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March 31

Lecture 48

QUESTION BOX LECTURE

At the Sanitarium Parlor, Battle Creek, Mich., Monday, March 4, 1912, at 8 P. M.

Colitis - mucous

-by-

insomnia - rye bread - beer & cheese
W. H. KELLOGG, M. D.

Question. What can be done to promote the growth of hair?

Answer. That is just what I would like to know. If anybody finds

that out he can make a fortune right away. Well there is something more to be said about that. The hair, like the grass, grows best in the sunshine and the air, and a pretty good thing to promote growth of hair is to go bare headed in the sun. Another thing is to give the scalp a good thorough shampoo with good cold water every morning, and another thing is to sleep plenty o' nights. A good, long sleep o' nights is the best thing for promoting growth of hair I know of. I lost my hair because I did not get sleep enough. [Night is the time when we grow. Boys and girls and babies grow only when they are asleep. Just remember that.] That is the reason why (babies sleep nearly all the time because they need to grow when little,) so they sleep nearly all the while. But we only grow ~~and grow~~ when we sleep. (It is a good thing to remember too that you are only getting well while you are asleep. Invalids need to sleep a good deal and need to rest a good deal because) when we are awake our energies are being utilized in spending rather than in building. We are burning up when we are awake. (When we work and activities are all going on of brain and muscle, we are using up energy, but when we are asleep we are depositing energy, we are rebuilding and repairing. The physiologic eight hours of sleep is the time for repair, it is the time for growth and rebuilding, and there is no doubt about it lack of sleep is one of the things that will promote the loss of hair.) I have

all of my life time robbed myself of sleep. When I was a body ten years old I started out to paddle my own canoe in the world, and I have had the pleasure of supporting myself ever since. I have not been one penny's expense to anybody since I was ten years old. I worked fourteen hours a day and fifteen hours a day, then tried to get an education the rest of the time. I worked in a factory ten hours a day, worked for my board--for I did not get much pay in the factory--for three or four hours a day, then I allowed myself a little time for sleep and studied the rest of the time. I systematically began robbing myself of sleep at a time when I ought to have been growing, so I did not have a fair chance in the world. When I was fourteen I was teaching school. When I was sixteen I was teaching a big country school and boarding around. When I was twenty-one I had graduated at one college and was studying medicine and went on to a couple more. When I was twenty-four I took charge of this institution. I had no boyhood, but as long as I can remember I have been driven to distraction with more things than I knew how I could possibly get through with in a single day. When I was a small body everybody wanted me to run errands for them, and my name was John, and I got very tired of it because it was Johnny, Johnny, Johnny all the time do this and do that. And I am very glad to be at everybody's command and beck and call, night and day, all the time, and no time to myself. I never had any vacation. I never have had in my life time the time and the opportunity for reasonable sleep. At least three-fourths of my life I have had to work day after day and week after week feeling ~~that~~ half the time that I would give one hundred dollars for one hour's sleep. There has been hardly a day in twenty years that I did not have that experience. I think every day, now then tonight I am going to get a night's sleep, but something will crowd in upon me, and I find myself getting to bed only at two or three or four o'clock in the morning. This morning it was five o'clock before I get a wink and the night before it was four o'clock, and I started off early in the morning again. So I have to go on from day to day every day thinking I am going to turn over a new leaf and reform

tomorrow, but I don't get the chance. And tonight I have got a program that will last me, after I get through here, at least half a day's work to do before I can think of getting a minute's rest. I would not have told these personal things if I did not feel that it was really necessary for me to make some apology that I begin to show a little lack of hair. However, it is not so very much, so I am hoping to hang on to a little, enough to make a decent sort of showing for sometime yet. (But you may live as hygienically as you like, take every precaution you like, if you violate that one great law to take proper rest, you have to suffer the consequences of it. I suffered the consequences of not getting proper growth. I had to stop growing before I had gotten my growth because I did not get enough sleep. I went to bed at nine o'clock with the rest of the folks. There was a law against sitting up to study, but there was not any law about getting up to study, so after keeping quiet until the rest of the house was still, I was up at 10 o'clock and until two or three o'clock in the morning every night studying, and my education was obtained mostly in that way. My father never found it out so I never got punished for it, nor even reprimanded, because there was no law against getting up to study, it was only a law against sitting up to study. That is rather a sophistical argument I admit, but it was the only way I could see, so I utilized it. ~~There~~

There is another word to be said about this hair growing, and that is, that loss of hair is often due to general malnutrition. When a person finds his skin is getting dry and harsh, getting pigmented, that he is getting brown spots on his hands and face, and he finds his hair is dry, lacks oil and the skin is getting thin so it is not the proper thickness or consistency, but is getting parchment like, when he finds himself getting into that condition, he will pretty soon begin to lose his hair. That shows that the dermic cover of the body, the skin, that its nutrition is failing. Now what is his use for this? There is a very interesting fact I must tell

you about, that is, this little gland in the neck here, (the thyroid gland, has charge of all the functions of the skin. It has charge of the perspiratory function of the sweat glands; it has charge of the oil glands and the fat glands of the skin; it has charge of the growth of the hair. When we have seen this failure in the skin, seen the skin getting thin and dry and the hair becoming dry and falling out, that is an indication of the failure of the thyroid gland. It is an indication that this gland is losing its activity, or an indication of a state of hypothyroidism as we call it.) I made a diagnosis of that sort today. I met a patient, found all these symptoms I have mentioned here, and I at once made a diagnosis of hypothyroidism. Now what is to be done? (The first thing is to stop the degeneration of the gland, and in many cases when that is done, when we remove the cause, there is^a very considerable degree of recuperation. This degeneration of the gland is the result of overwork. The thyroid gland is a poison destroying gland. It destroys especially those poisons that are taken in from the intestine. For a long time this gland was not understood. Nobody knew what the thyroid gland was for and the general impression was that its chief purpose was to furnish business for doctors by getting big so that the doctors could have some excuse for an operation. A great many people had the idea that that is about all the explanation that could be given of it. In other words, it was a sort of vestige or unnecessary appendage. But now we know this thyroid gland is one of the most essential of all the organs of the body. A person cannot live without it, that is, he is likely to die if he does not have it. When dogs had their thyroid glands removed they died. When rabbits had their thyroid glands removed they did not die. Somebody else operated upon some dogs, took out their thyroid glands, fed these dogs on a rabbit's diet, and when the dogs lived on a rabbit's diet, they did not die. When the dogs lived on the dog's diet, they all died, that is, in other words when they ate meat. So one of the very first things to bear in mind is that when a person has a dis-

eased thyroid to cut out the beefsteakes and all meats of every description. It must be done, because it is not what is in the meat--- Now I want you to stop and consider just a minute. It is not what is in the meat, but it is what becomes of the meat. I am going to make a very rude sort of diagram. Suppose this represents the alimentary canal, the prima via, as it is sometimes called. This is the road along which the nutrient travels. When we take food into the mouth it travels all along this road from one end to the other, and the valuable part is taken out. Now this is the prima via, the alimentary canal. We have in this canal twelve gates. There is a gate at the top, that is, there is a sphincter muscle here. That is to keep cattle out and sheep, dogs too and rabbits, oysters and scavengers of all kinds. That is one function at any rate of that gate. Now a little way back is another gate just back here at the back of the throat, the soft ~~palate~~^{palate} it is called, and that is the inspector's gate. That is where food is inspected to see whether it is ready to be swallowed or not, whether it is chewed enough or not. Some people hustle the food by so quickly there is no chance for inspection, that is smuggling. A great many people smuggle their dinners down into their stomach. The thing is not passed in the regular way by the government inspectors as it ought to be. So remember that, please, when you sit down to eat your breakfast. Now just a little way ~~back~~ behind that at the top of the oesophagus is another gate called the isthmus of the oesophagus, and that is to keep air from going down into the stomach. We have a little trap door on the top of the voice box, the epiglottis, you know, to keep food from going into the wind-pipe, and we have immediately behind that a little door which shuts up the wind-pipe to keep air from getting down into the stomach. If we did not have that every time ~~you~~^{we} took a breath we would fill the stomach up with air and it would swell up like a balloon and one might blow himself up and burst almost if it were not for this little isthmus up there to shut the air out of the stomach. Now down below there is a little gate at

the top of the stomach which keeps food from getting out after it has gone in once, and there is another gate on the lower part of the stomach, the pyloric part, which keeps food in the stomach while it is being digested and doled out, but it sponns it out a teaspoonful at a time into the small intestine to be digested there. Here is the cardiac gate, that is at the upper opening of the stomach. This is the pyloric gate below the stomach. Away down here is the ileocecal valve, that is the sixth gate/ Then right up here the colon makes a bend under the liver, and that is the seventh gate. Then over on the other side there is another fold, and that is the eighth gate. Then where the colon joins the rectum is a little fold, the pelvi-rectal fold it is called, and that is the ninth gate. Then there are three gates more right down in the lower end of the alimentary canal that guard the outlet. There are three at the upper opening of the canal and three more at the lower end of the canal, and these other gates between. So you see the alimentary canal is divided into **eleven** compartments.) These are the different compartments into which this prima via is divided. Now when the food is taken into the mouth it is kept a little while then passed on from one compartment to another. (The different processes of digestion that are performed in each one of these compartments are performed upon the food then it is moved on to the next. In the mouth it has to be masticated, Fletcherized we sometime say in order to get people to do something new, don't you know, that they have not been doing before--we give it a new name and people are interested in it. And when food is Fletcherized in the mouth then it is swallowed and it passes down into the stomach. It remains there until it is digested, then passes into the small intestine which is a long section twenty-five feet long--then down into the different parts of the colon, and is moved from one part to another and something is done in each one of these different compartments.) Now this is what I want to say to you. (When one eats flesh food it is not what is in the meat that does the harm, though

once and a while it does. There were a lot of tramps got hold of some stale fish over in Germany while I was abroad and one-hundred and sixty-five of them ate some of this stale fish and inside of three days sixty of them were dead, killed by that stale fish. Now suppose the fish had not been quite so stale, then those poor fellows would not have died so quick. They would have died more slowly, you see, or perhaps they would not have died till the next year. Some of those stale fish lying around here in the stomach and in these different compartments, rotting and decomposing by degrees would slowly poison them. Then Bright's disease come on and liver disease and thyroid disease. That is what the thyroid is for to protect us against poisons that are produced through the putrefaction of flesh foods in these different compartments of the alimentary canal.) Now sometime there is obstruction at some of these gates. Down here at the ileocecal valve there may be obstruction, so at the hepatic fold, or the splenic fold or the pelvic fold. (I have seen three people today who had obstruction at the pelvi-rectal fold near the lower end. In one case everything was held back ninety-two hours. Just think of it. From the time this patient took a test meal until the end of the experiment, until that test meal had passed out of the body was ninety-two hours. Now just think what that means. Think of a dead rabbit lying around ninety-two hours. Why you know in that length of time things will get very stale, and all of these poisons are being sucked up into the body. When you take an oyster you want that oyster to be fresh. If that oyster has been sitting around in a warm place for ninety-two hours you would not eat it, but now you swallow it and let it lie around ninety-two hours after you have swallowed it. Is that any better? Of course, it did not taste quite so bad when you swallowed it before it moulded and putrefied--it does not taste so bad--but after we take it it is just as bad because if that oyster is lying down here rotting, decaying in the cecum or transverse colon, or in some other section of the alimentary canal) here--while it is lying about there (and the poisons are being absorbed. These poisons are excreted and they come out in your

breath and that is what makes your breath smell so bad. You have got the odor of the stale oyster in your breath you see. You have got a taste of it in your mouth. That is why your **mouth** tastes so bad because of the stale oyster and other rotting materials in the interior. My friends I am not exaggerating this thing; I am not talking to fill up time, but this is one of the most terrible facts that we are in contact with in the practice of medicine. One of the most terrible facts is the apathy of men and women to the state of their interiors. It is a most awful thing that I know of in the world that men and women should be content to go about with an interior that is just filled with **rottenness** and corruption don't you know, never stopping to think anything about it. A man that would not think of going around without his finger nails kept trim, nice, neat and clean, would be ashamed to **be** **been** going around with dirty finger nails, that very man perhaps has on the interior of his body and accumulation of putrefying material, enough to infect a whole city possibly if it were introduced properly under the skin. People that are extremely neat and tidy about their external appearance, think nothing at all about the interior. Now it is far more important, my friends, to be clean inside than it is to be clean outside. You better neglect your skins, let them get dirty as you please, for you would not suffer any serious inconvenience, you would not suffer any serious ill health from it, but to allow the interior of the body to **become** unclean and filthy and smeared over and packed full perhaps of putrefying material, it is a crime against the body, and I wish I could make every man and woman thoroughly believe that so it should be one of the ambitions of your life to be clean inside. Why I tell you it is a matter of more importance in relation to health, in relation to longevity, in relation to comfort, in relation to sweetness of temper and disposition and cleanness of character--I am perfectly willing to say it is ^a ~~of~~ more important thing than almost any other physical fact, perhaps I may say than any other physical fact of which we have any knowledge. So if we want to live long, if

we want to live well, to keep free from horrible diseases that are always ready to prey upon us, we must look out for our interiors. One reason why so many people have this trouble with the skin I am telling you of--a dry skin, an eczematous skin, saltrheum, psoriasis and all these other things, scurvy of the skin, pimples on the face, impurities of various sorts, they almost all of them grow out of colon troubles. The colon is a regular Pandora's box of evils and michiefs.

Question: What causes gall-stones? Is there any cure except the knife?

