn't it?" "Well, I should think so," he said. "Well is it? Do you like the stem the best of any part of the watermelon?" "Oh, no," he said, "the stem is not sweet at all." "Then it must be it doesn't come in through the stem." That is a rather shallow argument perhaps, but it answered the purpose at that time. The littleboy said, "Well, I guess it must get in somehow." "Well, how do you think it gets in? Here is the watermelon; there is no place for it to come in but through the stem, and it does not get in through the stem, and you say God made the watermelon, and God made the sugar, but where did he make the sugar?" "My," he said, "he must have made it in the watermelon." "Well, if God made the sugar right inside the watermelon, where is God working, where is God?" "Is God in the watermelon?" the little boy said. "Is God in the watermelon?" It was a new idea to him. He is in the watermelon, he is in the watermelon; and not only in the watermelon, but in us.

Now, when a physiologist looks into the body, he begins to comprehend or appreciate its wonders as nobody but a physiologist can, and he is compelled to come to that conclusion, that the same divine, creative Power that made all things in the beginning is right at workin the ody itself; that it is a living temple, and the Builder is there at work. When God made man, in other words, when God made

man, in order that he might be like himself, in order that he might be really his image, he had to put himself into him. It was not simply an outer resemblance, but it was far deeper, far deeper, far more thoroughgoing than that man was made in the image of God. God actually, as you may conceive an artist, if he had the power to make a statue exactly like himself, then actually put himself into that statue. That is what the divine Being did with man, what he had to do in order to keep him alive, because this creative Power is going on within the body in every little blood cell, in every little fiber, in every gland, in every part of the body to its remotest bounds, from center to circumference, the divine Creator is still at work. Now, if you should see this book rising and falling, and rising and falling, and rising and falling, you would know that there was some power there lifting it, some power moving it; so when you lookinto the body and you see creative power at work, you know that where there is creative power at work there must be a Creator at work, for creative power and the Being which wields that power must be inseparable. Power can not depart from the source of power. Power and the source of power must be forever in contact, they must be forever one. Power is not a thing that can be separated from a thing that exercises power. Power and the thing that exercises the power are one. Muscular power is connected with the muscle. When the muscle is there, the power is there; destroy the muscle and there is no power; the power is gone; you can not separate muscular power and muscle. So creative power requires creative presence, in other words; and when we see this evidence of divine creative power in the body, we know that the divine presence is there; so we are really living temples. So what Paul said was an actual scientific fact--"Know ye not that your bodies are temples of the Holy Ghost?" That is, of that great Power, of that great Spirit, of the great, divine Intelligence which made us, which created us and, I am very glad to say, who is still with us.

Now, John Fiske said when he was a boy the conception he got of God--John Fiske, the great historian, professor at Harvard for a good many years, he said

"When I was a boy the conception that I had of God was that he was a great Being up at the zenith. I had a picture in my mind of a great Being up there, a great, tall man with long black hair, fierce bladk eyes, aquiline nose and sharp features, standing behind a desk and looking down over the world with a searching glance every now and then , and puttig something down in some bocke up there.. That is the idea I had of God." Now, that is not vey different from the average idea of God, I think. The average child gets something of that sort of conception--that God is a being far off, lockng on in a critical way. I remember my first conception of God from reading Sunday-school books--a God that watched little boys particularly sharp, and if they went fishing Sunday they were sure to get struck by lightning or something was going to happen to them, that God was after the man who was doing wrong, was after him sharp, and he would hit him if an opportunity offered. Now, my conception of God, I am glad to say, is different. When I came to study physiology and study science, saw the evidences of God working all about us, not as one who is looking on, but as one who is himself personally concerned in our individual affairs.

Well, I talked with this lady, s I was telling you, told her the very things I have been telling you here, and by and by alook of hope came into her face, and as she went out of my office, she seemed to be feeling better. Two weeks later she came into my office again, and shex had a happy look on her face, an entirely different expression. She said, "Doctor, I have begun a new life. You know, when I came inx to see you the other day, I had not prayed in fifteen years. I was brought up a Methodist, but I got such an idea of God that I didn't like him, and I thought he was simply looking after me to find some fault with me and to punish me. I never had any conception of God as being interested in me personally; I could not believe he was. After I went out of your office, I went up to my room and sat and thought about it for several hours, and by and by the sun had gone down and twilight was coming on, and my window was open and I was looking out upon the beautiful scenery and the sky, and I dropped upon my knees before the

open window, looked up at the sky, and I said, ~~X&X~~x "O God, Creator of all things, help me to believe in Thee"; and she said, "It all came upon me at once, the truth of this great thought that my body is a temple, and that God is close by, not far off but close by, near to every one of us, as Paul says you know. From that moment that lady was happy, and her hopes, and ambitions, and anticipations began to be realized, ~~XXXX~~ and today she is one of the happiest women in the United States. She is a mother of a beautiful family of five children, and living out in the West. Her husband is a doctor, and they have a very successful and happy home, and she is a very happy woman. And her unhappiness was due to the fact that she had a wrong conception of God. That is a curious thing--what wrong conceptions of God have gotten loose in the world. Nearly all the religious controversies grow out of the attempt of some man or some set of men to make some other man or set of men believe or accept his conception of God; and these conceptions are almost altogether wrong. We can not form any absolutely definite conception of God, cannot tell how he looks in his face, can not tell how tall he is; we can not fathom those questions at all, but we can know that God is a personal Intelligence, that he is a ~~XXXXXX~~ present help in every time of trouble; that he is ready to do everything he can for us, and is all the time doing all he can for us.

You ask me, then, "How can I be sick if God is all the time doing everything he can for us? Why don't he keep me from getting sick?" He could not keep you from getting sick; he could not do it." "Why, is God limited? Are there some things God can not do?" "Most certainly there are." God is the most limited being in the universe. That may seem like a very ridiculous notion to some of you I am sure, at first thought. Although he is omnipotent and infinite, the very fact that he is infinite limits him. He can do nothing but what is absolutely perfect; he can do no imperfect thing; he can do no wrong thing, he can do no inconsistent thing. God must be consistent with himself; he must be reasonale. Some things God can not do. I was talking with a man once ~~XXX~~ many years ago. I

had this thought then, and I was talking with a man who disputed me very strongly. he said, "Tell me one thing God can not do?" I said, "That is very easy. God could not make a three-year old calf in a minute." "Oh, but he could." "No, he couldn't. He could make a calf as big as a three-year old calf in a minute, and it would look like a thee-year old calf, butk he would not have had the experience on the grassy meadows, don't you see? There would be a whle lot of experience behind the three-year cl d calf, that the new calf would look like but would not have. It must all be there. God must be absolutely consistent.

Now, here is a man that has tobacco heart because he smokes tobacco. The fist time he smoked the tobacco, God saved his life. Tobacco woul d kill him if he did not. He saves his life out of mercy and compassion, to give him a chance to repent. The next time he smokes, his life is saved again; and so it goes on; but all the while a little damage is being done to his heart, and by and by he gets to the point where his heart is so damaged and so injured that it can no longer do its duty well, and then he begins to suffer from shortness of breath, and pain in the region of his heart, and palpitation, and various other symptoms. hegoes to a doctor, and the doctor tells him he has tobacco heart. Now, no amount of praying will help that man's heart at all, because God has been doing for him every day everything he could possibly do consistently. Suppose the man smoked, and God should restore him to perfect health each time, and he didn't suffer any consequences of the smoking, that would be an endorsement of tobacco, don't you see,--that would be an endorsement of tobacco using and smoking, but tobacco is a poison. Now, there is a great law that God recognizes, that we ourselves recognize--"Whatsoever a man soweth, that shall he also reap." There is no escaping that. God can not change that, because that is a law; tht is a principle in Nature, and it can not be set aside. God himself could not set it aside, because it is a principle in Nature, not a principle God has made, but a principle that exists in the very nature of things. "Whatsoever a man soweth, that shall he also reap." Go out and sow corn, and you get corn. Now, a brewer

sows corn to make whiskey out of, and he gets just as good corn and just as good a crop of corn although he intends to make whiskey out of it--he gets just as good a crop as the other man who intends to sell his corn to get money to suppose a missionary cause. The brewer gets just as good a crop as the other man does, just exactly as good a crop. Why? Because there is a promise in every seed of corn, and God has to stand by every little grain of corn. He made it, and he put a promise into it, and he must stand right by it. God must be true though every man is a liar. So here are certain limitations of the divine Power. Those limitations are the divine perfection, the divine intelligence, the divine justice--all of those things limit the divine Power; so God can not heal the heart of the tobacco smoker just as long as he continues to smoke. God is working for him, doing all he can for him to keep him alive, but he can not make him well so long as he himself is using his will in a contrary way. So the first thing for the smoker to do is to turn over a new leaf, to stop smoking. Cease to do evil, the old prophet said, and learn to do well. Now, when he ceases to do evil and learns to do well, then he is co-operating with God, and then he will be restored as far as he possibly can be restored. This is the thing in which there is great hope. No doctor can heal, no remedy can heal. There is only one power in all the universe that can heal, and that is the same power that creates, for healing is creating; healing is creating, and the Power that created is the same Power that heals today. The Power that made us in the beginning is the Power that heals today. The Christian Scientists have got a little inkling of that thought, just a little inkling; but they make a wrong use of it. The Christian Scientist says the body is a living temple and God dwells in the body. Mrs. Eddy says, "God dwells in me; I am god." That is where the mistake comes in. "I am a living temple; there is a divine life within me; I am divine." That is an error. That is not a right conclusion. I am not divine, but I am a temple of the divine Power. There is divine power within me, at work within me.

Now, there are two ~~xxxx,xxxx~~ wills, the human will and the divine will.

The divine will takes care of my heart; the human will has control of the muscles, but doesn't have any control of the heart at all. Now, if we would let the human will become as thoroughly subordinate to the divine will as the heart is, so the same will that controls the heart also controls the muscle, so that the same ~~xixkxx~~ will wich controls the heart and the stomach and the liever and these other ~~axgxxxx~~ internal organs--so that that same will shall control the mind, the reason, and every action of the body, and every purpose of our lives, then we would ~~liv~~ absolutely perfect lives. Now, the great ambition of my life is to let this divine Will control ~~xyxkapgixass~~ me absolutely, every power and every purpose of my life, so that mylife may be the means of accomplishing as much good as possible.

Now, the purpose of my talk to you, my friends, this afternoon, is not simply to exploid ideas, not to tell you what I have been saying to you simply as my views of things, but to hold up before you the fact that there is a great healing Power that is accessile, a geat healing Power that is not far away; that there is a Power that is able to heal, a Power that is able to save to the uttermost; a Power that is able to heal bodily, physically as well as mentally and morally. And this Power is accessible. You don't have to go to the Christian Scientist to get the Christian Scientist to intercede for you. You don't have to go to a preacher nor a doctor to get them to intercede for you. All in the world the Doctor can do for you is to help you to find the way, to get out of the way, to get your will in harmony with the divine will, to get you ir tune with this great power that is behind the harmonies of the universe. That is all that anybody can do for you. The healing power is within. It is a power that dwells within, that we could not leave for one moment without, and all we can do is to make conditions right, to get out of the way, to take our own wills out of the way and make our acts conform to the divine order which relates to our bodies. Now, this may not seem very real to you; it may seem a little far off; and I must give you a little of my own personal experience so you will see how practical this thing is.

I remember very well I was coming into the office one day, and I passed a man on the porch, and he looked so wretched and so miserable, his face followed me. He was a stranger just arrived, and I had not met him. The expression on his face followed me; and I got into my office and sat down to my duties, but his face kept looking at me, so I left my office and went out upon the porch, and I was very glad to find him. And I said, "My friend, are you feeling badly?" "Oh, horribly, Doctor, horribly, horribly; I am just miserable." "Well, what is the trouble?" "Oh," he said, "Oh, Doctor, I am afraid I shall take my life; I am afraid I shall take my life; the horrible thoughts that haunt me." "Well," I said, "Come into the office and sit down, and let us talk it over." He came into the office and I said, "How did you sleep last night?" "I didn't sleep a wink, Doctor; I haven't slept for a week." He said, "I just came in yesterday, and I have not slept for a week, and I feel as though I should lose my reason; I am afraid I shall take my life; these awful thoughts torment me." I said, "Well, my friend, you say you can ot sleep." "Yes, Doctor, I can not sleep." I said, "Nw, I knew of a man that had just your experience; he was in just the same situation you are in; he could not sleep." "Did he find sleep?" He said. "Yes, he found sleep, and I will tell you how. What is your nationality?" He said, "Doctor, I am a Hebrew." I said, "Then he was a relative of yours. I will read you about him." I opened my Bible. I said, "Here is what he said about it." And I read it to him: "I am weary with my grounings. All the night make I my bed to swim." "That's me", he said, "That is just me." "I water my couch with my tears. My eyes are consumed with grief." "Why, Doctor," he said, "this has worried me to death. I would give the world if I could get out of it. Is there any help for me?" I said, "This man found help. Just see what happened to him." "The Lord hath heard my supplication. The Lord will receive my prayer. Thou hast put gladness into my heart." "It wasn't there before; there was a Power that put it in. "I will both lay me down in peace and sleep, for thou, Lord, only makest me to dwell in safety." "Now, " I said, "do you pray?" "Yes, I say my Jewish prayers every morning." "Wel ," I said, "suppose we pray." We got

down on our knees, and I prayed a few words, and then he prayed. I will never forget his prayer: "O Lord God, thou great and holy One that liveth between the cherubim, that dwelleth between the cherubims,--O God help me. Oh, thou great and mighty One that created the heavens and the earth,--O God, please dox something for me." So he went on. He said his Jewish prayers, and once in a while got in a word for himself, don't you see? He had never prayed any other prayer but the formal prayer, but he got to the point where he really cried out from his heart. We got up from our knees, and he said he didn't feel any better, but I met him an hour afterwards in the lobby, and he came across the lobby with his face full of smiles, "Doctor, I am another man; it is all gone, it is all gone." Gladness had come into his heart, don't you see?

Now, there is a Power that can put things into our hearts that are not there. And that is what God is for. There is a Power that can heal, and is willing to heal. I remember very will some time ago I heard a sermon about a man whose little girl was sick with diphtheria, a little child three years old. His wife was dead, and he had two little ones left, a little girl of three and a son of seven; and the little child was sick with diphtheria. The doctor had given the child up to die. He was a very wicked, profane man. I heard a minister telling the story of this man. He had been a very wicked, profane man, but he saw the little one dying there, and he got down beside the little bed on his knees and pled with God to save the little one's life. And the little one recovered. A clergyman was telling the story, and I heard a man say afterwards, "You can not make me believe any such doctrine as that,--that God would hear the prayer of that wicked man. The Bible says 'The prayer of the wicked is an abomination to the Lord.'" Now, that man had not got any conception yet of what God is in his relations to man. He did not appreciate the fact that God was more anxious for that little child to recover than the father was. The praying of the father had something to do with the recovery of the child; there isn't any doubt about that. The little one got well at any rate; because it is not our worth or merit that appeals to God, but our need. "The prayers are to God for the in food" the

Psalmist said, and Job says, "He heareth the young ravens when they cry."

Then there is that story of the poor boy dying of thirst in the wilderness. I am sure you have all read that story,--the poor boy that was thrust out with his mother from the household of Abraham, and mother Hagar carried the little boy, perhaps twelve or thirteen years old, out into the wilderness, and by and by the food was gone, and the water was gone, and they were perishing in the wilderness, and she laid him down behind a bush and went off some distance so she would not hear his cries, so she would not hear his dying groans, and while she was wandering about there, waiting for the little one to die, I suppose she hit her foot perhaps against a stone that was covered up with sand,and brushed the sand away, and found that stone covered a well, for that is the way theyprotected the wells of that country. The drifting sand soon fills up the well unless it is covered, and the well was covered, and she stumbled upon it. An angel led her to the spot, the Bible says, and the record says that God heard the voice of ~~kha~~ whom? Of Hagar? God heard the voice of the lad. Now, there is wonderful hope in that thing, my friends, in the fact that God heard the voice of the lad. He hears the ravens when they cry for their food, the young ravens. He feeds the young ravens. Then can it be possible that there is a person here that God would not hear? Now, I am going to just tell you as I said a moment ago a little how this thing works practically. I am in trouble for one thing, have been in trouble all my lifetime; I am in trouble all the time. I can not remember a day since I was ten years old that I have not been in trouble. I unfortunately got into serious business when I was a very small boy, never had any childhood that I can remember anything about. I had responsibilities laid on me when I was ten years old, and have had all my life time a great deal more than I knew what to do with, and a great deal more problems than I knew how to solve, and I have had for thirty years or more--35 years I have been in charge of this institution, and I have had difficulties that I can not tell you about that were just like a stone wall right before me, that I could not see any possible way to go a step forward;

and if it had not been that I had faith in God and that God had a mission for this institution and this work, I certainly would have abandoned it long, long ago. And I am perfectly frank to tell you this, glad to tell you, because I don't want anybody to think that this institution has been built up by ~~indixid~~ anybody's skill, or by anybody's wisdom or ability. It is here because it is a miracle of God's providence that this place is here, that this institution is here; it could not exist in any other way. If I should tell you all about it, you would be very ready to agree with me--if I could tell youall the details of it; but I won't stop for that. I have been in trouble all the time, so I had to pray. A man asked me one about what I thought was the philosophy of prayer, how it is God helps people, and what good it does to pray any way. "Well," I said to him, "All I know about it is this; that when I am in trouble so I do not know what else to do, I cry for help, and somehow I get it." Now, I am going to tell you just exactly how I have had help sometimes.

