LECTURE 31.

July 3,1911.

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QUESTION BOX LECTURE

At the Sanitarium Parlor, Battle Creek, Mich., Monday, July 3, 1911, at 8 P.M.,

By

J. H. Kellogg, M. D.,

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Some time ago I was talking with a board of officials about the necessity for pure water, and a member of the board who, I was surprised to find, was also a doctor, came forward with the assertion that live water, fresh water always had animalculae in it; that these animalculae in the water are what give the water its life. If that were not true, the water would be dead. This is true in a certain sense, for when water has a lot of living creatures in it, it may be said to live with live creatures, and water which has nthing at all in it, is, of course, inanimate. It is simply a chemical compound. But that is what we want in water--we want simply H_2O, or hydrogen combined with oxygen in chemically pure water. And no other water is fit to drink. Water may contain a little lime without hurting it any. I am glad to tell you that the water which we have here at the Sanitarium comes from an artesian well 166 feet deep down in the sandstone rock. There is a very little lime in the sandstone, so the water is a trifle hard, but not enough to do it any harm. It has practically the same chemical composition as the famous water of Waukesha. I find there are several questions here and I shall have to be industrious to get through them all.

Question. If the stomach is otherwise well, but adherent to the liver and the gall-bladder, should it be operated on?

Answer: Here is somebody who has been having an ~~ex~~ X ray examination made of his stomach, and it has been discovered the stomach is drawn up under the liver so the stomach is given a flat shape. Now, the question is, should he have an operation? Certainly not unless he has some trouble. If he has no pain,

no pain, no inconvenience, then no operation is required. This condition is frequently the result of an inflammation in the gall-bladder, and there may be more trouble in the gall-bladder than in the stomach in such a case; but if there is no pain, no inconvenience, certainly it is well enough to let it alone until there is trouble.

Q. Please tell us how to get thin.

A. I should not think it would be necessary to do anything more than to sit down in the sun on such a da as we have had. A gentleman from Chicago told me today he was going home to get cool. Think of it,--twelve people died in Chicago of sunstroke yesterday. A man sitting on a bank fishing got sunstroke, fell into the water, and was drowned. Several other similar cases happened. So there are places which are hotter than this. I told this gentleman we usually had it xxxyxxxx pretty cool here, but it got so hot in Chicago this year that it warmed us up some. I suppose this is really true, for this warm air comes from the southwest when we have it so warm here.

Q. What is the cure for Bright's disease, if any?

A. There isn't any cure for Bright's disease. Bright's disease is one of the things that ought to be cured before you get it. The cure for Bright's disease is just like the cure of a fire. Now, if your house is on fire and half your house is burned up and you put the fire out, there are still left the results of the fire; part of the house has been destroyed. Bright's disease is a disease which is destroying the kidneys, and every day that disease exists, a little more tissue has been destroyed, and a little more and a little more; it is like a fire eating into a house and consuming and destroying it little by little. This disease may be arrested just as you may put out a fire; we may arrest the fire, but that does not restore that part of the house that has been burned. Now, in the case of the kidneys, we can not restore that part that has been destroyed. In the case of the kidneys, we can not build on a new part to take the place of that which has been burned, but we can do this in case of the house. With the

kidneys, all we can do is to make the best of what is left. That is an awfully important thing to know about and to remember about. Some years ago a well known judge from the State of Ohio came here to the Sanitarium, and we found he had a tumor in his loin. On investigation, we found it was a cancerous tumor of his right kidney, and it became necessary to remove his right kidney. He got on first rate with one kidney, got along all right; and he came down to my office before he went home, and he said, "Now, Doctor, I belong to the famous one-kidney club. There are just four of us", and he told me the names of the other people that had had that same operation performed, and had each one kidney. "Now," he said, "I propose to outlive all the rest of them, for I recognize the fact that with but one kidney I have got to take extra good care of that one kidney. I can not have another kidney removed; that would be the end of me; so I want you to tell me exactly how to live, how to take the best possible care of this kidney, what to eat and all about it,--how to take the best possible care of this kidney." So I gave him a program to follow, and he went home and followed it for years and years, and he came back to visit us and we found himstill enjoying splendid health for years, and with one kidney. Now, a man who has Bright's disease is in just that same situation. He may have a kidney and a quarter, but he has less than two kidneys; it may be a kidney and a half, may be only one kidney, and may be seven eighths of a kidney. He can live if he has five sixths of a kidney, but if he gets down to two thirds of a kidney that is the end of him. When he gets down to three quarters of a kidney, he can ot live long after that, because it takes more kidney than that to do the filtering work for the body and keep the blood clean enough so the brain, nerve centers and other tissues of the body can go on and do their work; so it is an awfully important thing to know when you have got Bright's disease, how to live so as to make things easy for those kidneys. The kidneys, the liver, the heart, the brain, and the lungs are the great vital organs of the body. (You can get along without a stomach. I took an X ray picture of a gentleman who is here now who left his stomach here some years ago, and he

just came back to show us how well he is. Five years ago he came here just a skeleton, and two or three weeks after I had operated on him, I met him out on the porch, and I said, "Mr. Jones, how are you?" And he said, "Doctor, I am just fine. I have gained fifteen pounds with my stomach in a bottle, just think of it." Well, we have got his stomach in the bottle, and he is all right; he is in good health. He can get along without the stomach. Mr. Jones is here, and you can shake hands with him if you want to. When you look around and find one of the h healthiest men on the premises you will find Mr. Jones, and it will be perfectly safe to say, "Mr. Jones, how are you; how is your stomach?" That is what they say in China, you know. Now, Mr. Jones has gotten on so well and made such a splendid recovery because he recognized that he had lost his stomach. He could not depend on that stomach any more to help him out with Christmas dinners, and Thanksgiving feasts, and gluttonous banquets; but he has not been doing those things any more; he has had to live on the basis of a no-stomach existence, you see. He has made calculations on taking care of his digestion, with the understanding that there was no stomach to help him out. He would not undertake to eat beefsteak, any more . Why? Because beefsteak requires a stomach to digest it. You can not digest beefsteak without a stomach. The stomach is the organ for the digestion of beefsteak. If you haven't got any stomach, you can not digest beefsteak. Now, suppose a man has a worn out stomach; he has used his stomach up on Christmas dinners, and Thanksgiving gormandizing, and perhaps eating a Christmas dinner every day, and a Thanksgiving dinner for supper every day. There are some people who live just that way. Such a man has worn his stomach out. Now, he is just as bad off as the man who has had his stomach removed. He is a little worse off, because his food goes down into the stomach and just stays there, remains there and ferments, decomposes, rots and doesn't digest; so he is worse off than though he had no stomach at all, a great deal worse off. Now, the man who has lost his stomach, you see, he can live; but the man whose kidneys have been destroyed, that is the end of him. So the man who has Bright's

disease must make his calculations to live close to the line. He must use no more mustard, pepper, peppersauce, ginger, horse radish, and those irritating, scorching, burning, stinging things; they must be all omitted from his bill of fare; he must never eat them any more. If you do not want to get Bright's disease, it would be a good thing to leave those things off your bill of fare. Just drop them out if you don't want Bright's disease. A certain proportion of the people here are going to die of Bright's disease just becaused they won't mind what I am saying here. I am not going to die of Bright's disease; at any rate, I should be ashamed to die that way, because that means that I have gormandized, it means that I have abused my liver, abused my stomach, and perhaps my kidneys until they gave out. We haven't any right to do that way. Now there is no cure, as I said, for Bright's disease after it has once established itself; but the thing is to find out wen Bright's disease is coming in time to stop it. I discovered a case just the other day, a lady who is suffering from the pre-nephritic condition, which is just at the borderline of Bright's disease, has not passed over the line yet, but is just right up to it. How do we know that? A little rise of blood pressure, a little indican, autointoxication, and a little hardening of the arteries. That is the condition that comes just before Bright's disease. Bright's disease is next door, but we can just as well stop right there and not have it. It is better to stop a little before you get there. If your blood pressure is normal, if you have a blood pressure of 105 or 110, be thankful for it, and say to yourself, I am not going to let it go any higher. I am going to keep it there." I am sixty years old and my blood pressure is 105. If I found my blood pressure was 140, I should expect to be cutting my career short in the course of a few years. I should know absolutely it was impossible for me to live twenty or twenty-five years. I should expect probably I had not more than ten years to live if I had a blood pressure more than 130 or 140. We should ot have such a blood pressure as that until we get just at the end of our career. A blood pressure of 200 means you have got to do something

right away quick to get that blood pressure down. If you don't, there is mischief coming sure. It is wonderful what can be done sometimes. We have a patient in the house now who was here three years ago and had a blood pressure of 208, systolic pressure, and the diastolic pressure, which you find mentioned on your card, is the most important of all, and that was 160. The diastolic pressure has come down to 115. Now, that means years added to that patient's life. She has been living on the low protein diet since she was here before, and it has given her a new lease of life.

Q. Will a two-hours wait for a Sanitarium doctor when extremely nervous produce as much uric acid as a pound of beefsteak?

A. That is a good problem. I think I will get this party to try and see. If it were me, I should say that before I can settle that question, I should have to get the patient's temperature and really try to settle the question as to whether it was high temper or high temperature. I would have to look into the case first. Perhaps it might be a little of both. Certainly waiting must be very dismal and restless sort of work.

Q. What exercise is of value to the neurasthenic?

A. Now, the neurasthenic is almost always suffering from intestinal autointoxication. The neurasthenic is intoxicated, food intoxicated. I told a lady today she was food drunk. She had been eating beefsteaks and mutton chops, oysters, chicken and things, and her whole body is saturated with toxins. She said, "I don't know why it is I am so tired. I get up in the morning and I am tired, no matter how long I sleep I am tired when I get up in the morning." That shows it is not work, because rest, sleep will cure the fatigue which is produced by work; but this is the fatigue produced by intoxication, by food intoxication. The putrefaction of undigested and unutilized foodstuffs in the intestine has resulted in saturating the whole body with poisons. That is what is the matter with this lady. She is going to get over that. She will wake up one of these days feeling like a steel trap, as if she would like to leap ten feet into the

air the first thing when she gets out of bed. She has not had this sort of feeling for some years, I dare say, but it will come back. She had to go back to Chicago on the last train, but she will be back again; and she came here to learn how to live, to get started, and if she gets started, she will keep right on. She is an intelligent woman and wants to learn the way.

Q. Could one eat too much salt?

A. Most assuredly. Salt is not a food; that is, the common, inorganic salt we find on the table. The chlorid of sodium that is naturally in the food is food, but the chlorid of sodium in the food is different from that which we find on the table. It is true chlorid of sodium is perhaps one of the most harmless of all chemical substances which we can take into the system, but it is unnecessary. We only add it as an aid to the appetite, as a favor to the taste. It is not an absolute necessity. There is enough chlorid of sodium in our natural foodstuffs. Possibly the potato may be a little lacking in chlorid of sodium; it does not do any harm, perhaps, to just sprinkle a little tiny bit of salt on the potato, but in general salt is not necessary. I saw somebody the other day shaking salt on a cantaloupe, and even shaking salt on a watermelon. Just thinkof it. You might as well salt pears, peaches, plums, cherries, grapes and everything else. Those things require salt if anything else does. Experiments have been made in France recently which show that the ordinary foodstuff has all the salt we require. We don't need to add salt. If you think that animals require salt, just walk up to my home and you will see there some fine deer in my grove, and those deer never had a bit of salt; they won't eat salt. They were all born on the premises, and they are a demonstration that salt is not necessary. I would like to have you see those deer, so you can tell your folks at home that deer can live perfectly well without salt. Men who live on the western plains do not salt their cattle. Salt is not necessary as a matter of fact. We add some because we like it, and the less we take the better.

Q. Do you consider woman inferior to man mentally?

A. Somebody asks the question of me, and I do not suppose I ought to pass it by, because I stand here on the witness stand, sort of pledged to tell all I know, at least about the questions asked me here. Now, I think this is a man's handwriting and he is trying to find out what my opinions are; and I say most emphatically, no. (Applause). Those cheers all came from the feminine side of the house. If you look over the annals of the history of the world, you will find it almost universally true that a man who has been a genius, who has made a great name in the world, has been a man who had a great mother. Very often he didn't have a father who amounted to very much, but he had a great mother; a record of that kind cannot be denied. Man has a larger brain than woman has, that is true, and because he has a brain which weighs several ounces more than the average female brain, for a long time it was considered man must have a greater mind. That does not follow at all. The elephant has a bigger brain than the canary bird, but the canary bird is in some respects smarter than the elephant. The canary bird has a bigger brain in proportion to its size than the elephant has; and the woman has a larger brain in proportion to her size than man has. That is, when you come to compare the size of the brain with the size of the body, woman's brain is biggest; it is relatively larger than the man's brain. But that doesn't prove that women have better minds, or greater minds than men either, because it is not the size of the brain that counts, but the quality. The women used to argue that although their brains were smaller, still they were of better quality; but now we have to turn about with the men, for it is true that although their brains are smaller in proportion to their size, than in women, they may be of sufficiently good quality to make up the difference. This is a very old controversy. I am giving you only a few facts in relation to it. There is much more that might be said. Woman's brain is different from man's brain, and we men certainly ought to be very thankful that it is. Certainly, I am sure there are very few men who would be willing to pass more than once at least through the

pains of maternity, and yet we see the brave little mother who gives her life again and again and again, and who is willing to sacrifice in order that the race may be preserved, in order that she may have a home filled with ~~the~~ little ones. I am very thankful indeed that the feminine brain is different from the male brain.

Q. Give us a talk on the cause and cure of colitis.

A. Colitis is an infection of the large intestine; it is an infection of the colon; and it has been determined within recent years that this disease is not a nervous disease, as it was once supposed to be, but is a disease due to the over-accumulation of putrefactive organisms in the colon, an excessive number of the putrefactive germs, of the ordinary germs of decay. Suppose you go off from home on a vacation, and you come back, and you go into the house, and find an awful smell and trace it to a closet and find a rat got in there while you were away and died there, and there is an awful stench coming out from that dead rat. There are putrefactive germs inside of that dead rat's body growing, and decomposition taking place, throwing off the aromatic, volatile, putrefactive poisons into the air; and that is what makes the bad odor. The very same sort of germs that are found in the rat's intestine are present in the human intestine and in the intestines of other animals as well, carrying on their work of putrefaction all the time--these ded rat germs that get into the colon--they are found in beefsteak, in mutton chops, and ~~fish~~ codfish, mackerel and everything else you buy in the shape of meat at the store. Every oyster you ever swallowed had millions upon millions of these putrefactive germs with it, going down into your stomach. Take a drop of oyster juice and look at it through a microscope, and you find it is like a silver mine in Colorado--there are millions in it,--millions of these wriggling germs just such as you saw here in the moving picture of bad water. Just think of being so very, very careful to have the water clean, absolutely clean, to have distilled water, and yet turning around and swallowing the filthy oyster which is just reeking with putrefaction, that lives upon the

scum or slime of the ocean bottom, that licks the slime off the stems of seaweeds and the ooze off of the stones; and its stomach and intestines are all full of these putrefactive organisms, irritating germs. You swallow the whole thing alive and wriggling, into your stomach. Why it is amazing. Persons are very particular that the plates should be clean, and the knives and forks should be burnished, and the spoons shining clean; and yet after taking such pains to have everything nice and clean, and a clean tablecloth, and white clean napkins, and everything immaculate, will reach out and take a bit of cheese that is fairly swarming, that has got in every ounce of it more germs than there are inhabitants on the face of the earth, and swallow that down into the stomach and inoculate it with filth germs, molds, yeasts, putrefactive organisms and germs from the barnyard, the pigsty and the chickencoop which came along with the milk that made that chesse--swallow them all down into the stomach, and keep the table nice and clean. Why should we be so particular about dirt on our hands and fingers and the talle, and the spoons, knives and forks, and yet swallow this rottenness and decay by the mouthfull?X Certainly we have gotten wrong conceptions of things. It is because we have been blind; we do not see, we do not know, but what we do know, we ought to stop to consider; and I am telling you plainly about these things in the shortest, bluntest way I know how so you won't forget about it, so you won't have it any more. Nobody would ever have colitis if he didn't eat meat or flesh, or animal protein of some kind--could not have it, because these creatures are not well supported, can not live well on vegetable protein. It is this animal protein that supports them. If you want to get rid of it quick, cut out all meats of all kinds forever. If you relapse and get it again, it is because the colitis germs are increasing. You inoculate yourself with colitis through beefsteak, mutton chops, chicken, oysters, and all these other things which are already decomposing when you swallow them.

Q. Within the last week, I note my left thumb up to the first joint became numb. Explain the reason.

A. I should have to look at the rest of you to see what is the matter with your thumb. I should want to look at your tongue, to look into your eyes, to see what your skin looks like. It is quite possible you may be getting multiple neuritis, which is a condition which begins just that way--a numb sensation in the hands or in the feet is the way that multiple neuritis or polyneuritis as it is sometimes called, or peripheral neuritis--those are three names of the same disease,--that is the way it begins. Another symptom is tingling and crawling sensations of the skin, and burning of the xxxx palms of the hands and the soles of the feet are other symptoms. There is sometimes pain and tenderness of the muscles, and shooting pains through the limbs are other symptoms. Sometimes loss of memory is a symptom. Now, these are symptoms of poly-neuritis which is a disease which is coming to be more and more frequent among civilized people. There is a very peculiar form of this poly-neuritis which is known in the far east as beri-beri, You have read in the newspapers about beri-beri, and you remember there was an outbreak of beri-beri in the Japanese army at the time of the Russo-Japanese war. This is simply multiple neuritis, and the investigation showed that it came from the too exclusive use of polished rice. That was almost their sole food, and when it was their sole food, they got beri-beri. Now, there has been a very thoroughgoing investigation by the best scientific men of different countries, and especially in England has this investigation been carried on, because beri-beri is very common in certain parts of India, in Madras and Calcutta; and it also prevails to a very great extent in the Malay Archipelago as well as in China and Japan; but it also has occurred in New Foundland; and some years ago in an insane asylum in Oklahome, and in another insane asylum in Alabama an outbreak of this same disease occurred which was really beri-beri. It has also broken out in Nova Scotia and Australia, and South America; so it pertains to all parts of the world and xxxx it is not confined to Japan and China alone. An investigation was made in this way. Rice was fed to various animals, and it was found that rice that would produce beri-beri in

human beings would every single time produce the same disease in fowls, chickens, and guinea-pigs. They would get paralyzed, lame, and the feathers would drop out of the fowls, and by and by they would die. They had all the symptoms that human beings had that were suffering from beri-beri. Now, a very interesting thing which is extremely practical, and I hope you will take it to heart, is this: within the very last few weeks, in fact, almost in the last mail, there came from England a medical journal that I was reading just two days ago, an article in this medical journal on the results of the report of the commission appointed in England to investigate this subject, and some very remarkable things have come out of this investigation. It has been shown that fine flour bread produces exactly the same effects as unpolished rice; that this poly-neuritis I was speaking about, or beri-beri will be produced in animals, fowls, chickens, and birds, pigeons and other animals, by fine flour bread just as quickly as it would be produced by unpolished rice. Now, we do not any of us eat enough rice so that would have any particular influence upon our health and lives; but there are a great number of people who almost live on white bread and butter, make a very large use of fine flour bread. Now the investigation of the cause has seemed to show that it is because the fine flour and the polished rice are lacking in certain elements which are needed to nourish the nerves. It is found that these preparations are lacking in certain kinds of phosphorus, organic phosphorus which is necessary for the nutrition of the nerves; that this material is found on the outer part of the grain just within the bran, and when we use only fine flour bread, we lose this element and so predispose ourselves to this disease of the nerves which is coming to be very, very common everywhere; so we should abandon the use of fine flour bread. I am never going to eat any more. I have never eaten very much in my lifetime. I adopted the use of graham bread more than 45 years ago. I was a disciple of the famous Dr. Graham from whom graham bread was named. He went throughout the United States preaching graham bread, and calling

the attention of the people to the importance of using the whole grain; so this bread came to be named after him. That is the greatest honor I think, almost, that could be conferred upon anybody,--is that the word "graham" is now spelled with a small g, and his name has become a household word wherever civilization exists. Go into Germany into the restaurants there, and you will hear the word "graham brot"; and you will find in every civilized country this whole meal bread. We must abandon the use of the fine flour. The manufacturers have been trying to make us believe that in patent flour, in this improved milling process we had flour which had all the nutriment, all the nutrient material of the grain; that it was more nourishing than even the whole grain. It may be true that it has a larger number of calories, but it is not the number of calories, it is the quality of the food elements, it is not the quantity that counts. And this very important thing has now been determined scientifically, that fine flour bread is lacking in organic phosphorus of a kind that is absolutely necessary for the health of the nerves. And the neuritis which is coming to be so common among us is probably in many cases due to the lack of this element.

Q. I have had neurasthenia caused by over study and work in a bank.

A. I don't believe a word of it.

Q. I am twenty-two years old, weigh 164 pounds, stout looking and feel quite well. I would like to go to college this fall. Would you advise this? How shall I study so as not to get another attack?

A. Study never gave you neurasthenia in the world. Study is healthy. You can work your brain just as hard as you can make it work if you take the proper amount of sleep and a reasonable amount of outdoor exercise and wholesome food, you can not possibly do any harm. Suppose you put your hand in a pail of water, away downunder the water, and then take it out. You have made a great hole in the water. You put your hand in and took it out again, and when you took it out the water looked just as it did before; you haven't done it the least bit of

harm. But you put your hand that way against a glass vase, and you would have destroyed it; but you can put your hand in the water as hard as you please, and you do not hurt it at all. The brain is almost as liquid as water. It is a very soft, mobile substance, and it is almost impossible to do it harm by work, it repairs itself so rapidly. One fifth of all the blood in the body goes to the brain. I haven't the least bit of sympathy with the great outcry about overwork. I do not think I ever saw a person in my life who has been damaged by overwork. I have met thousands of people who have said, "Doctor, I am broken down by overwork." I said, "It is overwork at the dinner table, or in going to theaters, perhaps; that sort of work. One can overwork sitting up nights reading novels, going without sleep; that would break one down. But honest work does not hurt anybody. Of course, if one does not have time to sleep he may suffer, but it is not work that hurts him; it is the lack of sleep that hurts him, and not the work. Work is wholesome. And one may work so steadily he forgets about eating his food properly, neglects to chew, and he may suffer, but it is not because he works too much, but because he didn't take time to eat. One may sit down at his desk and stay there several hours a day, and may not take any exercise, and he may suffer. If he had ceased to work and sat there in his chair, he would not have been any better off than if he worked. It is the lack of sleep, improper diet,--that is what breaks one down. I say to this young man, by all means go to college, join one of the athletic teams, work hard in the gymnasium, and you won't have the least bit of trouble with your brain. Make your bowels move three times a day, and keep your brain clean as a whistle.

Q. How can a person with little vitality best endure this sort of weather?

A. Just keep calm; sit down in the shade, drink plenty of water, and don't allow yourself to get excited about the weather. Don't allow anybody to talk to you about hot weather. If anybody comes around to you saying "It is hot",

you say the opposite; you say, "It might be hotter; it might be hotter." This is cool compared to what they are having in Chicago. Really there has not been a warm day here yet that you could not find a place where you can not get a nice breeze. There is always a breeze in front and on the porches. I have not suffered a particle from heat any day. In fact, I am delighted to have a chance to see the weather warm enough to make you sweat well. It does us all good to sweat. It will be cool probably tomorrow, and when the change comes, we come up so fast we will be astonished. This sweating is like a turkish bath, and the cold that comes afterward is a tonic that gives us a lift. This hot weather wears out, sweats out, eliminates the evil elements we want to get rid of, and prepares the uplift when cooler weather comes. A little warm weather does not do us any harm. Drink a good deal of water, keep the evaporation going on in the skin, and that cools us off.

Q. Can a chronic case of bronchitis be cured here?

A. Yes, bronchitis is nearly always due to intestinal autointoxication. It is the tissues trying to eliminate the poisons that have been carried off through the bowels, and because the bowels were not properly active, the poisons were absorbed, thrown off into the lungs and set up irritation in the lungs. I have seen a great many cases of asthma and bronchitis cured in a very short time here by a simple change of diet and proper treatment.

Q. Is yogurt buttermilk best for people inclined toward biliousness?

A. Some people have an idiosyncracy against milk, and such persons should avoid yogurt buttermilk and take yogurt tablets instead.

Q. What home treatment do you recommend for colitis?

A. Live on a Sanitarium diet, keep right on doing what you are told to do here after you go home. Get just as good asstart as you can before you go.

Q. I understand Eugene Sandow believes in a meat diet.

A. I have been told that the amunt of meat he eats is very small.

I believe if he were properly instructed on the subject, he probably would be glad to reform. This thing has been very noticeable, that great athletes nearly always die early. Men that have been great athletes, that have been trainers and in training, nearly always die early. Some seven years ago we had down in New England a dedication of an institution, and an eminent trainer was present. He gave an address at the meeting, as I did myself, and he complained of feeling badly. He stepped outside, and I went with him. I said, "Doctor, I hope it isn't anything very serious." He said, "Just feel my pulse." And I put my finger on his radial artery and found it hard as a pipestem. "Why," I said, "Doctor, I am surprised to see your arteries are hard. It looks as though you had arterio-sclerosis." "Yes," he said, "my blood pressure is nearly 200, but it is coming down." "What is your age, Doctor?" He told me his age--just the same as mine. He had been given to physical culture all his life, at a great university, has a national reputation, stands at the very head of his profession in this country,--one of the men that stand at the head of their profession, at least, and has perhaps been regarded as the head; yet here he was going to pieces. Dr. Anderson was here the other day and he told me he saw him not long ago, and he is an old man, wrinkled, bent over, feeble, and only a short time to live. I said to him, "Well, Doctor, what makes your blood pressure so high? Was it a too high protein diet?" "Yes, Doctor," he said, "Yes, I stuck to that training diet too long." Now, there he had had every condition except one for giving him the most perfect health--an outdoor life, an active life, a teacher of gymnastics, engaged in it all the time, in splendid training, able to perform almost any gymnastic feat when he was forty years of age, and was performing in feats with young men, but he was an old man at fifty-three years of age; and now at sixty he is just tottering on the brink of the grave. Now, my friends, what shall we attribute it to? I can't attribute it to anything but just that one thing, to his unnatural diet; but the Doctor said, "I have stopped it. I have not eaten meat for a year and a half, and it is wonderful the improvement that has taken place in my arteries;

they have softened a lot", and I believe he told the truth about it. But he said, "I rather hanker for it; oh, I hanker for beefsteak; I would rather have befsteak than the most luscious pear you ever saw. I told my doctor about it, and he said if I wanted it so I better eat a little, so I ate a little, but it made me feel somuch worse that I am not going to eat any more." But I understand he went back to it in a year or two, and the consequence is he is preparing to die pretty soon.