Answer: Gall-stones are due to the very thing we have been talking about. Just apply everything I have said to the gall-bladder and you will see the cause of gall-stones. How does it come about? In two ways. It is down in the lower part where the worst infections occur. When food is taken in it is comparatively clean, but by and by it gets down into the lower part of the colon, putrefaction occurs and this putrefaction travels up and up. Now up here is the liver in communication with the upper part of the small intestine. In connection with one of these compartments you see is the liver and there is a duct which leads right up into the liver and here is a little side road that leads up to the gall-bladder. Now when this infection begins to travel up it works up and by and by gets up here into the liver and gall-bladder and then gall-stones appear. Now there is another way in which gall-stones are formed and that is that these poisons are absorbed and the germs are absorbed into the blood vessels, carried up and filtered through the liver, come around through the liver and come out in the bile and back up into the gall-bladder, and the germs are excreted along with the bile and in that way the bile becomes infected. Now when a man gets typhoid fever the gall-bladder is one of the places where the disease is located. The germs get into his gall-bladder--get into the intestines first, then they spread throughout the intestine and by and by get into the gall-bladder and irritate the gall-bladder and so produce gall-stones. They are absorbed into the blood and they are excreted through the liver into

the bile, then get into the gall-bladder, so people sometimes who have had typhoid fever and gotten well afterwards carry around these typhoid germs in ~~ga~~ their gall-bladders sometime for five years or ten years, or twenty years, and there was one ~~an~~ old lady in New York discovered sometime ago who had been carrying typhoid fever germs in her gall-bladder for fifty years. Sometime ago I removed some gall-stones from a lady's gall-bladder, and on examination at the bacteriological laboratory, we were astonished to find typhoid fever germs right in the middle of those gall-stones, living ~~typhoid~~ typhoid fever germs in the center of those gall-stones, and on inquiry I found that this lady had had typhoid fever fourteen years before, and that is where she got her gall-stones. The typhoid germs were the beginning of gall-stones, so gall-stones are due to infection. You ask me, how do I know this. There is no theory about it at all. These are scientific facts which are based upon careful clinical study and upon laboratory research.) (Prof. Moynihan of Leeds, England, is one of the men who have worked out a great number of interesting facts and Prof. Mayo Robson, of London, is another who has worked out a great many of them, and this is one of the experiments they make. They put some glass beads into a dog's gall-bladder to see if they would make gall-stones. The glass beads didn't do the dog the least bit of harm. He got along just as well as though they had been hanging around his neck. He didn't have any unpleasant experience of any sort so far as the beads were concerned. Six months afterwards the gall-bladder was opened and there were those glass beads all right, perfectly in tact, no gall-stones at all. Then they put the glass beads back and put in along with the glass beads some typhoid fever germs into the dog's gall-bladder and in six weeks afterwards they had some gall-stones. Other kinds of germs make gall-stones too. Any sort of disease producing germs, streptococcic, pus-forming germs and various sorts of germs were put into the gall-bladder along with glass beads and made gall-stones. There was a little glass bead in the center of every gall-stone, and some typhoid fever germs along with it.) (It takes two things you see to make gall-stones.

it takes infection first of all, then it takes a foreign body. Now the germs make catarrh of the gall-bladder, and the catarrh of the gall-bladder becomes the cnidosis of the mucus that is formed there and there is a deposit around the outside of some of the solid constituents of the bile with cholesterin or of other material which is crystalized around this substance. I was operating upon a man the other day who had trouble with his stomach. He did not know he had any trouble at all with his gall-bladder, but while I was operating upon his stomach, I felt something angular on one side--in fact, I was making an examination, and I discovered he had some gall-stones. He did not know he had any. I suppose probably there are twenty people in this room who have gall-stones. Now don't be scared. I see one lady looking around to see who it is, but I don't know myself, but I know there are about twenty people here who have them because (on an average about one person in every six who is sixty years old has gall-stones. More women have gall-stones than men--about four times as many. Now why should women have more gall-stones than men, can anybody tell? Well now women have bigger livers than men so they have better health and are less liable to be diseased than men. Why? I think I was telling you the other night that woman has a large liver and small heart. She does not need so large a heart because her muscles are not so large, but she needs a larger liver because it has to do work for two sometimes, that is the reason, and this large liver ought to make woman a healthier person than man, and I suppose women are generally healthier than men are on an average. They stand infectious diseases better. Less women die of typhoid fever than men. If there are one-hundred girls and one-hundred boys that have measles, more of the boys will die than the girls, because the girls endure infection better than the boys do. That is a fact which has been statistically recognized for a long time. So there seems to be some special reason why women have gall-stones more often than men--four times as frequently, and it is because the liver is abused, that is the reason. Because the poor livers don't have a fair chance. One reason is because the clothing is tight.)

Now the waist line that

in women, naturally.

women ~~make~~--there is no waist line any more than there is a North **Pole** in nature. I heard of some arctic explorers who said that an Eskimo recommended them to get up on a high iceberg and look at the Pole through a telescope instead of going there, but there is no Pole to be seen and there is no waist line unless one is made, and yet every woman twenty-five years old has got a waist line which has been manufactured there by the dressmaker, and this compression of the waist, you see, comes right at a point where the liver is brought under pressure, you see. You cannot wear anything tight about the waist here with^{out} compressing the liver, and when the liver is compressed there is stagnation produced, and stagnation is the thing that makes infection. Now that is why we have infection in the colon, that is why we get colitis because of these decomposing materials that ought to be hurried through the intestine and discharged from the body. They stagnate, and when they stagnate, then there ~~x~~ is putrefaction. (Now here is an illustration which shows you pretty clearly how it is. We see the same thing in nature everywhere. Here is a pure stream coming down from the mountain side. The snows are melting away up on the heights and the melting snow comes down the mountain side in little streams which dash upon the rocks and burst into spray and so the water goes on hurrying and jumping from one ledge to another until by and by it gets down into the valley. Now if you take a glass and dip up some of this water out of this mountain stream we find it clear, sweet, pure, the finest water you can find anywhere perhaps. When it gets down into the valley and runs out into a broad surface it becomes a stagnant pool and it is not very long before that very water becomes full of corruption, covered over with green slime and scum, and frogs croak in it, horrible creatures of all sorts are found sporting in the water that a little while before was clean and pure and sweet. Now it is simply because it is quiet; while ~~moving~~ it was in motion, while it was moving rapidly it was clean, pure and sweet, but just as soon as it comes down to the valley and stagnates, as soon as stasis occurs, why then putrefaction

and all kinds of infection begin. Now the very same thing is true of the body. If we keep the movement of the food stuffs going rapidly along this prima via, this highway of life--if we keep the movement rapid, then there is no stagnation, there is no infection, there is no putrefaction, there is no fermentation, everything is all right. And whenever there is gas forming here and there, whenever there is putrefaction, whenever there is biliousness, whenever there is anything of that sort going on, it is because there is stasis, because there is stagnation, that is what it always means, it simply means stagnation. We have got to stop that stagnation some way. So here in the region of the liver if there is stagnation, then there is trouble. So long as the bile flows continually and freely then everything is clean and pure. The bile itself contains no germs, it is non-infectious, but just as soon as stagnation occurs, then the infection travels up and the gall-bladder becomes infected and mischiefs occur. Now the application of constriction around the waist compels stagnation. It cannot be otherwise because the movement in the liver, the movement of the circulation of the bile is due to the fact that just over the liver is the diaphragm and the diaphragm compresses the liver, comes down and squeezes the liver against the abdominal wall. The gall-bladder is emptied and a little bile is forced down through the ducts and the movement is continually maintained. The movement is going on all the while right along these bile ducts so they are continually clean. But now when a woman puts on tight clothes and brings the ends of the diaphragm together like that, just (ties them up) like that, (the diaphragm cannot come down; ~~it~~, it cannot squeeze the liver any more, (it cannot compress the liver properly.) The breathing is done up here. (Watch an opera singer and see where ~~a~~ the movements are. Ask your little boy or girl to take a deep breath and see how the sides swell out here. Watch a Prima Donna, see her singing and she has got her diaphragm away up here. She is dressed so tight she cannot use the proper diaphragm, so you see she makes a diaphragm out of the chest and the breast bone here and you see it flop up and down at a great rate. That is all artificial, that does not do

the liver any good at all, that is not of the least bit use to the liver. Where we want this movement is down at the lower end so as we draw in air we can pump out bile, don't you see. As air is taken into the lungs bile is pumped out of the liver, so this is a double-acting pump, the diaphragm is. It draws in air and forces the bile into the liver, empties the gall bladder and keep everything moving on properly. That is why it is bad to eat just before you go to bed; that is why it is bad to sleep soon after eating, because the diaphragm does not move much and things stagnate in the stomach, remain there in the stomach for a long time, become too excessively acid and the stomach gets irritated and mischief results because of the deficient action of the diaphragm. That does not make any difference with a baby, however, because the baby's stomach is so shaped that the food passes out very easily. The food material passes out of the stomach almost as quickly as it comes in so it does not remain long enough in the stomach to make any special trouble and besides the food of the baby is milk and milk contains fat which inhibits the formation of hydrochloric acid, so that there is no excess of hydrochloric acid formed in consequence of the sleeping after eating in the case of the baby.)

Question. How long should it take one living at the Sanitarium on a prescribed diet to recover from acidity of the stomach?

Answer. Well, I should think in the course of a week at least we should get that thing under control, but in the course of a month we should have that difficulty mastered. And if there are any of you here suffering from too much acidity in your stomach, and you do not feel that you are making progress and getting over it, it is simply because we are not hitting it quite hard enough. We have got to hit it harder in some way and that is exactly what we want to do. I want to say to you that if any of you here come here with definite difficulties and you know what the trouble is and you are not making progress for pity sake I will say to you, don't go away from this place until you are relieved of it. I don't ask you to stay here six months or a year, but I will say this to you,

if you don't find you are getting better in a very short time, I would like to say to you, come to see me or send me word, come to the medical office, speak to your Doctor about it, call me up by telephone in the middle of the night if you want to. I want every man and woman who comes to this place to go away from here better. Why, my friends, there is not a thing that worries me so much as to have a man come a thousand miles to this place and perhaps spend \$500 here, perhaps putting a mortgage on his house, on his home, so he can come, and then go away no better. Why, my friends, that is an awful thing to me, and there is not a thing I would not do to prevent such a catastrophe as that if I had a chance, and every doctor we have here feels just the same way about it. This place is here to cure people. We want to help every man and woman that comes within touch of this place, and we want to keep on helping them, and that reminds me of a thing I was thinking ~~think~~ the other day that I must mention to you. When you go away from here, don't forget that we are interested in you, that your doctor is interested in you, that this institution is interested in you. When you go away and find any time that you are in trouble, not getting on as you want to, just send in an appeal for help and I tell you we will come to the rescue right off. We will do the best we can for you. If you need to come back, we will tell you that; if you can get along at home, we will help you there. We want you to know, every one of you, that the purpose of this place is to help men and women, and that is the real fact. I do not like to mention that, but it may be of interest to you to know that our activities in this line do not stop here in this building. We have across the road here a Dispensary. If you have some poor neighbor who needs some help and cannot afford to pay for it, if he can come and sustain himself in some way here in Battle Creek; if he can find a little room somewhere and can get his board and manage to get along, he is just exactly as welcome as you are. He can go over here to the Dispensary and get just the same things you are getting and without paying one cent for it. He can get everything done we know how to do and without paying a single cent, and he can get his

treatment without paying a cent for it, or if he can pay 50 cents a day, we let him pay that. If he can pay something, we let him pay it to help keep the thing going, but if he can simply support himself for his board and lodging, or if his town will pay it for him, or the county, or if anybody will pay it, he can have all the treatment we know how to give him. Down in Chicago there is a Sanitarium. If any of you get into hard luck when in Chicago over on Halstead street and 33rd Place you will find a place called The American Medical Missionary College Dispensary, and you will find a doctor up there and some nurses up there and they will get right after you and give you electric light baths, electric baths and massage and almost everything in the world you can get here. If you haven't any money to pay for it you can get it just the same. The institution there treats more people than this one does every year, and we are very glad to get encouraging reports of the work that is being done down in what is called the Jungle of Chicago in the Stock Yards District. We have been there fifteen years, and for seven years I spent every Sunday of my life in Chicago working down there in the slums to see if these principles would not do something for those poor souls who never had any chance--the most of them. Some of them never were in the sunshine in their lives. So we want to keep in touch with you. That is why we send you the Battle Creek Idea after you go home, so you wont forget. We want you to get inoculated with better ideas of living so you will inoculate your neighbors, start a Battle Creek community in your neighborhood and, perhaps, get a lot of other people going in the right way. It is an awful thing to think of ^{that} thousands and thousands of men and women are going right straight down to their graves, encouraging the thing every day, doing something every day that is simply helping them right straight down hill instead of helping them uphill. It is hard enough to live anyhow and we ought not to encourage death to make encroachments upon us. We ought to work the other way.

Question. Would you believe in the use of tuberculin on a little child

who has had tubercular glands removed from the neck, and whose system is not otherwise infected with the disease?)

Answer. I should hardly think the child needed it. That child is probably already immune. maybe. At any rate if the child has the disease or has been infected and has risen above it, I do not think that the introduction of tuberculin in small amounts would do any harm if it was done by a skilled physician.

Question. In such treatment what chance has a child that the disease will not appear again?

Answer. (The most important thing for that child is to send him out of doors; get him to live outdoors in the sunshine and the fresh air.) (A French doctor had some children brought to him, and the mother was asking him what ought to be done, and he looked at them for a moment--saw their poor, wizened, pale faces--then he turned to the mother and he said, "Roast them, Madam, roast them in the sunshine!" That is what they needed. They had not had any sunshine. They had been brought up indoors in the shade and they were like potato sprouts, they grew in the dark, they haven't any chlorophyl and so haven't any color. They had not any blood and they needed to get out of doors in-to the sunshine. That mother took the hint, gave them a chance and they soon got well. The healing power is within us, right inside of us, lets not forget that.) A great German Pathologist more than half a century ago, said: "Nature heals." That is the first law of therapeutics. Nature creates and maintains, therefore, she must be able to heal. Now what is nature? Why nature is the great force, the great power that is working all about us. We call it nature, but that is a very poor name I think. The same power that created things in the beginning is still at work, that is the power that creates and the power that heals.

Question. Kindly state the physiologically ideal arrangement of meals, that is, the number ~~of~~ per day and the hours, together with the reasons underlying this schedule.