I remember as though it were yesterday, some years ago when I had to do a surgical operation; it was a bad operation, a difficult operation, and operation that I dreaded to do because of the risk to the patient's life which was so very great, and yet it was the only escape from a life of perpetual suffering. A good many surgeons had seen the patient and refused to operate because it was a desperate case. A surgeon does not like to do an operation when he feels the patient is very likely to die; it hurts his reputation to do such operations as that, and he does not like to do it; and then it is an awful thing to a surgeon to do an operation and then have the patient die; he can't shake that off. It follows him day and night,--"Did I do everything that I could do?" Oh, how many times, how many nights, how many nights, how many nights I have rolled in my bed and begged God to take away from me every thought that I might get a little sleep to prepare me for the next day, because of the strain of the day at the operating table. The tension is sometimes terrible, my friends, more than I can tell you anything about; it is to me at any rate, and I know it is

to a good many surgeons--the fear that something may have been left undone that ought to have beenx done. When a surgeon stands at the operating table, he hasn't time to go to consult any books; he hasn't time to a doctor, or to some surgeon or somebody else to give him a suggestion. He has got to sum up all of his experience and all of his knowledge, and have it right there ready for instant operation, and there isn't any man on earth that can do it; there isn't any man on earth that can do it if God don't help him; and I believe that God helps every surgeon that honestly trxes to relieve some poor, suffering mortal,--I believe God stands by him and helps him; I don't doubt it a minute.

Well, I had a case I dreaded very much to operate upon, and as I went to the operating room, I was earnestly asking God to help me; and as we stood at the operating table before beginning the operation, we all bowed our heads and asked God to help us all to do our best for that patient, because we always do that; and now when I came to the operation, it was a great tumor, grown fast to everything. The tumor was removed, and there was a great, hollow place, a hollow place in the body there from which that tumor had come, and blood was spurting from a thousand little points,--blood was just welling up from every vessel, pouring out in such quantities that the patient would be dead in three minutes if there wasn't something done. Well, everything was ready, and everything that could be done was done and done as rapidly as possible. When I held my hand against the bleeding surface it would stop the bleeding partially, but not entirely, and I knew something must be done. The last measure I knew anything about we had tried, and it had failed, and the blood was still pouring out, and what should we do? I didn't know. I stopped doing anything and turned my face toward heaven and prayed God to help me save that woman's life. I opened my eyes and the thing was done, the things was done. When I stopped doing anything the surfaces of the wound were brought together just so and shut up tight, and I saw it all at once; one surface fitted tight against the other, and so stopped the bleeding, and all I had to do was to put in a little suture and a few stitches

around the edges to keep those two surfaces together, and the patient's life was saved. Now, I do not suppose that any miracle was wrought. I don't suppose that any divine Being brought those surfaces together, closed them up. I suppose those surfaces were closed together by the patient taking a deep breath. The patient took a deep breath and pushed the two surfaces together. But this was the point: While I was trying to stop the bleeding I was pressing open those two surfaces, and the patient would soon have bled to death; but when I stopped trying, did nothing at all, then the power that is working within us all, caring for us all, did the thing which was necessaryx to be done for her; and I paused and looked up toward heaven for help, and that gave an opportunity for the operation of these natural processes that were at work there. Otherwise I should have hindered it; I should have hindered. So when we get down upon our knees and look up toward heaven, cry for help, we are stopping, we are pausing, we are listening, so to speak. Our own wills are at rest, our minds are open, and God can put the thought in there that we need to help us. Now, that is what brought you here, my friends; that is how you happened to come here. A good Providence sent you here to get something that will help you. And I believe that heaven planted this place here, and planted here certain truths to be of use in the world, and that is why you came here. It was not because I am a great man, because there are not any great men here; we are all small people; but there are great principles here, principles that will bless you and bless your homes if you will take them home.

Now, the thought I am trying to give you here this afternoon-- I thought I might give you a few illustrations from my own experience, how God helps us; but my purpose has been to try to bring to you as a reality the thought that God is with us, that he dwells in us, and that all he asks of us is submission to his will and co-operation with him. Let us do that. Thank you.

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vinegar 22 → Starch & acid stomach 27 → brain 31 → bee's honey 32 → bath, morning 34

QUESTION BOX LECTURE

At the Sanitarium Parlor, Battle Creek, Mich., Monday, August 28, 1911, at 8:00 P. M., By,

J. H. Kellogg, M. D.

Lecture 39

Question: Generally speaking, is raw milk laxative?

Answer: That depends upon the quantity. If raw milk is taken in sufficiently large quantities, say a tumblerfull every hour, it may produce a very decided laxative effect; but if it is taken in only such quantity that it can all be digested and absorbed, then it is not laxative. Milk is only laxative when taken in such large quantities that some undigested curds are left behind, and the intestinal contents become acid, and then there is a laxative effect. A very interesting fact that was discovered some years ago by experiments upon animals is that the intestine, the colon is stimulated by acids, but is not stimulated by alkalis. The normal condition of the colon is slightly acid. When putrefaction takes place, the products of putrefaction are alkaline--ammonia, and ptomains of various sorts are formed, which are alkalis, and hence the natural acids are no longer present, and that is the reason why flesh eating tends to produce constipation--it is because it produces putrefaction, and putrefaction produces stasis or inactivity of the colon. On the other hand, starch, farinaceous foods, cereals, etc., undergo slight fermentation. Some portions that are not digested in the intestine undergo slight fermentation and produce lactic acid, and the lactic acid is laxative. Acids stimulate the colon. That is the reason why acid fruits are laxative and sweet fruits are laxative, because the sugar of fruits undergoes a slight degree of fermentation, producing an acid. Oranges, apples, apple-juice--all kinds of acid fruits are laxative.

Q. What is neuritis?

A. Neuritis is inflammation of a nerve. A great many of the pains

that people attribute to rheumatism are really neuritis. Neuritis is produced usually by toxins. Poisons circulating in the blood irritate a nerve and set up an inflammation or neuritis. Neuritis is more commonly caused by toxins absorbed from the colon thanby any other cause. Sometimes neuritis may be produced by colds. One of the most efficient remedies for neuritis is an application of heat. Hot fomentations, a bag filled with hot water, a photophore, or heat from an incandescent lamp,--any of these things or any method of applying heat, but particularly the arc light,--any of these means of ap lying heat are efficient means of relieving neuritis.

Q. What results does one receive by taking sunbaths?

A. The light of the sun is the great vitalizer of the world. The rays of the sun are the great source of energy to the world. In fact, the sun and other suns like our son are the sources of energy throughout the universe. Nearly all the energy the world gets, it gets from the sun. There is only one other source of energy, and that is gravitation. Now, let us see how much energy we get from the sun. When the sunlight falls upon the green leaves of a tree, the sunlight is captured by the chlorophyl, and by means of the energies of the plant, this energy of the sunlight is entangled, it is captured, and it is woven into a fabric that we call wood or that we call food. We may take a tree and put it into a furnace and heat it and it burns, and the sunlight comes out again; and the light and heat we see coming out from a burning faggot is sunlight; it is not woodlight; it is not simply firelight; it is sunlight that is being recovered, that is coming out again, that has been captured and stored up, and now is coming out again. Now, the trees fall down beneath heavy rocks and are buried deep in the earth, and through the ages are converted into coal. We dig out the coal, raise the temperature of the coal until it bursts into flame, and back comes the sunlight again. We put this coal into a furnace and make steam, and with the steam we run an engine, with the engine we run a dynamo, and the dynamo makes electricity, and then we see the sunlight coming out again in the electric light, the same sunlight that shown upon this earth nobody knows how long ago; so this

is resuscitated sunlight; and we have sunlight in this way at midnight. So we see that all the steam engines in the world are run by sunlight; all the great mills, great factories--the wheels are being turned by the sunlight that has been captured and stored up in the form of coal. The sunlight shines out over the water, over the lakes and rivers, and the moist earth after a rain, and upon the great ocean, and in the contact of the light from the sun with the water, the water is captured, and the heat converts the water into steam, and it rises in the form of vapor, goes off in a warm, moist current of air, strikes a mountain top somewhere, and is chilled, converted into rain which falls down on the mountain side, forms a rivulet, and the rivulets join together and make rivers, and by and by a man comes along and he makes a wheel, sticks it into that river, and the current of water turns the wheel when it is running down hill, and the wheel turns a mill, the mill grinds flour and does all sorts of things--makes electricity; so the sunlight comes out again. The sunlight, you see, turns all the water wheels. The sunlight heats the air at the equator, and it rises and floats over toward the poles; then it gets chilled and comes flowing back over the surface of the earth again, and a man puts up a wheel, a wind mill, and the wind turns the mill, a saw mill, a grist mill, or some other sort of mill; or a pump; so we see that the sunlight turns all the windmills. The sunlight shines out upon the great wheat field, and it is captured, stored up in the wheat or the corn, and the ox eats the corn, then is hitched to the plow, and that sunlight pulls the plow with the muscle of the ox, you see. Or a man eats the wheat and the wheat is converted into man, and that wheat goes around walking and talking, acting and thinking, performing a series of wonderful exploits; so we see the sunlight is really the great source of energy in the world. Now, when one eats wheat or corn he gets sunlight at first hand, don't you see; and when he eats the ox after the ox has eaten the corn, he gets the sunlight at secondhand--polluted sunlight, don't you see. Now, why do we take sunbaths? We take sunbaths for the purpose of getting into our bodies some of this marvelous, miracle-working sunlight. A sun-

bath does not stop with the skin, but it goes in. Now, if you stand up before a warm stove to warm yourself, the heat does not penetrate the body. Your clothes are warmed, and after they get hot, they warm the skin, then the warm skin warms the muscles down under the skin, and so the heat gradually works in, but it can't get in very far because the currents of blood that are all the while moving through are carrying away the heat, and it can't get in very far; but now when a ray of sunlight strikes the body, or a ray of light of any sort, from any source, strikes the body, it goes straight in; it does not have to warm the surface, and then the hot surface warm another surface below, and then another layer below that; it strikes instantly right straight through; the moment the arc light strikes you or the sunlight strikes you, instantly the whole body is filled with light. I remember how astonished I was the first time I took a peep inside of the body through the instrument, and the inside of the body was all dark. Then I applied an electric light to the outside of the body, and instantly the whole interior of the body was illuminated; the whole interior of the bdy. It was one of the most astonishing things that ever happened to me when I saw the whole inside of the body illuminated, lightened up by an electric light applied to the outside. Now, if a doctor wants to know if you have got any pus up in the frontal sinus, he puts a light up here, then looks up in the nose or through the back of the mouth--he puts a little light perhaps in the mouth here, then has the patient shut his mouth up tight; then, in a dark room, he looks at the patient and his wole face is illuminated; he has for once a luminous countenance. If he has a black spot here, there is something in the maxillary sinus; if he has a black spot up here, there is something in is frontal sinus, don't you see? Pus in there perhaps. The X ray nowis a better means, but that is one of the ways known as darkness illumination, one of the means of diagnosis. Now, the sunlight is more powerful than ~~any of these~~ electric lights, so when one's body is actually exposed to the sunlight, ~~xIxxxxx~~ or when he wears white clothes, as you see I do, in order to set you a good example and because I feel so much better myself,--then the light passes right through into the interior of the body. Pictures have been taken

away down two inches below the surface of the body; so you see the sunlight is a powerful vitalizing agent. Here is a poato sprouting down there, and you see those sprouts and the potato may have sprouts on it a foot long, and those sprouts will be absolutely white. Bring that potato out into the sunlight and in a little while that stem becomes green; it begins to take on the colors of the rainbow, don't you see? There are all sorts of colors in the sunlight, as we see when we take a lens and break up the sunlight into different parts, or when we see a rainbow which is on the same principle. So flowers have no color and plants have colorless leaves, if they have any at all, when they grow in the dark. So with human beings--brought up in the dark, they lack color, they lack strength, they lack vitality, and they have short lives just as plants do. Sunlight is one of the most powerful vitalizing agents. By means of the sunlight, the blood making power of the body is greatly increased, the appetite grows, the metabolism is improved, and all the vital processes are stimulted to increased activity.

Q. When the tongue is coated and is sometimes brown, sometimes yellow, sometimes white, sometimes green and sometimes purpole, what symptoms are indicated by these various colors?

A. Only just one symptom, and that is autointoxication,--things rotten in the colon. Sometimes one thing is rotting, don't you know, and sometimes another thing is rotting, and sometimes another. So you have different colors on your tongue. That is not the real reason. The real reason for these color coats upon the tongue is found in the growth of different kinds of fungi. Something more than twenty years ago I began to talk to people about germs upon the tongue, and you cannot imagine how they used to laugh at me when I talked about germs upon the tongue, how much sport they used to make of me when I began to talk about typhoid fever germs, and about consumption being contagious. Thirty-five years ago I was preaching that I thought consumption was contagious, and I could hardly find anybody who believed it. When I was a member of the Michigan State Board of Healh over thirty years ago, I was preaching at sanitary conventions in different parts of the state and other states that diphtheris was contagious,

I was ridiculed as a crank. A good many doctors ridiculed me. One doctor wrote me a letter, and he said diphtheria was no more contagious than a post was contagious. You could catch diphtheria just as easy as you could catch corns from a cornstalk. Now he was very much in earnest about that. He said, "Now, to prove that diphtheria is not contagious, I have ~~taking~~ taken a diphtheria membrane out of the throat of a child and put it into my snuff box,--to prove that it is not contagious." He was a snuff taker. In two weeks he was dead of diphtheria, and I didn't mourn a bit. I was not glad he died exactly, but I could ot bring myself to shed any tears that that man was dead, because he had been going all over the neighborhood telling everybody diphtheria was ot contagious. He put it into his snuff box, snuffed it up his nose, got an attack of diphtheria, and died of it. Now, we had to wait for a lot of these standpatters, if you please, to die off. That is the only way to get rid of standpatters--it is to wait and let them die off. They will die off after while. The world must be moving on. It is movingon. And the standpatter is not a man who progresses. This is the insurgent. I am not saying I am an insurgent politically; I am somewhat of an insurgent, I think, and I am somewhat of a standpatter too; but I believe in making progress. I only mention this to show you that things that seem to you today to be strange, peculiar and ridiculous, ten years from now will be commonplace. The facts that are commonplace today about typhoid fever and diphtheria,--these things were perfectly ridiculous thirty years ago; nobody had any faith in them. I went to Germany twenty-eight years ago to see the tubercle bacillus, and nobody in this country had seen the tubercle bacillus, the bacillus that makes consumption or tuberculosis. I hadn't any doubt I was going to see the germs, because I believed the theory. It accounted for all the facts; it was reasonable; so I went over to Germany in order to see this bacillus, and when I came back, I found nobody believed it, nobody believed it; there was not one doctor in 100 who believed that consumption was produced by germs, or that it was really contagious. And for ten or fifteen years after that time, the professor of pathology, in the University of Michigan, in this very state, ridiculed the germ theory of consumption.