Q. How do yu knead the stomach?

A. Just lie down over a pillow and breathe. That is the best way to do it. Double up a pillow, put it right up against the stomach, lie down over it and take deep breaths. That is the way to do it. When you do that, you put the pillow on the outside, and you have got that on one sidex of the stomach and your diaphragm on the other side of it, you see, and when you take a deep breath you have got the weight of your body holding the stomach down to business, don't you see. Now, you take a deep breath and with the diaphragm pinch that stomach right up against the pillow, and the weight of your body holds it down against it, and every time you take a deep breath, you are giving that stomach a good squeeze, asking that digestion to move along, and giving your health a good boost.

Q. I have a pain that is not getting any better. Would it be advisable to have an X ray examination?

A. Yes, it would be a capital thing. If any of you have got an old chronic pain inside, and it is not getting any better, ask your doctor if xxx it would not be a good thing to have an X ray examination. It is marvelous what we can see inside with the improvements that have been made. Almost every organ of the body can be inspected, and we can get an inside view that we never could get in any other way.

Q. Tell me whether eating bananas is likely to cause a child to have infantile paralysis?

A. No, indeed, but the very opposite. Bananas are very wholesome for children, but they must be chewed up. For a young child, it is better to put the banana through a colander so there will be no strings in it, and it must be very ripe. The skin of the banana should be brown. You should not see the sharp corners on it, but they should be rounded off, and the banana should be mellow like a peach, and should be put through a colander or else beaten up. Take a nice ripe banana, put it in a tumbler, and with a spoon or a fork you can beat it up in just a moment. With a fork you can reduce it to a froth almost in less than one minute's time, if the banana is properly ripe. Eaten in that way it is entirely wholesome.

Q. Can chronic inactivity of the bowels be corrected to any extent by kneading the bowels?

A. We can not cure it in any easy, simple way. One of the most important things is food, diet. Food is the natural laxative. The bowels should move after every meal. Old, chronic constipation needs some help. Colax, simply Japanese isinglass, or Ceylon moss, as it is termed, gives bulk and moisture and helps the bowels to normal activity. We recommend colaxin sometimes, especially because it contains carbohydrates, meltose, which feeds the friendly germs, and the intestinal contents are thus hurried along down through the bowels, and the entire bowel is brought into a state in which the putrefactive organisms can not grow.

Q. Are exercises given to develop the neck injurious to one having goiter?

A. It depends on what kind of goiter you have. If you have exophthalmic goiter, you should not take the exercise.

Q. Will olive oil enemas cause autointoxication?

A. No.

Q. Could yogurt be made from separated milk?

A. Yes, this is the best way to make it. Skimmilk makes better yogurt

than whole milk. Cream should be added when it is used at the table.

Q. Isn't dancing a good physical exercise?

A. Dancing is a good physical exercise if it is properly provided at the right time of the day. Public dancing, or social dancing at twelve o'clock at night or one o'clock in the morning, I don't think is particularly healthful, and nobody pretends to dance in that way for exercise; that is not the purpose of it. If you want to dance in line in the gymnasium, as we do at the morning exercises--those polka steps, there is certainly no harm in it at all; but social dancing I do not commend, because it is likely to lead to unwholesome ways and other unwholesomeness.

Q. What causes brown patches on the face?

A. Intestinal autointoxication. Putrefaction takes place in the intestine, and one of the products of these putrefactions is a brown coloring matter. That is one of the products of putrefaction. This is absorbed into the blood, and it ought to be destroyed by the suprarenal capsules; but when the suprarenal capsules are overwhelmed with work, then this brown coloring matter accumulates in the body and is deposited in the skin. When it is regularly deposited, it produces brown patches. When it is deposited throughout the whole skin, it produces a dingy or brown colored skin.

Q. Would meat be harmful if taken in small quantities?

A. The smaller the quantities the less the harm. The same thing is true of tobacco or rough on rats, for that matter.

Q. Would yogurt made at home be injurious if properly prepared?

A. It is pretty difficult to prepare it in such ax way as to make it harmful. I do not know how one could do it. Simply boil the milk, put some yogurt tablets in it, let it stand until it gets an acid flavor, and it is all ready to use. There would be no harm from it anyway.

Q. Is de-caffinated coffee injurious?

A. There is none that I know of. We have examined some of it and it

contains caffein. It does not contain so much, but it does contain caffein. Besides that, there are other things in coffee that are just as poisonous as caffein; so this is not to be recommended.

Q. Explain the meaning of blood pressure, and how it is taken.

A. It is taken by compressing an artery, taking the pulse, and noting how much pressure is necessary upon the artery to completely obliterate the pulse. After the pressure is applied so as to obliterate the pulse, then the pressure is gradually diminished so you can feel the pulse, and the moment the pulse appears the reading is taken on the pressure gauge, and that pressure is that man's blood pressure. That is the amount of pressure that can be overcome by the heart which is behind it sending the blood through the arteries.

Q. Is skimmilk of much value?

A. Yes, it contains about 11 calories to the ounce, about half the number of calories of full milk. It contains all the elements of the milk except the fat.

Q. What is the best method of cooking vegetables--steaming or boiling?

A. Steaming is a little better; for potatoes, baking is best.

Q. Can diabetes be cured?

A. Not always, but it can be regulated in such a way that it can be tolerated for many years.

Q. What sort of life sould the person live whose arteries have started to harden?

A. He should live exactly the life we recommend at the Battle Creek Sanitarium. Get a copy of a book at the bookstand called the Simple Life in a Nutshell, and live right up to the directions of that little book. That is what I try to live up to myself, and what I recommend other people. It is the best way I know of to fight off hardening of the arteries.

Q. Do you consider the milk preparation Plasmon valuable as a form of nourishment for invalids?

A. It is as valuable as skimmilk, but no more. It is simply the residue or waste product of English dairies. The skimmilk is evaporated down and the dried product is sold as plasmon; that is what it is--simply powdered skimmilk.

Q. I am three months at the Sanitarium, live strictly up to the doctor's orders, take all the exercise prescribed, and I am still not well.

A. Now, it takes a long time to make a splendid, healthy man out of an old sinner. I want to say that it takes more than three months. You have to be reconstructed, to put off the old man and put on the new man. The old man of disease must be put off, and the new man put on, and it takes a good while to do it, and we have got to be reconstructed more than once. The first reconstruction approximates the healthy man, the next comes a little nearer, and the next lifts you up a little higher, and so on each day. It is like going through the various stages of transmigration, according to Hindo phylosophy. If you have been a pretty bad man when you die you have to go into a low kind of animal, maybe a worm. If you are a pretty good worm, when the worm dies, you come up a little higher, perhaps a butterfly. If you are a good butterfly, and the butterfly dies, you come still higher, get up to a bird by and by, get up to the elephant after while, the most splendid animal of all; and maybe after while you et to be a man. It is a good deal that way with the invalid. There is a slow process of construction, and it takes three months to make the first tissue change, and it will take another three months to make another one. We do not expect to cure people while they are here at the Sanitarium. But we want to get you started on the right road, and we want to get you improved enough so that you will be thoroughly converted to the principles; then when you go home, we expect you to keep right on the right road, keep climbing up. I wish you might have been here and seen me thirty years ago. I have got my picture taken here thirty-five years ago, and it shows the puniest, pale looking young chap you ever set your eyes on

pretty nearly. I was such a puny creature they didn't expect I was going to live. I was such a puny baby, they all expected I would die, did not expect to raise me. When I was ten years old, I was regularly educated to believe I would not live till I was twenty. When I was twenty, I hadn't the slightest expectation of living till I was thirty; and I am surprising everybody who knew me by finding myself alive at sixty and in better health than I ever was in my life before. I never knew what it was to be well until within the last ten years of my life; I was suffering pain every minute, and notwithstanding I lived a very arduous life, I have steadily improved. I believe I have myself demonstrated the value of the principles I recommend here in this institution by living up to them myself for 45 years, and reaping a wonderfully good harvest as a result.

Q. What effect does change of climate have on rheumatism?

A. Not very much. The climate that needs to be changed in rheumatism is the climate of the dinner table. If you don't want to have any more rheumatism, you will stop eating it.

Q. Can the blood pressure reach 260 and a man be well?

A. You will feel first rate. High blood pressure makes a person feel well. It is only when the blood pressure begins to fall that you begin to feel worse.

Q. What is your objection to the use of salt and pepper ?

A. I object to the use of mustard, pepper, and the excessive use of salt for the same reason I would object to the use of pebbles and clay and other things that are not fodd. These things are not food, they are poisons; at least, pepper, mustard and things of that sort are actual poisons and do mischief. A little salt may not be so very harmful, but in excess, that also is injurious.

Q. How does the putrefaction of rotting ~~xxx~~ potatoes differ from the putrefaction of fish?

A. The putrefaction of a potato is due to the action of molds; it does not produce the poisonous ptomaine and toxins that are produced in the decompo-

sition of flesh, but it is entirely a different process--a decaying and not a putrefaction. It is due to xxxkxx molds.

Q. On which side should one sleep?

A. He should sleep on the side on which he is most comfortable. I am glad to sleep on any side. I am restless in my sleep, and I am very thankful if I can stay in bed. I frequently find myself on the floor. I do not think we can control ourselves very much while asleep. I think the best way is to put oneself in a comfortable position and go to sleep. If you find yourself in the same position when you awaken, it would be a good thing to change the position a little, but it is not a matter of any serious consequence.

Q. Why does twenty minutes' standing after each meal reduce the weight?

A. I don't think it will. I never heard of that before.

Q. Are asafoetida pills good for the nerves?

A. I have heard they were good for hysterics, but asafoetida smells bad enough to drive away hysterics or any other kind of bad spirits I should think. It really has no curative value; it may be a palliative.

Q. Where one has slow digestion xxx and has gotten over an attack of neurasthenia, what should he do in the shape of exercise?

A. Take breathing exercises. Lie down on your back or xxx a little on the right side and take deep breaths for about half an hour.

Q. What salts or other nutrients are lost in cooking vegetables?

A. Not very much. The amount of loss is really very small.

Q. Is it ever necessary to parboil vegetables, and why?

A. Yes, it is a good plan to parboil spinach because it contains oxalic acid. It is a good thing to parboil peas and beans because they contain a small amount of uric acid, and if you parboil them, you get rid of it all.

Q. Should a person with rheumatic tendencies eat much acid fruit?

A. Yes, the acids of fruits become alkalis in the body, because the acids of fruits are combined with soda and potash, with alkalis, and the

acid is digested and burned up and utilized in the body, and passes off and leaves the alkali behind, so fruits of all kinds increase the alkalinity of the blood. That is a very important thing to know, and fruits are not to be forbidden xx in rheumatism, but to be recommended.

Q. What is the difference between rheumatism and neuritis?

A. They are very often associated. They are both due to chronic toxemia.

Q. Tell me the best foods here at the Sanitarium on which I can get fat.

A. It is not so much the particular articles of food, but the quantity you eat. You must eat more calories, a low protein diet, plenty of carbohydrates. That is the thing you want to do if you want to get fat. Malt honey is the most fattening food we have at the table. Malt honey makes it possible to eat more butter and more cream.

Q. Does everybody in the South have hookworm disease?

A. No, indeed. It is very rare among the class of people who come here. We have had here at the Sanitarium I think two or three cases only of hookworm disease. It is very rare among the class of people who come here. It is only by some accident that the better classes of people of the South become infected in this way. It is a disease which infects people who go about with the feet uncovered and so expose the body to infection. People who habitually wear shoes are not likely to get this trouble.

Q. What is the cause of one's vision growing dim and blurring just before a severe headache?

A. It is due to spasm of the blood vessels of the eye, of the retina.

Q. I suffer intensely with my head at times.

A. Another case of migraine due to autointoxication.

Q. Why do you object to the use of vinegar?

A. It is a product of fermentation and decay. It is not a food, but a poison.

Q. What did this institution cost?

A. $750,000, this building.

Q. What causes one's feet and ankles to cramp?

A. That is one of the early symptoms of neuritis, so you better stop eating fine flour bread. The best bread on the Sanitarium table is the granose biscuit, or rice flakes. Granose biscuit are, I think, the very finest of all breads. I recommend you all to eat granose biscuit, or graham bread, or the bran crackers, or bran biscuit, and to eschew white bread--chew the other. I thank you very much.

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THE STOMACH

A [redacted] Lecture at the Sanitarium Parlor, Battle Creek, Mich., Thursday, July 13, 1911, at 8 P. M.,

By,

J. H. Kellogg, M.D.

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I am going to talk to you tonight about a subject which lies very near the heart of everybody here--the stomach. Now, perhaps it never occurred to you that the heart is very near the stomach, or that the stomach is very near the heart, but it is, and that is one reason why you have palpitation of the heart sometimes when you eat what you ought not to eat for supper or for dinner. The heart is on one side of the diaphragm, and the stomach is on the other side of it,--just a little thin partition between. The various organs of the body are laid up on shelves, as Dr. Anderson was telling you in the gymnasium the other day, and the heart is on the top shelf, and the stomach goes on the next shelf below. It is just beneath the heart.

Now, the stomach is one of the most interesting organs of the body, and yet it is one of the organs concerning which we have known almost nothing until very recently. We thought we knew a great deal about digestion. Dr. Beaumont, a hundred years ago, had an opportunity to study with the naked eye the work of digestion in the stomach of Alexis St. Martin, who is famous because he had a window in his stomach. He was a hunter or trapper in the employ of the North American Fur Company at Mackinaw, northern Michigan. He was going out one day to shoot ducks, and as he was getting out of his boat, his gun was discharged, and a full load of buckshot at a very short distance from his body was discharged against his body, fortunately a glancing shot, so that it tore away only the front wall of his abdomen here, and the front wall of the stomach and a part of the chest wall, a space as large as the hand. When the company

physician, Dr. Beaumont, found him, he discovered that there was a large opening into his stomach, that he could see his stomach and see his heart beating, and could see the lungs, and he thought certainly the man would die, but he refused to die, and when he recovered, there was an opening through the entire abdominal wall into the stomach. The edges of the opening of the stomach grew fast to the edges of the opening in the skin, so he could lok through the window, and Dr. Beaumont made a great number of experiments upon him. He employed him as a house servant, experimented upon him from ~~timxtaxtimx~~ day to day and week to week, and year after year for several years he made these observations for the purpose of determining the time required for the digestion of arious foods, and the effect of various foods upon the stomach, and many interesting things were learned. That is about all we knew about digestion until a now famous professor of physiology in St. Petersburg, Prof. Pawlow, about fifteen years ago began experiments with dogs and learned facts that we never dreamed of before; and at the present time we have some absolutely scientific knowledge in relation to digestion. We know things that before we only guessed at, and I am going to give you some of these facts.

Four years ago I went to St. Petersburg for the express purpose of seeing these experiments with my own eyes and becoming acquainted with Prof. Pawlow and learning at first hand of the interesting work which he has been doing; and I am going to show you some of the things that I learned while I was there, tell you about them and show you. ~~Firstxaf~~ I had wanted for a good many years to go to St. Petersburg, but I didn't go probably for the same reason that some of you didn't go--I was afraid to go. I think I have a reasonable amount of courage when I have to face a situation, but I preferred to see St. Petersburg at a distance for a while, till things got a little more settled; but after they got the constitutional assembly there I thought it would be safe to go; so when the Douma was in session, I thought it would be a pretty safe time and I slipped over there. I found that I was the second American doctor that had been there in

three years. I asked Prof. Pawlow's assistant why more American doctors didn't come. He said, "Well, I think they are afraid to come." I didn't feel, bwever, so much of a coward as I had, when I discovered that nearly all the people of St. Petersburg were half scared to death, to see the way they were going about; they were living in a state of chronic fear and apprehension, and there was really occasion for it. I didn't fear for my life, but I was afraid of getting shut up and getting tied up for a time so I could not get away; that was the thing that troubled me. Americans are very safe over there however. Very few Americans have lost their lives, although quite a number have been detained there and more or less inconveniences.

I found Prof. Pawlow one of the most genial men in the world, and a vey communicative man. He took me into his laboratory and told his assistants to do everything I wanted them to do; and for the time I was there, his whole laboratory force was turned over to me to repeat any of his experiments, or to do anything I wished to have done, so that I had an opportunity to verify in a most thoroughgoing manner the observations and experiments Prof. Pawlow made. Prof. Pawlow's experiments were made largely upon dogs, some upon humanbeings also, but chiefly upon dogs. The experiments look a little cruel at first, but when you come to see the dogs and get acquainted with them, how they loved Prof. Pawlow, what a joyous morning greeting they gave him when he came, how attached to him they were, what care they had, how they were petted and coddled we may say, cared for with every possible degree of nicety and of interest and humanity, one could ot feel that there really was any cruelty about it after all. Of course, to do an experiment upon a dog is more or less unpleasant for the dog, but doctors are continually subjecting themselves to danger and to suffering and privation andhardships for the sake ff finding information, getting information that will be of service to suffering humanity. For instance, a doctor down in Cuba allowed himself to be inoculated with yellow fever, a very eminent

doctor; one of the most promising physicians in the United States allowed himself to be inoculated with yellow fever, was inoculated and died with yellow fever, died for us that we might live, that we might not run the same risk that so many of our friends have run and perhaps died.

Some of you remember that Proctor, the great astronomer, made a visit to Cuba, came back to New York and in a week was dead of yellow fever. It was very dangerous to go to cuba. But now it is as safe as any other part of the world. When I was in Cuba some years ago, I met an American just recovering from yellow fever, who had nearly lost his life, and I was very glad to get out of it. We didn't know what caused it then, whether it was the water, the air, or what; but by these experiments it was determined that yellow fever is carried by mosquitoes, just as the malarial parasite is, and now we know it is only necessary toexclude the yellow fever patient from the mosquitoes, so that no mosquito can bite him, and then you can not get infected. We can not quarantine the mosquitoes, but we can quarantine the patient, and if there is a case of yellow feer breaks out in Havana at present, the patient is immediately put in prison, surrounded with mosquito netting so that no mosquito can get near him, so that no mosquito shall bite him, and so the disease does not extend at all. As long as o mosquito bites that man, nobody else will get it. Now, it is worth a great deal to know that, isn't it?

Another of our physicians has been investigating the question of spotted vever, a disease which is so very, very fatal; very few have been known to recover from it. It is a real scourge in certain patts of the Rocky Mountains. The same physician went down into Mexico to study the fever which is so fatal down there, typhus fever, a disease which in the middle ages devastated certain parts of Europe, which broke out in the prisons and was very, very fatal, and which is still a very fatal disease. Only a small proportion of those who suffer from this disease recover from it. He made a careful study of the disease down

there and died of it just as he was getting to the point where he was bringing some of his experiments to a successful conclusion, and only a very short time ago another very promising physician died of the same disease. He went down there from Columbus, Ohio, one of the professors of bacteriology in Columbus, went down there to study the disease, came back, and in a week he was dead of typhus fever. He exposed himself to the disease and took all the risk in order that he might find out the cause of that disease, and the cause has been discovered. It has been found that typhus fever is a parasitic disease which is communicated by fleas. A flea gets the infection, then the flea bites a healthy person and inoculates him just as a mosquito infected with malarial fever bites a person and inoculates him with malaria. We have a lady here in the house ow recently from Porto Rico, and she brought from Porto Rico some very malignant malarial germs. We have been getting the better of them and in a few days I hope she will be well of that trouble, because they can not stand the Sanitarium diet. The malaria parasite doesn't like the Sanitarium bill of fare. They come up here and they very soon die on our bill of fare, and the reason why is because the blood is reinforced. Now, we fight these parasites by means of blood cells. It is necessary that the blood should be in the very highest state of vitality in order to fight off these parasites. The malaria parasite, like the typhus fever parasite, gets into the blood and grows and multiplies provided that the blood cells are not capable of killing the parasites; but if the blood cells are capable of destroying the parasites, then the parasites must die in the battle between the blood cells and the parasite. I had a consultation about that case today, and it may interest you to know what my recomendation was/ It was that this patient's temperature should be taken every day three times a day, and the moment there was the slightest rise of temperature, the patient should be given a very hot bath for one minute and a very cold bath for fifteen seconds, then should be wrapped up very warm and gotten into a perspiration. Now, what do you

suppose the effect of that treatment will be? It will be to increase anywhere from 25 to 50% the number of germ fighters in the blood. The white blood cells will be increased, the leucocytosis, as it is called, will be enormously increased by that treatment. By a short hot bath followed by a cold bath, the white blood cells are brought out of their hiding places in the body, and they are made to fight in the blood, to put on their fighting harness, so to speak, gird up their swords to fight against the parasites, and the result is that parasites will be eaten up by the white cells before they have a chance to multiply to such a degree as to produce a malarial attack.

I had an experience of my own in connection with this thing down in Mexico some years ago. Before I went to Mexico I was working on a book, endeavoring to get the manuscript done. I took a little trip down there in order to get certain portions of the manuscript finished up, and stopped upon the border in order to finish it up, and worked forty-eight hours on a stretch without stopping to eat, but just barely swallow a morsel, and to drink, and I sat at my table and worked continuously for fortyeight hours; then I crossed the border, ran on to Mexico, and my resistance was pretty low, and I met a malarial mosquito, and he bit me. I felt that it was a very unfriendly thing to do, for I was going down there to Mexico for the good of the country, and not for myown benefit, but the result was in a few days I had a chill, and I discovered I had malaria fever good and hard; so I did exactly what I recommended for this patient. I said I would be on the lookout for the chill the next morning, and so I was, and the next morning I began taking my temperature, and I soon found my temperature coming up to 99, then 99½, and my fingernails began to get blue, and I began to feel curious little sensations creeping up and down my spinal column, and I began to notice my lips getting blue, and I said, "I must be going to have a chill sure", and I took my temperature again and it was 100; so I immediately put myself through just what I recommended for this patient. I had a very short hot bath, then I had a pailful, two pailfuls of ice water poured over me, pails

of water well cooled off with big chunks of ice. Then I was well wrapped up with blankets and rubbed till I was thoroughly warmed, ~~then~~ got into a perspiration, and the result was I had a very slight chill, practically no chill at all, had a very vigorous perspiration that came on right away, and it was the end of my malarial fever. I have cured hundreds of cases in the same way, literally hundreds of cases. At one time I remember I had some thirty or forty cases of malaria fever in rapid succession, one right after the other, all within six weeks, and cured them all without one drop of medicine, without one grain of quinine. Now, on the other hand, I remember having a case here, a young man from India who was brought from India here, who had malaria fever a long time, and was very pale, very anemic, and he had taken a great deal of quinin and didn't get any better at all; and I tried the same method with him and it didn't cure the chills entirely; he had slight chills once a week, and they did not stop entirely; but a very small dose of quinine, just one ten-grain dose, divided, cured the disease entirely, and in a short time he was well. He had had repeated doses of quinine and they didn't do any good. Now, by combining the two methods, the patient was entirely relieved.

Now, I remember another case of a young woman who was here from Java who had been a missionary nurse in Java for some little time, and she had an experience there, had malaria for some little time, and the doctor gave her quinin, and it didn't do her any good, and by and by she sort of got used to it, and she got into a situation where when the doctor gave her a dose of quinin it would give her a chill. Every time she took a dose of quinin she would have a malarial chill. The explanation of that was this: that the quinin weakens to some degree the white blood cells; it also weakens the parasite; but if it weakens the parasite more than the white cells, then the white cells will still be able to fight the parasites off; whereas if the white cells are weakened more than the malaria parasites, then the parasites get the better of the malaria cells. In her case it happened that the parasites had gotten used to the quinin, they had gotten

used to it like a drunkard getting used to whiskey, or a boy getting used to tobacco; so it didn't affect the parasites, but it did affect the white blood cells and weakened them as it does the parasites, so the parasites were able to gt the better of the body, and would produce a chill every time this patient took a dose of quinin; but now by combining the two remedies, by the hydriatic method, a sbrt hot bath followed by a cold bath, then a small dose of quinin--not enough to weaken the white cells, but enough to diminish the power of the parasites, the difficulty is relieved.

Prof. Tyndall madd the discovery that typhoid feverwas due to germs by means of the scientific imagination without ever having seen the germs at all. He was the very first to announce that typhoid fever was due to germs. He made use of what he called the scientific imagination--saw the germs in his imagination. He knew the grms were there from the circumstances which were associated with the development of typhoid fever. After a time this thing was observed in Switzerland in a place where typhoid fewr occurred on one side of a mountain, and after while it broke out on the other side of the mountain. And it was found that the mosquito exfreta of these patients had gotten into the water, in certain springs on one side of the mountain, and the question was could that water possibly have gone through the mountain and come out on the other side? So a large qaantity of salt was put into those springs, a very large amount of salt in the water, and it came out on the other side of the mountain, was examined, and it was found the amount of sale increased in a short time afterwards, the amount of salt was very greatly increased. Other materials were put in and tested in the same way, and later, after the discovery of the typhoid fever germ, it was found that the grm itself was carried through the mountain; and it was found in this way that typhoid fever germs might be carried for miles under ground. It might be very easily communicated from one place to another at long distances even. It was found, for instance, in the case of dug wells that a well will drain an area the radius of which is three times the depth of the well.