Answer. Now that just depends. The number of meals depends on so many

different things. (Taking the world at large I think it would be a great deal better if we arranged for two meals a day, but if you should get hungry between meals you might take a little nip without doing any harm. I think, as a matter of fact, **it is** just as proper to eat when you are hungry as it is to drink when you are thirsty. Hunger is an instinctive demand for nutriment just as thirst is an instinctive demand for fluid, ~~for~~ water. Now these instinctive voices within us are not absurd things, they are not incidents or mere accidents, they are divine voices talking to us. Now the little boy is tempted to steal and he hears a little small voice inside of him saying, "don't do it, don't do it. It is wrong to steal!" We say that is conscience; we say that is a divine voice talking to the boy to warn him against doing wrong, and that is right. Now then these instinctive voices within us are just in the same way divine voices, just as true divine voices as the voice of conscience that is awake and is warning us against this thing, that thing and the other thing. It is perfectly proper to eat when you are hungry, provided you have not **got** an abnormal appetite. If one is in an abnormal condition and he has a state of constant hunger--when he sits down to the table he begins to eat and finds himself more and more hungry all the time--and there are such cases--that is an abnormal, diseased appetite, and we are talking about the physiologic man. Two meals a day would ^{be} the proper thing. If a person gets hungry between meals, let him eat, but he must be careful what he eats. The person who wants to eat between meals or eat at any other time than the regular mealtime, must be careful to eat something that wont require digestion. Now there are certain kinds of foods that require no digestion at all, practically none at all. If one got hungry between meals and ate a ham sandwich for example, or a bit of ~~meat~~ bologna sausage, he would have reason to repent of it. Those things are not fit to be eaten at any time. They are not wholesome. If one felt a little hungry between meals and he saw a bit of bread and butter close by and he helped himself to the bread and butter, he would be doing something physiological-

ly wong because that bread and butter is one of the hardest things to digest that ever gets into the stomach. It takes more time to digest a slice of bread and butter than almost anything else you eat. Raised bread is one of the things that is very hard to digest, and most invalids would be better off if they discarded raised breads entirely and ate nothing of that sort. Confine yourselves wholly to hard breads and reduce them in your mouth by mastication to a very fine powder or a smooth paste before being swallowed. Ordinary raised bread is seldom eaten in that way, but it is swallowed in chunks and makes bullets in the stomach. But there is a class of foods that can be eaten at any time, that do not require any digestion, or any cooking, **ripe** fruits, for instance, **One** can eat a ripe apple if he chews it well, or a handful of strawberries, or almost any sort of fruit with the exception of two or three perhaps, such as a date or a fig and a banana, they are about the only exception I should think of making. But all these juicy fruits we are familiar with, the berries, apples, pears, plums, cherries, peaches, apricots, etc., all of those things are already digested, they are no tax at all to the digestive organs, and one can eat them any time he **feels** inclined to do it, - in moderation, of course. One can take a glass of fruit ~~juice~~ juice any time he is hungry because these substances are already digested and all that is necessary is that they should be appropriated. That is why one feels so refreshed after taking a glass of fruit juice, or lemonade. After eating an orange one feels refreshed right away because there is food substances there already digested, ready to be immediately absorbed and appropriated. So two meals a day would be ^{quite} sufficient. I think the best time to eat would be about ten or eleven o'clock in the morning and four or **five** o'clock in the afternoon.) Those are really the hours I should be glad to adopt for meal hours. I hardly know what to do with this meal question. I always feel as though we were not treating our patients just right in feeding them three meals a day, at 8 o'clock in the morning, **3** o'clock, then 6 o'clock in the evening, with only five hours between--really only about four

~~four~~ hours between meals, and the average stomach is so slow it does not get one meal disposed of before the next one is on hand, that is, I mean the average dyspeptic stomach--unless one is very careful of what he puts into the stomach. On the other hand if you have an inflamed stomach, a stomach that is the seat of gastritis, then it is important to eat but a little food at a time and to take it more frequently, but it must be food that does not require much of any stomach work; food that will be passed out of the stomach very quickly. (Some kinds of food pass out of the stomach in an hour and other kinds of food require six or seven hours. A piece of rare pork will stay around the stomach for seven or eight hours. A lumberman likes fat pork. He says it sticks by the ribs. That is just what it does, it stays up there in the stomach right under the ribs and it does not digest and so he thinks it is hearty food. The proper pronunciation of hearty food is, hard to digest food .) But one should not eat that kind of food, but should take simple food, like banana puree or porridge or gruel, purees of vegetables, any sort of puree, something that is broken up completely so it will pass quickly out of the stomach. Then on the other hand there are people who have ulcer of the stomach, for example, who have stomachs that are the seat of ulceration and hyperacidity--such people find it well to eat a small quantity of food and to take it at frequent intervals.

Question. Is the quantity of liquids at about a half to two pints a day of all sorts, advocated by the French and German authorities, sufficient for the highest state of bodily efficiency as is claimed by them?

Answer. No indeed. There is not anything more ridiculous than the contention that these advocates of the thirst and hunger cure as they call it. This is not a new thing at all. It originated more than one-hundred years ago. One-hundred years ago Priessnitz, a peasant in the hills of Eastern Austria, in Austria silesia, began the treatment of sick people by means of water and natural methods, and among other things he proposed for his patients was fasting. Fasting is a very, very old remedy. There was a man over on the other side of the moun-
the

tain opposite Priessnitz by the name of Schott who set up in competition with him, and he not only fasted his patients, but he deprived them of water also, subjected them to thirst as well as to hunger. He would give his patients violent sweating baths every day and give them a crust of dry bread to eat, but no water. He would sometimes allow them just a few ounces of water, barely enough to keep them healthy, and they would go on that way for weeks and at the end of that time they would have a kind of crisis, and if they lived through it, they got well; if they did not, they were incurable cases. And very recently a German doctor in Dresden, Germany, has revived this old absurd and unphysiologic method and is exploiting it, and I think more than anything else as a means of getting business. There is a certain class of doctors all the time who are trying to find something queer to do, something new, something extraordinary, something peculiar, which will attract attention. It seems to be their only stock in trade. Now there are better ways of dealing with all these cases that are apparently helped by these extreme, strenuous and drastic measures, - there are better ways. The fact that some people get well by these methods is in no sense a demonstration that they are beneficial or necessary, because, as a matter of fact, a large proportion of the people who get well, get well in spite of what is done for them rather than by the aid of it. We never can say that a man is really helped by what is done for him unless we can establish a physiologic relation between cause and effect and show that that is applicable to that particular case. The Editor of the London Lancet I think spoke very aptly when he said: "The philosophy of these food faddists is identical with that of the man who bought a patent stove because it would save half his fuel, and then bought another patent stove so he might be able to save the other half." If one patent stove would save half the fuel, why, of course, it was evident the two patent stoves would save all the fuel, so there would be no expense at all. The philosophy of the fast and thirst cure is essentially the same thing. Here is the theory. A man fasts for a day or

two and feels better, it does him good. Now if it does him so much good to fast for two days, it will do him twice as much good to fast four days, and if he is greatly helped by fasting four days, he would be immensely better by fasting eight days, don't you see. And if we could only get along without eating at all what a blessing it would be.)

Question. Do you believe with Prof. Hawk of Illinois University, with reference to taking no water with meals.

Answer. No. What Prof. Hawk showed was that when one takes water along with the meal the amount of gastric juice would be increased, but that discovery was made by Pawlow more than fifteen years ago. Pawlow showed that a pint of water ~~was~~ given to a duck would cause the duck's stomach to pour out a great abundance of gastric juice. Various lesser lights are taking up the very same thing, and it is a very common thing in this country to see men making experiments that were made by Germans ten or fifteen years ago, and exploiting them as great discoveries, whereas, they have made no real progress at all. There is no doubt that water alone in the stomach will cause the stomach to pour out a large amount of gastric juice--it is a stimulus to the gastric glands. Prof. Pawlow made another observation in connection with this feature that we ought to mention just now as it is very instructive. He found that one single grain of carbonate of soda added to a pint of water given to a duck in this way would prevent entirely the formation of any gastric juice, so you see what baking powders are doing. One grain of baking powder mingled with a pint of water, instead of causing the stomach to pour out a great amount of gastric juice, absolutely prevents the formation of any gastric juice at all. So it is a good thing to dispense with baking powders, isn't it?

Question. What is the best diet for mucopus colitis?

Answer. A diet that will starve out the germs that are causing the mucus colitis. Mucus colitis and every form of colitis, is an infection. It is just like catarrh of the nose, throat or skin of any other part. It is

an infection. There are various kinds of germs that make catarrh of the nose. There are four or five kinds of germs that will cause mucus colitis. In general the germs which cause putrefaction will cause colitis, and the way in which they cause colitis is this: Material coming down through the stomach, passing through the intestine, lodges in some fold of these compartments, generally in the colon, in the cecum, or the ascending colon, or in the transverse colon, or in some other of these twelve compartments of the colon, and remains there until the processes of putrefaction are far advanced, until the bacteria which are present occur in immense numbers and become highly active or virulent, as the bacteriologist says--then they attack the mucous membrane and produce this condition which is commonly known as colitis. The mucus which is poured out upon the mucous membrane which passes off in strings, shreds and membrane, pieces of the intestine itself sometimes, this mucus is poured out there, up in there, to protect the mucous membrane because the germs destroy the mucous membrane and this mucus is poured out as a kind of soft semi-liquid scab to protect the mucous membrane just as a scab forms on a sore on the surface. This is simply the natural result of the exposure of these delicate tissues to the contact of these putrefying materials. Now let me ask you this question. Did you ever try the experiment of putting a poultice on the skin? Did you ever know that thing to be done? Did you ever see a portion of skin on which a poultice had been applied day after day for a long time? If you ever did, you saw some skin that was unhealthy. The skin was broken out, there were pimples and there was an unhealthy state of the skin. The skin is macerated and broken down by the poultice. Just imagine, if you will, a poultice made out of some loathsome material, a piece of beef steak, for instance, put on ~~a~~ ^{and} left there for a week in a place, rotting flesh. Just think of a stale oyster being used for a poultice, binding it on to some place and keeping it there for a week. What would be the state of the skin under that kind of poultice? Go a little farther and just think what would be the condition of the skin if the horrible

putrescent and loathsome material discharged from the bowels was used as a poultice, put upon the skin, kept there in contact with the skin for several days, think what it would be. Now these impure materials, putrescent material inside of the body lying direct in contact with the delicate mucous surfaces of the bowel, produce disease, are the cause of disease, the cause of colitis. So you see the only cure in the world for colitis is to keep the intestine clean, is to keep these impurities carried off so rapidly that the intestine has a chance for healing. If you had a portion of your skin in an irritated state because of masses of impurities accumulated upon it, the very first thing you would do would be to clean it off. Then you would put some emollient on it to protect it, and that is why we recommend some of our patients to use Colax or Para-lax. Colax is simply Japanese seaweed which has been washed, purified, disinfected and put in a convenient form for use. You can buy it at the drug stores under the name of Agar Agar, and prepare it yourselves, or you can get hold of Colax. And the Para-lax is prepared from a refined paraffin product imported from Russia, a refined form of petroleum, refined white paraffin oil.) You can buy that sometimes when you cannot get hold of Para-lax, and it will answer the purpose of lubricating the intestine. That is what it is for, and of these two things the Colax is to form a mass, a bulk, which works through the folds of the intestine and stretches out the intestine so it works through these little bends and folds that make a certain amount of obstruction, so it is forced through. It is a broom that sweeps the intestine clean, if you please. Then the Para-lax is a lubricant.) The Para-lax is simply an emulsion of this refined paraffin oil I am telling you about that is prepared so as to be a little more convenient for use.

Now the best diet for colitis is a diet that will starve out these germs. There are four or five different kinds of germs, particularly Welch's bacillus, typhoid bacillus, paratyphoid bacillus and the proteus form of germs which cause diarrhoea in the baby, and the very same thing will make colitis

in an adult, and very often mothers who have colitis infect their babies without knowing it. The babies get some of these germs; some of them get into their food through contact with their mothers, and the thing travels through families in that way because it is more or less infectious. **Paratyphoid** is an infectious germ just as typhoid fever is, only it does not produce the very same results. Then the ordinary colon germs that are always present may become virulent under the influence of a very rich protein diet so that they become the cause of colitis. But the principal cause of colitis is stagnation. None of these germs would produce colitis if it were not for the fact that the decomposing food material remained ~~existing~~ in some spot too long and set up a diseased condition in consequence.)

Question. Can mucus colitis be cured?

Answer. Certainly it can be cured, every single case can be cured.

Anybody suffering from this disease need not go through life with that horrible handicap, suffering from autointoxication all the time, inviting Bright's disease of the kidneys all the time, inviting premature old age through hardening of the arteries, through the continual autointoxication that is taking place. No one needs to suffer in that way, everybody can be cured.) If there is anybody here who ~~is troubled~~ has trouble of that sort and you are not getting ~~along~~ well, I want you to report to me because I will see that you do get well, that is what I am here for, and there is not any reason in the world why anybody should ever leave this institution without being cured of that malady and when you get home you ought to keep cured of it. (Live on a very low protein diet, eat fresh vegetables freely, uncooked vegetables, lettuce and cabbage if you like, and fresh fruits, berries and cucumbers and other fresh vegetables and fresh fruits, all these can be used.)

Question. What is the best arrangement for outdoor sleeping in a tent?

Answer. Simply sleep in the tent and have the tent open so that the air can circulate through because I have known people who led sedentary lives in a tent, led indoor lives in a tent. You can shut a tent up so tight that you

be a great deal worse off, because the tent does not let so much light in as the glass does and you won't have so much fresh air in it as in a well ventilated room. The only way if you are going to sleep in a tent is to have the sides up because the cloth of the ordinary tent is pretty nearly air tight, but not quite. There is very little circulation of air through it. You should have the same arrangements for ventilation, as far as possible, that you would have if living in a room. I think the best thing is a sleeping porch open on all sides with screens or shutters arranged properly so the air can be circulated all the while.

Question. What is the virtue of the following prescription for insomnia: Rye bread, beer and cheese to be eaten at bedtime.

Answer. Now I should say that would put a man to sleep, and if he put himself to sleep in that way for a few years, sometime he would fall asleep and would not wake up at all. He would go to his last long sleep. There is no doubt that food is soporific. Alcohol in the food produces partial intoxication, it lessens nerve sensibility and tends to produce sleep, and taking large amounts of food stuffs of any kind into the stomach will cause the blood to accumulate in the stomach, recede from the brain and so relieve the brain of the pressure that keeps one awake. But when one puts himself to sleep in that way, he falls asleep at once, but after three or four hours wakes up and is more wide awake than before. A ~~the~~ better way to get the blood into the stomach is by drinking a glass of hot water, then putting on a moist abdominal bandage. The moist abdominal bandage will relax the blood vessels, draw the blood in without giving these organs any extra work. The neutral bath is another most excellent remedy. A bath at 95 to 92 degrees or 99 to 92 degrees--. Lie in the bath for half an hour if necessary, or even for an hour--stay there until you get sleepy. This bath is used very extensively now in insane asylums all over the world. In France and Germany it has been used

for the last half century, this method to put lunatics to sleep. People that become insane from loss of sleep are put into a bath of that sort and in a couple of hours are sound to sleep, and in a few weeks are well without any drugs at all. This is commonly practiced in every insane asylum in the country at the present time. So you see you cannot any of you be so bad off as that, you cannot be so bad as these very extreme cases. I dare say there is not a person in this room that is liable to have **an** attack of insomnia that could not be relieved by the neutral bath. If you stay there long enough you are almost absolutely sure to go to sleep, that is, if you are not suffering pain.

Question. Is salt injurious?

Answer. A little probably does not do any harm, but there is no necessity for adding salt to your food, it is purely a matter of cultivated taste.

Question. Is every meal too often to drink Yogurt?

Answer. No, not if it agrees with you. If it does not agree with you, take Yogurt Whey. Some persons cannot digest milk who can take the Whey.

Question. Of what use is the appendix in the body?

Answer. The appendix secretes mucus which lubricates the alimentary bolus which is protective to the lower end of the cecum.

Question. Would you remove a sound appendix in performing an operation?

Answer. No, indeed, I never did such a thing in my life. I do not believe in removing anything that is sound. I would no more remove a man's appendix if it were sound than I would cut off his nose, it is just as reasonable.

