Question Box Lecture at the Battle Creek Sanitarium Parlor, Monday, April 7 at 8:00 P. M.

By

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Q. Is there a sure cure for diabetes?

A. No. Diabetes is one of the diseases that is practically never cured. Well, I must not say that. It is cured. It is cured all the time but the patient is not cured I mean to say, the patient is never cured. When a person has diabetes he is worse off than a man who has lost a leg, who is crippled. A man can get along however, very comfortably with one leg. He can have a wooden leg or he can hop about and manage to move around with one leg. A person with diabetes has lost some other power to utilize carbohydrates or sugar. Starch, sugar and dextrine when taken into the body are at first stored up in the liver in the form of glycogen or animal starch. After being stored up in the liver the liverboles it out a little at a time, passes it on to be used in the body and this glycogen and carbohydrates are among the most important of all our food_stuffs because they furnish fuel for immediate use in the body. Now fat is stored up for use at some future time. Protein is used to repair the damaged machinery of the body. The carbohydrates, starch, dextrine, sugar and carbohydrates that the diabetic has so much difficulty in dealing with, they are the very thing that the body utilizes the most and is the great necessity of the body for furnishing energy and the heat for keeping up the steam of the locomotive. That is what starch is for. That is why grains and ------- are so valuable. That is why a horse or an ox can pull such a heavy load and for so long a time. It is because they live on this energy producing material. If you are going to take a dog out hunting you have got to feed him something besides meat if he is to be a good hunting dog. The dog has to have corn meal mush in order that he shall be able to run. Hunters

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never feed their dogs meat or at least very rarely. hunters give their dogs cornmeal, bread, beans, and things of that sort. These carbohydrates are very necessary and a didbetic is greatly crippled. It is immossible for the diabetic to have great endurance because he has not the power for storing up energy. Vegetarians have more endurance than meat eaters just as horses, reindeers and the ox have far greater endurance than the lion. Mr. Roosevelt told in one of his stories of his hunting in East Africa that he run down a lion and I think in less than a mile. That is, his horse did. He didn't. The horse carried him on its back and run down a large lion. Mr. Roosevelt said that a horse with a heavy man on its back can always run down the ~~lion~~ fleetest lion in a mile and half. Just think of it. The endurance of the lion is only a mile and a half long while the endurance of a horse is all day long and the difference is in the diet. It is because the lion's body is already filled with poisons. He has been eating an ox or a deer. He is a meat eater. He does not run the deer down but springs upon it suddenly perhaps after the deer has been running for some distance. He killedthe deer and ate it and when he ate that deer the deer was tired and the lion ate the whole thing, tiredness and all, don't you see, and the tired the deer had, the lion swallowed, don't you see and that is why beefsteak makes a man so tired. It is the tired of the ox don't you see. If a man eats beefsteak he eats the ox tire. That is a scientific fact. Dr. Herter of New York sent some of these products of meat decomposition ~~x~~skatol ---- and indol the products of decomposition of meat and they are always found in beefsteak, he sent them to Dr. Frederick P. Lee of the Columbia Univ. and asked him to experiment with them and Dr. Lee for the last fifteen years has been experimenting on fatigue poisons to try how find out what makes a man tired, what makes that tired feeling you read about in the newspapers and he is recognized the world over as the greatest expert in the world on fatigue so Dr. Herter sent him a specimen of skatol ---- and indol. They are substances which ~~deals~~ give the peculiar fragrance to the intestinal products. They are the aromatic substances

found in feces. ----- and indol. Dr. Herter sent some of this skatol ---- and indol to Dr. Lees and asked him to find out what effect it had upon fatigue. and Dr. Lee found that they were intens to feed poisons. They were very virulent to feed poisons. They were not quite so highly toxic as the poison which is produced in the muscle itself when it is working and which is the cause of fatigue but that substances is almost as active as that celebrated poison, woolrari. The Indian of South American dips his ~~oil~~ arrow into a solution of woolrari and he shoots that into an animal and the animal immediately falls down exhausted because of these fatigue poisons. His nerves are paralyzed so that although he can feel perfectly he falls down with fatigue. This poisons is produced by brain work or muscle work and it is similar to the poison of woolrari and effects the muscles in very much the same way. Skatol ---- and indol were not quite so active as woolrari but they were mixed into it. It produced an astonishing effect in causing fatigue in animals whose tissues were exnerimented upon by Dr. Lee. When an animal eats flesh freely then the effect is to introduce into the body a large quantity of these fatigue poisons from another animals and more than other animal tissues possess because theseof the decomposition products which have been formed after the death of the animal. The diabetic has little endurance because he cannot stir up glycogen. The vegetarian and vegetarian animals have more endurance than carnivorous animals not only because they have less of these fatigue products in their tissues and the blood but because they have the power to store up a large amount of glycogen and then they have glocogen stored up in their muscles and other tissues of their body and consequently they have great endurance. That is, the staying ---------- qualities of a man or an animal are due to the amount of glycogen which can be stored up in the tissues. Now we examine a diabetic when we comes we and get his respiratory quotient and it will be 70 or 64. Then we know that is a bad case because this quotient coefficient is an index to the amount of glycogen stored up in the body. When the coefficient is 70 it means there is no glycogen stored up. It is all used up. When it is 64

it is even worse than that. When it is 81 as it ought to be in a healthy person 12 hours after his last meal that means that person has a good store of glycogen. When it is 100 that means that means the patienthas just had a big dinner and his body is flooded with glycogen, a large amount of glycogen in his body, carbohydrates, so if diabetes cannot be cured it is of the highest importance that it should be properly managed. A man who has but one leg and wears a wooden leg or a crutch to supply his deficiency has to be more careful than a man who has two sounds legs so a man who has diabetes must learn how to supply his deficiency so VonNoorden the great Austrian physician or German physician rather, who has gone to Austria, VonNoorden of Vienna, one of the greatest physicians in the world has been working at that for a number of years and he has made some remarkable discoveries. He has found different kinds of carbohydrates differ in their ability. For instance, he finds in general, starch of fruits is more valuable than the starch of cereals but among different cereals he finds that the starch of oatmeal is the most readily assimilated by the body. Oatmeal comes first. Bananas come next. Then comes the starch of potatoes. They come in that regular order. The starch of the oats, of the banana and of the potato. Now another thing discovered by VanNoorden was that one person can assimilate and utilize one kind of starch best while another can assimilate and utilize another kind of starch best. This is a matter of so great importance that we find some very interesting things here. For instance, when a patient comes here we find what is coefficient is. If it is 70 we know that man is in a dangerous condition because he is eating his own tissues, living upon himself. He cannot store up glycogen so when he eats a meal in the course of two or three hours all the starch he took at that meal has been carried off out of his body. It is all gone. He has lost it. He could not store it so he feeds upon himself and the result is, the production of acidosis and that leads on to diabetic coma so when a patient has a coefficient of 70

we know he is in a very serious state. He is liable to drop off into diabetic coma and go to sleep and never wake again, almost at any time. When we find his coefficient is 71 or 72 or 73, the higher the better, why we know he has still a little margin. He can store up some glycogen. If when he eats his last meal at 6:00 O'clock in the evening and is examined at seven or eight o'clock the next morning there are twelve or fourteen or fifteen hours since his last meal and he has stored glycogen enough to last him over night and still has a little left.

so that is an encouraging case and we know we can improve that case. To show you the difference in diet I will mention a man who come here two or three weeks ago and his respiratory quotient was only 64 and that is way on beyond the danger line. That man was in intimate danger. It was to luckiest thing in the world for that man who arrived here just when he did. Now this man was put on a special diet. He was given some oatmeal with some butter on it; oatmeal soup and dropped his meat and everything of that kind and his co-efficient had come up to 73. You know we felt like raising a great shout because we saw we had just lifted that man out of the pit, so to speak while he was in most intimate danger. He is like a man standing on a railroad track and the express train rushing right after him. He had gotten off the track, we had gotten him out of danger and we found out how to keep him out because we find out the particular kind of starch that was beneficial to him, that he was able to assimilate. He had been eating bread and potatoes and other things that did not agree with him, but oatmeal he could utilize.

We had another case not very long ago, a patient who had a very large amount of sugar discharged every day. A large amount of sugar was being lost. On a diet of oatmeal there was no sugar left at all. The sugar disappeared entirely although the patient took a sufficient amount of carbohydrates. With a diet of oatmeal the sugar entirely disappeared from the urine. There was no loss whatever. Now that shows you the great importance of these discoveries of von Noorden. By utilizing these important recent discoveries we are able to save alive a great number of people who would rapidly have gone down to death if it were not for these important investigations. The important thing in every case is to find out what particular kind of starch is adapated to this patient and how much starch he can use, because a patient might be injured by 1300 calories when he can take 500 calories very well and if he cannot take 500 calories, if by proper treatment and management he can be educated day by day to take a little more and a little more and a little more until by and by he can take the normal amount. It is not the loss of sugar that does so much harm as it is the loss of the power to store up glycogen in the body so as to utilize it because the heart needs glycogen for

every heart beat, the brain needs it for every thought. Every organ of the body depends upon glycogen for the energy with which to do its work, so while we can't cure a diabetic, we can render him invaluable service and every single diabetic needs to have his case studied by means of the respiration apparatus, then by means of the metabolism chart, by means of which we are able to see exactly where the patient stands. Every single diabetic needs to have his case studied and have his dietary marked out for him, a course for him to pursue which will be safe for him which is adapted to his particular case. (Now another point I might mention, is that the dietary of the diabetic needs to be changed from time to time. The starch that is good for him today may not be good for him a month from now. It is found necessary to make a change from time to time as the conditions of the body need a change and require a different form of starch.

Q--Is there a cure for rheumatism?

A--Yes indeed. There are more cures for rheumatism than for every other disease. Every one of them is guaranteed to cure rheumatism and generally does but it does not cure the patient, that is the trouble. A dose of morphia will cure rheumatism. A man who has got terrible pain in the joints, takes a dose of morphia and he feels perfectly comfortable. The rheumatism is cured, but the situation sometimes becomes that of a famous Chicago editor about 35 years ago. His wife was sick with rheumatism and he told various doctors to treat her. The gave various sorts of medicines and at last a doctor came to see his wife, saw her about midnight and said she was cured. Now the rheumatism was cured. At 3 ~~xtxxx~~ o'clock she was dead, so the editor began suit against the doctor for mal-practice, for killing his wife and he had a very distressing time of it for some little time. I think he drove the doctor off on a trip to Europe. He was most unreasonable and unjust in his charges. Of course, the doctor had not killed his wife. The medicine he had given the man's wife had probably not done her any particular harm but the doctor got into trouble by saying the rheumatism was cured. It was cured but the patient was not. This editor said, "Cured to death" would be an appropriate epitaph for most of the tombstones of the country, but that is not true at all, but it is true that the great mistake ~~xx~~ is also made of thinking that if you cure the

disease the patient will be all right. That is a great mistake. What we want is to cure the patient. If we cure the patient, the disease is nowhere. We don't want to bother ourselves about that. If you have an awful neuralgic pain, you can cure that with a dose of morphia. The disease is cured but the patient is not cured. Here we undertake to operate an entirely different principle, not to cure pains---though we do something for pain. We do cure pains but not to rest with the curing of pain or any other symptom--but to cure the patient by removing the disease because if we do not cure the patient and remove the causes of the disease, if we do not cure the patient, then if we cured the disease in one form, it will be breaking out in another. For instance he has eczema and we cure the eczema by rubbing on salve of some sort on the skin. The next thing we know colitis will break out. We try to cure up the colitis in some other way then the eczema will break out again and so it will oscillate one thing after another.

Q--Is there any means of curing atrophy of the muscles?

A--There is just one thing that will cure atrophy of the muscles and that is work. Nothing else will cure atrophy of the muscles. You cannot cure shrunken muscles by laying on of hands, by massage or by any other means except by making those muscles work. That is the only way in the world to cultivate your muscle, to make it stronger, is to make it work. But you say, "What are you going to do when your muscle is atrophied?" If it is atrophied to such a degree that you cannot make it work by the stimulous of the will or by the stimulous of electricity or by any other means, there is absolutely no hope for it, but if we can make the muscle contract by the application of the electricity and the application of a strong impulse of the will, the muscle can be made to work. We had sometime ago, I remember very well, a man who came here with a paralyzed arm. He could not close his fingers, he could not flex his arm, he had had apoplexy. I examined the patient and found his muscles were not shrunken. Yet he was absolutely powerless to control his hand. I found his muscles were there intact and I became satisfied that the man's nerves were not destroyed. It takes two things to make a movement you see, the muscle and the nerves. The brain sends down a message to the muscle over the nerve, the the muscle contracts. Now if

the nerve is cut the muscle is paralyzed. If the muscle is atrophied or degenerated, then there is no motion, so in this case we find the muscle is good and I was satisfied the nerves were all right, but the man thought he could not move his hand. The trouble was the connection between the will and the nerve was broken so we had to help that man a little. I had to take hold of his arm and bend it for him, then said to him, "Why your arm is all right, don't you see, Your arm bends all right. Now then you try to bend it yourself.". He said, "Oh I can't". I said, "Now just try once more". So while he was trying to make an effort of the will, I bent his arm for him and he thought he did it, then we did it again, did it half a dozen times and pretty soon the man found he was moving his hand himself. Sometimes that process has to be continued day after day. We have to educate the will for the will has lost control of the muscles you see. It is like a horse that has run away from the driver and you have to tame that muscle and bring it back and bring it into use again. Now that is just what a baby has to do. A little baby trying to walk has to learn to control its legs. The legs do not go when it wants them to go and it takes quite a while to train them. You see a boy learning to write. What an awful time he has sometimes. You see him pinching his pencil with all his might, you see him twisting his head around and screwing an arm around, just laboring so that it takes every muscle that boy has got in his body to make the letter "h" for instance. It is a laborious process. Little by little he learns to control the particular muscles that are necessary for use in writing. Now it is just so with these paralyzed people. Sometimes the connection of the will and the nerve has to be restored and the muscle trained in again.

Q--Kindly tell us what to use to thoroughly a stomach tube to make it anteseptic, something which will not injure the rubber.

A--Well the best way of dealing with the stomach tube is to wash the stomach tube very thoroughly with soap and water after it has been used then to rince it thoroughly, immerse it in a solution of boracic acid, a teaspoonful of borax in a pint of water and keep it immersed in that. Then when you take the stomach tube out of the solution it will be just as clean as it was when you put it in. If it was clean when you put it in, it will remain clean. The germs won't grow. It won't undergo

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any change that might come from mold or anything of that sort. Of course, corrosive ~~xxxxx~~ sublimate and things of that sort might be used ~~xxtxxxx~~ but they might be of little harm if they were not thoroughly cleansed. We find a strong solution of salt, chlorid of sodium will answer the purpose very well.

Q--Can angina pectoris in the early stages be cured?

A--Yes in the early stages.

Q--What will prevent a bilious attack?

A-- When one has a bilious attack he is suffering from acute intestinal auto-intoxication. It means there is something rotten somewhere. There is a dealy in some part of the colon. The most common place for the delay is in the lower part of the colon. Suppose this, if you please, represents the colon. Here are four different places where there may be a delay. Up in this part, the cecum where the small intestine ~~xxx~~ empties or the transverse colon, the descending colon or the pelvic colon, these are the four essential parts. Not infrequently this simple portion becomes prolapsed in this way. This is a most common thing. We find this condition very ~~xxx~~ frequently indeed, find the colon prolapsed just like that. Now when it is prolapsed in this condition, material will accumulate down here or through there, but a more common ~~xxxxxx~~ source of the accumulation is in the cecum and we find the cecum becomes enormously distended. A case I operated on yesterday was very much like the drawing I have made here now. It was an enormously dilated cecum. Over here in the transverse colon there is sometimes an accumulation, but the more frequent caseswhere accumulation takes place is in the pelvic colon. The trouble is the pelvic colon gets to falling over backwards ~~xxxxxxxxxxxx~~ and in this position it cannot empty itself so the fecal matter accumulates there and decomposition takes place. Now a bilious attack is due to the fact that in some part of the intestine there has been an accumulation of fecal matter which has remained there day after day undergoing putrefaction and ~~fixxxxx~~ flooding the body with poisons until by and by the body is so thoroughly saturated with these poisons that the bilious attack occurs. Now to make you see the reality of that thing, let me suppose a case, the most awful point you could

think of, perhaps? Suppose some of this matter that has been discharged from the bowels was some way secreted in capsulesor in some other way and you were made to swallow it and when these capsules dissolved and the material broke loose in the interior of the body, just imagine how it would feel. You can see it would be poisonous to the body. The very idea of putting back into the body this offensive material that leaves the body through the bowel, the very thought of putting it back is horrible, nauseating, disgusting and yet don't you see the very same effects take place, the very same consequences occur if this material is retained in the body as would happen if it was put back into the body. The very same thing happens to the body exactly. The same poison occurs through the absorption. The only protection, the only defense is the fact that down here in the lower part of the colon, absorption does not take place so rapidly as it does in the upper part of the colon, so a certain quantity of fecal matter introduced with the food would do more harm if it was swallowed than if it was left in the colon, for a protectel period for the reason that absorption takes place more rapidly in the upper part than in the lower part because nature protects us in this way from the poisonous properties of this decomposing material in the xxx colon. I don't know how I can impress sufficiently upon the men and women I come in contact with the importance of getting rid of these horrible poisons. They are the bane of human life, my friends, the foundation of more chronic disease than any other cause I know of. They are the worst thing with which the human body comes in contact; they are worse than tobacco; they are worse than alcohol; worse than tea or coffee; worse than any of the ordinary things we come in contact with. They are so protective of disease. These poisons are produced down here in the colon are poisons which produce a condition known as anaphylaxis. To illustrate what is know as anaphylaxis xxx suppose you have sometime been in woods and handled poison ivy and you xxxx a severe attack of ivy poisoning. You know a person who has once had that sort of experience, whenever they pass into such woods again and come near the ivy without touching it at all, it will very often bring on an attack. I wonder if there is anybody here who knows anybody that is so sensitive as that, that simply passing ivy will bring on an attack of ivy

poisoning. I see a score of hands raised here. Now that is what is known as sensitizing the body. The body becomes sensitized to the ivy so that a very small dose or an infinitesimal dose that you get through the air by inhaling the volatile substances that rise from it is sufficient to bring on one of those severe attacks. When in the first place it took a very large dose to produce that effect. Now the body gets into the same position in relation to colon poison. The germs that grow down in the colon produce poisons. When the body has once had a big dose of these poisons after that a very small dose is sufficient to bring on these distressing effects. Anybody who has ever suffered from a bilious attack does not want to have another one. It is almost like death to have a severe bilious attack. It is something terrible. The nausea and the distress are something almost indescribable. No such effects as that could possibly be produced without an adequate cause and the adequate cause is these germ poisons that are formed down there in the colon to which the body has been sensitized. Hay fever is another illustration of the same thing. Certain poisons found in pollen produce hay fever. When a person has once got an over dose of this pollen, the body becomes sensitized so that a very minute dose afterwards will produce a baneful effect. Every one of you ought to know if you do not know already that diphtheria antitoxin is another poison of the same kind, that when a child has once had this antitoxin, a very minute dose of antitoxin after that is likely to kill the child. So if any of you ever have diphtheria antitoxin and the doctor comes to see and to give you some more be sure to tell him that you have had a dose before and then the doctor knows that you cannot take a large dose of it for it might produce immediate death. That has occurred more than once. Then the cure for biliousness is to prevent this fecal accumulation. How is that going to be done? By thoroughly evacuating the bowels two times every day or four times would be better. The bowels ought to move when you get up in the morning, after each meal, and before you go to bed at night. They are more likely to move after a heavy or hearty meal than they are after a lighter meal. Dr. Heitz of London found by X-ray studies

that the material passing along in the colon ~~made no advancement during the~~ meal while a person was eating the meal, during the meal it made more advancement than for four hours before, so you see that eating is a very necessary part of the rhythm of the intestine. It stimulates the intestine and causes a forward movement of materials that are further down in the alimentary canal. That is one reason why chewing should be practiced thoroughly. By thorough chewing there is greater stimulation of the intestine. Chewing sets upa of the intestine even before the food is swallowed. It gets the movement started. That begins with the jaws and moves along. I have met a few men who said that their bowels moved all right whenever they chewed tobacco, but when they did not chew tobacco they had a terrible time with the bowels. It was not the tobacco that encouraged bowel action, but the chewing. Somebody suggests that that is a good excuse for chewing gum. Well if there is any excuse for chewing gum that would be one, but I doubt if the gum chewing would produce any effect whatever because the gum is tasteless. It is necessary that there should be a flavor with the chewing. Simply chewing gum that has no flavor in it or chewing a stick would not produce any effect because it is necessary that the gustatory nerves should be stimulated in order to set up the reflexes from the brain necessary to stimulate intestinal action.

Q--Should a healthy growing child have meat?

A--If the child were mine, I am sure he would have no meat. If he is yours it is up to you whether that child will have meat or not. If the child is a healthy child and has never eaten any meat, if you offer him any meat he will take it as an insult. He doesn't want any. A lady one day said to me, "Doctor, Oh I wish I had some chicken! I haven't had any chicken in a good while. I just can't eat your things here. I do wish I had some chicken". "Now", I said, "would you like to have me bring a nice fat chicken in here and introduce him to you before he is killed so you may know he is a nice healthy fellow". "Oh no", she says, "I wouldn't care to have you do that." "Well would you really like to look a chicken right square in the eye and say, 'Now then I am going to eat you'.

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Would you like to do such a thing". "Well", she said, "if it was a rooster I believe I could because I hate roosters. They crow so much that they keep me awake at night." "Well," I said, "you are like an East India man. He said he could not see how any body could have learned to eat cows, those gentle cows, and he said, 'I can see easily how a man could learn to eat men because I sometimes myself hate my enemies so I feel as though I would like to eat him'". Well this is the feeling this lady had against roosters, don't you see. Well she afterwards got hold of some chicken shmehow and the next day I saw her and she said she had a good joke to tell me. She swallowed that chicken but she had scarcely swallowed it before it came back again. Now if you tell that boy a few stories it would spoil his appetite for meat. He will never want any and if he doesn't have any hankering for meat there is absolutely no excuse for taking it. I asked a boy one day in our dining room if he was getting along all right, getting all he wanted. He said, "Well doctor, I would like some chicken". I said, "Suppose I should have a mother hen around here with some nice little chickens and have one of them fixed up for you to eat, what would you think about it? Would that be a nice thing for you to do to take one of those chickens away from that mother hen while she is clucking and you would see one of them and eat him, do you think it would be a nice thing to do". What do you think he said? He said, "I wouldn't like to have her see me." Now that boy you see had the right sort of sense. He had the effort of sense in relation to that thing. Meat eating is just as un-

natural. Killing animals and eating them is just as unnatural as it is to kill human beings. When an animal is a ferocious animal and attacking you, you would naturally kill him, but there is no natural instinct in the human being to kill animals, not the least: but if you see a fine paar or a peach or an apply hanging down from a limb, a lucious peach with rosy cheexks and fragrant aroma, you naturally feel an impulse to take it off and ~~it~~ eat it. Take a baby out and show it such a fruit hanging on a tree and it will lay right hold of it. Did you ever hear of such a thing as a baby that had an instinct to lay hold of a canary bird and eat it, or to choke a kitten to death and then pick its bones? Why you never heard of such a thing. It is not a human instinct at all. Now it is natural,

perhaps, for a dog or a cat or some other carniverous animal to kill animals and eat them, but it is not a natural instinct for human beings to do such things as that. It is only because we have become educated to it. Offer a young child a piece of meat for the first time that never has had any meat, meat gravy or anything of that sort, give it to the child and it will make up a wry face and spit it out. Many a mother has told me she had to try a long time before she could teach her little ones to eat meat. I wonder if there is any mother here who knows that to be a fact. I see a lady here who says she had to teach he little one to eat meat and she thought it was very necessary that she should do it, and I have found a number of instances in which children had such an antipathy to meat that is could not be overcome and they had actually grown up to manhood and woman hood without ever having tasted meat at all because they had such a natural antipathy against it. You never say a child that had such a natural antipathy as that against bread or fruit or any other wholesome food. These natural wholesome appetites appeal to our instincts. They call upon and exort us to eat that and take them, but there is no such instinct in the natural human being with reference to the eating of meat, so the child will be perfectly safe to be allowed to grow up without meat and never have a taste of it.

Q--Somebody wants to know why I wear a belt?

A--Well I suppose I an subject to criticism and I an willing to explain why I wear a belt. I wear a belt because I do not like to have my shoulders prammelled. These shoulder straps are a very great nuisance and I hope the time will come when inventive genius will make it possible for men to dress as healthyfully as women can if they will. At the present time improvements in dress have reached a further point of perfection in relation to women's dress than in relation to men's dress. Men are behind, but the women do not avail themselves of these improvements, I an sorry to say for they still wear the barbarous old torching corsets that do not permit them to breath and while they have freed their shoulders, perhaps, they do not give this much more important part of the body, the abdomen, opportunity for the freedom of movement that it requires.

As I said before the reason why I wear a belt is because I cannot endure to have my shoulders imprisoned. I sometimes put on suspenders and I am in misery until I get them off.

Q--How do you determine the the normal strength as shown on the strength chart? Was it a test of well people, if so, what class?

A--The figures given on the strength chart were of people in health who were physically well. The large number of tests were made of our nurses and students where were well developed young men and women and this was the foundation of our standard. It represents all the average. Of course, if you go out among laboring men you would find a higher standard. If you take farmers you might find a higher average than we give in our tables.

Q--What is the possible cause and cure for hysteria in a boy of eight years?

A--If a boy of eight years has got hysteria he ought to be born again. That is really the only cure for that boy. The cure for that kind of case would have to begin with the grandfather or the grandmother generally. There must be some radical defect in his nervous organization if he suffers from hysteria at eight years of age. Still it is entirely possible he may be rendered comfortable in this and helped to such a degree that he can live a useful and comfortable life.

Q--A man lived until he was 103 years old and drank eight cups of coffee every day. How do you account for that?

A--Well I will have to account for that the same way Sam Jones accounted for the long life of a tobacco user whom he met out in Omaha, Nebraska. He had been giving a course of lectures there and the old gentleman had been attending them and finally Mr. Jones gave a talk against tobacco; and the old man eighty-six years old arose and said, "Mr. Jones, I have been attending your lectures. I have rather liked what you said last night and the night before but I don't take a bit of stock in what you have said to night. And now look at me, I am eighty-six years old and I have been smoking since I was ten years old and still

in good health. What have you to say about that." Mr. Jones said, "I say that if it had not been for your smoking, they would have had to kill you with an ax on judgement day". This man in other words was regarded as being "uncommon tough"and that is all I can say. He has a remarkably strong constitution. When we see people pointing to such examples and saying, "Here is a man who lived to be 100 years old and drank eight cups of coffee a day", "Here is another man that lived to be xxxxxx almost 100 years old and smoked every day of his life", "There is a fellow almost 100 years old who has taken a pint of whiskey for every day for fifty years or more," People who point to those examples has evidences that these things are wholesome or good forget all about the 999 people that have died, that have been killed trying to imitate that old fellow don't you see. I think it is an awful pity that some of those awful fellows lived so long because it has such a bad influence upon society. I would much rather they would die off sooner because people point to them and do not stop to consider that while that one xxxxxx person has lived to this great age, perhaps, thousands have died in early years because of the xxxxxx baneful effects of these poisons.

Q--Are green onions a healthful article of diet?

A--They are certainly the best. They are irritating. People with delicate stomachs cannot eat them at all. xxx People with good strong stomachs can tolerate them in moderate degree.

Q--On which side should a person lie when sleeping?

A--I think he should lie on the sleepy side. You know there is a difference you lie on one side and you don't seem to be comfortable or rested at all, then you lie on the other side and you get comfortable and go right to sleep. That is the sleepy side. Find out the side on which you are most comfortable and that is the side to lie on. As a matter of fact it is rather useless to give people instruction about that anyway because they won't obey orders xxxx when they are asleep. It is as much as ever I can do to get people to obey orders when they are awake. If you have just eaten supper and go to bed early after supper, you better lie on your right side. If it is two or three hours that you

took your meal it loesn't make any difference at all so far as the body is concerned on which you lie. Simply make yourself comfortable.

Q--What can I do to ~~xxxx~~ quiet my nerves? The ticking of a clock keeps me awake all night.

A--Just stop your ears; put some cotton into your ears. If that is not sufficient ~~xxx~~ take some paraffin paper and pack your ears full of this paraffin paper and that excludes all these external sounds and it gives the nerves a quiet time. You need to be icelated, that is the only thing necessary.

Q--Somebody wants to know why I wear a summer suit in winter time.

A--People are getting inquisitive about my private affairs, but I am very much obliged that somebody asked the question for I am aching to tell. You know I don't consider white is really ~~x~~ particularly a summer suit, but when these hunters go up north they find the foxes are white and the bears are white and the birds white. Now why is it that these animals who live up there at the north pole, why should they all dress in white, if white is not the proper winter color. White is the winter color instead of the summer color. As a matter of fact, white is the best color for hot weather and for cold weather both. Now why? White reflects heat; white at the same time does not absorb heat.) White reflects heat but it does not radiate heat; it does not absorb heat. well, and does not radiate heat well, but it reflects heat well. (Now in the summer wewant to avoid the absorption of heat, don't you see. We are irritable with too much external heat. We want to protect ourselves against ~~xxx~~ external heat in summer time and white is the best color because it reflects the heat away from you and does not absorb it. On the other hand in winter time we want to preserve the heat of our bodies because the air surfounding us is too cold so white is the best color to wear because it does not radiate or throw off heat, so white is the warmest ~~xxxxxxx~~ color for winter and the coolest color for summer.) If you have a piece of black cloth and a piece of white wollen cloth, the black cloth will melt down into the ice very rapidly, whereas the white cloth will not, because the black cloth absorbs the heat of the sun's rays. Another reason I wear white clothes, is, I know when I am clean.)(When we were

putting up a hospital building some years ago, the architect asked me what kind of knobs I wanted on the doors and I said I wanted white porcelain knobs. "Why," he said, "That will be showing the dirt all the time." That is exactly what I ~~wanted~~ want it for because every morning I walk down the corridor and I look at the door knobs and I know if the door knob is dirty that the nurse has dirty hands and everything about that patient in the room is likely to be dirty, so you see that would be an index to me to the situation of the ward. So I had all the door knobs made white and I took care to see that the conduct of that ward was such that the door knobs were always kept white and everything else was kept white and clean too.

Q--Can fruit pealings be classified as indigestible cellulose?

A--Yes they are indigestible cellulose. Most stomachs are able to take care of the skins of fruits without any difficulty but if swallowed in too large masses, in some stomachs there are rather objectionable.

Q--How does indican affect a person?

A--Indican is a poison that produces torpor and a sense of fatigue or exhaustion, stupidity. It is the cause of it. Sometimes in our laboratory work we have to study things which contain indican in large amounts and sometimes the attendants become so ill, simply from the inhalation of the indican, the just have to go home to get a day or two of vacation even after they become somewhat accustomed to the work. I remember a doctor who was made sick for three days by the inhalation of indican from some specimens he had to study, carrying out some experiments. Now see how much worse it must be if the person is carrying all that material around in the body and not only getting it diluted through the air but absorbing the whole thing, bodily into the blood. The wonder is we are alive at all, my friends, when we consider what terrible things we are continually exposed to.

Q--Are molasses and ordinary honey as slow of digestion as cane sugar?

A--Molasses is cane sugar. While it is made from cane it is cane sugar. Honey is malt sugar. Honey is made up of sugar obtained from flowers and fruits by bees, afterwards passed through a digestive process in the stomach of the bee. This

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honey you see then is already digested and ready for immediate absorption and the only objection to honey is there is a variety of substances, some of them more or less toxic which it contains which are gathered from the flowers along with the sweet.

Q--Why does the woodchuck have seven stomachs?

A--The woodchuck si better furnished than that. The American woodchuck has fourteen stomachs and is the only animal that can digest the ordinary human bill of fare. Go down at a hotel and you see they have a bill of fare there of all creation. The whale has to have seven stomachs to digest fish with, the dog has one stomach to digest meat with, the cow has four stomach to digest grass with; the monkey has a monkey stomach to digest fruits and nuts, that is thirteen stomachs, and men with one little human stomach sits down there at the table and undertakes to digest the bill of fare of all creation. It isn't any wonder something goes wrong. The woodchuck is the only creature in the world that can do it. He has fourteen stomachs. Just why I do not know. It must be because he is a scavenger.

Q--Is quinine injurious to the heart and nervous system?

A--The regular use of quinine is certainly injurious. Its worst effect is upon the kidneys and white blood cells. It paralyzes the white blood cells, irritates the kidneys and disturbes the blood vessels.

A--What is the business of the thyroid gland?