So you can see just about how large an area it will drain. ~~Thexxxxtex~~

One of Prof. Pawlow's experiments consisted in taking a dog and making a small stomach, of a part of the dog's stomach, and connecting the small stomach with the skin so that he could examine that small stomach and use it as he liked. The small stomach was separated from the large stomach. The dog had nine tenths of the stomach, and the physiologist had one tenth of the stomach. Now, he found that when food was put into the large stomach, gastric juice would be developed in the small stomach, and you could see by inspecting the gstric juie that came from the small stomach exactly the effect of different kinds of foods on the stomach; and the found the gastric juice produced in the large stomach was exactly the same as the gastric juice that was formed at the same time in the small stomach, and poured out of it through the opening through the kin. He found different kinds of foods produced different kinds of gastric juice. Now, this is an extremely practical thing, these observations of Prof. Pawlow with reference to the effect of foods upon the stomach. He found, for example, some foods would cause a very abundant outflow of gastric juice, while other foods would produce only a very scanty flow. He found some foods produced a gastric juice which was very acid, but had comparatively small digestive power; while other foods produced gastric juice that had a large amount of pepsin, and a very high degree of digestibility, very high digestive power. Now, here are some of the things he noticed. He found, for example, that milk produced a gastric juice which was rather feeble in quality, very slightly acid, whereas a portion of meat of any kind produced a powerfully acid gastric juice, that no sort of food produced such acid gastric juice as meat. Some of you say, "I don't see how that could be, because when I had acidity, the doctor ~~prohibited~~ prescribed meat for me to cure me of acidity, and it was better. I found I didn't have nearly so much trouble with the acid stomach or sour stomach when I took meat." Now, the reason for that is that meat acts like soda, has the same effect soda has upon the acid of the stomach. It absorbs the acid, and ~~af~~ neutralizes it, sucks it

up in itself, combines with it, so it has the same effect that soda has; so when you took a large amount of met, although the meat relieved the acidity by absorbing the gastric juice, at the same time it stimulated the stomach to make a larger quantity of this same, very acid gastric juice. Now, he found on the other hand that bread produced a gastric juice that had great digestive power, and a large amount of pepsin in it, but a very moderate degree of acidity. The gastric juice produced by meat had three times the digestive power of the gastric juice produced by milk. He found that certain things would almost entiely prevent the flow of gastric juice, for example, fats would cause the stomach to produce no gastric juice at all. He found that olive oil had more inhibitory power upon the stomach than any other food substance. Olive oil would cause the stomach to cease to make gastric juice. You see how useful that fact is. If you have a stomach that makes too much gastric juice, all you have to do is to take olive oil enough, and you can stop it. That is the reason why some of you patients who have hyperacidity are recommended to take a tablespoonful of olive oil at the beginning of the meal--is to sort of put on the brakes on your stomach, so that the stomach won't make so much gastric juice; and olive oil is a great deal better than whiskey for that purpose. You know some years ago Sir William Roberts, the great English physiologist, made some experiments to find out the effect of stimulants, of alcohol upon the digestion. He was sure that alcohol helped digestion, but he didn't know exactly how, so he made experiments, because it has been the habit of the profession for centuries to recommend a little brandy after dinner, or wine or something of that kind to help digest the dinner. Now, he found when he came to make the experiments that alcohol actually hindered digestion, that it spoiled the gastric juice, or it precipitated the pepsin, and it actually diminished the digestive power of the stomach; it was a great hindrance to digestin. Well, ~~Rx~~ Sir William Roberts suddenly made a new discovery. He discovered that the great thing we are in

need of in this stage of digestion is not something to aid digestion, but some-thing to hinder digestion, that modern cookery has so greatly increased the digestibility of food that we are likely to suffer from an undue acceleration of nutrition, that our greatest danger in the modern time is an undue acceleration of nutrition; those are the words he used; so we must have something to slow the stomach down, to put on the brakes, so he recommended alcohol to slow the digestion, and he had started out to show why it was helpful to digestion. These scientific summersaults are very interesting sometimes.

Now olive oil will actually hinder digestion in a physiologic way; it will notify the stomach that gastric juice is not needed, and the stomach willl recognize the order and will not make so much gastric juice when olive oil is present. But on the other hand, a suggestion comes along just here that if we haven't acid gastric juice enough, if we are suffering from biliousness, for-example, have indigestion pretty bad and our stomachs don't make gastric juice enough, it is not a very good thig to eat a great deal of animal fat or fat of any kind. We should take just as little fat as we can get along with in such a case, because the stomach will be hindered in its work of making gastric juice; if the stomach doesn't make enough gastric juice, then we should take very little fat. Prof. Pawlow made another very interesting observation about the stomach, and that was that liquids caused a great excess of acid to be formed. He found if a man, for instance, gave his dog a pint of plain water, passed it down into the dog's stomach with a tube, that the dog's stomach within a very few minutes began to pour out a large amount of acid gastric juice. It is curious, isn't it, that plain water should cause the stomach to produce gastric juice; but that is the fact. So we see a good reason why we should not take too much liquid at meals, not because it dilutes the gastric juice, although that might be the case if the stomach didn't get enough gstric juice, but because it over-stimulates the stomach, causes the stomach to make too much gastric juice. I have had a good many patients who said to me, "Why, Doctor, I have got the worst

stomach you ever heard of. Why, Doctor, my stomach is so sour that water sours on my stomach." The patient had the idea that his stomach fermented, but his stomach soured, but that is an error. The water stimulates the stomach to make gastric juice; the person who suffers from sour stomach has not fermentation in his stomach; he isn't suffering from acidifying of his stomach by fermentation, but he is suffering from the excessive formation of gastric juice. Now, that is true of 99 cases out of 100. I remember only a very few cases that I have seen in mylifetime of many, many thousands of patients,--I remember very, very few in which the stomach has been acid because of fermentation. The acidity is due to an excessive formation of gastric juice; and so this explanation came to us through Pawlow in one of his wonderfully interesting experiments.

Now, he made another interesting observation. He found that a pint of water put into the stomach caused the stomach to pour out an enormous quantity of acid gastric juice; and he found at the same time that if so small a quantity as one grain of soda was added to the water it made no gastric juice at all. It hindered the stomach from making gastric juice. So you see at once the enormous mischief that must be done, the enormous evil that is produced by the use of baking powders, and saleratus, and soda biscuit, so-called, and all kinds of alkaline substances; and you see also the great mischief that comes from the use of alkaline mineral waters. The stomach gets worn out, becomes paralyzed, and colitis comes, catarrh, intestinal catarrh, enteritis are exceedingly common results from the large use of alkaline mineral waters. The thing to be warned against--the fact that the water has a bad smell and a bad taste is no evidence that it is going to cure anybody. Down in Iowa they have a very famous mineral spring, and the history of the mineral spring is this: a farmer found bout fifty years ago that when the cattle drank water from this spring they became very sick; so they fenced the spring in to keep the cattle away from it. An enterprising Yankee got down there and he saw the situation, saw there a spring that had a very bad smell and a very bad taste, a taste of the sea and a smell

of perdition, as somebody said; so he built a hotelinside of the fence, and immediately the sick people began to flock there from all over the United States to be cured. The thing that made the cows sick would certainly cure people who were sick, wouldn't it? Water hat had a bad smell and a bad taste must certainly have some marvelous curative power about it.

Downin AnnArbor some time ago, the university town of this State, one of the professors discovered a peculiar odor from the water in his well, and a very peculiar smell. He had noticed it for some little time. Finally he took some of it over to the laboratory to have it examined, and the laboratory professor reported that a mineral spring had broken intohis well; and the professor began to see visions of wealth growing very fast. He was going to have a great institution here, a great mineral spring establishment. But somebody had a suspicion that led them to make a little further investigation, thought they would investigte the well, so they went down and investigated, and fund nine dead cats, fourteen old shoes, and several pairs of trousers, and a whole lot of other things of a similar sort. It seemed that some of the boys in the school had taken offense at some of the things the professor hdd said, or done, so they had been using that well for a catch-all for all the offal of the neighborhood for several weeks, and finally found a dead cat and dropped it in there, and gathered up any old shows anywhere and tossed them in at night, until they had gotten really a fine specimen of mineral water.

Well, all mineral waters are not of that class of coursse, but you see it is very easy to produce a mineral spring. Down in the neighborhood of Philadelphia some time ago mineralsprings were discovered, and on investigtion it was found that these mineral springs were located in a part of the town hat had beenfilled up with rubbish many years before, and after it had had time to undergo thorough decomposition, it developed a stratum of very fine mineral water. The odors of mineral water have no curative virtue, and there is nothing in any mineral water anywhere that can not be found, there is nothing in it that can not be

obtained from a drugstore. There is no peculiar property imparted by the soil; the mineral water is simply a solution of mineral substances, nothing more; and these mineral substances can be determined, detected, analyzed and measured by the chemist, and put into water, and the very same effects can be obtained from this artificial water as from the natural water. Of course, those who sell the natural water endeavor to give the impression that this water has something in it that the chemist can not discover; but that something in it which the chemist can not discover is of no particular consequence; and the free use of these mineral waters is productive of an immense deal of mischief. But that is incidental

Now we will come back to the subject of digestion again. Prof. Pawlow, as I told you, found that alkalis prevent the formation of gastric juice and hinder the stomach. That ought to be enough to induce you to say, "No more soda for me; no more baking powder biscuit on the table for me; no more mineral water after meals." We find quite a number of people come here who have been here repeatedly before, and have profited by what they have learned, and have continued to profit from year to year by putting into actual practice the facts which have come to their kowledge.

Now, Prof. Pawlow made some more observations which were extremely interesting. He noticed that when a dog began to chew the food, and before he had actually swallowed the food, the gastric juice began to leak out of his little stomach. He had a little glass flask, and while the dog still had the food in his mouth and was chewing it, the gastric juice would begin to drop down into this bottle. So he made an experiment which seemed really a very cruel one. He made an opening in the dog's throat here, so that when the dog chewed the food up and swallowed it, it didn't go into his stomach at all, but dropped out and came back into the dish again. So the dog ate his breakfast, dropped it back into the plate, and ate it over and over and over and over. The gastric juice simply poured a perfect stream out of his stomach all the time. He could keep that dog

eating all day long, and the gastric juice kept pouring out as long a the dog was cewing. Now, that was a fine lesson in fletcherizing, wasn't it. I saw a whole row of dogs standing up on the platform that had been chewing their breakfast from six o'clock in the morning till ten o'clock, four hours, and each one had to produce a quart of gastric juice. The Doctor collects this gastric juice and sells it, sends it all over Europe, and we have got some here that he ships over to us. We sometimes find people who haven't any gastric juife of their own, and we lend them some, and it works fine; it works agreeably well; this canine gastric juice is a great deal stronger, as Prof. Pawlow says, it is infinitely stronger, more active in aiding digestion than pepsin and all those things that are made simply from the lining of the pig's stomach. Pepsin is not made from gastric juice; it is simply the lining of the pig's stomach. Prof. Pawlow finds this dog's gastric juice is wonderfully effective. If any of you get a bottle with a Russian label and you want to know what is in it, you will have to get an interpreter; we don't interpret it, we just send it along. However, there isn't anything offensive about it, not the sligest; it simply tastes like hydrochloric acid. It has been carefully filtered, purified, aerated, passed through a Pasteur filter, and you would not imagine the dog had ever looked at it even.

Now, Prof. Pawlow made another very important observation. He found that when this dog saw the food, smelled the food, that the gastic juice began to flow just the same. Before he put it into his mouth, when he only got the odor of it. Now, you have had that same experience. You have made experiments upon yourself, or the cook has, and you get the odor of it, and you say, "My, doesn't that make my mouth water", and you find the saliva just pouring out of the mouth. Now, when the mouth waters, the stomach waters too, you see; it is not simply the mouth that waters, but also the stomach, and this flowing gastric juice is simply the watering of the stomach. If you could see the gastric juice being formed, as Beaumont described it,--it is like perspiration breaking out

upon your brow, on a hot day. That is the way the gastric juice is formed in the stomach. And Pawlow found when a man was passing through the room, when the dog was hungry and the man who fed this dog only came into the room and passed through the room, the dog's mouth gastric juice would begin to flow, and simply the sight of the cook was enough to make the gastric juice flow.

Now, all of these things have a practical bearing you see. Food ought to be tasty, it ought to have a pleasant flavor because when he gave the dog som food that he did not like, there was no gastric juice. When the dog had food he didn't care for, there was absolutely no gastric juice at all, not a drop; but as soon as food came along which the dog liked, then the gastric juice began to flow. Now, some dogs like meat, and meat will cause the gastric juice to flow; but another dog was very fond of bread, didn't care for meat at all, and when he saw bread that just made his mouth water, made his stomach water, and the gastric juice flowed a perfect stream; and another dog had another fancy. These were certainly wonderfully interesting experiments. And they led Prof. Pawlow to form certain conclusions which he afterwards verified, and which are of exceedingly practical interest. He found that the nerves of taste are connected with certain nerve centers of the brain, and that when we chew our food, a notice is sent first to the brain, then from the brain to the stomach that food is coming, and the stomach is notified that food is coming, and now get ready for that food. He showed that there is gastric juice formed in the stomach ready to digest the food while the food is still in the mouth being chewed. He found the more we chew, the more thoroughly we chew the food, the more gastric juice we have, the more abundantly the gastric juice flows; so you see how important it is we should masticate the food, that we should thoroughly, thoroughly chew it.

More than 100 years ago a very interesting Frenchman visited this country, Brillat Savarin. Some of you have read about him in the accounts of the early history of this country. Brillat Savarin was a French judge, and at the time of the French Revolution he was under suspicion. He was thought to have

favored certain parties who were not in favor with the administration of the government, so he was obliged to flee from France, and he came to this country, and while he was not occupied with his legal duties, he wrote a very interesting book which was really a series of letters to his son. The purpose of the book was to tell his son how to enjoy his food, how to relish food, how to get the most pleasure out of eating. That was really the purpose of the book, and it proved a brilliant success, and was the one thing that really made famous this man who was a very eminent jurist. In this book he gave very special attention to the matter of chewing. He impressed the necessity for chewing very, very thoroughly in order to enjoy the food properly. But it remained for Mr. Horace Fletcher, about twelve years ago, to take up the subject of chewing and make a scientific study of it; and he shows what profound depths of science there are to be found in this simple matter of chewing; what great physiologic facts of very, very practical importance there are that had been entirely overlooked by the professors. He was a man considered as a hopeless invalid. He could not get life insurance at all. The life insurance companies would not accept him as a risk. In a very short time, a very few months, he succeeded in quite rejuvenating himself. Although he was over fifty years of age, he built himself up to such a degree that he was able to get all the life insurance he wanted, and he became practically a young man again after he had become senile and broken down so that he was able to engage in all sorts of useful athletics and to outdo the young menin many feats of endurance and strength, although not a trained athlete. Mr. Fletcher has often been here. I had a letter from him today. He is at the present time in Venice, and has been traveling in Hungary for some little time, and he will be back to this country after while. He always comes here when he is in this country; this is one of his headquarters in America; and he has done a vast deal of good by teaching people the importance of chewing. Mr. Fletcher found that when he chewed the food, the palate itself would select the food which he needed; that it would regulate his nutrition by simple, thorough

mastication of the food. One really does not need to give very much attention to anything else if he will only chew everything very, very thoroughly.

Now, Prof. Pawlow found that while the food was being chewed, and gastric juise was produced which he called appetite juice, and this appetite juice is the most important element of digestion, because if there is proper appetite juice in the stomach, then the gastric juice will digest a part of the food, and this part of the food which is digested, becomes a stimulus to the stomach, causes the stomach to make more gastric juice to digest more food, to stimulate the stomach still more; so the thing propagates itself. Now, it is like a man making money. He makes a little money, and this money he made helps him to make more money; so he goes on getting rich. It is exactly so with the stomach . If the stomach has a little capital of gastric juice to start with, it can by digesting in the stomach the food which is swallowed, create a substance which will stimulate the stomach to make more gastric juice; so the process goes on propagating itself; but there must be a little gastric juice to start with, and that is why Prof. Pawlow recommends his canine gastric juice, or, as he calls it, natural gastric juice. The reason why he recommends it is that a person may take a small amount of this, a tablespoonful after a meal to act, as he says, as igniting juice, to set the stomach on fire, so to speak, to ignite, to start the combustion, to light the fires of the stomach, so to speak; to start the process of digestion; because if you once get it started, it will develop itself. A little gastric juice that will digest a little protein, and the peptone, will produce more and more, and will digest more and more and more until the process is completed. So you see how important this process of masticating food becomes. I don't think there is a person in this room, probably, but what could improve a little in the matter of mastication. When you sit down at the table tomorrow morning, I hope every one of you will remember some of the things I have been telling you here, and say to yourselves, "Now, then, it is breakfast time; I have nothing at all to do but to attend to the

needs of my body, and I will masticate my food thoroughly. I will go at this thing of eating in a business like way; I will make a business of eating. I won't eat here just for entertainment; I won't eat just for sport; I won't swallow this food just for the pleasure of it, but I eat for the benefit of my body, to get health and strength and efficiency." It is amazing how much we lost by neglecting to make proper use of our opportunities in nourishing our bodies. The average man believes he must have beefsteak in order to make him strong. I don't know where we got that idea unless it comes from the old cannibalistic notion. Down in the Sandwich Islands once two men came before a judge in regard to a certain piece of property. One of them said, "It is mine; my father owned it; I am his son." The other said, "It is mine; I ate his father ", and of course having eaten his father, everything that had belonged to the man's father, belonged to the man who ate him. He had absorbed the father, and he had absorbed his property along with him. Now, that was the old cannibalistic notion. I asked a Maori, the grandson of an old Maori chieftain who had eaten missionaries, why hisgrandfather was a cannibal. He said, "I asked him that question myself once. I said, 'Grandfather, why did you eat missionaries and other people?' 'Why,' he said, 'when I killed a chief, I ate hom so that I might have his couage; it wasn't because I liked him, but because I wanted his courage, I wanted his bravery; and that is why I ate him; and I ate the missionaries so I might be good.'" That was a novel idea. So the average business man eats a big porterhouse steak, thinks he must eat it to be strong. Why? Why, because it is a piece of a strong animal, you see. If a man wants to be strong, he must eat a strong animal. I suppose if elephant steaks were on the market, some people would be very anxious to eat them that they might get the elephant's strength and his vitality. But this is all baseness. There is not the slightest foundation in fact for the idea that there is any extraordinary strength in beef or in meat of any kind. It is a false notion we have imbibed from our ancestors. It is strange how hard it is to get rid of these false ideas. Where does the ox get his strength?

Somea of you have read Thoreau's "Walden" I am sure, and if you have you will remember a conversation he relates that he had had with a farmer. He was talking with a farmer one day, and the farmer was admonishing him that he never would have strength, vigor, or vitality if he did not eat meat, because Thoreau was practically a vegetarian, was eating no meat. Sometimes he tasted a little fish, at rare intervals; he lived in his little hut that he built himself in the woods, you know, and he ate nothing but what he raised himself on his plot of ground,-- beans, corn and other things that he found in the woods. He was trying to live simply, and to find out what the real necessities of life were. So he lived there for a couple of years. I think he said his expense was about 27 cents a week for food, and it cost him I thik about thirty dollars for his house, and he had a splendid house; he built it himself. It was satisfactory, met all his needs. He tdld how he had one door, two windows, and a trap door into the attic, had an attic and a hole into it, and he had several other things that he considered all he really needed for satisfying his needs. Of course, that was living in a crude way. Now, Thoreau said to the farmer, when the farmer told him how impossible it was for him to be strong without meat, he said to the farmer, "You apparently entirely forget that those oxen that are dragging you along in the furrow are nourished on grass. The ox does not have to eat meat in order to be strong; neither does the ~~goat~~ hunting dog have to eat meat in order to pursue the prey. The hunter feeds his hunting dog on oatmeal, or on cornmeal much and oatmeal~~x~~ cakes and bread. He doesn't feed him meat." I asked a hunter why. He said, "My dogs can't run when they eat meat. Besides~~;~~ they haven't any scent, can't follow the trail when they eat meat." That is one of the wrong notions we have. Some people say we must have a large amount of meat. Now, as a matter of fact, a pound of meat is only equal in food value to one third of a pound of wheat, only one third the value. If the meat were dry, absolutely pure meat, it would take nearly a pound and a half of that meat to equal in actual value one pound of wheat; for a pound of meat is pretty nearly three fourths water; it is

one half or more water; so it amounts only to about one third of a pound of wheat. You pay perhaps twenty-five cents for that pound of meat, and the pound of wheat would cost perhaps two cents, a pound of corn a penny, and a pound of meat made from that corn twenty-five or thirty cents, or perhaps more; and it is not worth more than one third of that, but you get it, so you see what an enormous emount of money we are throwing away--enormous waste; and the reason is because we have to use up an enormous amount of energy in making use of protein. Thirty per cent of all the energy in the albumen of meat is wasted in the digestion of the meat, whereas the energy required in the digestion of starch and fats is so very small that it really is not worth while noticing; it can be entirely ignored; but it requires thirty per cent of the energy that is in the food, the protein of meat,--thirty per cent of its energy to digest it.

But it is pretty nearly time for me to stop. You have come here, my friends, to make an earnest business of getting well, and that is the reason why these lectures are always sober and serious. We don't have very much here of a social nature, about this institution; we have some wholesome entertainments, but we expect the people who come here to be sick enough to be really in earnest in getting well. We do not put in any attractions for people who simply want to have a good time and expect a good time in learning how to treat their bodies well. Health and efficiency are the things you all want, and they are the things that are most worth working for,--health and efficiency. I was down yesterday at the large assembly at Winona Lake, Indiana, went down there early yesterday morning, traveled back during the night, so I might be here for operations today, and I found there hundreds of people, a large assembly, eager to find out what health and efficiency means, how to live for health and efficiency; and I told them just the same things I am telling you here. It is amazing, as I said before, the extent to which people think beefsteak is necessary. There is the potato that is worth more than meat. If I had here two things, sixty pounds of potato and sixty pounds of meat that I had to live on, and I knew my

life would go out when I had used up that quantity of food that is given to me, I would take the potatoes every time instead of the meat. I would know I could live longer onxmxp sixty pounds of potatoes than I could on the sixty pounds of meat, for the potatoes have all the protein that I need in them, and they have a lot of other things besides; and if it was a bushel of wheat, I should expect to live on it sixtyx three times as long as it would be possible for me to live on the sixty pounds of lean meat. The reason is plain enough. There is a larger amount of nutrient material in these cereal foods. There is more food value, and besides, in the meats there is something that hinders efficiency, something that directly damages the body; there are poisons there which paralyze the forces of the body, which interfere with the work afxthexhmaxkky and with the energies of the body. When a man eats beefsteak, he sits down and feels dull and stupid. When a dog eats beefsteak, gnaws a bone, he lies down behind a stove and goes to sleep. Battling Nelson, one of the famous pugilists, said he lost fifty thousand dollars once because he ate a beefsteak. His trainer was not looking, and he had such a tremendous appetite he took an extra big beefsteak just before he was going into the fight, and it was the beefsteak that knocked him out; he said he knew it, and felt it from the time he ate it; it was a load on him; his energies seemed paralyzed.

Many a business man is in the same situation. Beefsteak becomes a poison in his body so that he is incapacitated, intoxicated actually drunk with beefsteak poison. Down South there is a certain class of people around the mountains that have been noted for many many years as lazy and shiftless, and recently the reason has been discovered. They suffer from hookworm disease. It takes their vitality away, and they haven't any strength. Whole families of them get infected with this horrible parasite, so this hookworm has acquired the name of a lazy bug. I am not mentioning this tonight as anything new but only as a text to hang a lesson on. A beefsteak has got a lazy bug in it; there is a bigger lazy bug in beefsteak than in any other food I know of, because there are poisons

there that do to the body exactly what the hookworm does to the man who is suffering from it--saps his vitality and his energy; and there is an awfully big lazy bug in every cigar, and every cigaret, and every plug of tobacco, paralyzing the heart, paralyzing the kidneys and destroying the activity of the liver. It is simply a monstrous laxy bug that is to be found in tobacco, and in every cup of tea and coffee. It is important for us to learn the things that are worth while, the things that promote health and efficiency and cultivate those things. I thank you.

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v-7-16-11.

LECTURE 34.

July 24,I9II.

The Battle Creek Idea-Getting in harmony with the Universe I,2.

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Catarrh,-dark brown taste,building up the body II,I2.

Cucumbers I3.

Peas,spinach,rhubarb-oxalic acid I4.

Grape nuts I4.

Cultivating disease-fear I5,I6,I7.

Propagation of disease-medical isms I6.

Believed she couldn't walk"Fire" I6.

Earthquakes-diphtheria-cholera I7.

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Catarrh produced by "dinner table climate".27.

No flesh-eating before the flood 28,29.

Receipe for an appetite (lemon juice) 29,3o.

Leavened bread 3o.

Oysters and mosquitoes 3o.

L E C T U R E 34.