Question. Should a woman's nose be as red as her cheeks? If it should not be, give the cause and the cure.

Answer. That **subject** is so intricate I think I will have to pass it along until next time.

Question. What will relieve intense pain caused by gas in the stomach and acidity?

Answer. Hot water inside and outside, and the use of the enema.

Question. What causes fistulae?

Answer. I do not know what sort of fistulae are referred to here, so I can hardly answer this question.

Question. Does low blood pressure indicate ~~but~~ a deficiency in the quantity of blood.

Answer. No, it does not. It may indicate a weak heart, sometimes too much blood.

Question. Is not more than one glass of water at a time too heavy for the stomach.

Answer. No, not necessarily so. However, one glassful is enough to take at a time. A glassful is about six ounces and the stomach will hold two pints easily, the ordinary stomach. But it is better not to take too large a quantity of water.

Question. What are the first indications of hardening of the arteries?

Answer. One of the first indications is the rise of blood pressure. Rise of blood pressure, however is not in itself proof positive of hardening of the arteries.

Question. Is the constant use of laxatives injurious?

Answer. Yes, indeed. Medicinal laxatives--that does not mean paraffin or seaweed and those things which are absolutely harmless-- They are neutral and produce absolutely no harm, may be used indefinitely, and some people who have crippled colons must use something of that sort the balance of their lives, and it is better to do that than to suffer the evils of auto-intoxication.

Question. What makes one dream?

Answer. The brain remains active. The reason why we are conscious is because the two parts of the brain, that part in which consciousness resides, and that part in which sensations are stored up, are in contact by means of delicate fingers which reach out and take hold of the cells. When this contact is broken, we go to sleep and become unconscious; when the contact is made, we wake up. In dreaming there is a partial contact, there are some of these little

fingers that fail to let go when we go to sleep, they hang on so there is a sort of semi-consciousness kept up.

Question. How can it be overcome?

Answer. The best way to overcome it is to sleep sounder. The way to sleep sounder is to take the neutral bath and go to bed without your supper.

Question. What effect dose sulphur have on the system?

Answer. Sulphur is a poisonous substance. It is not very poisonous in the way in which it is here used, but taken in the form of sulphur, in its common form, it is a laxative. It does not absorb to any very great extent and it is not very poisonous, but it is not curative.

Question. Is it necessary to use salt?

Answer. Food without salt would not keep you alive. You would quickly starve to death on food that contained no salt, for salt is essential to the formation of gastric juice. Without gastric juice there can be no digestion, and without digestion there can be no nutrition, but as a matter of fact, there is salt in everything we eat. Every article of food has a little salt in it. That is perfectly true, we must have salt, we need salt, but there is enough salt already in the food. It is there and we do not need to add it to the food. So all the salt you add is simply to satisfy a perverted taste, and it is a good thing to cultivate a liking for food with ~~less~~ little salt, the less you take the better.

Question. Would you advise the daily use of a cold bath?

Answer. Not necessarily of the cold water bath, but the cold air bath, or a cold application of some other sort. If you have neuritis, then you have to protect those parts from contact of cold. The chest and abdomen are the parts especially important to expose. The face, chest, abdomen, hands and the feet are the most important parts to expose to cold. Why? Because these parts produce the strongest reactions.

Questions. Would you advise abrupt or gradual discontinuance of the use of meat or of the tobacco habit?

Answer. I say, quit at once. There is no reason why one should taper off on any evil habit. If you have got into the habit of lying, for example, wouldn't it be to much of a shock to the **system** to stop lying right away and wouldn't it be better to taper off? You see there is no sense in it. If one is doing a thing that is harmful, the sooner he stops the better. Tobacco does nobody any good whatever, not the slightest good, and I never saw anybody suffer ~~any~~ in any way at all from leaving it off. One may suffer some inconvenience, it is true, some unpleasant sensations, but it is only his nervous system waking up you see. He has got to go through that experience before he gets back to his normal state again.

Question. What is the proper diet for gastritis, or inflammation of the stomach?

Answer. It is best to rest and take a diet of water for three or four days.

Question. How can the coarse pores of the face be most successfully reduced to normal size?

Answer. By grooming the face very carefully, keeping the glands continually empty. Bath with very hot water and massage the face very thoroughly.

Question. What ~~is~~ the cause of tropical sprue?

Answer. It is a bad auto-intoxication.

Question. Should the skins of baked potatoes be eaten?

Answer. One can eat them if he likes to, but it is not necessary.

Question. Is epilepsy curable?

Answer. Yes, generally.

Question. What are the comparative benefits of drinking water cold and water hot?

Answer. If you have an atonic stomach, too little hydrochloric acid in other words, drink cold water, a third or a half glassful of cold water before the meal. If you have a stomach that makes too much gastric juice, too much

acidity, then take the same quantity of hot water, half a glassful or a glassful half an hour before the meals.

Question. What is the cause of cancer?

Answer. Prof. Ross of England has proven, I think, that cancer is caused by certain poisonous substances which he calls augmenters. There are certain poisonous substances which are constantly present in the body, such as uric acid. Uric acid produces cell activity, excessive cell activity, and tea and coffee and things of that kind have the same effect. Tea taken into the stomach produces an excessive amount of hydrochloric acid, caffeine has that effect. Now there are other substances, the products of cell decay, colalin and cadaverin and some other poisons~~xxx~~ of that sort, which when taken into the body produce an excessive cell activity, and it is this excessive cell activity producing abnormal exuberance of growth, forms the real cause of cancer. These Prof. Ross calls augmenters, and they are found always in decomposing flesh. I had a talk with Prof. Ross about it, and suggested to him that perhaps the people who ate meat would be more likely to have cancer than those who did not, and he said, -of course that was natural for a person who ate meat, submitted their bodies to putrefactive poisons which are being formed in the intestine all the time, and they would be much more liable to cancer than those who did not. That is a clinical fact. Cancer is a disease of meat eating races of men and animals. Cats and dogs have cancer. 6 or 7 per cent of all the cats that die have cancer. The same is true of dogs. Human beings are a little less subject to these diseases than cats and dogs.

Question. What is the cause of appendicitis?

Answer. It is an infection.

Question Has the extensive use of tomatoes a tendency to produce cancer?

Answer. Not the slightest.

Question. What causes coryza?

Answer. Germs somewhat similar to grip germs that are hanging around

all the time, and these are the germs that produce the common cold. Every cold is an infection. Some people carry these cold germs with them all the while and they are ready to break out and to prey upon them whenever their vital resistance is lowered just a little bit. If they get tired or are exposed to cold, or if in any way the circulation is disturbed, then these cold germs break right out, produce headache and infection. So the important thing to avoid taking cold is to keep the resistance high. Keep the body as much above par as you possibly can. Be careful that you keep it up to par at least. The loss of sleep, overwork, the loss of food, these are among the causes which will reduce your resistance. But the thing which most of all produces low resistance is that putrefaction in the interior, this absorption of poisons from the intestine, that is the most common cause of lowered resistance, and it is the greatest handicap to which civilized men and women are subjected.

Question. What is acute indigestion and why does it so often prove fatal?

Answer. Acute indigestion is very rarely fatal. Acute indigestion can almost certainly be relieved by washing out the stomach. The stomach may be washed out with a stomach tube and that is almost certain to relieve all the evil effects of acute indigestion. It is chronic indigestion that kills people, and this chronic indigestion of stomach and intestine is responsible for most Bright's disease, liver disease and probably a large share of cancers.

I think I have reached the bottom of the box this time.

Thank you for your patience.

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T O B A C C O

A stereoptican lecture at the Sanatarium Parlor,

Battle Creek, Mich., March 7, 1912

at 8 P.M. - by

J. H. Kellogg, M. D.

Ladies and gentlemen, I have been asked to say something to you tonight about tobacco. I talked to you about dress the other night and a delegation waited upon me, and wanted me to say something to the men. I had been rather hard on the ladies and they thought I ought to talk to the men. There are a few ladies who smoke as well as men, and I am sorry to know that smoking among women is becoming more and more common. I think the time has certainly come when there ought to be a tremendous protest made on the part of the people who do not smoke against this terrible curse. Tobacco is unquestionably one of the gigantic evils that is threatening our civilization with extinction.

I have a little paper on the subject of race degeneracy. Last year I was asked to go down to the State of Connecticut to attend a meeting of the State Association of Charities and Correction, and to talk on the subject of Race Degeneracy, which I did, and my talk is now in the form of a paper. I will have copies of it for distribution at the book stand here, and I will be glad if every one of you will get a copy of this paper and read it through- not because of anything I have said, but because of some of the facts which I have copied and compiled and brought together from various sources, figures that are so startling that I think every intelligent person ought to be made acquainted with them.

There is not any question about it; we are going down hill at a tremendously rapid rate and there are plenty of men who recognize that fact besides myself. I suppose some of you noticed in ~~the~~ a recent number of the Ladies Home

Journal an article by Dr. Sargent referring to the change in the type of young women, and he also calls attention to the fact that the human race is degenerating. Dr. Sargent, of Harvard, is quite an authority on matters pertaining to physical development and he recognized the fact that the race is degenerating. A great committee was appointed by the British Government some years ago and this committee spent several years in the study of the question of what are the causes of deterioration of the English race, and this committee brought in ^a the most voluminous report in two very large quarto volumes of several hundred pages each. They got testimony from all sources, from many, in all different classes of society, from doctors, lawyers, bishops, visiting nurses and friendly visitors and from people of all classes, scientists, statisticians, etc., and the testimony was almost unequivocally that the human race is degenerating. Why, the English race has degenerated to such an extent that within thirty years they have been obliged to reduce the height requirement for enlisting men into the army. They now let men into the English army who are only five feet tall; that is four and one-half inches shorter than I. Just think of an army made up of pigmies like that, and the number of persons who are rejected is increased year by year, notwithstanding they have lowered the standard to this extent. There, a man can become a soldier in a British army if he is only five feet tall, and notwithstanding the fact ~~that~~ they cannot get enough men. It is because the men who apply are so defective. In the Boer war the English Government actually had to go so far as to supply false teeth to their men. They found that the men who enlisted were so deficient in teeth that they could not get enough men who had teeth to bite off the ends of their cartridges with, and they had to furnish them false teeth and they actually went so far in some instances as to furnish them with spectacles because their eyes were so defective they could not see far enough to shoot a Boer.

The fact is becoming more and more apparent to observing people every where that the race is degenerating and there are some great causes. It is not one little thing only but a great number of causes in operation that are almost universal. They

must be in order to produce a degeneration of a whole race. There is no question in my mind that one of these great causes is tobacco. Do you know that the American people- men, women, children and babies altogether- use on an average of ten pounds of tobacco each every year. My authority for that is the American Tobacco Journal. The Tobacco Journal keeps pretty close track of the amount of tobacco used and the statistics furnished by this Journal shows that the average American uses ten pounds a year. Now leave out the women and the babies and you can see about how much the average tobacco user uses, and it is enough to keep him well soaked with nicotine all the time.

Tobacco is used in several different ways- smoking cigars, smoking cigarettes, smoking pipes, chewing tobacco, snuffing tobacco and in certain parts of the country, rubbing snuff on the gums. That is what we call "snuff dipping". Now, of these different methods of using tobacco, civilized human beings have invented only one. We learned this filthy habit of using tobacco from the wild Indian. When Columbus discovered America, he wrote down in his log book that his sailors saw the naked savages twist huge leaves together and smoke like devils, and it is the most astonishing thing that since that time a large part of the civilized world has been imitating some of those naked savages, smoking like ----- well, certainly, I do not expect that angels smoke. I fear I cannot associate in any way with cleanness, sweetness and purity this horrible habit of tobacco using. It is an unclean habit; it defiles the air; sometimes defiles the floor and furniture. A man who uses tobacco is saturated with it, and he carries a horrible, offensive, sickening odor with him wherever he goes. He is a nauseous bouquet. He does not realize it, does not appreciate it. If a person must use tobacco, he ought certainly to have the privilege to use it first-hand, and not have to take it second-hand. The odor of a stale cigar or of a man that is saturated with tobacco is something most repellant. I sometimes get against such a person in travelling and it often makes me sick, and I have to get a window open as soon as I can, or get into the fresh air. I have never become immune against tobacco, and I do not want to. Columbus, as I said, saw the naked savages twist huge leaves together and smoke like devils. They were the first cigar makers. On a little island in the Atlantic Indians were found to make pipes and smoke tobacco

with pipes, and down in Peru when the Spaniards landed, they thought they were going to have an easy conquest because they saw the natives coming out to meet them with no arms in their hands; they had no stones in their hands, no clubs, no spears, bows or arrows, but they simply came out to meet them, a group of them in line, and as the Spaniards advanced these men came toward them and the Spanish thought they were coming to give the right hand of fellowship, a friendly welcome, but they were very much disappointed and surprised when each one received in his eyes some tobacco expectorated by these friendly savages.* That was their ~~mode~~^{mode} of defense, and I have encountered people in my lifetime who were almost as dangerous to approach as those ancient Peruvians. That was the origin of tobacco chewing, and spitting - expectorating. By the way, there is one thing that ought to be mentioned about this expectorating of tobacco. These expectorators are very likely to have tuberculosis or cancer- either one or the other. One hundred men have cancer of the mouth where one woman does and it is just because of this horrible habit of smoking or using tobacco. Some of the world's great men have been killed by tobacco. General Grant had smoker's cancer of the throat. Unsar Fritz, the great German emperor had cancer of the throat and a good many other men have died, hundreds and thousands of men, and there are hundreds of men dying every year from cancer of the mouth, or cancer of the throat, that they get entirely from tobacco, yet they go on smoking and using tobacco just the same. The ladies in Chicago are making just now a great fuss, which I hope will amount to something, about the men who stand on the front plat-form and smoke and chew and spit on the platform, because it has been discovered that a large number of these men have tuberculosis. Investigations made at the Phipps Institute, Philadelphia, showed that men who smoke ~~have tuberculosis~~ are twice as likely to have tuberculosis, or consumption, as people who do not smoke. Tobacco destroys the resistance of the body and prepares the way for consumption. The only invention that has been added to the technique of the use of tobacco is snuff dipping. It never extended in the world very much but seems to be confined to certain regions of the country and to certain very poor and rather degraded classes of people. This is the one invention that has been made by civilized man with reference to the use of

tobacco. What a strange thing that we should imitate those savages. Go down the street of a large city and you pass a tobacco shop that makes the selling of tobacco its one great specialty, and you are almost certain to see a certain sign out in front of it. It is the effigy of an Indian, so every man who smokes is burning incense to the dead Indian, the god of tobacco.