Nobody at the present time doubts or questions it. Now, the very same thing is true with reference to these things I am telling you here tonight about the cause of these symptoms that we attribute to autointoxication. It is simply another revelation of the mischief-making powers of germs. Well, now about this tongue--what makes these coats on the tongues? I was telling a man about twenty-five years ago just what I have been telling you here. "Oh," he says, "I don't believe that is the cause of this coat on my tongue. You are a crank on germs; you are attributing everything to germs." "Now," I said, "I will prove it to you." I was all ready for him. I had some sterilized potatoes in my office, some potatoes that I had to keep there in those days to demonstrate the fact; so I had a dozen sterilized potatoes, potatoes that had been boiled, had been cooked, had been thoroughly sterilized,, and I had them under bell glasses--some water in a shallow dish, then some bell glasses inverted over so that no air from outside and no dust, nothing could get into them; so I said, "Look here, I will show you the fact"; so I scraped off from his tongue some of that mould, and I raised the bell glass, then planted a little of the coat on his tongue, planted a little on each one, on three or four different potatoes. I said, "Come in again in three days." In three days he was back, and each one of those potatoes was covered with a growth of moulds and various other germs, and had different colors. One was red, another was green, and another was yellow. "Well," he said, "I don't believe those came from my tongue." "Well," I said, "you have my word of honor that they have not been opened." The vessels had not been opened since I closed them up after I had planted them from his tongue, and I said, "I will prove it to you." So I took off the bell glass and let him bring one of those potatoes close to his nose and get a smell of it. I said, "Do you know what that smells like?" "Yes," he said, "I recognize it. That is my breath, sure enough." That was it. It was the very germs growing on his tongue; he could recognize it by the smell of it. There was no disputing it. That is the way I had to prove things 25 or 30 years ago. Well, now, people are getting more faith in germs. I remember very well a lady looking at some germs, and she asked me how big they

were. "How large are they?" she said. They were diphtheria germs too. I said, "Well, if there were about ten thousand of them arranged in a row, it would make a line an inch long." She said, "Oh, such little fellows as that I aren't afraid of--such little fellows as that." These little fellows make tremendous mischief. They grow so rapidly, and that is what makes the trouble. These germs growing on the tongue grow mostly at night, and for this reason. In the day time you are drinking water, eating breakfast, dinner and supper, nibbling things between meals, perhaps, and you are swallowing the saliva secreted, and the tongue is moving around in talking, so the coat disappears, sometimes may disappear almost entirely, but at night, while you are asleep, the germs that are in the mouth there, grow upon the tongue; there is nothing to disturb them, and in the morning when you wake up there is a fine crop of fungi closely allied to the moulds that grow on the wall--the same sort of thing, and that is why the tongue is coated, and it is not the tongue only. You think your tongue tastes bad, smells bad, but it is not only the tongue. The tongue is only a part of the lining skin; it is just a little piece; you can put it out here and see how it looks. What about all the rest of it? There are seven square feet more. The tongue is only the tip end of it--seven square feet of thislining skin, and most of it looks a great deal worse than the tongue; it is a great dal worse. And if the tongue tastes so bad, just imagine--multiply that four square inches of tongue, or four square inches of bad taste,-now multiply that by 100--just think of it--see what a bad taste that would be. A pretty good sized one. It pays to be good, my friends. Take such care of yourself that the inside of the body is just as clean as you try to keep the outside of the body. It is a great deal more important that the inside should be clean than that the outside should be clean.

Q. What are the signs of a diseased thyroid gland?

A. One sign is big brown spots coming on your hands. Look at them and see if you have them. They are coming there sure. My, but I saw some spots today! A lady's hand looked justlike a leopard for all the world. Look in the glass the

next time you get a chance, and see those great brown circles around your eyes. That is another evidence that the thyroid gland is not able to do its work. Another symptom is a dry skin, and a dry, shiny parchment like skin. That is another symptom. Another symptom is inability of the body to destroy poisons, as indicated by frequent bilious attacks, and by a general chronic condition of autointoxication. Now, the trouble is the thyroid gland has had too much work to do in destroying poisons; with floods of poisons pouring into the blood continually, the thyroid gland is overworked by and by and gets worn out, then you must give it an easy time. Why, it is possible to live without the thyroid gland. When a dog had his thyroid gland removed he lived perfectly well so long as he ate bread and milk, but when he ate meat, pretty soon he got sick, began to have headache I think--he didn't mention about it, but I am sure he must have had headache and had a bad taste in his mouth, felt bilious, and after a few days began to have fits. That was evidence there was something the matter, because in three or four weeks he was having fits all the time, and died of paralysis. The dog always dies after his thyroid gland is removed if he eats meat; but if he does not eat meat, he gets along all right provided he lives on natural foods. Now, the leston from that is a person whose thyroid gland has been overworked and worn out and is giving evidence of it in premature old age, hardened arteries, high blood pressure, inactive, dry skin and evidence of premature senility, pigmented skin,--such a person should never eat meat because he hasn't got a thyroid gland that is strong enough, that is able to cope with the poisons produced by the meat and destroy them.

Q. What can a man do who must continue a sedentary life, in order to make a permanent recovery from autointoxication? What should he do?

A. I am glad to have this question asked, because it is possible for a man to live asedentary life and still be healthful. It is not necessary for a man to be outdoors running and jumping or climbing trees and going through all kinds of violent operations and activities in order to be well; that is not necessary, but a man whose life is sedentary must in the first place restrict

himself to a reasonable number of hours,--six or seven hours is enough for close confinement in sedentary employment. He must spend at least two or three hours out of doors every day in active work, vigorous exercise, hard enough to make him sweat. The Lord told Adam, you know, he must earn his bread by the sweat of his brow, and he never took it back. What God said to the first adam is just as true in relation to every other Adam. Man must earn his bread by the sweat of his brow, and if he does not sweat, he has to take the consequences, you know, which are premature old age. The men that live to old age are men that sweat. The man who lived the longest in modern times was Thomas Parr, who lived to the age of 152 years and 9 months, and he was a hard working laboring man. He was able to swim swift riers when he was ~~152~~ 120 years of age, and worked for a living until a few weeks before he died. The king was so interested in him because of his advanced age that he sent for him to make a visit, and feasted him for two or three weeks; then the old gntleman had a fit of indigestion and died. The king killed him.

Q. Of what medical significance is a burning in the throat just above the Adam's apple?

A. That is just above the larynx. That is very much like clergyman's sore throat, but it is not confined to clergymen. In fact, mos people who are not clergymen have it than clergymen have it. It is sore throat that comes from chronic indigestion. It means infection of the tissues of the back of the throat; there is chronic infection there, and a granular condition, and follicular inflammation, as it is called.

Q. What is the cause and cure for pimples on a boy's face?

A. Now, the thing to do is to send that boy outdoors, make him work, make him play, make him perspire vigorously outdoors. Make him drink two or three quarts of water a day. If he works hard and sweats well he will drink enough without doubt. Put him on a non-flesh diet, and the pimples will disappear. He must not eat any meat, of course. I didn't tell you what that man should do to keep

well, living a sedentary life. He must live outdoors and work outdoors, exercise outdoors at least two or three hours a day. Then he must sleep outdoors all night. That is the important thing. His business may compel him to live indoors, to live a somewhat artificial life during working hours; but the most important part of the time, while he is sound asleep, he can live outdoors; there is no excuse for living indoors, there is no excuse for living a sedentary life when he is asleep. He can live outdoors, and there is no excuse for living an indoor life when one is asleep. We throw away our best chance for cultivating health by sleeping indoors, in poorly ventilated sleeping rooms. My friends, I can not sufficiently emphasize that thing. I never think of going to bed in a close, unventilated room. I sleep in a corner between two windows, and have both windows, on both sides of me wide open as far as I can get them, and the wind sweeping right over my bed and my face all night long, summer and winter. I used to sleep outdoors in a treetop, but I have got so many sick folks to look after now that I have to stay right by the telephone. I have two telephones right at my ear all night long, and I don't get my last reports until about two o'clock in the morning, and then they start in early again in the morning, and it keeps me busy; but the rest of my folks all sleep outdoors. I turn my wife and children outdoors every night, the coldest winder night they are all outdoors. I find them outdoors when I get home, as a matter of fact, for I generally don't get home until they are all gone to bed. They are all outdoors, and often in the morning they are snowed under. When we have a snowstorm at night, we are all snowed under, have to dig out in the morning. It is a common thing for me to wake up and find three inches of snow onmy bed. It doesn't do a bit of harm. It is the nicest kind of cover. My beard frequently gets frozen up in the night, so I have to wake up and break off the icicles from it. Now, you haven't any idea of the delight of sleepingi in cold air if you never felt it. I do not suffer from the cold, I assure you that. I have my head covered up, and my ears--why, when we go to bed at my house, we get ready to take a sleighride. We look as though we were going out for a

sleighride; we dress up with thick, heavy robes, and we dress up so warm we can go right outdoors and take a sleighride just as well as going to bed, just exactly. I am just as well prepared for a sleighride when I go to bed, as to go to bed,- just exactly, because I am going right into the same condition, going right into the coldest air I can find. Now, the benefit of this cold air sleeping is simply the breathing of cold air,--the breathing of pure air. Cold air from outdoors is always pure air. Why is the cold, outdoor air pure air? Because the germs are all frozen up. There is no putrefaction going on in winter time, in cold air, there is no contamination; the air comes from thousands and thousands of miles over the snow fields, from the North, you see, and it is absolutely pure; there are no germs in it, no foul gases in it, no dust in it, no impurities in it. But that isn't all of it. This cold air taken down into the lungs is spread out over a surface of two thousand square feet. Would you ever imagine there was so much space as that in the lungs? I don't know how to make that clear to you except by a very simple explanation. Suppose you had the finest gossamer silk you ever saw, ten square feet of it, you could crumple it all up and hold it in your hand very easily. It is very thin fabric. Now, the lining membrane of the lungs, is infinitely thinner than the thinnest fabric you ever saw. The thinnest fabric you ever saw is a thousand times as thick as this delicate membrane that lines the lungs; so it is possible for this membrane, two thousand square feet of it, to be folded up in one pair of lungs. If the membrane of one pair of lungs were all spread out, it would just about cover the floor of this room. Now, underneath this thin membrane, the blood flows every three minutes, and the air comes right against it, passes into it quickly, so the blood is quickly aerated. Now, you know how you feel when you get up in the morning and have a cold spray. It makes you feel as though you had springs in you; you could just almost fly up into the sky and without an aeroplane. That is the way you feel. Now, when you take cold air down into the lungs, it produces the same tonic effect as a cold application to the skin, only not quite so intense. We have twenty-one square

feet of skin, and 2000 square feet of lungs--100 times as much lung surface as skin surface; so you see the application of cold air to the lung surface has a tremendous importance as a tonic measure, as a lifting measure, as a vitalizing measure. This is a very small application, it is true; it is just a little breath, only twenty-five or twenty-six, or thirty cubic inches that we breathe in at each breath; but then we breathe a thousand times an hour, don't you see, and each lift is a little cold bath, so to speak, but a thousand of them makes a splendid maximum, you see; and then eight hours' sleep means 8000 little cold air baths, lung baths, every one of them a little tonic life toward health. Why, my friends, if you have a chance to sleep outdoors, and everybody has, it is easier to sleep outdoors than indoors because you can sleep a great deal better outdoors than indoors, because you can sleep a great deal sounder outdoors than indoors, and there is more room for you outdoors than indoors, so there is always a chance to get an outdoor room; and this sedentary man must do that thing, must not fail to do it. I hope everybody when you go home will set that thing going in your home. Do not fail to do it; if you don't, you probably won't have to come back here; if you do, you will have to come back here to be punished some more. It is astonishing how long it takes to learn that it pays to be good to ourselves as well as to other people. It pays to obey the laws of health. This kxx outdoor sleeping is one of the laws that we can not infringe without suffering. Away back thousands of years, nobody knows how long ago, when the icebergs came scraping over the surface of the earth, coming down from the North, our forefathers our ancestors, after shivering around in the cold awhile, moved into holes in the ground to get away from the icebergs and the terrible cold, and somehow we have never been able to get out of those holes. We are still down in the holes, living in the hole. We have built a roof over the hole, and by and by we built a room on top of the hole, then the hole was a cellar; then we built another room on top of that room, and we have two story or three story houses, and we are going to have fifty-story houses, I believe. But we are still in the hole, and the

houses are made so tight, and they are nothing but extensions of the underground holes the cave men had away back in the ages, in time too remote for history to give us any information about it. We are still practicing hat habit, and that is one reason why we are degenerate. We have got to get out of the hole into the open, the great, fresh air, the great ocean of life-giving influence that is all about us, and drink it in. That is a resource for health and energy that we can not possibly drain, we can not diminish. There is always free access to it. Another thing this man must do if he wants to keep well, if he wants to keep away from autointoxication, is to cut meats out of all kinds, oysters, shellfish of every sort, flesh, fish, and fowl,--cut them all out; then he must take pains to masticate food thoroughly; must eat a large proportion of fresh, uncooked vegetables like lettuce, and cucumbers, and fresh, uncooked fruit. You can always get something fresh and something uncooked. If you can not find anything else, get oranges, for yu can get oranges the whole year round. If he doesn't eat anything but oranges, he ought to eat a dozen oranges a day--something that will give him an abundance of these fresh juices just as they come from the hand of Nature. When we cook our food we very nearly spoil it, we partially spoil it. There is no food we eat that is improved by cooking except a few starchy vegtables and the ripe cereals. The unripe cereals are a great deal better without cooking. I had four ears of raw corn this morning for my breakfast, and they were simply delicious. The Mexican corn is very fine. There is a yellow corn, Golden Bantam I think they call it, that is very tasty and very sweet. If you once get rid of your prejudice, youwill find it doesn't have a raw taste at all. When it is just right, and has just the right stage of development, when it is in the milk, then it is really very delicious indeed. It does not require much digestion, you see, and it has a quantity of enzymes, and diastases, and other delicate substances that are not very well known yet; the chemist does not understand their composition, but we know that they are of marvelous benefit to the body. They are of enough benefit so that when a man is dying, when his teeth are ulcerating and fal-

ling out, and gangrene is beginning to eat up his fingers and his toes and his whole body is falling into decay, if he just gets hold of a little handful of these fresh, uncooked things to eat every day, why a miracle is wrought, he is reconstructed at once, begins to recover himself--just the juice of two or three oranges, or a few handfuls of grass, or a little handful of lettuce, or some other simple thing of that kind will save his life from scurvy, that awful disease; so that shows you that there is something potent, that there is something marvelous in these uncooked things that is necessary, and we must not forget about that. They have great potency in combating the evils of our civilized life. But if one eats nothing but cooked food, he will have scurvy right in the midst of plenty. You don't have to take a long journey up into the Arctic regions, or a long voyage at sea to get scurvy. There are thousands and thousands of people in the United States this minute suffering from scurvy because they are trying to live on cooked foods entirely. A baby that is put on sterilized milk, in ten days begins to go down. If we keep on feeding it on sterilized milk, it will die if we do not give it something else. It must have the juice of an orange every day, and that will save its life; that will antidote the evil effects of the sterilized milk, because it will supply to the child the thing the sterilized milk has been robbed of by the cooking. Friends, do not forget this, because it is such an important thing. This is not a whim, it is not a fancy, but it is a thing that has been proven to be true. That is why the doctors are taking so much pains these days about certified milk; that is why you hear of the organization of certified milk societies about the country--because doctors know that sterilized milk is death to the baby unless in something else is added to the sterilized milk. Everybody does not know that the juice of one orange or one lemon a day will save the baby. That is such a simple thing that everybody ought to know it, because if we do not get the raw, uncooked principles in the milk, we can get it from some other source, we can get these principles from the vegetable kingdom in abundance. and in better form than that in which they are furnished by the animal kingdom.