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infant feeding 7
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Lecture 3

QUESTION BOX LECTURE

At the Sanitarium Parlor, Battle Creek, Mich., Monday, July 24, 1911, at 8 P.M.,

By

J. H. Kellogg, M. D.

- -

We have so many questions the box has overflowed, but we will try to get to the bottom of the box tonight. First of all I want to call your attention to a little book we have here, "The Reason Why." A good many of the questions you ask me and a good many more are answered in this little book which tells all about the reason why of the Sanitarium and our peculiar ways here. You want to know why we don't have tea and coffee on our table here, why we don't recommend you should not eat cane sugar but malt sugar instead, why we don't eat beefsteak; you will find these questions answered here and the most important reasons given. Some of you would like to send some of these home to yur friends, and to take a copy or two home with yu when you go. They are free; there is no charge for them; yu are welcome to them, and I hope you will supply yourselves with them and read them through. I have even had serious thoughts of having an examination on this book. I think every patient ought to read this book through from cover to cover. There is not a line in here that will do you any harm, and I don't think there is a page that won't do you good. And as I said, I have had serious thoughts of forming classes and having this book studied page by page, and having recitations so as to make sure you have all gotten thoroughly rooted and grounded in the Sanitarium faith. Now, we have quite a number of people here this summer that didn't have to come. The most of you had to come, you didn't come until you felt driven by necessity to come here and do penance for your wrongdoings, or if not your own wrongdoings, then those of your ancestors, somewhere, who were at fault. But there are a number of people here this summer that didn't have to come, that came here simply to show off, just simply came to

to show that it pays to be good. If there are any of you here who haven't yet got acquainted with Mr. Owen, from Pine Bluff, Arkansas, I hope you will make his acquaintance. He is a modest man--he has been a traveling salesman for 25 years so yu will know he is an exceedingly modest sort of gentleman, and I am going to ask him to stand up here so you may know who he is. I thank you very much. You see he came and sat down here in front on purpose so I could get hold of him handy. No,--he didn't now anything about it. Now, I want you to interview Mr. Owen, and I think he can tell you a story that will convince every one of yu that it pays to be good. And another thing he will tell you if he tells the whole truth,--it pays to have a good wife who will make you be good, because I now he never would have done it in the world if it had not been for his good wife wifeking right after him all the time, and saying to him, "Now, you mustn't have any beefsteak, remember; remember you must not eat any roast chicken. When yu come home I am going to ask you about it, and so be sure you do not fall into temptation at those hotel tables where you are going; but you must just stick to your diet." Now, Mr. Owen came here with a death warrant over his head. He came here just ready to die. His blood was reduced to fourteen. Some of you are scared because your blood is down to 85 or 90, and it is bad enough to have it there, but his blood was fourteen, and he was as white as a sheet, and we had to put him to bed the very first thing and had to keep him in bed for a long time. Now, he recovered without a drop of medicine, without a particle of medicine, and I am very proud to be able to tell you he has not eaten any meat since he left here, so you can not attribute the good blood he has to beefsteak. He has gotten back his blood almost up to normal, almost up to 100, and he has not tasted flesh of any kind in these two years, and has not taken a drop of medicine. So you know what cured him. I didn't cure him. The Battle Creek Sanitarium didn't cure him; but he has gotten well because he has conformed to the laws and the principles of nature. That is the reason. (There is nothing in

the world, my friends, like getting in harmony with the universe. If we get out of order we get hit every time. If a man undertakes to defy the law of gravitation, won't recognize it, you know what happens to him,--he steps out of a third story window into the open air, and he comes down on the pavement and is smashed. Now, it is just the same with the manwho says, "I won't recognize the laws of digestion; I defy the physiology of digestion, I won't recognize it." Sooner or later he has to come to the Sanitarium to do penance. Indeed, he has to do works of supererogation all the rest of his life. If you are good Catholics you know what works of supererogation are--works of supererogation are being extra good, you know. That is what every last one of you has got to do. There is no use in mincing about it, in thinking that you can do penance here for a while, and then after you go away from here thinking you can go back to the old ways you practiced before you came here. You can't. Your very life and your health depends on living up to the light you got while you were here. Yu come here to get information, and you get enlightened. Now, if you go back, you will be punished ten times worse, and you say, "But if I come back again,--if I go back to my old habits and get into trouble I can come back to the Sanitarium and get fixed up again, can't I?" Don't you believe it, my friends. It is possible that might happen; but I want to tell you the man who goes back, then comes here again with a relapse is an awfully hard case to deal with, and the third or fourth time he comes back he generally doesn't get out of it; he dies. So if you have had a trouble serious enough to bring you here, it is serious enough to make it a matter of business and to treat it in a businesslike way. If you made a mistake in business once and lost a hundred thousand dollars, got into a receiver's hands, I dare say you said to yourself, "If I ever get out of this receiver's hands, I will never get in again; I will take care never to make that mistake again. I won't go to signing notes for people; I won't make risky investments; I will do business in a safe, sound way." Now, my friends, that is just exactly what you have got to do about your health. You are in a receivers' hands now.

This is a bankruptcy court here, and you are here, you are bankrupt, most of you,-- I am doing my best to say things to you so you will remember them, so you won't forget them, because forgetting gets us into trouble. Now, you must act upon this thing with respect to the very same principles which are followed in business. You must do it. There isn't any other way in which you can hope for any betterment or any substantial results. If you are going to be well, if you are going to get well and stay well, you have got to keep right on doing the things that made you well, that helped you to get well. Now, you aren't cured up by any sort of hocus pocus. A man came here today to hire out to us; he wanted us to hire him, and he said, "I believe in animal magnetism"--a great, big, stout looking fellow", and he said, "I find when I lay hands on a very feeble patient, I feel strength going out of mee; I feel weak afterwards." I said, "That is just the kind of people we want to get rid of", so I showed him the door politely and smiled him out, told him we didn't have any place for him; told him he would find this such an uncongenial atmosphere he could not stay here if he tried, and I was sure he better not try; so he went away. Now, you haven't been cured by any such means as that. I said, "We tell our patients who come here that they are sick because they are sinners, that they are sick because they have done wrong; their habits have been wrong, and they have fallen from grace; they have gotten down from the high level of health and happiness, down to the miserable lowlands of disease and sickness. Now, the only way to get back is by right eating, by right living. That is the only way; and the only way to keep back is by right living. My friends, I hope you won't forget what I am telling you, because I am in dead earnest about it; I am not talking here for entertainment, but I am talking here so earnestly so we will have the pleasure of never seeing you again; so when you wonce get cured up and you go home, you will never have to come back. If you want to come back once in a while to show yourself off, like Mr. Owen here, all right. We have several other people,-we have two or three prominent jurists here now who have come for the same reason. I will not mention

their names out of respect for their offices, but we have a couple of gentlemen who are here simply to show that they are so well, showing that it pays to be good, to follow these principles. Now, these principles, I must tell you, are not Battle Creek Sanitarium principles at all. We only call them Battle Creek Sanitarium principles just to get people to come this way so we can introduce them; but these principles that are taught and practiced here in this institution are older than the hills; they existed from the very beginning of things, from the very beginning of the race of man upon the face of the earth. I can show you how every one of these principles came from the very beginning of man. They grow out of the nature of things. Now, you know here, for instance, about the beefsteak. Read the first chapter of Genesis, and you will find there the bill of fare laid down for Adam. The Lord didn't tell Adam what kind of clothes to wear,never said a word to him about that; as a matter of fact he didn't have to wear clothes. It was such a mild, genial climate it was not really necessary to wear clothes; but he told him what to eat. He said to him, "Every tree bearing fruit, and every herb bearing seed, to you they shall be for meat." So seeds and fruits, or fruits and nuts and seeds were to be the diet of man. The other things we have added. Now, along about the third chapter, you willfind the Lord telling Adam--that is after he had sinned, that he must earn his bread by the sweat of his brow; and after he had sowed his seed, and after he had sweated and cultivated it, we find that the earth is going to bring forth thorns, it would bring forth thorns to him, "and thou shalt eat the herb of the field." So he had permissin to eat lettuce, don't you see, and cabbage, and leaves, tender leaves and shoots; permission came there. He was content till after the flood when there wasn't another thing on the face of the earth to eat, when the fruit trees were all swept away, and everything else was buried up, there wasn't a thing to eat, and he was then given permission to eat meat, but he never was given permission to eat blood. Every animal, every creeping thing, everything in which there is life, everything, every living thing, "to you it shall be for

meat." Noah was given permission to eat all these things after the flood, "But the blood thereof which is the life thereof, thou shall not eat of it." That is what God said to Noah, so we never had permission to eat blood. If we are going to eat meat, we must eat it without any blood, and we must wash the blood allout of it; and that is what the orthodox Hebrews do to this day. I just wanted to call your attention to this little book thattells you the reason for things, and we want you to give this book to your friends and let them read it through and let it sink into their hearts and minds. Every single word, I think, is worth more than gold. I will try to have some brought in this evening if we can get them in time, if and if we do not, you will find them down at the little bookstand, and you can just help yourself and carry them off.

Q. Is it best to put limewater in cow's milk when given to babies?

A. Lime water in cow's milk is nobetter for the milk than ordinary plain water; it is nobetter than plain water. The idea sometimes is held that the baby needs more lime, that the baby has a tendency to ricketts, threatens to be bowlegged, and its limbs are weak, and its bones are small, and the doctor says it is going to have the ricketts, and you must have lime water.

the baby's digestion, and you do not want to do that; so it is very important to know these things, and tell everybody you have a chance to talk to on the subject about it, so the mother's won't make the mistake of giving lime water to their babies month by month until the poor baby's digestion is spoiled forever, and th the stomach is ruined forever.

Q. When is the best time to take yogurt tablets, before or after meals?

A. Just before meals is the best time of all, ten or fifteen minutes before meals, and whenever yogurt tablets are taken, something sweet should be taken with them. Malt honey is the best of anything. Malt honey is the best food that is known for the friendly germs; it feeds them, encourages their growth. You can get the little malt honey tablets, or health candy as it is called, which is simply maltose--that is, sugar that is made from grain, not made from cereals, not from cane; that is the best food for them. It should always be taken with the yogurt.

Q. Which is the best, yogurt cheese or tablets?

A. Yogurt tablets are better because they contain no fat, and the culture is a pure culture in the tablets, and it is not pure in the cheese. It is impossible to make the cheese with the pure culture when it is made in such large quantities. The other germs associated with the Bacillus Bulgaricus are not harmful germs, but simply are sour milk germs; but the Bacillus Bulgaricus is in pure culture in the tablets.

Q. What do you think of viavi treatment?

A. It is a splendid humbug.

A. Do you advise adding salt to the morning bath?

A. It does no harm; in fact, it might be a little beneficial by stimulating the skin. If you have a good, tough skin and need a little more stimulation than the cold water gives, salt does no harm. The salt is a chemical stimulation, while the cold is a thermic stimulation.

Q. How much salt should be used per gallon?

A. Five or ten pounds, whatever the water will take up. It makes no difference. It will do no harm any way. Two or three pounds to the gallon will be perhaps about right.

Q. How can arthritis be told from other forms of rheumatism?

A. By means of the X ray. When the X ray is applied to a joint, you can see the little spicules of bone growing out on the ends of the bone, like little icicles sometimes, or like stalactites, in a cave, or stalagmites,--little particles of bone, osseophites, as they are called--these are growing on the edge of the bone; but there are two forms,--another form in which the bones really are diminishing in density, rarefaction of the bone as it is called, and this is known as the atrophic form. There are two forms of this kind of rheumatism, the hypertrophic form, and the atrophic form. In the hypertrophic form new bone forms upon the bone, and that is why the joints grow large. You can see here I have one on one of my little fingers. I got those little nodules there by eating too many eggs. I used to eat a couple of eggs for breakfast every day, and too much milk. I thought I must eat more protein because the wise men all said we must have four or five hundred calories of protein a day, and I tried to eat half that much and as a result I got too much rheumatism; but when I found it out, I stopped. I recommend for you just what I do myself. I didn't want that rheumatism there, so I made up my mind to stop it right away. So I got right after it, and I did to myself exactly what I am recommending you to do. If I should take a high protein diet, I should pretty soon have nodules like that in every joint of my body, and I would very soon get to be a cripple. So I was glad to have made a discovery in time of what the trouble was. Nobody has profited more by the principles of this institution, my friends, than I have. I was such a puny boy I was not thought worth raising. I managed to struggle through, but I had ill health, pain and suffering and distress nearly all my lifetime. It is only the last ten or fifteen years that I have felt myself really well; and I find myself at sixty years of age feeling fresh and vigorous and enduring, and able to work hard as many hours as I find it necessary to work, and work all day without eating if I have to, and work all night, and keep on working all the next day if I have to. I don't recommend anybody to do that, but doctors sort of belong to what you might call the human fire department

and have to go when the bell rings; so we can not live so systematically as other people; it is not healthy for us, and other people should not follow our bad example.

Q. What is your objection to the use of eggs?

A. The principal objection to eggs is that they were never intended for human food. They are not good food, but are a very inferior sort of food. They always contain some toxic, poisonous matters. Most people do not suffer from the use of eggs. Most healthy people do not suffer from the use of eggs for the same reason that they would not suffer if they swallowed a little venom of a rattlesnake. Now, this poison in eggs is a toxalbumin, the very same poison that is found in the venom of the rattlesnake, the very same kind of poison--not the veryitable poison, but the very same sort of poison, a poison of the same class. It is in very minute quantity, so small a quantity that it ordinarily is not noticeable. I met a gentleman yesterday, and we talked about eggs. And I said they were not a very good diet. He said, "I have found that out. Eggs are simply poison to my boy. If my boy eats eggs or eats a piece of cake that has eggs in it, he is poisoned right away, even when he didn't know anything about what he was eating. Eggs poison in this way. This matter was discussed a number of years ago in quite an extended way before the great French Academy, Paris, and the most eminent physicians, and the most eminent chemists of the world went to work to study the question up, and find why it is that eggs sometimes make people very sick, and the facts I am giving you are the facts that were brought out in that investigation, and they were published in the French medical journals. It was shown that there is a poison in eggs, in the best egg you ever saw in your life when it was subjected to a skilled chemist, he would find the poisons there. These poisons do not ordinarily do us any harm, so long as we are perfectly healthy, so long as the mucous membrane is perfectly healthy it can fight the poison off and will not allow it to pass in. You

can put some of the venom of the most deadly serpent upon the skin and it will do you absolutely no harm; it can not go through the skin. So with the mucous membrane; it can not pass through the mucous membrane, but when a person's mucous membrane has become diseased by catarrhs, or colitis, or tapeworm or by the bites of other parasites which get into the intestine, then through these little abraded surfaces, raw surfaces, the poison gets in. A man smokes tobacco and it does not kill him. A little baby fell upon a stove once and burned its head, and the old grandmother took a little oil off her pipe that she was smoking, and rubbed it upon that little sore, that little raw surface of the baby's head, and the baby in afew minutes had convulsions, and in a few hours it was dead, killed by the very thing which the grandmother was smoking. You see in the case of the grandmother, the poison was taken in through the mucous membrane, and it was taken in very slowly, while in the case of the baby it was rubbed upon that raw surface and taken in at once, and so the baby was killed by it. That is a good thing for some of these smokers here to put into their pipes and smoke. I told that story for their benefit.

Q. Is chewing gum bad for children?

A. Well, if a child has forgotten to chew its dinner, it might be proper to give that child some gum and have it go and stand behind the door and chew. I don't know that I can recommend gum for anything else except as a punishment for neglecting to chew your food, to fletcherize.

Q. Is catarrh a constitutional or a local disease?

A. Catarrh is due to a predisposition. The nose of a healthy person is able to destroy every germ that comes into it, at least most germs that come into it. The mucous secretionof the nose is a germicide, it destroys germs; they can not live in the nose. The experiment has been tried on healthy persons. A bacteriologist put some very deadly germs upon the mucous membrane in the nose, then examined that particular spot where he put those germs, from hour to hour and at the end of four or five hours they were all killed. That was a healthy

mucous membrane. Now, if it had been the mucous membrane of a person who had a dingy skin, a skin that was tinged with the poisonous coloring matters that are formed in the colon and absorbed, a person who had a dirty, dingy sclerotic, had a bad ~~toatmmx~~ on his tongue--I met a man the other day who said he had a dark brown taste in his mouth every morning when he got up. Some of you know what that brown taste is,--when you have been out late at night and had a lot of rich things at a sociable somewhere--ice cream, etc.,--well that rich brown taste this man said he had in his mouth in the morning is an indication of a diseased body, of a poisoned saturated body, and such a body as that has lost its power to resist disease. Now, such a person takes cold, and that means a congested nose, a congested mucous membrane; mucous membrane that is congested is weakened. Then the germs which get into the nose are able to lodge there and to grow there, and they get a foothold and hide away in some of the little nooks and crannies ~~thars nik~~ which are so very numerous in the nose, and they grow and develop and produce their poisons, and the body sends out mucous to defend the mucous membrane and to fight off these germs and kill them; and that makes a discharge from the nose, and by and by there come to be lacerated surfaces, then there is a purulent discharge, and more mischiefs result. Now first of all, then, in the treatment of catarrh, it is necessary to build up the body, to increase the constitutional resistance. But local treatment of the nose never cured it in the world--these simple applications of sprays and thing. They give some relief, but they never effect a cure. The body itself must be made better, and when that is done, the local applications are of very great use.

Q. Are there any microbes so small as not to be subject to the law of gravitation?

A. No, Mr. Tyndall made an experiment many years ago which very clearly proved that. He made this experiment. It was an experiment which demonstrated the presence of germs before the human eye even aided by the most powerful microscope, had ever seen the germs. He placed a bottle in an ordinary room in such a

position that a ray of sunlight through a little opening in a curtain could pass through it. The ray of sunlight was perfectly visible in the bottle, but after this bottle had been standing a week, the ray of sunlight disappeared in the bottle. It struck the bottle, and began again on the other side of the bottle, but within the bottle there was no ray of light; so Mr. Tyndall, by the use of what he called scientific imaginatin, at once interpreted this to mean that in the bottle the ray of light was visible only because ~~the~~ of minute particles floating around in the air, particles of dust, germs, etc., and that after the bottle had stood still a certain length of time in the room, all the dust and all the germs had settled to the bttom, so there was nothing to reflect the sunlight; so the ray of light was no longer visible in the bottle. Now, he found that when a bottle had been allowed to stand in this way, and the air in the upper part of the bottle was removed, it was absolutely free from germs, and food or any decomposable substance placed in ~~the~~ such air remained without undergoing any change. It didn't undergo putrefaction or fermentation.

Q. Are cucumbers wholesome?

A. Yes, if you chew them well and if you don't poison them with pepper and vinegar. Pepper and vinegar spoil the cucumber.

Q. Is cucumber jelly wholesome?

A. Yes, it is all right.

Q. Is yogurt likely to degenerate into a harmful drink?

A. It won't degenerate into anything harmful so long as it has an acid flavor. If it has a bitter, unpleasant, disagreeable flavor, it will be unwholesome. So long as it has a sour flavor it is all right. However, it might lose itseefficiency to some degree, because the ordinary sour milk germs are not capable of living in the colon. I was visiting our laboratory this morning to investigate some matters there, and I was glad to find a report from our laboratory that in examinations that are made of the stools of persons who are aking yogurt that the yogurt germs are found to have taken up their abode in the colon

colon and are going to substitute the unwholesome germs that have been growing there.

Q. Can one use sterilized bran indefinitely without any harm?

A. Yes, it does no harm. Sterilized bran is bran that ha been thoroughly washed ans sterilized at a very high temperature, so that all the germs are killed. Ordinary bran is very, very dirty.

Q. Is there any oxalic acid in canned peas?

A. Well, there is a very minute quantity of oxalic acid in nearly all vegetables, a very minute amount, and the amount is so very, very small that it is not noticeable. In rhubarb it is present in very large quantities, and in sorrel it is present in large amount. There is quite a little oxalic acid in spinach, and that is the reason why the spinach that is served upon our table here is always parboiled before it is put upon the table, and that taes out the acid flavor. You sometimes find spinach with quite a tart flavor, and that is due to oxalic acid. Wkan In our kitchen I insist that the spinach shall always be parboiled, and that takes the oxalic acid out.

Q. Do you think grape nuts is a valuable cereal food? If not, why not?

A. It is entirely wholesome, just as good as other cereal foods. I do not consider that it is any better than granola or any of our cereal foods, that have malt, for instance, our various kinds of toasted flakes of various sorts, wheat flakes, corn flakes, and rice flakes,--quite a number of varieties of flakes I think are just as good if not a little better than grape nuts. They are certainly just as good. Grape nuts, so far as I know, is entirely wholesome. According to my notion, they would be better if they were more thoroughly cooked. Of course, the grape nuts contain nothing but what is contained in ordinary cereals. They have no value any greater than ordinary graham bread or toasted wheat flakes, or anything of that sort, with a little malt honey, a little malt added, would have all the value that grape nuts has.

Q. A religious cult claims that fear is the foundation of disease. In the treatment of disease by allopathic physicians, how is this tendency to fear combated?

A. There are no allopathic doctors. This term allopathy was coined by Hahnemann who coined the term homeopathy, and allopathy was supposed to be the opposite of it, but this term was never used by scientific physicians except perhaps in the case of some who were rather ignorant; but I suppose what is meant here is, how is this element of fear combated by ordinary physicians, physicians who use drugs? I am perfectly willing to admit that the ordinary physician cultivates disease. I know I have sometimes cultivated disease myself, and I have repented of it and said I would never do it any more; but when a doctor goes to see a patient, looks at his tongue, feels his pulse, listens to his heart and looks wise, the patient is getting scared half to death every minute getting worse and worse scared; there is no doubt about that; in examining patients there is a tendency to cultivate disease. And I was upbraided by a doctor not so very long ago for making diet prescriptions. In fact, I had a letter today from a gentlemanin England under the care of ~~kk~~ a doctor there, and he said this doctor objected to our way of dealing with patients in making diet prescriptions because that cultivated dyspepsia, if we gave people diet prescriptions. I wrote back to the gentleman that that was perfectly true when we were dealing with hysterical women and hypochondriacal men; but when we were dealing with intelligent, common sense men and women I didn't think that that principle applied. And I think that is true. A wise man, a sensible man is not afraid; he is not scared to face the facts as they are. If he has got an obstacle to overcome, he is not afraid to go at it. He takes a look at it, and springs over it. The intelligent invalid, I find from my experience, wants to know the reason why he is sick, and he wants to know the road out so that he will know how to travel, to help himself. That is necessary, so that we know we have his co-operation; so, for my part, I think on the whole it is better to ~~kxxhimx~~ have at least one good thor-

ough looking over of the case of the patient to let him know all about his case, to let him know just what is the matter, how he is sick, why he is sick, and to know the way out and how he is going to get out of it. I do not think the average man is so lacking in intelligence that he can not face the facts; or that he has so little sense that he is not able to command himself and lay hold of hope and good cheer, upon the things that are offered him to help him out of his unhappy condition. In fact, I think it is quite necessary for co-operation that a man should have that knowledge; and for my part, I would rather know the fact, know what is the matter, than to drift in a state of ignorance. This propagation of ignorance, this insisting that the patient should be ignorant about his condition and about what is being done for him, is the very thing that has given rise to such a great number of medical isms in the world, and so many fads, and so much foolishness and has left the sick man a prey to charlatans of every description. The medical profession made a great mistake in not educating their patients, and the medical profession, I am glad to say, are beginning to see this. When the American Medical Association held its meeting at Los Angeles a short time ago, on Sunday twenty churches in the city were occupied by doctors who were standing upin the pulpit and preaching the gospel of health; and I think that is a very good thing to do. A lot of the doctors that got together in that great city felt it was their duty to do something to lift that city , to help them to know the way out of disease, as the Christian Scientists say we ought to do. But there are certain maladies, it is true, that it is well to ignore. I remember a lady we had here some time ago who believed she culd not walk. ~~She thought she could not walk.~~ Somebody smelled smoke and shouted fire, and this lady got out of bed and ran downstairs, and I met her in the hall after she had come down two flights of stairs--I happened to be going upstairs to see what was the matter. She said, "I am killed, oh, I am killed, I am killed", but she wasn't killed. The next day she was walking all about the house, and she is walking yet. That happened twenty years ago. So there are cases in which fear seems to do people a

lot of good. For instance, at the time of the Savannah earthquake some years ago there was a couple of people with rheumatism that had been in bed a number of years, and they got up, ran out of the house, and the stiff joints limbered up and everybody was surprised to see them go scampering about the street. These are examples of the wonderfully curative effects that fear sometimes has, and imagination has a good deal to do with the cure of imaginary maladies, but imagination can not produce a germ disease nor cure a germ disease. Nobody ever got an infection with diphtheria because he was afraid he was going to get it. There have been reports that people have got cholera because they were scared. I don't believe anybody ever got cholera simply by being afraid of cholera. Certainly not unless they were exposed to cholera.

Q. What do you think of the motor cycle as a sport?

A. I should say it is a pretty strenuous sport. For those who like it and are capable of doing it safely, I haven't anything to say. But for the average invalid, I would not recommend it; certainly it is highly dangerous too.

Q. Please tell us something about arthritis deformans.

A. Arthritis deformans is a toxic disease produced by poisons absorbed into the circulation, into the blood and affecting every tissue in the body, and producing an abnormal metabolism that is abnormal and unhealthy, and an abnormal and unhealthy tissue development. The tissues instead of growing in the normal natural way, grow abnormally, so the joints become deformed. It is lucky the disease attacks the joints. It attacks the joints because these are the points of least resistance. We have less blood circulating through the joints than any other parts , than in the cartilaginous structures or the lymphatics, and the bones are not the best defended; they have the least defense, so here is where the disease makes its attack. It is a great deal better to have it there than in the heart or the brain or some other vital part, but sooner or later these vital parts become affected; and when a person finds his joints becoming enlarged

enlarged and rheumatic, he must take that as a sign, as a certain and positive evidence that the same thing is preying upon his liver, his heart, his spleen, blood vessels and other parts. Ruin and havoc are being wrought in his body everywhere, so he must stop that thing just as long as he can if he wants to live long in the land.