Now I am going to show you a few facts about tobacco to-night that I hope you won't forget. Tobacco belongs to a class of poisonous plants that are known to be deadly in their effects. Every farmer wants to kill the vermin on his sheep. He dips them in a concoction of tobacco juice, tobacco leaves, or tobacco stems. He dips his sheep and he kills every living thing that may be hiding in the wool of those sheep. If he dips them in too strong a solution, he may possibly kill the sheep, too. Everybody knows that tobacco is a deadly poison. A few drops will kill snakes. About twenty years ago in investigating this experiment, I took a frog, and frogs, you know are very hard to kill- you can cut a frog's head off and he will go hopping around the room for sometime, just tap the floor and the frog will jump. I remember making the experiment when I was a very cruel medical student. I took a frog, cut off its head behind its ears, and he was on the stand where I was at work. The frog was there with its head cut off so that his brain was apparently removed. I simply tapped the table with my fingers and that frog leaped into the air, jumped off on the floor and I chased him all around the room by simply tapping the floor with my foot. Sometimes he jumped straight ahead and sometimes against the wall, because he had not any eyes and could not see. I simply tell you this so you can see how hard it is to kill a frog. I put down a frog's throat $1/14$ of a drop of nicotine, or oil of tobacco. That frog uttered one great croak, thrust out his legs straight behind, then went into a spasm and that was the end of him. He was dead- absolutely dead. His heart had stopped and you could not get another motion out of him. He was simply absolutely dead; in less than ten seconds that frog was dead. $1/14$ of a drop of nicotine was all that was required to kill that frog. I gave a cat $1/6$ of a drop of nicotine injected under its skin. The cat sprang out of my hands

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suddenly, looked wild, ran across the room, dropped in the farther corner of the room, had a terrific spasm and was dead. Now, a cat is supposed to have nine lives, but it only took fourteen seconds to kill a cat with 1/6 of a grain of nicotine. Now, if a smoker wants to have a real good proof of the toxic character of the things he is smoking and of the noxious character of his breath, all in the world he has to do is to put a dozen flies in a two quart jar. Now let him take one puff from his pipe and breathe it in that quart jar, put on the cover and watch those flies. The flies will be dead in just a few minutes. There won't be one of them left alive. Some years ago, an old smoker arrived here and he said he wasn't going to stop. He would stop his whiskey, he said, but he would not stop smoking. He was a pretty hard old case, a man about 75 years of age and he intended to keep right on smoking. It was no use to talk to him about tobacco smoking. It was all right; it didn't do him any harm. He admitted it was a foolish but he said tobacco was all right. He was very much displeased because there was no smoking room here. He finally came to me and asked me if there was no smoking room, and I told him we had one room ~~and~~ where we allowed smoking, so I took him out to our green house. I had happened to notice a few days ago a rose bush which had a whole lot of green flies on it. I gave him a seat just in front of this ^{rose} bush and called his attention to the flies on the rose bush. I said "Now, we smoke green flies here; we don't smoke people, and if you want to take the job of killing those green flies, all right. So he sat down and begun with his old black pipe. He got his lungs full of tobacco smoke and breathed it out upon the bush. Instantly, there was a shower of dead flies dropping to the ground. I looked at him, thinking it might ^{make} an impression upon him seeing that his breath had so much poison in it that it would kill one dozen green flies at every puff, but he sat there with the greatest comfort puffing away and the green flies falling all about. He came to me the next day and wanted another rose bush. He had killed all the flies on that rose

bush, and he wanted another one, you see. He was absolutely incorrigible. There was the fact, right before him, which was plain enough to him that there was death in his breath, to say nothing about what was in the tobacco smoke, but certainly the tobacco smoke is the thing that gave his breath this deadly character, and he was breathing out death with every breath. Now then, supposing it had been a little baby in his arms that was getting that horrible breath of his. I tell you, my friends, many a baby has been sickened, and perhaps poisoned to death by a smoking father. Many a woman has had to live an awful life because of the nauseous odor of the tobacco smoking husband's breath.

There is the tobacco plant. It has not one single good quality. It has no use in the world apparently except to kill or destroy life, and it is very useful for that. Now, we would generally expect that if this drug is so poisonous it would have a deteriorating effect upon living things of all classes, and it does. It effects plants as well as human beings. Professor Dawe made an experiment upon a sensitive plant. You know what a sensitive plant is. The Sundew is a very delicate sensitive plant, and a very interesting one, and it has a whole lot of little stems with little caps on the end of each stem, and on each head is a little drop of viscid matter, and if a fly comes in contact with one of these little stems, it sticks, then they all come down around it and capture the fly and then digest it. That viscid juice is like gastric juice, a digestive agent that will digest flies and little pieces of meat if the meat is fresh, but if you should feed a piece of prime steak to one of these insectivorous plants, it won't do it. In fact, if it is over-fed with meat, it dies. I am telling you this so you will get a picture possibly of what it really is and what it does, and this plant, the Sundew, when placed in a glass globe under the influence of tobacco smoke, a puff of tobacco smoke put into the same globe will kill the plant. The plant loses its power to catch flies, the leaves turn yellow, and it dies, so tobacco is poisonous to plants as well as human beings. Now, this shows the results of some observations made at Amherst and at Yale. Dr. Seaver who had charge of the Yale gymnasium and the training of athletes there for years, had

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charge of the students in general. It was his duty to examine every boy who came there, to take his measure, and to test his strength. He tested the strength of these boys with the Sanatarium Dynamometer, by the way, for the University of Yale is supplied with one of our Dynamometers, and it has been in use there for a number of years, and the same is true of other large Universities, as well as the United States Government. Every young man who enlists in the United States army, or in the navy has his strength tested by the Dynamometer, the same as some of you have been tested here. We make them here in our machine shop and supply the United States Government. I sent one to the Phillipine Islands the other day. I mention this to you to get you interested in the Dynamometer, for I noticed that only about half of you have had your strength tested, and everyone of you ought to have a chart. If you get one of those charts you will find out just how you stand with relation to the average man and the average woman, and how your strength is. You will find out where your weak points are, and all you need to do is to develop those weak points, and I think you all ought to have it. There is no extra charge for it. There are persons who are ready to make out this chart for you. You better get your charts made, I think, for we are going to make a charge for it by and by in order to get people interested in it. Now, Dr. Seaver made these tests of every one of the men that came there, and he makes them every year so if the boy stays four years in Yale, he has his test four times. Every year he has a test made and he is compared then with what he was when he came in first. You know the men who get into Yale and the other Universities, many of them are boys who have not yet got their growth entirely. They are still developing and have not yet reached the age when they get their maximum weight. Now, Dr. Seaver observed a great difference between smokers and non-smokers. He made a special study of that subject and these two columns you see here show the relative increase in weights of the smokers and the non-smokers. The smokers increased about 25% in weight faster than the non-smokers did. That is, the average increase in weight was 25% greater with the

non-smokers than with the smokers. Then in case of the height there was a still greater difference. The increase in height was 25% in favor of the non-smokers. In the case of the chest girth, the measurement of the chest- some people think that puffing a pipe is good ~~for~~ ^{and} respiratory exercise, it might increase a man's chest capacity, but it has the very opposite effect for the non-smokers increased their chest measurement 42% more than the smokers did- almost one-half more- and that is a very great difference. Now, you can readily see why it is that smokers are more likely to have consumption, because the chest capacity is diminished by their smoking, not in the actual capacity of the lungs ^{but} the amount of air that can be taken into the lungs ^{when} ~~was~~ inflated to their fullest extent. It was found the non-smokers had increased 75% more than the smokers- almost twice as much, you see. The smokers had increased a certain amount and the non-smokers had increased 75% more than the smokers had. Now, these are very eloquent ~~facts~~ ^{figures} and facts. They speak volumns against the use of tobacco, and show us at once that this must be an entirely unnatural and an extremely pernicious and unwholesome practice. This shows the effect upon growth and development. The British Government discovered this fact a great many years before this ~~and~~ experiment was made, and in France it was such a crime for a boy to smoke to the extent that he could not attend the Public Schools. More than twenty years ago, the British Government passed a law that no boy should be allowed to attend the Public School who smoked. In Switzerland, I remember some twenty-nine years ago on my first visit there, I found a fourteen year old boy had been arrested on the streets a few days before for smoking. Smoking by boys was prohibited more than thirty years ago in Switzerland. They recognized the evil of tobacco and its effects upon growth, and I suppose there is not anybody at the present time who has not my ideas if the question were asked him, that tobacco was a very harmful thing for boys, very bad for boys. Every old smoker objects to having his boys smoke. He says tobacco smoking is not good for boys. You must wait until you are grown up until you smoke, and I dare say the old smoker is in his heart hoping that when the boys grows up, he will forget all about it and won't

want to smoke, for he knows it is an evil thing, and he wishes he could be delivered from it. Every now and then, we see something like that in the newspapers: "Killed by smoking cigarettes. This youth used four boxes a day and consumption came." Boys get consumption. Why? Because when they smoke their vital resistance is lowered to such a degree that the consumption germs are able to sieze upon the body and destroy it. Some people have the idea that tobacco is a disinfectant. I remember sometime ago I was a member of the State Board of Health, some twenty-five years ago. One of the members of the Board came in one day smoking a cigar. He knew my opposition to ~~smoking~~ tobacco, and he apologized. He said "Doctor, I feel that I should offer an apology for smoking, but I passed a house where there was a red flag hung out as evidence that they had small-pox there, and I am fumigating." Now, the doctor, of course, was only joking but there was a public notion that people who smoke are safe from contagious diseases, are not so likely to get infected by contagious diseases if they smoke- that tobacco smoke will disinfect them. Nothing could be more ridiculous than this idea. Smoke will not kill germs. Germs are not destroyed by nicotine; it is not a poison to germs as it is a vegetable product. It is not an antiseptic and it is not a disinfectant. It only prepares the way for the activities of germs by lessening the vital resistance of the tissues. This doctor's excuse for smoking was just about as good as that of another doctor who said he had ^{sore}throat and he was smoking for his throat. Now, everybody knows that tobacco smoking makes sore throats. We have a particular disease known as smoker's throat. Every throat specialist is meeting such cases every day, and saying to his patient "you must not smoke, because smoking injures the throat by rendering the throat incapable of defending itself against the germs that are all the time being brought in contact with it." This excuse is just about as reasonable as that of a small boy who was caught smoking in an academy where smoking was forbidden. The Professor caught four boys in the room smoking. He asked them for the reason of their conduct and one of them said "Professor, I have a headache and I was smoking for my headache". Another said he was smoking for sore throat and another had an attack of pain in his stomach and he was smoking, hoping

it would relieve that, and the fourth one hardly knew what to say.. The good excuses all seemed to be used up and he scratched his head a moment, and he said "Please, Professor, I have corns." It is just as reasonable to suppose that smoking will relieve corns as to suppose it will prevent consumption or any other sort of disease. It has no value of that sort whatever. This boy turned yellow, you see. He was simply following the example of other boys who smoked. This is simply a photograph from a newspaper announcement and there is a very good reason why tobacco should produce consumption. Smoke is brought in and fills the lungs. It does not stop in the mouth but goes right on down in the lungs. You say "but I do not swallow the smoke." It does not make any difference whether you swallow the smoke or not. While you are drawing the smoke into your mouth, you are drawing air in through your nose, and the air which comes in through the nose catches some of this smoke and carries it right along down into the lungs. Here are the lungs with 2,000 sq. ft. of surface, delicate mucous membrane, and this tobacco smoke is spread out over that 2,000 sq. ft. of surface, a surface as big as this room, nearly, and the tobacco smoke is spread all over that surface and on the other side of this very thin membrane, so very thin that it puts almost no impediment in the way of the moving of gases at all. On the other side is the blood, ^{so the blood} is bathed in tobacco smoke and the nicotine is taken into the blood with very great reticence. The lung tissues are damaged by the contact of the poisons of tobacco smoke and these poisons are not simply nicotine, but prussic acid, pyrogallic acid for burning tobacco fibre, and one-half dozen other different poisons, some of them even more deadly than nicotine. Somebody says "I smoke mild cigars, or Havana cigars, ~~and XXXXXXXX XXXXX~~ I pay 50¢ a piece for my cigars, or I smoke Turkish cigarettes, I do not smoke any American cigarettes." Now, the only difference in the high priced cigar is that the high priced cigar has more prussic acid in it than the low priced cigar has. They are all alike so far as the poison is concerned, but the so-called mild cigars have prussic acid instead of nicotine. That is the difference. The most of you know, I suppose, what prussic acid is, but the average smoker, I imagine, does not know that the cigar has prussic acid in it, and the milder the cigars, the

more prussic acid they have. The Evening Journal of New York published this sometime ago: "Cigarettes affect the victim. Smoked 100 cigarettes a day. Frequently left the class room to smoke. Became addicted to drink. Brain and body seriously affected. Left his post of duty in a spree. Shoots himself in a cab." He was a teacher in one of the Public Schools of New York. Cigarettes made him insane, and that is the way he ended up. The stomach does not escape. You see the stomach here shows a state of acute inflammation. That represents a condition of acute congestion. The appearance of a boy's stomach when he takes his first smoke. You say "Oh, tobacco never affected me that way." It is all the more unfortunate. If you have a hereditary liking for tobacco, then you have also in your body already the hereditary consequence of tobacco using, and consequently you cannot smoke as much as your father smoked, but you are certain to be a victim of chronic tobacco poisoning. Sometime ago, I had a visit from a man that illustrated that very well. I will tell you about it in a moment. The reason why tobacco does the body so much damage is because the liver is not able to destroy all the poisons that are taken in. When one takes his first smoke, the stomach rejects it. The stomach throws the poisons out, and rejects it, and causes the boy to be sick so he can vomit it out, but after awhile, the stomach gets used to it so that this danger signal is silent, then the nicotine goes right on into the blood, goes to the liver and begins its mischievous work upon the liver. The liver is able to destroy a large amount of nicotine, and so long as the liver is able to do this the smoker escapes. He does not suffer any very serious injury, he thinks, or any very unpleasant symptoms, and it is because his liver is still able to destroy this nicotine. I suppose the average man or woman imagines he or she has a great surplus of vitality and vigor, more than he can make any use of, and he is likely to die before he gets it all used up. My friends, that is the greatest possible mistake you can make. Vitality, vigor and stamina of constitution are an inheritance like an inherited fortune. In this inheritance of vitality, so long as you retain it, so long as you have this stock of stamina and vitality, nothing is going to destroy it. Nothing can destroy it but an accident of some