A--It is to make thyroidin and thyroidin is a substance very necessary in the body to aid in the process of destroying poison. When a person's thyroid gland is deteriorated then the poisons accumulate in the body rapidly and the skin becomes dry and thin and attenuated, atrophied. There arespots formed upon the skin and the person rapidly becones old. The hair is dry and falls out.

Q--Suppose a person with nervous exhaustion sleeps well at night, yet is tired and sleeping most of the time?

A--This person is probably suffering from chronic toxemia from these fatigue poisons absorbed from the colon. Get the bowels to moving two or three times a day and the difficulty will disappear.

Q--What is the cause of hyperacidity?

A--Constipation is the chief cause.

Q--What is the formula for the Sanitarium cold cream?

A--I cannot give it to you exactly. You can get it at the pharmacy. It is prepared from white vaseline. Lard is not employed.

Q--What is the cause of rheumatism?

A--Chronic rheumatism is unquestionably due in the majority of cases to poisons absorbed in the colon.

Q--What treatment is most beneficial for rheumatism?

A--Improvement of the bowels. Make them move actively and get rid of the poisons. In the second place applications of heat, applications of light, applications which will increase the activity of the skin. Radium is wonderfully effective in quite a proportion of cases. Some are relieved in a few days by the use of radium, others require a few weeks' treatment. Radium is effective in quite a proportion of cases.

Q--What is the cause of occipital headaches?

A--Is is most often due to autointoxication but sometimes due to a diseased condition of the nose, the sinuses of sphenoid bone. The sphenoid cells are sometimes in a state of disease just like the bones in the upper part of the nose which sometimes become diseased in the same way and cause headache in the front part of the head. The sphenoid cells will cause a pain in the back part of the head just as the turbinated bones cause pain in the front part of the head and headache. Such a case should be examined by a nose specialist.

Q--What will increase the percentage of white and red blood cells?

A--Improved nutrition. You need more food. You need to digest and assimilate more food. That is the only way in which you can get better blood. Exercise is one of the things necessary for the formation of blood because the blood is made in the bones and the circulation of the blood through the bones is carried on by means of the muscles over which ~~xxxxx~~ over lie the bones. In order to get the blood circulated through the bones of your legs, you must use the muscles of the leg because the muscles of the legs pump the blood down through the bones.

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You must use the muscles of the arms and by this means the blood will be pumped into the bones which are the laboratories in which the blood is made. The red cells are made in the inside of the bones. That is one of the most remarkable discoveries that has been made in recent years.

Q--In the treatment of colitis, would you advice taking the bacillus Bulgaricus?

A--It is very useful indeed. The bacillus Bulgaricus I think should be used in all these cases. In bad cases of colitis it is necessary to apply it locally as well as by mouth.

Q--In what way is pure cow's milk injurious?

A--Pure cow's milk is comparatively harmless, but it is the most difficult thing in the world to get cow's milk. Even certified milk which is called pure is allowed to contain as many as fifty thousand germs in a teaspoonful. That is called the purest the kind of milk. That is certified milk. Ordinary commercial milk contains a million germs. The law permits milk to contain one million germs to the teaspoonful and yet calls it pure wholesome milk. So you see it is very difficult to get milk that is really clean and pure. Doubtless any germs at all in milk do more or less harm.

Now I think I have reached the bottom of the box. I thank you for your attention.

End.

V-P

The Measuring of a Man.

Stereopticon Lecture at the Sanitarium Parlor, Battle Creek, Michigan, Thursday, April 10, 1913, at 8 p.m.

By

J.H.Kellogg, M.D.

I am going to talk to you tonight about the measuring of a man by means of the great scientific progress which has been made in recent years we are now able to measure the efficiency of a man. It is far more important to know the efficiency of a man physically than to know his business efficiency. When we come to study the man, we find there are a good many particulars in which you are interested in knowing his efficiency. First, we consider the man as an engine, as a means of exercising mechanical power, doing mechanical work and we may measure this and see what his capacity is. There was a time when we could not do that. The engines the body uses in moving itself about are the muscles and the bones. The bones are levers and the muscles are the lifting powers which act upon these levers. If we study the relation of the muscles to the bones we find that all different kinds of levers and even the pully are represented in the different groups of individual muscles of the body of which there are 500 in number and there are about 200 bones and 500 muscles and they are able to exercise all the different kinds of mechanical power, these different kinds of levers and the pully. In general, the muscles of the body work at a disadvantage rather than an advantage. The muscle works upon the short arm of the lever so as to secure quickness of movement rather than the greatest amount of power. Now it is only within a few years that we have been able to measure the capacity of a man as a machine, as a lifting machine, as a working machine, as an engine. When I took charge of this institution thirty-seven years ago, that was one of the very first questions that I had to face. Exercise was one of the measures I endeavored to set in operation for the cure of sick people and this had not been employed before in this place. This institution was started as a water cure and when I took charge of it, water was the universal remedy. I introduced exercise and the question was"how much exercise shall I give this man,"

how much exercise ~~xx~~ does this woman need". The only methods I found in use for determining this were methods of measuring the body and the muscles to see how big they were.

Some of you remember when you were boys in school that the boys used to go around and say, "Look at my muscle". "See what a great arm I have" and the boy that had the biggest arm was supposed to be the strongest boy, but when we come to examine sick people this is quite a different thing. The man who has the biggest arm may be an enormously fat man and may be almost good for nothing. That method as applied to sick people or grown-up people did not work so we had to devise some means for accomplishing this and I found in use a little instrument known as the mosso aigograph. That is a little instrument by which you could test the strength and endurance of a finger. We also had some little instruments known as dynamometers for testing the strength of the hands, but one or two little instruments of that sort were all that were to be found. After ten years of hard work I succeeded in perfecting an instrument which we call the "universal dynamometer" by which it is possible to test the strength of every important group of muscles in the body. This instrument, as I say, was the result of ten years of hard work. In fact, many a night I worked at this instrument till I saw the sun rising in the East. After finishing my work at ten or eleven o'clock at night, I went to the laboratory and went to work and when I found I was pursuing an idea that had some profit in it, I would keep at it all night ~~along~~. After awhile we succeeded in perfecting an efficient effective instrument, and after developing the instrument and testing it upon a large number of persons we got together the results of these tests, after applying the test to a large number of healthy persons particularly. We finally got together the result and compiled them into a chart that you see here. This is a chart of a man and we have a chart for women too because we find the standard to be decidedly different. The average woman has just about half the strength of the average man, so we had to have two separate charts and each row of figures here represents the strength that a person of given height should have. A tall person should naturally have more strength than a short person.

This is not absolutely true universally but naturally it is expected to be true, that the larger man would have greater strength than the smaller person.

The strength of the muscle is determined by its cross section. A man who has large bones is supposed to have large muscles. So the larger man ought to be proportionately stronger than the small man. By taking the strength of different groups of muscles and plotting it upon this chart, then at the end of a certain time after exercise has been administered making a test again it is possible to see whether the patient has made a gain or not. In this particular case we have represented the effects of a warm bath. The dotted line here shows a man was made weaker after the warm bath. The strength was very much less than before. He had a strength at the start in this case of 6480 pounds. After the ~~xtrxxxtxx txxx~~ bath his strength was only 5415 pounds. He then took a cold ~~xxtx~~ dash immediately afterward and his strength was restored to the original amount. Within three minutes his strength was completely restored. He had lost a thousand pounds in strength, but in three minutes it all came back ~~xxx~~ to him under the effects of a cold douche. These examinations of the body include, not only the physical examination, not only the examination of the muscles, but examination of the bones. By means of the X-ray we are able to penetrate the solid tissues of the body. If we do not see the bone itself, we at least see the shadow of the bone, so if there are injuries, fractures, dislocations or anything of that sort, under the influence of the X-ray it becomes directly visible so that we can see it.

Here you have the skeleton. With the X-ray we can see, no only if the bone is fractured or dislocated but the density of the bone is determined by the X-ray, so that we can see whether there is a diseased condition of the bone, because when a bone loses its density, that means disease. If the density is increased that means diseased. So any change in the normal density of the bone is a clear indication of the presence of disease. Examination of the joints of the spine of other parts of the body with the X-ray is also found to be of very great value. For instance, in this case you notice these little nodules coming at the corners of the articulations. Here are some little nodules developing.

That is the beginning of rheumatic gout. By means of the X-ray we are able to discover the very beginnings of it. Very often a man has a pain in the back and wonder what makes it. The examination shows here is the beginning of this chronic arthritis or rheumatic gout, so this becomes a very valuable thing. In carrying out this physical examination of the skeleton and of the muscles we regard also the figure and ~~xxxxxx~~ the general coneur of the body. We compare it with the normal. For instance, suppose this is an outline of a healthy woman, this is the outline of the conventional woman, this is the circulation of a woman who has worn her clothing too tight about the waist so that the viscera of the abdomen have been forced down into the lower part here. This is a very common observation. The skeleton is affected as well as the soft parts so you see the deformed figure is very much smaller. The waist is very much compressed as compared with the normal figure. This is a matter of a good deal of importance because these deformities mean other injuries and deformities as well. These examinations lead to an effort to correct these deformities. As you see here, this is the correct standing pose and this is the correct sitting pose. This man stands against the wall, thrusts his head back pushing his chest out from the wall. When he holds himself in that position, his body is balanced over his toes so he has a proper curve in the back and has a position such as this man has when he is sitting erect. That is the way we get curvature of the spine, that is the way we get round shoulders, that is the way we get flat chests. Children sit in chairs that are too high for them. Pursuing their studies at school they sit down in chairs so the back has a posterior curve rather than an anterior curve as it ought to have. (We endeavor to inculcate as a part of our gymnastic and physical training the importance of maintaining a correct position in all the occupations of the day, in one's avocations of his business sitting at the desk, sitting at the piano, engaged in writing or in any sort of occupation,) work or manual labor, it is important to maintain the right position. Here you see the right position and the wrong one. This man is working with his chest ~~cramped~~. This man has his chest free so he can breath more freely, work longer and harder and accomplish more at the same time.

Prof. Sargent of the great Harvard Gymnasium, one of the leaders of physical education in the United States said that he had ~~turned~~ obtained pretty much his whole training, ~~the most important part of it~~ in development and ~~developed~~ developed his wonderful body while a farmer boy working upon a farm in pitching hay and cutting corn, chopping wood and all the different farm operations. He always took pains to put himself in the correct attitude. If he was going to pitch a fork full of hay upon the load, instead of doubling himself up and getting the hay and shooting it up in an ungainly fashion, he maintained a correct attitude, kept his ~~xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx~~ chest up and his shoulders back and the result was ~~xxx~~ while he was developing his strong muscles he taught the body to maintain that position, so it is perfectly automatic for him to maintain a splendid attitude ~~xx~~ or pose. Now if we neglect this when in our ordinary daily avocations, in our method of sitting or standing, if we allow ourselves to fall into any sort of shape in which the gravitation happens to pull us, we get deformed bodies, we get disordered, get these deformities of internal parts, we get prolapsed livers, distorted colons. We get our whole bodies in a state of degeneracy and disease.

Now this X-ray examination enables us to go further. It looks down into the body and tells us the position and the form and the condition of the viscera. It looks into the chest and cavities of the body and gives us marvelously useful information. Here for instance are the lungs of a man. Now I know these are the lungs of a man by the shape of this thyroid gland. You see it has no middle lobe. A man has two lobes of the thyroid gland and a woman has three. That is why women have cleaner blood and more endurance and greater vitality, but the X-ray tell us about the thyroid gland and it gives us information also about a gland that is very large when we are very young, before we are born that exists in this part of the chest. It ought to disappear or at least it should be very small when we are infants and should gradually disappear so that at the end of three or four years it should be gone entirely or only a mere little trace of it left. Sometimes this thymus gland is persisent and then it often gives rise to serious mischief. It presses upon the trachea, interferes with the breathing and sometimes sudden death is due to this persistend thymus

gland. Children sometimes turn black in the face, have a convulsion and die right off quick and we don't know what the matter is. Sometimes these persons that have a persistent thymus gland, if they take an anesthetic it is likely to be a very very dangerous thing for them. If we have an X-ray we are able to see this gland and to see whether it is there or not and how large it is, whether it is making any trouble and so we know what to do in advance.

If I were going to have an operation I certainly would have my chest examined to know about the thymus gland, the heart and other things. The X-ray gives information also about the lungs. A physical examination made of the lungs tell us about its density. Percussion over the lung tells us whether it is properly resilient or not. In that way we find whether it has the proper resilience and if it does not that change in tone indications of the disease but the X-ray comes in and tell us exactly with reference to the density of the lungs. These slight modifications of sound are influenced in a great many ways and it is one of the most difficulty things in the world to mark out a patch of disease in the lung insome cases by the old methods of physical diagnosis but the X-ray comes in and gives us the most minute information, especially the stereoradiograph gives us the most exact information and not only of the lungs but of the heart as well. We have other means of studying the lungs also. These tracings show the type of breathing. This shows the normal breathing. The chest moves very little and the waist moves a great deal. Here it is reversed. The waist does not more at all and the chest moves a great deal because the waist is tied up and cannot more. This is a condition of things that is exceedingly common. Ask a lady to expand her chest and she always pushes up her shoulders so as to pull her chest up and this abnormal type of breathing is very injurious because when all the movements are above these lower organs, the stomach and liver do not receive the amount of aid they ought to have from the breathing process. The breathing process is useful, not only for introducing air into the lungs, taking in oxygen and throwing off carbonic acid gas, but it is necessary for the proper activity of the liver and the stomach as well and the bowels and the colon, and these other parts are largely dependent upon these

little movements of the diaphragm coming down upon them and choking them and jogging them so to speak. Each movement of the diaphragm gives the stomach a little jostle, moves the food material along. When the stomach is going and the X-ray examination is being made and the doctor wants the stomach to move and it is not moving, he tells the patient to take three or four breaths and the stomach starts right off at once. So in order that the liver should do its work properly, it is necessary that the diaphragm should come down every time you breath and give it a nice little hug and a little suggestion to move on and stir it up. When the liver is squeezed in this way so the stagnant blood in it is squeezed out and sent along, room is made for new and healthy blood.

In the study of the lungs examination is made of the sputum. Here are some tubercle germs found in the sputum but sometimes when we do not find any tubercle germs in the sputum at all, tuberculosis can be seen in the lungs, and we can determine something about the heart by the physical examination and by various other means. By examinations of the pulse by the stethoscope and so forth, but these examinations are very coarse compared with what can be accomplished by means of the X-ray and the stereoradiograph,--that is a radiograph taken stereoscopically, two pictures taken with the object moved a little, just a distance of the pupils of the eyes, so that you see two pictures just as though you were looking at a stereographic photograph. Just this way we are able to see a longer object to get the solidity and perspective and it gives us a more definite idea of the heart than can be gotten in any other way. This shows how the heart can be compared exactly with the normal. Here are certain lines that are drawn by and by means of comparison of the dimensions of the heart as determined by measurements upon these lines we are able to see just what changes there are. Now for instance here is a list of figures. Here are figures that should be normal, even normally even to half. Here in it is 12.8. That shows the distance from the mid line here, you see, over to this point. This distance is 12.8 whereas it ought to be 8.5. That shows the heart is greatly enlarged in that particular direction and that tells us where

the enlargement is. These figures should be 4.7, that is the normal. ~~That is~~ It is found to be 4.8 from the other side. Here it is 20 and here instead of 13 it is 17.6. That means that heart is very much enlarged. The X-ray examination gives us positive information upon that. Here we have a very small heart. This heart is as much too small as the other was too large, but this little muscle here in this picture means tubercle deposits and just the moment the X-ray is turned upon the chest, this stands out as clearly as you see it upon the screen. So if there is any tubercle deposit there, it would be recognizable immediately and the Roentgenologist is able to tell exactly where it is and just how much there is of it. Here is another enormously enlarged heart. There is no means except by means of the X-ray examination that we could get this information as exactly as we have it here. I might remark just here that the management have decided to make a slight modification in our general plan of introductory examinations. Heretofore, there has been a charge made for all X-ray examinations, but the management have determined that the importance of these examinations of the chest is so great and it is so difficult to get many people to recognize the importance of it that they have determined to make it as a routine part of the examination hereafter. I have become satisfied after giving the matter consideration for several months that it is a matter of so much importance, we ought to do this to make a fluoroscopic examination of the chest in every single case, in every person who comes, because we have several times found after a person has been here several weeks, there is some trouble that did not show in any of the ordinary methods of physical diagnosis and are not suspected, so hereafter everybody who comes to this institution will have a fluoroscopic examination of the chest and those who are already here are entitled to this fluoroscopic examination also. All you have to do is to say to your doctor, "I would like to have a fluoroscopic examination of my chest" and the doctor will give you an order on the X-ray department and will arrange an hour for you. These examinations will begin the very first of the week. Dr. Case will be already all ready for you and will appoint an hour for anybody who wants this fluoroscopic examination. For instance the other day, a lady came here who had been having an obscure trouble. She was weak, quite short of

breath and there didn't seem to be any particular reason for it. She had been examined by many physicians and came here and she had some trouble with the stomach. Accidently while the doctor was examining the stomach, of course, he naturally glanced at the chest also as he always does and here was found what seemed to be a double heart as big as the normal heart lying right along beside it. On examination it was found to be a little sack that had formed near the apex of the heart where there was a leak so this woman had a very large aneurysm of the left ventricle of the heart, an exceedingly rare condition. It never would have been discovered in the world if it had not been for this fluoroscopic examination.

Now the examination of the blood is another thing of importance to which we attach great attention here. Every patient who comes here has his blood examined. This is one of the first things we do is to make a blood examination. The finger of the lobe of the ear is punctured and a little drop of blood obtained and a careful examination made by experts who have worked at it every day for months and years until they have become very expert and this examination tells us, not only the amount of blood and the ~~quantity~~ quality the of/blood but if necessary it is carried on further, so we determine other functions of the blood. We determine the amount of lime in the blood. We may determine also the viscidity of the blood. I have to operate upon a patient next Sunday who is jaundiced. Now before operating upon that patient, we will have to-morrow an examination made of his blood to see whether it will coagulate or not. Because sometimes you know there are people who are called bleeders because the blood will not coagulate and when an artery is opened even though it is a small one it keeps right on bleeding because no clot is formed to close the end of the artery. The same condition occurs sometimes in cases of jaundice. So on such cases it is dangerous to operate upon the patient, but now we have tests by which we can determine whether the blood will coagulate or not. If it won't coagulate we won't operate because we are not going to allow him to bleed to death anyway. So with other things you want to know whether it is dangerous for you to come in contact with a case of tuberculosis. You would like to know whether you are very susceptible to tuberculosis. You would like

to know whether you are likely to take some other form of disease, pneumonia or something else, perhaps. All that is necessary to do is to have your opsonic index obtained. Get a little drop of blood and this blood is brought in contact with the particular germ you are interested in. If it is a tubercular germ it is brought in contact with that and for fifteen minutes the germs and the white blood cells are allowed to fight and then this field of battle is examined, looked over and a careful estimate is made of the number of germs that have been slain, don't you see, and if you have got the ability to slay one hundred germs in a certain length of time, then you are good for a battle with those germs. You are able to meet them and you are said to have an opsonic index of one hundred, so you are up to par. I felt very proud when I was examined to find my opsonic index again tuberculosis was 200,exactly twice the normal. I felt particularly good about it because some one had been saying,if a man did not eat meat he would be subject to tuberculosis and I had not eaten a pound of meat in forty-six years so concluded I was pretty safe. I ought, perhaps, to explain a little further the reason I have an opsonic index of 200, is not because I do not eat meat but because I had tuberculosis when I was a boy and expected I would die. I had a cough for a year or two but I battled through it and I did not eat a particle of meat either. I lived in those days as absteimously as I do now and have all my life followed this low-protein diet, eating no meat ever since I was a boy of fourteen so I have had a good chance to test it out for myself and have been in contact with tuberculosis a great many times and very closely in contact with it. We used to treat many cases here,although for a number of years we do not receive cases of that sort and have never contracted the disease because I got over it so thoroughly that I acquired an immunity against it and have the ability to resist it to the extent double that of the average man. Now there are other examinations of the blood that show diseases of the blood cells. There are various conditions of disease which it is very important to become acquainted with. Pernicious anemia, you know something about that, a disease in which people get paler and paler and the blood seems to turn to water, as you say. The blood count falls from 100 to 14 or 15 percent. The hemoglobin may get

down as low as eight percent. I had a letter from a man the other day whose hemoglobin was 8 per cent. him here and when he left it was 93 per cent. He was enjoying life ~~exactly~~ immensely. That is the condition of the heart blood cells in cases of pernicious anemia. We know by this examination, we do not guess, we know. We make an examination of the blood and determine the exact condition present. There is altogether too much guess work. If you were going to buy a gold mine you would not invest your money in that gold mine until you had had some ore assayed with all the skill you could bring to bear upon it. You would want to be absolutely certain how much gold there was in the ore and how much it would average, yet we see what people do with reference to themselves. People spend any amount of money sometimes without knowing whether they have had a proper exaimation of not. They spend any amount of time and money all on guess work, all on imagination. Sometimes worse than that, sometimes on pure fakes in many cases.

Here is another form of disease in which the heart blood cells are changed and the examination of these cells tells us what is the nature of the disease. Here we have an examination of the blood that shows the appearance of the blood in a case of malarial infection. This shows you the appearance of the malarial parasite at different stages of its life. The parasite which destroys the red blood cells and produces the ravages of that terrible disease which has, perhaps, killed more people than almost any other one, malaria. (It is said malaria ruined Greece. Mosquitos really destroyed that great nation.)

In the examination of the heart we have, not only the examination of the heart itself, but the examination of the pulse with the ~~px~~ sphygmograph and we get some very interesting information. A little piece of smoked paper passes across the instrument and with each movement of the pulse there is a record made. This shows as the paper travels along this way a little writer up here which you see here, this little writing lever is making marks which indicate the nature of the pulse. This shows some of the different kinds of tracing. Here is the pulse of a healthy person. This is ~~a~~ the pulse of a moderate drinker. Here is the pulse of an old drunkard whose heart is very irregular and ragged. This is the

pulse of an old tobacco user. Here is the pulse of a young smoker. Here is the pulse of a heart that is nearly paralyzed by the affects of nicotine. This shows other forms of pulse, different kinds of pulse, the dicrotic pulse, intermitting pulse. These are all different forms of pulses that we meet in examinations with the sphygmograph and the blood pressure is determine l also by means of a suitable instrument called a sphygmomanometer and more recently there has been devised a wonderfully interesting instrument, the electro-cardiograph. This instrument gives information about the heart that cannot be gotten in any other way. It gives information respecting the function of the heart and the work of the heart just as intimate and as subtle as that which is given by the X-ray respecting the structure of the heart. By following the pulse we can tell something about the heart but we do not know very much about it all, but the electrocardiograph gives us a picture of the actual work done by the heart. When the heart contracts it produces a little electrical current, a very delicate current that requires a most delicate instrument to detect it and record it, but that is just what the electrocardiograph does and these little waves are produced by that electrical current that is produced when the heart beats. In this examination you simple take a a couple of in your hands or one is put upon each arm perhaps, then you lie perfectly still and at each heart beat there is a little electrical current which is recorded by the electrocardiograph and it makes a wave which you see here. This is the wave made by the auricle, the upper part of the heart and this is the wave made by the ventricle. This is a normal heart. Here is another wave coming in. This is an extra systole,as it is called, coming in and here are different curves that tell us where the irritation exists, where the source of irritation is. Each one of these represents a different type of heart, a different kind of lesion, or diseased condition in the heart which records itself, which may be detected by means of the electrocardiograph. This instrument, I went abroad a year ago to become acquainted with its use and it has been in training. We have been getting it installed and ready and in a very short time it will be ready for regular

operation. After all these examinations have been completed, then we have this record made which records all the different findings. Here is the blood cells, the proportion of one to the other and the amount of hemoglobin, the the different kinds of heart cells, the different kinds of blood cells, their proportion to the normal and the blood pressure. This is all put down. By a comparison you can see the gain that has been made in this case. There was at the start 1, 150,000 and after a few weeks, after a second examination there was 3,600,000 cells. The time was three months. This was evidently a very bad case of pernicious anemia. The patient had gone down pretty low, only had 45 per cent. of the blood he ought to have. We were very fortunate in getting hold of him so soon so he came up quite rapidly. If he had gone on a little further it might have been impossible for him to recover at all. We have to see to that sort and so this patient was treated in 1905 and we have cases of persons who have been treated here for this disease ten or twelve years ago and are in good health today.

Here is the stomach. Dr. Case has told you so much about it, it is not necessary to say much more. Here is a healthy stomach and here is one shown by the X-ray. Here is a dilated stomach . You see how enormous the dilatation is. How quick we can see with the X-ray exactly where the trouble is and how much there is of the trouble. We have also the test meal by means of which we determine just what is the function of the stomach. It shows us about the function of the stomach as the electrocardiograph does the function of the heart. This tells us how much hydrochloric acid the stomach makes in relation to the normal. In this case the stomach made no free hydrochloric acid at all. Here is the normal line through here and in this case it is way down to zero. It might be way up here. We have had cases that went way off the chart. By comparing each one of these points with the normal we see just the deviation from the normal condition. By this graphic method the patient himself as well as the doctor is able to see at a glance the normal condition. Here is a normal stomach you see. It is rare to find a stomach which is so exact the normal as in this case, but ocassionally we do.

By recent methods of study we are able to determine the efficiency of the liver. If we find, for instance, in the examination of the urinary secretion certain substances there, they mean that the liver efficiency is diminished and the more there is of these substances, the greater the efficiency of the liver is damaged. When we find these substances present in the urine it means these little liver cells are undergoing degeneration. They have the power to oxidize certain substances found in the bile which are absorbed when the cells are destroyed and undergo decomposition in the intestine and then are reabsorbed and they do oxidize and change these substances so they do not appear in the urine, but when these cells fail to accomplish this, then these substances appear, then we know hepatic insufficiency exists and this condition is found in people who have been accustomed to use tobacco, condiments, tea, coffee, whiskey and otherwise to abuse the liver. And when we have livers of that sortwe will find this hepatic insufficiency, so we have also likewise recent methods devised by which we can determine the deficiency of the pancreas, an organ which has been so much out of sight that very little has been known about it until very very recent years but ~~the~~ by proper examination it is now possible to determine the efficiency of the pancreas and we are making constant use of methods for testing the efficiency of the kidneys both the permeability of the kidney to water, the permeability of the kidney to salts and the ability of the kidney to eliminate the toxines of the body. The normal efficiency of the kidney is one hundred.

Yesterday as I was about to operate upon a patient, the patient was in the outside room all prepared for the operation,--I should state here that I never operate upon any patient without having the renal efficiency determined. Here was a woman brought up to be operated on all ready for the operation, but I found at the last moment that her renal efficiency test had not been made. She had just come in and required rather a serious operation but I insisted that I would not operate till I got the renal efficiency report and just as the patient was waiting and we were expecting nothing would be found wrong, we were waiting for the report to come and the report came that the renal efficiency was

33. I had nothing to do with it but stopped and explained to that lady the situation, that she would have to come again and asked her to please excuse me this time. I didn't want to operate upon her so the lady retired and will come again. Now next week I expect to operate upon a man. Six months ago I examined him. He came for operation and we found his renal efficiency was 31 and the other day another examination was made and his renal efficiency is 64. So not he can have his operation done. If I had operated on his ~~six~~ months ago, there would have been a funeral ~~instant~~ inside of a week. Now we shall get through all right because we have got a margin of efficiency sufficient to carry us through the ordeal of the operation. I believe every person who is sick, who has anything the matter with him, every person at least passed middle years, every sick person who has ever had any trouble with the kidneys ought to know what the renal efficiency is because really it is one of the most important factors in preserving our lives. The kidneys eliminate poison. They are one of the most important outlets for ~~poi~~ the poisons of the body and when the kidney has lost its efficiency, these poisons rapidly accumulate in the body and the arteries harden rapidly, old age comes on rapidly and death is hurried along. We want to keep old father time at bay just as long as we can. It is far more important for any business man to know what is the condition of his kidneys as regard renal efficiency than it is to know what is the value of his stock in the market or anything of that sort.

We have also other examinations of the kidney. These represent casts shown by the miscroscopic examination of the urinary secretion which tell us whether the kidney is being broken up or not. These casts mean that the kidney is undergoing disintergration. It is breaking up. Whenever there are casts found in the urine that is a piece of the kidney and when it is loss it is never reproduced. It is going, so it is very important to know about it. This represents the crystals of various poisonous substances found in the urine. Here are some specimens of uric acid found in the urine. That means the body is not burning up uric acid. The uric acid ought to be converted into urea. It means there is something wrong so the body is not able to do this. Here are some un-

usual substances sometimes found in the body besides uric acid. When the report comes in "hyaline casts" or any other kind of casts, it means the work of breaking down the kidney has begun and the greatest care must be exercised from that moment on. The greatest care must be exercised to avoid overworking the kidney or doing anything that willaccellerate its work of breaking down.

Here is the colon. The X-ray gives us information about that that we could not possibly get in any other way. Here is a normal colon. Here is the cecum, the transverse colon, the descending colon and here is the pelvic loop which is very large and has fallen over. It sometimes becomes a source of trouble. Hhere is a colon that has fallen away down in the center. Instead of passing across the top as it should do, it has fallen away down here. You see this is the normal colon close up under the ribs on both sides. Now look here, here is the top of the hip bones you see and here is the colon almost entirely in the pelvic. The ribs are away off up here somewhere and almost the entire colon is down here. It ins't any wonder that patient was sick. Here is another case in which the cecum is enormously large, the ileocecal valve incompetent, some of the material baking up into the intestine and the hepatic flexure folded over so it makes a double obstruction, an extra kink here. So there are three kinks in the colon. Here the colon is contracted as a result of colitis and we see right away what is the trouble with the patient and we know what to do to cure that condition. Here is a terrible tangle here where the colon is almost tied in knots, it is so twisted and doubled. Here is another case in which the appendixwas diseased. It was open so that bi smuth and fecal matter could get into it, so it was a diseased appendix and likely to produce serious mischief at any time. Such an appendix should be removed. Here is another prolapsed colon, a fallen colon, you see, lying down here. Here is a great kink in it. Now the history of that colon is rather interesting. This colon had been in a bad state for a great many years and the patient's skin had become the color of leather. He was emaciated, wretched, miserable as a man could be. He ate a great deal of beefsteak, lived it on it mostly. He was a

New York lawyer and he smoked a good deal and he drank moderately of whiskey. He was a man something over sisty years of age. He happened to come up to Michigan and through the influence of his friend called on us here and we made an investigation of his case and while he was here he made up his mind to turn over a new leaf, stop eating meat, stop smoking, stop drinking whiskey and so on and he improved considerably and he stood up on the platform right here in this parlor and told here an interesting story of what he resolved to do. A year afterwards I met him and he was a wonderfully healthly, strong, vigorous, hearty man and marvelously improved. His skin had cleared up until it was almost as clear as anybodys and he continued. After a few years in which he had enjoyed splendid health and vigor, was able to do marvelous work for he was a very prominent corporation lawyer in New York City, a man who had occupied one of the highest positions and one of the most important commissions in the state of New York, three years afterwards he took a trip out to Denver and on the cars just before he got to Denver he said to himself, "Now then I see here is some chicken pie on the bill-of-fare. Now I am not going to eat any chicken but I wonder if a little of that crust wouldn't taste pretty good," so he ordered chicken pie. When it came he was very much disappointed to find it all chicken and no crust, just a little crust at the top. He nibbled at the crust, got a little taste of the chicken and the old appetite for chicken came back. He said, he knew
he ought not to eat this chicken and that he was going to do it just this once. He wanted to get his money's worth, but he ate the chicken and in less than three hours he began to feel bad and before he got to Denver he was feeling very bad. He got to a hotel, sent for a doctor and the doctor said, "You have got ptomain poisoning". He had vomiting and was very very sick. He continued ill for two weeks, then got here to Battle Creek and he improved rapidly here, but urgent business called him on and he went on on his way to New York. He got as far as Buffalo and he felt bad and went into a hospital and in two weeks later he died in that hospital and the examination showed he was killed by insufficiency of his liver. He had a weak liver and these poisons that were formed here in this colon.Because he had this tangled up colon, the chicken got down

and lay around and rotted and could not get out. Got entangled here in this greatly prolapsed colon, so he had terrible ptomain poisoning and the liver was so badly crippled it was not able to deal with this enormous amount of poison so he died. It was the chicken that killed him, there was no question about it, he knew it himself. He made a little talk to our people and I think he told his story about it. I won't mention his name for he was a very prominent man and I certainly greatly mourned his death because he was a very charming man as well. A great circle of friends moum his death. What a pity that life should be sacrificed to chicken pie. Anybody who has got a crippled colon of this sort is likely to be suffering all the time from this cause.