This sedentary man will have to take great pains to secure proper activity of the bowels. The bowels should move three times a day; do not forget that. You will say that is a fancy too; but I want to say if any of you will take particular pains to train yourself to the point of evacuating the residues, the unused residues from the body three times a day, you are going to get a tremendous uplift. I am getting letters almost every day from somebody somewhere saying, "I thank you more than I can tell you for teaching me that thing; I am so glad to find that out. I never before knew what a delightful thing it is to have a clean body, sweet breath, and to be free from things rotting in my interior." Get rid of these excretory products just as quick as possible. Suppose you had excretions in the nose and they should bank up all day in there and not discharge it only once in twenty-four hours, until your nose was all full, stopped up and you could not take your breath until it escaped. You would think it would be an awful thing. But that is the real situation. The liver is excreting poison all the time and pouring it out in the form of bile excretion. And the intestine is pouring into its own interior poisons all the time that are being rejected out of the blood. The kidneys remove from the body certain kinds of poisons; the skin carries away other sorts of poisons, and the lungs carry off certain other poisons. And the liver and intestines discharge from the body still other poisons. These alkaline poisons for the most part go off through the intestines and the liver. It is important that they should be regularly discharged. If they are allowed to accumulatex, they are absorbed back into the body again. The chief purpose of the bowels is not to discharge the residue of food. I would like everybody to hear this,--the chief purpose of the bowels, of bowel movements, is not to discharge the unused remnants of foodstuffs we have eaten; that is not the chief purpose. The chief purpose of the bowels and of bowel movements, so far as this particular thing is concerned, so far as this function is concerned, is to discharge excretory poisons, waste substances from the body, and not the unused remnants of foodstuffs; that is the chief purpose. The bowels should move whether one eats

or doesn't eat. I met a manor the lawn two or three years ago who had been trying a fast. He had read about the wonderful things fasting would do for a person, and how it would give them a tremendous moraluplift, such a marvelous amount of clearness of mind, and such wonderful strength, and he thoughthe would try it. He didn't let me know anything about it. I met him on the lawn here one day, and he said, "Doctor, come here, I want to see you." I went up to his chair and met him, for he was in a wheel chair and had a nurse. "Well," I said, "What can I do for you?" He said, "Doctor, look at my tongue." He put out his tongue, and it looked as though it ought to have the city scavenger after it. It was positively filthy, positively filthy. It was a horrid tongue, about as bad a looking tongue as I ever saw in my life. He said, "Now just look at that tongue. Here I have been fasting for twenty-one days today waiting for my tongue to clean off, and it is getting worse all the while. Now, just think of that." I said, "Well, I didn't advise you to fast." He said, "I know you didn't." I said, "Didn't you hear what I said about fasting, that when a man is fasting he is feasting on himself? A man who is fasting is simply gnawing his own bones; that he is a cannibal, eating himself up?" "Yes," he said, "But I heard so much about fasting, of the wonderful things it would do for people that I thought I would like to try it." I said, "Well, you are trying it, and you see just how it works don't you? ~~Now I am going~~ "Well," he said, "tell me what I ought to do. Why is my tongue so awfully coated?" I said, "How long since the bowels moved?" "Well, my bowels haven't moved since I began to fast. I haven't eaten anything. Why should my bowels move when I haven't eaten anything. I took care to empty my bowels thoroughly before I began fasting, and I haven't eaten anything since, and of course there is no occasion for the bowels to move." I said, "What about your liver? The liver is making a quart of bile every day, a pint and a half to two pints of bile every day, and that bile is the most poisonous thing produced in the body. The bile is six times as poisonous as urine. It takes about an ounce and a half of urine to take the life of a rabbit. An ounce and a half of urine injected into the veins of a rabbit will kill the rabbit in two minutes,

but it takes only one ninth that quantity, or one quarter of an ounce of bile--one sixth as much bile will kill the rabbit in the same length of time, two minutes." "Well," he said, "what had I better do?" I said, "Well, I think you better be unloaded as soon as possible. You are just loaded up with poisons, with awful fulth." "I don't believe it." ~~XX~~ I said, "I think you better be attended to right away." So he had a saline laxative administered to him. I met him a couple of days afterwards. He said, "Doctor, yu wouldn't believe it. Why, I would not believe myself the most horrible material, quantities of it; why, it wasn't less than a pail full of the most horrible, rotten material that has passed from my body in the last two days." I talked to his doctor about it--this is rather plain talk, but this is a medical convertion here, or I would not talk so plainly to you. You are sensible folks, so I am telling you the plain truth about it. The doctor said the quantity was simply enormous, and he could hardly believe it himself. Now that man was fasting for an appetite, waiting for his appetite to come, for his tongue to get clean, fasting to relieve his body; yet he was just storing up in his body every day the most horrible pollution. That is the way these unscientific fellows impose upon the public--by getting the public to try all sorts of experiments of that kind. If that man had not been here, I think probably he would have died, but we succeeded in getting him through, and that fast didn't do him any good.

Q. Does oil fatten as well as build up the nerves when rubbed on the body?

A. No, it doesn't have any effect at all in that way. It improves the circulation and the appetite, and the general nutrition, so in that way is beneficial.

Q. Explain dyspepsia?

A. Now, I am afraid that is too long a subject for just now. I remember some time ago I was lecturing on dyspepsia, and I talked an hour or more, and I had described six different kinds of dyspepsia. And there sat over in the corner of the parlor--this was twenty-five years ago or more--a very old and

very experienced dyspeptic, Prof. Webb, the author of Webb's word method, one of the pioneers in the new method of learning readhing; and Prof. Webb rose to his feet, pointed a long, bony finger at me, and he said, "Young man, is that all the kinds of dyspepsia you now about?" I described six different kinds. "Well," I said, "Yes, that is six different classes of dyspepsia." "Well," He said, "I want to say to you, young man, you don't know a thing about dyspepsia. I know I have had more than 100 different kinds of dyspepsia." "Well," I said, "but I only told you about"--I had to get out of it some way. I said, "I have only told you about the different species of dyspepsia. Now, of course, we have all sorts of combinations, don't you see. For instance, there are the six different kinds. Now, we may have one and two combined, don't you see; then we have two and one; then we have one, two and three, and then three, two and one , and two one and three, and so on; so we have to follow the law of combinations, to apply it to those six different species, and we will find out how many different kinds of dyspepsia there are." So you see I could not tell you all about it tonight.

Q. Do you believe in hypnotism?

A. Yes, I do, I believe in hypnotism. I don't believe, however, that anybody ever hypnotized anybody else. If anybody ever got hypnotized, he hypnotized himself. Nobody is put into the hypnotic state. Men who get into the hypnotic state fall into it; they are not put into it. No man has the power to cast a spell over another person. The power of the mind is confined to the inside of the body, to the brain, or at least to the body itself. We have not the power to extend the mind beyond ourselves. Suppose, for instance, a person holds a pin just one tenth of an inch away from your finger when your eyes are shut, and you do not know what is going on, you would not know a thing about it. If he puts that pin into the end of your finger, you find it out right away. The power of the mind extends to the tips of the fingers, and it can't go a particle beyond. The mindtravels on nerves. Mind force and nerve force travel on the nerves. Cut in two the nerve that comes down to this finger, and bring th the two ends of the nerve together. I can not communicate with that finger when

the nerve is cut in two; I can not make it do anything. It is in my body, and yet close as my mind is to it, with the same blood circulating through the vessels of that finger, I can not communicate with it at all by my mind. Now, if I can not influence my finger when the nerve is cut off, to move, how can I influence a man or a bdy that is outside of my body and make it move in any way then? How? I may bring the ends of this cut nerve together, and still my mind can not communicate with the finger, because there is no continuity; I have got to wait for the ends of the nerves toggrow together. Then you see if I can not communicate to my finger when the nerves are brought together, I could not communicate with another person by simply putting my finger on his head or on his hand. I am sure you can see that. It is make believe; this business of hypnotism is simply make believe. No person can be hypnotized unless he believes the hypnotist has the power to hypnotize him, to throw a spell over him. He has to believe that hypnotism is there looking at him, that hypnotism is going to do something to him, and that expectancy, that belief, leads him to throw away his xhaka will, to lay down his own will, and become a prey to suggestions that come to his mind through his senses, through his eyes, ears, and other senses. I said once to one of the most eminent hypnotists that ever traveled through the country, Prof. Carpenter,&&I said, "Prof. Carpenter, could you hypnotize a man here in the next room?" "Oh, no, nobody could do that." "Well, then, suppose I should bring you a man deaf and dumb and blind, could you hypnotize him?" "Oh, no, I could not hypnotize him." "Why?" "Well, he wouldn't know I was here." Don't you see? It is simply the suggestions that are put into the mind through the eyes and the ears. The hypnotist, for instance, stands a man up, closes his eyes, and says to him, "You are getting sleepy, you are going to sleep." By and by he says to him, "There, you are sound asleep, you can't open your eyes." The man thinks he can't and he cant. The person thinks he can't. Then by and by he says,"Now you are hypnotized, you are asleep", and he opens up his eyes for him. He says, "Now, we are going fishing; there is a fish down there, look at it, see, there is the fish"; and he sees the fish. The picture of the thing

is put ito his mind and he sees it there. Then he takes a stick, puts it into his hand, says, "Here is a fishpole, there is a line, there is the hook, catch the fish"; and he proceeds to go fishing. Now, that is all in his mind, and put into his mind through his ears and his eyes. It isn't any occult influence that is thrown upon him, that is cast upon his brain, that emanates from the hypnotist and settles down upon the subject--nothing of the sort. He simply drops into this hypnotic state himself. I think there are some sick people we are hypnotised; they think they are awfully sick when they are only just a little bit sick,perhaps are not much sick ~~at all.~~ I remember some time ago such a case, and when I persuaded the lady finally that she was not sick, she felt awfully bad because she was not sick. She really felt very sad indeed. She said, "I have got to go home and go to work now, I have got to take up the burdens of life, have got to do the duties that pertain to me and my home", and she would have to carry her share of life's burdens, and that was an awful thing to contemplate.

Q. What exercise is good for fallen arch of the foot or instep?

A. There is one exercise that is simply splendid, and that is to rise obliquely on tiptoe, with the heels turned out. When you rise on tiptoe, turn the heels out and the arch rises. With children who have a tendency to flat feet, if they are made to walk on tiptoe with the heels turned out, or to stand with the heels and toes together, that is a very good exercise; but to walk on tiptoe with the heels turned out is a capital exercise. The tendency with flat foot is to turn the toes out so that when the arch finally gives way entirely, and the whole foot comes down flat upon the ground, then the feet turn out, the ankles roll in, and the person really walksupon the ankles, so you see by turning the heels out, the very opposite way, and turning the toes in, there is a tendency to antagonize the difficulty.

Q. How can one control an excitable nervous organization?

A. Now, in the first place, we want to quiet that nervous organization as much as we can by cutting out all stimulants--mustard, pepper, peppersauce,

and tea and coffee, and beefsteak and meats of all kinds must be xxxx cut out, because the poisonous substances, the extractives or excretory products in these substances excite the nerves, irritate the nerves. They must be cut out. The next thing is taking plenty of sleep. Lie down in the middle of the day and get an extra hour of sleep. Take a day off now and then and stay in bed all day. That is a good thing. Take a neutral bath at night. When xxxxxxx ever you get to feeling high strung, as though something is going to snap, and you are going to go to pieces, and the temperxxxxx is rising when there isn't any occasion forit--I think there are sometimes occasions when it is proper for the temper to come up a little bit; I don't mean to do anything bad, but one must have the power to react; he must have the ability to appreciate that some things are not worth very much; but when you find your temper is getting unreasonably, abnormally excitable, go and get into a bath and stay there until you get overit. The temperature of the bath should be 92°. That is the way to cool off. Cold water will excite you more, and hot water will excite you more, but water at neutral temperature will soothe you off to sleep. One can not get hot headed under such circumstances.

Q. Is pure cider vinegar made from sound apples poisonous?

A. Yes, the purer the cider vinegar, the worse it is. There is nothing but pure vinegar that has wrigglers in it. Hydrochloric acid vinegar, and vinegar made from sulphuric acid and such things, never have vinegar eels; but good, pure cider vinegar--hold it up to the sun in a glass and you can always see a wriggling menagerie, see the eels wriggling around in it. They are wonderfully interesting creatures. Study them the next time you get a chance, and you won't want to eat any more vinegar. Lemon-juice is infinitely better, of finer flavor, and entirely harmless. Acetic acid, the acid of vinegar, is poisonous, destroys digestion and interferes entirely with starch digestion in the stomach, as Sir William Roberts showed as much as twenty years ago--that it is a very powerful poison to the digestive process.

Q. What is the food value of yogurt tablets?

A. About the same as zwieback, about one hundred calories to the ounce.

Q. Do you ever advise calomel? What are its dangers?

A. I sometimes prescribe calomel in very small doses for a very short time as an emergency remedyunder special circumstances. There are other laxatives and intestinal antiseptics which are far better and saver under all circumstances; but there are very few conditions in which I thik it is advisable to use them. For instance, when a patient vomits with every other laxative, it is necessary to give an antiseptic and a laxative at the same time in very small doses so as to avoid the vomiting, calomel is sometimes useful, but very rarely. It ruins the liver taken habitually, and produces the same effect upon the blood vessels and other tissues of the bdy that other poisons do.

Q. Is cotton seed oil a good substitute for olive oil?

A. I don't know about cotton seed oil. The cotton root contains poisons, and cotton seed oil I think is yet on trial. It seems to be used quite extensively, but we do not use it here. It is refined by chemical processes, and I have felt it is not really a wholesome food on that account.

Q. Can you tell skin cancer in its early stage?

A. Yes, the diagnosis can usually be made without any difficulty.

Q. Do you recommend the knife or local treatment?

A. The X ray properly applied, will almost certainly cure a superficial cancer.

Q. What did Battle Creek take its name from?

A. Well, away back 75 or 80 years ago, it must be pretty nearly 100 years ago now, there was a party of surveyors going through this country. It was then in the hands of the Pottawottamie Indians, and down on this little stream that crosses the street below here, known as Burnham's brook,--down on that little stream there was a battle fought. The surveyors camped over night on one side, and the Indians gathered on the other side, and in the morning they had a battle, and this whole country through here was strewn with flint

arrows. I remember constantly picking up them up as a boy, and they are frequently picked up still. We have quite a collection, I believe, of these Indian relics; so this was called Battle Creek by the surveyors.

Q. What is the cure for hay fever?

A. The cure is to move away from it; that is the only way. If it were possible for a person to shut himself up in a room, a person suffering from hay fever, and have filtered air forced in by fans, I think he could in that way escape from hay fever.

Q. Is tuberculosis of the bone curable?

A. Yes, it is generally curable by the same process whichwill cure tuberculosis of the lungs--by the outdoor life, and a pure diet. The X ray is useful also in many cases, and especially the arc light. Sometimes when the bone is dead, it must be removed.

Q. How many times a day should an active boy of thirteen eat?

A. A boy of thirteen could eat three times a day if the right food is eaten, but he ought not to eat anything at night that is hard to digest, and one of the hardest things of digestion is bread and butter. So the boy must not have bread and butter for supper. What may he have? Rice, and fruit. There is nothing better for supper than that. He must not have bread and butter, for that will take him all night to digest.

Q. What is the best way to build up the nervous system?

A. To build up the body in general.

Q. What treatment would you prescribe for eczema in the palms of the hands?

A. The X ray is almost a certain cure, but it will not stay cured. It is necessary in addition to that to adopt an antitoxic diet. Dr. L. Duncan Bulkley, the leading skin specialist of New York City, has published within the last month a very interesting paper in which he gives an account of 150 cases of skin disease of the most chronic character,--psoriasis and eczema,--cured by the vegetarian diet. That is what cured them. Dr. Bulkley has been prescribing

this remedy, the vegetarian diet, for the last thirty years. We had a letter from him a day or two ago. We shall have a visit from him after while. We shall be glad to have him come. He is not a vegetarian himself, I might say, but he prescribes vegetarianism for patients with skin diseases, because he has found it will cure them. Now, what is good for my patients will keep me from getting the same diseases they have. If water will put out a fire, it will prevent a fire. No house would ever catch fire so long as there is a stream of water falling onit. It is a good thing for doctors to take their own medicine, especially preventive medicine.

Q. What is the cause of autointoxication?

A. The cause is something rotting in the intestine, decomposition, maybe meat which you have eaten; or it may be bile from the liver which you have retained, which has been kept behind up there in the intestines when it ought to have been discharged. It is just as important that the secretion of the liver should be discharged promptly from the body as that the secretions or excretions from the kidneys should be promptly discharged from the body. The bile is six times as poisonous as the urine, hence it is more important.

Q. What treatment should a girl of twenty have whose blood is eighty and who is verynervous?

A. Turn her outdoors, let her be a tomboy for a while. That is the best thing for her. She has been indoors too much, practicing at the piano perhaps, or doing too much fancy work, reading too many storybooks. Turn her out doors andlet her live a natural life.

Q. What do you consider the best and most up-to-date medical school in this country?

A. Well, there are thirty or forty good medical schools, half a dozen medical colleges that are first-class. Each one has its excellencies. Neither one can be said to have all the excellencies.

Q. What diet should one have with Bright's disease?

A. He should avoid meats, should have plenty of fresh fruits and fresh vegetables and cereals. He should especially avoid the use of condiments. He may have to avoid milk, and he should avoid eggs. He would find rice the best of all cereals in such a case.

Q. What do you think of Howard Carrington's system of diet?

A. I believe he believes we can absorb energy from the air without eating anything at all. I have not yet come to that point. I don't quite believe that. I am sure we get all the energy we have at all from our food. I had a letter from a man the other day who said he believed we could live just as well on 500 calories a day as on more. I invited him to come here a while, and we will put him on 500 calories, then we will weigh him every day just to see how he fades away. We will stop just in time to save his life, but teach him a good lesson.

Q. Is the sunbath in addition to the regular treatment a good thing?

A. Yes.

Q. What exposure?

A. Start with fifteen minutes, extend to half an hour, then an hour if you like. It depends upon the intensity of the sun.

Q. Is it bad to combine cream or buttermilk of anyk kind with stewed or fresh fruits?

A. No, no. It doesn't do any harm to combine fruit and cream, because the cream will curdle in the stomach any way. The acids of the stomach, the juices of the stomach are more acid than any fruit you ever saw, a great deal more acid, so it does no harm on that score.