kind. It might be appropriate to tell you just now of a story which happened in Kansas City some years ago. Sam Jones had given a lecture on tobacco, and at the end of his lecture an old man got up and said "I am 84 years old; I have smoked ever since I was ten years old, and I am pretty tough and hardy yet. How do you account for that, Mr. Jones?" Mr. Jones said "that means only that you are so tough that if you had not smoked they would have had to kill you with an ax." Now, there is something more than heredity in that. There is a sound philosophy in it. It is a physiologic fact that every man is born with vitality enough to carry him through a long, long life, if it were not for the traumatisms, for the damages he inflicts upon himself. So long as the man has enough vitality to keep his body going, he is going to live. We are not going to die off if we have still got power to live unless by accident. As I was saying, it is exactly as it is with a big fortune in a bank. Your checks are not going to be refused; the banks are not going to refuse to cash your checks and send them back to you so long as you have got money on deposit there, so long as you have a big bank account. Now, that is the way it is with the body. Vitality and vigor are our bank accounts of strength, health and energy, and so long as we have a stock of it we can draw upon it. We can make the daily drafts necessary to keep the vital machine going. Now tobacco is one of the things that consumes this capital of strength at a tremendously rapid rate. Nobody ever has any more than he needs. If we seem to have a surplus today, it is simply a margin of safety that we still possess. That surplus is a margin to draw upon in an emergency. When ~~you~~^{we} get typhoid fever, if ~~you~~^{we} do not have a margin of safety to draw upon we die inside of twenty-four hours, but this margin of safety carries us through. The fever used up some of it so is not a good thing to have typhoid fever, and once you have typhoid fever you are not going to live so long as you would have lived if you had not had typhoid fever, because some of that poison is poured into your body, and that consumes a lot of your liver energy. The liver has to deal with those poisons and they leave an injury on your liver that the liver never can recover from; it never can undo the damage that has been done to it,

and what is true of the liver is true of all other poison destroying and eliminating organs of the body. When we expose them to an excess of poisonous material of any sort, there is damage done to them that cripples them and leaves scars upon them, so they are damaged and the result is they wear out sooner than they ought to, and the day comes sooner than it ought to come when they are no longer able to do their duty. When the time comes that the liver can no longer destroy poisons that are brought out in the blood, the next day we die, because ~~when~~ one can live only about twenty-four hours after his liver ceases to work. He can live a couple of days after the kidneys cease to work but only about twenty-four hours after the liver ceases to work, so the liver is the thing to take care of. It is good to husband its energy. You save money, you hoard money for old age, but I want to tell you, my friends, there is nothing you can hoard up for old age that will be worth one-half as much to you as liver energy and strength and vitality. That is the thing to hoard up while you are young. You can get along pretty well somehow if you don't have much money, but you cannot get along without your liver. The man who smokes is consuming his liver. Every puff of ~~smoke~~ tobacco, every whiff from a pipe or cigar is simply burning out his liver, and the day will come when his liver will be used up and will be no longer able to destroy the poisons which it is its function to destroy. These poisons are destroyed by means of little cells in the liver along the blood vessels. Nicotine has the effect to set up a degeneration of the cells of the liver and it destroys them, changes them to fat, and they lose their power to destroy poisons, and they then undergo this degeneration. Alcohol does the same thing. I might incidentally mention right here that cayenne pepper, mustard, capsicum, horseradish and all those horrid things that burn and smart and sting and blister, the whole category of poisons, including tea and coffee and cocoa, as well as alcohol, all of these poisons, have the same effect upon the liver. They wear it out. Here is a drinker's liver all covered over with these nobs, you see, the so-called hob-nailed liver of the drunkard, and one can get hob-nailed liver with red pepper six times as easy as with alcohol. Pepper has six times the power to make gin liver ~~that~~ gin has.

That was proven by Prof. Voix of Paris. Nicotine does the same thing. One of the worst livers I ever saw in my life was the liver of a man who smoked, but had never taken a drink in his life. An experiment was made by a physiologist sometime ago to show the effect of nicotine upon the liver. An operation was performed so that the blood instead of passing through the liver passed directly into the systematic vessels and the liver was put out in that way for work so that it could not purify the blood as it normally does, and it was found then that it only took one-half as big a dose of nicotine to kill the animal. If the nicotine was put in direct so that it could ^{go} through the liver it took one-half of it, and this was a pretty good proof of the power of the liver to destroy nicotine. Another thing was done. Some live liver taken from an animal just killed was ^{smashed} ~~chopped~~ up into fine bits, mixed with nicotine and it was found it destroyed one-half of the nicotine. The liver has this marvelous power of destroying nicotine, but while it is destroying nicotine it is using up itself, consuming its energies, and what is true of nicotine is true of all other poisons, but if the liver is occupied, and its whole energy is expended in destroying nicotine, don't you see there is less power to deal with other poisons? So it is no wonder that we see such a thing as this in the newspapers every now and then: "Girl crazed by cigarette smoking. Mamie King was removed from her home in a violent condition. Her reason was dethroned. The young woman kept house for her father and has been the victim of cigarette smoking for years." This poor girl was carried to a lunatic asylum. In these asylums there are to be found any number of persons that are sent there by nicotine. Prof. Hurd, superintendant of the Eastern Michigan Insane Asylum, many years ago made a study of the subject, and he found that a large proportion of all their insane people there were the children of smoking parents. When the father and mother both smoked, the result was a very grave form of insanity in the children. ~~That~~ Now this shows ~~in~~ the brain, you see, the convolutions marked out here. This whole surface is divided up into little territories and every little part has charge of some part of the body. Up here, for instance, is a part of the brain that takes care of the legs and here is a part

that has charge of the shoulders; this part of the brain takes care of the elbows, and this one, of the arm. Here is a part that has charge of the neck, and the eyelids and the nose and the lips, the jaw, the tongue, throat and larynx. Down here is a little part where words are stored up. If a tumor comes there and destroys that part of the brain you cannot use words any more. The power of speech is lost. Here is a space where sounds are stored up. This is where the memory of things you see is stored. The front part of the brain is where conscience resides, and there are inside of the brain minute little fingers that run back. You see some of them here. Here is the surface of the brain up here and here are little fingers that run down for some little distance, then they run crosswise, so the different parts of the brain are connected with a central station just as the telephone wires of a town. The wires are all brought together in a great trunk, then conducted to some distance, don't you see, where these fibres come down over trunks to the center of the brain and then pass off to be distributed in different parts connecting the different cells of the brain, and the front part of the brain is in that way connected with other parts of the brain which form the great storehouse in which images of various sorts are deposited. Now, the effect of alcohol and tobacco is to destroy these little branches by means of which contact is made. Here you can see a great number of branches from a single healthy nerve cell, and these little buds here are the things by means of which contacts are made. You see what alcohol does, and other poisons. Nicotine will do the same thing. It causes the shrivelling up of those little buds, and that is the way that intelligence is impaired and the way memory is destroyed. Here is another picture of these same cells, and that is the reason why smoking destroys the nervous system and produces insanity, loss of memory, impairs scholarship, etc. There have been many tests made in colleges with reference to the comparative scholarship of non-smokers and smokers, and the non-smokers are always found to be ahead. These cells here, you see, have been destroyed. The delicate little contact buds are gone. Here are some samples of work-

manship by the tell-tale tremor, resulting from the use of nicotine. This was published by the Anti-Cigarette League. The first one was made in 1905 and the second one was made by the same boy a year later after he had stopped smoking. You see there was a strong tremor when he smoked cigarettes, and his mind, when he had stopped was very irregular. "Forty cigarettes a day destroyed youth's mind. Sent to the hospital because he wanted to wander naked in the street." Our asylums are being filled up with young men suffering from dementia praecox, a peculiar form of dementia that has its origin in cigarette smoking in a great number of cases. Not only the general nervous system, the brain and spinal cord, but the sympathetic nervous system, particularly, is involved. These nerves that supply the stomach, liver and intestines, and have charge of the work of digestion and of circulation of the blood, and all the wonderful functions connected with nutrition- these nerves are especially affected by nicotine. That is the reason why the smoker is generally pale. A man who has been smoking some little time gets pale because his arteries are contracted through the influence of nicotine, this poison which has a stimulating affect upon the sympathetic nerves. That is the cause of it. There are many illustrations of this. There is many a smoker who is conscious of the fact that his sympathetic system is affected by smoking. That is the reason why smoking comforts him, because it quiets his nerves. If he is depressed; if he is excitable, he is quiet for the time being under the influence of nicotine. "Blind and now insane from cigarettes. Frank Ritchie, a merchant of Glen Cove, smoked sometimes 150 cigars a day." Nicotine paralyzes the nerves of sight, and produces what is called tobacco amaurosis. "Warned that total darkness would follow, he could not abandon the habit." So he had to go right on and become blind. There is many such a case. Here is a tobacco devil, handing this boy a ticket to the asylum.

The kidneys are also powerfully affected by nicotine because it is the duty of the kidney to eliminate poison. The nicotine is carried off through the kidneys and these delicate little cells of the kidneys must perform the work of separating poisons from the blood, so they are damaged by the enormous amount of overwork to

which they are subjected. This shows you something of the machinery of the kidneys. Here comes the blood down into a little bit of a capsule, into the minute vessels here not more than 1/1000 of an inch in diameter, and here it is surrounded by a little cap and the poisons pass out in solution into this little tube which carries them down to the center and then they are carried off to the bladder and out of the body. Nicotine has the effect to cause degeneration of these vessels and thickening of the walls so they ^{cannot} possibly allow the poisons to escape, and when a person gets in that condition he has got chronic Bright's Disease, which is extremely common with smokers. The poison which is produced by tobacco also causes congestion of the kidneys and when the kidneys are congested, then a little albumen appears and casts appear in the urine, and that is one of the first symptoms of Bright's Disease, and a condition which is common at present with smokers. 10% of the smokers, according to examinations made in Edinburgh some years ago, showed albumin^{as} present, and that is one of the evidences of the beginning of Bright's Disease. Destruction of the poison destroying glands, and degeneration of the thyroid gland, is one of the consequences of the continued use of tobacco.

Nicotine is a heart poison. That is the reason why men who run and men who wrestle and men who row, in rowing matches, especially sprinters, never smoke at least, when they are in training. They know they cannot smoke because it takes away their breath at once. You never saw a man yet, I am sure, running for a train, smoking as he ran. A man cannot smoke when he runs. The effect of smoking is to weaken the heart and put a man out of breath, and there is a good reason why it should. The heart is a muscle. Nicotine is a muscle poison. It comes down here through the little arteries into the heart and it saturates the heart muscle, and in that way weakens and partially paralyzes it. Smoker's heart is one of the most common of all causes of the rejection of young men who apply for enlistment into the army. An examination of the pulse with the sphygmograph shows that very clearly. Here is a tracing of the normal heart. It is perfectly regular, you see. The intervals are

all regular. Here is the pulse of a smoker. You see it is entirely irregular. The natural rhythm is destroyed. It is a miserable, fluttering heart. I have records of hundreds of these tracings that I have made with the sphygmograph and some even worse than those you see here. These slides were made from tracings which I made in my office from men who had gotten their heart affected, partially paralyzed, by smoking. But it is not only the heart that is affected, but also the blood. The blood is sometimes ^{called} a fluid tissue. It is that tissue of the body which defends it against the attacks of its most virulent and dangerous enemies—germs. These germs are always getting into the body; they are always getting into the blood cells, which you see pictured here, different varieties of them are fighting off these germs and destroying them continually. Now, it has been shown by Prof. Wright of London, one of the greatest authorities in the world upon the blood— it has been shown that nicotine diminishes the power of the blood to fight germs. For instance, in the case of consumption, the tubercular germs are introduced into ~~the~~ a drop of blood and through the microscope you can see right away the white blood cells attack the germs and eat them up, and the number of germs which these cells can capture and destroy in a given time, say in fifteen minutes, is a measure of their capacity, so we have now a means of determining what is called the opsonic index, the power of the blood cells to destroy germs of different kinds. The tuberculo-opsonic index is the indication of the power of the blood to fight tubercular germs, and this test is a very simple one. We make it in our laboratory frequently. In a healthy person the opsonic index is 100. A person who is only half as strong as he ought to be in this particular has only half the power to defend himself against tubercular germs, and his opsonic index is 50; if he has three-fourths of the power he ought to have his opsonic index is 75. Prof. Wright found in the case of a young man who had tuberculosis his opsonic index was zero, and that is why the germs were swarming in upon his body and consuming him very rapidly, and the poor boy was dead in three weeks. Now think, then, what a man who has trouble with his lungs is doing when he smokes. Just think

of it— a man with consumption and smoking. Just think of the absurdity of the thing, yet we find that constantly. Go around the country and you find these institutions, sanatoriums, so called, for treating consumptives, and in more than half of them you will find the patients are allowed to smoke. There is no possibility of a man recovering while he smokes, or if he did recover, he would certainly die of Bright's Disease pretty soon. Here are some cells that have become diseased from the infections of poisons in the blood. Nicotine produces a diseased condition of these body defenders, the white blood cells. Here is another illustration of some diseased white blood cells, and when these cells become diseased then they attack the body in various ways, set up degenerations of various sorts, and here is an illustration of degeneration of nerve cells of the brain, and nerves which are being destroyed by these cells which have left their proper work of destroying the rubbish and debris of the body, and are now attacking the body itself, and that is the way that Bright's Disease is produced. That is the way that degeneration of the kidneys takes place as the result of the use of nicotine; nicotine causes a diseased condition of these cells, so that they leave their proper work ^{of} ~~is~~ destroying debris and attack the body itself and destroy it. This is one of the interesting discoveries made by Metchnikoff, and they attack the walls of the arteries so the arteries become diminished in size and the blood pressure rises. Nicotine always causes a man to look pale because his arteries are contracted. Now, when the arteries ~~are~~ are contracted in this way, it takes more force to send the blood through those contracted arteries so the heart is compelled to do more work, and consequently the blood pressure rises. One cigar, as shown by Prof. Janeway, of New York, a prominent physiologist, a man of world-wide reputation, will raise the blood pressure twenty points in thirty minutes. Now, suppose a man's blood pressure was already two hundred, and he smoked a cigar, there it goes twenty points more, and that may be just enough to reach the bursting point, don't you see, and produce apoplexy. That is the next thing common. Nothing could be more dastardly than for a man with a high blood pressure to smoke or to use tobacco in any form.

This shows how the walls of the vessels become thickened. You know how it is with a hot water pipe. The sediment sometimes accumulates on the inside of the pipe and stops it up. That is what happens to the blood vessels. They are thickened and on the inside ~~as that~~ ^{and} they become thickened more and more by ^{contact with} nicotine and other poisons in the blood.. Room for the passages in the blood becomes diminished; the lumen of the artery is diminished until it takes a tremendous pressure to drive the blood through. Nobody ever has more blood pressure than he needs. Please remember that. Your blood pressure is never no higher than it is necessary to be. The body is not a fool. It does not do unnecessary things. The body is always working wisely, doing the best things it can under the circumstances and when the blood pressure is high, it is because it is absolutely necessary it should be high in order to get the necessary blood to your brain, to your liver and to your kidneys; it has to have more pressure to keep the blood circulated when you have high blood pressure, and you do not want to be too anxious about getting it down, so anxious that you are willing to take poison to get it down, because simply bringing the blood pressure down will not do you any good, and it may do you harm. What we should be anxious about is to remove the cause of the high blood pressure, to stop doing things that make the blood pressure high, because nature will bring it down when there is no longer any necessity for the pressure to be so high. Look at these ruined arteries. Here is one in which the cells have become fatty and considerably stretched until an aneurism has formed and that is the way aneurism forms, by a weakening of the walls of the blood vessels. Tobacco is one of the causes of this condition.