I received today a letter from a gentleman connected with the Government. He said, "My brother has suffered for fifteen years from terrible ptomain poisoning". That means simply that he has got a crippled colon. He said, "I have got him to stop eating meat and he is a great deal better, but every little while he gets something of that is not right and he get laid up and just as soon as he is able to come, he will come along to Battle Creek". Such a person has no business to eat a particle of meat of any kind because it will simply lie around in the niches and corners of that colon and rot, putrefy and the worst possible mischief may result.

This is a picture of the germs found in the examination of the feces. Here are some more germs found in different conditions in disease. Here are the friendly germs that will drive out these unfriendly and disease producing germs. We are acquiring more and more confidence in the value of these friendly germs. I take a bottle, sometimes two bottles every single day of my life. I must confess I once in a great while get so busy I forget it, but every day when by error I don't forget it I take one or two bottles of these friendly germs here because I value my life. I want to make the most of it. I want to live as long as I can. I want to be just as efficient as I can all the time and I dont want to be poisoned and paralyzed and hipnotized by these horrible germs and the poisons reproduced but I want my brain to be just as clear as I can keep it and I want all the endurance I can possibly get for work. That is what I am living for so I am willing to have all the help I can get from these friendly germs and I am glad

there are such things as friendly germs because we have been led to believe that all germs are unfriendly but that is a mistake. Metchnikoff, Wallman, Griegeroff, Tissier, Brieger and a lot of others of the great European investigators have shown us that there are certain germs that are capable of helping us to keep in health. So it is a good thing inocculate ourselves with health by the ~~following~~ swallowing of these friendly germs. That is why we have on the table here, the Yogurt buttermilk and the Yogurt Tablets which contain in addition the new germ discovered at the Pasteur Institute last summer, known as "glucobacter" which represents the friendly germs though it does not do anything itself,--that is very great value to the body,--it makes food for the friendly germs and so feeds them and enables them to thrive grow and flourish and it helps us in that way more than it otherwise would.

All these different examinations we ~~xxxx~~ find ~~xxxxxxxx~~ summed up in a series of co-efficients. The Battle Creek Sanitarium System of physical co-efficients.By the presided plan is expressed the efficiency and power of all the different functions and organs of the body. These different examinations I have been telling you about are all important and I thoroughly believe that the New York doctor that I heard from this morning is correct. I don't want to appear as bragging or boasting, but I received a letter this morning from a prominent New York gentleman and he said, "I am ill. I have been sick for a long time and I don't seem to find out what is the matter and don't get any better. A few days ago I met the medical director of one of the three largest Life Insurance Companies in the world and he told me to go to Battle Creek. He said, 'You go up to Battle Creek and you will get there the most thorough-going scientific examination you can get anywhere in the world'", and he said, "I am coming and I want to let you know that I am coming as soon as I can get there and I want you to look me over and tell me what is the matter". Now I would not have said this if I had not felt that I had a pretty good authority in this very learned doctor from New York to back me up. The Sanitarium is a place where such a thorough-going examination as I have been describing is made because we do team work here. There is not a single doctor in this institution that could make all these examinations I have told you about. It takes a whole team of doctors. I know absolutely you could not find a doctor on the face of the earth, not a live man anywhere on the face of the earth that

could make all these examinations I have told you about. It is only by having team work, making these different examinations by a ~~different~~ dozen different people. Experts is one in whose particular line to do the work and it is only by maintaining a large institution and extensive laboratories and a whole corps of experts and doing team work of this sort that it is possible for this kind of thorough-going examination to be made. The important thing after all is to get well so that you feel as well as that baby looks ~~if~~ possible, to get back to the same joy and health and vigor you once had. Treatment is the thing to accomplish that but most of all the change in habits, the getting back to normal habits of ~~living~~ living, the only thing that has made you sick and how to get along without it without doing that thing any more and doing something better. A man said to me tonight, "When I came here three weeks ago I really didn't think I could ever get along without meat, but really I don't think of it any more. I am glad to get rid of it." A gentleman in my office the other day said, "I was here three years ago and I have come back to show you how well I am." I said, "Have you been living up to Battle Creek Ideas since you went home?" He said, "You bet I have." He said, "I have not tasted meat since I left here or touched a cigar." He said, "The last cigar I smoked was the one I smoked the morning before I came to the Sanitarium", and he has never touched it since and the result of it ~~is~~ is he has been getting back to his old vigor that we thought was gone forever. I tell you my friends, it pays to be good; it pays to be good! The real object of this institution is not examine people, it is not to treat people but ~~it~~ is to teach people how to live, but through the examination we find out what is the matter and through the treatment we get the opportunity for a new start in life. Then through ~~the~~ the training and education and the instruction you get, you ought to be able to keep on growing better after you go home. Don't forget that fluoroscopic examination of the chest and heart and in the course of a week I think you can all get opportunity ~~for~~ to have an examination. I thank you for your attention.

End.

v-p

Question Box Lecture at the Sanitarium Parlor, Battle Creek, Michigan, Monday, April 14, 1913 at 8 p. m.

By

H. H. Kellogg, M. D.

Q—What is migraine?

A—Now there are just about as many different opinions about migraine as there are doctors, but I believe migraine is acute intoxication, that a person suffering from migraine is simply poisoned. He is in just the same condition as if he had gone to a drug store, and, by mistake had got the wrong medicine. He is simply poisoned and the source of these poisons is the colon. Migraine is without doubt, in my opinion, a phenomenon of anaphylaxis. Now, perhaps, you don't know just what anaphylaxis is. Dr. Vaughn of Ann Arbor has done a great deal of experimental work in relation to this condition known as anaphylaxis. Dr. Vaughn is one of the foremost investigators of this question. An experiment by Dr. Vaughn will illustrate the meaning of anaphylaxis. Dr. Vaughn found that when he injected into the abdomen of a guinea pig a considerable amount of the white of egg for example, it did the guinea pig no particular harm. The guinea pig was perfectly happy as ever. Nothing happened to it, but, at the end of two or three weeks' time he injected again just a few drops of white of egg, the guinea pig promptly died. Now that is a very singular thing, isn't it, that a thing that was apparently harmless as the white of egg, should, on one occasion be perfectly harmless to the guinea pig and three weeks afterwards should be a deadly poison. Nevertheless that is a fact and this is found to be true of nearly all animal proteins. If instead of white of egg it had been the blood of some other animal, if it had been ordinary beef juice, the effect would have been just the same exactly on the guinea pig. It is because everybody of each animal organism is a foreign territory to every other one, because the tissues of every animal are at enmity, at war with the tissues of every other living being of a different species. Now to illustrate that fact I might mention another simple laboratory experiment. Here is a drop of human blood. We take this drop of human blood and put it into the veins of

a cat for example. In a few moments it has entirely disappeared. The tissues of this cat, the blood of the cat will eat up that blood. It is destroyed because it is foreign. If a man's veins are injected with the blood of an ox or a sheep, in a few hours it has all disappeared. The body will not tolerate the invasion of its sacred territory by the tissues of any other species of animal. Now here is a very interesting thing that I will tell you. I always like to tell about it and that is, that if it is the blood of a monkey that is introduced into your veins it is welcomed as a friend and neighbor and kin don't you know. There is no objection to it. Human blood does not object at all to associate with monkey blood, with the blood of a gorilla or a chimpanzee or orang. Now isn't that an interesting thing. That is to me very good proof that we humans all belong to the monkey tribe, we all belong to the monkey tribe. The tribes of monkeys do not all belong to the human tribe but we all belong to the monkey tribe and consequently we ought to study the monkey, don't you see and to follow the monkey diet. If we study the diet of the monkey that is where we get to. We ought to behave like monkeyes at least in some decent respect. Now migraine is simply an illustration of this phenomenon that has been described by Dr. Vaughn and by a number of eminent European investigators. A person who has been subject to inactivity of the bowels or in whose colon there has been produced poisons of certains sorts becomes sensitized to those poisons so that afterward the introduction of a small amount of them, the generation of a small amount of them and their absorption into the blood is sufficient to bring on the horrible vomiting distress and terrible pain of migraine. I arrived at this conclusion myself by studying these cases and a few months a go I had an opportunity to talk the question over with Dr. Vaughn and he said, "Of course, there is no doubt about it that these sick headaches in migraine are an example of anaphylaxis of this peculiar behavior of the body toward poisons." The body has been sensitized. Now you know there are some people who cannot eat strawberries because they are sensitized to strawberries and as they eat strawberries they have nettle rash or terrible sickness. We had a very tragic thing occur here in this town only a year or two

ago. A baby that had once eaten very freely of strawberries, I believe that to be the case at any rate, found a large crate of strawberries waiting to be taken away, carried somewhere else, and the baby siezed upon a box of strawberries, got into a corner and ate the whole box of strawberries. The strawberry seems to be the most innocent thing in the world, but that baby within a short time was siezed with terrible spasms and died because it was sensitized to these apparently harmless substances contained in strawberries and which to the average person are entirely harmless. Some people have the same sensitiveness toward oysters, fish and honey.) I have known a number of people who could not eat honey without being very sick and there are naturally ~~xxxxxx~~ I ~~think~~ people who are sensitized to eggs so that they never can eat eggs without being made sick. Here is a gentleman here who knows of such a case and such cases are not at all uncommon. Only a few years ago an eminent physician reported before the Academy a large number of cases of this kind of antagonism to eggs, an inability to eat eggs. He made an investigation of the matter and he found that eggs contain a small amount of a poison, a poison known as toxalbumin, a poison of the same nature as the poison which is found in the venom of snakes, but only in very minute amount and this amount is so small that ordinarly it does not affect anybody, but some people become sensitized in some way to this poison and then even the minutest amount of it is sufficient to produce most distressing symptoms. Dr. Rosenau of Harvard University has recently brought another very interesting and common phenomenon under the head of general anaphylaxis. He has found that the distress which we experience when we find ourselves in a close room is due to anaphylaxis. Another very common illustrationof it, is the asthmatic attack that some people have when riding behind a horse. Some people cannot ride behind a horse. The slight amount of horse substance that is absorbed taken in through the air by inhalation is sufficient to produce the asthma so you see these are symptoms of anaphylaxis because these people are sensitized to the horse you see, just as some people are sensitized to eggs and others are sensitized to the horse and other people are

sensitized to the poison of the pollen ~~of~~ found in certain plants and those people have hay fever, so if a child is injected with antitoxin for dyphtheria, the child is by that act sensitized with the antitoxin and if a year later that child is injected with the same dose of antitoxin that saved its life the first time will kill it the second time so if a person is ever treated with antitoxin, the amount must be very small ~~indeed~~ indeed and given very carefully or vatal results will follow if the person has once before had an injection of antitoxin. ~~In~~ If any of you have ever been treated by antitoxin and you have occasion to use it again, be sure to tell your doctor that you had it before. The same thing is true of almost any serum injection. It is not the antitoxin itself that makes this trouble, it is the horse serum, it is simply the material which is derived from the horse. Now all of this weighs distinctly, don't you see against the use of the flesh of animals as food. It is probable that the cooking of the ~~flesh~~ flesh of animals destroys to a large degree this effect and it is certainly true also that the mucous membrane of the intestine filters out these substances and so to a very large degree prevents the occurrence of this difficulty. A process of digestion tears the flesh all to pieces and reduces it down to the original brick and mortar out of which it is built. Then these ultimate particles are rebuilded into a different kind of tissue. That is the reason why it is possible for us to subsist upon the flesh of ~~many~~ other animals. (A gentleman was saying to me to day, he thought it would be difficult for anybody to make blood without the flesh of another animal. He thought a person must eat meat in order to make plenty of blood. That was formerly supposed to be the case but now we know that meat is no better than any other food for making blood because we know that in order for the tissues of the body to make human albumin out of animal albumin it must reduce that albumin down to its very lowest element, that is, we take the albumin after it has been reduced down to the albumin from an egg or the albumin from wheat, the albumin from corn, we find they all look just ~~like~~ alike. It is all ~~just~~ the same thing as though here were a dozen structures builded of red brick. Here is a barn built of red brick, here is a church built of red brick, here is a dwelling house built of red brick, and here is a warehouse built of the

same material. Now when we tear this house down and put the brick into a pile and tear the church down and put the brick from it and put it into a pile, and tear down the barn and put the brick into the same pile, you would not be able to say which was which. You could not say that this was this church brick and this was dwelling house brick and this was store brick and this was barn brick. The brick are all kkkxky alike you see. So when the flesh of an animal is digested in the body and the same material, protein from a vegetable or grain or cereal is digested in the body and reduced down to the ultimate acid amines of which these substances are composed, crystaline substances out of which albumines are built, they are all alike so there ~~x~~ is no advantage in the animal albumin. It must be torn down to the ultimate material anyhow before it is built up. But here is one point rather in favor of the vegetable protein,--that is, in an animal we have these materials built up into a structure into a machine for use. In the vegetable we find these materials in their crude form but in the animal they have been used so when one eats animal flesh, it is a good deal like building a house out of second-hand material; it is a good deal like building a house out of the brick, mortar, stone, lumber and nails that have been once used in a house before, don't you see. The other house has got the first use of them. It is a good deal like wearing a second hand coat, don't you see. When I was down in London sometime ago I was passing a store and I saw a sign out, "Second hand teeth". I was so shocked that I went back and looked at it again and stood before the sign. It was on a pawn brokers store, "second hand teeth" and there along with the second hand kettle and the second hand pianos and other things were second hand teeth. I said to myself, "Now that is the limit" and as I walked down the street toward the hotel thinking it over, it seemed to me something really very appalling, that people had gotten so poor and impoverished that they were compelled to put up with teeth that had been used before. I said tomyself, "How would one feel chewing a dinner with teeth that had been used for chewing dinner before". Wouldn't he be thinking about what kind of dinner these teeth were chewing the last time? Was it limburger cheese?

v-p

Thursday, April 10.
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Was it limberger cheese or something else and it would somehow interfere with the enjoyment of the meal. When I was at the hotel I sat down at the table and there was a big, burly man sitting beside me who was there just a moment before I got in and I heard him give his order to the waiter and the first thing he ordered was cow's brains. I looked at him andIsaid, maybe that is what he needs. I don't know. Then he went on and there was trite, That is, a second hand stomach don't you see and beefsteak, second hand muscle and liver. Dear me. He had half a dozen second hand things before he got through making his bill of fare. His bill of fare was all made up of second hand food. Now it occurred to me that it is really on the whole a great deal more decent to eat a meal with second hand teeth than to eat a second hand meal, and to eat something that had been eaten before. Well, nowwe will pass on to something else.

Q. How would you treat migraine?

A. Get rid of this awful poisoning. A person suffering from migraine is almost certain to have a stasis somewhere. Suppose this represents the alimentary canal. This is the colon a part of it and here is the small intestine coming down into the colon and when we investigate these cases of migraine we find that somewhere there is a stasis or stagnation. Here is a cecum that is dilated for instance, enormously dilated. It is so over stretched it has become weakened so it is not able to contract and lift the material out so it remains down here in the bottom and stagnates, a whole lot of that material that remains there day after day and week after week. We have had cases repeatedly in which the material was seen in the cecum a whole week after it had been eaten and it lay there rotting and putrefying. Suppose you put some beefsteak in your pocket and carried it around for a week. You would likely to be arrested as a public nuisancce. The condition of that beefsteak would be such as would require the services of a city scavenger. Now it is bad enough to have beefsteak in your pocket but suppose it was inside instead. Is the beefsteak any better inside than it is outside?

Now, all the difference is the inside is getting the whole benefit of it. If it is outside the neighbors get some of it too, you divide it up with your neighbors so it would not be quite so bad. Now it is no wonder that a person in such a condition as that suffers ~~from~~ with migraine. The wonders he escapes one minute, the wonders he is not suffering every minute of his life and there are people that suffer that way. There are people that go month after month who don't know what it is to be free from headache, from distress, irritation, irritability or some other distressing nervous symptom for one single minute of their lives. It is a terrible handicap to live that way and when we investigate those cases we find there is some trouble of that sort in the colon almost without exception. It is the very rarest thing to find an exception. We used to charge these things to all kinds of metrical causes, some changes in the moon or solar system or something else, some obscure change in theweather or some obscure and and far remote cause but nowwe know that the cause is a real tangible thing and that can a definite thing you can put your finger right upon and fortunately remove. Sometimes there will be a kink rightup there. That is what makes this trouble here, this accumulation. Sometimes this accumulation has undergone such a degree that the ileocecal valve has been pressed open. Then these fecal matters that have accumulated here will be forced up to the small intestine, sometimes many feet and then the condition is a great deal worse because the absorption and putrefaction in the small intestine is far greater than in the colon but the colon is naturally prepared to defend itself against these conditions somewhat. Sometimes the colon will be fallen away down like this and that is not an uncommong thing at all.to find the colon down like that and in those cases there will be an accumulation in here. Sometimes the trouble will be down here in the pelvic colon. We find a great variety of conditions which produce stagnation in the colon. Whatever the condition is it must be learned and that is the reason why the X-ray is such a service to us. That is why the bismuth meal has rendered us such great service

in picking out the cause of the headache. ----------Many a headache has been cured by finding out the exact location of stagnation through the bismuth meal. A man takes a bismuth meal at 6:00 o'clock in the morning. At half past nine he comes around and the Rontgenologist makes an examination and finds out where the bismuth meal is. He sees it. Then the patient comes in again a couple of hours later and the Rontgenologist sees where it is then so in a couple of hours more he comes in again and perhaps he will find some of this material lying around in the cecum for three or four or five or six or seven or eight days. It is a very common thing to find it lying about here 3 or 4 days and it is putrifying during all that time. Sometimes it is likely to be down in this part where stagnation occurs. We have to do something to do this trouble. I might mention one interesting case to you. This is what is called the pelvic colon. This is the lowest part of the colon just above the rectum and this normally falls over backward when it is empty. Then it rises as it is filled but sometimes when it gets fallen over it gets fixed, becomes adherent and is caught and clogged so it cannot rise and then obstruction occurs here. I think this is the most common cause of the cases of obstinate constipation we meet with that are not regularly relieved by regulation of the diet. It is because there is some trouble of that kind in many cases. A couple of weeks ago I had occasion to perform an operation up on a case of this sort and finding the colon down in this way I put it up, had to operate for some other reason also and after getting it up here I fastened it here so it could not get back by tacking it to the omentum which is attached to the transverse colon to hold it up. Today this patient was examined and found that the difficulty which he had formerly had had entirely disappeared. ~~only it~~ Formerly it was impossible to empty the bowels even by enema satisfactorily because after the bowel had been filled with the enema it would not evacuate. There was an obstruction down here so it would not evacuate so there was trouble on that account. Now it is found there was not the slightest bit of trouble. The patient's colon is filled and immediately emptied because the kink

had been overcome by holding the pelvic colon up in place. We have one or two other similar cases on hand. We must find where this stagnation occurs and remove it and if we search thoroughly enough we can find the place. Every single case of constipation can be cured. Every single case is curable. There are no exceptions. There is no reason why anyone should go on month after month and year after year suffering from this most terrible of all maladies, the mother of thousands of other maladies.

Q. Could pains in the knee and limbsbe rheumatic when the analysis does-not shows no uric acid?

A. Oh, yes. There is no relation between uric acid and rheumatism. It is very important that people should find that out and that the public should know it, that uric acid is not the cause of rheumatism. There is no relation at all between uric and rheumatism so one never should imagine that rheumatism means uric acid poisoning or the poisons of uric acid is evidence that rheumatism is coming. Neither one of these things is true. Rheumatism is probably in the majority of cases an actual infection of germs. One of the discoveries have been madewithin very recent times about rheumatism. For instance, one case had suffered from chronic inflammation of the tonsils and chronic rheumatism. The tonsils were removed and the rheumatism entirely disappeared at once and the patient never had any more. I have seen one case almost like that myself. Cases have occured in which there were inflammations or infections occurring in some other parts of the body. When these were cured up the rheumatism ceased. That was the source of continual poisoning and infection to the body so the body never had a change to recover itself. I think that this is the most common cause of rheumatism and that the source, the door, through which the infection enters is the colon. It is the intestine because there is almost always connected with chronic rheumatism a a condition of colitis. That is a condition that most commonly exists in the descending colon, a condition of colitis. This fact was discovered long, long ago

As long as 20 years ago I remember reading in a bulletin of the Pasteur Institute an account by one of the professors of the institute of some investigations he had been making. He was himself suffering from rheumatism and he had found that at frequent intervals when he had suffered from attacks of rheumatism there was infection of the colon. There were, as he said, large masses of mucous discharged from the bowels which, on examination showed the presence of a special organism and he believed that this infection had something to do with the rheumatism and the modern researches have seen to confirm these observations.

Q. How can a correction be made when the toes turn out to the side too much so that the weight is thrown on the big joints causing them to protrude?

A. Now there may be difficulty with the shoes. It is quite possible that the shoes are not properly constructed so that is the first thing to look after. Maybe you need a shoe doctor. Maybe The next thing is to see an orthopedist. The patient should be examined carefully because there may be some deformity in the feet. There may be weakness of some group of muscles or maybe the foot gear is not properly constructed.

Q. The writer in the February Craftsman taking his ideas from a book in circulation entitled, "Man on a 50% Efficient" makes the statement that the daily enema is as the daily bath and part of ---------

A. Somebody has been reading the advertising columns. There is responsible writer who would dare make such a statement as that. This patient has evidently been reading advertising the matter columns of the Craftsman and they have to be read with a discount, more than 50% discount. ~~This extremely excessive~~ This is not a new idea at all. There was a certain Dr. Hall some years ago in New York who advertised of ---------- a secret of long life. It was known Hall's secret. It was advertised everywhere and sold by agents all over the country and, I am ashamed to say, clergymen were very largely instrumental in selling this secret. They had a commission of 50% for selling it and it sold for

four dollars and consisted of a little bit which said by Davidson's---------- and take an enema every. That was all there was to it. I drove them out of this country. I prepared a circular letter exposing the thing and sent a copy of it to the associated press and to several large advertising newspaper agencies and the newspapers all over the country took it up and whenever this man's agents appeared in town immediately ---------- that I had written about it appeared in the columns of the newspaper so destroyed the business. I was very glad to say that a few people from being imposed upon. A great many people were damaged by this so-called secret. It was an imposition of course. Dr. Torriall of New York was simply perpetrating the Hall secret business. Dr. Hall made one hundred thousand dollars out of his fake.

Q. Is it possible to ----- the teeth when they are becoming loose?

A. Yes, indeed. A good dentist can do that if the difficulty has not gone too far. It may have gone sofar that the teeth are just ready to fall out and in that case it is of course, too late.

Q. If highliving, rich food, etc. cause gout with rich people what would cause it among poor people?

A. I was reading not very long ago of a young fellow in England who had gout terribly bad and he said he wouldn't mind only it was his father who had the pleasure of drinking the wine. A tendency to gout is hereditary. It is likely affects of high living and the affects of alcohol and dissipations of various sort. They are hereditary. Now if you cut off a man's arm that is not transmissible by heredity. His child will have two good arms because it is only a part of his body that is damaged but if you feed a man alcohol day after day and day after day until every single cell and fiber of his body have been damaged then that man's children will show that blight. That blight will be carried on down by heredity.

Heredity,as somebody has said,is God's bookkeeper. We find it expressed in holy writ. The sins of your fathers are visited upon the children and to the third and fourth generations. Why not the fifth? Because they run out. There isn't any fifth generation. They die off before they get there. But why is it that these sins of the fathers are visited upon the children of the third and fourth generations. It is an inevitable consequence. The child is a part of the father. He is simply an extension of the father. The child and the father are one being and the grown child is simply an extension of the grown father. It is one being after all. The child and the father are not two separate ---------- in a biological sense. The child is simply an extension of the father. We are all buds off the family tree, don't you see. Take a little twig off a willow tree and stick it in the ground and pretty soon it will be another willow tree. Perhaps you may have a thousand of them but there is really only one willow tree in the world so there is just one man, Adam,and we are simply an extension of the original Adam and the consequences of the evil doing the father brings upon himself,he also brings down upon his children. That is a serious thing that people ought to think about. Men don't think about that as they ought to. We have all that trouble for generations to come. That is what is the matter with this generation? It is what the generation that preceded us has been doing. Oliver Wendell Holmes said every man is an omnibus in which ride all his ancestors. That is what is the matter with us. We have so many crooked people in our omnibus sticking their heads out every little while and making a row.

Q. Please state again about the free X-ray examination.

A. Every patient that comes to the Sanitarium from now on,beginning yesterday, every single patient who comes in is entitled to an X-ray examination, a fluoroscopic examination of the heart and chest. This does not include the making of plates because that incurs a very considerable expense but it is the observation made with the fluroscope. The doctor can look in and see the heart and chest and if there is any serious trouble there he will find it out and

if there is anything that requires a more thorough-going investigation by means of radiography, that will be done. Of course, that will occur only very rarely but now and then it will occur. Now in just yesterday's ~~days~~work, Dr. Case informed me that he discovered three cases of tuberculosis in people who hadn't any suspicion of it. Some 40 or 50 people were examined yesterday and of those 40 or 50 people three had tuberculosis of the lungs and didn't know it and it would not have been discovered perhaps without that method of examination though the doctor, the examining doctors might have found it in some cases. In another case the doctor found a large long string of gallstones, four or five great, big gallstones and the patient had no suspicion at all that he had any of them there but there they were. Well, we say when ignorance is bliss'tis folly to be wise and eyes are not proof but it is a good thing to know what we have to reckon with after all. Those who are now in the institution are entitled to this examination and if I were in your place I would not go away from this place without having it made. It is a good thing to know the condition of the heart and lungs. I would not leave a place where you can get such an examination made without having it done. It costs you nothing to get it done. You can arrange through your doctor and it will be quite valuable I am sure.

Q. What causes ringing noises in the ears?

A. There are a good many causes. If you are troubled with that thing call on Dr. Colver and have an examination made to see what the cause is. The most common cause is a catarrhal condition of the middle ear, a catarrhal condition of the throat and nose which has extended up into the middle ear.

Q. If one has a small lump on the chest is there any danger?

A. Yes. There is danger. You ought to have an investigation of that lump. If it is growing and painful it ought to be removed right away because it may develop into cancer. Everybody ought to know that especially women. Women ought to be thoroughly alarmed about that thing. The appearance of a lump should lead to an examination right away and removal. Now there is no danger in removing

a little lump. It is the simplest and the easiest thing in the world to do. Then it ought to be critically examined by a good pathologist because that is the time to cure cancer if there is any cancer coming. That is the time to cure it. I was so pleased the other day when a lady who came here fifteen years ago and had such a little lump. I said by all means have it removed. I removed it and found it to be the most virulent form of cancer. I met the lady the other day in perfect health. If the matter had been neglected six or seven months it would have been too late. She would have been dead but she is today in perfect health and a lady whose name is familiar to every person here. She was a very prominent woman.

Q. Is there danger to health or deformity of the neck in applying massage to the thyroid gland?

A. No.

Q. What are the advantages of applying massage to the thyroid gland?

A. None at all. The tyroid gland does not want massage unless it is in a state of atrophy. If there is a condition of atrophy it would be well to apply massage for the purpose of bringing more blood to the parts and stimulating the activity of the gland.

Q. How long is it best to wait after meals before taking a bath?

A. If it a hot fomentation to relieve pain or indigestion you can take it right away. If it is a general hot or cold bath it ought not to be taken for a couple of hours.

Q. Can the Battle Creek System of constitutional treatment benefit impaired hearing and how?

A. Well, if a person has impaired hearing due to chronic catarrhal disease of the middle ear this catarrhal trouble is being continually aggravated and the hearing may be worse and worse by continually recurring attacks of catarrh. This condition can be remedied by building up the resistance of the patient so that he will be less subject to catarrh.

Q. Why can't we get butter-milk at the table?

A. You can get it by simply asking for it. It is not the ordinary butter-milk however. The ordinary farm buttermilk we do not have for the reason that it has so many things in it besides the buttermilk. That is the reason it has one kind of menagerie today and another menagerie tomorrow. It is a regular travelling circus so our buttermilk is made by sterilizing the milk, then inoculating it with the friendly baccilus Bulgaricus. This Bulgarian baccilus is a friendly germ and there are no barnyard germs or pigsty/or chickencoop germs or any of the other filthy germs that are always found in milk in the way in which it is produced commercially.

Q. What is the cause of locomotor ataxia?

A. Locomotor ataxis is a degenerative disease of the spinal cord and the general opinion is, that it is a disease due to immorality. It is possible there may be other causes but that is the most common cause, not the only cause but the most common cause.

Q. What causes enlargement of the liver?

A. The most common cause of enlargement of the liver is toxines absorbed from the intestines. Many people who have suffered many years from toxemia or intestinal autointoxication will be found on examination to have enlargement of of the liver. The X-ray examination will show about that, not a fluoroscopic examination always but the radiographic examination.

Q. What is the best treatment?

A. To get rid of the autointoxication and its natural effects and then it gets well of itself.

Q. Can liver spots be removed from the face?

A. These spots are not liver spots at all but they are kidney spots. They are not due to infection of the liver but/to the accumulation in the body of certain toxic substances which are produced in the colon by/putrefaction of protein.

They are not produced by the putrefaction of vegetable protein but only by the putrefaction of animal protein at least this is what professor Conde says about it and I have no doubt he speaks correctly as he is a very scientific and reliable authority. This brown coloring matter is known as ---- Catechin and it is realted to Cateche a vegetable coloring matter. This brown coloring matter which is ordinarily destroyed by the suprarenal capsules of the kidney. When the suprarenal capsules of the kidney are overworked and become degenerated it is not destroyed because they are not able to destroy this coloring matter so then it accumulates in the blood and is deposited in the skin and that is the cause of these brown spots. The question is can they be gotten rid of. Last Friday I met a gentleman that I met six months ago and I looked at him with pity for he seemed to be a very old man. He had the appearnace of very great age. He was bent over. His hair was white. He had a tottering step. He was very short of breath and I helped him into a cab and as I sat down beside him in a cab after riding a little ways I incidentally asked him his age. He said I am 60 years old doctor. Well it seems to me that you look too old for 60. I am over that myself. "Oh" but he said,"my asthma has made me prematurely old" "Now,"I said, "You must have something beside asthma." "Asthma is only a symptom. It is not a disease at all. How about your bowels?" "Oh, my bowels have been very bad for many years. I can't remember when to have had a natural movement of the bowels for 30 years or more." I said, "That is what is the matter with you. You are suffering from chronic poisoning." He said, "What can I do? I have done everything I know of". He was a very intelligent man and a man of great culture and large learning, a very intelligent man. He said, "What can I do?" I just told him a few things to do. I met him again last Friday. I really hardly knew him. If I had not been well acquainted with him I don't think I would have recognized him as the same man. I told him he was looking well. He said, "Why, doctor I am another man. Just look at my hands. Those brown spots have nearly all disappeared." He was so delighted and proud he said, "Feel of my skin." It had been think, atrophied,varnished and he really loked like a very old patriarch

but is skin was getting white again. The sallow color had disappeared from his face and a little flush was on his cheeks. It was really delightful to see the change in him. He said, "When I walked into the office this morning the clerk said to me, who had not seen me for several months, (this man is an official of the state of Michigan. He said the clerk said to me,"Why, how well you are looking. You look ten years younger. What have you been doing?" He said,"I just told him I had been making my bowels move three times a day by natural means and I am astonished to see what a change it has been made in me.) (Metchnikoff as much as a dozen years ago or about thirteen years ago, Prof. Metchnikoff of the Pasteur Institute gave the world a warning about this. He said colon germs are the cause of old age and everybody laughed. People laughed and smiled, said Metchnikoff was a crank but Oh, he is an enthusiast. It isn't possible that these little germs in the colon are the real cause of old age. Why, it is fate ------ that makes us old. We are destined to get old. We are all bound to die at a certain age. Anyhow we have to get old but people are coming to see that Metchnikoff is right about/ it, that the poisons produced by these putrefactive processes are going on in the colon are responsible for these conditions that we call old age.) This gentleman I am telling you about is certainly 15 years younger today than he was six months ago.) I met a gentleman today who said looked very old, 55 years old. He said he was and his blood pressure was up to 180. Just think of that. Blood pressure at 180 at only 55 years of age. His blood pressure ought to be 110 or 120 at the most. It is due to these colon poisons. We always find these brown spots on the hands and the varnished skin and the other evidences of chronic autointoxication in connection with this high blood pressure. Natural living is the thing. We have got to go back to the natural ways of living and ----- diet. We have got to return to ------ in a mild way in order to avoid this premature senility which is creeping over the civilized world at a terrific rapidly rate.