Q. Will malt honey injure an acid stomach?

A. If a person has a very acid stomach, too much gastric juice, malt honey should not be taken by itself alone, and should be taken at the beginning of the meal, should be taken with butter or cream, and taken at the very close of the meal. It is even better to take it an hour after the meal. That is the best time to take it. When taken at that time, it prevents the action of the gastric juice upon the mucous membrane , and it really is a benefit. If it is taken at the meal, it has a tendency to stimulate the flow of gastric juice, and so may increase acidity. However I should say this, that malt honey is much to be preferred to cane sugar. Cane sugar is very objectionable in these cases. Malt sugar, and malt honey can be often used when cane sugar can not be used. I would be glad if I could induce everybody here to discard cane sugar almost entirely, use it very little, only for sweetening a little some of the most acid things; but dispense with it as much as possible and use malt sugar instead. That is the natural sugar. It will save a great many ailments. Children are greatly damaged by the use of cane sugar, and many babies are killed every year because of sugar. Malt sugar is the natural sugar because it is the same sugar produced by the action of saliva upon the starch of the food, so it is natural sugar, native to the body.

Q. How should sedentary people exercise?

A. The Lord told Adam he must earn his bread by the sweat of his brow, and everybody ought to sweat every day. The man who dodges the sweating is certain to get something a great deal worse. He has either got to sweat or he has got to suffer; so if you don't want to suffer, to get premature arteriosclero-

sis, if you don't want to get indigestion and headaches, and autointoxication, exercise is the best panacea you can find. Take a cold bath every morning, then half an hour's exercise, afterwards, preferably outdoors or in your own room with your windows open is a capital thing for the business man. Every man, no matter what his occupation, if it is indoors, ought to have at least two or three hours of good active work outdoors every day. The trouble is the sedentary man loses his appetite for exercise. He loses to a considerable extent his aptitude for exercise, and he loses his liking for exercise; he likes to sit in a chair. When he gets through his work in his office, it is much more pleasant to go home and sit down in his library and smoke a cigar in an easy chair--ordinrily it is a great deal more agreeable to him than it is to go out and work; but there are sometimes men who have stamina enough, and character enough to fight disease and to fight old age by a really strenuous life. Mr. Roosevelt is one of those men. Mr. Roosevelt had a boxer around not because he liked to box, but because he knew he must do that thing. He had to go out west because he knew he was threatened with consumption, and he has had to fight for his life all his life long; but he is able to do a tremendous amount of work because he keeps himself up to a fine state of efficiency all the time. There was the inventor of the "Monitor", Ericson, who lived to a very old age, was active up to the very last, and the way he maintained his great activity was in taking three hours' outdoor exercise regularly every day. No matter how cold it was, no matter how stormy it was, no matter how the wind was blowing, or how it was blustering or raining, you might have seen him pacing up and down the streets of New York city from eight to eleven o'clock every single night. Every night he was out taking his walk. William Cullen Bryant was another man. Every morning he would get up and teeter up on his toes this way five hundred times; then seize a couple of chairs and let himself down to his shoulders and up again, lifting up his feet so he was free from the floor, lifting himself up and down and making what he called forty dips. He had several other exercises he went through

through; then he would take a nine mile walk to the Post building, to his office, and walk clear up to his office on the top of the building, instead of taking the elevator. That is the way he kept himself alive, vigorous and active. We sit down and go to pieces, we sit down and decay, just sit down and die. Why, my friends, it is awful, the way we see people just lying right down and letting the old monster disease come up and put his hand upon our neck and crush us into the dirt. Why do we do that? Why don't we rise up and make ourselves as well and strong and vigorous as we can possibly be? The principal reason is we haven't enough self-respect; we haven't enough spunk, we haven't enough grit; that is the principal reason. We just lie down and let disease roll right in upon us, instead of rising up to fight it off. We should plant our feet upon the foundation of right principles and then stand up and fight old Father Time off just as long as we can. Some people have to be thoroughly well scared to get waked up. I met a lady the other day who was talking about her health, and I was telling her about the proper diet for her, etc., and she said, "Oh, I don't see how I can give up meat and tea and coffee; I don't see how I can get along without my beefsteaks, or how I can get along without my chicken; I must have my chicken sandwiches; I can't get along without chicken sandwiches", and she thought she had got to have the old wicked things that had made her sick, and said she could never give them up in the world, could not spare them; but I said, "Just think about it; here you have got arteriosclerosis, you have lost your good complexion so you have to wear an artificial one, and your breath smells--I was going to say like a dead rat; it really does, but I won't say it; and your body is being destroyed and spoiled by these wrong habits, and you don't know whether you can give them upor not. Now, just look here. Old Father Time is right after you; he is after you with his sickle, he is right at your heels, and he is going to reap you if you don't turn about and reform." "Do you--do you mean that? Do you mean I am going to die?" "Why, certainly. You haven't got but just a few years to live if you don't turn right around now." "Well, I guess I will have

to change." "Well, you have got to do something, you have just got to change. You have just got to change your habits or you will be sure that that awful change we all dread will come, and it will come pretty quick." Why, my friends, we cultivate disease; why shouldn't we turn about and cultivate health? We work hard to get sick, and now we can not expect to get well easily. We have got to cultivate health, we have got to work for it, just as we worked to get sick.

Q. Is this a charitable institution?

A. Now, I dare say it looks to you as though that is really a joke, but I want to say to you, my friends, if this institution were not a charitable institution, I would not have worked for it for thirty-five years without a cent of compensation. I have worked here for thirty-five years and never received a penny from this institution. (Applause). I board myself. I have performed more than ten thousand surgical operations and I never had a surgical fee in my life, not one cent, never. I have never received one cent for any examinations I have ever made in this institution, or for anything I have ever done for a sick person in my life; I have never received a penny. I have managed to support myself by writing books and one thing and another after other people have gone to bed. I have been able to contribute to this institution several hundred thousand dollars out of earnings that I have made after other people had retired and gone to bed, and that is why this institution stands. If it were not for the personal contributions of myself and my colleagues, who have worked generously as I have, and done the very best they could, this institution could not be, absolutely would not exist. Now, for instance, you are acquainted with some of my colleagues, Dr. Riley, for example. Dr. Riley has been working for this institution for more than a quarter of a century, and I doubt if there is a man here in this room that would work for the salary Dr. Riley has had. Dr. Riley supports himself entirely independently and his salary has not averaged one hundred dollars a month during that time. It is a little more than that at the present time, but most of the time his salary has only been sixty or seventy

or seventy-five dollars a month. Seventy-five dollars was the highest salary until very recent times; and the same thing is true of others. The doctors who are serving you here are many of them working for a mere pittance, seventy-five or eighty dollars a month, and supporting their families, just barely enough to get a living; and these nurses that are working for you, their salaries are very small, twenty, or twenty-five, some of them, the older ones that have been here years and years get as high as thirty or thirty-five dollars a month. Now that is not very much is it? And I want to say to you right now, my friends, I want you to believe every word I say, because I can prove it to you--if I took a salary such as I have been offered elsewhere, and if my colleagues here took salaries such as they have been offered elsewhere, this institution would have to do one xxxx of two things: it would have absolutely to shut up its doors and go out of business, or else we would have to raise our prices fifty per cent. That is exactly what we should have to do. It seems like a pretty large sum to you that some of you have to pay. I know it does when you pay thirty or forty dollars a week, as some of you do,--it seems like a large sum, but consider for a minute. We have at the present time a thousand patients in this institution. We have almost a thousand other people here taking care of you--almost a thousand people; so that for every patient here there is another person that has to be boarded and has to be paid a salary and in addition to that all of the general running expenses have to be maintained. Consider that the charges that are made here are not greater than they are at first-class hotels, not as much as in many hotels, and yet the expense of taking care of people in this institution, considering they are sick, and considering what medical attention has to be given, and the records that have to be maintained, and all the advantages that have to be supplied, is very much greater than the individual expenses in an ordinary hotel. The number of persons employed in proportion to the number of guests is always larger. During half the year the institution runs behind. This last year, I think last winter is the first winter in the entire history

of this institution that it did not run behind, often at the rate of two or three or four or five thousand dollars a week; and it takes the summer to make the losses of the rest of the year up. And you know the doctors and nurses and the whole corps have to be maintained through the year ready for the summer business when it comes. We would not be here any of us if it were nt for the fact that the people that come are sick and need to be helped. Nothing else would maintain this institution. Some of yu have wondered how it was we manage to get so many wholesome people that we have here. I am sure you have noticed in the bathrooms the people you come in contact with are a wholesome sort of young men and women; and the people you meet in the dining room are a wholesome sort of yung folks. I dare say some of you have wondered how we manage to get them. The reason we have them is because they are interested in the principles of this institution, because it is a valuable institution. You have asked the question and I will give you one statement to settle it; and that is that we do not pay taxes; we do not pay taxes. There were some people in the town several years ago that because we charged our patients something here, thought there must be a money making institution up here; so we invited the court to investigate us. The court did investigate us, looked into our books, kept us in court for eight or ten years, and at the end of that time, they decided that the Battle Creek Sanitarium was properly incorporated under the law of the State of Michigan which exempts it from taxation; so that settled it for all time. (Applause.) If this were a charitable institution in the sense that nobody was charged anything, there wouldn't be any of you here; not a single soul of you would be here. We have to charge you something so we will get you to come. If we should offer all the advantages of this institution without charge to the world, free, nobody would come. It would be looked upon as absolutely worthless, because, as a matter of fact, the most of you, I don't know but I can say every one of you, can getright at home almost all the advantages we offer here, and you have the privilege while you are here of larning just how to do the thing, so you can

take it right home with you; yet you didn't do it before you came, and some of yu are not going to do it after you go back. You have to be brought where you are sort of under durance, don't you see, under orders, and have to be put under marching orders so you have to be sort of driven to do the things you ought to do for your health. When you get home ~~thingsxxix~~ business will occupy your mind, you will be swept away and forget all about the importance of health. But I must say another word, and that is that we have the next building to this, a large building called East Hall. There is not a person in that building who-- I hardly ought to say this perhaps, but still I will say it because it is important for you to know the facts, and I think this question was asked with a perfectly honest motive--there is not a person in that building that can afford to pay the rates of this building, and yet that building is run at a tremendous loss. The people in East Hall pay some of them five dollars a week. There are 25 or thirty people here receiving treatment at the present time who pay five dollars a week, and they have every advantage any of you get. They have all the examinations they want, and they generally take more examinations than most of youare willing to take, that is, than some of you are willing to take. They have every single examination they want and just as often as the doctors want them to have them; and they get more examinations than the average case, because they are willing to take just as many as the doctor suggests. Then they have all the treatment free, and they have their board; they have everything we know how to give them for five dollars a week. We wish we could do it for every one. These are returned missionaries from foreign lands who have been giving their lives for the benefit of the heathen, and we have a standing invitation for allsick missionaries to come here to stay just as long as they need to stay, at five dollars a week. (Applause). Well, ~~xx~~ there is not a day passes, hardly, that we do not get a letter from the secretary of some mission board--all the boards send their sick missionaries here,--telling us of another missionary that they want to send. Now, we have a double object in doing that. In the first place, we want

we want to do what we can for the missionaries, but in the next place we want to convert those missionaries. I am interested in the heathen. I wanted to be a foreign missionary myself. I intended to go to the foreign field as a missionary and spend my life in the field, but I didn't have a chance to do it, and it occurred to me to do something for the heathen it would be a good thing to get the missionaries here and cure them up so their efficiency would be increased, and send them back to the mission fields with ideas and principles that they would inculcate into their own work, that they might teach the heathen. Another thing, I find some missionaries have been teaching the heathen things they ought not to know. As Senator Hoar said, one of the things most necessary is not to civilize the heathen, but to get the heathenism out of civilization. I once had a letter from a native Japanese, and he wrote me, "Doctor Kellogg, Dear Brother: I am so glad there is one man in America that don't believe in eating meat, in killing animals and eating them." I looked at the end of that letter to see who this man was that was calling me a brother, and I found a Japanese name. He had found out about me, heard about me somewhere over here; and I wrote him I was very much interested in what he wrote. He wanted to get hold of some of my tracts and translate them into Japanese, and he did translate several of my tracts and published them there and circulated them widely in Japan. He wanted some further information I wrote him and asked him if he thought it would be a good thing to send over someof our missionary nurses to Japan who did not believe in slaying animals and eating meat. What do you think he said. I got a letter back just as quick as the boat would bring it, and he said, "Keep your missionaries at home. You have got more heathen in America than we have in Japan." Well, you know, that is one reason why we receive missionaries here, we want to convert the missionaries so when they go back they won't be teaching those heathen some of the things that ought not to be taught to them, as I am saying. Well, then we have a dispensary across the road where any poor man--somebody asks the question, can a poor man come here and have an operation done

without paying a large fee for it? We have a dispensary across the road and I want you all to know about it; you may have some poor worthy neighbors who would like to have the advantags you have had. If a man can come to this town and manage to maintain himself somehow in the town and can find a place where he can get his board or board himself, get along in some way, hire a room perhaps and board himself, or go down to this little cafe across the road, go down there where he can get just as good a meal as you get upstairs and it won't cost him but twenty-five cents--we have that little cafe and we run it at a loss, carry it on at a loss; it runs behind about five hundred dollars every year, and we run that little cafe for the express benefit of people whose circumstances are limited, who can not afford to pay our prices here at the Sanitarium. Now, a person can do that, and go across the road, go to the dispensary there and find the very same nurses who give treatment over here, and the very same physicians, and can get the very same treatment, and he can get all those advantages and every examination we know how to make, if he is a poor man and a worthy man, absolutely free. Now, we do not advertise that very much, because if we did we would be stormed. We are doing all we can. Our charity work last year amounted to one hundred thousand dollars, and we were able to pay ten thousand dollars on our debt. We have a debt of eight hundred thousand dollars. It used to be a million dollars. We have managed to work it down a little. This institution has had no endowment. It has simply been trying to lift itself by its bootstraps, so to speak, and carry a big load of charity besides. The institution has done over two million dollars worth of charity since it started, and it has at the present time a million and a half dollars worth of assets on which there is an eight hundred thousand dollar debt. That is our status, and we are trying to work off that debt. I am hoping to live long enough to be able to wipe out that debt. If we had our debt paid, we would charge you a little more than we do now, but we would do ten times as much charity as we do if we could. We want to give the poor man a chance; and

whatever you pay us more than it actually costs us to take care of you, we will guarantee yu that every single dollar of it will go in paying off the Sanitarium debt and doing what we can for the poor. (Applause). I didn't put this question in the box; I don't know who did; but I am glad for an opportunity to tell you a few facts. If any of you have the least bit of doubt in your mindsabout the exactness of everything I have said to you, you are at perfect liberty to go over to the business office there and our polite clerks there will allow you to look into the books and see ex the exact facts.

Q. What is the best state in the Union for a person afflicted with catarrh of the head and nose?

A. The best state is the place where you happen to be; any place is all right, so far as that is concerned. The climate is allright. The trouble is not with the state; the trouble is not with the climate; it is with you. The climate that produces catarrh is the climate of the dinner table. It is the climate that is manufactured in the kitchen. The breeze from the kitchen is the thing that gives you catarrh. It is an infection, and it is not due to climate at all. It is true that climates that are very changeable are a little more difficult for a person with catarrh than a climate that is a little more equable, but at the same time, the more equable climate is depressing when it is warm, and produces a very low state of resistance. I have visited tropical countries repeatedly, and I never yet went to a tropical country that I didn't find a great many people suffering from catarrh, and find a great many advertisements in the papers of catarrh cures of many kinds.

Q. Are bananas good for inactive bowels?

A. Yes, but they should be well chewed or taken in the form of a puree.

Q. What treatment do you prescribe for infantile paralysis?

A. When a child has infantile paralysis a very skilled physician should be called and his best efforts will be required in the child's behalf. There is now a serum that can be injected which is proving very beneficial in

some cases. There is no panacea; there is no one thing that can be done. Generally hot baths are useful, short hot baths to draw the blood into the skin and to relieve the spasms which are likely to occur. The most important thing is to put the child or the patient to bed just the moment the first symptoms are indicated, and to keep the child there.

Q. I have followed the suggestion about taking bran as a laxative, and as a result the bowels move six or seven times a day now.

A. It won't do any harm for a little while, but you better not continue that. After a little while the bowels will become regulated.

Q. Why does a person's face look bad when he feels bad?

A. I met a lady the other day and told her how well she looked, and she immediately looked very sad. She said, "That is what everybody tells me. I don't get a bit of sympathy." She was very sorry she didn't look bad. If an invalid looks well, he certainly ought to be very, very happy. Now, it is a good thing to take courage in the fact that you look well; take courage in that fact and try to bring the rest of the body up to the measure.

Q. Is perfect elimination from the bowels more difficult when vegetable food is used?

A. No, just the opposite.

Q. Is thereany authority for the statement that the human race before the flood did not eat flesh?

A. Yes, you will find it in the sixth to the ninth chapters of Genesis; in fact, you will find it in the first to the ninth chapters of Genesis,--that there was no flesh eaten before the flood. The Lord said to Noah that he should take into the ark"of all food that is eaten, and it shall be food for thee and for them"--for the animals. That is what you read. The Lord told Noah to go into the ark and to take in of all food that is eaten. That would include beefsteak, would it? Now, we haven't any record that he took in a lot of sheep for the lions to eat; or a lot of bugs for the birds, or a lot of goats or pigs

for himself. There is no evidence of anything of the sort. They were shut up here in the ark for a whole year. There were only two lions and only seven sheep. The clean beasts went in by sevens and the unclean by ~~fmx~~ pairs. Just think how many sheep there would have to be for the lions, for example. Suppose the lions had been fed on sheep, they would have had to have at least one sheep a day, and that would be 365 sheep, and a whole lot of hay for them to eat. Just think of it. The ~~argumentx~~ ark would not have held them all, you see, so it is utterly impossible; so we may conclude that nothing but the food which God gave to animals and to men, that you find in the first chapters of Genesis--grass, herbs of the field for the animals, and fruits and seeds for human beings; we find no hint even of anything else having been eaten before the flood.

Q. What fruit is good for one who has excessive acidity of the stomach?

A. Fruits that are sweet, like bananas, sweet apples, and other sub-acid fruits.

Q. Are we and our actions entirely the result of heredity and environment?

A. Chiefly so. Our wills count for something.

Q. What is the cause of nervous indigestion?

A. Nervous indigestion is nothing in the world but chronic toxemia, autointoxication.

Q. What is the cause of numbness in the hands and arm?

A. That is autointoxication, or toxemia, a symptom commonly associated with neurasthenia but really due to this infection from the bowels.

Q. What is the cause of nerve exhaustion?

A. It is simply poison, simply food intoxication--nothing more.

Q. Is exophthalmic goiter curable? A. Yes.

Q. Should a person eat when he has no appetite for food?

A. No, get an appetite. Let me give you a recipe for an appetite, a real good one. Take half a lemon, and just squeeze a little on the tongue slowly

fifteen minutes before you eat. It will start the appetite juice, start the saliva to flowing and will create appetite. Pawlow says that appetite means gastric juice. And conversely gastric juice creates appetite. If you have one you have the other.

Q. What causes flat foot?

A. Weakness of the ligaments of the feet.

Q. What can a person do to increase the motility of his stomach?

A. Deep breathing--nothing like it. Every time the diaphragm comes down it gives the stomach a little jostle, don't you see? So deep breathing is the very best thing in the world to increase gastric motility; and gymnasium exercise, and swimming.

Q. Why should a business man who is not a very heavy coffee drinker and misses his coffee in the morning have a headache?

A. That means, why should a business man who misses coffee in the morning have a headache? Because he is a coffee drinker; that is the reason. And he is in just the same fix as the whiskey drinker; he misses his eye opener in the morning, his toddy--the same thing exactly.

Q. Are there malarial germs in all oysters?

A. No, I don't think the oyster has any malarial germs. I don't believe a mosquito would touch an oyster; so the oyster escapes.

Somebody asked me what I thought of unleavened bread, so I sent for a loaf, and I have made this ball out of the center of this bread to show you what I think about it. This is just what happens when you chew leavened breads and swallow them. The crumb forms itself into little bullets, and when they are swallowed into the stomach, they are difficult indeed to digest. Unleavened bread such as granose biscuit or rice biscuit is the best bread in the world.

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RACE DETERIORATION

A Stereopticon Lecture at the Sanitarium Parlor, Battle Creek, Mich., Thursday, July 27, 1911, at 8:00 P. M., By,

J. H. Kellogg, M. D.

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Ladies and gentlemen: The most important question for you and me to consider at the present time is the question of health. I scarcely need to tell you that. That is what has brought you here. Some of you have come hundreds, some of you perhaps even more than a thousand miles, in order to devote yourselves for a little time to the study and the cultivation of health. Health is somewhat like an exotic plant; we have to take a great deal of pains with it, especially when it has begun to dwindle away, to disappear. This is a sort of university of health. You heard last night from Dr. Riley, who gave you some very interesting and practical information about the felicity of cure, and the method by which sick people are cured by such simple means as water. I am going to talk to you tonight about some other things which I think have a strictly practical bearing upon the question of producing disease. When we get well, we want to keep well. It costs a great deal, you know, of money, it costs a great deal of time and it costs a great deal of effort to recover health, but when we have once recovered it, we ought to make a most earnest effort not to lose it again. The man who has never lost his health can hardly appreciate its value, but when one has once been ill he knows how to appreciate the value of health and certainly he ought to make every possible effort to keep it. Now, one thing that is very remarkable and well worthy of notice in relation to the statistics which are gathered by the United States Census Bureau. You know they have down there a large bureau of clerks hard at work all the time gathering facts from all parts of the country; they have observers and assistants from all parts of the United States, and they get this great mass of facts together, and

and they occasionally send out a volume, but very few people ever look into it. I find these volumes of exceeding interest. I study every volume that comes with a great deal of interest, and a great deal of care. If you should see the big volume of mortality statistics, the last one sent out by the Census Bureau, that I have in my office, you would find it well thumbed, and you would find it marked all through, checked, leaves turned down. When a new copy comes along, I take it to bed with me, and work at it at night, and the first thing when I get up in the morning, and I work at it for weeks and weeks to see what diseases are gaining ground. I found in it some very interesting things. I am going to tell you tonight some of the things I have found in the study of this book.

I found for instance, in the study of heart disease, that from 1900 to 1905 an average of forty thousand people every year died of heart disease. In the year 1905 44,000 people died, and in the next year 53,000, the next year 59,000, the next year 60,000, and in the year 1909, 65,000. So heart disease, you see, is increasing at an enormous rate. Look at this increase--in a few years an increase of more than fifty per cent. That means that our chances of dying of heart disease are improving very fast, that we are a great deal more likely to die of heart disease, that now we have fifty per cent more chances of dying of heart disease than we had five years ago. If it keeps on at that rate, we won't have any chances of not dying of heart disease. Angina pectoris is a peculiar form of heart disease that is very fatal, and very painful. A person who suffers from this disease has a pain in his heart when he takes a little exercise. When he is sitting still, he is perhaps perfectly comfortable, at first, in the early stages of the disease, but as soon as he begins to exercise, there comes a severe pain in his heart, and he has to stop; his lips get blue, he is short of breath, can not breathe, has most terrible agony, and some day he gets an attack of that sort and it carries him off. Dr. Riley told you last night about the effect of cold over the heart, how it controls the heart and strengthens the heart. If the man who is suffering from angina pectoris

had known that early enough, he need not have suffered from that disease, provided he stopped cultivating it. The average number of persons who died from this disease in 1900 to 1905 was two thousand; the next year it increased to 2281, next to 2700, next 2900, and in 1909, five years later, it was 3481 which is an increase, you see, of nearly sixty percent; it is really an increase of nearly two thirds in five years. That certainly is a most terrific advance.

And what is true of this disease is true of other chronic diseases. There is no chronic disease that is not increasing at almost as rapid a rate. The mortality from chronic diseases has doubled in 29 years. At the present time heart disease, liver disease, kidney disease, apoplexy and diseases of the arteries carry off 750,000 people in the United States every year. Half of all the people who die--1,500,000 people die in this country every year, and half of them die of chronic diseases; and half of those who die of chronic disease today would not have died thirty years ago, would not die today if we were as healthy as we were, as our ancestors were thirty years ago.

"To be a good animal is the first requisite to success or health. And to be a nation of good animals is the first condition of national prosperity." That is what Herbert Spencer said, but he was not a good animal himself, so he died early. In his last years he was obliged to go out in a boat and row for hours in order to get himself into condition so he would work an hour or two; then he had to row and row and row again. He had neglected to exercise until he had gotten to the point where he had to exercise to live, and had to devote almost his whole time to it, and was able then to accomplish very little. It pays to be good to ourselves. It pays to take care of our bodies. Our bodies are machines, and they require care. The man who has an automobile and does not take care of it, it very soon goes to pieces. Our corpomobiles require the same sort of nice care that the automobile requires, and even more.

Now, see how diphtheria and croup have diminished, have gone down. In 1880 the mortality was 11.2 per ten thousand, deaths, and this has goen down

to 2.2. Now see what an enormous improvement there has been, what a wonderful improvement. In thirty years there has been this marvelous gain indeaths from acute diseases; but at the same time chronic diseases have been going the other way. Mental diseases have been increasing at a tremendous rate, increasing in men and in women. The mortality from some special diseases here, general paralysis, alcoholic diseases, 19% and 17% constitute respectively of allthe mental diseases of men. And some other forms of mental disease have 63.5%; and in women from these two causes the mortality is not so great, not nearly as great, because womeh do not drink as much whiskey as men do, and do not dissipate so much as a class and consequently they do ot suffer from the same forms of paralysis. The number of peop e who die from acute diseases every year, needlessly die, is something awful to contemplate. The number of people who die from disorders of degeneration, heart disease, and disease of the arteries, disease of the kidneys and liver disease equals the entire population of the city of Indianapolis. Think of a whole town being blotted out by just one class of diseases, every year, in the United States. Tuberculosis kills 126,000 people in the United States every year, as many people as live in the city of Wilmington, N. J. 88,000 die of pneumonia every year. Accident kills 85,000, cancer kills 67,962--an awful disease, destroying one out of every eight women who die over 45 years of age. In fact, in the year 1905, every seventh woman over 45 years of age who died died of cancer.