Q. Is it harmful to eat the skins of Irish or sweet potatoes or fruits?

A. I couldn't say it is particularly harmful, but certainly it is very inconvenient and absolutely useless. You might just as well eat the brown paper the oranges were sent home in, or the basket the potatoes came in,--might just as well eat them, because that is what the skin is--it is simply the wrapper of the food.

Q. Can the stomach with only.386% of acid be restored to its normal condition, and how?

A. Yes, indeed. The cold bath every morning, the outdoor life, proper eating, thorough mastication of food--these are all the things needed, probably.

Q. What is the difference between yogurt cheese and ordinary cottage cheese?

A. The difference is yogurt cheese is made from sterilized milk and has the Bacillus Bulgaricus put into it in the making of it, while the ordinary cheese has moulds of all sorts, and yeasts of various kinds, and germs of various assortments, and a great variety of germs from the barnyard, chicken coop, pig sty, and from the other places about the farm.

Q. Why can't a person with high acid in the stomach digest starch?

A. He can digest starch, but he should take care to chew it well so it is liquid when he swallows it; then it will pass on into the intestines where it can be digested. The saliva which mingles with the food when you chew it is active throughout the entire intestine. It is active in the stomach if it has a chance to act. After while, it becomes inactive in the stomach, because of the acids present, but after the food leaves the stomach and goes to the intestine, the saliva is reactivated, to use the technical term, reactivated by contact with the intestinal juices; then the saliva begins work again, so it is rendered useful.

Q. If there are more than one kind of autointoxication, please describe them.

A. Well, there is only one kind in a general way, but this autointoxication may be produced by more thanone hundred different kinds of germs, and each particular germ produces its own poisons, and each poison produces its own symptomes; so you see it has great variety.

Q. Why is cane sugar hard to digest?

A. Because it is not the natural sugar for human beings; it is natural

for cows, for sheep, for goats, for horses, but it is not the natural sugar for human beings; it is the sugar of grass, cornstalks, cane, and roots. It is not the natural sugar of fruits. The sugar of fruits is another kind of sugar wich requires no digestion at all, whichis all ready for immediate absorption. The sugar which is most natural to the body perhaps, next most natural, at any rate, is malt sugar, which is produced by the action of saliva upon starch; and this is ready also for use; it is immediately absorbed, although it is usually converted into fruit sugar,before it is absorbed; but cane sugar is not readily digested because there is no digestive fluid in the body for the conversion of cane sugar into fruit sugar. It is lacking in the body. After cane sugar is eaten, three or four hours after it has been swallowed, the body manages to create a digestive ferment which is ale to digest it, so it is finally utilized; but very often this ferment which digests cane sugar is lacking, then the sugar simply ferments and makes mischief. Cane sugar ought to be banished from our tables. It may be used in small quantity for neutralizing the acid of sweet fruits; it does not destroy the acid, it only covers it up, but we should avoid the use of cane sugar as much as possible, and use instead malt sugar which may be made in our own mouths by the action of saliva upon the starch. Or, you can if you like get it in the form of malt honey. If you can't, you can go to the drugstore and buy it in the form of Trommer's extract of malt, although that is somewhat bitter and not so palatable as malt honey.

Q. Are roasted or uncooked peanuts most easily digested?

A. If they are slightly bakes, so they are cooked properly, they are more easily digested than raw. But if they are roasted until they are brown and bitter, fried in their own fats, they are indigestible.

Q. What do you think of chiropractors?

A. Well, they are doing some good by stirring people up and by convincing them that they are cured; but as a method it is thoroughly unscientific, and it often does a great deal of harm. These men wo are carrying on this practice

are not accurate diagnosticians, and they treat people for the wrong thing. They will treat a man with gallstones for a crook in his back, or a man with cancer in the stomach will be treated for curvature of the neck. If a man has a cirrhotic liver, they will put him upon his back and give him a double twist, restore his lumbar vertebrae into place, when they are not doing a thing for his poor, cirrhotic liver. They donot know what a man has to start with, and do not knod how to treat it .

Q. What treatment do you recommend for floating kidney?

A. It generally needs oly to be let alone.

Q. What is the cause of eczema?

A. Poisons absorbed from the colon.

Q. Can chronic appendicitis be permanently cured without operation?

A. Usually it can. It depends on how far the disease has gone. If it has advanced so far hat the appendix has become congested and is in a sloughing state, it must be removed.

Q. If five sixths of a molecule of protein is turned into poisons in the body, why should we eat any at all?

A. We must have some, because the muscles are wearing out, and we must have protein for replacing them; but the amount required is very small, really not more than one ounce a day or an ounce and a half at the most, for a large man.

Q. Is ice cream not more digestible than fruit gelee?

A. Fruit gelee requires no digestion at all; there is nothing in it that requires digestion, except a very little sugar, whereas ice cream has cream in it that requires digestion, and it has animal gelatine init that requires digestin; it has casein in it that requires digeation, and all these things can not be digested at all while the stomach is in a chilled state, but they may undergo fermentation and decay; so it is not to be considered a wholesome food.

Q. Do you advise one with hypoacidity to take a fast?

A. I don't think his acidity would climb up at all by fasting. What he needs is to chew, chew, chew, chew, chew. That will help his hypoacidity, because it will encourage the stomach to make more gastric juice.

Q. Is it possible to get a thoroughly exhaustive diagnosis at the Sanitarium?

A. If you can't get it here, you can't et it anywhere on the face of the earth.

Q. Do the same objections apply to beet sugar as to cane sugar?

A. Beet sugar is cane sugar. The sugar of beets, the sugar of cane, the sugar of the maple tree, and the hickory tree, the birch tree and the palm are all the same sugar, and all cane sugar.

Q. Tell us something of the value of yogurt whey.

A. It is good for people who can not take yogurt on account of casein.

Q. I am 26 years old and going to school this fall. I have neurasthenia, sleep about five or six hours, feel a little exhausted. Would you advise this?

A. Advise what? I certainly would not advise you to sleep five or six hours and feel exhausted. I would say sleep more, until you get rested. I think probably the inquiry is about going to school. I should say no. You ought to have got your schooling before this time. At twenty-six you are certainly old enough to finish school. What you want is to live outdoors and become a good animal. You can get something outdoors that you can not get in school.

Q. What is the cause of white spots on the fingernails?

A. Every one of the little marks on the finger nails is a way mark along the path of life. Just look at your fingernails. You can just see your history there if you will only read it. It is all there. The same thing is true of every hair you pull out. Hold it up to the light and look at it. In some places it is thick, and in some places it is thin. Where it is thin, that is where you lost a night's sleep, or where you had a cold, or an attack of autointoxication, or a bilious attack. Now, the same thing is true of the nails--

those little impressions there all indicate times when the body nutrition was low, and a mark was made right there on the fingernail or in the air, it is there.

Q. Can common bran be prepared in the ordinary kitchen so it is fit for food? A. Yes, cook it well, wash it thoroughly, then dry it out in an oven, then make mush of it. It will be very good.

Q. What causes gas in the stomach and owels?

A There is always gas there.The gas makes trouble when it is present in too large quantity, or when it is moving about, when it can not pass through the normal openings.

Q. What, in general, should one avoid who is troubled with colitis?

A. He should avoid meat above all things. He should see that his bowels move three times a day, and should eat cereals very largely, and sweet fruits. He should avoid milk, eggs and meat--that is all dead things. He should take the ferments, the antitoxic ferments.

Q. Outline a diet for a person with both high acidity and autointoxicatio

A. Those two things generally go together. The poisons are absorbed from the colon, excreted into the stomach, irritate the stomach and cause it to pout xxxx out that great excess of acid. That is the real cause of autointoxication, and the remedy is a thoroughly antitoxic diet,--no meats of any kind; cut out eggs too--everything that can rot in the interior of the body should be discarded. Use fruits and cereals very largely. Take a tablespoonful of olive oil before each meal as a means of keeping down the acid secretion of the stomach.

Q. What do you think of taking buttermilk between meals?

A. Take yogurt whey, but I would not take buttermilk, because buttermilk will tak the stomach.

Q. What is a good remedy for hay fever?

A. Move away, get up high. We have less here than in other parts where the elevation is not so great. We are up pretty well here, but we have a little in this region. We should increase the vital resistance and so fortify the body against hay fever. Give attention to the nose to see that it is in a thoroughly

a thoroughly healthy state, and that will help greatly, and mitigate this disease, sometimes cure it.

Q. What is the cause and cure for autointoxication and colitis?

A. The case is putrefactive germs, poisonous germs found in food, particularly in meats and milk, which are fed upon animal protein. They can not lie upon vegetable protein, but feed upon animal protein; that is the cause. The cure is to get rid of the germs, get the weeds out of the flower garden, get the flower garden full of flowers. That is the cure. By flowers we mean friendly germs that drive out the putrefactive germs.

Q. What is the cause of asthma?

A. Autointoxication generally. It means an accumulation of poisons in the intestines, which are absorbed into the blood, thrown out through the lungs, irritate the lungs, and cause the small air passages of the lungs to contract so the air can not get out. That is the most common cause of asthma. Getting the bowels to move actively and a right diet will almost always effect a cure. Fomentations to the chest is an excellent means of temporary relief, because that relaxes these contracted vessels.

Q. In case of war between France and Germany, which willwin?

A. The one that eats the least meat. Beefsteak does not win. The country that eats the least meat will win in the end, because it will outlive the other fellows. They might not win the first time, but will after while.

Q. Is bees' honey a proper substance for the human stomach?

A. It is better than cane sugar. The only objection is bees adulterate the honey so much. When they get the honey from a flower, they do not take any pains at all to keep out of the honey thepoisonous extracts in the flower. The pollen is dropped in, and the dust drops in too. That is the way the microscopist tells artificial honey from true honey. Artificial honey is clean, while true honey is dirty. The bee is not always clean about wiping off his feet when he comes home. I have seen bees walking all around the most horrible

filth, and they go home with their dirty feet, walk right straight in, step in the honey, and they get the honey dirty. They know it is going to ferment, so they put benzoate of soda--no, not benzoate of soda, but formic acid, formalin. You have heard of formalin that you use to disinfect your room when somebody has had diphtheria or scarlet fever. The bees manufacture formic acid, and just before the bee puts on the cap on the cell that is full of honey, he puts his stinger in and lets a little formic acid in, lets a little venom in it; that is what the bee manufactures venom for. It is not to sting his neighbors or people with, but to make his honey keep, to adulterate his honey so it won't ferment and sour. So when you eat the honey, if you are very susceptible to these things, the honey will give you a headache. Very few people can eat more than a small amount of honey, because of these extraneous substances which are there and which produce more or less toxic effects. So honey in small quantities is all right, but if you eat very much, probably you will get an eruption of hives or some other infection.

Q. Can yogurt be taken between meals? Yes.

Q. Is a soft, decaying condition of the teeth due to a condition in the system which may be removed?

A. Yes, such a condition of the teeth indicates a feeble constitution and low resistance. You must get out of it right away and improve your whole body, and cultivate your teeth, harden them. One thing you must do is to take cold baths, or cold air baths, and sleep outdoors, take exercise outdoors, live on an antitoxic diet, and get rid of these poisons from the colon.

Q. It is said there should be forty per cent of friendly germs.

A. We can not, of course, get back to a perfectly normal condition. But we ought to get up as high as we can. We ought to get up to 90%. I endeavor to keep myself at 95% of friendly germs. I feel a great deal more friendly when I am up to that standard.

Q. Why is asparagus not good for a person suffering from rheumatism?

A. There is no harm in it. You might use too large quantities, but a small amount may be a real advantage, for it contains a large amount of alkaline salts which neutralize the acids present in rheumatism.

Q. What produces in the joints sounds like cracking?

A. Little excrescences or roughnesses which can be seen with the X ray. If you have that trouble, have the joint examined with the X ray and you can see the thing that makes the trouble.

Q. How can gas in the stomach and bowels be cured?

A. By taking gains with the diet, and taking great care to keep the bowels properly evacuated. This trouble is generally the result of some residues left in the colon which are undrgoing putrefaction.

Q. Why do sweet potatoes cause so much distress?

A. Because they are not well chewed.

Q. Is the drinking of hot water between meals of any benefit for a person suffering from dyspepsia?

A. Yes, when there is gastric catarrh, the drinking of water is beneficial. Every patient under treatment should drink two to four quarts of water a day. It is almost impossible for you to drink too much, that is provided you drink only one glassful at a time.

Q. What is the best form of the daily morning bath?

A. A towel wrung out of cold water, rubbed across the body, first the chest, then across the shoulders, down the back and the legs, and all over the body. Two dips of the towel in cold water is quite sufficiet to give a very efficient bath. When you can not do that, take the cold air bath, exposing the body to contact with cold air. In the coldest winter weather you can get up in a cold room, expose the body to the cold air, rub the body vigorously for perhaps fifteen seconds, then go back to bed again and get warm, and you will get all the benefit there is in it. Thendo it again, two or three times if you like, and you will find it a most effective means of getting a tonic effect from the cold bath without the unpleasant chill of the very cold

water. I knew a case in which a boy was very much attenuated and had consumption, so he was put to bed in a cold room, but got up every half hour all day long, and was rubbed in just that way for half a minute, then put back to bed again, and the boy got well. He was gotten over his fever, and then sent outdoors to exercise.

Q. Are there any cures of chronic stomach trouble and inactivity of the bowels directly traceable to the Battle Creek Sanitarium system?

A. I do not think we ever cured anybody entirely; they get reasonably well so that by living right they can keep comfortably well. But a person who has a crippled stomach or colon never gets entirely well. That is a thing we ought to kow, and we must become reconciled to that fact. When a man has lost a limb, he can not expect that he is ever going to have another natural leg again. He can get a wooden leg, perhaps, and be entirelycomfortable, but not entirely well. A man with a dislocated elbow or shulder never has a perfectly good joint; it is always a weak joint; so a person who has a spoiled stomach can get ~~xxxxxxxx~~ his stomach into a sufficiently good condition so he can digest good food with good care and get along comfortably, but he can never expect to be perfectly well.

Q. What is the diet and treatment for a prolapsed colon?

A. Ah, there's the rub. If I knew what to do for the bad colons, I would be wealthy pretty soon. This institution would become more famous than any other institution that ever existed, if we could only cure those bad colons. The trouble is, the colon gets too long, there isn't room for it, it gets enongated so that--suppose this is the colon in its normal condition, somewhere about that; but here is where the small intestine comes in. The colon becomes redundant so that it will perhaps drop away down like that. It is too long; there isn't room for it, so that it can not lie in the bdyin its normal position, and this curvature here becomes elongated so that it comes away up here in this form. We see those cases very often. I frequently have to operate on cases of this sort.

Only a short time ago, I had to operate upon a poor man, only a week or two ago. His colon had become entirely obstructed up here, fallendx down, and I had to cut the intestine off here and bring it over here, and put it on there. I am glad to say he is getting on very comfortably. I see he is out around on the lawn every day now, and getting on perfectly well. The intestine has been cut off here and put over there. An increasing number of kxixngsxixxkaixg operations is being performed on these crippled, redundant colons. We are learning more and more how to deal with them, but many of them are so troublesome they have got to be managed with the greatest care, and mechanical means must sometimes be used. If I were suffering as a great many people are with their colons, I would certainly have an X ray examination. By means of the X ray examination, the colon can be seen, and we can see exactly where it is and how it is, and all about it.

Q. What makes water sour in the stomach?

A. Wqter stimulates the stomach to make gastric juice. A pint of water will cause the stomach to pour out gastric juice.

Q. Are canned strawberries as rich in iron as fresh berries?

A. Yes, but they are not very rich in iron. It is only the dry matter that contains a large amount of iron. Strawberries on account of the water they contain have only a very small amount of iron.

Q. Should yogurt tablets be taken in water or with something sweet?

A. They should always be taken with something sweet. An ounce of malt honey or ordinary honey should be taken at once right away afterwards so as to feed the germs and cause them to grow and multiply.

Q. What diet and treatment should be used for bronchial asthma?

A. The antitoxic diet, hot applications to the chest, general tonic baths, the neutral bath to relieve nervousness and irritability, laxative foods, and antitoxic foods, so the bowels will move actively.

Q. My hemoglobin is 84. Would a nice juicy beefsteak once a day increase

the iron in my blood? Do you know anything better?