Why shouldn't we live naturally in relation to diet as well as everything else? The world is coming to recognize the fact that we must return to Nature so we are seeking out natural methods of education don't you know. How much attention is being given to natural methods of education, natural methods of learning to read, natural methods of learning geography, natural methods of training the mind and we are even getting far enough along so that we begin to see the value of living out of doors. Every day we see more and more people taking outings, spending a part of the summer out of doors and when people once get a taste of the outdoor life it does them so much good that they feel so much lifted up they want more of it and must have it again. Now if six weeks of living outdoors will do one so much good what will a whole year do? What marvelous power there must be in the natural life to keep one healthy, to keep one well young you should have such wonderful rejuvenating and resting and enervating properties. I was talking with a gentleman the other day and he said there was only one objection to sleeping out of doors, when you get aboard a sleeping car it is perfectly terrible. You cannot sleep at all in a sleeping car when you are accustomed to sleeping out of doors at home. Some of you know that from experience. Now what does that mean? It means that we ought to ventilate our sleeping cars a little better. We ought to have some open air sleeping cars where we could sleep naturally and normally when travelling as well as when at home but it is an evidence that we have lost a great deal by not giving attention to these natural things and now as I have said before, why not apply these natural principles to diet as well as to outdoor living and to education and to other things. When Col. Parker was living he used to come up here and bring Mrs. Parker with him quite frequently. You know he was one of the pioneers in natural methods of education. He was one of my most enthusiastic converts and he said,

Doctor, "If you only had your Sanitarium across from the Cook County Normal School in Chicago we would just have the whole thing because you have got on the physical

side what I have got on the educational side. Then we would have the whole thing all together so used to send his teachers up here to get a little course. We always had three or four or half a dozen of his teachers here taking a post graduate course in natural methods of living and if the good Colonel had lived a little longer I think he might have been a powerful influence in leading the people to see the right rules in relation to the care and attention of the body as well as the mind but many, many people are getting interested in these things, getting interested in these principles and beginning to sit up and take notice and say it does us so much good to live out of doors, to live natural life and in that regard it must be equally good for us to eat the right kind of food, to eat food that naturally belongs to us to eat. Now you see the monkey living outofdoors and thriving. Put him indoors and he gets consumption and dies just as man dies and put him out of doors and he gets well of consumption. Put the consumptive man out of doors and he gets well so when you put him under the conditions of the monkey life he thrives. If we traced that thing out in a great many different lines we feel that when we live like the monkey we as healthy as the monkey. I got that idea from Col. Sanderson. He was an officer in the British Army. His business was to hunt elephants and he had to go out every year and catch elephants and had to attend to the training of these elephants for the Government work. He had charge of the elephant service of the British Army in India, so he had thousands of elephants under his care. Every year he went out with 12 or 15 hundred men to surround the great territories for hundreds of miles and he would form a great ring around and drive the elephants in to the center and there he had a great stockade with a gate in it and then he would drive these elephants in there and shut the gate and then he had them. He told me that he one time caught 124 elephants in his trap at one trip. I guess that is the biggest bag of that anybody ever caught. Col. Sanderson was sick with jungle fever so he could not hunt. Now when he went out into the jungle he had to be carried on a stretcher. He would never get to the jungle but he would be right down with jungle fever. He was down in Calcutta and had to go back to the jungle at the

time hunting began and he was in great distress about it so he was telling his difficulty to another sea captain, a friend of his who had just come in to port, telling him all about it and he said, "Look here, I have got a book you had ought to have" so he gave him a copy of a little book he had bought from another sea captain who bought from said retired captain in Liverpool and that captain bought the book from my publisher, and he got this book. It was a little book called the Home Hand Book and he read that book, read something about the vegetarian diet and the increased resistance that it would give, etc. Now, he said, "That looks reasonable. I am going to try that," so he went back to his jungle and instead of living upon canned meats and all kinds of meats as he had been accustomed to do he abstained from meats and lived upon fruits and cereals and nuts and the result was he had no fever. He escaped his jungle fever and was able to go anywhere he wanted to and he became so much interested that a couple of years afterwards, after trying the thing for a couple of years he lived that way all the while after that and he got leave of absence on purpose to come over here. He got to New York and got off the boat and the first man he met he asked for directions. He said, "I would like to see Dr. Kellogg. Will you tell me where I will find Dr. Kellogg." He hunted around New York for three weeks and before he happened to run across anybody who knew who Dr. Kellogg was. He wouldn't have to hunt so long now, I think. This was 23 or 24 years ago but after three weeks he found some-body who directed him to Battle Creek so he came here and in telling me of his experience he said, "Doctor, I find that when I followed the monkey in diet I could follow him everywhere he went and he said I have discovered that when I live as a monkey lives I can live anywhere that a monkey can live, that if I eat what the monkey eats, I can live anywhere the monkey can live." Now, why not? Why Not? Our anatomy is the same as that of the monkey. Capt. Sanderson spent several months with us and I had many delightful chats with him. I have still a ------- of an elephant's tusk that he left with me and I had certainly a very pleasant acquaintance with him. I had another experience of the same sort.

There was a large mission school in Liberia. The president of this school wrote to me and said, "What shall I do for my teachers? They cannot go out into the interior without contracting malarial fever. They get jungle fever if they have to go out into the interior. What shall I do?" I wrote and told him Capt. Sanderson's experience and the experience of some others. After two years he wrote back to me and said, "My teachers can go anywherethey like in the wilderness without the least fear. Since they have adopted a non-flesh dietary their resistance is so great that they do not have suffer any more from fever. I was down in Kokomo, Ind. about 30 three years ago and I met a gentleman there and I gave a little lecture and I talked about the non-flesh diet and after the lecture the man came up and said, "Doctor, I want to tell you something interesting. I have lived in this town 30 years. I was not born here but I moved here about 30 years ago and I and my family are the entire only persons in the town of Kokomo that have not suffered from malarial fever in that time. Everybody who has it down here.

Everybody has it down here except myself and my family. We never eat any meat and never touch it. Now, I don't believe that abstainence from flesh will be an absolute security against malaria fever. I think one should take the greatest care to protect themselves from the bites of mosquitos. Besides, but I am absolutely certain that it is a wonderful advantage. It gives one ——— resistance because when one has reduced his resistance by compelling his body to fight against these poisons generated in the colon with which the body is saturated he has less power left with which to fight against the malaria poison, the poison of the malarial parasites.

Q. Is arthritis hereditary?

A. The tendency to arthritis is hereditary but the disease itself is not.

Q. What is the your opinion of the influences of mind over matters?

A. Now that is a pretty poor ---------- and really a long question to get into. We might get too deeply involved to make it profitable for us. You ask me what I think about the influence of my mind upon a stone lying out in a field somewhere half a mile away and I should say I consider it nil but you ask me what I think of the influence of mind over the matter of my own personal body. That is something very great indeed. There is no doubt about it that mind has a tremendous influence over the body but I don't know any way in which my mind can influence any other persons mind or body except through the mind itself, through the senses of that person. I once asked a great hypnotist, Prof. Carpenter who travelled all about the country. I called on him once to interview him to see what he was willing to undertake and I said to Prof. Carpenter, "Suppose I should bring into your presence a man who is deaf and blind and dumb." Do you think you could hypnotize him? "Oh, no. Of course not. I could not hypnotize him." Suppose, I said, I should

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put a man just the other side of the wall. Do you think you could hypnotize him? He said, "I hardly think I could do it"and I don't think he could do it. This hypnotic influence, the influence of the mind upon the body is personal. It is not the influence of another person acting upon the subject, it is not the influence of the hypnotist acting on the subject. It is the subject's own mind acting upon himself to ---------- upon him through his senses. Mind travels through regular channels and has to travel on nerves. It cannot travel in the air like wireless telegraphy. Oh, but he said, "Don't you believe in telepathy? Not at all. I don't believe in it at all." I had a young man who called on my sometime ago who did and to illustrate what simple things will lead people to, I will tell you his story. He was a nice young fellow about 18 years of age and became into my office all out of breath so that he could hardly speak. He said, "Doctor, I wish you could do something for my mother." "Why", I said, "What is the matter with your mother? "Why", she is in danger of her life. "Why", I said, "hwat is it? "Why, there is a man trying to choke her." I said, "Why, I said, "what-is-it "Why don't you pull him off; shoot him or do something to him." He said, "Well, it is a complicated case. I can hardly explain it. "He is going to kill her, he certainly will." "Well, I said, "Who is it?" and he named a prominent business man in the city here. "Oh, I said, that is ridiculous. He isn't that kind of a man. He wouldn't undertake to do anything to your mother. What makes you think he wants to kill your mother?" "Well, he said, "He has been near her." "Well", I said, "I don't understand this. Why should he want to kill your mother? "Well", he said, "because my mother has found out certain things about him. He is a very, very bad man, an awful man. He is a terrible monster. He has killed three wives already and my mother found out about it and now he is trying to kill her. He is going to do it and the young man was awfully upstarted about it. It was very real to him. I said, "When you see him coming into your house, why don't you shut him out?" "Well", he said, "That don't help a bit you know."

"Well", why is it then? "Well", he said, every night about three o'clock in the morning he nearly chokes my mother to death by telepathy. "Well", I said, "I wouldn't be afraid of that kind of choking. I said, when he gets at your mother that way, you just get out and ---- the devil---- out." rebuke and cast him

Question Box Lecture, April 14, 1913 cont'd from note book Page5339.

The young man would not hear a word about his mother being disturbed mentally. He was a thorough believer in telepathy. He claimed that this man had choke three wives by telepathy and he was choking his mother in the same way. I have not seen any positive evidence that mind can travel in any way except over the channels of nerve structure. Of course, the mind does have a great deal of influence upon the body. There is no question about that. That was well illustrated by a man down at St. Louis a good many years ago when the cholera was threatening. He was terribly afraid he was going to have an attack of cholera. So he had his wife get some cholera medicine ready for him. He had a bottle of it on the table beside the bed and the cholera was coming up from New Orleans. He was getting very much alarmed about it. One time in the middle of the night, he woke up with a pain in his stomach. He had been eating stewed lobsters for supper, or devil's crab or something of the kind. And he said to his wife, "Oh I have got it, I have got it. Give me the cholera medicine right away quick." So she passed the bottle to him and he took a large swig of it and felt a little better. He took another swig and went to sleep and apparently slept soundly the rest of the night. He woke up in the morning feeling all right, but he felt somewhat puzzled as did also his wife when he found he had gotten into an ink bottle instead of the bottle of cholera medicine, but it did him just as much good, don't you know.

Q--Do you prescribe the use of castor oil?

A--It is better to take a dose of caster oil than to allow the body to be filled with reeking putrefying material. You better get rid of it if it takes caster oil but one should not habitually use castor oil or any other medicinal laxative. They are harmful because they irritate the bowel and lessen its resistance. They irritate the bowel so that the poisons are able to pass out into the body and so increase the trouble. They are unnatural remedies.

Q--Are the fruit juices served at the Sanitarium sweetened?

A--Some of them are sweetened at the table. The juices of acid fruits are somewhat sweetened.

Q--Of what is gastric juice made?

A--It consists of two things chiefly. There are some other things in it but the essential and important things are hydrochloric acid and pepsin.

Q--Is there any temporary relief for headache caused by too much uric acid?

A--It is not uric acid that makes headache. It is toxines. Uric acid is a comparatively innocent thing, but when uric acid is present these other poisons are also almost certain to be present, so it is an indicator of importance.

Q--What is the function of the appendix?

A--The function of the appendix is to furnish a lubricant, a protector of mucous to the bowel. Prof. McCun of Scotlant, an eminent surgeon pointed this out eight or ten years ago.

Q--Can a floating kidney be anchored?

A--Yes, but it is hardly ever necessary to do it. The reason the kidney is floating is because the colon holds it down and when the kidney is put back and fastened place, the colon is attached to it and it has to be held up and the weight of the colon hanging upon this point of attachment produces pain so it is not always by any means successful and very often the patient suffers more pain afterwards than before. It is only once in a great while that a floating kidney has to be anchored. I think I have to operate day after tomorrow on a case of that sort but this case is ~~appendix~~ peculiar. The kidney has fallen down so far that it folds over on the ureter and obstructs the outlet of the secretion, so the secretion accumulates in the kidneys which fills up and becomes enormously enlarged and the poor woman suffers terrible pain and in that case it is necessary to put it back in place, but these cases are very rare.

Q--I would like to know what the permanent cure for catarrh is.

A--Call on Dr. Colver and he will explain it to you and show you how to take such care of yourself that you need not suffer from catarrh. Very often the difficulty is due to some conditions of the nose that can be easily remedied.

Q--What is the cure for catarrh of the stomach.

A--Stop abusing the stomach and it will get well of itself then. It is due to mis-

use of the stomach, to swallowing food that has not been chewed, to taking condiments, pepper, pepper sauce and things of that kind. Every Mexican in Mexico who eats pepper, suffers from catarrh of the stomach. Gastritis and gastric catarrh are universal in various parts of Mexico where people eat red pepper. There are some portions of Mexico where red peppers are not eaten any more than in this country and in those places people are not subject to gastritis and catarrh. I have been there a great many times, have traveled all over the country on horseback, out in the mountains, in the wildest parts of Mexico among the natives and I am quite well acquainted with the habits of the people and I was surprised to find large areas of Mexico where peppers were not used at all. In those places where they do use them the people suffer greatly.

Q--~~When~~ How many calories are there is a bismuth meal?

A--I think about six hundred.

Q--What is the function of the pancreas?

A--To make pancreatic juice and to make a ferment which burns up sugar in the body. When the pancreas becomes diseased, the ability to use sugar is lost and diabetes makes it appearance.

Q--What is the effect of having the appendix removed?

A--It should never be removed unless it is diseased and then the effect ought to be good. A great many people have the appendix removed and don't feel any better than before because the removal of the appendix has not removed the cause of the trouble. The real cause of the trouble is generally colitis, infection of the colon which extends from the colon into the appendix, so the trouble of the appendix is only an effect and not a cause and when this is removed there still remains ~~the~~ behind the greater difficulty which was the cause of the appendicitis.

Q--I have a corn in the prong of my little toe.

A--See Dr. Harris and he will help you out of your trouble.

Q--What causes cramps in the chest and shoulder and in both arms that shorten the breath when walking, generally after eathing.

A—This difficulty may be due to several causes. There may be adhesions between the stomach and the liver. It is barely possible there may be some trouble with the heart. The case ought to be investigated. I advise a bismuth meal and a careful examination to be made.

Q--Can a person of middle age reduce high blood pressure to normal by right living?

A--You ought to be able to bring it down nearly to normal. I have often seen blood pressure at 175 or 180 come down to 130. If you can get it down and keep it there you ought to get along very comfortably for twenty-five or thirty years.

Q--Is there any harm in eating grape fruit the first thing in the moring for breakfast?

A—No, not unless you have ulcer of the stomach.

Q--Do you attribute much value to the drinking of hot water in cases of stomach trouble?

A--It is not a curative remedy. It is a palliative remedy and doubtless has some value.

Q--What are the Yogurt Tablets?

A--They are cultures of the Bacillus Bulgaricus, a ferment which is used in making sour milk in Bulgaria.

Q--If one whose appendix on removal has been shown to be tubercular, does it necessarily mean that such a person has tuberculosis in the rest of his body?

A--No it does not necessarily mean so, but his case ought to be investigated. He ought to have a tuberculum test to find out what his condition is and ought to have his lungs examined by the X-ray to see if there is any trace of tubercular trouble there.

Q--What would you do for a child two years of age to increase bowel activity?

A--Give the child plenty of vegetable purees, like purees of turnips, parsnips and things of that ~~kind~~ kind. Give the child prunes, that is an excellent thing. Prunes that have been soaked for forty-eight hours in cold water and not cooked, that is a very excellent remedy. Dr. Falta, assistant of ~~Dr~~ Prof. von Noordon told me a year ago last winter when I was in Vienna that that is the favorate

remedy of Prof. von Noorden, Prunes that have been soaked in cold water. They make use of this remedy and have done so over there for many years and we have also used the remedy for a number of years with good results.

Q--What causes pimples on the face?

A--It is low resistance and permitting the germs on the skin to work their way down underneath the skin to make this trouble. The resistance is due to poisons absorbed from the colon in the majority of cases. When the colon becomes a little inactive the pimples will appear again, but if you keep the colon active the pimples disappear. DR. Bulkley of New York told me recently that he found the dissuse of meat was one of the best remedies for this trouble. A great many cases have been cured simply by discarding meat. Increasing the activity of the bowels is a most excellent measure in these cases.

Q--Is it proper for one to take a nap just before meals?

A--Yes before eating is a good time to sleep.

Q--Is the quality of the SANitarium Yogurt different from what is was when first served here? It seems to be more effective now.

A--Well we have thought to improve our Yogurt continually. The first cultures we employedware obtained from the Pasteur Institute of Paris. Soon after I was able to get fresh cultures from Bulgaria so we had an additional strain. Not long afterwards I found a missionary from Mt. Ararat from the foot of Mt. Ararat and he brought with him a very excellent strain of Yogurt. It was found to be effective than anything we had ever had before and we added this to our Yogurt strain so we had three strains, all working together. Not long afterwards I received word from a friend in India saying that they had there a fermented milk which they Baddi which they thought was very good, better than our Yogurt. So I had him send me some samples of this and found it was another strain of the bacillus Bulgaricus and we added that to our collection so we had four. Then a few months ago I received a letter from a very intelligent physician in Iceland who told me they had something there a great deal better than Yogurt. And he sent me a sample of it and on investigation we found this was still another variety of the Yogurt

bacillus which grew very large and strong and thrifty and we added that, so we now have five different strains from five different parts of the world, each one of which has proven by experience that it is a very valuable remedy of this sort and we have them all working together, so you see we have a sort of team work in attacking these difficult germs of the colon.

Q--To what extent is our exercise valuable for a person past middle life?

A--Such a person needs to exercise a great deal more than a young person does, but he has not the same capacity or ability for exercise. He must exercise in great moderation. The old man needs a great deal more exercise than a younger man. A young man can stand a sedentary life betten than the old man can, for the old man, a sedentary life is deadly. Nobody goes off so quick as the farmer who retires from business and goes into town and lives an idle life. He gets old very fast and goes down rapidly so that is the thing to remember. Keep active, keep exercising. The old man needs a great amount of moderate exercise.

Q--Is it proper to take any vigorous exercise just before or just after a meal?

A--No, very violent exercise should be avoided both before meals and after meals, but gentle exercise after meals is just the thing in many cases, but persons who suffer from a tendency to heaviness in the stomach or distress after eating should lie down forty or fifty minutes after eating and will find this a very great advantage.

Q--Should one breathe from the diaphragm or from the abdomen?

A--Now the way to breathe is simply to put your chest up high, just as high as you can get it and then forget all about it. You need not pay any attention to it at all. Just the minute you undertake to breath according to order, you do it wrong. Tell a lady to take a deep breath and this is the way she always does it, by raising her shoulders. She has to put her shoulders away up and tell a man to take a deep breath and he tries to push his stomach out somewhere, but the thing to do when you want to take a deep breath and breathe properly is simply to put your chest up as high as you can, as the vocal masters say, "Set your chest and hold it there and then take a deep breath " and you will see

the work will be done here at the side and about here where it ought to be. A very good way to teach yourself to do this it is to slip a pillow between the shoulders. Lie down on it on a sofa, then breathe and you can't help but breath right.

Q--What is the best kind of underwear for summer or winter for one in a southern state?

A--Cotton is the best for all the year to wear next to the skin. In cold weather the woolen should be worn over the cotton. The cotton next to the skin is always best because it is less irritating to the skin. It absorbs the moisture quickly and carries it off and it does not maintain a poultice next to the skin as woolen does, but the underclothing as well as the outer clothing should always be porous and loose.

Q--Are grape fruit and oranges good to eat by one who has rheumatism?

A--Certainly. They are among the best things to eat. The fact that grape fruit and lemons and oranges and things of that kind are slightly acid discourages a great many people in their use when they think they have rheumatic tendencies because they say the uric acid will cause rheumatism so anything acid will be harmful. Now vegetable acids, like the acid of a tomato and fruit acids of all kinds have the effect upon the body as an alkali. You want the reason why. I don't ask you to believe anything unless I can give you a good reason for it. This fact has only been known to physiologists even for the last three years. You will find a clear statement of what I am telling you in the book of Gautier and all the most recent works on dietetics. All scientific writers on dietetics recognize this at the present time, although formerly it was not known. The acid of grapes and of apples of lemons, sitric acid, malic acid, tartaric acid, all of these vegetable acids are in combination with alkali. They are acid plus alkali. The alkali is soda or potash. The acid of these acid fruits are quickly digested and oxidized. When they are taken into the body they are digested and used up just the same as starch and sugar is and other food substances, so the acid part disappears, don't you see, and it leaves the

alkali behind so the effects of fruits of all kinds upon the body is just that of an alkali exactly on that sort of acid. The acid effect is just temporary, last only a very short time while the acid is being absorbed and burned up, assimilated by the body.

Q--Is maple sugar as injurious as cane sugar?

A--It is just the same sugar but has a little dirt in it, that is all and a little flavor.

Q--How does the curing of hams counteract the tendency to putrefaction?

A--Ham is mummy that is the reason and mummy will resist digestion as well as putrefaction. That idea did not originate with me. Dr. J. N. Harty, Secretary of State Board of Health of Indiana was speaking at a Chautauqua some years ago. He was talking before a large Chautauqua assembly and some one asked him what he thought about ham and he said, has was splendid mummy, that if you would like to eat mummy, ham is good for you but I have reached the bottom of the box.

I thank you for your attention.

End.

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Dictation
May 12, 1913.

Report. (The Stomach)

Stereopticon Lecture at the Sanitarium Parlor, Battle Creek, Mich.

Thursday, April 17, 1913 at

8:00 P. M.

By J. H. Kellogg, M. D.

We are going to talk tonight about the stomach, a question which lies nearer to everybody's heart. When we have an X-ray picture we can see the heart is just one side of the partition and the stomach on the other side. That is why the heart is so much disturbed sometimes when the stomach gets out of order. I have often known men to lose heart because their stomachs were on a strike and I have known several cases in which young ladies have been brought here for treatment for broken heart when it was really nothing but a broken stomach. Now, we are going to have a little bit of country school exercise to start with. We want to have a few fundamental principles to work upon . The story of digestion is a very simple, easy story. if we only understand it. If we just get hold of the foundation. Digestion, of course, concerns food. The purpose of digestion is to render the food absorbable. In order to understand digestion we first must know something about the food. When we come to study food we find there are five digestible food elements, starch, albumin, salt, sugar and fat. Those are the five elements of food that are acted upon by the digestive fluids. I am going to ask a question right here to see how many of you can remember that. How many food elements are there? Starch, albumin, salt, sugar and fat. That is plain. That is splendid. We have a good bright class. We will make fine progress at this rate. Now it is a very interesting thing to know that while there are five digestible food elements there are also five digestive organs and the first is the mouth. The next the stomach, the next the liver, the next the pancreas, next the intestine. Those are the five chief digestive organs,

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the mouth, the stomach, liver, pancreasand intestine. Now there are five digestive juices also. Each digestive organ makes a digestive juice. The mouth makes the saliva. The stomach makes gastric juice. The liver makes bile. The pancreas makes pancreatic juice. The intestines make intestinal juice and that is the whole story. How many digestive fluids are there? Five. What are they? Salive, gastric juice, bile, pancreatic juice and intestinal juice. Now that is the whole story of the food and digestion in outline. Now, the question naturally arises, what do these different divestive organs and these different digestive fluids do to the different digestive food elements or food principles? For instance, here is the mouth. What does the mouth do? The first business of the mouth is to chew. The mouth is the mill that grinds the food and now I am showing you upon the screen here the oldest meal in the world at least that is the oldest set of human grinders in the world. That jaw was once used by a man. He lived according to the geologists only 400,000 years ago. That is all. This is known as the Heidelberg jaw. It is a model of the Heidelberg jaw that we have in our collection here. This was recently brought to this country. One of our very enterprising anthropologists went to Europe, made a cast of the jaw and brought it home and I succeed in getting a copy from him. This man who lived 400,000 years ago you see, had these beautiful teeth. Three of them are broken, but theywere broken because there was a pebble adherent to them and in getting the pebble loose they broke teeth off but the teeth were sound so long as the owner possessed them and it isn't any wonder that they were broken after lying in the ground for 400,000 years. There wese70 feet of stratified earth over them where the river had risen and deposited soil century after century until finally 75 feet of stratified earth had been laid over this solid jaw. This jaw is half the bigger than the modern jaw. This will give you something of an idea of the size of the men of those times. Look at those teeth. They are all intact, not one damaged excent by this accident. Theyare all there too.

There are 16 in each jaw. How many people are there here who have 16 whole teeth on the lower and 16 on the upper jaw. I saw a lady put her hand up over here. I should like to ask if they are home grown teeth. You see it makes a difference if they are home grown or store teeth. There are two people in this house, it seems, that have 32 sound teeth, not the least bit of decay, no filling. This lady here has 32 sound teeth and she certainly ought to rise up so that everybody can see here. She says she never had the toothache in her life. Now, what do you think of the rest of us that have not got 32 sound teeth? Why, we are a weazened lot of folks. That is all there is about it. Suppose you are out in the country to buy some sheep and you find a farmer that had one hundred sheep and you examined them and you found only one sheep in the whole lot had sound teeth. What would you say about them? You would say they were a measley lot of sheep, wouldn't you? Now, that is just what we are here, don't you see. There is only sheep amongst us who has sound teeth. In all the rest of us the teeth have dropped out or decayed and some of us are wearing false teeth. Suppose a man wanted you to pay him $500.00 for a very fine horse and you would open the horse's mouth and find he has two fine sets of store teeth that had been purchased for him. What would you think of a horse wearing store false teeth? You would say he was just ready for the bone yard and my friends we don't what it means stop to consider that we have lost our teeth and the whole human family are getting toothless. The citilized part of it means race degeneracy. That is what it means, race degeneracy and that is what this institution is here for, to do what it can in combatting this awful race degeneracy which is sweeping down with such a terible tide toward race extension. Here is a pretty good set of teeth that belonged to mound builder, indian. I have the skull of this indian in my office. If any of you want to examine it you can come down to my office and see it. I have two such skulls of mound builders that were found on an island in San Francisco Bay. This tooth has dropped out. You see the teeth are all there in this jaw. There are 32 sound teeth but they are very much worn. Here is a set

showing how they are worn. THat indian lived on toitilles and he ground his corn on a stone and there was so much grit ground off the stone that it was mixed with the corn meal and so ground his teeth away as you see here. The man who lived 400,000 years ago had harder teeth. He lived on raw food too. That is why his teeth are so good and so hard because he lived on a natural diet. He lived on simple foods, probably on raw foods and he didn't have any mill so didn't get any grit to spoil the teeth but the grit doesn't spoil the teeth so much as some other things do. I have had ourdentist examined those teeth carefully and he cannot find the smallest sign of decay in any of the teeth of those mound builder indians. They are perfectly sound. Here is the jaw of a modern European man. You see the space back here is so crowded that the wisdom tooth disappears very early. The most of you lose your wisdom teeth early in life. The wisdom teeth are crowded so the jaw is getting short because we do not use it enough. Over here there is more room. The jaw does not rise straight up as it does here. It has a slope and the tooth is not pressed on so much. That is a New Guinea native. His teeth are more like those of the Heidelberg men who lived so long ago. Here is an interesting comparison, the teeth of a man and the teeth of a gorilla. The gorilla has just the same number of teeth that man has and the same kind of teeth. Here are the four milar teeth, the small molars, the eye teeth, then the cutting teeth in front. There are 32 teeth just the same as you and I have exactly. The only difference is this, that in the human jaw the eye teeth, the so-called canine teeth are no longer than the other teeth and are not of the least bit of use for tearing purposes, because man got so far away from that state of existence, long centuries ago when he had to tear things with his teeth. Man's normal diet is of a different character. It does not require tearing. The gorilla has to tear his food because he

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has to eat cocoanuts as a part of his diet and he has to tear the husks off the cocoanut, don't you see. That is why he has those teeth, it is to tear the husks off and to tear off the shells of nuts. He doesn't have any machinery or nut crackers and mills with which to prepare his food, so he has to do the whole thing with his mouth. Now here is the dog, he has some canine teeth you see also. Those are real canine teeth because they belong to the dog. The canine teeth of the gorilla are not real canine teeth. They are in the same place in the mouth but used for a different purpose and are different shaped somewhat, but the fact that the dog has canine teeth is no evidence that he is a carnivorous animal nevertheless. That does not prove that he is a meat eater naturally. The thing that proves the dog to be a meat eater is his short alimentary canal, intestine, and not his canine teeth because here is the horse up here and the horse has bridle teeth too. He has canine teeth and the stag has four canine teeth, although it is strictly a herbivorous animal. How much the horse chews. Did you ever watch a horse chewing his grain to see what pains he takes in the matter? You won't forget the story I am sure that Mr. Riis was telling us last night, how the two little boys in New York went out into the country and when the cows came up they saw them chewing and chewing and they were not taking any food, so one of the little boys said to the farmer, "Do you have to buy gum for all these cows to chew". He didn't know they were chewing their dinner, taking their second turn at it, don't you know. Man does not have a chance to do that. If he chews his breakfast at all or his dinner, he has got to chew it before he swallows it. He only has one chance at it. I have known of people who did have a second chance but they didn't enjoy it. The gorilla has teeth, not only in every practical essential like those of men but in their structure. The teeth of the dog are different in structure. They are saw shaped; they hetchel the food. The dog chops his food. You can hear his jaws chopping and snapping as he is munching his food, but it is not so which man or with the herbivorous animals of course. These animals grind the food. There is only a hingelike movement in the case of the dog and these other car-

nivorous animals.