Every fifty seconds, a life is lost from preventable cause. A few years ago Dr. Gould, of New York, also Prof. Irving Fisher, of Yale, the great economist, made a study of this question of the cost of death and sickness, and he found it amounted to three billion dollars a year. Reckoning the average life as worth only $1700 and adding to this the cost of sickness, it was found that the actual cost of death and disease in the United States every year is not less than three billion dollars. That is a tremendous sum. That is more than half as much as the combined national debts of the world.

Now, if we look into the cause of this terrible mortality, we find abundant reason for this increase of chronic disease, at least in the increasingly vicious habits of the people, the increased consumption of tobacco. Just think of it,--ten pounds of tobacco consumed per capita by every man, woman and child in the United States. Every man, woman and child on an average uses ten pounds of tobacco a year. That amounts to six drops of nicotin every day for every man, woman and child--six drops of nicotin a day, and that six drops of nicotin is enough to kill ten men and fifty cats. Itis deadly, nicotin is deadly, and the tea and coffee,we are using tea and coffee enough to furnish every man, woman and child in the United States six grains of caffein per day. That is a medicinal dose for a man, and a deadly dose for some smaller animals. Then there is the alcohol,-356 grains of alcohol, three fourths of an ounce of alcohol, pure alcohol, is swallowed by every man, woman and child in the United States on the average. That is the amount that is consumed. It is three quarters of an ounce of pure alcohol. That would be a deadly dose for a small boy, so the whole population is poisoned, so to speak, the race is being poisoned. If there are some who do not use these poisons, there are others who use such a large quantity of them that death occurs much more rapidly.

And these degenerative conditions are transmitted. Now, this shows how this may occur. Rheumatism and pneumonia, uremic poisoning and tuberculosis--these two families,--a boy, a member of this family, married a member of the other family--two pathological families, and the result was rheumatism, rheumatism, rheumatism. Every child in the family had rheumatism. They simply were weak organisms. And we have this illustrated in a great number of ways. This gives us the law of heredity, and you see the reason why. A black eyed man marries a blue eyed woman, and all the children have brown eyes, invariably so. That is the law of heredity. A man whose father and mother both had black eyes has black eyes, and he married a woman who has blue eyes who had a father and mother both with blue eyes; then the children will all have brown eyes. Now, if a

brown eyed man marries a brown eyed woman, they have four children, one will have black eyes, one will have blue eyes, and two will have brown eyes. That is the law. Now, you look that over in your own families, among your friends, and it will enable you to account for the variations in families. You never saw such a thing as all the children of a family having brown eyes when they have a father with brown eyes and a mother with blue eyes, or the reverse. If the father and mother both have brown eyes, the children will some of them have blue eyes and some of them will have black eyes. Half of them will have brown eyes. Now, you see what this means. Suppose this mother has tuberculosis, a tuberculous constitution, then three of the children of the third generation will be influenced by this condition of the mother. In the first generation it could not appear. Every one will have the imperfection, but it might not appear, but in the second generation it will appear, it is sure to appear. And the others will have the power of transmitting that weakness. Blue eyes and black eyes are simply signs that are hung out of the entire physical condition. If a woman has blue eyes, everything else she has will go right along with those blue eyes in the heredity which follows it. If a man has black eyes, everything else he has will go right along with those black eyes; or brown eyes wherever they are found, the characteristics of that man will go along with the color of the eyes. It is simply one of the items which make up the physical peculiarities of the man. So you see this is the law of heredity, it is Mendel's law worked out by an Austrian monk nearly half a century ago. It was not accepted at first, but it has been carefully studied in the last few years and experiments made with rats and guinea-pigs, and observations made upon human beings, and it has proven to be absolutely true. It is a scientific fact.

Now, you see what happens through the operation of this law when people who are related marry. Here, for instance, was a man who married his cousin, and the cousin had a brother who was insane. See what happened. All the children were defective,--paralytic, nervous, demented, insane, idiot, suicide, and so on.

Now, it is evident in this case that both had this defect in their blod, in the family. Here is a thing that the study of heredity has brought out. Sometimes it is said a boy is a chip off the old block. That is perfectly true, but the old block does not mean the father block nor the mother block; it means the family block. He may have characteristics entirely different from those of his father; but in every individual all the characteristics that belong to the family block, to the line, all that the ancestors have, and that were found in the uncles and aunts and cousins away back, and all the grandfathers and grand parents away back,--these characteristics are all in us. We are a sort of kaleidoscope--whatever sort of picture turns up depends upon the last turn of the kaleidescope, so to speak, so we are chips off the family block.

Now, here is another case. An imbecile man married an insane woman. Of course, he must have been an imbecile or he would not have done it; and the result was one insane and four imbecile. Now, this insane woman was crafty enough to catch another imbecile husband, and they had eight children, all imbecile. That is the way heredity is transmitting feeble-mindedness. There has ben a recent study of this subject down in New Jersey, and it has been found that within one single generation feeble-mindedness has doubled in New Jersey. If we should look the rest of the country over as sharply as ~~xxxxxx~~ New Jersey has been looked over, probably we shall find just as many; if not the same defect, a tendency coming on. At the present time one person in every 520 in New Jersey is feeble minded. That is a terrible thing to contemplate , at least; the proportion of feeble minded is increasing; it is not diminishing. Now, I am sure that anybody interested in domestic animals, in horses for instance, can recognize the marvelous improvement there has been in horses in the last forty years. I certainly remember very well in my boyhood we used to see a great many scrub horses, poor old plugs, as they are called, going about the streets. We don't see it any more. Go out in the country, and you see farmers have good looking animals, fine animals. The farmers have improved our horses,

and eliminated the poor specimens of horse flesh; but while this improvement in horses has been going on, and improvement in cows, improvement in oxen, improvement in poultry, improvement even in pigs--the pigs are finer than they used to be, and fatter, bigger. Cows at the present time give more milk than cows were ever known to give before. Chickens lay more eggs, and pigs take on fat more readily, and sheep produce finer and larger quantities of wool, and we have draught horses almost as big as elephants,--enormous great creatures of tremendous strength,--and running horses and trotting horses that are fleeter than any horses the world ever heard of or knew anything about before; and yet all this time, while all these domestic animals have been improving so rapidly, man himself has been going steadily, steadily, steadily down.

Why, over in England the decay of the human race has been so rapid that it has been necessary to lower the standard of height for admission to the British Army six and a half inches within forty years. At the present time a man only five feet tall to be admitted to the British Army. They were compelled to do it; they could not keep up their number in their army by any other means. And at the present time, notwithstanding the lowering of this standard to five feet, notwithstanding that, the number of rejections is just as great as it every was, just as great; and the rejections are rejected because of deficiency in these very particulars in which the standard has been lowered. Seventy-one per cent of all the people who apply for admission to the British Army are rejected because of physical deficiency. So we see there is a very great decay going on, and this is true not only in England, but in France and in every other civilized land. This decay has in part due to germ diseases that we have no business to have, that we cultivate, that we invite by reducing our powers of resistance; although these germs, as Pasteur says, ought to be destroyed, to be eliminated from our environment.

"I hope to see the time when the increased efficiency of the public health service, federal, state, and municipal, will show itself in a greatly

reduced death rate. The federal government can give a powerful impulse to this thing by creating a model public health service and making our national capital a model sanitary city." That is what President Taft said some time ago in relation to a bill proposing to establish a national health department. Ihope every person who is here that has any influence with a congressman or a senator will use it in behalf of this national department of health. There is nothing needed so much in this nation at the present time. We are losing more because of inattention to this thing than through any other source. We are getting interested in the conservation of our national resources--of coal, and of forests, and of water power, and of other things; but there isn't anything in which the importance of this conservation effort is so great as in the conservation of the national health, and conservation of the national vitality. There are so many things that have been discovered within the last few years in relation to the preservation of health, and the opposition to disease that the common people do not know anything about; so many facts that have been developed by laboratory research that are simply hidden away in the musty tomes of society reports. It is necessary we should have a department of health that will try out and test all these new discoveries, and bring them forward to the public notice.

"Of the enormous total expenditure authorized by Congress last year, amounting to one billion 122 million dollars, only 1.3% was used for the protection of the public health." An enormous amount was appropriated, one billion 122 million dollars, and only 53 million dollars, or 1.3%., was used for the protection of the public health. The public health is the most important of all, the greatest question that could possibly be considered by our legislatures.

"The public health is the foundation on which reposes the health of the people and the power of the country. The care of the public health is the first duty of a statesman." That is what Lord Bacon thought about it; yet we do not hear very much said about it. It is a question with us that is almost entirely ignored in the halls of congress. There is great opposition to

this proposed department of health,and the opposition is coming especially from an organization calling itself the league of medical freedom. Probably the most of you do not know that this league of medical freedom that is inducing congressmen to make speeches and to connive in every possible way against this national department of health is made up of people wo are fighting against health, whose business it is to prey upon the health of the people of the United States, at least to a large extent,--patent medicine manufactures are the people who are financing it and chiefly interested in it. Christian Scientists are something interested in it. They think we ought not to have a national department of health. Why? Why, there is plenty of reason why the Christian Scientist should oppose it; because if the Christian Scientist had his way, we would not have any boards of health; we would not have any health officers, we would not have any quarantine laws; we would not have any instruction to the people against germs, the people would have no instruction about disinfection, because the Christian Scientist says there is no such thing as disease; there is no such thing as diphtheria, it is all imagination, all in your mind; there is no such thing as germs; germs are purely and simply figments of the imagination, and the proper way to deal with the disease is simply to ignore it, to ignore small-pox, yellow fever, and all these other things. That is the Christian Science idea, so the Christian Scientists naturally do not want to see any increase of boards of health. Down in Ohio sometime ago a Christian Scientist had an outbreak of diphtheria in his family and would not allow a doctor to be called because he was going to ignore the disease and to treat it by Christian Science methods, which is simply by ignoring or by denying, by insisting it did not exist. The baby died in spite of the Christian Science activities, and the health authorities stepped in and the man was put on trial for manslaughter. He permitted his own child to die, and would not allow a physician to come in; no steps were taken to save the child's life; so there was a trial for manslaughter, and I saw the report of it in the papers. The Christian Scientists are becoming a little wary; they find

the boards of health are an annoyance to them and theywould like to have the boards of health got out of the way, and do not want any more. So they are naturally ppposing, not as a body but many of them as individuals,--have joined with the promotors of this league of medical freedom. The league of medical freedom means simply that all laws regulating medical practice should be abolished, and that any charlatan should be allowed to start out and prey upon the ignorance of the people, to preay upon the credulity of men and women who have never learned anythig of medical science and hence can be readily imposed upon. There probably isn't anything in the world ~~thatxpsaplexknowxlaxxxxf~~ of the intricacies of which the people knowless than upon this subject,--the intricacies of modern medicine. Medical Science has advanced so marvelously in the last twenty-five years that it is impossible for anybody to know anything about it unless he has made a careful study about it. When a man starts out with some cure-all and avertises it widely, he can easily get a following. Up in Minnesota there is a man now traveling from town to town announcing himself as from Battle Creek, treating people by the Battle Creek method, and he tells people he was for a time connected with the Battle Creek Sanitarium, and that he was here a long time as a physician, and that now he is traveling around, so that the people have the benfit of the Battle Creek method. He gets the people to pay him twenty-five or thirty dollars apiece, and then he sends them some medicine, or pretends to, and goes on to fool the people of the next town. We are trying to have him stopped, and I think the next time he gets to a certain town, he will be arrested and put on trial. We have some lawyers up there watching for him; but the people are so easily imposed upon. That is the difficulty, and we must have laws that will prevent such imposition. Doctors possess superior knowledge which men who assume the prerogatives of the profession, without having any qualification for it, are likely to employ in imposing upon the public.

Now, notice how the death rate per thousand from all causes of death in the United States has decreased. In 1880 it was 24, in 1890 20.8, in 1900 17.6, and

and in 1908 it was 15, a decrease of more than one third, and you se that looks as though we were getting better. "Does that agree with what you have been telling us?" This decrease has been brought about almost solely by saving lives that were formerly sacrificed by diphtheria, scarlet fever, and other degenerative and infectious maladies, and a great number of lives have been saved by learning how better to care for infants.

About one fourth of all babies who die, die in the first year of their lives. Here are two columns which represent the proportion of babies that die in the first year, those who are breast fed and thos who are bottle fed. Now, babies that are breast fed, brought up in a natural, healthy way, only seven per cent of them die, one in fourteen that is, die in the first year of life; but babies that are bottle fed, half of them all die the first year,--half of them die. So you see this great mortality of infants is due almost exclusively, almost entirely to the fact that they are not nursed by their mothers, but are fed with cow's milk which is often a very deadly thing for babies,--from a bottle.

Now, another reason for this increase in chronic disease is because we do not chew, because we do not use our teeth properly. Here is a jaw that has the proper number of teeth and properly used, and these teeth ought to remain sound as long as a person needs them. This shows the consequences of the neglect tochew in consequence of which there is early decay and loss of the teeth. In Hungary where wheat bread is eaten principally, most of the bread is made from the whole wheat, and a large part of the food consists of simply boiled wheat that has been dried in the sun and ground up so the whole wheat is there, where the habits of the people are simple, we find the longevity is at its maximum. We find in Bulgaria one centenarian in every thousand people. This tree represents Bulgaria, if you please. This is death at the top. The diminishing longevity is due to the decay of the arteries, gradual degeneration of the arteries, and of the vital structures of the body

which are supplied by these arteries in consequence. Now, this decay is least in Bulgaria. In the United States we have one centenarian in every 25,000. You see the tree shows a few more dead branches. In Spain there is one in forty thousand; in France one in 190,000, in England one in 200,000, and in Germany ~~and in 250,000 only~~ only one in700,000. There are less than eighty centenarians in all Germany, a country with 55 millions, and only eighty centenarians. We have four thousand centenarians in the United States, so we are better off than Germany. We are a younger people, and that is one reason. And another evidence of this decay is in the destruction of the teeth.

There is the jaw of an old Indian whodied hundreds of years ago--nobody knows how long ago. He was a Mount Builder, and this skull, that I have in my office, was found on Roberts' Island, in San Francisco Bay. That shows the lower jaw, and you see how those teeth were worn. They are worn down almost to the jawbone and yet there is no decay. I had these teeth examined carefully by a dentist, and he assures me he could not find the smallest symptom of decay. Not long ago an English commission was appointed to study the question of race deterioration in England, and Prof. Cunningham, the great authority on anatomy, testified that the teeth in skulls found in what they call the plague pits--large pits in which the bodies of the plague victims were buried during the great plague in Longon a few hundred years ago--that the teeth of these plague skulls were far inferior to those in skulls found in caves, like the Heidelburg jaw, for example, but he said these plague pit skulls showed teeth that were very much superior to the teeth of the present day; so there has been a very great decay of the teeth in the last 200 years.

Now, here is a picture of the Heidelburg jaw which is supposed to be 170,000 years old; and you see how perfect the teeth are. There are eight in half of the jaw, and that multiplied by four would give us 32 teeth; and you see the wisdom tooth is just as large and fine as any of the others. Now, I suppose there are very few people here that have their wisdom teeth. If you

ever had them they made you lots of trouble, decayed early and made so much trouble coming in that the dentist perhaps had to pull them out, or dig them out in some way. The large molar here has disappeared, and the incisors are disappearing; we are losing our teeth. That is one of the evidences of decay. Note this massive bone here. That means massive muscles, and this man must have had muscles two or three times as large as those which we find at the present day. He used his teeth, and I have a picture showing the surface of the teeth, which shows that they were well worn, but no evidence whatever of decay.

There are the teeth of a Mound Builder from another skull which I have. This was an old man and the teeth are greatly worn, yet perfectly sound. Here is another view of the Heidelburg jaw. You see these teeth were worn far down. There is some evidence that some of them had been broken a little, but not the least evidence of decay or erosion resulting from the action of germs; and not only plenty of room for the wisdom teeth here, but room for another tooth; whereas in our jaws, or in the modern'man's jaw there is not room even for the wisdom teeth; the jaws are diminishing in size because the teeth are undergoing decay.

Here is another view of the Mound Builder's teeth, and you see they are fine, sound teeth althugh greatly worn, and evidently belonged to a very old man. We are losing our teeth because of the general deterioration of our bodies and the neglect of mastication.

Here you see the face of Brillat Savarin who was a very eminent French judge who at the time of the French Revolution was obliged to flee to this country to save his life, as he was suspected by some of the authorities that he had not favored them in his judicial decisions, and he lived in New York and thereabouts for some years and wrote a very interesting book, and he was one of the first men in modern times to emphasize the necessity for chewing. Mr. Horace Fletcher who has been agitating the question of mastication, thorough chewing of food, has introduced a sort of renaissance of this reform, and has accomplished a great deal of good; but Savarin was perhaps one of the first to philosophize

upon the subject, to emphasize it and urge it. His very interesting little book upon the subject I have in my library. Mr. Fletcher has renewed the discussion in recent years, and an enormous amount of goodhas been accomplished by his efforts. He has shown that by carefully chewing the food the nutrition will be perfectly regulated; youwill know how much to eat, and know when to stop if you take pains to masticate the food with sufficient thoroughness; and Mr. Fletcher himself was rejuvenated,--from being a man who could not get life insurance, although over sixty years of age, he has resumed his athletic activities which he was accustomed to when a boy, but had not practiced for forty-five years, and found himself as well able to perform the stunts as when he was younger. Mr. Edison thinks it worth while to take pains in the mastication of his food; he eats twice a day, lives very frugally, abjures beefsteaks and follows a very low protein diet. He finds it pays well to give attention to the economics of the body as to the careful economical regimen of a machine or a mechanism of any sort. Leonardo da Vinci was another celebrity who gave great attention to the matter of diet. He was a very pronounced vegetarian, who would not allow under any circumstances the introduction of meat to his table, would not allow it on his table, and would not taste it himself and exhorted all his followers and his students in art,--he exhorted them most earnestly to abstain from fleshfoods. He was one of the greatest artists that has lived, perhaps, in the memory of man, and he was as earnest in his advocacy of a natural dietary as in the profession of his art.

Cornaro was another man who fletcherized long before Mr. Fletcher was heard of; so this is not a modern invention at all, but simply a return to old fashioned ways. Here is the face of Tolstoi who twenty years ago thought it worth while to change altogether his habits of eating, to discard flesh foods of all kinds, and adopt the natural dietary. I received some time ago a letter from his daughter which he had asked her to write to me, telling me he was adhering closely to the non-flesh dietary. He was a strict flesh abstainer, and that

he never intended to eat meat. He also expressed an appreciation of the Battle Creek Sanitarium principles afxw with which he had made himself familiar through the reading of our jurnal, Good Health. Now, one reason why this degeneracy is coming because of flesh eating is because the flesh does not contain the proper amount of lime; and this is a very positive proof that flesh eating is an unnatural practice, and mmt that meat was never intended to be food for human beings. It does not contain the elements that are absolutely essential for the building up of the body. The body requires seventeen grains of lime per day, according to Prof. Bunge, because it loses that much. A pound of meat contains only one half a grain of lime. The body must hx absolutely have seventeen grains of lime. How are you going to get seventeen grains of lime out of meat? The only way in the world would be to eat thirty-four pounds of meat in one day. You can very readily see that one could not accomplish that; it would take an Eskimo to do that; and the consequence is meat eaters everywhere are suffering from lime starvation.

Some time ago one of the great English surgeons, Dr. Treves, was called to explain to the authorities of the soological garden of London, the "London Zoo" you all know about,--called there to explain to the authorities what was the matter of the lions. The lions were hxing becoming crippled; the little cubs were club footed and crippled, weazened, had ricketts, died early and so on. What was the matter? Prof. Treves made an investigation and found the trouble was with the diet. He says,"What are you feeding?" "Oh, we are feeding the best kind of meat." "Well, do you feed them bone?" "Oh, no, we do not feed them bones; we feed them the best kind of meat." "That is the trouble; feed them some bones." So they got a quantity of bone meal and fed this to the lions and the difficulty disappeared. We have enough lime, you see. People who depend largely upon meat are starving their bones, they are preparing the way for constitutional decay, for early decay of the teeth, and for degeneration in their children, because the weakness which they develop in their bodies when it becomes

general throughout the body, constitutional, is transmitted to posterity. You may cut off a finger, and that deformity will not be transmitted; but when a man injures every cell of his body by alcohol, by a meat diet which deprives the body of an essential element for its building up so that every cell of the body suffers, that defect will be transmitted. That is a thing that will appear in posterity. The potato has very little lime, but wheat contains a large amount, four grains to the pound; and peas contain eight grains to the pound. You see here the reason why fine flour is an objectionable article of food, and fine white bread. A pound of fine flour contains but one grain of lime only, twice as much as meat does, but the wheat itself, the whole wheat contains four grains of lime. The lime is chiefly in the outer part of the grain. That is also a reason why polished rice is not the best article of food. If eaten at all, it ought to be associated with other foods which contain a considerable amount of lime.

Somebody has prepared this miserable cartoon. I hesitated about letting you see it, but it got into the pile, and so it came along. It is intended, I suppose, to impress upon the mind the fact that bologna has a pretty miscellaneous origin. If I were going to eat sausage, I think I should call for genuine swine sausage, or pork sausage. I should then have it fried until it was crisp, and then I should want to have it disinfected with carbolic acid or something else, then I should want it cremated, and then I would consider whether it was worth while to eat what was left. But Bologna sausage is very miscellaneous. There is no doubt but what the flesh of dogs, cats, and other animals is a constituent of bolognas. It has been proven to be the case in Germany. In Germany bologna sausage is generally made from mules, donkeys and horses. Over in San Francisco some time ago a man got a great reputation for his bolognas, they had such a fine flavor everybody wanted them, and they took first prize at a food exhibition. The people of the neighborhood were disturbed some time afterwards in the small hours of the morning, about three or four o'clock, they were very much disturbed by a great caterwauling of numerous cats that

were being brought down the street, and some of the people looked out the window and found a lot of boys coming with bags, between three and four o'clock every morning, and on investigation it was found these boys were bringing in cats to thi s sausage maker, and it was very soon discovered why his sausage had that peculiar flavor which had given it first prize. A small boy said to me today he was very fond of chicken, he was sorry he could not get some chicken, and his mother said he told her the other day that he was homesick for a chop. So I brought this picture in for the benefit of the little boy. This represents a boy's dream, and it is said to have been an actual dream. The boy dreamed the turkeys roasted him and ate him, and after that he was doubtful whether he had an appetite for roast turkey.

I want to announce that the outdoor gymnasium where you had the entertainment this afternoon will be ready for men to use tomorrow. The lower part of the dressing rooms will be ready to use, and the water will be warm and ready, and in a few days I hope the whole gymnasium will be in operation. Then the ladies will be able, after tomorrow, to have the exclusive use of the ladies' outdoor gymnasium here. We believe this to be a very important part of our outfit, of our equipment here. I hope you all will get the full benefit of it. I hope every person here, while here, will endeavor to get all the advantages this institution affords. When you get away, you will go back to your old pursuits again, won't be thinking so much about health, and I hope some of you will think more than you have been; but while you are here, make a business of getting well; get all the health you possibly can get, and when you get out into the wicked world again--this is a sort of sanitary heaven where you are protected against the temptations of the world. When you get out into the world, you will be likely to backslide more or less I am afraid, and you want to get your resolution fortified for this. Hang on to what you learn here, and when you go back it won't be so hard to hit up against the great tide of degeneracy that is setting in toward destruction all around us.

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v-7-28-11.

LECTURE 35.

July 31,1911.

L E C T U R E 35.

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QUESTION BOX LECTURE

At the Sanitarium Parlor, Battle Creek, Mich., Monday, July 31, 1911, at 8 P.M.

By,

J. H. Kellogg, M. D.

Lecture 35

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Q. Please give one kindxa diet for a person with consumption who has no appetite at all and what kind of exercise and how much should such a person take?

A. W ell now the appetite for tuberculosis or consumption, that is really a very practical question, and I am glad some one has asked the question, because there are so many popular errors in relation to this. And one of the first and one of the most pernicious is the idea that beefsteak is very necessary for a person who has consumptin; that a meat diet is very important. Now, I see some of you smile, and you say, "Oh, that is os of Dr. Kellogg's fads." Not it isn't because it is a fad that I am speaking to you about it, because it is not a fad. What I am going to say to you I am going to say only because I am afraid somebody else won't say it if I don't, and it isn't worth while to be talking things everybody else is saying; it is not at all worth while to be saying merely commonplace things that everybody else knows. If we don't say something that is worth while, something that won't besaid if we do not say it, it isn't worth while to talk is it? So I am saying so many things about meat eating mmix particularly because I am afraid this is the only place you will hear these things. When you go home yu will hear so many things on the other side, and I want to get you converted and prepared to fight the battle in beahfl of reform,of return-to-nature. We are dying, my friends, dying, just as certainly going down to race extinction, just as certainly as the sun shines; and people are finding it out. At the last meeting of the Michigan State Board of Health, the Board appointed a special commissioner to study the question of mental degeneracy, of feeblemindedness in the State of Michigan You see states are

taking it up--other states besides Michigan. In New York they are going crazy so fast they are really getting alarmed about it. They have got thirty thousand insane people shut up in the asylums in New York state besides as many more that they haven't caught yet. In New Jersey they have got one feebleminded in every 250 of the population, and we want to find out how many there are here in the State of Michign, so the State Board of Health has appointed an inspector to go around the State of Michigan and see how many of our people are feebleminded. There are a good many more than will appear on the records, I am sure. Galton, you know, the great English professof or eugenics, the man who coined the word "eugenics" and founded the school of eugenics that has attracted so much attention throughout the world from so many people,--Galton said that degeneracy has gone on to such a degree that at the present time the average man is little above the grade of trained idiocy. Now, hat is a pretty serious thing. Galton said that the average man is only a little above the grade of trained idiocy. When you stop to thik of what you can train a horse to do, and what an imbecile or a feeble minded person can by patient training be trained to do, then just go the whole world over, the civilized countries and see what the average man is. The average man is not represented by the average people in this room by any means. The average man is on a good deal lower scale. The average man is the man that goes out and digs, digs, digs, digs all day; or that stands at a machine and holds a tool in his hand all day long and does one thing over and over and over again, lives a thoroughly monotonous life--it is enough to make him an idiot if he was not one at the start to live that sort of way. It doesn't require a very high grade of intelligence to do the world's work today as it is done today as it did several centuries ago when there were ~~less~~ fewer mechanical appliances. Now this degeneracy is the result of wrongdoing in some way, and I am doing what I can to cry aloud and to warn my fellow men of what seem to me to be terrible dangers that are being incurred for the race and for us as idividuals. I have suffered myself and I have been delivered, so I know what I am talking about.