A. We had a gentleman brought here a couple of years ago who had been fed on meat, and his hemoglobin was 14% instead of 100%. This gentleman stood up here in this room a few weeks ago and showed xix you his rosy cheeks. He was Mr. Owen, from Pine Bluff, Arkansas, and he stood up here to show you how strong, healthy, and well he is, and he never has eaten one pound of meat, or one particle of medicine has he taken of any sore, and he is cured. He was simply put upon the Battle Creek Sanitarium diet, and with the aid of his good wife, he stuck to it. I think he would have fallen into temptation and backslidden if it had not been for Mrs. Owen. She really deserves all the credit for his keeping well. We can not make blood from the blood of other animals. The ox makes its rich blood from grass and corn. The elements that make blood are found in best form in the foods which come from the vegetable kingdom.

Q. Describe arthritis deformans.

A. It is an incurable disease, a perfectly awful disease, a disease in whib there is stiffness, soreness, incapacity, and deformity of the joints. It is produced by toxins in the blood, chiefly from the colon.

Q. What causes high blood pressure?

A. Poisons in the blood, irritating the arteries, causing the arteries first to contract, afterwards to become hardened and thickened.

Q. Is the use of cascara in small quantities, a quarter of a teaspoonful before a meal, injurious?

A. It is better to take just one dose at night before going to bed, but it is not a good drug to take continuously. It should be taken with malt honey or something of that sort, or three or four oranges so as to give the bowel something to act upon. It should be taken in connection with Colax if necessary, but colax alone is far better than any of these chemical drugs, because it is simply seaweed and absorbs moisture, gives bulk to the intestinal contents, encourages the action of the intestine mechanically instead of chemically, hense

is not an irritant.

Q. Of what are malted nuts made? A. From malt honey and nuts.

Q. What is the cause of gallstones? A. Germs in the intestine.

Q. Is it not injurious to eat in less than three hours after a meal?

A. It depends on what you eat. If you eat food that requires five hours for digestion, certainly you ought not to eat within three hours, because food will still be in the stomach, and the worst insult you can possibly give your stomach is to put food into it when it has undigested food already there.

Q. How does the use of tobacco injure one?

A. It simply poisons him, paralyzes the heart, produces hardening of the arteries, produces cirrhosis of the liver, damages the kidneys, produces general wreck and havoc throughout the body.

Q. Tell us about the new typhoid serum.

A. It is not entirely new, and it has not been fully demonstrated yet to just what extent it is valuable; but it is simply on the principle of the antitoxic serum which is used in typhoid fever. It probably has some value and after while may prove to be entirely successful.

Q. How can milk ferments be propagated at home?

A. By boiling the milk, letting it cool to a temperature of 100°, putting it away in a warm place for twelve hours or more.

Q. Can a dilated stomach be cured?

A. Yes and no. Some dilated stomachs can be cured.

Q. Can a colon that is decidedly prolapsed be remedied?

A. It can be helped somewhat by lifting it up, but many times there is too much colon there, and the only positive remedy is to remove part of it. However, this redundant colon can be managed; you can manage to get along with it very comfortably by taking care not to put anything into it that will rot or decay, because the longer the colon, the more the danger of decay. It is necessary to take great pains always to encourage the activity of the colon, so that there shall be no ~~xxix~~ pent up, seething, putrefying masses there.

Q. A great many people think tomatoes cancer? Is this true?

A. No, no. Tomatoes are perfectly innocent of any such thing. Beefsteak is the cause of cancer.

Q. How much water should one drink a day. A. Three or four quarts.

Q. Is the sanitarium near Melrose Massachusetts a branch of this?

A. No, indeed. This institution has nothing at all to do with it; is not in any way connected with it. A great many institutions call themselves by our name because they have a nurse perhaps that has been here. An institution in Pennsylvania some time ago xxx advertised very extensively, "Battle Creek Sanitarium methods." They got hold of a young fellow that had been rescued in a mission and taken in here to help him lead a correct life. He was a rescued man from a rescue mission in Minneapolis or somewhere, and we thought he had made a pretty good reform, and he turned out to be a good, honest fellow after while, and we tried to make somebody of him. He had a partial nurses' course, then went down to this place, and they took him in there and advertised the Battle Creek Sanitarium system. This is being done all over the country. There is only one Battle Creek Sanitarium in the world. This institution has absolutely no branches anywhere. We have no branches anywhere, because we xxx found when we undertook to have some branches that we could ot look after them all the while. It took me half my time to run around to look after them, and very soon they fell into the hands of clerical people who wanted to use them as traps for proselyting people, and to convert them into sectarian mousetraps, so to speak, and we could not have anything to do with that sort of business, so we dismissed them all, and have nothing at all to do with them, are in no way connected with them, and are in no way responsible for them, and for the most part the people who were formerly put in charge of them have long since left them, disgusted with the associations; so we have no affiliation whatever with any other institution anywhere. Each institution has to stand alone.

Q. Why is salt not good to create or stimulate thirst for water?

A. Well, if you have thirst for water when you eat salt, it is only to help you to get rid of the salt. So what is the object of that? It is

like soiling your hands so you can wash them off again, or we might say that to create an appetite for taking a bath ~~xxxxxxx~~ dirt is good, and one should smear himself with dirt so he would feel the necessity for washing himself. There is no advantage in the use of salt. The only excuse for the use of salt is that it stimulates the appetite to some degree, gives us a relish for some foods, that otherwise would be less relishable. There is ~~xxxxxxx~~ no other excuse for salt, and really we can get along very well without salt, and one can take very very little indeed for a short time, until he becomes accustomed to it; and by a little practice he will find he relishes his food better without.

Q. Is the banana a good food?

A. Yes, if it is ripe and if it is chewed until it is creamy in the mouth. Then there is no difficulty in its digestion.

Q. What is Reynaud's disease?

A. It is a disease due to toxins which cause spasm of the blood vessels of the fingers and toes, the extremeties, and sometimes the nose and the lips, so that they become white or purple, and after while may give rise to ulceration and destruction of tissue and a deformity of the fingers. This disease is one of the consequences of intestinal autointoxication. It can be overcome by proper diet and proper treatment. I think I have answered every question, and got to the bottom of the box. I thank you very much for your patience.

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WHERE ARE WE GOING?

A Stereopticon Lecture at the Sanitarium Parlor, Battle Creek, Mich., Thursday, August 31, 1911, at 8.00 P. M.,

By,

J. H. Kellogg, M. D.

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Ladies and Gentlemen: I am going to talk to you tonight about the same old story, "Where are we going?" If we keep on at the present rate, where are we going to land. It is not very long since the United States government got out its last report on mortality, and this report showed that we are going down hill at a terrible rate. I am going to show you just a few facts here. First of all I want to give you a quotation from a letter I received from one of the leading physicians of Great Britain. Just a few days ago I got a letter from Dr. Alexander Bryce, professor of dietetics in the great medical college of Birmingham, England, one of the leading English physicians, and well known throughout the British Isles. Dr. Bryce came here last year to take a look at us. He had heard that we were a lot of cranks here in Battle Creek that did not eat beefsteak, and he didn't see how it was possible for anybody to live without English Roast beef, so he came over here to take a look at us, to see whether we were really alive or not. Unfortunately he was exposed somewhere to grip just before he got here, so when he got here he had an attack of grip within a few hours after he arrived, and he was sure it was because he didn't have beefsteak for breakfast. His resistance was so much lowered that he contracted this awful disease, so I didn't have him under favorable conditions for making a very good impression on him. However, he remained three or four days, got better, and before he went away he told me he would try it. But after he got to Boston he backslid at once, and went back to his beefsteaks, but I sent after him all the year. I got a letter from him telling me how good the English roast beef was, and I would

then write him a letter, what I thought was inside of it; and I kept right after him, and the other day I got a letter from in which he said, "I am now a kax confirmed low protein feeder, and practically fleshless, and I feel sure I shall remain so." Now, I want to tell you what settled it with him. He got a sore mouth. He wrote me what was the matter with him and asked me the reason, and I told him it was autointoxication. You have heard about that before. It was autointoxication, and the only thing to stop it was for him to stop eating beefsteak and get the germs out of his instestines; that he was feeding his intestines with germ food, and the germs were thriving while he was fading away; and the beefsteak was feeding the germs so that they were multiplying faster than he was; they were growing and developing, and he would have to do something to cut off these germs. He tried it, and sure enough, his mouth was better. That produced a favorable impression. Theg they recently had a meeting of the great British Medical Association, and Dr. Chittenden, of Yale, the man who made the wonderful experiments a few years ago on dogs--got sixteen government soldiers that were detailed by the United States government to go to New Haven and to allow him to experiment uponthem; and he put himself in with the experiments, so they wouldn't be afraid to try them, I suppose, and three other Yale professors, and six Yale athletes--26 men in all were put upon these experiments, and Dr. Chittenden found as a result of these experiments that these men actually improved on a diet which contained less than one third as much protein as ~~the~~ they had been accustomed to take, and practically excluded beefsteak entirely. Lean meats they had to exclude entirely, so they practically ate no meat, and used eggs very sparingly, and these soldiers all increased greatly in strength, vigor, and endurance, and the six athletes doubled in etrength. That is a very remarkable thing--they doubled in strength; and he himself had chronic rheumatism, and he got well; and one of his colleagues had neurusthenia, and he got well, and the other two improved, and he found it so satisfactory that he continued the practica of eating low protein food, now for nine years--eight years, since his experiments were completed.

He went to Great Britain and read a paper before the great British Medical Association about this low protein diet, and the reasons why it was so important the people should be instructed with reference to the evil effects of the eating of an excess of protein, in other words, the eating of so much beefsteak. And his paper, of course, was very much opposed at first, but Dr. Bryce, in writing to me about it, tells me that Prof. Chittenden easily maintained his position. Now, that is a great thing for Great Britain, and so I think he became thoroughly persuaded himself, so he has become a low protein feeder. Well, he wrote me three or four months ago that he was gradually tapering off; so I suppose he has finally reached the stage where he can live better without beefsteak.

What a strange thing that people should ever suppose beefsteak was necessary, as Thoreau said in "Walden." He said you know, "A farmer was saying to me one day, 'Why, Mr. Thoreau, you never can live and be strong without beefsteak, without meat.'" He said, it had never occurred to that farmer that the oxen that were pulling him along behind his plow in the furrow were not meat eaters. Those oxen were grass eaters and grain eaters, yet they were strong enough to pull the plow and him along. Now, Prof. Chittenden believes, and I believe he is certainly right, that a large part of the chronic disease that is prevalent in this country and is growing in every country is due to the large use of flesh food,--not because of what is in the flesh--that is where a great mistake was made for many years--not because of what is in the flesh, not because of the uric acid in the flesh; you know there is a great deal of it--fourteen grains of uric acid in every pound of beefsteak, and seventy grains of uric acid in every pound of sweetbreads, and only six grains is a day's work for the kidneys; yet there are fourteen grains of uric acid in every pound of beefsteak; but that is not the worst of it. The worst of it all is that the beefsteak is not all digested when taken into the body; some portion of it remains undigested in the intestine and undergoes putrefaction, and the poisons which are produced by this putrefaction--these poisons make the mischief. That is the reason why we find chronic disease has doubled in thirty years, deaths from chronic disease. Think,

my friends, what a terrible thing that is. If the mortality from chronic disease had doubled in a thousand years, it would be a terrible thing to contemplate, when you consider the life of a race, the long life of a race, thousands, possibly millions of years--if the mortality from one class of diseases had doubled in a thousand years it would be looked upon as a calamity; but now instead of that the mortality from chronic diseases has doubled in thirty years. The statistics of the United States government show that, and there is some great cause behind it. It could not be an accident, because there has been a steady increase each year a little in advance of the year before, until at the present time deaths from chronic maladies number twice what they did thirty years ago. Some diseases have increased more than 150%, almost 200%. And this mortality is still going on, this increasing mortality. Why, at the present time, one half of all the people who die in the United States die of chronic diseases. We have been preventing acute diseases, the typhoid fever, cholera, black death, yellow fever, malaria and these other acute maladies,--we have been holding them at bay, preventing their occurrence, but while we have been preventing the mortality from acute diseases, chronic diseases have been making great advancement, have been making rapid strides, until at the present time half of all the people who die die of chronic diseases, whereas thirty years ago only one quarter as many people as die now died of chronic diseases; only about one quarter of the people who died died of chronic diseases. Now, one third less people die of acute diseases, and twice as many die of chronic disease, so it is balanced up, and the death rate is just about the same as it was thirty years ago--very little change. Look at the increase in heart disease, 105%, and in apoplexy in Massachusetts, 135%, and diseases of the kidneys in Chicago 167%. That means that 267 people die in Chicago of disease of the kidneys today where only 100 would die if the peopl ewere as healthy as they were thirty years ago. We are going down hill fast, you see. Look at this disease of the arteries. See the percentage, the death rate,--six in 100,000 in 1900, 20.9 in 100,000 in 1909, and 24 in 100,000 in 1910. I have not got those figures here, for the report has only recent-

ly come in. The death rate is four times ass great; four times as many people are dying of heart disease this year as died in a year ten years ago. That is an awful thing to contemplate. That means that every one of us here is more likely to die of heart disease as we were ten years ago. Why, in the State of Michigan see what the havoc from disease is, right here in this state. What a calamity it is to have these preventable maladies increasing in mortality at such an awful rate. One hundred persons dying every day, one in every 24,000, four every hour, one every fifteen minutes in the S tate of Michigan alone. Just think of it--a funeral every fifteen minutes, ninety-six funerals every day in Michigan alone. Fourteen thousand of these deaths are easily preventable, and could prevented just as well as not. Seven thousand of these persons would not have died at all thirty years ago. There are seven thousand people that are being absolutely slaughtered, slaughtered from ignorance by our cultivation of disease. Instead of preventing disease we are actually cultivating disease. We are preventing typhoid fever, and at the same time cultivating rheumatism. We are preventing small-pox, but we are cultivating Bright's disease; so we are only substituting one mode of death for another. We are eliminating the sudden deaths, so to speak, from these acute diseases, and we are dying instead, long drawn out, agonizing deaths of slow torture. Which is better? We better die off of the acute malady and have it done with than to be killed by the slow torture and misery to ourselves and our friends that comes from these chronic maladies.

Here is just one malady, consumption, tuberculosis that we talk a great deal about, and we imagine we have got it conquered, because we have found the cause of it; but we haven't made any headway at all practically in the last five years in the battle against tuberculosis. We have made just a little progress, but we are not going any further. We have moved outdoors somewhat, that is, moved the sick man outdoors and stopped dosing him to death with cod liver oil and whiskey, and are giving him instead good food and fresh air, and we depend upon that to cure him, and as a result a great number are getting well. Sixty pe

cent of all the cases taken in the early stages are getting well, recover. So we are making some progress so far as tuberculosis is concerned, in the cure. We have perhaps made all the progress we can make in fighting tuberculosis until we do another thing, and that other thing is to increase the vital resistance of the whole community, to lessen the susceptibility of the entire community, because we never in the world can get rid of tubercle germs, but we can learn to resist them. The same thing that will cure a man from tuberculosis when he has once got it, when his lungs are thoroughly infected, cavities forming, and lungs passing into decay rapidly because of the invasion of this awful parasite--the same thing that will save a man's life when he has once gotten into that terrible condition will prevent his getting into it. You would not be afraid of your house getting afire if you had a stream of water continually pouring on it. The same stream of water that will put out the fire will prevent the house getting afire. So if you live outdoors, and sleep outdoors at night, living outdoors as much as possible, that will cure consumption, will prevent consumption; and it is exceedingly important people should be brought to the point where they will recognize the importance of doing that.