I find it is getting late so I think I will finish this subject another time, and let you off tonight for there are several more important things to say, and so important that I do not want you to be tired out. I want everybody to leave this place, to go away from Battle Creek, a strenuous missionary for reform in this thing, for suppression of the tobacco habit, just as far as it possibly can be done, and especially I want to encourage the protection of the rights of non-smokers,

that the men who will smoke shall retire to a secluded place and smoke by them-
selves and not smoke in every public place ^{where} ~~with~~ non-smokers, are compelled to
breathe the second-hand tobacco smoke.

Thank you very much.

QUESTION BOX LECTURE

At the Sanitarium Parlor, Battle Creek, Mich., Monday March 18, 1912, at 8 P. M.

-by-

J. H. KELLOGG, M. D.

Question. What is the cause of gray hair?

Answer. That is a subject that I judge from looking about is of interest to at least three quarters of my audience. The majority of people here, I think, have gray hair or none at all, or at least very little. The cause of gray hair is a very interesting physiologic question. A question that was really very little understood until a few years ago when Metchnikoff, the great French bacteriologist, worked out the problem. Prof. Metchnikoff made a careful study of certain cells of the blood called the white blood cells. These are large cells which have the power to change their form. If you look at one of these cells you will notice at one moment it will be nearly spherical and the next moment it will be elongated in one direction or another. Sometimes they draw themselves out into long masses so they look almost like snakes. They are very, very versatile in their movements. Now these little white cells are very small so small that it would take about 2500 of them ranged side by side to make a row an inch long. These curious little creatures are really independent living animals. They live in the blood; they thrive in the blood just as fishes swim and thrive in the water of a river or lake. They live in the blood, they work for us, they are slaves. They work for the body just exactly as slaves work for a master, and they are of very great service to the body. They eat up and destroy the germs that get into the blood. There are germs always getting into the blood, multitudes of germs, myriads of germs, are

continually swarming into the blood and these little bacteria or creatures swimming in the blood are eaten up and captured by the white cells just as the oysters eat up the germs in the sea. That is their function in the body and a most remarkably and interesting function it is. They do another kind of work too, they are scavengers. If you have had a boil somewhere, have got a hard lump under the skin, you watch it and it will gradually disappear and by and by it will be gone. What has happened to it? These little creatures have gnawed it away. They have actually gnawed it away and carried it off. That is the way we get rid of lumps and pimples. If you have got a little pimple on your face, perhaps, that is all red and swollen, but by and by your face is smooth again, that is due to the efforts of these curious little creatures that have come in there all around that little pimple and have carried away every particle, picked up and carried off the material out of which that lump is composed. So they render very great service to the body. But under certain circumstances they seem to lose their natural useful function and assume functions which do not properly and naturally belong to them. When the body gets into certain conditions of disease these curious little creatures take advantage of the situation and prey upon the body itself. They are scavengers. Now we might illustrate the same thing. Here are men that come around the city gathering up all the dead cats and horses and cows and carrying them off to the bone yard, and they come around to the back door and empty the garbage box so they keep the cities clean, and they empty the gutters and sewers. But suppose these men, instead of stopping at the garbage can should break into the kitchen, get into the larder and carry off the bread. Well they might carry off that old cod fish or hen that was hanging up in the cellar somewhere—that would be good scavenger business—but suppose they carried off your coal or other useful things about the house, broke into the house and robbed you, suppose they should do that. That is exactly what these phagocytes sometimes do. They are not satisfied under certain conditions, apparently, with doing the proper work of the body as scavengers and

protecting the body, destroying the germs, but they seize upon the body itself in certain conditions—these are conditions of abnormality, conditions of disease. For instance here is a man who smokes, his body is polluted by tobacco smoke, the tobacco smoke lessens the vitality of his cells and his whole body gets into the condition of a garbage can, you see, into an unhealthy, unnatural state. It has a bad smell about it, it has a taint about it, the whole body is in a polluted condition, so these scavengers seize upon that man's tissues and they attack the body itself because the body has been reduced to a low state. Now tobacco is not the only thing, it might be tea or coffee instead of tobacco; instead of cigarettes and cigars, it might be the teapot and teacup and the coffee cup, that is what it might be. These concoctions contain poisons of a most deadly and destructive character. In every cup of tea there are four grains of caffeine, and do you know what ~~caffeine~~ caffeine is? Caffeine is the equivalent of uric acid. To the chemist they are the same thing, caffeine and uric acid is the same thing. In the body caffeine becomes uric acid, and it is the same thing. In every cup of tea there are four grains of caffeine. Dr. Wiley of the Agricultural Department, the great government chemist, analyzed cups of coffee as they are served in hotels, and he found the average cup of coffee has four grains of caffeine in it. Now then if that cup was filled with urine instead of coffee, there would not be so much uric acid in it as there is when there is coffee in it. There would be only from a grain to a grain and a half of uric acid in a cupful of urine, whereas, there are four grains of uric acid in a cupful of coffee. There is more uric acid in coffee than there is in urine. That is a good thing to remember. Next time you are tempted to drink coffee or tea, just remember that, that it would be less unhealthy, so far as uric acid is concerned, to take that quantity of renal secretion. Well I would like to have you just plant that down in your memory so you won't forget it because it is a good thing to remember that when you are taking tea or coffee, you are taking poison into your body and you are polluting your body. Now suppose one takes beefsteak (applause)— I am

glad to see that you welcome this subject so enthusiastically. We are really getting enthusiastic over this question of beefsteak aren't we? When we take beefsteak we can digest and utilize a part of that beefsteak. Beefsteak is food, there is no question about that. It is food because the corn was eaten once and used and digested. It has been food originally and so it is food still just as when you go into a secondhand store and see some ragged, dirty garments hanging around there--there are coats pantaloons, shawls, dresses--they have been made for that purpose, they have been used that is all. That is the way it is with beefsteak it is secondhand food which has been used before. Now when you eat beefsteak you are able to digest and assimilate and utilize a part of it. How much do you think? Now Dr. Haig of England, who advocates a high protein diet, says that a person ought to eat every day about three ounces of protein, which would be equivalent to twelve ounces or three fourths of a pound of beefsteak. So if one in the course of the day didn't eat any other food at all if he eats in the course of a day just two pounds of beefsteak, that would be thirty-two ounces of beefsteak, he will utilize twelve ounces of that beefsteak and twenty ounces he could not utilize. Now what becomes of that twenty ounces he did not utilize? Now suppose instead^{of} that that a man was eating bread and meat and beans and peas and potatoes and other foods such as people usually take, a mixed diet, he would get all the protein he needs in the other things he eats. For instance if beans and breads make up half his diet, for example, half his daily ration, and the other half were made up of beefsteak, he would get in the bread and beans all the protein his body needed. All that he actually required he would get in that half, and what he got in the beefsteak would be surplus, so if he ate half a pound of beefsteak it would be so much surplus protein that he did not need. What becomes of that surplus protein, whether it is four ounces, or eight ounces or twelve ounces, a pound or a pound and a half? I met a man some years ago who bragged that he had eaten nine pounds of beef at a single sitting. It was at a beefsteak contest and they had to eat with their hands tied behind them, just simply had to

gnaw it as a dog does. That is the proper way to ~~eat~~ do for really one gets down on all fours with the dogs gnawing bones when he eats meat. It is proper to eat it in the natural way. Well he ate nine pounds of beefsteak at a sitting and he said his shoulder got so stiff before he got home he could hardly move it. He knew it was the beefsteak that did it. He had tried it before and it had just that same effect, ~~amazing~~ but he said I did not eat so much beefsteak as some others did because one of the ex-mayors of New York said he had eaten eleven pounds of beefsteak at a sitting, and an Eskimo claimed to have eaten forty pounds in the course of a day. Now what becomes of all that extra protein when a person eats it. The same thing happens to it that happens to a dead rat in the closet, the very same thing happens, or an old cow that lay down and died in the fence corner, the very same thing happens, and the mere fact that you have swallowed it does not make a particle of difference about it. It undergoes all the same changes of putrefaction, of decay and decomposition, the development of germs, horrible stenches happen just ~~the~~ the same after you have swallowed it as would have happened if you did not swallow it, except that portion that we have digested, absorbed and utilized. All the surplus simply rots. That is all there is about it, it rots, and that is the great difficulty with beefsteak, with meat eating. The great difficulty with it is that so large quantities of it remain behind in the colon, putrefying, decaying and spoiling the appetite. Now when a person has been living in that kind of a way for some weeks, months, or years more properly some years, and his body has been polluted all this time with these foul stenches and these foul poisons that are being produced in the colon continually and his skin begins to be dingy and pigmented and to have big brown spots on it-- I met a lady today who showed me her hands with a great deal of pride and pleasure. Just look at my hands they are not parchment like the way they used to be. I was here last August and you told me I ought to stay until March, but I only staid until October then I went back to Boston to my home, but I stuck right to it. I have been living right up to the letter and just look at my hands.

Those brown spots have been fading out, they are not half as big as they were; and my skin is soft now, there is some flesh to my skin now, it is not like parchment ~~like~~ as it was last summer. She has come back to get rejuvenated now, I suppose; to get twenty-five years younger. I asked her what she was going to do after she left here. She said she was going to stay right here. I told her I meant what was she going to do when she left the Sanitarium. She said she was not going to leave, but she was going to stay right here. Now if you found a gold mine and could fill your pockets with gold every day, you would stay right there and work it, but that is not what the people do who come here. The men get up and flit away after twenty-seven days, just think of it, and the women stay thirty-five days, ten days longer than the men. Perhaps it is because they are sicker, or perhaps they want to be well for their husbands' sakes so they give themselves a better chance. Men have urgent business, of course, and they must get back to their business. The average business man is dedicated to his business, soul and body, and he will sacrifice his life any time for his business. It is the strangest thing the fascination that business gets for men and how we become slaves to our routine duties and business. Why if you can make a man only understand it that the man himself at the head of his business is the most important asset in the business, and the keeping of that machine of his, of that corpora-mobile, as Mr. Fletcher calls it, in the finest possible shape for work, is the most important thing he can do for his business. It is a very difficult thing to make people understand and really believe that, but I am doing the best I can with the people I come in contact with. But now suppose by cigars and alcohol, tea, coffee and beefsteak, by neglect to take care of the bowels, the body has become polluted, suppose the body has reached a deteriorated state, than these phagocytes just seize upon the body itself, they turn upon the body and destroy the body. Now each hair is a hollow tube. This represents, if you please, a hair. There is a little hollow tube in the center of it, and in this part of the hair there are pigment cells, little

specks of brown pigment in some cases and other colored pigment in other cases. There are different pigments that give the colors to different kinds of hair. Now these phagocytes I was showing to you on the black-board a moment ago, climb up this little tube, they creep up this hollow tube and steal this pigment away, swallow it and carry it off, and that is what makes the hair gray. The hair has simply been robbed, it is like a house in which the furniture has all been stolen out. They climb up in the ~~skin~~ hair and tear away these little specks, and Metchnikoff has actually seen them doing it. I have shown slides here repeatedly that show this going on. That is what makes the hair gray. It is the deterioration of it. Now sometimes it is only temporary deterioration. It may be a fever. A person has a fever, and after the fever is over his hair is gray. A person goes through a period of terrible anxiety. We have heard about people having their hair turn gray in a night. That never happened, but the hair has turned gray in a week, ~~in~~ In three or four days the hair has become perceptibly grayer, but it never happened in one night. But passing through some period of great anxiety, or great strain the body has been so reduced by that strain, burden, anxiety and worry, has been so depreciated that these phagocytes have turned upon the body. So anything that reduces the vital resistance of the body, exposes us to the attack of these servants of ours that are working in the body for the maintenance of our lives, yet are the most dangerous of enemies because they are liable to turn upon us if we lose the power to resist them. Now just the same thing happened in the old South when the slaves sometimes in certain sections of the country made an insurrection against their masters. So long as they were kept in subjection, they were working for their masters, but when they turned rebels, they attacked their masters. It is the same with the body. These phagocytes are slaves, they are working for us, that is, their duty and it is proper for them to stick to their business and do their duty, but when we cease to have the power to maintain the mastery over them, when the body loses its power to maintain its own resistance, when the

body cells lose their power to resist the attack of these phagocytes, then they fly upon the body and may actually destroy it. That is the way we get arteriosclerosis; that is what makes the arteries get hard; that is what makes the kidneys become infected with Bright's disease; that is what makes the liver become cirrhotic and harden up--these degenerative processes that result in dropsy and in early decay of the body, in premature senility, old age and finally death, and this results from the action of these phagocytes. That is the way the skin becomes parchment like, so that instead of having a nice pinch of skin when we take hold of your flesh, there is nothing but a little paper on it, a piece of oiled paper on it. That is the way these phagocytes have stolen from the skin this underlying cushion that lies beneath that leathery covering of skin. The little cushion underneath the skin has been stolen away and there is nothing but the thin horny part of the skin left, and that is why it has this parchment like appearance. So you see it is best for us to keep these phagocytes at their proper work and not allow them to turn upon us and destroy us as they are likely to do. How are you going to do it? Be careful how we treat them; be careful to keep the body and the tissues clean because it is when the blood and the tissues get unclean that they mistake the body for garbage that needs to be removed, don't you see. These blood cells make a mistake. They think these polluted tissue cells are dead cells, so by mistake they seize upon the body itself when it is deteriorated and think it is debris that needs to be removed.

Question. What may be done for a girl of sixteen who suffers with nervous headaches, can she be cured?

Answer. Certainly she can be cured. Nervous headache is nothing but toxic headache. That term is an utter misnomer. You couldn't have any other kind of headache than nervous headache, that is the only sort of headache there is because it is only nerves that can ache. You see bones cannot ache, finger nails cannot ache, hair cannot ache--nothing can ache, but nerves.