And I am glad to warn other people, and anxious other people should be warned. I don't expect to live 120 years, but some of you might live that log. The boys and girls coming up now can just as well live 150 years or 120 years as not. You can hardly find a person suffering from any chronic malady but if you look into their history, inquire into their live that yu can not see readily has thrown away a large share of their strength, vigor and vitality that they originally inherited--thrown away a large share of it. There isn't any question about it--the average business man doesn't use himself up in business. It is not business that wears him out. The average politician,the great men of the nation that are dropping out every little while--when some greatman falls it is not the great work that he has done that kills him; it is thebig dinners that have killed him; it is the abuse of his stomach and nerves, and his physical neglect that have killed him. Some of you were in at the gymnastic exhibition the other evening and saw those young men wrestling; you saw what marvelous power they had in thir bodies, and they seemed to be almost like human eels--wonderful power in their muscles. You saw some performances on the apparatus. I envied them. I said to myself if I had the power those young men had, I should consider it the biggest thing that could be offered me. If I possessed the power those young man have, this strength of body, vigor and vitality,--it is the greatest blessing a person can possibly have, the greatest treasure we can possibly have, yet how we throw it away. Any of you sitting here can look back in your lives and see that you have squandered your vitality and vigor and thrown it away. You can not get it back again. All you can do is to possibly is to take care of what you have got left, and make it go just as far as it will, what you have left, and that is what you are here for--to see while you are here how to make what you have left go just as far as possible. I got a letter this morning that did me good. A man wrote me and said, "Doctor, eighteen years ago I was at Battle Creek, and I learned some things, and if I had not learned those things, I know I should have been dead or in an insane asylum, but today I am well. I am

74 years old, but I am in perfect health nevertheless." He was 56 years old when he came here, and yet, although he was just about ready to die, he improved sufficiently by adhering closely to the principles of the Battle Creek Sanitarium, and has steadily improved in health, and now, at 74 he finds himself in pefect health, and with a good many years to live ahead of him, and enjoying life every minute. Now, he would have been dead, ~~he would have been dead; he had to~~ if he had not changed his habits of life. I was out in the outdoor gymnasium this morning, and I met a man lying down on the bank and I think he had just the complexion of Adam. He was not bleached white as though he had been whitewashed; his skin was a dark, rich brown color. I don't know but I could see him around here somewhere as I look about, but I won't ask him to stand up. Well, I said as I saw this gentleman with the nutbrown color, I said, "If you go traveling in the South, yu will have to have a certificate of your parentage I am afraid." He uncovered a portion of skin and said, "Well, I keep that little spot to prove I am a white man." He was so brown. Now, that man stood up to show me how well he was. He was in fine health. "Doctor," he said, "I came here three years ago and I was not worth anything then; I wasn't worth anything. It looked as though I could not live very long; and I have been sticking right to this thing for these three years, and here I am and I am in fine condition, and I am here just to put in a little more work at this thing and get a little more out of it." Why, my friends, nobody ever gets to the bottom of this thing, nobody ever gets all they can out of this thing. The people who come here only get a little taste of it; they stay here two or three weeks, feel a little better, think they are not going to die right away, and go back home, drift into their old ways, think, "Well, if I get sick I will come back to the Sanitarium after while and get well again." Don't be too sure about that. Nature is pretty hard on backsliders and doesn't have much patience with them. ~~When a person has sinned presumptuously~~, the sin of presumption is an awfully bad thing. When a man sins against life, nature seems to be pretty hard on him. I want to say to you that a man who comes here and gets a start the

first time better improve that opportunity and work it for all it is worth; then keep right on working it after he gets home. Now, I am not anxious you should stay here a long time. I am anxious you should ~~mak~~ stay long enough to get thoroughly converted and to get a god start, and I wish everybody who came here would do that, because I would feel that we were accomplishing so much more. It is a very heartless task, don't you know--it is a very discouraging task to go on year after year and feel that you never but once in a great while had the chance to do your best. Suppose a painter always had to stop his painting before he finished his picture; suppose a shoemaker had to give up his shoes before they were quite done; suppose the dentist had to let his customer go before he quite got his teeth finished, before he got the work done, and always had to feel his work was left imperfect. Just see what an embarrassment that would be. Suppose you should hire a contractor to build your houe for you, and when he got the roof about half enclosed, you should say, "Well, I have got to go into the house right away; I can not wait any longer", and you drive him off. Why, you could not hire him again. He would say, "I won't build a house for you again; I am ashamed of my work; I want to finish my work so it will look well and proper as a good representation of what I can do; so I will have no reason to be ashamed of it. Now, here my friends, we have to feel almost every time a man comes here and goes away--feel ashamed of that work; we haven't done much for him, just got him started, just given him a little boost, just a little, and pretty soon he will be right back where he was, and we won't have anything really to feel proud of; we can not feel that we have really accomplished much; but my friends, if we could keep you here long enough, if I could speak to you here in a sufficiently convincing way, so as to get you converted to the error of your ways and to really abandon all your sins, get you down on the anxious seat, as our good friends the Methodists do, and get you to repent and turn away from your old ways, and make you converts, not to me or to the Battle Creek Sanitarium, but converts to good old Mother Nature, and to Mother Nature's ways of living,--if

we could only get you converted to that thing, why, my friends, I should feel as though life was worth living, that we were doing something; but as it is, our friends come here and only now and then one has the good sense to work the gold mine until he gets all the gold out of it. Only now and then one gets enough out of it to really accomplish definite and permanent results. But I must stop this scolding and go on to answer these questions. I have been talking thus much in answer to the smile I saw when I said no meat for consumption. It is a most ridiculous idea that a man who has consumption must eat meat; the man who has consumption must consume something to stop the consumption that is consuming him. There is no possible sense in that. Now, as a matter of fact, the majority of people who have consumption have consumption because of meat eating. That is the fact. The American Indians didn't know anything about consumption until they began to live on goernment corned beef, diseased cattle of all sorts put off upon them. Do you know, my friends, that twenty per cent of all the hogs that are slaughtered in this country are found to be tuberculous? Last year there were 35 million hogs killed in this country, and seven million of those hogs were found to have tuberculosis--seven million out of 35 million were found to have tuberculosis, and that is the reason why the price of meat is high, is because animals are becoming so diseased that such a large number of them have to be condemned; that is one reason. The professor of bacteriology of the University of Wisconsin made the statement I have just made to you before the Oregon State Medical Society--the State Medical Society of Oregon, just the other day. I have been studying carefully the government statistics, and I found the government statistics said that about two per cent of all the animals slaughtered last year were found to be diseased; two per cent of all the animals slaughtered were found to be diseased, and that 99% of all the hogs that were diseased at all were diseased because of tuberculosis. Now, we know that two per cent of the hogs have trichine, and if 99% of hogs that are diseased have tuberculosis, it would look as though pretty nearly all the hogs were sick, wouldn't it? but I

think there must be some error in those statistics, because I can not imagine that 200% of the hogs are diseased. It could not be quite so bad as that. You see if two per cent have trichinae, and that is the government report, and if 90% of all the hogs that are sick, that are diseased, have tuberculosis, then 200% of the hogs are sick. Well, I don't believe it is very far from that any way. So when you are chewing a nice piece of fried bacon that is so very nice and sweet and juicy, you think about it -"That is simply a mass of disease; the whole hog is dying of obesity, and if the butcher had not gotten the start of Nature by a day or two, Mother Nature would have taken him off and he would have gone back to dust in the regular way; but now since the butcher has cut his throat and served him up, you say I will bury him in my own stomach and give him a respectable burial." Well, is that respectable? You know Charles Lamb suggested that idea. He said roast pork is awfully nice, isn't it, awfully nice, but then it is so hard on the pig; but after all the pig has a compensation in the fact that he has such a fine sepulchre. Think about that the next time you eat sausage. Now, about consumption. Why is it that meat is not good for consumption? For the very reason that it has something to do with causing consumption in the great majority of cases. Prof. Ehrlich, the man who discovered the antitoxin of diphtheria that has saved so many thousands and thousands of lives,-- Prof. Ehrlich made the discovery that tuberculosis begins in childhood, that the man who dies of tuberculosis did not catch it just the other day, but got it from tuberculous milk, of tuberculous cows when he was a boy, or perhaps a girl; and these tuberculous germs have been lying latent in the lungs all the time. You can examine almost anybody in this room with the X ray and find spots where there has been tuberculosis, if there is not tuberculosis now. Probably there are not half a dozen persons in this room who have not had tuberculosis. We have had it, but we have not been reduced down low enough so that it could get the better of us; but when our vitality is lowered then these germs develop and we come to have consumption. Those are the scientific facts which are now recognized by men

who have given the subject careful study. Now, autointoxication, disease that comes from the putrefaction of dead things in the colon, the putrefaction of undigested fragments of meat in the colon--autointoxication--that is the thing that above all others, except alcohol and dissipation and tobacco--those three things, alcohol, tobacco and a dissolute life--those things are the things above all others that lower the vitality of an individual and which prepare the way for tuberculosis. I saw the other day a man smoking who had tuberculosis, or rather he smelled strongly of tobacco, smelled as though he had been smoking, and I gave him a good lecture on the subject, I tell you. I just told him his only chance to live was to throw away his cigars; and that is the truth about it. Dr. Wright of London some time ago found a man who had consumption and was smoking, with a tuberculo-opsonic index oc zero. Now, the tuberculo-opsonic index is determined by examination of the blood, and by this examination, it is possible to tell the power that a man has to resist tuberculosis. If it is 50, you have got only half the power you ought to have; if it is 100, you are up to par. If it is 120 it is possible that you have had tuberculosis and have fought your battle successfully and are on the safe side. Some people have said that people who did not eat meat would not have enough vitality to avoid tuberculosis; so some time ago I had an examination made of our people here that had been without meat for many months, some of them many years, and some that had never taken it in their lives, and you know I found that they averaged above the normal. The tuberculo-opsonic index was above 100 on the average, and I found one man that had not eaten a pound of meat in 45 years and his tuberculo-opsonic index--here is the man--his tuberculo-opsonic index was 200. Now, when I was a boy I was brought up to believe I was going to die of tuberculosis. I was brought up that way. I was condemned to die before I was 21, and I think people were getting ready for my funeral. When I went along the street everybody looked at me as though they knew I was ill, and I had an awful cough, and they thought I certainly was going to die; people looked at me with long and mournful faces; but

I declined, so I am here, and my tuberculo-opsonic index is 200; so I feel pretty safe notwithstanding the fact that I have not eaten a pound of meat in 45 years. So I am pretty well satisfied that meat is not necessary to save people from tuberculosis. In most institutions where people are treated for tuberculosis, meat is one of the principal articles of diet, and it was supposed that meat was the one thing of all others to fortify people against tuberculosis; so over in Germany three of four years ago, a man conceived the idea of having an institution to treat consumptives where they would not feed them anything but meat, and were going to feed them raw meat, because it was so much better than cooked meat for tuberculosis, and I think the way this idea arose was in the original supposition that dogs did not have tuberculosis. But it has been discovered that is a mistake, that dogs do have tuberculosis; carnivorous animals do have tuberculosis; and this institution that was started to cure people of cuberculosis on a raw meat diet at the end of four months had died of inanition, of consumption, of tuberculosis. The members of the medical profession have been giving this matter thought, and experiments have been tried in different institutions, and at the present time I know of several institutions where no cases except tuberculous cases are received, and where the Battle Creek Sanitarium diet is being given to the patients, if not to all the patients, at any rate to those who are willing to take it. We have had visits here from several men who are themselves in charge of institutions of this sort, and they have come here to study our dietary and have introduced it into the institutions, and they write me that their patients are doing a great deal better than they did on the old meat bill of fare. Some years ago my colleague, Dr. Riley, was in charge of an institution in Colorado that I was somewhat instrumental in getting started, where consumptives were treated in considerable numbers, and a large number of cases were treated there; and Dr. Riley told me that his observation was that every single time the patient backslid and took a beefsteak diet, or ate meat, his temperature went up and he felt worse--every single time. I will show you upon the screen here

one of these days a picture of a man who was a medical student here, who contracted tuberculosis in California, I think, or in the South Sea Islands, then came here and pretty soon it developed, and we sent him away. I never expected to see him again; but he said nothing about it until it had got so far advanced that I thought his case was hopeless. He went out to Colorado, and I saw him six months later and thought I should never see him again. He was just barely able to breathe. He could walk just a few steps at a time, and then had to lie down. I went to Colorado next year afterward, and found him running all over the mountains, and he challeged me to race up the mountain side, and he came out far ahead of me; and the next year I saw him again, in perfect health. He climbed Bear Mountain and came back in two hours and a half I think; he had been climbing continuously as rapidly as he could go, and had worked off seven and a half pounds. He weighed when he got back seven and a half pounds less than he did when he started, so you see there had been some work--of course, largely perspiration; he had reduced his weight seven pounds and a half in that three hours by the vigorous exercise; and he was in perfect health. He came back here, finished his medical education, and now he is in Berlin pursuing scientific studies there, in perfect health. Be became one of the most vigorous athletes I ever saw. He could perform all the feats of apparatus work that some of you saw here the other night, could make the giant swing around the horizontal bar. He could lie down on his back and raise his legs up into the air a thousand times without stopping. He could run twenty-five miles continuously in three hours. He took a fifteen-mile run regularly every day. He never ran less than twelve miles as his regular dose. Fifteen miles running he considered his daily dose of exercise. He didn't expect to get well if he didn't take his 15 mile run. That man accomplished this, and climbed up from a consumptives grave, being right at the very edge of the grave and one foot in the grave; and he never tasted one particle of flesh in all that time, and he does not at the present time. (I think it is one of the greatest delusions in our medical practice that the consumptive must have meat. The high

protein diet is one of the worst things possible for him. When a man dies of consumption, he doesn't die of diseased lungs unless he dies of hemorrhage. It is not destruction of the lungs that carries him off; it is the failure of his kidneys that carries him off. The man whodies of consumption finally dies at the end, not because he has lost lung capacity, but because his kidneys have become worn out and are no longer able to eliminate the poisons which are produced by the germs of this disease. This is the thing that kills the consumptive. Sometimes a man's lungs get well of consumption, and he dies of Bright's disease the next year or two years after, because of the damage that is done to his lungs. Now, a meat diet is the worst thing possible for a person who has diseased kidneysx; a meat diet is the worst thing possible for a man wo expects to have diseased kidneys. It is the worst thing in the world for a man who has a tendency in that direction. There is no physician in the country but what knows a heavy meat diet is the worst thig possible for one whose kidneys are diseased. Then, you see, if a man's kidneys are exposed to an unusual cause of disease, like tuberculosis of the lungs, and a quantity of the poison tuberculin thrown in all the time--a poison that is one of the most deadly poisons known, one of the most virulent poisons known to man is this tuberculin, the poison produced by the tubercle germ, and the kidneys are being damaged by it all the time--under those circumstances a heavy meat diet is the worst thing possible and I am satisfied is responsible for the death of a good many consumptives who do not get well; they are killed by disease of the kidneys that is produced by the heavy meat diet that is given. Now there is another absurd notion with reference to the food of consumptives, and that is that cod liver oil is the one foodsubstance that is specially beneficial to them. There is no benefit whatever in cod liver oil except the fat that is in it. There can be no doubt that good, sweet cream is far superior to cod liver oil. I remember very well the late Dr. Janeway, who was one of my teachers when I was a medical student 35 or 36 years ago, and Dr. Janeway was professor of

materia medica, among other things, at that time. And he told us all about cod liver oil and its wonderful virtues. Then when he got through he said, "Now, there is just one thing more I must tell you about this to be really honest. If you can send your patient into the country where he can get good, sweet cream, it is just as good as cod liver oil and a great deal more palatable." That was 35 or 36 years ago. Well, we have learned a whole lot of things since then; and one of the things we have learned is that the only peculiar characteristic of cod liver oil is the ptomains or germ poisons that are produced in the rotting of the cod livers before the oil has been extracted. That is the only thing peculiar to cod liver oil. I don't think the consumptive needs any of that. Now, about exercise. The consumptive who has too much temperature, whose temperature is high, should keep quiet. If he has a febrile temperature, he should keep still. He can take breathing exercises, but he must not run around, because that will increase his temperature; but he may lie still and take very deep breaths.

Q. Do you think it is better for a person to wear a soft collar rather than a starched collar from a health standpoint?"

A. Most assuredly I do. If any of you gentlemen ever tried it, I think you will be very unwilling to go back to a stiff collar. A soft collar is not so stylish, but it does not choke your neck. I met a gentleman the other day who had a terrible headache, and we discovered it was his standup collar choking him. You see the large veins are in the sides of the neck, the deep jugular and the superficial jugular. Some of the jugular veins are near the surface and you can see them stand out on the neck. The least pressure on these veins will interfere with the circulation of the blood, dam it back into the brain. The arteries are like water pipes--they have liquid under pressure; but the veins are like drain pipes; there is no pressure behind at all--just a drain to carry the liquid back. They are like an irrigating canal. Now, you know how little it takes to stop up a drain pipe. You know how little it takes to dam up

a ditch when the water is flowing; just a little dam will cause the water to stay, cause congestion, and the water will flow back over the land. That is what happens when there is just a little pressure on the veins of the neck, just enough to dam the blood back into the brain and hold it there with the impure blood that ought to be carried to the lungs to be purified, so pressure about the neck is very harmful. I think it is almost as bad as the pressure about the body lower down, and I hope Dame Fashion will pretty soon liberate men from the torture of these stiff standup collars. I do hope that fashion will permit us men to dress as healthfully as women may if they will. Now, as a matter of fact, there has been such progress made in the last 25 years in women's dress that women can, if they will, dress more healthfully than men are permitted to dress by our modern conventional styles. Men must wear suspenders, either suspenders or a belt. Of the two evils the belt is better. I wear a belt. I threw away suspenders several years ago. I find the belt a great advantage. I didn't know how much harm the suspenders were doing me in holding my chest and shoulders down, restricting the use of my lungs, pulling my body out of shape and my shoulders down, keeping me round shouldered--I didn't appreciate it for some time after I threw them away. A belt is something of a disadvantage, but if it is worn low down it does not do any harm. It is when the belt is up around the chest that it does harm. But low down around the abdomen it may be something of an advantage to us degenerated creatures who have lived indoors all our lives and never had a chance to develop the muscles as they should have been developed.

Q. What must one do who has faulty elimination?

A. He must do just one thing--drink, drink, drink, drink--water, not beer, nor wine, nor whiskey, nor tea, nor coffee; just pure water. That is the only thing. Just pour the water in and Nature will take care of it. If you will drink water enough, you don't need to work, you don't need to take sweating baths, don't need to take any kind of eliminative treatment; all in the world you need to do is to drink. All of you might have been cured at home by water drinking. Almost anybody who has chronic disease could have been cured by water

drinking. A glass of water every hour is better than almost any other one thing I can recommend for a person suffering from chronic disease. If you have got patches on your hands, moth patches as they are called, liver patches, a dingy complexion, if you drink water enough you will get rid of them. If we put water into us, it has got to come out somewhere. It will pass out ordinarily through the kidneys or the skin. It is bound to be absorbed if the water is passed down, gets into your stomach, it is bound to be absorbed. Why, I find the average man does not drink more than half or a quarter enough, and the most common prescription I make to the chronic invalid is to drink three or four quarts of water a day. I had a letter today from a young man and he said, "I just called on one of the leading physicians of Chicago." There are not more than three or four at any rate from whom to make the selection." "I called on one of the leading physicians of Chicago" and he said, "I told the Doctor I had neurasthenia. I told him another doctor said I had neurasthenia. He looked me over, and he said to me, 'Stop eating meat; don't you eat any more meat. Eat plenty of fresh vegetables and fruits; drink three quarts of water a day; don't take any more tea and coffee; sleep outdoors.'" Wasn't that a pretty good prescription? Now, twenty years ago this very doctor was laughing at me for telling people not to eat meat. He was saying to people as they came along to him at Chicago, "Oh, don't go over there to Battle Creek; they will starve you." He doesn't say that any more. I met a man today that this same doctor sent here, told him he ought to come to Battle Creek and live on the Battle Creek diet. This man was the brother of a doctor, and the doctor told him the best thing for this young man to do was to come over here and live on the Battle Creek diet, and he told him to live on the non-flesh diet. This thing is getting hold of the men at the top of the profession. There are men at the bottom of the profession that are merely commercial men, of course. There are men in the medical profession who are working it for the money there is in it, and they work just as hard as they can. I am not talking about your home doctor, because you would not employ that kind

of doctor; but there are men who are in the profession for simply what money there is in it and they are not worrying themselves about the welfare of the public or of their patient except so far as necessary to keep up their professional standing; but the men who are high enough up in the profession so they don't have to worry about practice, have all the practice they can attend to, have all the money they need--those men have time to give to this matter thought, and are free from prejudice. Their minds are open so that they can consider the subject, and they are considering it, and this same doctor said not very long ago at a large gathering, he said the drugs of the materia medica do not cure. Drugs do not cure. There are only two or three drugs that cure anything; and he mentioned two or three. Quinin that cures malaria sometimes, generally does--not always, and two or three other drugs that produce specific cures; but aside from that drugs do not cure. Doctors are finding it out. That was a heresy twenty or thirty years ago. Today it is orthodox doctrine, doctrine that every medical man who has been educated in the last few years has had drilled into him in his medical course or after the course--that drugs do not cure, that doctors do not cure, that baths do not cure, that the curative power is in the body itself and what we must do is to co-operate with it.

Q. What is gastrectasis?

A. Gastrectasis is simply dilated stomach. It is a great deal more interesting as gastrectasis than it is simply as a dilated stomach. A man doesn't want to pay a doctor ten dollars for telling him he has a dilated stomach. But if he tells him he has got gastrectasis, it is worth ten dollars to know that. I remember when neurasthenia first came into fashion. A friend of mine lost a patient; the patient did not die; he just lost the patient; another doctor found the patient all right. He told the mother of the patient, a young lady, that she was suffering from nervous prostration. "Oh, Doctor," the mother said, "I don't believe it." She went down to New York, found a doctor who told her the young lady had neurasthenia. She came back and told about the wise doctor

she found in New York who discovered just exactly what was the matter with her daughter and gave her a prescription for it. The old doctor got hold of the prescription, and it was exactly the same prescription he had given her; but the mother was perfectly willing to pay her fare all the way down to New York City and back again, and to pay a $25 fee to find out her daughter had neurasthenia, which is exactly the same thing as nervous prostration, only another name for it. Well, gastrectasis is simply plain dilated stomach.

Q. What should a patient do whose hemoglobin is only .56 to improve his condition?

A. Now, that patient should be followed up closely. He should take sunbaths, should go into the outdoor gymnasium. There isn't anything in the world that will make blood so fast as sunlight. A lady took three puny, pale children to see a great French doctor some time ago. The doctor looked at them a moment--those poor, weazened little fellows; then he looked up at the mother and with a savage look on his face he said, "Roast them, madam, roast them--in the sun." Now, that is what pale babies need--roasting; and pale faces need the very same thing. I saw a line of men lying upon the side of the hill this morning roasting in the sun, and it did me a world of good. What they are getting out there is something a great deal better than anything we can do for them indoors. I don't believe we have, actually, a thing in this whole institution so important, so valuable as the outdoor gymnasium. The last thing I did before I came in here this evening was to post a memorandum in my office, to dictate a note to all the doctors in the institution to tell them that the men's outdoor gymnasium was in use, and that now we have an outdoor gymnasium for ladies and one for men and they are accessible to men and women respectively all day long; and I am sure tomorrow every one of you here will be recommended to make for the outdoor gymnasium and to spend every minute you can spare in the outdoor gymnasium. If I were sick, I would crawl there on my hands and knees to get a chance to get out into the sun and expose my body to the beneficent influence of the miracle-

working sunlight. Why, see what it does, my friends. When the ground is all covered with frost and snow, frozen up solid in the spring, and the rays of this wonderful sun come to shine a little more directly upon us, the snow melts away and pretty soon we see the grass springing up, and in just a few days we will see this brown earth covered all over with a lovely green carpet. Now, that is a wonderful miracle. There is a creative power in those rays of the sun. You know what the Master, the Great Teacher, said years ago--"Let your bodies be filled with light;" filled with light. There is power in the sunlight; there is creative power in it. It is a divine force that is working miracles today and has been all the years. Go out into the vineyard and you will see some green grapes that are bitter and sour. A little later you will find those grapes full of sugar and with the most delightful aromas. That is the wine that has been created in the grape; that is the miracle of turning water into wine. It is a sort of renaissance of the days of miracles; but it is not really a renaissance because it has been going on all the ages, every day of the year this creative power is going on. Now, you go out there and the sunlight strikes upon your skin, but it doesn't stop with your skin. It goes down deep in. When you have a fomentation put on you it is superficial heat simply on the skin, and the top layer only is heated with it, and that heats another layer underneath, and it gradually works down in beneath if you continue the fomentation long enough and have it hot enough. But now you go out and expose yourself to the sun, and the very moment that sun strikes you, it goes clear through you. It is not merely on the skin, but it goes clear through. Our bodies are almost transparent to the sunlight. Hold your hands up to the light when you go back to your room tonight, get your hands up near the globe, and you will see your fingers are translucent; the rays go through. Luminous rays of heat have penetrating power. They go deep down into the body; they stir up the liver, they tickle the stomach and wake things up and set to going the blood-making processes of the body so that this is a marvelous thing--this sunlight. As I said before,

my friends, we haven't a thing in this institution so good as the outdoor gymnasium, and tomorrow I am going in there and try it myself. I think there isn't anything so splendid; and I hope I will find 150 men out there in the outdoor gymnasium. There ought to be 200. I think really there ought to be about 500, for we have a thousand patients here at the present time, and about half of them are men. And I don't know a single one that ought to be excused.