Now, those chronic diseases affect mostly old people, of course, people past middle life. It is the man of thirty or forty or fifty or sixty who is the victim of chronic disease. It is not the child of five or ten who is dying of chronic disease; it is the older people; and the consequence is the increased mortality is chiefly in the years after forty. Between the ages of forty and fifty, according to Dr. Rittenhouse, formerly president of the Provident Life Assurance Company, of New York City, and now the head of the conservation department of the great Mutual Life Assurance Company of New York,--Dr. Rittenhouse showed by careful study of the life insurance statistics that the mortality has increased, between forty and fifty years, thirty-five per cent; the mortality of people between fifty and sixty years, 22%, between sixty and seventy years, 24%. This is certainly a dreadful situation. Why should men just reached

the age of their greatest usefulness, of their greatest capacity for work, for ~~doing~~ adding to the world's wealth of knowledge, or of other values,--why should these valuable men be allowed to go down into their graves when they have just reached the point of their greatest usefulness? Why should they, my friends? You see we are guilty of terrible neglect. Society has made a terrible mistake--paying so much attention to the arts, and to the conquest of acquisition of wealth and of refinements of all sorts, and neglecting the greatest thing of all--neglecting attention to ~~the~~ increasing the capacity of man to enjoy and to lengthen out his life so that he may enjoy the fruits of his labors; letting a man die when he has just reached maturity--what an absurd thing it is. We have not yet learned how to live; we haven't yet got civilized in the right direction; we have been paying attention too much in civilization to externals, or refinements and accomplishments and distinctions, and have not given enough attention to the one thing. We have improved our cattle, our cows, horses, chickens, canary birds, and pigeons, we have made marvelous improvement in all these creatures by eugenics and the study of euthenics of animals, the conditions of their health and life; we have studied those conditions in animals, and as the result we have the finest pigs the world ever knew; we have the fleetest horses the world ever knew anything about, and the cows that give more milk and chickens that lay more eggs than any cows or chickens the world ever heard of before; but when we come to human beings, we are getting the puniest, the most degenerate, the most short lived people that ever lived on this earth, growing weaker and wiser. There is an old adage, you know, "weaker and wiser." We are certainly growing weaker. It is a question whether we are getting any wiser or not. It depends upon whether we recognize these great important principles of health conservation. Why, we are throwing away three billions of dollars every year, we are throwing away in the sacrifice of human life, and it is about time we began to do something to stop it. Just see the babies we are wasting. Three hundred and fifty thousand babies dying in the United States every year, 350,000 babies--think of that slaughter,

and they ought not any of them to die. Certainly very few of them. Some of them might die by accident, but the idea of all these babies dying--why, it is just like the buds dropping off your rosebush. What would you think of a rosebush with the buds all dropping off, all turning yellow and decaying before they had actually blossomed, before they had ever bloomed,--dying in the bud. That is what it is when a baby dies; and yet we find one seventh of all the babies that are born and are fed in the natural way die the first year of their lives--one out of every seven of babies that are breast fed; and of babies that are fed on bottles, fifty per cent of them die. Now, it doesn't require any very great mentamount of calculation when you kow that only about one quarter of all the babies that are born in the United States are fed in the proper way; three quarters of them are fed on bottles, if not from the very first dayof their birth, they are put upon bottles within a short time afterwards. The mother does not find it convenient to feed the baby in the proper way, or perhaps she is not capable of feeding the baby in the proper way. Maybe the demands of society or something else interferes, so the baby is put on the bottle in a few days, and the babies die. So probably we can say that at least nine tenths of all the deaths of babies during the first year of life are due to improper food. Now, here are 350,000 babies that are dying, and more than 300,000 of them are killed by bad food. As Prof. Bunge says, the old Romans used to kill their babies at birth when they were weak. Their weakking babies they killed at birth; it was they duty of the midwife to strangle the baby that had any evidence of weakness about it. If the baby was under weight, or under size, looked like a feeble infant, it was strangled as soon as it was born. They didn't have any more trouble with it. Butwe keep our babies alive, as Prof. Bunge says, and kill them by slow torture by bad food.

Youhave been reading this, and you see what we are doing, not only with babies, but with ourselves. One of the great causes of degeneracy of the human body--the body weighs 150 pounds and contains three and a half pounds of lime, of which one tenth is in the nerves and the balance in the bones. The

body loses 17 grains of lime daily, one fourth through the urine, and three fourths through the intestines, and this amount must be replaced by the food. Legumes, vegetables and milk furnish a sufficient amount of lime. Half of the food supply of the American people consists of meat and sugar, which furnish almost no alime at all. There is half a grain of lime to the pound of meat, and there is no lime at all in cane sugar; so if you are going to get the lime from meat, you would have to eat 34 pounds of meat you see, every day, to get the necessary amount of lime. "how is that?" you say, "how is that?" Well, it is plain enough. The hog eats the corn, the lime goes into its bones. When you eat the hog, you do not eat his bones, but eat that part that doesn't have any lime in it. The lime is left behind in the bones, you see. If you are going to get the corn back after the hog has eaten it, you have got to eat the whole hog. It is the whole hog or none; otherwise the hog keeps nine tenths of the lime behind, you see. The amount of meat consumed in the United States amounts to 227 pounds per capita, but there is lime in that for only nine days. xxxxxxx, Half of our rations are made of meat and sugar which contain only lime enough for nine days, and all the rest of the time we are living on an insufficient amount of lime. The diet of Americans contains three to ten grains of lime less than it should, and this lime must be stolen from the bones. That is why the bones decay; that is why the teeth decay. Suppose you had a fuel famine and had to keep attacking the house to keep the stove going, had to keep pulling down the mouldings off the wall, then pulling up the joists, and by and by pulling down the supports of the house in order to keep the fire going. That is what the body does. It must have this lime. The lime is thrown off from the brain, nerves and other parts where it is being used, and if it is not supplied in proper quantity, it will be stolen from the bones. Now, the lime content of foods varies. Eggs contain four grxains to the pound; meat has half a grain to the pound, a pound of potatoes contains xxxxx 1.7 grains; a pound of wheat contains four grains; a pound of fine flour contains one grain; a pound of peas con-

eight grains. See the difference between graham bread and fine flour bread. The fine flour is like the meat; it has had the lime taken away from it. The outside of the grain of wheat is the skeleton of the grain of wheat, and it has had the lime stolen away by the miller, and is fed to the cow and the ox, and that is why the ox has such fine, splendid bones, while the man has such poor bones. It is because the ox gets the better food. Fine flour ought to be banished from our tables. It ought to be prohibited. I think we will have to establish an order here at the Sanitarium that fine flour bread can be obtained only on special order. It is an unwholesome food. Recently an experiment has been made in England by some very eminent scientists who made a study of the subject, and they found that when rats were fed on polished rice they all died within a few weeks. They got spasms, got lame, were crippled, and by and by got spasms and died, and it was found when these rats were fed on fine flour bread the very same thing happened to them. They got lame, crippled, and finally died in spasms. They had neuritis, poly-neuritis, or beri-beri, and the very same thing is prevalent all over the United States at the present time; neuritis is almost everywhere. You find almost every other man you meet has got neuritis. What is the cause of it? Here is one cause. It is the use of food that is imperfect in its constitution, is deficient. Here is wild rice that the wild Indians lived on; this wild rice that grows in the shallow lakes of Minnesota and throughout the North-west, some of it also here in Michigan, and all through the South, the wild rice is food for birds, also for the wild Indians. The wild Indians still gather this wild rice up in Minnesota. They gather the rice, put it into earthen or iron bowls, and parchedxxxxxxxxx it over a fire, stirring it with a wooden paddle. And they feed upon it. It is the principal food of certain tribes. Here is an old Indian woman, more than 100 years old, that has lived, I believe, on wild rice,--a strong, hearty, enduring woman, because the wild rice has all the foodelements in it. In commercial rice which is polished, the best part of the rice is taken off, the outside, and there is very little left. A few words about foods.

We are degenerating because we do not know enugh about foods. Our bodies are constructed of foods. The foods we eat today are walking around and talking tomorrow, behaving good or bad. What we eat today is alive tomorrow; it is transfigured into these living tissues, becomes our brain, muscle, blood, and bone. So if the food is not right, the tissues will not be right, and our conduct won't be right, and our thinking won't be right. Now, look at some of these fruits. A lady said the other day if we don't eat meat what shall we eat? Now, we have got so accustomed to thinking meat is the whole thing, there is scarcely anything but meat in the world, that we do not stop to consider. I have put this slide up here chiefly for the purpose of calling attention to the fact that there are several edible fruits that are accessible to people in this country. Let us see how many there are. There are 25 here, but there are just a few duplicates. But there are between 20 and 25 different fruits that are accessible to everybody who wants them in this country, easily accessible, and there are some others not mentioned here that are easily attainable. Now, look at these fruits and see how nourishing they are. For instance, here is one fruit, dates,--1600 calories to the pound, that means 100 calories or one portion to an ounce. That is about the same food value as flour. All of the cereals have on an average 100 calories of food value to the ounce. So you see dates have an average value equal to flour. Here are dried figs, about the same; then here are raisins, practically the same, and prunes about the same; so there are four fruits that have a value equal to the cereals,--dates, figs, raisins and prunes,--dried raisins, of course. Now, when you look at these other fruits we find they have a lessened value, chiefly because they are in a fresh state and contain a large amount of water, whereas dates are dried, and figs are dried. Fresh figs would not have so high a value. Here are dried figs1475, and fresh figs 381, or only about one quarter their value; so about three fourths of the fig in fresh state is water; and you see the other fruits are about the same thing. For instance, here are plums, 395, practically 400, or one fourth as much as dates, three fourths water; and here we see bananas, the same thing. Now, notice some

comparisons here. Here is watermelon, 140, strawberries 180. Watermelon has almost the food value of strawberries, about one tenth as much as figs and dates, and about one half as much as apples. That is a pound of apples is just about equal to two pounds of watermelon, or a quart of strawberries. When we come to the banana, we see there is it is a very good food, 460 calories to the pound. Now, when we come to notice the potato, as we will in a few minutes, we will see that the banana and the potato have about the ame futritive value. They run right along here, you see, 300 or 400 calories to the pound, or 25 calories to the ounce. When we come to vegetables, we see their nutritive value is just about the same as fruits with the exception of the dried fruits. Vegetables all contain a large amount of water. The potato, you see, has 385. Let us see how many fruits there are equal to the potato. Here are cherries. Cherries have 75 more calories to the pound than the potato. Here are plums, that are high above the potato, and here are fresh prunes, equal to the potato. Here are raspberries, almost up to the potato. Here are apples that are about 100 below the potato, about two thirds; so we see there is a very high nutritive value in many of these fruits. Now, notice here parsnips, radishes,pumpkins, spinach, squash, tomatoes, turnips--you see they have about the same nutritive value as some of the fruits have. Strawberries have 180 calories to the pound, and turnips have 185. So you see strawberries have just about the same value as the turnip, and here are tomatoes that are even less than the watermelon. A pound of tomatoes has less food value than a pound of watermelon. We do not think of watermelon as being a food at all. Butx we see it has nutritive food values very different from what we have considered them. Egg plant has 130, cauliflower 140. You notice cauliflower has the same food value as the watermelon. Cauliflower is simply wood and water, and watermelon is the same thing,--wood and water and cellulose and water--that constitutes almost the whole of cauliflower, and the same thing is true of the potato and the tomato. There is just a little flavoring thrown in. Here are the greens--dandelions, kohlrabi, spinach, artichoke. You see here green corn has a nutritive value just about the same as that of the

banana, and the banana is 25% above the potato in nutritive value. Now, we think of the potato as being a very valuable food, and it is, but it contains such a large proportion of water that its nutritive value is must less than we would otherwise think it would be.

Now, when it comes to cereals, look at the difference. See what a fine lot of cereals we have. Recall that splendid list of vegetables we have just been looking at, and here is a new list of cereals, and almost every one of them is 1600 calories to the pound, or about oneportion to the ounce, on the average, about four times as much as the vegetables, four to five times as much. Some of themvery much more. The soy bean contains a large amount of fat, so it has a very high nutritive value. Cornmeal and corn contain some fat. So they have a very high nutritive value. Rice has a nutritive value of 1600 to the pound. You see here the flesh foods fall far below the cereals. Here is porterhouse steak, 1100 calories to the pound, or about sixty to the ounce, sixty or seventy to the ounce. Here is brain, only half as much. How many of them have a low nutritive value! The sweet potato has a higher nutritive value than any of these preparations. Chicken, for example, is looked upon as being so very nourishing, and it has only 505 calories, less than one third as much as oatmeal. Oatmeal has three times as much nutritive value as chicken has; so one pound of oatmeal is equal to three and a half pounds of chicken. Now, the pound of oatmeal would cost us six cents, and what would the chicken cost you?--spring chicken, for example? It would cost you a good deal more than six cents wouldn't it? So you see we are paying our money for something that has comparatively little value. Now, look at these fish and see how little value they have,--codfish, mackerel, salmon has some because there is a good deal of fat in it; and the oyster 235, and beefjuice that people generally regard as being so very nourishing, the very concentrated extract of nutriment,--only 115 calories to the pound. That is beefjuice. Now look again at some of these things,--porterhouse steak 1100; dried beef less than 1000; and sweetbreads 825, codfish 325. Look at some

of these--beefjuice 116. Now let us look at the next list. Look at these values, enormous values, you see--3000 calories and more to the poundx, 3384 calories to the pound of almonds, you see; and notice almond meal, beechnuts, Brazil nuts--see what a splendid list of values we have here. Hickorynut 3300, more than 200 calories to the ounce, more than twice the value, even of the cereals, and three or four or five or six times the value of meats. Now, we reckoned just a moment ago that sweetbreads had 800 calories to the pound, and here are Brazil nuts, equal to hickory nuts, equal to four pounds of sweetbreads; and you remember porterhouse steak was 1100, and here is almond butter 3300. Here are filberts, hickory nuts 3300, pecans 3400, more than three times as much as porterhouse steak. In other words, in a pound of these fine nuts you have three pounds of porterhouse steak. Now, what do you have topay for it? Look at peanuts for a moment--2500 calories, more than double a porterhouse steak, three times the sweetbreads. What do you have to pay for three pounds of sweetbreads? Perhaps seventy-five cents. A pound of peanuts having the same value you can get for ten cents. We throw away a great deal of money. But that is not the worst of it. These flesh foods taken intoour bodies undergo decay and putrefaction. If one of those animals happened to die in the corner, happened to get off in a corner and die, pretty soon it would be a great mass of putrescence, followed by a stench, and the turkey buzzards would come if there were any about, and the rats would come, attracted by the haut gout; it is becoming prime beef, don't you see? and pretty soon it would be a mass of seething corruption. Now, when you swallow a piece of a dead animal down into your body, all of that portion of meat which you have eaten, which is not digested and absorbed and utilized right away, simply remains there and rots, and in a few hours is in a state of advanced decay.

These animals here have been coaxed inside the fence, got in line here, and not they are assassinated. The animal is hit upon the head, this door falls out upon the floor and the animal falls out there, and three or four men fall upon it with knives in their hands, the skin is removed in the course of a few seconds, the animal is disemboweled, cut intopieces, and hung up to cool, then

put away and kept perhaps three months in some cases. Mr. Armour's man told our buyer that he kept his Christmas beef three months before he offered it for sale. That much neglected meat has a very high flavor and is very tender, because it has been decaying all the time. You say it has been in the cold; but that does not prevent decomposition. There are germs that grow almost down to freezing, and they continue to grow and develop, but they do not produce malodors, so they are not recognized, but they are going on, at work all the time, and by and by when the flesh is brought out and allowed to warm up, the putrefaction goes on very rapidly, because it is all fullof bacteria, ready to seize upon it.

Here a man captures a pig by a hind leg, fastens it to a hook on this wheel and the pig comes over here and goes off down the line squealing, and a man sticks its throat with a knife, and byand by some men put it down into a vat of hot water, and the poor creature wriggles and struggles for its life without avail. After it has been cooked a little bit, then it is taken out and the hair scrapped off its hide, and then it is divided into various parts and sent out to be buried in the stomachs of perhaps 100 or 1000 different human beings. The poor creature does ot have a respectable grave, but is ~~xxx~~ never buried in one spot, but is scattered. It never could get its remains together in the world. Now, when they are examined by the government chemist, or the government inspectors, as they sometimes are if the pork is going to be shipped abroad, ~~xxx~~ it has to have a goverment stamp on it to show that the animals have been inspected and are healthy. But if it is going to be used at home, it is no matter. Here is a portion of the entrails of a tuberculous pig. Here is a liver that has beeninfected with tuberculosis, and you see the large mass of tubercles growing there in the liver. Here is the inside of a lung that is all covered over with tuberculosis, and here is a lumpy jaw. Do you suppose they waste all of that good flesh? No, indeed, it makes splendid sausage meat; makes fine mince meat, of the very best sort. They can not afford to waste all that good meat. Two per cent of all the hogs that are killed have trichinae, and trichinosis is becoming more

and more common in the United States. It is spreading with great rapidity; and it must be so, because men die with trichinosis. They have the parasites in their bodies. Now, then, a rat gets access to the human body and becomes infected with trichinae. The rat dies and the hog eats it; the hog dies of trichinosis, man eats the hog; then the man dies, the rat eats the man, another hog eats the rat; another man eats the hog, then the man dies and a rat gets at him and so one scavenger eats another and passes the parasite around. Now, isn't it a strange thing that we would be willing to do that, that we are willing to lend ourselves to such a horrible procession of scavengers as that, to be the incubator, fax if you please, the hotbed for raising parasites and passing them on to some other creature? No animal except animals that eat other animals ever has trichinae; you can not have trichinae because trichinae grow only in animals, and if we don't eat ani al flesh, we could not possibly have trichinae. The same is true of tapeworm. This shows tapeworm. That is what is known as measly pork. There are some little white bladder like specks on the meat about as big as the head of a pin, and there is a young tapeworm in every one of them. When the meat is swallowed, the tapeworm gets loose, slips down into the intestine, fastens itself on the wall of the intestine, begins to grow, and it grows and grows and grows until it may be a hundred feet long, and each one of those joints is a tapeworm; it is a whole family of tapeworms, xxxxx father and mother tapeworm, for these creatures are bisexual creatures, so each one is producing millions upon millions of eggs. Thousands of eggs are being poured out of these tapeworms, and a man who is going around carrying these tapeworms is sending down into the sewers millions of these tapeworm eggs every day, and the cattle drink the water, get them into their intestines and they find their wayinto the muscles; then a man eats their flesh and he has tapeworm, so he passes it on to somebody else. Every man that has a tapeworm is sowing tapeworms wherever he goes, all over the country; he is scattering tapeworm eggs.