The chewing of food is the first process of digestion and while the food is being chewed the saliva is excreted, poured out into the mouth, acts upon the food, converts the starch of the food into sugar. The motion of the jaws causes the salivary glands to pour out saliva, so chewing is very necessary in order to excite the glands to make the saliva flow out upon the food. Why is chewing necessary for this? Because when we move the jaws we exercise the muscle and when we exercise the muscle we pump the blood along. When the muscles are active they contain ten times as much blood as when they are idle and the consequence is that a large amount of blood is brought to this part of the body and the glands become active and a large amount of extra blood is brought to the face when the jaws are made to work actively. Then there is another thing in the chewing of food. It is broken up so we can taste it. If one takes a bit of food into his mouth and swallows it whole, he doesn't know very much what it tastes like. It is much like swallowing a capsule or a pill. You don't know what is inside the morsel of food. It is only when we crush it, break it up into minute bits, disolve it, roll it about the tongue and against the cheeks and spread it out over the tasting surface of the mouth. It is only then that we come really to appreciate it and know what is in the food. It is a very important thing to have that point in mind because the chewing of food is the first act of the digestion and if the act is not properly preformed all the rest of the work of digestion goes wrong, none of it is done right, but after the food has been chewed, then it is swallowed into the stomach and here comes in contact with the gastric juice and the gastric juice in the stomach is secreted in this round portion, the cardiac portion of the stomach. This is the cardiac orifice at this point. Here the gastric juice is excreted and as it is excreted it comes down here. This first gastric juice that is poured out when the food comes in contact with the stomach is produced by the stimulation caused by the contact of the food with the nerves of taste in the mouth. While we are tasting the food, smelling it, thinking about it perhaps and the mouth begins to water, the stomach

begins to water too and the gastric juice begins to pour out into the stomach at the same time the saliva begins to pour out into the **mouth** and when the food gets down into the stomach, the gastric juice is already there to digest it. That is called "appetite juice" and this juice acts upon the food, digests a portion of it, then this liquid portion comes down here and it brings some small particles down along with it and this part of the stomach contracts and while food is in the stomach, the lower part of the stomach is working, contracting upon the food continually. It acts upon the food somewhat as a chicken gizzard does upon the food only it is not so powerful. It is the muscular part of the stomach. It is the mill of the stomach and does what it can to mix all the food remnants and while the food is being mixed up in this way and ground together, churned together while it is in the mouth, it comes in contact with a mucous surface and stimulates little glands there to act and these glands produce a peculiar substance known as gastrin. This gastrin is a harmone which acts the way gastrin does and the gastrin is absorbed carried by the blood to the gland around the stomach and it excites those glands to make more gastric juice. Then the gastric juice comes down here in these glands at the lower portion of the stomach and causes them to make more gastrin. So you see these two things work together. The gastrin makes more gastric juice and more gastric juice makes more gastrin and the digestive process when it is once set going, keeps climbing up and increasing in intensity and the secretion of gastric juice is first started by the tasting of the food, chewing it in the mouth and after it has once started, the gastric juice is formed and causes the production of gastrin and the gastrin makes more gastric juice and more gastric juice makes more gastrin, so the process continues until digestion is completed. This is a wonderfully interesting thing. As the food is digested, the acid products of d digestion are by and by forced out through the pylorus and they get down through the pylorus and down into the duodenum. This shows what we see by the X-ray. When you take a bismuth meal into the stomach you can see right upon the screen just what we see there. These are pictures made by means of the X-ray,

after a bismuth meal looking at the stomach with the X-ray. Here is the pylorus It is probably opened here so the food is going through. Here is it shut up entirely. You see the shape of the stomach is continually changing and a wave passes over the stomach about five times a minute or from three to five times a minute, but the waves start up here you see and travel down over the greater and the lesser curvatures of the stomach until a little portion of the liquid is forced out and by this means the food is spooned out of the stomach, A teaspoonful at a time and sent down into the small intestine. It is very curious what a close resemblance there is between a human stomach and other stomach. Look for instance at the stomach of the rabbit. It looks for all the world like a human stomach, doesn't it. See what a splendid pylorus it has. Here is the stomach of a coati which is also similar. Here is the stomach of a lion which has a very pronounced pyloric portion and here is the stomach of an American porcupine which has a very remarkably developed pyloric portion here. The antrum is so distinct it can be readily recognized. Here is the stomach of the owl. Here is the part of the stomach that makes gastric juice and this is the pyloric portion, the antrum or muscular part and is very large and strong, really the principal part of it. You see the enormous great muscles are formed here to act upon the food substance. The pyloric portion of the stomach acts just like an atomizer or syringe in forcing the food out. Here is the stomach of a crocodile. Here is the large muscular stomach; here is the pyloric portion of the stomach; here is the pylorus and the duodenum and all acting, you see, upon the stomach, upon the same principle as the human stomach and in some respects assisting certain features of digestion. Here the stomach is turned clear over so as to show the pancreas which lies behind. Here is the head of the pancreas; here is the duodenum; here is the stomach, the pylorus, the duodenum and the head of the pancreas. The duodenum is curled right around here and the secretion of the pancreas, the pancreatic juice, pours in here. The bile comes down from the liver, forms in the liver and comes down through this little duct the hepatic duct and the gall bladder stores up some of the bile ready for the next meal and when you eat the food and the food is digested and the gastric juice passes

out with some of the food, it comes in through the stomach, passes out through the pylorus into the small intestine and then the gall bladder is made to contract. I was talking with a lady this morning who has 100 gall stones in her gall bladder. The gall bladder has been examined by the X-ray and you can see the gall stones in the gall bladder. It looks like a pavement. They are all fitted, joined together like a mosaic and we can count sixty gall stones on the front side and there are fully as many on the back side, and this lady said, "Why is it that I never have any pain at all until about two hours after eating". That is the time when the contents of the stomach become most acid and the passing of the acid contents of the stomach into the small intestine causes powerful contraction of the gall bladder and an effort is made to force those stones out so she has pain every day two hours after eating, morning, noon and night. In fact every time she eats within a couple of hours afterwards she has that severe pain. And the only thing to do is to remove those gall stones and get them out of the way. Here you see the liver, stomach, pancreas all in their normal relations. Here is the spleen over here. The liver makes the bile that comes down into the duodenum and after the gastric juice has acted upon the food, then the bile acts upon the fat of the food. The gastric juice acts upon the albumin of the food. The saliva acts upon the starch of the food. The saliva converts starch into sugar. The gastric juice converts the albumin into peptone which can be absorbed into the blood and made into human albumin and the bile converts the fat into soap and makes an emulsion, then the emulsion is still further saponified by the pancreatic juice, then it is ready to be absorbed. You know if you have oil on your hands you put a little alkali with the oil and it becomes soap and then is easily washed off. If you have a grease spot on the floor, a little caustic soda will convert the oil into soap and it can be washed off because soap is soluble and oil is not, so all kinds of fat, animal or vegetable fat, whatever fat it is, is all converted into soap. It has to be converted into soap before it can be absorbed. The part that is digested and made into soap is taken into the blood and that is why you find no fat in the blood or very little, because it is con-

verted into soap and after awhile it is reconverted into fat again and deposited under the skin and in other places where it helps our good looks and serves other useful purposes. Now you remember there are five digestive food elements starch, albumin, fat, sugar and salt. Salive digests starch, converts it into sugar. We don't need to take very much cane sugar then ~~xxx~~ because the starch we eat is three quarters starch. The potato is nearly all starch and a large part of the food we eat at the table is starch, at least 60 per cent. and this starch is all converted into sugar. Think of what a sweet time we have when we are vegetarians and live on vegetable foods. Oatmeal is nearly all converted into sugar, into fruit sugar, into the very best kind of sugar. Well now let me see, what does the gastric juice digest? Albumin. The while of egg represents albumin. What does the bile digest? The bile digests fats. What does the bile do to the fats? It makes soap. It does exactly what the lie from the old leach barrel behind the barn used to do. On soap making days you know it makes soft soap. That is exactly what it does and the bile is a sort to lie. It is made out of the waste residue matters of the body. They are carried to the liver which is a kind of rendering establishment and converts those blood corpuscles into bile. It takes out the potash and the potash goes down into the intestine. The bile mingles with the fat and makes soap of it. That is the way we digest it and utilize it. This is not a fairy ~~tail~~ tale at all, but the actual scientific facts as physiologists have worked them out in these most recent years. Now we have got three of the most important food elements. What is left now, sugar and salt. ~~xxxxxx~~ Starch,albumin and fats are the great food elements but sugar, that is cane sugar and salts,--by salts we mean the acids what will be left if we burn the food, We have certain acids left, that is what we mean by salts, mineral salts and lime and other things of that kind but we have got here a new digestive fluid, another one that comes next after bile, the pancreatic juice. That comes next after the bile. What does the pancreatic juice do? The pancreatic juice comes in here and does a most remarkable thing. Here is the order of the digestive fluids, saliva, gastric juice, bile, pancreatic juice. Here is the order

of the food elements according xto their importance. Starch, albumin, and fats. How saliva digests starch, gastric juice digests albumin, bile digests fat. The pancreatic juice digests starch, albumin and fats. It does just what the three preceeding digestive fluids do. It does it all over, it reviews the work you see and the pancreatic juice digests starch and does it better than the saliva does. The pancreatic juice digests albumin and does it better than the gastric juice does. The pancreatic juice digests fat and does it better than the bile does. So you see what a most important digestive fluid this is. It is the most important digestive fluid in the body. We can dispense with all the others but we could not get along with the pancreatic juice. We could lose every other one and still live. Our food would be well digested and well digested with the pancreatic juice alone if we dispense with all the others but we do not need to get along without the others. We get along better when we have all the rest. Each one has its function. Each one does some work of importance for the body so it is well to cultivate and maintain it and take care of our digestive fluids and not dispose of any of them. There is one more digestive juice and that is the intestinal juice. It is found in the small intestine you see and this intestinal juice digests cane sugar. Salts are digested by all the different digestive fluids. The gastric juice digests those salts which are soluble in acids and the intestinal juices, the bile, the pancreatic juice and xxx intestinal juice digests those salts which are soluble in alkaline substances, for these liquids I last mentioned here are alkaline in character but after the food has been digested then it is necessary that is should be absorbed and the small intestine absorbs it. There are two places where the great digestive work is done, three places. The mouth is preliminary. The stomach is preparatory. The gastric juice digests the food in the stomach, not only digests the food but disinfects it, but the small intestine is really that part of the body in which the great and important and final and perfecting work of digestion done. That is done in the small intestine. The small intestine is a very large digestive organ when we come to think about it. It is 22 feet long and three or four inches in circumference. If you take 22 feet of intestine, say an inch in circumference, that means we have

six square feet of small intestine, but we have more than that. We have some seven square feet of small intestine because it has folds and these folds extend the surface. So if we had it all straightened out, spread out, the real actual surface of the small intestine would be seven square feet. That is a good deal larger than the stomach. The stomach is small compared with that. The small intestine is the great digestive organ and the food is retained in the small intestine for some little time until it is completely digested and absorbed. Then when it is absorbed, it is carried by the portal vein to the liver. The portal vein gathers up the food from the small intestine. It is all carried to the liver, at least nearly all of it and in the liver the work of digestion is perfected and the food is inspected; it is carefully looked over. If you have been taking tea and coffee along with the other dinner, the liver carefully takes out all that caffein and the tannic acid and those other poisons you have been taking. If you have been putting mustard, pepper, pepper sauce, ginger, horse radish and other horrible things mixed with your dinner, your liver sorts them out, sucks them up into itself, lays hold of them and holds them back. It does not allow them to pass on into the blood if it can possibly help it. So my friends, just think of it when you are putting pepper sauce on your cabbage or whatever you do put it on, when you put pepper sauce on something, please think I am putting pepper sauce on my liver. When you are shaking the pepper box over your-----well I don't know what you do put pepper on,--I have fogotten---- but when you are peppering your potato for example or turnips or something else just think of what you are doing to your liver. I was talking to a man on the train once on this very question. He caught me eating my lunch. I had to hurry off from home without any dinner and hadn't had any breakfast, so I seized a little lunch and took it along for I didn't like what I got on the dining cars then. That was twenty years ago and the dining care were not so well provided with natural things to eat as they are to day and I always took my lunch with me and a friend of mine came along while I was eating and I didn't notice him. I was busy dictating to my secretary as I was going along and munching my lunch, but he stood there for some little time and I finally discovered some-

body peeking over my shoulder and being quite occupied eating dinner, reading letters and dictating all at the same time, I finally noticed a man was watching me. When he saw I noticed him he said, "Oh! ha! I caught you at it." I said, "What do you mean"? I recognized him as a professor in a medical college. He said, "I have been wondering for a good many years what you eat when you are away from home. That is a sandwich isn't it". "No," I said, "It is simply a piece of breakfast toast". "Well", he said, "it doesn't look to me as though you have got much to eat there." I said, "Look here, I have got apples and nuts and bread, that is the whole thing. Bread is the staff of life. Nuts are the beefsteak and the butter and the apples, why, that is a dessert, that is the sauce and the pie and different things, don't you know, so I have got it all here, you see". "Well", he said, "it doesn't look to me as though there was very much in that". "Well", I said, "you don't know how sweet this toasted bread is". "Oh", he said, "It is sweet then is it". So he seized a piece and he munched it and he said, "Why, I can't taste a thing. I thought you said it was sweet." "Oh! ha!, I said, "you have been up there in the dining car blistering your palate with pepper, pepper sauce, mustard, ginger and that sort of thing and that's the reason you can't tast anything respectable." He said, "How did you know I have been eating pepper, pepper sauce, mustard and things of that kind in the dining car. I have been doing it, but how did you know it". I said, "I know it by the looks of your nose". He had a pepper sauce nose, don't you see. "Well" he said, "I like things that give my palate a twist." That is what I wanted to bring to your notice, "I like things that give my palate a twist", but he forgot that those things which gives his palate a twist don't stop twisting there but the continue twisting all the way down. They never stop until they have twisted his neck and made an end of him and it is the same way with everybody. "Well" he says, "I will think about that. I believe I will come up to Battle Creek and stop a week or two with you and learn how to live". I am awful sorry he didn't come because he kept on with that until helost his job. If there is anything in this world that pays, my friends, it is to be good to yourself. That

is the most profitable thing you can possibly do, to be good to yourself to be good to your stomach, to your liver, to be good to your small intestine and to your peptic glands and your pancreas and all the rest of this internal anatomy here. We treat these things villianously. If a man treated his own watch the way he does his stomach it wouldn't keep time two minutes. Just think of it! Now the stomach is an organ that is more delicate that the finest watch you ever heard of. There isn't a thing man ever made that compares with the delicacy of structure of these marvelous internal organs. Take the liver for instance. Now just look at this liver. When I was in St. Petersburg seven years ago at the laboratory of the great Prof. Pawlow/---I went there on purpose to see him---he had made some wonderful discoveries about digestion. I think the next time I will show you some of his dogs and the wonderful discoveries he made with them. When I was over there I saw this operation done one day. A dog's portal vein was attached to the ascending vena cava. This large vein that goes straight to the heart and the portal vein goes to the liver you see. It was attached to the ascending vena cava and then the portal vein was tied so all the blood in the portal vein went straight to the general circulation, to the heart and was distributed to the body instead of passing through the liver first, so it was not filtered, you see. It was like letter the water from the river right into the city mains without first going through the filtering process. Suppose in St. Louis, the water of the Mississippi river was turned into the water mains without going through the filtering process first. That is exactly what is done here. The portal vein goes through into the general circulation, but in the case of the dog it was severed so that the blood was returned directly to the general circulation. This operation is known as Eck's fistula and the dog that has this operation done gets on very comfortably and is just as healthy and lively so that you would not know the difference between him and any other dog. He seems to be just as happy as any other dog so long as he lives on a special diet, but he has to follow a special diet. That dog has to be a strict vegetarian. As long as he lives on bread and milk, he doesn't

have the least bit of trouble, but the moment the dog is fed meat he begins to get sick and in three days in every case he will be dead. Such a dog always dies after a few days if fed on a meat diet. This has been repeated in many different laboratories. It was discovered in Pawlow's laboratory that a dog that has had ~~its~~ this fistula preformed dies in three days when it is fed on meat. Why? because when a dog eats meat it is necessary for its liver to do something to the bbod. It comes through the portal vein to do something to it to take out of it something which is poisonous, when it is permitted to go into the rest of the body. Now that fact alone, my friends, ought to be sufficient to cure every one of you of meat eating. You never ought to eat another beefsteak in your life. The next time you do it, I want you to stop to think that the liver has got to disinfect the beefsteak and has got to sort it all over and take out a lot of the filth that is going along in and a lot of poisons before it is safe for it to go on into the blood. Suppose you have got a worn out liver. You have used a great deal of calomel in your ~~life~~ time and been taking laxative drugs, mineral waters and things of that sort which wear out the liver very fast until your liver is a poor old ~~x~~ crippled liver. It is almost as bad

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It is almost as bad as the dog that has had Ech's fistula done. That is the reason why you cannot go on doing what you have been doing. A lady said to me the other day when I was talking about her breath smelling so bad and her hands being so dirty and her general appearance so uncanny, I said to her, "You are awfully dirty inside"and you know she didn't like it a bit but she said, "Look here, I have had this awful breath ever since I was seven years old. Just think of it. It was noticed when I was seven years old that I had this terrible breath and our whole family has had it and it has been the trial of my life but I have had it all my life so there is no use trying to get rid of it now. It can't be doing me so very much harm." What do you think I said to her? I said, "Suppose somebody tells you that your house is afire, and you say, 'Oh, well, I don't mind. it has been burning that way for an hour.' You wouldn't make such a remark as that would you? You would not say, "Oh, well, my house has been burning that way for an hour, I don't mind it. If you had had troubles of that kind that have been going on for five or ten years or twenty years, why my friend you have got to make haste because certainly the day of settlement or the day of judgment if you please is close at hand. I said to the woman,"you will have Bright's disease ~~if you~~ as sure as you are alive if you don't get rid of that bad breath"and that is so because she has gone as far as she can. I can see by the color of her skin that old age and senility are coming on very rapidly. We must get waked up about this thing. We must get in earnest about it. We must get to work. We must be willing to make a business of treating our bodies well, of finding what is the right thing, of learning the right way of living, the right road,my friends. The righteous way of living if you please is the one great thing that will save the race from ~~extinction~~ extinction and it is the only thing that will. It is not all about that either. ~~You ought to~~ Now these pleasant days have come and I

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wonder how much time you are spending out of doors. Every time I go through the lobby I see a lot of people sitting there in those chairs. I am thinking of putting some pins in those chairs to get the people out of them. I really feel sorry to see the people sitting around indoors with such glorious sunlight out of doors and such fine air. I look out of my window and feel like a caged bird. Oh, if I only could get out in the sunshine and air but I can't. I have got to work as long as the day lasts. Then I go home and work some more. I work until the daylight, my friends very often, not only to give people the help that is necessary, not only for pleasure, health and comfort, but for the extension of their lives. This is a picture of the Kalamazoo river which is full of delightful scenery all the way along. These country roads are all of them charming. We have nice walks and shady streets all about the town and the out-door Gymnasium will be opening up right away now so get outdoors. Don't spend one minute in the house that you can possibly help because it is artificial. Our natural place is out of doors in the fresh air, in the open, under the blue sky. Breathe in sunshine. We haven't any right to hid ourselves indoors until we get all covered over with blotches like the mold that grows on the wall and is found infecting old cellars. While you are here at the Sanitarium make every minute count in cultivating health. You are here to get all the health that is coming to you and very few of you get. Very few of you get the maximum benefit that you can get here but I must not keep you longer. You need sleep as well as other things. I thank you for your attention.

(End of this lecture.)

Question Box Lecture at the Sanitarium Parlor, Battle Creek, Michigan, April 21, 1913, (Monday) at 8:00 P. M.

by

J. H. K. Kellogg, M. D.

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Q. Are the following things suitable for a child over 2 1/2 years of age? Soft boiled eggs, warm milk, boiled rice, cream of wheat, corn flakes, wheat flakes, etc.

A. Now here is a lady who is very anxious to feed her children right and she has made out a very simple bill of fare here to which nobody could find any objection unless they wanted to go the whole figure. Now, for myself, if I were raising boys and girls and endeavoring to feed them as I think they ought to be fed, I should not let them have any eggs at all. I am satisfied that eggs are very harmful for children. The doctors have found out that egges are very harmful for babies, exceedingly harmful. I don't know of any modern text book on the feeding of babies that does not say children should not be allowed to have eggs before they are three to five years old. Some doctors say three years old, some say five. Now why? Because eggs are more or less poisonous . There is a little dose of poison in every egg. What for? The mother hen puts it in there to kill off intruders, don't you see. If anybody tries to steal an egg except the one it belongs to they are likely to be damaged by it. To make this a little plainer this is the fact that the body of every human organism is foreign territory and strange and hostile to the tissues of every other creature except one of the same species. Now, if you take a drop of human blood and mix with it ox blood they do not mingle but one will attract the other. If you put some ox blood into the veins of a human being it disappears in a short time. The human blood will not tolerate the blood of another animal. There is only one species of animal the blood of which is tolerated by human blood and that is the monkey. That is

one way in which we know that the monkey is nearest tin of ours because we are blood relation. We are of one blood so to speak, because when you put the monkey's blood into human blood nothing happens but if it is ox blood, or sheep's blood or dog's blood or any other kind of blood except the blood of the human being or of one of the higher apes there is trouble. Now the same thing is true of the egg. The egg is intended for two purposes. The white of the egg is intended for the skeleton and the flesh and the feathers of a chicken, if it is a hen's egg and the yelk of the egg is food stored up for the chicken while it is getting big enough to feed itself. The yelk is food and the white of the egg is the part that becomes the chicken. Now there is in this egg, the white of the egg and the yelk of the egg particularly in the white, more or less of a poisonous substance, a tox albumen. This was pointed out by a member of the French Academy some years ago, an eminent chemist who made a careful study of this matter, found that all eggs contained a small amount of tox albumen. Now tox albumen is a poisonous form of protein which we find in the venim of snakes. In other words, there is a little venim in eggs. Now species of fowl or birds, in some species this tox albumen is very much larger in quantity. Many people are made sick by ducks'eggs you know and there are many species of birds the eggs of which are notoriously poisonous. The same is true of some fishes. The roe of some fishes is very poisonous, indeed very deadly because of the large amount of tox albumen which it contains but all eggs contain more or less of this tox albumen and some people are very susceptible to it. This eminent French physician that I was telling you about published his name at the time in my journal,"Good Health". I don't recall it at this moment but he pointed out the fact that some people are susceptible to this tox albumen as eggs because of the state of diminished defense as lessened defense on the part of the mucous membrane and because of the diseased condition of the mucous membrane. Now you know of you have a little snake venim and put in it on the skin it does not do any harm. If there is a ~~rough~~ raw place on the skin it is a very different situation. The venim is taken in at once and deadly affects will be producted. Doctors sometimes

administer drugs in that way. It has been done by scarifying the skin, then rubbing in the material. Now that same thing happens in the interior of the body. If a person is suffering from colitis or from a diseased condition of the mucous membrane, when such a person eats eggs, he is likely to suffer from egg poisoning and some people are so susceptible to this egg poisoning that the very smallest amount of egg mixed in with other food entirely ridden away and suppressed so that he does not know what he is eating at all, will produce various serious effects. The patient will be seized with violent vomiting and other very bad affects. Unquestionably this is a venim, a phenomenon. Unquestionably this is a phenomenon of anaphylaxis because persons suffer when the amount administered is extremely small so it is unquestionably what is known as anaphylaxis though I think children would be a great deal better off if they did not eat eggs at all. (If a child is to be fed on eggs let it be simply the yelk of the egg.) I know this seems like rather an extreme doctrine and some of you would think the child is going to be starved to death. If you are not going to give the child any meat or eggs what will the poor child have for it has no nourishing food at all but, as a matter of fact, it has been proven again and again that there are foods which are outside of flesh and outside of eggs that contain all the elements of nutrition. (Milk contains all the elements of nutrition, everything the body requires except one thing and that is iron. There is no iron in milk so it would never do for a person to live on milk for an indefinite length of time because he would become anemic for lack of iron.) There is no iron in milk. Why? Because the calf does not need iron until it is old enough to eat. The calf is born with so much iron stored up in its liver it has enough to last it for six months. The liver contains six times as much iron as the entire body of an ~~animal~~ adult animal and what is true of the cow's calf is true of the human calf as well. It is equally true of the human infant. The liver contains six times as much iron as the body of an adult so there is iron enough stored up for the baby to last the baby for six or eight months. That is the reason why

it is very important that the baby should be fed something besides milk. Even a nursing baby should be fed something after the sixth or seventh month so that it may get the iron which it requires which is not found in its natural supply of food. Now the cerals contain all the elements of nutrition. Everything is found in wheat that is needed but when the wheat is cooked some of these fine elements are destroyed and some of the enzymes which we eat meat are destroyed and so one cannot live on cooked wheat without suffering more or less injury and one cannot live on raw wheat because he cannot digest it sufficiently so wheat is not a good food for a single article for a person to live upon alone. A diet of raw milk and cooked wheat answers very well however, because in the raw milk you get the enzymes and in the wheat you get the iron which you need so you put the two together in bread and milk and we have really a very perfect food. Wheat is also somewhat lacking in fat but the milk will furnish the fat so a diet of bread and milk is really a composit diet that is quite complete and no child needs eggs and no child needs meat. You can be absolutely sure that there is not the slightest necessity of feeding children either meat or eggs. Personally, I never eat eggs any more than I would eat meat. I wouldn't eat an egg quicker than I would eat meat. That is true but I never think of eggs. I used to be very fond of eggs and I remember when I was a boy I was exceedingly fond of meat but I have quite lost the appetite for either one. It will interest you perhaps to know that I had a letter from Mr. Jacob Riis yesterday and he said, "I think I am converted". He said, "Since I left the Sanitarium I have not been able to taste a bit of meat. It is put before me at every meal but I simply cannot taste of it. I used to be quite fond of it and I have quite lost my appetite for it and I have refused it except on one occasion at a banquet they gave me and I thought the hostess would be annoyed if I did not take some meat so I allowed them to serve it but I did not taste it. I could not eat it. I think it must be the effect of some of the conversations I had with you and I passed by a butcher

shop and looked into the window and there were a whole lot of fine cuts of steaks and meats hung up there and I looked at them and tried to admire them as I used to do but,he said, 'They left me cold." I could not get an appetite for any of them and,he said, I have written already to Mrs. Riis that we have got to make some plan of dispendingwithmeat in our bill of fare hereafter." It does not take a man like Jacob Riis very long to see the light when the light is shining. Just give him a hint and he is ready to get hold of it. It is amazing how long we have been in getting hold of these very self-evident truths. Why,it is as plain to me as the sun at noon day with a clear sky that the creator never intended men to eat meat, never intended us to eat these animals. Why, the animal is itself an eater and the idea of one eater eating another eater is perfectly preposterous. Now, potatoes do not eat other potatoes because potatoes are eatables but they are not eaters and it is just as unreasonable for one animal to eat another animal as for a potato to undertake to eat another potato. Potatoes are eatables. They belong tothe class of eatables. They furnish energy and food for eaters but eaters should not themselves be converted into eatables because that is reversing the order of Nature. An eater, an animal is a mechanism for using energy. A vegetable is a mechanism for storing energy for from the sunlight. Now, you would think it a very preposterous proposition if somebody should come along and recommend feeding the furnace with small stoves or kerosene lamps because there is a little coal in the stove and a little oil left in the lamp that has not been burned. That is exactly what you are doing when you are eating an animal. An animal is a consumer of energy like a locomotive and like a furnace and for a man to eat rabbits or a lion to eat man is just exactly like feeding a locomotive with small stoves or kerosene lamps. There is some fuel in the stove that has not been consumed perhaps. There is some oil in the lamp but there are other things besides fuel

you see. Now besides, we hear some people saying we ought to take animal food because it represents vegetable food in a refined state. Now that is just as absurd my friends as to say that if you are going to build a house that you ought to get some material from some other house that has been used before, material that has been fitted to a house and has got kind of used to being used in a house. Now what would you think of a man that instead of selecting the original raw material, the brick and the lumber and the paint, the fresh raw material, for a house, instead of selecting such material, he would go to a store keeper and get some second hand material where it has been collected as the results of tearing down a house. Second hand material does not make a good house. Second hand material does not make a good human body either. It is the same proposition precisely. The animal uses the energy which is found in the vegetable and we gets the best of it and when you eat the animal you only get what the animal has not yet used, just simply what is left, mixed up with a lot of toxines, the products of decay of tissue change and disintegration. The real prestine pure material for body-building is to be found in the vegetable kingdom because that is the order of Nature. That is the plan of the creator, the storing up of the energy of the sunlight by the vegetable kingdom to be usedby the animal kingdom) and as Ovid said in describing the views of Pathagros (Pythagoras), when one animal eats another we sit down to the table to eat another animal, he said, " If men with fleshy morsels must be fed and chow with bleeding teeth, with the bleeding ------- what else is this but to devour our guests and barbariously we know Cycopean feasts and I am going to say that again because it is every strong!" If men with fleshy morsels must be fed and chow with bleeding teeth, the bleeding ------- what else is this but to devour our guests and barbariously we know Cycopean feasts." It is pretty hard to find more forcible language than that, isn't it? The old Cyclopes used to go out and devour whole villages at a gulp you know. That is it. Here is the idea. (All animal creation are the guests at God's banquet. Here is the vegetable kingdom that createsthe luscious fruit

of all kinds and the juicy vegetables and the nourishing grains and all these delectable fruits are produced and offered to us by the hand of Heaven for all animals like to eat and here we are men and monkeys, horses, cows, sheep and goats. We are all here eating at the great table that the Creator has prepared for us and suddenly we turn around and one beginsto take a bite against a bite and devour another and he eats a sheep on one hand and on the other hand he turns around and eats a monkey that looks just like him, and presently a bear leans out and carries him off and eats him. One has just exactly as good a right to eat the other as the other has to eat him. We see as old Pythagras said, To kill man killers man has lawful power but not the extended liscense to devour." They have the right to kill them but not the right to eat them. "To kill mann killers man has lawful power but not the extended liscense to devour." Take not away the life you cannot give for all things have an equal right to live and the vegetable kingdom is the means by which we live and for one animal to eat another or for a man to eat any of these lower animals,it is like devouring guests. As the poet said again, "First feed with high folds of bread, they eat the turkey set before you we said." Now isn't that a horrible thing to do. First feed with high fold of bread, make a member of the family and then eat the turkey set before you he said. Now that seems a good deal like raising babies to eat. Thackery who was eating dinner with Bacons and he had just swallowed a big oyster and unusually big, fine oyster and he sat with a look of complacency on his face which was so very marked that the other guests at the table noticed it and they all stopped and looked at him and they said, "Pythagras what are you thinking about?" He said, "I feel as though I hadswallowed a baby." Why not? An oyster is a living thing, a living creature and he had gulped it down like a cyclons alive and and he felt as though he had almost swallowed a baby.

Q. Should one eat when he is not hungry?

A. Now, I am not going to say one should never eat when he is not hungry but I should say that it is very desirable you should have an appetite when you eat, at least you should have an appetite before you get through eating. Some people have no appetite when they begin to eat but pretty soon their appetite comes. It is a very curious thing that one of the greatest puzzles to physiologists until the last few years has been that question, what is hunger, and if you would have asked a doctor five years ago what is hunger he could not have told you. Nobody knew what hunger was. Why are we hungry and why are we hungry sometimes and not hungry at other times? There is one remarkable thing about hunger that attracted the attention of Doctor Cannon of Harvard University and that is the fact that hunger is not continuous. We talk about pangs of hunger. Hunger comes in paroxysms. We are hungry and forget all about it for a few minutes, then you are hungry again. You feel a pang of hunger so that Idea set Dr. Cannon to work and to get one of his assistants to train himself to swallow a little rubber bulb with a long rubber tubing attached to it and his assistant got so he could swallow that tubing and keep it in his stomach for any length of time without any inconvenience. He practiced on it several weeks before hecould get it down and tolerate it. Then he went without breakfast and dinner until he got real hungry and when he was suffering hunger pangs, one after another,quite regularly, Dr. Cannon watched this man and he had an instrument arranged with a lever working up and down and marking a white line on a revolving cylinder with a piece of white paper as the cylinder went around and he had this man make a note, give a signal every time he felt a pang of hunger and ~~it was then~~ at the same time Dr. Cannon was watching through that little tube one end of which was in the man's stomach and the other end attached to the recording instrument. Every time the man said I have a pang of hunger up went the little lever. That showed that his stomach was contracting and by other means it has been proven.

If you will notice this sometime when you feel a pang of hunger pretty soon you will hear a little sound in your stomach. Your stomach is moving, contracting. Hunger is the stomach contracting. That is, hunger itself is the contraction of an empty stomach. When the stomach is empty and contracts that thing gives rise to hunger. That is what a pang of hunger is. It is the contraction of an empty stomach so the question is, should one eat when he is not hungry? Now I used to say

I have found people who have not eaten for a few days and they have lost all idea of hunger and may not be hungry for two or three weeks. I have heard of people who fasted for three or four or five or six weeks, one may for forty days before he felt hunger. Hunger disappears after two or three days. The stomach stops contracting. The whole alimentary canal becomes quiescent and there is no demand for food except one feels hunger in his knees, perhaps feels weak in the knees and hungry that way. This I have observed. Many persons who had no hunger who were in an abnormal state would sit down at the table and begin to get the odor of the food and the taste of the food would develop an appetite and the stomach was made to contract. The stomach began to contract, the operations of the stomach began and in that way an appetite was induced. Now I should say, if a person is not hungry and when he eats he is not able to get an appetite that the food is continuously distasteful to him, I would not recommend such a person to fast entirely but I should say something must be done to create an appetite, to make him hungry, but here is another thing which must be considered. We eat not simply for the purpose of getting sustenance, that is not the only object of eating to get sustenance, to get material with which to support our bodies, to support energy and to maintain our weight, that is not the only advantage of eating. Eating has another purpose. The liver is an excretory gland that pours out into the intestine something like a pint and a half of bile, a most poisonous material poured out by the liver into the stomach every day. A pint and a half and even more. The whole intestine which presents a surface of nearly seven square feet, the whole small intestine with a surface of nearly seven square feet is an excretory surface. Now think of it! The whole surface of the body is about twenty-one square feet and the small intestine has a surface of one-third as great as that of the entire exterior surface of the body and this surface is an excretory surface that is very active in pouring out excretory matter into the intestine. Now this excretory matter needs to be removed from the body. It needs to be gotten rid of. The bile and all these other secretions need to be gotten rid of and when there is no food taken into the stomach,

there is no motion of the alimentary canal and there is no discharge of this material, consequently it is very necessary for us to eat and to eat regularly, periodically in order that the intestine may be made to carry off this waste material. When food is taken into the stomach and the stomach begins to contract a peristaltic wave is started which travels the whole length of the intestine. So whenever food is taken into the stomach there should be an output of waste material from the other end of the alimentary canal. That seems so perfectly rational, it is a wonder than anybody should ever think to the contrary. Whenever food is taken into the stomach, this peristaltic wave travels along and naturally induces an output at the other end, and when the functions of the alimentary canal are perfectly normal this will always occur. In other words the bowels will move after every meal. (The process of eating stimulates the movements along the intestine very greatly. Dr. Hertz of London who made a careful study of this matter found the material in the alimentary canal travels four times as far during the short hour of eating as during four hours before the meal. So if a person eats three times a day, the movement produced by the three hours' of eating would be equivalent to twelve hours work or twelve hours' work at other times so it is very important to eat in order to stimulate peristalsis, in order to secure the discharge of the waste matters from the bowel.) That is one reason why we should eat. If a person has no appetite and there is no real demand for food, he ought to eat something anyway. He can eat something that contains bulk and very little food substance. That is a very important thing.the public need to be educated about, that substances differ enormously in their food values. For instance, a pound of watermelon furnishes about 140 calories of food substance, about as much as two ounces of bread; a whole pound of watermelon furnishes about as much food as two ounces of bread. Now on the other hand a pound of pine nuts will furnish 3,000 calories. That is a very large amount, you see. An ounce of butter will furnish twice as much food material as a pound of watermelon, so you see there is a great difference in food substances. If one has no appetite, he sould eat material which has bulk, which does not require digestive power because the lack of appetite is evidence of lack of power to digest. If one

has no appetite and cannot get up an appetite, then he has no digestive power. The mouth is dry and the stomach is dry. The mouth does not secrete saliva and the stomach does not secrete gastric juice and there is no preparation for the digestion of food that requires a strong digestive effort, so it is very important that we should eat, however. We should eat something that is bulky but which does not require very much digestive activity. Now what would such a diet be? It would consist of fruit to start with. Fruit furnishes food already digested and ready to be absorbed mixed with a large amount of water and of cellulose, apples, peaches, plumbs, cherries, any sort of fruit except bananas and figs and dates. They would be rather too hearty, but all the juicy fruits can be taken in abundance. Then we have some other things that fit into this bill of fare very well. There is lettuce for example, then there is cabbage and radishes with the acrid rinds taken off and parsnips, turnips may be eaten raw if scrapped to a pulp or chewed very find and will furnish the body some little nutriment. There is no starch in turnips, so there is no particular use in cooking the turnip. It contains protein and sugar and the sugar is already digested ready to be absorbed and the protein which it contains is more easily digestible raw than cooked, so the raw turnip is quite as digestible as the cooked turnip, provided it is thoroughly chewed or grated into pulp. So a person who has no appetite should not eat bread and butter, cake and pie, beefsteak and things of that kind or scrambled eggs. That would be loading the stomach up with a lot of material it can do nothing with and would simply lie around in the alimentary canal rotting, decomposing and poisoning the body, but instead eat a large bulk of fresh material that requires very little digestive work and which will stimulate the bowel to activity. That will carry off the poisons and in a short time an appetite will be produced. Live on a diet of fruits, lettuce and if you would like, you may include agar-agar or Colax as we call it here or some bulky material. Bran mush if you like will be very wholesome.