Q. Outline a course of treatment for arthritis.

A. I will just tell you in short. The thing for a man to do who has arthritis is to make a visit to the Battle Creek Sanitarium and to stay long enough to get the disease stopped, to get him well started, then go home and keep right on living that way all the rest of his life. That is just exactly what you have got to do. A man who has had his leg cut off has got to go limping the rest of his life. If he has a short let he has to limp, can not help it; he has got a short leg. Now, the man who has got arthritis has lost something; he has crippled his liver; his kidneys are crippled; his power to destroy poisons is crippled; he has got to take the greatest care of his diet all the rest of his life. Some of you know that Bob Evans, "Fighting Bob" Evans--you know his experience. He was a great fighting man and a great beef eater. You know what Lord Byron said about it: "Man is a carnivorous product; he must have prey." Now, that was his idea about it. We had to have prey. Bob Evans belonged to that class. He ate a great deal of meat, and he got so rheumatic he had to go with a cane, could hardly move around at all. Somebody suggested to him to stop eating meat. He stopped eating meat, and he got absolutely well, and goes skipping about like a boy, and he tells everybody about it. Then there is Chauncey Depew--some of you have heard of him, I am sure,--senator from New York. He belongs to the Montauk Club, and they used to celebrate his birthday, but he didn't come for several years, so they didn't have a celebration;finally he put in an appearance. He said, "The reason I have not been coming here for several years past is because I was too sick to come; but I am well because I have stopped

eating meat", and he told how he happened to stop. He was over at Paris, and sitting at a dinner in celebration of the 100th birthday of that one of the most famous chemists that ever lived, Cheuveril. He had lived 100 years, and there he sat at the table, alive still and bright and active. Chauncey Depew said to him, "Professor, how have you managed to live so long?and still remain so young and well?" He said, "I have lived simply; I took no wine; I used no tobacco; I eat no meat; I live simply." He said it was a lesson to him, and he thought he would try it. He tried it, and in a few months he was entirely free from his rheumatism. You couldn't get Chauncey Depew to eat beefsteak now. Possibly you could if he was with certain company. A man told me the other day he saw him eating a little piece of steak, but he thought he did it for diplomacy and thought perhaps he could stand a little. But it was abstinence from meat, natural living, and return to nature. That is what cured him. You know what happens when the poor horse gets all worn out, jaded, good for nothing pulling cars up and down New York City. Sometimes they take him to the slaughterhouse and make him into sausage, and he makes fine bologna sausage; but that doesn't always happen; he has not got quite so far as that yet. They send him down in the country, turn him loose in a pasture, and in a few weeks he is a young horse again. That is the way with most of us. We are living in stalls--we call them offices,--most of us, and we need to be turned out to pasture, and we make the Sanitarium a pasture. That is what it is. The Sanitarium diet is being turned out to pasture, don't you know. The Good Book says "all flesh is grass", and we all come out of the earth; and when the horse gets back into his native pastures he gets well, and doesn't have to have a doctor, but simply by returning to Nature; so the greatest thing we can possibly do for any of you here, my friends, in this institution is to show you the way back to Nature, to get you into natural habits and natural modes of life.

Q. Explain something about mastoiditis?

A. Mastoiditis is an infection that extends into the cells of the bones

of the skill behind the ear. When suppuration occurs in the ear, it extends sometimes back into the interior bones. The bones of the skull, in order that they should be light, are not solid like ivory, but are full of little cells, and this infection extends into these cells and can not easily find its way out, so it swells and swells and swells and produces terrible pain, sometimes sets up inflammation of the brain.

Q. Where can the old people go to get away from the small boy in the lobby?

A. Well, it is a misfortune to get so old that we are no longer interested in the small boy, and forget that we were once small boys ourselves; yet I am perfectly frank to say that this institution is not the place for small boys to play and to make a noise. We make this a place for sick people, and we must suppress everything contrary to it. We have a strict rule that children are not allowed to be to be free in the lobby, and children that are running about loose can not play in the lobby nor upon the front porch nor around this building. We have a person whose duty it is to enforce that rule, and I remarked yesterday it was not being enforced strictly and made complaint at the office to have that matter looked after; and I assure you it will be looked after; it really must be enforced. Still I think there is no one here who is so much prejudiced against children that they would be disturbed to see a nice quiet boy or girl about who is not making any disturbance. Personally I am extremely fond of boys and girls, like their noise, like the music of their voices; there is nothing so delightful. When I left home yesterday morning, there were about 125 boys and girls in my yard at play, and they were just having a roistering time; and it was the most delightful music I have heard for a long time. I sent out invitations all over the town for boys and girls to come to see me, to make themselves at home in my yard. I think it is a much more wholesome place than the street, and I was glad to hear yesterday morning a lady say that her seamstress said to her that very morning, "My troubles are all at an end, oh, I am so glad

my troubles are at an end." She said, "What is the matter? What do you mean?" "Why," she said, "My boy is up at play in Dr. Kellogg's yard, so he is not on the street, and I am not the least bit worried about him; and I am so glad." These boys and girls have got to be tolerated. I am glad to have them come to the Sanitarium. I often urge people to bring the whole family here so the whole family can be inoculated with Battle Creek ideas. Why, my friends, I haven't much hope for you; you are poor old sinners, and there isn't much chance to make anything out of you; but if you can convert these boys and girls to these principles so they can grow up right, they have got their whole life ahead of them, and there is some hope for them. That is why I am encouraging the boys and girls. That is the reason why Mrs. Kellogg and I took forty of them into our home at differet times--didn't have them all at once; we have had three crops, so we could inoculate them with these ideas; and I was glad to see yesterday a young lady we had in our home thirty years ago, now living away out west, and a successful woman--I was glad to get a very pleasant message from her a day or two ago; and I tell you it pays, it pays to do something to change and to lift up and to improve the character of men and women and boys and girls, particularly boys and girls. I am interested in it. They have the outdoor gymnasium; that is a good place for them.

Q. What is a good hair tonic?

A. Cold water and plenty of sunlight. The outdoor gymnasium is the best place I know of. I am going out to take a taste myself tomorrow.

Q. What is colitis?

A. Infection of the colon.

Q. How would you treat it?

A. In the first place stop feeding it. People who get colitis swallow it. Nobody every had colitis who didn't swallow it. That is the way we get it. It is an infection; we swallow it; it is in the beefsteak that we swallow, and the milk that is infected with the barnyard and the chickencoop and the pigsty

and all the filthy germs that are flying around in the vicinity of the average dairy. These germs getting into the body find lodgment there and grow. Now, you know what happens in your house if you do ot keep it clean. The cockroaches come in. If you keep your house perfectly clean, there won't be any cockroaches in it. If you expose food around, rats come, and germs and pests of all kind gather in. That is exactly what you have in the body. If you eat dead things, things that will putrefy, then the germs that live upon such things,, the germs whose business it is in the order of nature to destroy dead things, to reduce them back to dust again,--those germs take possession of the body. When one makes a potter's field of his intestine, he can expect the situation there wuld be just what you would find in sepulchres, tombs, slaughterhouses, and rendering establishments. If you make that kind of receptacle of your body, you must expect that is the situation of things you have there. The principal thing that the average chronic invalid needs is disinfection. The principal thing is to get rid of the horrible germs that are making poisons in his interior, and to stop furnishing material to feed that poison.

Q. Is it right to drink water at meals?

A. One can drink a little to satisfy his thirst at any time.

Q. A scientific committee came to the conclusion yesterday that water during meals was healthful.

A. No, the conclusion they came to was that water excited the flow of gastric juice. Prof. Pawlow discovered that thing ten years ago; so that people who have hyperacidity should be careful not to drink at meals, because it stimulates the flow of gastric juice. People who have hypoacidity or haven't enough gastric juice may take a little water at meals with advantage, but not too much, and especially should not take a large amount of water with the food in such a way as to preent mastication; shuld not use the water to wash the food down without chewing. A person can take an ordinary glass of water without any harm, at meals; that is, the average person. If your

stomach is dilated, however, that is another thing. You must avoid taking too much material of any kind into the stomach.

Q. What effect does aspirin have on the nerves?

A. It has a somewhat quieting effect. It relieves pain sometimes, but it is irritating to the stomach and must be eliminated by the kidneys; so should never be taken continuously.

Q. Can catarrh of the nose be cured?

A. It can be cured; it can always be cured. We used to think it could be only partially cured sometimes, but now we know it can always be cured, so it is only necessary to put yourself in the hands of a trained specialist who will inquire into the difficulty and treat the nose and instruct you how to eat and what treatment you should have for your entire body--cold baths, the outdoor life, the antitoxic diet, and some proper treatment for the nose; and that is all that is required to cure any case of catarrh. If you are suffering in that way call on Dr. Colver, our nose and throat specialist, and he will give your case attention.

Q. What is the easiest way to remove small seed warts?

A. Put on a little glacial acetic acid every night with the tip end of a match and in a few days it will soften and rub off.

Q. Tell the proper foods to eat daily for one who has colitis?

A. Simply avoid eating meats; that is the main thing. Some must avoid the use of milk also. The fecal examination will show whether milk is digested or not. If it is not digested, then it ought not to be eaten.

Q. What is the sure cure for pockets in the intestine?

A. The sure cure is to secure proper activity of the intestine so there will be no opportunity for accumulation of fermentable material.

Q. What do you eat?

A. I ate for breakfast a bowl of broth, tomato broth and a cake of Colax, and an apple. That is my breakfast. And for dinner I took two plates of

pea soup and three granose biscuit and just a taste of fresh cucumbers, and a small potato, and another colax biscuit. That is about my bill of fare every day. Usually I eat a little more said food for dinner. I eat about 1600 calories a day, eat no protein. I seldom eat nuts because they have so much protein. I never eat protose, and never eat anything else that is rich in protein. I find myself a great deal better off for discarding those things. Milk does not agree with me very well. I always feel a little heavy when I take milk, so I am satisfied it is not wholesome for me, and I am sure at least half the invalids in the country would be a great deal better off if they would discard milk entirely.

Q. Does yogurt buttermilk contain the same amount of lime as sweet milk?

A. Yes, the same amount?

Q. Is cold water harmful in arthritis?

A. Not in moderate quantity.

Q. What is the amount of lime in different foods?

A. A pound of beans has eight grains of lime in it; a pound of peas contains eight grains of lime; a pound of wheat has four grains of lime; a pound of fine flour has one grain of lime; a pound of beef has one half grain of lime; a pint of milk has twenty-five grains--cow's milk. Mother's milk has one fifth as much as cow's milk. Cow's milk has more lime than the baby needs; it has too much. Potatoes contain about two grains of lime to the pound. So you see there is plenty of lime in vegetable foods, and there is almost none at all in the animal foods.

Q. You stated some time ago that a foul tongue indicates germs growing in the colon. I would like to ask as to the kinds of germs and the remedy.

A. Now, these germs that grow in the colon are putrefactive germs; that is they grow in the colon in unhealthy persons. Germs that produce a bad odor are germs of putrefaction--the same kind of germs that grow in a dead rat, or that are found in a decomposing cat, or any other dead thing; those same germs

are found in the colon of persons who eat meat or who eat freely of eggs, sometimes of people who eat milk when the milk does not digest.. Now, these germs are growing there because ~~they~~ conditions are favorable, of warmth and moisture. Now the remedy is to cease to eat foods that decay. Mr. S. S. McClure, the editor of McClure's magazine, who has been with us frequently the last two or three years, and who has thoroughly adopted and adheres very closely to the Sanitarium regimen,--Mr. McClure stated in public, "I never eat anything that rots." That is a very good thing for a person to remember who wants to keep the alimentary canal clean. If it rots outside the body, it will rot inside the body. Put a beefsteak in your pocket, and it will be in a horrible state in the course of 24 hours. And inside it would be worse off yet unless it were thoroughly digested. If one takes more than he can assimilate, it is bound to remain behind and rot. Buttermilk is valuable, especially yogurt buttermilk, because it introduces a kind of ferment germs that make decay impossible, germs which produce an acid condition. Now, I intended to bring up here tonight,--will bring it up next time,--a beefsteak that has been in pickle in yogurt buttermilk since two years ago the seventh day of last June. That beefsteak was put into a can of buttermilk two years ago the 7th day of last June, and it is just as sweet as it was when it was put in there; in fact, it has sweetened up; there was a little taint about it when it was put in, because it can not decay in yogurt buttermilk. The purpose of taking yogurt in different ways, yogurt tablets, yogurt buttermilk, yogurt cheese, yogurt whey, and etc., is to introduce these protective germs that save us from the poisonous effect of these putrefactive germs.

Q. Do ham and bacon putrefy?

A. Yes, the lean portion, not the fat portion. A man asked me the other day to tell him, if I were going to eat any sort of meat, which I thought would be the least harmful. I will tell you. You do not have to eat meat. I never have to do it when traveling about, and I don't think of such a thing. But if you insist upon it, I should tell you a piece of fat bacon, well fried,

would be the least harmful. Now, yu say, "That is very surprising." Why? Why, because it can not decay. It is fat, and will not rot. The great harm we get is from the decay of the lean meat after it has been swallowed. It is not what is in the meat, but what happened to it after it has been swallowed. That is where the trouble is--after it gets out into the colon, that part which is not digested. Fat fried bacon would be very little of it digested, and it would be fat if it was absorbed, so that it probably would, a large part of it, escape from the body without being assimilated at all, or undergoing any change.

Q. What do you think of chiropractic?

A. I don't think about it very often, and I don't think any good thoughts about it. A lady who came here some time ago for treatment said, "Doctor, you remember my husband who was here a few months ago?" I said, "Yes." "Well," she said, "He got a little better, and just before we went home a man down town said he could cure him, would guarantee he could cure him if he would come back; so we brought him back; we borrowed some money and brought him back, and he gave him six treatments, and after each treatment he was worse, and finally he hurt him so bad he could not get up from his bed, and I had to take him home, and in two or three weeks he was dead. He killed my husband." That is what the lady said to me. And I have known of more than one case in wich persons have been very seriously damaged by these rude practices which are carried on by men who have not a thorough scientific knowledge, and who have but just one idea. The Osteopathis going to cure everything by adjusting little bones or nerves that he says are out of place. An Osteopath came up here from Chicago the other day to apply for a position. I said, "It seems to me your ideas are too narrow. You can not imagine that every disease anybody can possibly have is the result of the dislocation or partial dislocation, or subluxation, as they call it, of some bone." "Oh, no," he said, "Doctor, oh, no; my school is broader. That was the old school down here in Missouri, don't you know, at St. Joseph. But our school has spread out, it is broader. We believe

Osteopathy is all right, but we have extended the idea. The disease is due to dislocation somewhere; that is, disarrangement of things; sometimes it is the habits of the individual that are out of place, don't you see; it is wrong habits, and we have to adjust the habits, don't you see?" So you see it is becoming quite broad. Now, with that idea, of course, it is possible that we may find a cure for almost any malady by reconstructing the habits of the individual. But that is a long ways away from dislocated bones, isn't it?

Q. Explain hypohydrochloria?

A. Hypohydrochloria is when the stomach doesn't make gastric juice enough

Q. Can it be cured?

A. Generally it can. If there is no gastric juice, if the stomach glands have undergone degeneration, then it is too late, but those cases are not very common. I remember some time ago a young man who had catarrh came to see me and I examined his nose. There are three stages of catarrh; the first is acute, the second is hypertrophy, and the third is degeneracy or atrophy of the bones. I said, "Your catarrh is in the third stage." "Oh, Doctor, I am so sorry to see I am a hopeless case. I was in hopes you could do something for me, but if I have reached the third stage, of course it is hopeless." Now, he could not be entisly cured, but he wasn't going to die. So, when the stomach makes no more gastric juice, it does not mean that you have got to the end of your career at all. It only means you have got to make your calculations without the stomach. You have got to leave the stomach out in arranging your bll of fare. You are to consider the stomach can not do anything to this bill of fare, so you must eat things that can be digested without the stomach. About twenty years ago, I thik, for the first time a human stomach was removed. A woman was the first patient, and the stomach was removed, and the patient survived and enjoyed good health notwithstanding. About five years ago now I met a man on the front porch about six weeks after I had operated upon him, and I said to him, "Well, Mr. Joned, how are you this morning?" He said, "Fine as silk, Doctor;

thik of it--I have gined seventeen pounds with my stomach in a bottle." We have his stomach in a bottle over at the other house. This gentleman was here a day or two ago to show how well he was. I shook hands with him day before yesterday; he has gone home. He comes to see us every year to report progress; he is getting better all the while. From ninety pounds, he now weighs 180 pounds. So yu see a person can get along without a stomach. But this man does not eat beefsteaks, you can be sure of that; he doesn't eat fried eggs, or sausage, or any of the abominations the average man eats; he lives right up to the letter. He eats the things a decent man ought to eat. He does not eat corpses, for example. He does not eat the horrible, decomposing rotting masses such as some people swallow under the alluring title of Welch rarebit, for example. He lies happily in a sensible way.

Q. Is there any truth in the statement that fodd heated in cooking to a degree higher than 205° has its vitality or life cells destroyed?

A. These people who are making these statements are food faddists, or food scientists; but there isn't one single one of them knows anything about the chemistry of foods; not a single one of them could pass a high school examination in chemistry. Some of them are men who have not even a common school education, but they are setting themselves up as food scientists, whereas they should be called food ignoramuses instead of scientists. There is nothing in it at all. This is the truth, that when food is cooked, there are certain enzymes in the food which are capable of rendering some service to the body. I forgot to tell you one thing I ate this morning, and that is two small ears of uncooked corn, just from the garden, sweet and delicious, and creamy. If you want something really fine, the next time we have corn on the bill of fare, you call for an ear of corn that has not been cooked and try it. First of all swallow your prejudice, because the prejudice will stand right in the way. You say, "Oh, it is raw, it is raw; I can't eat that; it will make me sick." But just think what

you did the other day when you ate lettuce. Lettuce is just as raw as corn is, and is not nearly so digestible. The corn ~~in the milk~~ milk in the is one of the most digestible things you can possibly swallow. A baby that can not keep another thing on its stomach will retain the milk of sweet corn from which the ~~xh~~ hull has been separated. I don't know anything better for the bowels than raw corn. When the corn is cooked, the interior of the kernel is coagulated and then it is hard to digest; but in the milk state it is creamy and ready to mingle at once with digestive fluids and to undergo digestion immediately. Besides that, there are certain diastases and enzymes, substances which are akin to the saliva and to the gastric juice, and the pancreatic juice, and the other digestive fluids of the body, and these enzymes are of very great service in the body. They are so useful that if we live entirely on cooked food we will acquire scurvy, fall into a state of nutritive disturbance that may be very serious; and a very small amount of uncooked food or fresh fruit, and fresh vegetables, a very small amount of it will save a man who is apparently dying of scurvy; so one with terrible ulcers in his mouth, and ulcers on his body, apparently dying,--such a person will be saved and recuperated by giving them uncooked food. A man told me one time he was shut up in the mountains, buried up with snow in California for three months, with snow fourteen feet deep, and they could ot possibly get out. He was buried up there with some miners and mules, fifty or sixty years ago, and he said most of the men died of scurvy. He didn't, ~~didn't~~ have a touch of it. He saw the mules were digging away the snow and getting the grass underneath, and he said, "I will eat grass like the mules", so he did; he ate a big handful of grass every day, and he didn'thave any scurvy at all. He got through perfectly well. If any of you ever get into such ~~xxxxxxx~~ close corners as that, I recommend you try that suggestion. Of course, the greater part of the grass is innutritious, but the juice of the grass is just as wholesome as lettuce or any other uncooked food.

Q. What do you do when the tongue is coated until it is necessary to wipe it off with a handkerchief, and to swab out the mouth several times every

night between retiring and rising?

A. I suspect in this case the mouth is open during sleep. Probably there is obstruction in the throat and you can not breathe through the nose freely. Germs grow in the mouth. Maybe there is infection of the gums. The mouth should be disinfected. I would recommend such a person to have a little bottle of cinnamon water in the pocket, and at night swallow a little cinnamon water; or a little cinnamon bark taken into the mouth and chewed will hinder the growth of germs and keep the mouth in a sanitary condition. The teethshould be cleansed before and after eating; and the vital resistance of the bodyshould be built up in every possible way to increase the resistance so the germs can not grow in the mouth. In a healthy person the saliva will not allow the germs to grow in the mouth, but when a person becomes diseased, and the resistance lowered, then the saliva does not prevent the growth of germs, and they grow in the mouth as in an incubator.

Q. What do you think of Upton Sinclair's theory of fasting for health?

A. He has no theory. He has simply borrowed a hobby to ride for a while in order to make a little money out of it. Upton Sinclair is not a scientist. He knows almost nothing at all of the things he is trying to write about. He is writing upon various things he thinks he can convert into money, and he is a man who is impecunious and has lost his standing as a literary man in ordinary literature, so he has adopted this method and various other methods of writing things he thinks he can find somebody to buy. That is the truth about Upton Sinclair as I look at it. The statements he makes can not be relied upon for he is an unscientific man and is not a competent judge. I know the man thoroughly for he has been here. When he was here he got great benefit, and became utterly changed from a man in a very miserable state and was able to write a book and to engage in work. Then he ran across the idea of fasting, thought it was a great thing, and adopted it and thought he was benefited by that. The next thing he became carnivorous, a flesh eater, lived on Salisbury steaks, almost strictly

carnivorous diet for a while, and at the present time he is alternating between a carnivorous diet and fasting. I think he ought to fast at least three months in order to do penance for the various mischiefs he has been creating. Six months might be better.

Q. Wouldn't unpolished rice flakes make a more perfect food?

A. We are preparing unpolished rice flakes at the present time.

Q. What is the cause and cure of infantile paralysis?

A. It is an infectious disease, and the thing to do is to put the child to bed at once, call a good physician, and the treatment will be applied that seems to suit the case at the time.

Q. Do you claim to cure locomotor ataxia?

Most persons who come here suffering from locomotor ataxis in the early stages of the disease recover to such a degree that they suffer no further inconvenience from it. The gait can be almost completely restored in nearly all cases. Some of the symptoms do not entirely disappear, but the pain and unsteadiness of gait are entirely cured.

Q. Do not vegetables imbibe unfriendly germs?

A. No, vegetables do not allow the germs to come in. The outer covering of the vegetable, and the covering of the roots is impervious to germs, and the cells of the vegetable are unfriendly to germs and destroy them. If you should inject a few germs into the sap under the bark of the tree, they would soon disappear. They can not live in the presence of living cells of the tree.

Q. Do you consider it wise to go regularly without breakfast when there is no desire for food?

A. Yes, it would be a good thing to wait until you have an appetite. A better plan is to take a little fruit or fruit juice and Colax or lettuce or something which will give bulk so as to keep up the regular procession in the colon. The bowels ought to move three or four times a day regularly. That is

the natural thing, but it is necessary to take food into the stomach in order that there shall be these movements, because food is the natural laxative.

Q. If one is so constituted as to make much exercise necessary, and his employment will not permit of it, what can he do to substitute?

A. He can jump up and down in a corner in his sleeping room. A man can lie down and raise his legs, or hop up and down in a corner of his sleeping room with the windows open and get all the exercise necessary for health in fifteen or twenty minutes or half an hour at longest.

Q. What is the cause of an excessive secretion of the kidneys?

A. It may be Bright's disease, or it may be disease known as diabetes insipidus.

Q. What is the food value in calories of shredded wheat?

A. Just the same as wheat--about 100 calories to the ounce. That would be about 100 calories for each cake, for there are twelve ounces of the food in a package of shredded wheat, about three fourths of a pound. Its nutritive value is just the same as that of wheat. If everybody had a little mill at home and would buy some wheat at the mill or at the grain store, wash it well, dry it, grind it up in your little mill, youwould have something sweeter and better than shredded wheat because it would be thoroughly clean. Shredded wheat, however, is washed, and it is a great deal cleaner than ordinary wheat foods.

Q. Is colitis ever cured?

A. Yes.

Q. Do you consider hardening of the arteries a curable disease?

A. If taken early enough, yes.

Q. Tell us what one can get to eat when traveling in Europe without meat.

A. Go to any first class restaurant and you can get fresh vegetables providing you arrange for them in advance. But you have got to fee the chef and

make special arrangements to get anything fresh for breakfast; otherwise it will be nothing but bread and butter and coffee. I have found no difficulty, but I find it a little expensive sometimes in getting everything I want, but I always carry with me a little box of nuts and a box of health candies; then with a little fresh fruit you have got really a whole meal.

Q. What does it mean when one feels faint before eating?

A. It means there is a raw, irritated condition of the stomach, and it means you should avoid eating large meals, and should avoid eating bulky food for a time, especially should avoid acids, mustard, pepper, and condiments. I think I have actually answered every question in the box. I thank you for your attention.

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