Seven million out of the 35 million hogs that were slaughtered last

year had tuberculosis. Now, think of that. How do so many cows or pigs become infected with tuberculosis? Because they eat the milk from tuberculous cows. If there is one tuberculous cow in a herd, the milk of that cow is all put in together and mixed together with the milk of the other cows, and when it is fed to the hogs the hogs become infected, and every single hog gets a portion of the infected milk.

Now, the same thing is true more or less of our babies. The babies are exposed to tuberculosis in just the same way as the pigs. This is a widespread, serious infection that affects human beings as well as hogs, and for the same reason, because they eat the milk of tuberculous cows. The same milk that is fed to pigs, a portion of that milk, or butter made from it--the same milk is fed to human beings. Human beings eat a part of the very same milk that produces seven million tuberculous hogs in the United States every year. We do not have seven million people that have tuberculosis in the United States, because we are toughern than the hogs. But I am not sure about that either. In the United States we have dying every year 150,000 people of tuberculosis, and for every one that dies, three or four at least are suffering from tuberculosis, and the truth today is that certainly not less than half a million people in the United States today have tuberculosis of the lungs, and there are a large number of people that have tuberculosis of the bones. And in some of our schools that have been examined, three fourths of all the school children have been found to have enlarged glands in their neck, and that means tuberculous glands, which means that they have been taking milk that comes from tuberculous cows; it was infected with tuberculosis, so the children get the disease just as the hogs do, and the fact that seven million hogs are contracting tuberculosis every year from the milk that is fed to them from cows that also supply milk or butter to human beings, certainly ought to make us interested in protecting human health and human life as well as the lives of these lower animals.

Now, this shows you the lungs of a child that had been eating milk from

a tuberculous cow, and the germs in the milk ha found their way from the stomach down into the intestine, then into the mesenteric glands, and from the glands of the intestine up through the diaphragm into the lungs, and have reached finally these glands that are found about the xxxx lungs and the glands have become enlarged, and the disease may be seen with the X ray. A child that is so infected may be brought upx to the X ray and looked at with the X ray, and shows these tuberculous glands very frequently. Such a child has a cough, is puny, feeble, don't gain in flesh, and is pale, and the mother wonders what is the matter. The child gets tuberculosis of the glands of the lungs. Now, the child may not die of tuberculosis, but if the child is put outdoors in the fresh air, and has good food, the child recovers. That is, the child recovers but the glands do not. These glands remain infected with tubercular disease, and by and by when the child gets older, gets dyspeptic, gets run down, debilitated by an indoor life, perhaps, then tuberculosis comes on, develops, the lungs become infected, and the child dies. Here you see how a lung looks with these tuberculous glands. So this disease is multiplying. Now, this comes about from our contact with animals, from eating the diseased meats and milk of these animals that are served to us as food.

Here is a picture of Pawlow. Prof. Pawlow has been making a study of some of the vitalproblems that relate to human health, and one of the interesting things he has discovered is that there is a peculiar kind of gastric juice made for every different food. Prof. Pawlow made this discovery by making a little pouch from the stomach of a dog. He separated a part of the stomach of the dog, made a little pouch of it so it was a separate stomach, and he called it the kleinemagen, that is, a little stomach, sometimes known as Pawlow's pouch among physiologists, because he was the first one to perfect this operation. It was a very ingenious operation by which this pouch was formed. It requires more dexterity to this operation than is required for ordinary operations upon the human stomach, because the operation is only successful by this painstaking care.

I learned more about how to operate upon human stomachs with safety in watching the operations in Pawlo 's laboratory, of St. Petersburg, than I learned in any other clinic in the world, for there is more pains taken in operations upon those dogs, better care is taken to avoid sepsis than I ever saw in any other clinic in the world. I must make one exception; I must except our own clinic, because I adopted the methods of Pawlow when I saw how much pains he took on dogs, and what wonderful operations he was able to perform upon dogs, and I said it would pay to take the same pains on human beings as Pawlow does with the dogs, and would be profitable; so we adopted his methods in our operating rooms.

Here is a question that is constantly coming up in the discussion of diet. I am asked every little while by somebody, if we are not to eat meat, why do we have canine teeth? Now, the canine teeth, so-called, are these teeth. These are the canine teeth, these large teeth on either side. Here are the incisor teeth in front. The dog has six cutting teeth here in front, and they have the canine teeth on either side in each jaw. In the human jaw we have the same thing. We have four cutting teeth in front, then we have a small tooth on either side with one point on top, that has a cusp, and that is called a cuspid tooth; then just beyond that we have two smaller teeth sometimes, called small molars, and also called bicuspid teeth, because they have two points on top. Then we ought to have three more teeth called the large molars or grinders or the multicuspid teeth. These teeth have three or four cusps on the top, three in one jaw and four in the other jaw. Ancient man had five. We have lost some of our teeth, because we do not grind enough. Look at the long line of molars in this jaw.- fifteen molars. This is the jaw of the horse. That is because he has to chew so much, to do so much grinding. He eats his grain, chews it with those teeth. Some people imagine we ought to eat oatmeal, corn, wheat and things of that kind raw, because animals do. But we haven't got the fifteen grinders, you see, or molars enough to ~~maxit~~ eat that kind of food and grind it properly. You see here the dog's molars are not grinders at all. These canine teeth with sharp points

work in together you see. The horse grinds his oats when he eats it by three movements of the jaw--to and fro, and up and down, while the dog makes just one movement, a chopping movement. When we come to man, we find the same thing. We have three movements because we have grinders; man's teeth can move over the surface in every direction. These teeth are all the same height all around. The so-called canine teeth are no higher than the other teeth, unlike those of the dog; but they are the same length as the cutting and grinding teeth, so that when the mouth is shut up, the point of junction forms a horizontal line clear around. Here is another animal that has teeth that at first look resemble those of the dog, because he has got some cuspid teeth here, long, sosecalled canine teeth, and he has got two small molars and three large molars just like human beings; and four incisors in front just like the human jaw. So the gorilla, the orang-outang, the chimpanzee and all the higher apes have just the same number of teeth, and the same kind and the same structure as in the human jaw with one difference, and that is the cuspid teeth are twice as long as the other teeth. In that respect these teeth resemble the canine teeth of the dog; but in the human jaw we have no teeth that look at all like the canine teeth of the dog. Canine is not a proper name for these teeth, but they should be called cuspids. The fact is, these so-called canine teeth, supposed to be for the purpose of tearing meat--and probably that is true,--but how about the man? He hasn't any canine teeth; he has no teeth with which to tear meat; but the gorilla has teeth with which he can tear things, but the gorilla is not a meat eater. The gorilla is a fruit eater. That is what made me a non-flesh eater. Some 45 years ago I read a statement by Cuvier that man's natural diet was the same as that of the higher apes, the gorilla, chimpanzee and other higher apes; in otherw words was a frugivorous diet, and I thought I would try it,--fruits, nuts and soft grains. So that is the sort of breakfast I had. I got my dinner about an hour ago, and didn't have any inconvenience at all, I have been able to work hard all day, and I had four ears of raw corn. It may be it was five ears, but they were rather small ones, and a little fruit. There is more nourishment in the corn than there

is in the potato. This unripe corn is easily digestible; it is soft corn. The material which becomes hard a little later is now in the milk state. When the corn gets a little ripe, you know, it has lost its sweet flavor, and one does not like it; it begins to have a very unpleasant, raw-starch taste, but when it is just right, before this stage has been reached, the carbohydrates are in the form of sugar, and it is very sweet, very readily assimilable, and the protein is in the soluble form also and so is very quickly digested. So you see this argument for man's diet has a wrong basis--the idea that man should eat meat, because he has canine teeth and because the dog has canine teeth and eats meat, is entirely in error. Man has no such canine teeth as the dog has, he has no teeth that could be of any use at all to him in eating raw meat or gnawing it off bones, or tearing it frm an animal's body. These teeth we have been neglecting very much. Here are three jaws. This one is a degenerate modern jaw. I copied this from a work on anatomy. I took it from a standard work, and it is supposed to be a typical human jaw as it exists at the present time. Just look at it. See how much stronger this jaw is. This is a jaw of a Mound Builder. I have this skull inx my office, from which this photograph was madd; and here is a jaw above which is a great deal stronger yet. This is a splendid great jaw, more than twice ~~kkaxxxx~~ as thick as this. This is the jaw of a man who lived somewhere from 150,000 to 500,000 years ago, according to geology. That is what is known as the Heidelberg jaw. It is evidently a human jaw, and we know it is by the teeth. See what splendid, great molars those are,--three large molars, two small molars, and canine teeth, then the four incisor teeth in front. I have a picture of the jaw looking down upon it, as well as this lateral picture which shows sixteen splendid teethin perfect condition. Not one of those teeth has the least bit of decay. Now, Pawlow found that the chewing of food has a very important relation to digestion; that if we chew food toroughly, then it is likely to be well digested. Why? Not simply because it is broken up into fine bits. One gets tired chewing just to reduce his food to find bits, but for another very important reason. That is that while the food is being

chewed, the portion of food that is xxxx dissolved in the liquids of the mouth is finding its way down into this little trough. This picture upon the screen represents certain little papillae at the back of the tongue, the papillae circumvallate; and the dissolved foodstuffs come down into this little ditch where they come in contact with the tastebuds, the ends of the nerves of taste--these great gustatory nerves that come up into the tongue here are distributed to the ends of these little buds which are thrust out to the very surface of the mucous membrane, but here at the top the mucous membrane covers them over you see. There is a thick covering there to protect these delicate structures, but down in this little trough they come right through the mucous membrane, you see. There are several layers of the mucous membrane over them, and the buds come right out upon the surface where they can come in actual contact with the fluids of the mouth, with the dissolved foodstuffs, and so can delicately test the qualities of these foods, and in this way the bodyinforms itself with reference to the character of the food that is being taken into the mouth to be digested, and the messae is sent to the brain, to the psychic centers, so-called, and they send a message to the stomach, informing it what kind of food is coming, and notifying it to get ready for the process of digestion; so the stomach prepares gastric juice which is just adapted to the fuudx that is coming. So you see how important it is to chew. Prof. Pawlow says we must chew in order that we should have this appetite juice with which to digest the food we swallow. If we swallow food without chewing, there is no gastric juice there to digest the food, so the stomach is not prepared for it, and the food lies about a long time and is worried out of the stomach after a long time, and changes take place which are in the highest degree a disadvantage to the body. Here are some dogs making gastric juice. Prof. Pawlow collects the gastric juice that these dogs make. Each dog is required every morning to make a whole quart of gastric juice before he can get his breakfast. He is chewing his breakfast, and it drops right through a hole in his throat so he doesn't get a thing in his stomach

but is
~~xaxxxxx~~ the gastric juice ~~xixxxxx~~ pouring in a stream all the time, into a little glass flask, and is collected, filtered, aerated, and is shipped to this country and other countries. I will leave the rest of my lecture for next time and let you go to bed early.

I want to say just a word, however, before I close. A gentleman said to me today, "Well, Doctor, I think I will go home pretty soon; my vacation is pretty nearly up." "Well, now, are you well?" "Oh, no, I am not well; I am better, but then I am not well by any means. Don't you think I will keep right on improving after I get home?" I said, "No, I am afraid you won't." "Well, why?" "Well, you used to smoke. When you go home I believe you will go back to smoking again." He said, "Well, I do hanker for it, I do; there is no mistake about that." I said, "I am afraid you will go back to beefsteaks again when you get home, then you will be right back where you were." "You don't think I will keep on improving, then, after I get home?" "Why, should you?" It is exactly the same thing as lifting a stone out of a hole, you get it part way out and then let go of it. It goes right back again. I said to him, "You are improving, my friend, somewhat, because you are being lifted, hoisted out of a pit of disease into which you have fallen, and you won't rise or improve only so long as you are hoisted. Now, when you dimiss all your hoisting apparatus, you must expect to get right down into the hole again. The great mistake such a large number of people make who come to the Sanitariumhere is that they do not stay quite long enough. We want you to stay until the job is done. If you take a pair of shoes to the shoemaker to be repaired, and just when he got the soles cut out and just simply fastened in place and began to sew them on, then you go to the shoemaker and say, "Now, I would like to take those shoes and wear them for a few days. I need them; I have got some business to attend to, and I have got to wear those shoes, and I want them a few days, and if I find that what you have been doing for them has helped them any, I will bring them back and let you finish them up." Now, that is the case exactly. That is exactly the case. A man comes here with

some old, chronic difficulty that has been hanging on him for years and years and years, growing upon him until it has swamped him, and he is not fit to do business; then he comes down here stays six or eight weeks, expects then to be about asgood as new so he can go back home and go back to his old sinning and transgression of the laws of life. My friends, the thing doesn't work that way. If yu improve after you get home, it will be because you keep right on doing what made you well while you were here. Beefsteak eating is one of the great causes of disease in this country and in all civilized countries. It goes right along with whiskey, alcohol, tobacco, tea, coffee and those other unwholesome things, breaking us down, dragging us down to ~~xxixx~~ race deterioration and decay. So we have got to keep away from those things, have got to start a new life, establish a new regime, dismiss beefsteak from the table, take pains to chew, to masticate food very thoroughly. Everybody who has chronic trouble and comes to the Sanitarium ought to stay longenough to get his habits thoroughly correct, to get rid of his old appetites. This gentleman said, "Well, when I first came here, I wanted my beefsteak awfully badd, I thought I could not get along without it at all, but now I don't care for it at all, but I do hanker for cigars." Now, by and by he will get rid of his hankering for cigars; he will get his old, natural appetites and instincts back again. I said to him, "Did you hanker for cigars before you ever smoked them?" He said, "Oh, no, the first cigar I ever smoked made me awfully sick. But now I have got used to it." Now, getting used to it, myx friends, is not getting used to a poison so it does not do you any harm. Getting used to tobacco, getting used to beefsteak, getting used to tea and coffee, ~~xxxxxxxx~~--it is not getting used to those things so that they do not do you any harm. This is the situation exactly. You are sound asleep at home and the family all quiet in bed. You are sleeping soundly, but there is a noise at the door, a burglar trying to get in; the dog is barking. The burglar is scared away. The next day the burglar comes around, gets acquainted with the dog, makes friends with him, gives him a bone or something else, baits the dog, talks to him, gets him acquainted with him so well that when he slips up there

in the night, goes to the door, the dog does not bark at all, and he walks straight in the door, and he commits burglary, steals away your silver plate, or commits some worse crime. The fact that the dog did not bark did not protect you atxa all. When the dog did nt bark any more, the burglar walked right in without any hindrance at all. It was a good thing for you for him to bark, and for him to stop barking was a bad thing for you. It is exactly so with tobacco. When the stomach receives it and vomits it, it is resisting it. It is trying to defend itself against this poison. By and by the man gets used to it. He has simply educated the dog, so to speak; it has influenced his stomach so it doesn't any longer protest against the poison, and so it gets in and does all sorts of depredations you see. That is the way it is with tobacco, and with tea and coffee, with all these poisons we have talked about; but getting to that point does not hinder the harm and mischief they do. I am very anxious that every man and woman that comes here to this institution should learn something to take home with him that will change his habits and his ideas about living, so when he goes home he will establish a new era of life in his home, and a new regime altogether, and then cultivate health instead of cultivating disease. You are here because you have cultivated disease instead of health. If you have got rheumatism it is because you have been eating it day by day for years, and have gone on consuming it until you have accumulated more rheumatism than your body can deal with. If you have got Bright's disease it is because you have cultivated it, created it and by degrees brought your boy into such a state that Bright's disease is a natural consequence, an absolutely necessity, a reaping of the harvest from seed you have sown. So, as I said before, cultivate health when you go home. Stay here till you get a good start. We don't want anybody to stay any longer than that. Stay till you get a good start so that what has been accomplished while you are here will be a permanent benefit and a permanent improvement. But I must not tax you longer. Thank you for your patience. I hope you will all have a good night's rest.

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