Q—If one's stomach is prolapsed four and one-half inches below the umbilicus what kind of treatment or exercise would you advise?

A--I advise this patient to stand on his head. That is about the only way he can get things regulated. Just moderately. I don't mean exactly perpendicularly on the head but in a moderate way, on an inclined plain with the head down and the heels high. Then take deep breathing with the hands pressed over the abdomen and lifting upward toward the head. That will aid in bringing these prolapsed organs back into place. Practice this two or three times a day. We have a little home gymnasium prepared especially for that purpose. We will have a demonstration of that shortly.

Q--What is the business of the spleen?

A--The spleen is a grave yard. The spleen is a cemetery, a kind of potter's field if you please. That is what it really is, and all the tissues of the body are continually being renewed. The blood lasts about six weeks. People talk sometimes about the body being renewed every seven years, but it is renewed more often than that, most parts of it. The blood for instance is renewed every six weeks. I remember Lord Beacon (Bacon) recommended everybody should be bled every spring to get rid of the bad blood and get a new lot. He thought the blood ought to be changed once a year so everybody had to be bled and he recommended they should be bled every spring in order to get rid of the old blood and get a fresh supply but nature won't wait a year to change the blood. The blood must be changed every six weeks. There is a continual dying going on all the while. The blood cells are dying and disappearing at the rate of eight millions every second. That is pretty lively isn't it. The body contains about twenty thousand million million blood cells and these blood cells are dying at the rate of eight millions every second, eight millions every time the clock ticks. Now just think of the great number of these dead corpuscles that must be floating down the veins and arteries, all these dead blood cells floating along. If there wasn't any way to dispose of them, just think of it! Suppose you go down to the river here and see millions of dead fish in the river floating on top. Pretty soon the stream would be clogged with them. That is just exactly what would happen in the body if there was not some means of disposing of these dead blood cells and the spleen is the place where this is done. The spleen contains large cells which

are cannibal cells and when a dead blood corpuscle comes along one of these cannibal seizes upon that blood cell and eats it up. That is the way in which these dead bodies are disposed of and the liver has something to do with the same business. Now that is a very useful purpose isn't it? Now I am glad you know what the spleen is for. It is not a very cheerful occupation but it is a very useful one. We used to think the spleen was mostly to make business for doctors but we now know that the spleen is a very very useful organ. It has other functions too. Perhaps one function which it is supposed to possess is that of a pump to help the portal circulation. The spleen contracts rythmically and it is supposed by this contraction it moves the blood through the portal vein and helps to pump it through the liver. It is a pumping station, a supplimentary pumping station to help get the blood through the liver and prevent stagnation in the portal circulation.

Q--The suggestion was made a day or two ago that it is getting out of fashion to have the orchastra played during the dinner hour, that it is getting old style and we are living sort of a way back in allowing music at the dinner hour.

A--Well I think I will put it to a vote. How many people would like to have the music at the dinner hour abolished so we would not have any more music during the dinner hour? Hands up, how many would prefer to have the music continued. I see several hands up. I see we have got some people here who don't vote. Let us have this vote again. All of you who would like to have the music continued raise your hands. If you don't want it continued we won't have it. If you do want it we will have it. All who are in favor of having the music at the dinner hour, put up your hands. All who are please put up your hands. I don't see a single hand up in opposition. Now I think sometimes the music interferes with conversation a little for those who are right close by but really we ought not to spend too much time in talking during the dinner hour. We ought to put in good honest hard work chewing. That is what our first business ought to be. When there is too much conversation going on, people get in a hurry. There is a little badinage back and forth and repartee and people get in such a hurry they swallow their last morsel as though it were a pill in order to be able

to say something quick, so too much conversation interferes with digestion. Well we will have the music continued.

Q--Is gardening a healthful exercise?

A--Gardening is the proper business of man and woman too. The bible tell us that when God made man he planted a garden for him eastward in Eden and he placed man in the garden to bless it and to keep it. There is something very beautiful about that. Some of you say that is only a tradition but let it be tradition if you like. There is something very beautiful about it, because that shows us the ideal life. At the time that book was written the idea of the people by whom it was written was that the ideal life was an agricultural life, was life close to nature in the midst of all the growing plants and the blooming flowers and the golden fruit. Why, my friends, it seems to me there is nothing more ideal than that sort of life. For myself, I believe that agriculture is going to be the aristocratic vocation a quarter of a century from now or half a century anyhow. Agriculture is the one thing that never is going to be overdone. The price of everything that is raised from the soil is going to increase. Beefsteak will be out of sight in less than half a century I know. It is out of sight for a great many people already and the sooner it gets out of sight the better. The people that are most worth while cannot afford to eat beefsteak now. The people who are eating so much beefsteak are going to degenerate and die off and fortunately the people that are most whorth while, the real back bone of the country, the common man, the man that has got the cleanest blood and the best blood, the blood from which the great geniuses really come, just take any great man anywhere, a man that has made his mark, a financier or any other big man and in nine cases out of ten you will find he came from the soil less than fifty years ago. That is where the strongest men are made. It is because when we got away from the natural life we begin to deteriorate. A boy that is raised in the city who is a grandson of a man ~~xxxxxx~~ that was born in the city hasn't any kind of chance. He must of had a tremendous original endowment to amount to anything at all. The average family that goes to the city is degenerated and gone in less than three generations.

The third generation is run out almost completely. It is said in India there is not to be found among city dwellers a single aristocratic family that has not been reinforced by good blood from the country within three generations. It is generally believed that it only takes about three generations to squander the biggest fortune that can be gotten together and the reason is this very thing, degeneration. So the cultivation of the soil is the natural occupation of man. It is the best occupation of man and it is going to be the aristocratic vocation of the future. It never will be overdone. Agriculture, we have only just begun to learn a little bit about it. It is only just beginning to be a science and as it is studied and developed more, it will be recognized as being the most beautiful and desirable of all possible occupation.

Q--We hear and read of elderly persons falling and breaking a limb. I have been told that the hip often breaks when an old person falls. Is this true?

A--Yes that is very true because the bones become brittle. The proportion of lime in the bone increases and they become much more brittle as one advances in years and at the hip there is a particular prolonging of the bone, a little narrow neck of bone that is very likely to break if one falls upon the hip and these fractures do not always mend very easily, so elderly people should take great care not to fall.

Q--What is the cause of uremic poisoning?

A--It is the failure of the kidneys to eliminate from the body the poisons which are developed in the tissues. It must be remembered that these poisons that are developed in the tissues are greatly increased by a flesh diet. When one eats the tissues of another animal, don't you see, he adds to the poisons formed in his own body, the poisons of the other animal's body. Now you see that may mean considerable. Suppose a man, for instance, is eating two pounds of beefsteak a day. See what that amounts to. In a month that will be sixty pounds of beefsteak, in two months it will be 120 pounds of beefsteak. A man may eat his own weight of meat every two months. In fact, when we come to substract the bones and the fat

and other things, materials that are not flesh, we may say that a man eats his own weight of lean flesh about once a month if he is a hearty meat eater. If he is eating two pounds a day it would amount to that. If a man does that you see what an extra load he puts upon his body. His body has to eliminate, not only the poisons of his own body but the poisons of another body as big as his own, but there is something more to that, a good deal more to that. Do you know that every animal that dies, dies of poisoning no matter how it is killed, it dies of poisoning. No matter how you die, you die of poisoning. Even if you are drowned you die of poisoning. The accumulation of carbonic acid gas in the body destroys the body, you are poisoned to death. If you are smothered in a fire by smoke, you die of poisoning, not simply by the poisoning of smoke but the ~~xxxx~~ emanations of your own body that you cannot get out. If a man is hung the thing he dies of really is poisoning. You see an animal is not really dead that is show through the head by the hunter, it is not really dead until it dies of poisoning. Actual death occurs only when each individual tissue of the body is dead. When a man's head is cut off, the man is not dead; in a biologic sense he is not dead. Cut off a chicken's head, the chicken is not dead. Dr. Carrel of the Rochester Institute will take a chicken with its head cut off, take the chicken's heart and he will plant the chicken's heart and raise more and in a couple of months he will have four times as much chicken heart as he had to start with. The chicken's heart will grow. He plants it in a little dish and sees it grow right before his eyes and each little particle beating just as ~~xxxx~~ though it is in the chicken's body. That seems beyond belief, but that is the actual fact of it. Each little particle of chicken heart that is planted is growing and is beating. He cools it down to 34 degrees, almost to a freezing temperature to make it stop beating so it will rest awhile and after resting for a day he starts it to beating again and so ~~it~~ he keeps it going for two or three months. He might keep it going for a year, perhaps, only by and by some germs get in which infect it, then it quickly dies because it has no ~~xxx~~ defense. ~~xxxxxxxxxxxxxxxxxx~~ What has this got to do with this question? (When an ox is killed its throat is cut, ~~xxx~~ but you see that ox

is not dead yet. You see the man taking off the skin and you see the flesh is quivering. The flesh is still alive and it remains alive until the poisons around each little cell and fibre has accumulated to such a degree that each individual cell is killed by the poison in its own vicinity. That is what makes absolute complete death and then decomposition begins. An animals tissues are not really dead until rigor mortis occurs the body is not really dead whether it is a man or an animal it is all the same thing. Now here is another thing to be thought of. When an animal's throat is cut or the animal's head is cut off or it is shot through the heart, its heart ceases to beat so this process of purification that is going on all the while through the lungs, through the skin, the kidneys, the bowels, the liver, this process of purification ceases. It is no longer in operation, so the poisons accumulate to an enormous extent. Now how long does it take if you strangle an animal before the animal becomes unconscious and dies? Three or four minutes. What about an animal that has been dead two or three hours and its heart has not been beating and its lungs have not been acting, the poisons all around each individual blood cell have been accumulating. The situation is this, that each individual cell has a fatal dose of poison in its vicinity and the cell dies. If it were not for this dose of poison that proves fatal, the cell would not ever die. So you see when one eats beefsteak if the animal was ever so healthy, he is not eating a piece of pure food or pure nourishment but he is taking food that is saturated with poisons to such a degree that it is deadly to living cells. That is what he is eating. There is a deadly dose of poison in every beefsteak, deadly to beefsteak itself and that is why the beefsteak is dead and not alive. So you see the amount of poison contained in flesh food is, under the very best circumstances, large. It is perhaps, forty times ar one hundred times as much as is found in the living flesh.

Q--Can acne be cured by vaccine treatment?

A--Yes, a little pustule on the face is pressed and a little drop of pus taken out, given to a bacteriologist and he will cultivate the pus for a particular germ that is found in it than make a vaccine and inject a little under the skin.

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and repeat that a few days afterward and all the pustules will disappear from the skin and all the acne will disappear. That is one of the most remarkable developments of our modern vaccine therapy. It is the cure of acne and other skin troubles and other diseases as well.

Q--How can a person keep up the Battle Creek idea in regard to diet when he is constantly moving around from place to place?

A--The only thing he has to do is to keep it in mind. Don't leave it at home; don't drop it by the way somewhere but carry it right along with you. That is all you have to do. When you sit down at the table keep that Battle Creek idea so strongly in mind that when you look at a mutton chop on the table you will see a pair of sheep's eyes looking right straight up at you and won't have the least bit of difficulty about avoiding that mutton chop and when you see some oysters on a half shell come along just think about one of those things scrabbling around in your stomach and trying to get away. The gastric juice is biting it and you know you won't have the slightest disposition, I am sure, to swallow one of those creatures like cyclopes of old. Just make up your mind you don't want any of that viscious stuff, that you are going to live on the ambrosia of the God just as high as circumstances will permit and you can find anywhere a sufficient amount of wholesome food to keep life going. The worst place in the world is in a little country tavern or a country town where there is nothing but a little cheap hotel or restaurant. That is the very worst place in the world where they probably won't have a thing on the table except some fried potatoes and fried pork perhaps and some white bread or salaradus biscuit or something of that kind and it will be pretty hard picking so you better have a lunch in your bag for such emergencies as that. There is a story told of an old preacher who was traveling through Michigan some years ago and he stopped at a farm house and for breakfast there was fried eggs, fried sausage, fried pork, fried cakes. Lots of fried things and they asked him to ask the blessing. He looked around a moment over that breakfast table and he said, "Friends this breakfast isn't worth a blessing" and he saddled his horse and moved on, so he was saved you see. He escaped. When I travel I have a little box of pine nuts and some Good Health

Biscuit or some breakfast toast along and a box of chocolates or something of that kind and a little fruit. I carry a few samples of that kind along and with a little bread and a handful of nuts, you have got all that the body really needs if you are willing to suspense with the luxury of diet and take just the simples, the real things that furnish the back bone of the diet and furnish the nutriment. There is no difficulty in getting along anywhere. I have traveled all about Europe and in other parts of the world and I have never found any difficulty at all in maintaining my principles. I lived on what the country afforded and had no trouble at all for every country furnishes all that is really needed for the sustenance of its inhabitants.

Q--What is the best remedy for catarrh of the nose?

A--Go to a nose specialist and find out what is the trouble with your nose. Very likely some little obstruction will be found, some little thing that can be remedied that will give you almost immediate relief. There is no such thing as a snuff or lotion or anything of that kind that can be introduced into the nose and cure up chronic catarrh. The one and important thing to be done is to build up the general vital resistance, make yourself stronger and more vigorous. Get your skin healthier. You want cleaner blood and it is important that the bowels should be made to move actively as this will do more to relieve catarrh than any other thing that I know of. I have known of numbers of cases of persons whose bowels have been very inactive who suffered greatly from catarrh and when they got the bowels to moving regularly three times a day, had no more trouble with the catarrh.

Q--Which is more harmful, careless eating or smoking?

A--Now that is a good deal like saying, which is more wicked highway robbery or safe breaking. It is all the same thing; it is all on the same level.

Q--What is the effect of anger on a person's system?

A--Poison. One cannot afford to be angry. The man who gets angry does himself more harm than anybody else. In a state of anger the body is actually poisoned and the poison is generated in a state of anger and circulated in the blood.

You say, "How do you know that". I know it by a circumstance that has occurred many many times. A nursing mother has got violently angry and her baby went into convulsions and now what made that baby have a fit? What made it? It was the poison in the mother's milk that produced that affect;that was thereason. Where did that poison come from? It cane out of the mother's blood you see. The baby was poisoned but the mother was poisoned first. There is very good proof of that thing. One cannot afford to be angry and to be continuously in a state of anger or wrath or jealousy or worry. It is the worst thing imaginable. Those things are pernicious; they are absolutely poisonous; they generate poisons in the body that are deadly.

Q--What do you do for bald headedness here?

A--About the only thing I know of we do is to pretent not to notice it. Some years ago when I was in New York I remember when I was a medical student some forty years ago now, nearly forty years ago, I was in New York City and there was going to be a great concert at St. Stephen's Cathedral and we had to get in early in order to get seated about an hour before time. So I was up in the gallery, I wanted to hear the music and having nothing else to do I set to work taking a census of the audience below me. I noticed quite a number of bald heads and I began to count those bald heads. I found about one in every seventh man was bald headed and I thought I would take a census of the ladies to see how many were bald headed and I did not find a single bald headed lady in the audience that I could see but there was one man in seven who was bald headed. Women are not very often bald headed, yet I remember sometime ago complimenting a lady on her youthful appearance and the fact that her hair had not begun to turn gray yet, although she was over seventy years of age. Just then some accident happened and I heard a scream and I looked around and her head was absolutely bare as my hand, so I know that happens some times. The only cure I know of is either to wear a wig or else to not notice it. I am beginning to be somewhat sensitive on that subject myself. I don't like to have so many questions asked on that subject.

22

Q--What is the principal cause of rheumatism?

A--Infection. The probability is, that germs are taken into the body sometimes through one channel and sometimes through another and these germs take possession of the joints, grow and develop there and produce these terrible sufferings and mal-formations that accompany rheumatism. These germs enter in various ways through the bladder, through the throat, through the bowels. We know that they can come in through all those different channels and probably through others. Acute rheumatism is an infectious disease. There are several different germs that will produce acute rheumatism.

Q--Can persons suffering from rheumatism be cured?

A--I am very glad to say yes in a modified way. I was very pleased a day or two ago to meet a lady in the hall tripping along very lightly on her feet with a very smiling countenance, a lady about sisty-five years old who came here a few months ago now, I should think about four or five months ago after having been bed ridden for six months. She had been to Mt. Clemens most of the time for six months bed ridden. She came away worse than when she went there and Mt. Clemens is no worse than any of the rest of the mineral springs. Some people are helped but chronic rheumatism is not helped in such cases. The acute or sub-acute rheumatism is benefited by hot baths, but chronic rheumatism is not benefited because the cause in not removed and something more must be done than can be done by the hot bath. This woman had not even gone from her bed to the door for six months. She went away from her upon her feet about to walk down town, went about and hardly knew there was the slightest trouble with her joints, although her knees had been pretty badly affected. We are able to do a great deal more for rheumatism by a combination of remedies than by any other one thing alone. Hot baths will not cure rheumatism; diet will not cure rheumatism. Radium alone works wonders sometimes with rheumatism but it cannot be trusted alone. If we are going to deal with rheumatism we must bring to bear all the different things we can possibly use in every given case, everything available to help that case. It is necessary to fire a broadside at the enemy, so to speak, in order to drive him out. In all cases of chronic rheumatism there is more or less disturbance

of the metabolism. Consequently the diet must be regulated; the blood must be improved; the general vital resistance must be built up; the muscles must be improved. One of the greatest difficulties with the hot bath is that it produces a depressing effect upon the system. Cold water is more beneficial in rheumatism than hot water, but it is difficult to use this because it increases the pain, so there must be an ingenius and very careful managed combination of hot and cold so as to get the eliminating effect of the heat and the relaxing and pair relieving effect of the heat and at the same time a tonic effect of the cold. Diathermy is very valuable in rheumatism. It is the best thing we have discovered yet for relieving the pain of rheumatism, is diathermy. It is an application of wireless electricity. We have a wireless station in the city here that is able to take messages from Washington and in fact from all over the country and it is able to send messages several hundred miles. A man who has charge of this station said to me the other day, "Whenever you are running your electrical apparatus up there in the Sanitarium, I can hear it on my instrument". It is very remarkable. He was very much interested and we talked the matter over. It is very remarkable that these waves that are produced in diathermy are the same thing as wireless electricity. It has been utilized for therapeutic purposes and it is a strange things that these waves are able to go through the heavy walls of this building and the moment the instrument starts at the south end of this building, just that moment he can hear it through his wireless station. This wonderful electrical current has been utilized through the discoveries of Dr. Nagelschmidt of Berlin in the relief of pain. In the body this current is converted into heat so we have the benefit of the heat, not only upon the surface but deep down in the tissues where it is greatly needed. I don't know of anything that has been discovered which is so useful as this thing. Radium is valuable also. I visited last year Joachimsthal in Bohemia, the head quarters for radium. They have a great radium spring there and hundreds of people come there from all over the world to be treated for rheumatism. Dr. Daoutwiatz the government physician told me that 80% of all the people who came were cured even of chronic cases. They were cured of all their stiffness and cured of pain and made able to use their limbs and go about and live very comfortable. We find

the use of radium in our radium department where we have used it for more than a year has shown some very remarkable cures. Within a week in some cases the pain has entirely disappeared. Sometimes, however, patients go on for several weeks without seeing any particular change, then the treatment is discontinued and in a few days they find that they are wonderfully relieved.

Q--What will remove liver spots?

A--The most important thing is to change the diet and adopt a non- toxic diet. Discard flesh of all kinds because these liver spots are deposits of brenz ~~catechin~~ catechin, a brown coloring matter produced by decomposition of animal protein, chiefly decomposition of meat. You have to discard meat entirely if you want to get rid of liver spots because meat furnishes material out of which the liver spots are made. Sometimes they can be removed with very light applications of frozen solid carbonic acid gas.

Q--What will cause perpetual cold feet?

A--Chronic autointoxication is the most common cause of it.

Q--What causes indican in the urine?

A--Putrefaction in the colon.

Q--What is the cause of ether pneumonia after operation?

A--Infection by drawing down the germs of pneumonia through the mouth into the lungs and the lowered vital resistance that occurs at this time. We do not have ether pneumonia in our ward and the reason we do not is because if the patient is going to have an operation we have his teeth cleaned first and his mouth thoroughly cleansed and twenty-four hours before going into the operating room he has cinnamon water and he keeps a little supply of it in his mouth so there are no germs growing there. We kill off the germs, then when the patient is going to have the anesthetic we begin treating him for pneumonia before he goes to the operating room. He has fomentations, heating compresses on his chest and every five minutes during the operation this compress is changed on his chest and for three days after the operation he has fomentations and heating compresses on his chest just as though he had pneumonia and we treat him just as though he had pnuemonia with the idea that if we turn the hose on the house before it gets a fire it is not likely to get a fire.

25

If water will put a fire out it will prevent fire.

Q--What is the best preparation for washing the hair and scalp?

A--Castile soap, mottled castile soap is as good as anything. An egg can be used for this purpose, than thoroughly washed out. The principal advantage of using eggs for a shampoo is that it takes such a long time to wash the egg out but the hair is made very clean.

v-p

Question Box Lecture April 21. Cont. 5385.

Q. What is the cause of psoriasis?

A. It is due to lowered resistance, probably is a germ disease of some sort. Dr. Bulkeley of New York has found out that psoriasis can be cured by a non-flesh diet. He puts his patients on a diet of starch. His patients who are subject to psoriasis he requires to discard meat entirely and it is surprising how rapidly they recover in many cases.

Q. Is water in which potatoes have been boiled unfit to use for preparing food?

A. That depends. If the potatoes are still in their jackets the water ought not to be used because the potato skin contains a small amount of solanin which is a poisonous substance. If the potatoes have been pared the water is entirely wholesome and is all right.

Q. What is the cause of the blood leaving the fingers?

A. That is what the French call dead finger. This is a condition according to Dr. Haig of London that is due to uric acid but according to Dr. Conde of Lausamne it is due to intestinal autointoxication and I think that Dr. Conde is right.

Q. Is there any cure for cerebrospinal meningitis?

A. Some persons get well. I have seen more than once case recover by means of warm baths, rest, and other hygienic care but the Fleischmann serum is certainly a very remarkable remedy and ought to be resorted to.

Q. Why is the use of tobacco more harmful than alcoholic drinks?

A. I don't know that we could say that it is more harmful than alcoholic drinks. It depends entirely upon the quantity. An old pipe smoked all the time would be worse than a drink of whiskey once in a while. It depends entirely upon the dose you see.

y-m

Q. Should a child 2 to three years of age be put to bed for a nap immediately after eating?

A. It is better to take the nap before eating but it does not do the child any harm perhaps to sleep for a few minutes after eating but long sleeping after eating is not wise for either grown people or children. At any rate children who are no longer young infants.

Q. Is there any remedy for food backing up into the lower bowel, that is for an incompetent ileocecal valve?

A. Yes. The palliative remedy is to make your diet so clean and so wholesome that no great harm will come if there is a backing up. That is the first thing. Keep the colon so empty and in such a wholesome condition that there will be no putrefaction in ~~to~~ the colon and no formation of poisons there even if there is the return into the small intestine and the next thing~~s~~ if the case is one that requires it is to employ an operation by which the valve may be repaired. We have performed this operation quite a number of times and with an entire success. The valve can be repaired if it has become incompetent but cases requiring this certainly must be very rare. The only cases in which we have operated are cases in which it was necessary to operate for something else.

Q. Can inflammation and inflammatory rheumatism be readily cured and how?

A. Yes. Old Dr. Flint used to say it took six weeks to cure inflammatory rheumatism no matter what you did. If a patient has acute or inflammatory rheumatism perfect rest in bed, proper diet and good nursing will usually effect a cure in two to six weeks but a great deal can be done by means of treatment to hasten and expedite the cure.

Q. What is the difference between diabetes and digestive glycosuria.

A. Glycosuria is a temporary condition which may be due to taking an excessive of carbohydrates. Almost anybody can get glycosuria which means sugar in

the urine by taking a large amount of sugar. Diabetes is a condition in which there is sugar in the urine even only when one takes only the ordinary amount of carbohydrates, starch or sugar, Sometimes when he takes none at all.

Q. Of what benefit to the patient is the X-ray?

A. If the patient has a dilated heart or arteriosclerosis the X-ray will help us to find that out and to find out to what extent this condition exists.

Q. What is the cause of appendicitis?

A. Infection of the appendix extending from the bowel into the appendix. The trouble begins in the colon.

Q. When a child of two years who has been always well has been fed much flesh food has only one movement of the bowels daily, what would you do to increase the number of movements?

A. The child should have more bulky food. The child might have in addition to its present dietary a little Para-Lax or a little agar agar. Colax can be given to such a child with a little vegetable puree of some sort. Perhaps the child is not having enough vegetable purees or turnips, carrots and beets. These vegetables may be used by such a child with advantage.

Q. What is diabetic coma?

A. It is the accumulation of acid poisons in the blood to such a degree as to produce comatose condition.

Q. What do you think of the chiropractic method of treatment of curvature of the spine?

A. This is a very bungling and more or less dangerous method of procedure. The methods used by the chiropractors I think are unsafe. I have known cases in which very serious damage has been done and these methods are unscientific and bungling. They are essentially the same methods that were persued by the old bone setters and are sometimes beneficial in a certain few special cases but they do not compare at all with the scientific application of mechanical measures.

V-m

Q. How did you happen to become a vegetarian?

A. The thing that made me a vegetarian was reading a statement by Cuvier the great French naturalist to this effect. "That man has teeth and an alimentary canal and other structures like those of the monkey, that the monkey is frugiferous, lives upon a diet of nuts, fruits and soft grains and that man's natural diet is that of the monkey"and I said it would be worth while to try it so I have been trying it for 47 years and I am still very much in favor of it.

Q. How does Yogurt buttermilk benefit the body?

A. By helping to drive out the unfriendly germs, the wild germs that grow in the body and produce putrefaction. Yogurt buttermilk makes it impossible for these germs to grow. We have in our cooking school department a beefsteak which was put into some Yogurt buttermilk 5 years ago next June and that beefsteak has been there and is in perfect condition, not the slightest taint about it. It has been submerged in Yogurt buttermilk for 5 years because the germs which produce decay cannot grow in the presence of lactic acid which is present in Yogurt buttermilk particularly.

Q. Are the remedies in the Old Home Hand Book all reliable?

A. Yes,but you better get the new edition which will be out pretty soon rather than the old one for there are a great many new things in the new edition as there are always are coming along in each new edition.

Q. How did you cure your corns?

A. I never had any very bad ones but I did have some troubles with some little ones that disappeared when I wore cloth shoes. I think a shoe that pinches the foot is a cause of corns and friction will produce corns some times if the shoes are too large. People who go without shoes do not have corns and people who wear cloth shoes are not likely to have corns.

Q. What causes frequently sore patches in the mouth?

A. Those are little points of infection due to lowered vital resistance and perhaps sometimes to the growth of parasites in the mouth. Prof. Erlich

thinks these little sores in the mouth and about the edges of the gums are due to ~~66586~~ spirochaetes which may be killed by 606. They are relatives of the specific spirochaetes at 606 was especially designed to destroy.

Q. Why does extreme sallowness often cling to a patient after treatment.

A. It is due to an anemic state but should disappear as the patient get more blood and becomes more active.

Q. If one doesn't have too much acidity and another person does not have enough, what should be the differente in the diet to cure both conditions?

A. A person who has too much acidity should eat more fats ~~tand~~ a person who has too little acidity should avoid eathing fats very freely and should take pains to masticate his food very thoroughly.

Q. Do you think a healthy baby a year and a half old should be given more cow's milk than any other food?

A. No. I should think such a child, at least half of its food, should be made up of cereals, fruit juices and vegetable purees.

Q. In functional nervous disorders can the nervous condition of the patient be ascertained by feeling the pulse?

A. To some degree, not altogether.

Q. For a healthy child of three what foods are best toregular the bowels?

A. Vegetable purees, malt sugar and such coarse cereals as oatmeal, cooked ten minutes. The oatmeal should not long be cooked. In order to get the particular benefit from it it should not be cooked more than ten minutes. If it is cooked half an hour it becomes pasty, soggy and is constipating but if it is cooked only ten minutes it is beneficial and is an excellent laxative remedy and the reason why it is beneficial particularly is because some of the starch is so imperfectly cooked that it is not well digested and it finds its way down into the colon and there

it feeds the acid-forming germs which grow in the colon and so present putrefaction.

Q. What is your opinion of fear and worry as the worst enemies of human beings as regards our many ailments?

A. Well, I don't think fear or worry are the worst enemies. I think bad habits are the worst enemies but there can be no question at all that fear and worry are very important factors in keeping sick people down. I remember a great many cases in which people have come here who did not really have anything serious the matter but were simply scared. They were haunted by ghosts and hobgoblins of maladies they did not have. They had heard of people who had had terrible cancers or some other awful trouble and were very sure they were going to have it and the worry of the thing made them sick. We ought to case out fear and worry. There is no use having fear and worry. If you are sick the probability is you have been doing something which was not the right thing to do. The thing you should do is to find out the right road to health and then resolutely set out to travel that road and determine to be well, to have all the health that is coming to you too. A great many people stop short of what they are entitled to. You want all the health that belongs to you and if you set your face earnestly, steadfastly healthward, you may be sure you have got all the powers in the universe working to help you. Mr. Jacob Riis said the other night, that he was very certain that he never got discouraged, he was always sure he was going to succeed in his philanthropic efforts because he felt the great power that made the earth, that upholds the universe was behind him and ready to work with him and was working for him. Now, every man that is sick that has turned his face healthward and has turned his back upon the wrong habits of living and has determined to seek health in a ligitimate and rational way can be absolutely certain that he has got the powers of the universe working with him. He is in tune with the infinite so instead of worry working against these almighty powers he is working with them and they are working for him and lifting him up.

We must fix our face on something besides your doctor. If you expect me to cure you I don't wonder you would worry. If you expect the Sanitarium to cure you you have got plenty of cause for worry but there is a greater power that is working for the sick man. The same power that made us is still in us and is working for us. When we go to bed at night we don't have to bother about our hearts. We don't have to make some arrangement to keep our hearts going while we are asleep. We don't have to have somebody set up to keep our lungs pumping while we are asleep. We forget all about that. Our hearts keep on and our lungs keep working and we wake up in the morning feeling refreshed and these wonderful functions have been going on while we are asleep. Why? Because there is one who never slumbers nor sleeps, who is speaking to that heart each moment,"beat, beat, beat". Every impulse of that heart is the result of a divine command giving orders to it and when we see that there is such a power working within us and working for us, why, my friends it gives us an endless amount of courage and all we have to do is to set ourselves on the side of omnipotence say we are going to do right, to eat right and to exercise right and to do everything we know that will help us prolong healthward. Then we must trust to the power that made us to do the very best thing possible that can be done for us but I see it is past bed time. I thank you for your attention.

End of this lecture.

v-m

Stereopticon Lecture at the Battle Creek Sanitarium Parlor, Thursday, April 24, 1913,

at 8:00 P. M.

by

J. H. Kellogg, M. D.

We are accustomed to think of Russia as one of the countries that is far behind the rest of the world in civilization and in some respects this must be true. Only a very small per cent. of the population of Russia are able to read or write. Nevertheless, there is one man in Russia who has gotten so far ahead of the rest of the world in the scientific study of the human body and especially in relation to the function of digestion that the whole world has been obliged to look to him for information and instruction, that one man you see standing here. This is Professor Pawlow the professor of physiology of the Institute of Experimental Medicine in St. Petersburgh, Rissia. Seven years ago I made a pilgrimage to St. Petersburgh for the privilege of meeting this man and of studying his work in his laboratory. I found a number of very intelligent men there, this gentlemen here and this one and this one and several others and I had the pleasure of meeting there men of remarkable intelligence. They have given their whole attention for many years to the study of digestion and have made more discoveries than have ever been made in all the world before their time. Here is the building furnished by the Russian Government for carrying on this very interesting work. It is certainly very creditable to the Russian Government that it has encouraged a line of work that has never been encouraged by the Government of the United States. The U. S. has never appropriated a penny to find out what is good for men to eat. It has appropriated millions and millions of dollars to find out what is food for pigs to eat and what is good for chickens and for cows. An enormous sum of money is expended every year for the purpose of ascertaining what is the best for these lover animals to eat but very, very little attention has been given to the

attention of the human diet. Dr. Wiley got us worked up on the subject of pure foods and the adulteration of foods but the study of what is a natural diet for man and how the process of digestion is carried on, that has been left for Russia to investigate, and to instruct us upon. Here is one of the places, one of the animal houses where the animals are kept for the experiments. ~~This laboraor laboratory~~

This laboratory makes experiments upon animals not in a cruel way but in a friendly and brotherly way, so to speak. I found the most cordial relations existing between the doctors there and the animals who were the subjects of their experiment. They were very carefully treated. This is the institution, one of the laboratories and this is another interesting picture showing the men gathered from various parts of the Russian empire to study the work of Pawlow and have themselves become instructed in the work. These are military officers for this institute is especially for the purpose of instructing military officers. This is Dr. Pawlow corps of assistants and you see the doctors are in surgical garments because the work is done there with all the care of the very nicest surgical operating room. A cement floor and porcelain wash stands, you see everything is conducted with the most scrupulous attention possible. And here is Prof. Pawlow himself performing an operation. This dog who is the subject of operation has been previously sterilized, had a thorough bath and has been subjected to exactly the same kind of preparation , more thorough-going if anything than that to which human being are submitted and the dog is being given an anesthetic with the very greatest care. (Pawlow is one of the most skillful operators in the world. He operates upon dogs' stomach witha degree of skill that is unequalled, perhaps by any other surgeon in the world who operates upon human stomachs.) The very finest work I saw in surgery was the surgery upon dogs in the experimental institute in St. Petersberg. I got several valuable points for operating upon human stomachs and when I operate at the present time upon a human stomach as I was obliged to do yesterday, I operate just as Prof. Pawlow operates upon dogs. I employ the dog method, so to speak for it is better than any other method, there is so much more pains taken; it is so much more delicately done and these are the appartments of the dogs after the operation. (Each one has his own little appartment and this little room is kept scrupulously clean; cement floor, cement walls and everything perfectly aseptic and every dog that has been the subject of an operation has his own nurse that takes care of him with the greatest patience and gives him the greatest consideration.) Here is a diagram of a dog that has had the operation preformed upon him to show you the nature of some of the operations preformed.

Now Prof. Pawlow in order to find out the relation of chewing through digestion and he did not sit down and think it over and ruminate about and meditate over the question; he did not watch somebody chewing or watch himself chewing and then guess what happened but he put a dog in such a condition that it was possible for him to actually find out and to observe to really know what happened. Now this operation upon the dog was rather an unpleasant one but the dog did not suffer any. The dog's meat pipe was so arranged that instead of going straight to the stomach it came out of the skin at its throat and the two openings were brought out through the skin in this way. Another opening was made in his stomach so that the stomach was connected by a tube with a glass flask here. The dog was given a breakfast to eat such a breakfast as dogs like, a breakfast of meat and you see what happened. The dog eats this breakfast and chews it up. It drops right back into the pan again and then he eats it over and it goes back into the pan again so the dog continues to eat the same breakfast over and over and over hour after hour and enjoying every morsel of it, getting sweeter and better all the time because none of it goes down into his stomach, don't you see, so that he does not loose his appetite. He has more appetite when he gets through than he had when he began and he enjoys every morsal don't you see and this is the interesting thing. Prof. Pawlow observed when the dog is chewing food in this was and it is dropping back into the pan, not a morsel gets into the dog's stomach. The dog's stomach goes to work just as though the breakfast was there and the gastric juice pours out into the stomach in abundance and down through this little tube comes a stream of gastric juice that trickles down into a bottle and in the course of an hour the dog produces in this way a half a pint of gastric juice and every dog has to start in every morning in that way. He had a lot of these dogs and this is a picture taken by my secretary who was with me. He took a snapshot of those dogs and that is just the way they looked the very morning I called. They had been chewing since six o'clock in the morning. It was not ten o'clock in the forenoon and they had been industriously working away ever since six o'clock and they thought it was about time for them to have their breakfast, so as I came into the door they

looked around to see if I was the one coming to feed them. They have to be fed with a stomach tube. After they have been chewing for several hours in this way they stomach tube is put down and the breakfast is poured down into their stomach and they go off quite contented. Each dog has to make a quart of gastric juice before he is allowed to eat any breakfast and the quart of gastric juice is then shipped over to America and sent to London. It is given to epicures who have worn their stomachsout and are not able to digest their dinners, don't you know so has to fall back upon the dog to let them out. Of course, if a man is going to live on a dog's diet he has to have a dog's gastric juice to help him to digest his dinner, don't you see. Now Prof. Pawlow made this wonderful discovery that the stomach makes gastric juice when there is no food in it and before the food ever enters the stomach, when the food is still in the mouth and the food is being chewed, that even the smell of food causes the stomach to pour out gastric juice and Prof. Pawlow called the juice produced in this way "appetite juice" and you see there are two very important lessons that we get from this discovery by Prof. Pawlow, facts of which we had an inkling before but we did not have the scientific proof. First, that it is of the highest importance that our food should be appetizing because he found that when one of his dogs was chewing food here and the gastric juice was merrily trickling down the tube into a flask the dog was chewing its breakfast admirably and everything was going on well, if that dog was made angry, if the dog was given something it did not like, if the dog was made to snarl or to growl, the gastric juice would stop right away. Everything had to be pleasant and cheerful about the dog and the breakfast had to be a breakfast that the dog liked or else not a drop of gastric juice could he get. Now it is very important to get the gastric juice because the laboratory is supported by the sale of this gastric juice. They get ten quarts of gastric juice every day and this is shipped all around the world at a pretty good price. I have got some down in the pharmacy now. When you feel the need of help it is waiting for you and several people have been helped by it. It has got a Russian label on the bottle so you don't know just what you are taking. Prof. Pawlow made the discovery that our food must be appetizing, that we must relish it and eat it in a

cheerful frame of mind. So you see how absurd it is for a man that has been buying stock ~~xxx~~ on margins or something of that kind down in the stock exchange, how ridiculous it is for this man to be reading the stock market report early in the morning when he is eating his breakfast. If he should find his stock had gone down ten or fifteen points, his digestion~~x~~ would stop just about that quick. Some people have got so hardened to it that they don't care whether it goes up or down perhaps, but one should be very careful not to allow worry or anxiety or any other annoying thing to interfere with the play of the digestive organs during the process of digestion. That is one of the facts Pawlow has brought out and Prof. Cannon of Harvard has confirmed these observations by his observations with the X-ray upon cats. He found that when a cat was digesting its dinner, the stomach was contracting and working, manipulating and churning that food, moving it along and everything going along merrily and the cat purred and enjoyed himself, was happy in the sunshine or if a friend was soothing or petting it and talking kindly to it, then if he pulls the cat's tail and made that cat spit, instantly the stomach stopped all its work, no more digestion, no more peristalsis in the stomach, not a movement. The stomach is absolutely paralyzed and remained in that condition for an hour perhaps, and never until the cat got into a happy frame of mind again would that stomach do its work so you see it is a matter of tremendous importance that our mealtime should be a happy time and that it should be an enjoyable time, that we should relish the food. So you see this lifts the avocation of the cook upon a very high ~~plain~~ plane. Our bodies are made of what we eat. What we eat today is walking around and talking tomorrow. If it is well digested it will be talking well; if it rots and ferments and sours inside, you may just imagine what the talk is going to be. The vocation of the cook as I said is on a very high level. The cook ought to be respected. One of the old writers, I think it was Tertullian said that some people were so very fond of eating that they ought to veisy the cook and worship the chimney which was a very shrewd suggestion. The chimney and the cook were so closely associated with the food and cookery he thought they ought to be made the objects of worship by some people who are so much devoted to the gratification of taste, but it is not essential to give attention to this matter of diet and

of relishing the food. (It is physiologic, it is absolutely necessary that we should relish the food and enjoy our meal, that we should be happy while we eat. If we do not we cannot digest. There is no gastric juice and there is no digestion.) Now the second important fact that Prof. Pawlow's discovery brought out is that the food must be thoroughly chewed; that it should be thoroughly masticated; that it should be fletcherized as we sometimes say, although the word "fletcherism" is a modern word. I had something to do with making it myself because I thought it would interest people in giving more attention to chewing. I found some people would fletcherize when they would not mastiﬁcate so I coined the word and set it afloat and it was picked up and has been carried all about the world and a great many people are fletcherizing now who never could have been induced to masticate the food thoroughly if they had been lectured about it for a century. (Now thorough mastication of the food Pawlow showed to be absolutely essential for good digestion. Why? why? because the mastication of food is the thing that calls forth the digestive juices. While the food is in the mouth and being chewed and its sapid qualities are being appreciated by the nerves of taste, The brain is stimulated, certain nerve centers in the brain and from the brain the stomach is notified that food is coming and it is notified as to the kind of food that is coming and is made to prepare itself for the reception of that food, so when the food gets down into the stomach it does not have to lie down there and wait for the gastric juice to be secreted to digest it, but the gastric juice is already waiting for it. The stomach, so to speak, stands there with its arms extended ready to embrace the good dinner that is coming down and to give it a welcome with a baptism in gastric juice. It is immediately submerged in gastric juice where digestion begins at once and goes forward with activity.) Now if you do not chew the food, if you swallow it into the stomach without thorough mastication, there may be no digestion at all or it may happen that after a long time the stomach by contact with the food will after a while begin to secrete a little gastric juice but it is a very meager activity; it is a very small quantity of gastric juice and it is a very poor apology for the vigorous active complete thorough-going digestion one is entitled to and that takes

place when the food is properly relished and properly masticated. So you see there is another important principle involved in that that is very interesting. After good mother Nature has done so much for us, has put into the food principles which give to its flavor which recommend it to our sense of taste and enable us to appreciate it, we ought to take pains to get all the good out of it we can. Some people are very fond of beefsteak. I presume several people here have relished beefsteak in the course of their lives, have sometime eaten beefsteak with a great deal of relish. "Nice juicy beefsteaks" people call them. Sometime ago we used to serve beefsteaks here and we were trying to work people off by the graduated methods and it graduated on intead of off and one of the schemes we adopted for graduating beefsteak broth was to wash our beefsteak, to launder them well. We used to soak our beefsteaks in salt and water, then we would wash them and run them several times through a wringer and by soaking the beefsteak in salt and water over night and running it several times through a wringer, we found we could get all the blood and uric acid and the urea and the other extractives and excretory materials all out of the beefsteak and we had the most beautiful white and clean looking beefsteaks you ever saw, as white almost as sheeting and as clean but they did not have any more flavor than a piece of rubber and you know it was the most difficult thing in the world to get people to eat those nice clean beefsteaks. Everybody preferred beefsteaks with the blood in them. It was like some of the people over in London some years ago. A man made the discovery that in the process of fermentation there was alcohol produced, so he thought he would have real good bread and he fixed up a distilling arrangement in his oven to capture the alcohol from the baking bread and he condensed the alcohol, collected it and made a little money off it, so he was able to sell his bread at a cheaper price and make more money out of it still and he succeeded very well for some little time until a baker across the road had the impudence and meanness to put up a sign "Bread with the rum in it" and everybody wanted that bread and the other man lost his business, so he had to go back to selling his bread with the rum in it too. So that we found people preferred beefsteaks with the blood and the urea and the uric acid in it and with all those unpleasant, unwholesome things and I could not

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get anybody to eat the beefsteak after those things were washed out because those ~~extra~~ excrementitious and harmful things are the very things that give to beefsteak its flavor and I doubt whether anybody could digest that beefsteak very much because it had no flavor and nobody wanted it. There are some things so bad they cannot be reformed, you know and beefsteak is one of them.) Now Prof. Pawlow called our attention in the most emphatic way to the fact that food contains element

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Now Prof. Pawlow called our attention in the most emphatic way to the fact that food contains elements ~~that~~ recommended to our sense of taste so that we will relish it. All natural foods contain these things and foods that do not contain these natural elements that give to them relish are not wholesome food. For instances all the different fruits, how delicious they are and the aromas and the essences, the sugars and the acids, all the various flavoring substances of food how delicious they are and how they cause the mouth to water sometimes. When you have not seen a peach perhaps for a year, and you see a nice delicious peach hanging down from the bough and you know what delidous meat it has inside of it, it fairly makes ones mouth water to get, it makes the saliva begin to pour out into the mouth and at the same time according to Prof. Pawlow, the gastric juice is pouring out into the stomach. The stomach waters as well as the mouth you see so you see it is necessary that our food should be so delectable, so delicious and attractive to every sense, to the eye, to the sense of smell and to the sense of taste. It should be in every particular so attractive that it will produce a real demand for it, that one will feel like reaching out and taking it.) You know how a colt when it comes out in the morning and is realy hungry will whinny, whinny for its breakfast and that peculiar whinning of the colt has something in it that is very expressive. Now that is the way you ought to feel about your breakfast. You ought to feel your stomach whinning, that your gastric juice is just craving for that breakfast and when one feels that way he will be absolutely sure of having a good digestion because Prof. Pawlow says that hunger means appetite juice and appetite juice means good digestion so we must take pains to cultivate appetite juice and see what a field there is for the housekeeper, what a field there is for the scientific cook and for the esthetic cook and for the artistic cook. What splendid opportunity there is to maintain and improve the good

digestion in their families. How much depends upon the cook. Sometimes people do not imagine I am sure. A story was told some time ago that a certain doctor was going to move away from a certain county that he had been living in In England. He had been a doctor to a certain neighbor man's family and he was about leaving so he called upon the neighborman and embraced his cook and said to the cook, "I owe you sir all I am and I come to bid you an affectionate farewell and to make you a present of one hundred guineas." He said, "If it had not been for you nobody would have been sick in this house and I would have had no business" so he was sharing up with him you see. Well, the doctors don't do that now days always but we would like to have it the other way. The time will come when doctors will be paid for keeping ~~sick~~ people well instead of ~~keeping~~ for attending people when they are sick and when that time comes the cooks will be better appreciated and they will be better educated and trained and will occupy a very high position in society and in the home instead of being looked down upon as menials. Now another operation Prof. Pawlow and which he devised and invented is a very important and interesting one besides it enabled ~~next~~ him to bring out a great fund of new and exceedingly useful practical information. It was the operation illustrated in this diagram. This ~~illustrates~~ represents the outline of the dog's stomach. This is the first step of the operation also performed in his laboratory. An incision is made here in the stomach. The next step of the operation is to take that part of the stomach which is cut off, nearly but not quite cut off, the nerves are not damaged at all, this made a separate stomach and is brought out into communication with the skin and a tube is put in here so that the dog is made to have two stomachs. The larger stomach he uses for his own benefit while the small stomach the physiologist employs and this is commonly known among scientific men as Pawlow's pouch because it was Pawlow that first suggested the making of it or as Pawlow himself calls it, queinemagen or little stomach and this queinemagen has given a world a great amount of most important and useful information because while the food is put into the

large stomach and the process of digestion is going on here, the gastric juice pours out of this little stomach which is not mixed with food. It is entirely free from food so its exact properties can be thoroughly tested and examined. The different kinds of food put into the large stomach produce different kinds of gastric juice. It is found when the dog has meat put into the stomach for example, it is digesting meat, a very powerful acid, a highly corrosive gastric juice was produced and poured out in considerable quantity, extremely acid gastric juice, the most highly acid juice that was possible to produce was produced when meat was put into the dog's stomach. Now is was found that if the dog had meat juice it produced just the same effect as meat or if the dog was given beefsteak, or meat extract, or uric or extract of beef or beef tea or broths, or bouillon, all of those things would make this little stomach pour out as well as the big one a large amount of most highly acid gastric juice. On the other hand, when the dog was fed bread it produced a small amount of gastric juice and very little acid nothing like as acid but will have digestive power. The gastric juice contained a large amount of pepsin but not very much acid, a moderate amount and when the dog was given milk then a considerable amount of gastric juice was produced but very little acid indeed. Further experiments showed that when the dog was given fats for example, or olive oil that there was no gastric juice at all. If a pint of water was put into the dog's stomach a large amount of gastric juice will be produced, very acid gastric juice would be poured out right away but if one single grain of soda was mixed with that pint of water then there was produced no gastric juice at all. That is a good thing for people to think about who are accustomed to making biscuit with baking powder, people who are accustomed to feeding their familes on baking powder biscuit or soda, saleratus biscuit should know about this experiment of Pawlow that he found that only one grain, that is, as much soda as would weigh as much as one large grain of wheat, just a little bit of soda, as big as a pill. That amount of soda in a pint of water would stop the stomach from making any gastric juice at all, absolutely none so you see my

friends the enormous damage people are doing to themselves when they are putting soda, saleratus and things of that kind into their stomachs. Those things were never intended to go into the human stomach. (Prof. Pawlow found that olive oil of all fats that are known had the most powerful [redacted] influence upon the stomach and that is the reason why when people have too much gastric juice,) we say to them take olive oil at your meals. If people have hyperacidity we say, take a couple tablespoonfuls of olive oil. If Prof. Pawlow had not made his experiments we would not have known that but now we know if a person has too much acid one of the very best things we can do for him is to give him one or two tablespoonfuls of olive oil before each meal. Many such people are completely relieved by this measure. That prevents the stomach from making the excess of gastric juice that makes the trouble. We would also say to such a person do not take meat or any kind of broths, bouillons, meat extracts of any sort at all because they stimulate the gastric juice.) Pawlow proved it on his dogs and it has been proved a thousand times over on human beings since Pawlow made his observation but a personsays"when I have a sour stomach and eat meat it feels better. My stomach is better on this kind of a diet than anything else. Meat agrees with me better than any other food because I don't feel the acidity when I eat meat." Now the reason for that is that the meat combined with the acid and so neutralizes it but at the same time it stimulates the stomach to make more acid and the longer you continue the use of meat the worse your stomach will get until by and by the gastric ~~juice~~ glands will be entirely worn out and you will not be able to make any gastric juice at all so you will continue to get worse until after while you will develop gastric ulcer down here at the pylorus. Then possibly cancer and other troubles will come.) You see then that Nature has been wonderfully wise in making the stomach of the dog for she made the stomach that is adapted to the dog's diet. The dog eats meat and makes a very powerfully acid gastric juice which is adapted to a meat diet. This is ~~natural~~ not true of all animals however. Herbivorous animals have a different kind of stomach. The monkey, the gorilla, the chimpanzee does not

have a dog's stomach but has a stomach adapted to the production of gastric juice that is best adapted to the digestions of cereals and foods of that kind. Here is a picture of Pawlow's dogs. These dogs have had operations and they seemed to enter into the scientific spirit of the place in a remarkable way. These dogs are all exceedingly fond of Prof. Pawlow. When he came around every dog present barked him a pleasant good morning and waged his tail to show their pleasure of seeing him. They are all well cared for. They are all attached to a string and it would not do to let one of those dogs run away for he would carry off a whole lot of scientific information you see and he would suffer a great loss. Here is a little sketch to show you something about the human alimentary canal. This shows the relation of the stomach, colon and small intestine. Here is the stomach. Here is the pylorus. Here is the small intestine or the so-called meat gut. Here is where the ileocecal valve is exists. Here is the appendix and this appendix is wide open, what we call a patent appendix allowing fecal matter to pass down into it and this shows the small intestine open. The colon contracts upon itself just as one would contract an atomizer bulb. When you contract the bulb the air goes both ways and exactly the same thing happens to the colon when the colon contracts. Instead of passing on as it ought some of the gas passes back into the small intestine here and persons who have this incompetent ileocecal valve, suffer a great deal from gas. I have met several persons without of that kind within a few days. Yesterday I had a case which suffered a great deal in this way in which I repaird the valve. It is very easy to repaid this defect. The valve can be narrowed in such a way that the difficulty is entirely overcome. Notice that the colon is quite long. It is five feet long, one sixth the length of the entire alimentary canal. The alimentary canal is 30 feet long and the colon is 5 feet long, just about as long as the body while the small intestine is 7 or 8 times as long as the body. Here is the colon of a cat. See how short it is. It is not half as long as the colon of the human being and the small intestine of the cat is only three times as long as the body while in

man it is 7 or 8 times as long as the body. In some other animals it is ~~still~~ shorter still. Look at the colon of an eel, the conger eel. Here is the small intestine of the Conger eel and the stomach up here and here is the small intestine and here is the colon. The colon is about a couple of inches longer, a very, very short colon you see because the Conger eel lives entirely upon meat. It is the scavenger animal, a meat eating animal that lives wholly upon meat and consequently has a very sort colon and a very short intestine for meat is one simple article and is very easily digestible. Here is compared a colon of a deer.. See this enormously long convoluted colon that looks for all the world like a snake. This is a colon of a deer. The deer is a herbivorous animal. It has a longer colon even than the human being. The alimentary canal of some of these herbivorous animals is thirty times as long as the body. In man it is ten times as long as the body. In a carnivorous animal it is three or four times as long as the body. In the gorilla, or the chimpanzee the colon has the same proportion as in man because the chimpanzee is a frugivorous animal, a non-flesh eating animal as human beings are. Here is a comparatively normal colon. Here is the cecum. Here is the ascending colon. Here the transverse colon. Hereis the descending colon. Here is the pelvic loop which has fallen down upon itself a little bit and there is nothing very serious about that in this particular case. Please get that picture in mind. This colon is not normal. It is folded down at the ~~don~~ top and doubled backward, lapped over and here is an extra kink here, a bend here and a bend here and this part of the colon is very much contracted. This condition shows colitis present in the colon. We do not have to guess about it any more. We do not have to say to the patient,"well I think you have colitis" but we have a bismuth meal, make an X-ray examination and we can see ~~that~~right away. This strongly corrugated appearance is also indicative of the presence of colitis. Here is another colon. ~~Here~~ See what a tangle it is, almost tied up in knots and this tangled colon of course,was very inactive. There was great stasis. The patient suffered from a most chronic and obstinate constipation. We know know that constipation

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is not a condition which depends upon one cause. We used to consider that people who were constipated on general principles. When we had to feed a patient with constipation we tried first one thing we knew was good, then another thing and went on through about 30 things until we finally hit something that helped the patient or made up our minds that the case was incurable but now we don't have to blunder around in that fashion any more because we can get inside information. We give the patient a bismuth meal and every person suffering from chronic constipation, every person suffering from chronic diarrhea or from stomach or bowel trouble, every such person ought to have the bismuth meal. I would not forego the opportunity for a bismuth meal for anything if I were suffering in that way for it is of the greatest importance to get the inside information and we find the difficulty exists at some definite place and in each individual case there is a definite cause for the constipation in that particular case. Here the colon is completely ~~filled up~~ pulled out, thre transverse colon is fallen way down and here is the pelvic loop. Notice this deeply corrugated condition of the colon. That means this patient has colitis in the descending colon which produced obstruction so the bowel is compelled to contract with great vigor in order to force the hard and pasty materials along. Here is a case of a diseased appendix, an appendix which is filled with fecal matter mixed with bismuth because the appendix is diseased and open. Such an appendix is ~~as as~~ dangerous thing. Now we will take up next the question of what to do for these bad colons and how to deal with these crippled colons and I will tell you that ~~the~~ story the next time. I thank you for your attention.

End of this lecture.

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Question Box Lecture at the Battle Creek Sanitarium Parlor, Monday, April 28, 1913,

at 8:00 P. M.

by

J. H. Kellogg, M. D.

When I was in St. Petersburgh some seven years ago as I was telling you of my visit the other evening, one thing I did not tell you about which I think might interest you, an observation which I made there. Prof. Pawlow one day after showing me about the laboratory and telling me of various experiments said, "Now come with me. I will show you something very interesting indeed." It was a discovery which he had recently made. He took me to a room where I found a dog which had been especially prepared so that the saliva instead of passing into its mouth, passed out into a little flask which was suspended from its neck through a little tube. We found the dog a most beautiful creature, the most beautiful dog I ever saw in my life and apparently an extremely intelligent dog standing on a table and an assistant close by. The assistant had made everything in readiness for the experiment. Now, the Professor said, "Watch and see. Not a drop of saliva is flowing". So we all watched and listened. There were two or three of us there. We watched with a great deal of care to see that not a single drop of saliva was falling into the flask. At a signal given by simply a wink of the eye from the Professor, the assistant by a motion of his foot which the dog could not possibly see, sounded a very high pitched note like the highest note of ------ fife and instantly the saliva began to flow abundantly. Now that showed that this dog's salivary glands were excited by music and the reason why was because this particular note had been associated with the dog's breakfast. The dog knew immediately when he heard that sound that the breakfast was coming next and the Professor experimented with different dogs afterwards and another dog would respond to another sound but no dog would respond to more than two or three.

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Whenever he heard that particular sound or group of sounds making a certain cord, the dog in a very short time would be trained so that the saliva would begin to flow at once as soon as he heard the sound. Another dog had a tube arranged in his stomach so that the gastric juice would poure out into a bottle and be collected. This dog whenever a certain man came into the room would begin to pouré out saliva. It was the man who fed him and whenever he saw that man coming into the room, the man was so associated with his breakfast that immediately the gastric juice began to pour out of his stomach just as though the breakfast was actually there so you see how mental impressions are very closely associated with our nutrition, with our food. It is on this account extremely important that one should keep his mind in a happy frame when he is eating.) I remember very well some years ago, a little circumstance happened. A lady was in the dining room and some one came hurrying into the dining room with a letter from home for this lady. She had just begun to eat her dinner, was enjoying it very much indeed. She opened the letter at the table and read a note from her husband, "Dear Wife, the Baby has diptheria. Come home quick." She sprang up from the table and before she could get out of the dining room the portion of dinner she had eaten was on the dining room floor. It was absolutely impossible for her to help it. Her stomach immediately not only ceased to act but it began to act in ~~to~~ the opposite direction so you see how how important it is to keep our minds in a proper state when you are eating. Now, I do not at all agree with a certain philosopher whose suggestion I was reading sometime ago on eating. He said, "When we eat we should remember that eating is a very serious matter. We should remember that our bodies are made ~~from~~ of what we eat. It is truely a solemn thing to eat and we should give our whole thought and attention to the matter. We should not allow our minds to be diverted by any frivolity, by conversation or any whimsical remarks or jokes or trifling or anything of that sort. We should remember our solemn, serious

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and important a matter it is to eat.and give the mind wholly to it. Now I think if a person would eat in that way he would soon be s subject of indigestion. It could not be otherwise. I remember a men who used to eat that way and after breakfast he would come along and he would say, "Doctor, my breakfast likes just like a stone right where I swallowed it. It has not moved an inch." He would come along again after two or three hours and says "Doctor, I can feel my breakfast right over here and put his hand over the spot." In an hour or wo more he would feel it over in another place. He actually followed that breakfast all along the twistings and turnings of his small intestine and never let it get out of his sight for a minute. I made up my mind he was a hopeless case and I sent hime home. He could not get his mind off his breakfast. It is better for us to eat what is set before us asking no questions for consciensce's sake nor for stomach's sake either than to be thinking continually of what we eat.) Why, the stomach gets into a state of stage fright actually. Did you ever see a person in stage fright on the platform? I notice several clergymen here and I don't suppose they ever suffer from it but I remember having an attack myself once. I know how appalling it was. When I was in a state of stage fright I could not say a word. When I was a small boy I had to speak a piece and I committed my piece to memory very well but when I got up ~~to speak a~~ up on the platform I felt my thinking machine simply stop. It was like Josh Billings' mule. It would not go. Now the stomach is in very much the same situation. (When a person thinks and says, "now I wonder if that baked potato is going to sour on my stomach or I wonder if this celery is going to agree with that glass of buttermilk, now when a person is in that state of kind, you can depend upon it that his digestive process is in a state of stage fright. The stomach goes on a steike when it has received constantly that sort of treatment. These processes of the stomach are like the processes of the old alchemists , you know. They went away off into caves in the ground and in out of the away places and carried on their subtle operations out of sight where no body could see. Now the stomach is like an alchemist. It cannot

allow spectators so if you bring your stomach right out on the stage and stare it in the face, so to speak, you look it out of countenance and the poor stomach gets into a state of stage fright and won't do anything at all. The worst thing of all is when people talk about their stomachs and to other people and actually li bel their stomachs. I remember how a man abused his stomach so that if I were the stomach I would not have done anything for him. It could harly be otherwise. He was all out of sorts with his stomach. We must be in harmony not only with the universe at large, in tune as Mr. Trine says, but we must be in harmony with ourselves. We ought to sit down at the table and as you look over the food, what an appropriate thing it is to begin the meal with a frank offering, with a benediction to thank Heaven for this good food. Then we ought to receive it with gratitude and with thankfulness and with delight and with contentment. People who have the character, I think that is the proper word to use, people who have character enough to do that sort of thing, they make immensely more progress in overcoming difficulties that may have arisen because of the wrong habits of life than those who are continually finding fault or begging for something they ought not to get. You know what happened to the children of Israel when they got to hankering for the flesh pots of Egypt, for example. I don't suppose any of you ever hanker for flesh flesh pots of course, but the children of Israel did. You know they got a hankering for the flesh pots and you remember what happened to them. A lot of quails came into camp and they had all the flesh they wanted to eat and while it was still in their mouths it made them sick. They had a terrible epidemic of ptomaine poisoning, I think it must have been and they had a frightful time and I have known that thing to happen to people since that time, too. I remember very well a certain judge from New York who had been a prominent state official for many years. He came out here and we taught him better things than to eat the flesh of dead animals and he went home and wrote me

he had converted his whole family. His wife was not very easy to convert but he brought her to it. She soon got reconciled to the situation. She must have been a very patient, amiable woman. I would almost venture to tell his name because he told the story right here in the parlor. He was on his way out west to Denver and on the dining car just as he was going into Denver, a few hours before he got there, in looking over the bill-of-fare he saw chicken pie on the menu. He said, "Now I don't eat chicken pie. I haven't eaten a particle for three years but he thought after while; well he said, "I wouldn't eat chicken pie of course. I like it but I won't eat it because I have stopped eating meat but I will take a little bit of the crust. There won't be any harm in that but when it came in there was just a little bit of the crust, not very much. It was mostly meat, and he said, "I'm not getting my money's worth. I have paid for that chicken pie and I will eat it just this time but only this once." Before he got to Denver he began to feel some terrible symptoms.

Before he got to Denver he began to feel some terrible smitings of conscience around the region of his stomach and his conscience smote him more and more until by the time he got to Denver he was really sick. He got into a hotel sent for the doctor and the doctor said, "Why you have got ptomaine poisoning" and, sure enough he had. He was very ill for two or three days, became jaundiced and after a couple of weeks he got well enough to get on here to Battle Creek. He spent a few days with us here, got a little better, got on the cars and started home to his business in New York. He got as far as Rochester I think it was and there he was taken so sick he had to go into a hospital. I had two letters from him while he was in the hospital and he thought he was getting better but he suddenly took a turn for the worse and died in three weeks. Examination showed his liver had failed just because of the poison which had produced a fatal effect. That is what happens to a backslider. Backsliders are very likely to get into a bad way. He repented of that chicken pie I assure you. He told me more than once in my office, "I will never eat another", "I ought to have known better, I did know better but I just thought I would try it" and you see what happened to him. There will be lots of temptations by and by when you get home. This is a sort of sanitary heaven where you are protected from temptation but when you get out into the great wicked world you may be tempted, so I am giving you this warning.

Q---Why is not cocoanut served at the table?

A---We can have it if anybody wants it. Give in your order and we will see that you get it. However, I must warn you that cocoanuts are not the most digestible of foods. If you are going to eat cocoanutx you must be sure to chew it well. If cocoanuts are well chewed there is no harm in them. The proper way to eat the cocoanut is while it is green. Go down to Cuba or South America or Mexico or Hawaiian Islands and you will find out how to eat a cocoanuts. There you see the natives take a big knife and cut the cocoanut in two, then eat it with a spoon. First they make a hole in it, drink the water out, then cut it in two and spoon

it out and it is in the form of a thick cream and is very digestible and very delicious, but when the cocoanut is dry and hard like we get it here, it is not at all easily digestible but must be chewed very very thoroughly to be digestible at all.

Q—Are raw eggs healthier to eat than cooked eggs?

A—No. The raw eggs is coagulated in the process of digestion; it becomes hardened so that it really reaches the form of cooked egg so there is very little difference. The white of egg is most easily digested if it is beaten up to a froth because then the albumin is spread out into thin films, each around a bubble of air and these thin films are easily acted upon by the gastric juice which mixes all through among the bubbles so it is very easily digested but white of egg cooked hard as in an omelet or hard boiled or hard poached is likely to be very difficult of digestion indeed, because it is swallowed without thorough mastication. A hard boiled egg is easily digested if it is ground up, if it is put through a colander and reduced to a fine pulp, then it is quite easily digestible. However, I ought to say further that the white of egg scarcely whorth eating anyway. It contains very little food material and is not the best kind of food material. The white of egg goes to make the chicken while the yolk of the egg is the food for the chicken. It is the little luncheon put up for the young chicken while it is inside the shell before it gets out, you know, so that is real food. The yolk of the egg is food intended for the feeding of an animal, whereas, the white of egg is not intended for food at all but is intended to be an animal, so eating the white of egg is about the same thing as eating beefstead, while eating the yolk of egg is a different thing. The yolk of egg is very easily digestible. It contains fat and protein but is so easily digestible it is digested in the stomach. Even the fat is digested in the stomach which cannot be said of but very few other foods.

Q--Who was the first vegetarian?

A—Well the first vegetarian was a relative of mine. Sometime ago I was taking dinner in Vienna. A friend of mine there, Dr. Winternitz invited me home to dinner and when we sat down at the table they began to bring in the various things.

The first course, I think, was a dead hen and the next course was a piece of sheep. Of course, they would call it mutton but various different beasts came along right after the other. I did not have any use for any of them and they all thought I was going to starve to death and the kind ~~hostess~~ hostess said, "Really you are eating nothing". I said, "Oh I have plenty to eat. I have no difficulty in finding enough to eat". "Well can't I get you something. Really you are eating nothing at all hardly". I said, "don't worry the least bit about me, I always find plenty to eat" and I got along very well. Finally a lady on the other side of the table, a sister of the hostess said, "Dr. Kellogg, you know you are the most original person I ever met." It was very nice of her to say that that way, wasn't it. She didn't like to say to me that I was a crank, you know, so she said I was the most original person she had ever met. Well pretty soon one of the other ~~lady~~ ladies said, "Dr. Kellogg, do you think a person could live to a great age live longer and enjoy life better if they lived as you do". "Well", I said, "I am very sure of it." "Now how can you be sure of it when you have never lived very long yourself as yet". ~~Well~~ "Well", I said, "because I had a relative who lived to a very great age." "Oh, is that so". "Yes",I said. I really thought I would kill two birds with one stone. I wanted to convince that lady that I was not so original as she thought I was and to give them a little argument too. "Is that so," she said, "how old". "Well", I don't dare tell you his age because he lived to such a great age I am afraid you won't want to believe it". "Of course, we will believe you" they said. "We know you are an honest man". "Well," I said, "this relative of mine lived to be nearly a thousand years old". "Oh", their countenances fell. They looked at one another and their credulity was taxed a little ~~a~~ bit too much. They could not quite swallow that but the doctor just across the table said ~~to~~ suddenly, "Whatwas his name?" I replied, "His name was Adam. I claim to be a relative of Adam or related to Adam". So I answered this question who was the ~~six~~ first vegetarian. The first vegetarian was Adam. Now you want my authority for that. It is in the good book. You will find it in the 29th verse of the 1st chapter of Genesis. Every tree bearing fruit, every herb bearing seed, to you they shall be for meat. That is what God said to Adam; that is a very interesting statement, isn't it? In an earlier verse in the same chapter, we read this "And the Lord

said, Let the earth bring forth ~~fruit~~ every herb bearing seed and fruit trees bearing fruit after their kind. So you see all the trees were fruit trees in those days and in the 29th verse God said to Adam, Every tree bearing fruit shall be meat for you and every herb bearing seed and ~~fruit~~ every fruit tree bearing fruit. (Now every tree was a fruit tree because God never made anything but fruit trees. Some of them have degenerated in these days so that we do not know how nice they used to be. For instance, an oak tree bears little acorns now, but I suppose if we could go back into the ages we would find every acorn was a loaf of bread already to eat. We have down in the tropics ~~xxxx~~ bread fruit trees still and the cow tree that gives milk and a great variety of trees that furnish everything we could possibly want in the way of ~~fruit~~ food. There are the nut trees that furnish the protein. Why, for instance, take the nut pine. In a pound of pine nuts you will find twice as much ~~beefsteak~~ as there is in a pound of beefsteak; twice as much beefsteak in one pound of pine nuts as there is in a pound of beefsteak; as much beefsteak in one pound of pine nuts as in two pounds of beefsteak. Think of that! Beefsteak is mostly all water. When you pay forty cents a pound for beefsteak you are paying for about twelve ounces of water and four ounces of beefsteak, don't you know. Ten cents an ounce in what you have to pay for the beefsteak, ~~isn't~~ it when you take the water out of it. That is a pretty good price isn't it? Now you can buy for seventeen cents a whole pound of pine nuts and the pine nuts contain 34% of protein, whereas the beefsteak contains only about seventeen or eighteen per cent. of protein so you see the difference. You have got twice as much protein in a pound of pine nuts as you have in beefsteak and you can get a ~~pound~~ pound of pine nuts at wholesale for the price you have to pay for two ounces of beefsteak. Just think of that! and besides, you have got half a pound of butter. In a pound of pine nuts you have got two pounds of beefsteak and half a pound of butter beside, so you see how rich these things that grow on the trees are in food. God knew what he was about when he made our food to grow on trees. Trees will grow when nothing else will grow; trees will grow where there is only a little place in which the root can work itself down into a

crevice of a rock and that tree will grow on the rock. A little soil will gather in the crevice and the root will hunt it out. You could not raise wheat or corn if in such a place but you can raise walnuts and the pine tree that raises these beautiful pine kernels that grow in the mountains.of Spain and away out in the Rocky mountains where not another thing will grow you will find the nut pine growing where nothing else at all will grow but these cone-bearing trees. So we need never lack for nourishment if we eat the right thing. People are beginning to talk already about what we are going to do by and by when the population of the United States reaches two billion. What are we going to do for food. The claim is made by some economists that the population cannot be increased more than ten times before we reach the absolute limit; that there won't be water enough; that there won't be soil enough to raise crops enough to supply the population of the country and that is perfectly true if we keep on eating in the wasteful way we eat now for it takes forty times as much land to support a man on beefsteak as it does to support him on corn. A farmer out west with 160 acres can raise corn enough in one year to last a family of five and twenty chickens for a whole century; he can raise corn enough to support a family of five for one hundred years. If he feeds it to pigs, unless the pigs waste most of it and takes the corn at second hand, you see it would not last him more than twenty or thirty years. That is the difference you see. That idea did not originate with me; that thing was figured out by Lesseps, the man who conceived and dug the Suez Canal. de Lesseps found out that the Arabs who worked for him digging that canal could work in the hot sun where the Englishmen who ate beefsteak could not work. He said he never in the world could have dug that canal if it had not been for dates and wheat; for that simple diet which enabled those Arabs to live under conditions that the average Englishman could not possibly endure. This idea of vegetarianism is a very old one. The only reason why we are fond of beefsteak is because as one of the speakers of last evening was telling us, our forefathers were cannibals and this is that old cannibal instinct still living and yelling in our hearts. It is for that reason we are hankering for beefsteak. When we get that cannibal entirely eliminated; when we get thoroughly civilized we shall not want beefsteak; we shall

not want slaughtershops. (Sometime ago 20 or 25 years ago I got a letter from a man out in Japan. He was evidently a cultivated man for he wrote me in splendid english. He started his letter, "Dr. Kellogg, dear brother". "Well," I said, "Who is this man in Japan that calls me a brother. I didn't know I had anybody there that was acquainted with me". I got this letter some twenty or twenty-five years ago. I looked at the close of the letter to see who it was and I found a Japanese name at the end of the letter. You can believe I was very much interested to get into that letter to see what he was talking about. The next sentence was this, "Dr. Kellogg, dear brother: I am so glad there is somebody in America who does not believe in killing animals and eating them". And then he went on to tell me about his country. He said, "The Americans that come over here are meat eaters". He said, "Our people are being taught to eat meat, and," he said, "I am very much distressed about it and these Americans have come over here, these missionaries are teaching the people to eat meat and before these missionaries came, meat was not eaten in this country. There was no such thing as the slaughterhouse to be seen anywhere in Japan, but now slaughterhouses are springing up everywhere and the blood is flowing in our streets." He was evidently in great distress. "Oh these horrible missionaries",he said. That is the way he wrote me. He had got an impression that all Americans were meat eaters and he was astonished to find that there was one man over here who did not believe in eating meat. He had gotten hold of a little track of mine somebody gave him. I wrote back to this man and said, "Dear Sir: Do you think that is some missionaries should go over to Japan who were not meat eaters that they could be of service to your country in reaching the higher levels of civilization." I got a letter back from him just as quick as the mail could bring it. He said, "Keep your missionaries at home. There are more heathen in American than there are in Japan, a great many". I then took the matter up with him at some length. I quoted to him this particular text from the bible and give him a lot of other facts from the bible that show that God never intended man should be a meat eater, and I got another letter back from him and he said, "Oh Dr. Kellogg, I am so glad to find that the Christian

religion is not a bloody religion after all. I supposed it was a bloody religion; I supposed you had to eat meat to be a Christian and I am so glad your bible does not teach that you must eat meat". It was quite a revelation to him. I only mention this because in answering this question I want everybody here to become thoroughly impressed with the idea that the vegetarianism idea is not a modern idea; is not confined to a few people, but it is the great idea God had when he made man and gave him his bill of fare. He never said a word to him about meat. There is no hint in the bible of any permission whatever to eat meat until after the flood, then it was a qualified permission. When God said to Noah after the flood in the ninth chapter of Genesis, "Every living thing that moveth shall be meat for you". God said that to Noah. "But", he said, "the blood thereof which is the life thereof thou shalt not eat of it",and Noah understood that and Moses understood it and the apostles understood it, because when you come down to the beginning of the Christian Dispensation we find this question coming up, "How far that Mosiac law, the old laws that were followed by the Hebrews were binding upon Christians?" and there was a question arose that lead Paul to come up to Jerusalem to get it settled and after three weeks of deliberation, James, a brother of Jesus Christ and the president of the council gave the verdict. He said, "It seemeth good to the Hold Ghost and to us to lay upon you only these four necessary things, to abstain from flesh offered to idols, from things strangled, from fornication and from blood. Adam Clark himself makes a very lengthy argument to show that that commandment-------- -

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Cont. from 5427. Question Box Lecture.

Adam Clark makes a very lengthy argument to show that that commandment which God laid upon Noah and which Moses reiterated to the children of Israel and which James the president of the first Christian Council and a brother of Jesus Christ, repeated that he laid upon the whole Christian Church but that obligation is binding upon every man who professes to be a christian today and that every man that eats the blood pudding and that every man that eats the blood of an animal is voilating the law of God, that God laid down for all humanity when he gave permission to eat meat just as much as though he was lying or stealing or violating any other of the ten commandments because that is the only condition on which man was permitted to take the life of an animal and to eat the flesh of the animal as food, that he should not eat the blood and why? Why? The blood was the symbol of the life. The blood is the life. Thou shalt not eat of it. It must be poured out upon the ground so the life goes back to earth from which it came and the flesh of animals was only to be taken and was only to be used as food in connection with a solemn ceremony and man was to take the life of an animal regretfully and with a solemn and a serious way and not to do it ruthlessly as we see animals slaughtered now abl about us. ——— from a state of cannibalism two thousand years ago. It is not two thousand years ago since cannibalism was practiced in some portions of the British Islands for as late as 1500 A. D. there were familes in the remote portions of Scotland that were known to be practising cannibalism, a practice that still survived in somewhat remote portions of the British Islands. In coming up as we have from that state of barbarism and cannabalism we have not yet shaken off all those savage tastes but I assure you it is not a difficult thing to do. I have met a good many people who, have after a few years abstinence from flesh eating, have come to look upon flesh eating as horrible to an extreme degree and about the last thing they would be willing to submit to.

Q. I heard that Neubachadnezzar was the first vegetarian?

A. No. Neubachadnezzar was not the beginning of vegetarianism. God Have permission to eat grass however, so if a man wanted to eat grass, he could. You will find that in the first chapter of Genesis where man was instructed to so feed, to plant, to earn his bread by the sweat of his brow until the sounds of whistles should be whispering forth and thou shalt eat the herb of the field so you see man was finally given permission to eat everything the beast ate. First, he was given the choicest foods, the herbs, seeds and frutts, and then later after the ground was cursed he was instructed that he might when there was _____ and the earth did not produce anything but sounds of whistles he could live upon herbs. He was given that bit of information so he would not starve to death and in order that it should be possible for him to live and after the flood when there were no herbs, and when man was brought in to what we might say a great emergency, he was then permitted to eat animals. There were no animals eaten before the flood. You will find that also in Genesis. God said to Noah to take the animals into the ark and he said to take in of all the animals, take in with the animals of all food that is eaten for thee and for them. Now see what Noah would have to have taken, have to have done if he had taken in sheep for the lambs to eat for example. A pair of lambs would eat a sheep a day and he was in there a year so he would have had to take along with him three hundred and fifty thousand (Sixty-five) sheep to feed those lambs and he would have had to take along food for half that number of sheep for the entire time don't you see, food for all the sheep half the time or half the number of sheep the entire time. Think how much food that would have been. In addition to the pair of lambs he would have had to take along food enough for one hundred and eighty sheep for the entire time he was in the Ark. Why? Because the lambs are eating a second-hand diet. if they eat the sheep he would have to keep the sheep alive. You can readily see if you figure it out that the Ark

would not have been one-tenth big enough to supply food for all those animals if they were fed carnivorously but in those days those animals did not eat flesh. I had a large, fine, bright, intelligent St. Bernard dog once and I brought him up to be a non-flesh eater. One day I tossed him a walnut and he proceeded to crack that walnut and then to pick out the meats with his canine teeth and I found out what canine teeth were for. They are nut picks, don't you see. They are intended to tear the husks off cocoanuts and for such purposes and were never intended for tearing flesh. A dog can live on anything a man can live on and a dog that takes no flesh is a better dog than a dog that eats flesh but I see a theological question arising. I appreciate the fact that we have some theologians present in the audience tonight and I imagine I hear somebody saying, "What about that sheep that Peter saw look down out of Heaven?" That question has been asked me a good many times. Peter had a vision and there was a sheet let down by its four corners and in that sheet was all manner of treating things, four footed beats and all manner of keeping things and the Lord said to Peter, "Arise Peter, slay and eat." Now that has been put up to me a good many times. What about that? The Lord instructed Peter to arise, slay and eat. The only answer necessary to that question is, did he do it? Did he do it? You will find if you read the text he did not do it. He refused to do it. He said, "Not so Lord" and the Lord lifted the sheet back into Heaven and excused him you see so we are all excused. You see that was intended for another purpose any way. That was simply allegorical. It was not a lesson in dietetics but instruction to Peter to carry the gospel to the Gentiles.

Q. What causes a person to sneeze?

A. Now the same sort of thing that causes one to be hungry or to cough or that causes one to get tired. There is a nerve center up here in the brain known as the sneezing center and when the nerves of the nose or of the eyes and some times some other nerve, when these nerves are irritated or excited the sneezing center is excited and one has a litttle convulsion we call

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a sneeze. This is a sort of fit. When one sneezes he does not sneeze with his nose you know. You don't sneeze with your nose at all. When you sneeze you sneeze all over. That is really a good hearty sneeze. One makes a little jump. Every muscle in the body makes a little jump. People often sneeze when they have taken a little cold and that sneeze is the effort of Nature to cure the cold.The sneeze is a muscular convulsion and that muscular convulsion that is set off by the sneeze creates heat and the heat antagonizes the cold. The cold is produced by lowering the temperature of the blood and this sneezing produces heat that warms the blood up and so helps to cure the cold. Somebody tells the story that when he was traveling up in the Arctic region with the temperature 40 degrees below zero he sat down on an iceberg and shivered himself warm. Whenever you find yourself sneezing or shivering go right at it and shiver as hard as you can. The more you sneese and the more you shiver the better. Don't take snuff for the purpose however but sneeze and shiver and the exercise will warm you up and will effect a curative process that Nature has set in operation.

Q. What is the best hair oil?

A. It is the kind produced by the scalp but if the hair is dry the best remedy is to bathe the scalp with a little cold water. Dip the gingers in cold water and rub the scalp vigorously and the effect will be to stimulate the flow of blood through the scalp and cause the scalp to make more fat and then the hair will be oily. Aside from this a very little vaseline or a very little lanoline will be wholesome for your hair.

Q. How often should one use an enema in order to keep the colon in a thoroughly clean condition?

A. One should not use an enema at all if he can get along but it is better to use the enema than it is to allow an accumulation within the body. Often it needs to be used two or three times a day. The trouble is it is not a perfect

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method of emptying the bowels. It cannot be depended upon. If the enema is to be used habitually it should be used at the temperature of 80 degrees or a little lower. Then it does not produce the damaging effects that it does when it is warm.

Q. What should be the food of a child two years old?

A. Fruits, grains and nuts and a moderate allowance of pure cream and cow's milk.

Q. What is the cause of canker sores?

A. Small infections in the mouth, an infected condition of the mouth. Professor Uhrlich thinks that these sores are produced by spirochaetes, an animal parasite that is found in the mouth some times.

Q. Are oranges and grapefruit bad for any one having rheumatism?

A. No, indeed. They are exceedingly good. All fruits of all kinds are wholesome for people who have rheumatism because these organic acids are not the same as mineral acids. They are decomposed in the body. The organic acids are digested and utilized in the body, oxidized so that they take the place of other food substances and do not appear in the body as acids.

Q. What is the cause of neuritis?

A. There are various causes. Mechanical injuries, cold and particularly, poisons absorbed from the intestine or taken in from some other source. The poisons taken in from the tonsils sometimes produce manu neuritis.

Q. Are there ofthe stomach in which the drinking of cold water causes headache?

A. Sometimes the disturbance of the circulation, a vasomotor disturbance is set off by drinking a large amount of cold water and this may produce headahhes and even worse affects.

Q. How many times should the bowels move a day?

A. Three times normally. That is true of the large ape and of the people who live in the wild, people who live upon a natural diet and it is true

of people who have reformed their diet and live in a natural way.

Q. What is a good combination for breakfast?

A. Everything agrees in solution. Everything will mix in solution so if you take pains to chew the food thoroughly and do reduce everything to pulp or liquid in the mouth you do not have to pay any attention to the matter of combination. The combination will take care of itself if you chew properly. Then the sense of taste will select the things that are best for you and you will have no difficulty in the matter of combinations.

Q. Should one sleep with more than one pillow under the head?

A. No. One pillow is enough. It is possible to be comfortable without any pillow at all.

Q. What should one do when taking treatment and diet and still suffering from inactive bowels?

A. Call to see me and I will tell you what to do. People do not suffer from inactivity of the bowels on general principles. There is always some particular thing the matter. Sometimes it is necessary to have an X-ray examination to find out just what the trouble is but sometimes the difficulty can be ascertained in other ways.

Q. Do you know any fumigating material which can be used safely and won't destroy clothing or furniture. Yes, formalin is the thing. Put the furniture or clothing into a room and a formalin candle and burn it in the room and that will affect the thing desired, disinfect the clothing, destroy the moths or eggs of vermin or things of that kind.

Q. How do you get rid of liver spots?

A. In the first place get the interior of the body in a clean and a thoroughly wholesome state so as to stop making liver spots. Then the next thing is to drink a good deal of water and get the bowels to moving three of four times a day and these spots will generally fade away. If they do not, and

you are anxious to get rid of them, you can have some simple application made like frozen carbondioxide.

Q. Can a neurasthenic recover?

A. Why, certainly. There are only few cases in which recovery is not to be expected. Some people are born neurasthenic. Some poor souls have neurasthenic parents and are born into the world with a neurasthenic constitution and such people have to live under a very favorable conditions in order to avoid this very uncomfortable disease.

Q. What harm does salt do?

A. A little salt does not harm at all but a large amount of salt over taxes the kidneys and the skin glands and the other excretory organs and disturbs the stomach. People who take too much salt are likely to have hyperacidity and later to have deficient hydrochloric acid when the glands are worn out.

Q. What causes hay fever?

A. Hay fever is due to poisoning from the pollen of certain plants. There are about one hundred different kinds of plants that produce pollen which is poisonous to certain people. The same person is not poisoned by all the different kinds of pollen. One person will be poisoned by perhaps a dozen different kinds of pollen and another by others so there are different kinds of poison that effect different people. The body becomes sensitized to the poison so that an exceedingly minute amount is sufficient to produce very grave and unpleasant symptoms.

Q. Can gallstones be cured by the use of diathermy?

A. I don't believe gallstones can be removed or dissolved but the pain will often be made to disappear. However, if the patient has gallstones and knows it, the proper thing to do is to get rid of them. By all means have them removed.

Q. What are pine nuts?

A. ~~Pine-nuts~~ They are the fruit of the nut pine. They are little nuts that are found in the pine cone and when the cone opend up the nuts drop out. There is a little shell around each of the kernels as you see them. These little shells are cracked and the meat is taken out.

Q. Can hot biscuit be classed with whole meal and wheat bread?

A. No. Hot biscuits are not wholesome food, that is, these hot soda biscuits or biscuits that are well seasoned with lard are very difficult of digestion indeed.

Q. My boy two years old cannot eat cereals of any kind without [illegible].morphea. Should he take his cereals with fruit?

A. There are quite a good many such people. Sometimes adding fruit juices to the cereals overcomes the difficulty.

A--Low vital resistance generally connected with an inactive state of the bowels.

Q--Is Yogurt good food for infants?

A--Yes it is a most excellent remedy, not perhaps a good food but an excellent remedy. A doctor in New York reported not long ago some twenty-five or thirty cases of very bad bowel trouble in babies cured entirely by the use of Yogurt after making ~~no change in diet at all.--There seems to be no definite rule as to whether the disease will progress rapidly or slowly~~

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Q-- What is the bestfor the nerves, hot and cold applications or cold only?

A--Both are good. It depends entirely upon the application and the case.

Q--What causes a bad cold?

A--Low resistance. A cold is an infection. We now know that we really catch cold just as we catch small-pox, measels and whooping cough. We catch cold from somebody else who has a cold or from some germs traveling about in the air.

Q--In the case of an old person who falls and breaks his leg, is it true that the leg bone may have broken first, then he fell?

A--[redacted] when only be true in some extraordinary strain was brought to bear on the leg under peculiar conditions.

Q--If rheumatism is a bacterial infection, is it true that a serum cure can be found?

A--Yes there are a good many cases of rheumatism that have been cured by serum injection. Certain forms of rheumatism are sometimes very quickly cured by vaccine.

Q--Do you think two meals a day are better than three?

A--It depends upon what you eat and how you eat. If one eats food that requires a long time for digestion, he should not eat more than two meals a day; if one takes a large quantity of food he should not eat but two meals, but physiologically, two means are better than three for the average person. Two meals a day is the custom of the world. In India and in South America, in Mexico, in many parts of the world, two meals a day is the usual plan. Savages generally eat but once a day and usually at night.

Q--Is goat's milk better for babies than cow's milk?

A--No. That is one of the great popular airs that has got spread about some how. Goat's milk is not nearly so digestible as cow's milk. The only advantage is, that generally the goat is kept cleaner and the milk is cleaner and contains less germs than cow's milk and is better is that respect.

Q--What is the cause of pimples?

Question Box Lecture. April 28. Cont. 5433.

Q. Do the colon bacilli live only in acid? If so, in what kind?

A. The colon bacilli are putrefactive in an alkaline medium and they are acid forming when in a different medium, that is, it depends upon the food they have. When they have carbohydrates,that is, sugar and starch they produce acid and when they have protein they produce alkalies and ptomaines.

Q. Is there any difference between rheumatism of the great toe and gout?

A. Yes there is a difference between rheumatism and gout. Gout is alwgys due to the accumulation of urate of soda but rheumatism is another disease. It is a disease produced either by direct infection of the joints with germs or by changes produced in the joints by the poisons of germs which grow in the colon and send their poisons into the circulation.

Q. What is the cause of arthritis deformans?

A. It is toxemia and resulting infection in the colon which by and by extends into the body.

Q. Which is the more proper abdominal breathing or chest breathing?

A. One never should never attempt abdominal breathing or chest breathing. The proper way to breathe is to put the chest up high, then to go on and breathe. You cannot breathe in any way but the right way if you hold the chest up high. You have to breathe in just the right way then in the lower part of the chest. By this means the liver and the stomach and these other important vital organs are properly exercized and their circulation is encouraged.

Question Box Lecture. April 28. Continued from note book page 5435.

Q. What is your opinion of fasting as a therapeutic means?

A. Fasting is unquestionably a very powerful means of influencing the body. A person who is obese can fast with profit. A person who has ulcer of the stomach may fast with advantage to allow the ulcer a chance to heal. A person who has fever and has no appetite and has no gastric juice may fast for a day or two or three days with advantage, perhaps but the promiscuous recommendation of fasting as a cure-all is exceedingly mischievous. Cases are occurring every little while in which people die because of these prolonged fasts. The average man does not stop to consider what he is doing when he fasts. When a man fasts he does not cease to eat. A man whose fasting is eating as is the man who does not fast. The only difference is in the diet. That is all. The man who fasts has simply changed his diet. He has become carnivorous. The body must have food because the body is a furnace that is burning all the while and the body is consuming material continually and if we do not supply the fuel in the form of food we take it from our own body. In other words, a man who is fasting is consuming his own body, gnawing his own bones, so to speak. He is eating himself. He is not only carnivorous but is living upon a strictly flesh diet and he is a cannibal as well and he is eating human flesh so we have to take that into account. Now this form of diet is naturally an exceedingly unwholesome diet so we find recent experiments have shown that when a man begins to fast within two or three days there begins in the body the development of poisons which are very deadly in character. Acids are formed and a state of acidosis is produced and the body rapidly goes into a state of disease so a fasting person is always in a state of disease. Why should one fast? A popular idea is that the body can be purified by fasting. Fasting may be a method of purifying the soul but it is not a good way of purifying the body. The very best evidence of that is afforded by the fact

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that when a person begins to fast he very soon gets a coated tongue. Within two or three days the tongue becomes coated and the breath becomes foul and the patient gives all the symptoms of most profound autointoxication. Examination of theurine shows that it is loaded with putrefactive poisons. First with indolacetic acid and later with cresol and carbolic acid and other of the products of advanced putrefaction. This is always found in the urine, found in the examinationsthat have been made of the urine of professional fasters in which the urine has been examined every day during the long fast. It has been uniformily found in such cases to be true. Not so very long ago a fasting man was observed for neraly 40 days by Dr. Benedict in the Carnegie Nutrition Laboratory. This was found to be true in this case. Why is this? Simply this. The body depends upon the regular eating of meals for carrying off certain excretory products of the body. The liver is an excretory organ as well as the kidneys. The alimentary canal, the intestine which has a surface of some seven square feet is continually pouring out poisons and the alimenary canal, the intestine is the outlet for poisons. Indeed,it is the most important of all the outlets of the body except the lungs. It is one of the most important at least of all the outlets of the body is the alimentary canal or the intestines. Bile is produced in quantity of about a pint and a half a day and this bile is six times as poisonous as urine, that is, an ounce of bile will kill as much living matter as six ounces of urine. It is six times as poisonous and is the most poisonous of all the excretions of the body and this bile needs to be carried out of the body and carried away just as promptly and just as thoroughly as is the exret excretion ofthe kidneys. Many people do not consider that. The intestine itself is pouring out certain kinds of poisons. The alkaline poisons are carried off through the liver and ultimately through the intestine so it is very important this discharge of intestinal contents should take place regularly and often. As I said before,it ought to occur after every

meal because food is the natural means of stimulating the intestine to act. Whenever food is taken there ought to be shortly afterwards an output of excretory material. Whenever there is an intake there should be an outgo and this ought to occur regularly and systematically. Now when a person begins to fast as soon as a person stops eating,in other words, the alimentary canal is paralyzed. It becomes quickly inactive. There is no activity and it is only when food is taken later that there is likely to be any movement of the intestine. Within a day or two complete inactivity takes place and continues until food is taken so the man who is fasting until he gets an appetite, until he has hunger and has an appetite, is doing a very foolish thing because his body is so thoroughly poisoned he cannot have an appetite. His body is so saturated with poisons he is in the state of a man who has typhoid fever and is completely saturated with poisons. His tongue is coated and gustatory nerves are all covered up under a dense coat and there is naturally no appetite. By and by if appetite comes it is only by accident. I have met a number of people who have fasted in this way for more than 30 days and still no appetite ~~no-app~~ came, still no hunger came ~~until~~ still the tongue did not clean up. The demand for food which the fasting specialists talk about did not make its appearance but these same persons when they took a little food, although they had no craving for it, not appetite for it; in a very short time the appetite came with a great demand for food. The tongue cleared up and this condition disappeared. My good friend, Mr. Horace Fletcher used to be a very earnest advocate of fasting. He finally tried it himself. After trying it himself he was quite satisfied. At the end of fourteen days the autointoxication became so bad he did not dare ~~in~~ continue it any longer. His breath was simply fetid, his tongue was so horribly coated it was six days afterward before he got rid of it and he did not dare go any further because of the horrible state his body was in.

I remember very well a man who came here to the Sanitarium and wanted to fast and without saying anything to anybody he began to fast. I met him on the lawn some days afterwards and did not know anything about it until he called me to his chair and said, "Doctor, what is the matter with me? Look at my tongue." I looked at it and it was horribly coated. Looked as though it needed a city scavenger to attend to it. His breath was fetid. I said, "What have you been doing?" He said, "I am not doing anything, I am fasting. Why don't my tongue clean off?" About the third day it became coated and it has been getting worse ever since." I said, "I should think your bowels must be in quite a bad state by this time if you have been fasting. How long since your bowels moved?" Why, he said, "It is over three weeks. I moved my bowels thoroughly before I began to fast and I have eaten nothing since so there was no occasion for my bowels to move." I said, I guess you better attend to that right away." He did and three days later he said, "Doctor, you absolutely would not believe the accumulation of most horrible, loathsome material in my body. Why, he said, Doctor, there were actually several gallons." He told me that three gallons of the most horribly, fetid material had passed from his body under the influence of the thoroughgoing purgation which he had to have to get himself unloaded of these poisons. Of course, the bile that had been formed by the liver and all these other poisons that had been accumulating the whole three weeks he had been absorbing into himself. That is the reason why a good many people die while fasting. It is a very bungling method. If some people have lived through it and found themselves better they are only in the same situation of a person that has had a long run of typhoid fever and when he got over it he felt a great deal better than he did before. The typhoid fever did not do him any good. Some incidental benefit has been derived in some way but such a person certainly was not benefited by the typhoid fever. Nobody was ever benefited by typhoid

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fever and I don't believe anybody was ever benefited by a fast in any way in which they could not have been more benefited by some other means. There is a kind of ~~short~~ fasting, however, that is of very great advantage and that is the protein fast. It is the great advantage in many instances to abstain from protein because protein is the thing out of which the alimentary canal makes poisons. Putrefaction takes place in the intestines through the decomposition of protein and this ~~kind~~ cannot take place in the case of carbohydrates. If a person is suffering from a condition which would suggest that he needed a fast, the proper thing for him to do is to take a protein fast, live entirely upon carbohydrates, that is, live on fruits and fruit juices and green vegetables, make the diet consist entirely of such things as lettuce, cabbage, celery, raw cabbage, I mean and fruits of various sorts on a diet ~~fo~~ of that sort for a few days and he will get all the possible benefit from fasting and will have the great advantage that he won't have to make a cannibal of himself and won't have to subsist upon his own body nor his own bones but he will get the fuel from the ~~ar~~ carbohydrates and he will get none of the disadvantages of the total fast. I find a good many people who have been led astray by this fasting suggestion and have been greatly damaged and, in some cases of persons who have been damaged the heart has been injured to such a degree that it did not recover entirely. You see while the body is being consumed in this way, in this long fast, the muscles lose one half of their weight. The heart is sometimes reduced one-third of its weight. Every organ of the body, even the brain is attacked and the whole body is more or less damaged. It is like tearing down the house, burning it up in order to keep the furnace going. One might do that in case of an absolute fuel famine but he would never do it so long as he had any other fuel to burn.

I thank you for your attention.

End of this lecture.

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