Nerves are the sensitive structures of the body. No other structures of the body have any sensibility except nerves. Consequently a headache is always a nervous headache. There is not any other kind of ache but a nervous ache. Can such a case be cured? Certainly every headache can be cured. These so-called nervous headaches are all toxic headaches due to the fact that the poor girl has not had proper outdoor exercise and has had wrong diet. The bowels have not been properly trained. There is an accumulation of poisons in the body, and this nerve storm that you call headache is simply a protest of the body against its treatment. It is the body rising up in arms and complaining because it has been abused. We hear a great deal about nervous diseases, nervous headache, neurasthenia, nervous prostration—the most ridiculous term ~~that~~ that ever was formulated—these are all of them misnomers. They do not represent anything at all that is real, except a group of symptoms. They represent no morbid conditions whatever because there is one morbid condition that is back of it all, and that is simply poisoning of the body. Nervous headache is poisoning, nervous prostration means simply the body has been poisoned until it is prostrated, that is what it means. A bilious attack is nothing but acute poisoning. You might have been poisoned with carbolic acid or by swallowing atropin, or a big dose of opium, or something else. You are simply swallowing backwards, if you please, the horrible poisons that are generated in the colon, and that is what makes these nervous headaches, neurasthenia, nervous prostration, etc.

Question. Should one eat salad and drink milk at the same meal.

Answer. It depends on how stout a stomach you have. Milk is not the most easily digestible of all food-stuffs, though it agrees fairly well with vegetables, and the reason is because the vegetables remain in the stomach for a long time because of the large amount of cellulose which they contain, and the milk clings to them. Now the vegetables do not ferment very easily, but milk does ferment very quickly and putrefies very quickly, so when the vegetables

remain in the stomach and some of the milk clings to these undigested vegetables, the milk will ferment, decay and putrefy and cause a bilious attack when milk and vegetables are combined together. But now if the vegetables are ground up to a pulp and taken in the form of a puree or chewed until they are in the form of a puree before you swallow the vegetables, then the milk does not make any disagreement with them because there is no innate disagreement between vegetables and milk, it is only in the form of the thing eaten.

Question. At what age should a child be given lettuce?

Answer. When it has teeth and can eat the lettuce.

Question. Is meat injurious when slaughtered according to the Mosaic law and prepared as follows:- one-half hour soaking in water and one-half in salt before being cooked?

Answer. That is not according to the Mosaic law. According to the Mosaic law it was to be put in salt water and soaked over night and must be washed until all the blood is washed out of it. The animal must be examined before it is killed and after it is killed every organ of it must be examined thoroughly to see if any part is diseased and when there is a tuberculous lung, does it say, for example, according to the Mosaic law, that the lung should be taken out and the rest eaten? Not at all, the entire animal was to be rejected. But the law of the United States is that the tuberculous lung, or the pair of tuberculous lungs, or the tuberculous kidney, or a rotten intestine or liver with a big abscess in it, that the part that has the abscess or the infection should be removed and the rest shall be pronounced as good as any. That is the sort of beefsteak you are likely to get any time. The last beefsteak I ever ate in my life was when I was a boy fourteen years old, and I shall never forget it. A portion of tenderloin had been brought home from the butchers and the cook cut off a slice and it had been cooked and eaten for breakfast and the next morning another slice was cut off to be prepared for breakfast, and when that second slice was cut off the knife cut right into the middle of a

big abscess. I have never forgotten to this day that the last piece of beefsteak I ate was a piece of beefsteak that lay right next door to a big abscess, and it didn't improve my appetite at all. But you have done the same thing many a time. ~~Some~~ Some time ago a Professor in a Medical College wanted to show some tapeworms to his students. So he telephoned down to the butcher that he wanted to get ~~some~~ hold of ^{some} ~~me~~ measly pork that had some little spots in it where the young tape worms were, each tape worm in a little bit of a shell, don't you know. When he got hold of some measly pork he wanted him to be sure and send it up to him. So after a couple of weeks he hadn't heard from him and he telephoned down to him, "why didn't you send me up that measly pork?" "Why", the butcher said, "I did send it up last week." "Oh, for heaven sake", he said, "Then we ate it." Now that sort of thing is going on all the time, probably every one here has eaten beef with measles because you are ten times as likely to get it from beef as you are from pork. I shall never forget a case in which I came very near getting into trouble. I did get into some trouble, but I got out of it. I used to recommend meat. Why, I have prescribed whole carloads of meat for people. We used to use several oxen a week here in this institution ~~regularly~~ ^{regularly} when we didn't have nearly as large a family as we have now. Up to ten years ago now meat was regularly served on the table here. I have had charge of this institution for thirty-six years this year, and during that thirty-six years meat was served here all the time until ten years ago when we got so thoroughly convinced the thing was damaging and harmful that we threw the whole thing away and the whole faculty voted unanimously to exclude it from the premises because we became so thoroughly convinced it was a harmful thing and was doing our patients harm. And one of the things that convinced us was this. I had a patient for whom I had recommended scrapped beef and Salisbury steaks—that was about twenty years ago, pretty nearly. I have not prescribed meat for anybody for as much as twenty years, but some of my colleagues continued to do it, and we let them have meat if they wanted it, but we were constantly telling them

it was not good for them. I prescribed meat for hyperacidity in those days. We did not know any better. Patients always got worse and worse. They were relieved by the beefsteak when they ate it, but they had to have more beefsteak the next time and less bread, so they kept getting worse and it never cured anybody, but it made the patient feel very comfortable for the time being. This lady had her Salisbury steaks. She was here six or eight weeks and went home. About six months afterwards I got a letter from her. She said, "I have a bill against you for \$6.54." I wondered why. I hadn't had any dealings with her that I knew of. She went on, "I was up there at the Sanitarium and you gave me beefsteak and with it you gave me tape worm, because you gave me Salisbury steaks and I am sure I got a tape worm there, for I got home and my doctor found out after three months that I had tape worm and I had to pay him \$5.00 for coming to see me and \$1.54 for medicine to get rid of my tape worm, and I think you ought to pay the bill." I pondered over that for two or three days as to what I should say about it because she seemed to have proved the case on me pretty well. I wrote back and said, "You have your doctor examine that tape worm, look at his teeth and certify to his age, then if he can prove that the tape worm was born here, I will pay the bill." I never heard another word from it, but I said, I won't take such changes again, having to pay for a tape worm, that is too much. Well every sixth man in the country has got trichina in his tissues. When I was a medical student in New York a professor of demonstrative anatomy there, Dr. E. G. Janeway, who died not very long ago—I was a private student with him—Dr. Janeway told me that ~~17~~ 6 per cent or one-seventeenth of all bodies that were brought into the anatomical laboratory there had trichina in the muscles. Now down in Chicago they have examined the pigs there for some years and the Government certifies that 2% of all pigs have trichina. It was 6% of people, or one in seventeen. 6% of all men had trichina at Bellevue, and 2% of pigs have Trichina at Chicago, and that represents the country at large. Now how does it happen that three times as many men have trichina as pigs. Only 2% of pigs have trichina and

and six percent of men, women, boys and girls, one out of every seventeen. How does that happen? How do we get trichinae. The natural history of trichina has been worked out. The first trichina ever seen was found in rats. Rats visited the dissecting rooms of dead houses and got trichina from people who died with it. Next it was found in in pigs. Pigs ate the dead rats that had trichina, you see, and the pig got it from the rate, then it was found in human beings. Human beings ate the pigs and got it. So the rat had trichina, died; the pig ate the rate and got trichina. The pig had trichina, died, and man ate the pig and got trichina. Man had trichina and died and a rate ate the man and got trichina; another pig ate the rate, another man ate the pig, another rate ate the man and so it goes around. Well one scavenger ate another and passed the parasite around.

Well now, my friends, you see when we get into a scavenger diet what we are likely to get. A hog is a scavenger and as part of his business as a scavenger he gets trichina. The rate is a scavenger that eats the dead body of a man and gets trichina, that is the compensation he ~~gust~~ gets for being a scavenger you see. Now when a man joins the trio and eats a scavenger pig, he has to suffer the same penalty that the scavenger pig did, he gets trichina too. Nobody would ever get trichina in the world if they did not eat the flesh of a dead animals. Sometimes chickens have trichina and sometimes fish. If pork containing trichina was fed to the chickens, the chickens will get it, and if the flesh is thrown into the water, the fish will eat the flesh and get trichina. All scavenger animals are likely to have trichina. Don't forget that now will you? I am sure you wont forget it. The only thing that troubles me when I am talking to people is the fear that they are going to forget, because the things I am telling you I consider very, very important. We are degenerating in this country; we are going down at an awful rate.

Question. When may one expect normal health after experiencing a

~~Question~~ mild attack of heat prostration?

Answer. Well if the person has had a mild attack of heat prostration he ought to get over it pretty soon, in the course of a few weeks, but very severe heat prostration sometimes leaves a person in a very serious state because it sometimes involves such damage to his brain that it may take several years to recover from it. I think a person who had an attack of this heat prostration, even if very severe, if he could have proper treatment right away and a regular process of elimination and up-building and a right diet,— I think his chances for speedy recovery would be very greatly improved. Exercise should be very moderate. Long neutral baths are very excellent in these cases and very gentle tonic applications, that is, tonic applications of cold water.

Question. What nature of food should one use in high blood pressure, and is walking ^{any} of benefit?

Answer. Answering the last question first, yes, a large amount of walking is of very great benefit when the blood pressure is high, but slow walking, moderate walking, never get out of breath. A person with high blood pressure should be very careful not to get out of breath. Why does one get out of breath? Because the heart is already doing too much work. Suppose the blood pressure is 220. That is twice what it ought to be. The normal blood pressures is 100 to 110, so when it is 220, it is double what it ought to be. The heart has to do four times its ordinary work, you see. It has four times as much work to do as it ought to do, because it takes as you know ~~it takes~~ for a steamer to cross the Atlantic in one week four times as much coal as it does to push the steamer across the Atlantic in two weeks. To push a locomotor along the track at forty miles an hour requires four times as much coal as it does to push it over the track at twenty miles an hour because the resistance ~~the resistance~~ increases with the square you see of the velocity. So it is of the greatest importance that a person who has high

blood pressure and whose is overworking his heart enormously, making his heart do four times the work it ought to do, such a person should be very careful not to increase the work of the heart. Whenever one hurries upstairs or runs to catch a train, that is when the extra strain comes upon the heart. Now when a person's blood pressure is 110, there is a great margin you see. His blood pressure can rise up to 220 temporarily without any very great risk or danger, but when it is standing up there all the time, when the heart is doing the same amount of extra work all the time, every minute, it is doing just what it does for the man who is running to catch a train. When a man runs to catch a train his heart is on a very great strain, but when the man's blood pressure is up to 200 his heart has to do that extra work every minute of his life, so the heart wears out too fast. Such a person should be very careful to do nothing that puts him out of breath, nothing that overtakes him. He should walk a great deal and walk slowly. Again the nature of the food is a matter of very great importance. There are some that are very harmful for people who have high blood pressure, and the thing that is most harmful of all, perhaps, is beefsteak. Now I saw somebody looking very sad about that. I saw one lady actually turn her head away. Now why? Let me tell you a little story. There came into my office two years ago a tall, stately looking man with a military air, and he was introduced to me as the Surgeon General of the army, retired, and I said, "Why, Doctor, I am glad to see you." He said, "I came to consult you." I said, "I am very much surprised that the Surgeon General of the army should come here to consult me, a little country Doctor off here in a country town." He said, "Doctor, I have been watching you for some years, particularly the last twelve years, and I have been reading many of the things you are writing, and I have made up my mind you are absolutely right in your theories about the colon and this autointoxication and the horrible things that result from it. I have made up my mind you are absolutely right, and I was over to Hot Springs on an errand for the Interior Department, and I am on my way home, but I

stopped in to see you because just the day before yesterday our surgeon down there took my blood pressure and found it was 210." Now he said, "Doctor, I have retired from the army and I was counting on having a pleasant life for twelve or fifteen years. I arranged to travel; I wanted to visit the art galleries of Europe and have a good time, and I don't like this at all because this blood pressure of 210 means a funeral two or three years hence, and I don't like it a bit. So when I found my blood pressure was up to 210 I made up my mind to come right straight here, have you examine me and tell me how to live. I want you to look me over thoroughly and tell me just how to live, and I will do it." So we began to talk it over. I said, "Well, Doctor, you smoke don't you?" Oh, yes I smoke, no harm in that I suppose is there?" "Well", I said, "It is just this way, a single cigar will raise the blood pressure twenty points in thirty minutes. One cigar will raise the blood pressure twenty points in thirty minutes. Now suppose you smoke ten or fifteen cigars a day." "Well", he said, "I will cut that out, I won't smoke but three times a day." "But", I said, "Then you will raise your blood pressure twenty points three times a day. Your blood pressure is 210 now, how much more do you want ~~in~~ it to be?" "Well, Doctor," he said, do you think it would do any harm to smoke a very mild cigar—I smoke the very mildest kind of Turkish cigars—and about half a one ~~in~~ after each meal, how do you think that would do?" "Well", I said, "Of course if you only want to get your blood pressured up ten points instead of twenty, it might not be so bad. Of course it is up and it is not down, what are you going to do, get your blood pressure up or down? If you want to get it down you will have to cut out cigars altogether." "Do you really think these mild Turkish cigars, the finest I can get that I pay 50 cents a piece for, are bad?" I thought that they were rather harmless." "Well, the fact is, Doctor, the only difference between the mild cigar and the strong is that the mild cigar is strongest in prussic acid and mildest in nicotin, while the strong cigar is strongest in nicotin and mildest in Prussic acid. There is just as much poi-

son in one as in the other, only it is a different kind of poison." "Well, I guess we will have to cut them out." He looked kind of sorrowful, but he said, "I guess I will have to cut them out." "Well, Doctor, how about tea and coffee?" "Oh, well I am very fond of coffee, but I don't drink tea." I told him the story about coffee. "Well, I guess I will have to cut it out, but I enjoy my coffee very much." "Well, Doctor, how about beefsteak?" "Well, of course," he said, "we army men eat a great deal of meat, that is really the principal part of the diet." "But, do you know, Doctor, that there are fourteen grains of uric acid in a pound of beefsteak and that the body eliminates only six grains a day? A whole day's work for the kidneys is to eliminate six grains of uric acid, and every pound of beefsteak has fourteen grains of uric acid in it." He said, "How about Sweet breads, they are not so bad are they?" "Sweet breads have seventy grains to the pound, that is the difference, four times as much and more." "Well, Doctor, what are you going to leave me?" I don't know about it that looks like a pretty hard row to hoe." ~~What~~ I said, "Well you try it." He said, "Well I tell you what I will do, I will try it three or four days." At the end of four days he came into my office, caught me in the hall, led me to the office, sat down in a chair and said, "Doctor, Doctor, this is just ^{simply} marvelous, it is just simply marvelous, why, Doctor, my blood pressure has come down thirty points in four days, it is only 180 today. I took his blood pressure and sure enough it was then 180. That is the way to get the blood pressure down. I got a letter from him a few months afterwards, and he said he was sticking right to it. He had departed from it but just once. He had smoked a little piece of a very mild cigar, that was the only backsliding he was guilty of, and he was getting along fine. Now, my friends, there is that splendid man, just about my age, about sixty years old, with a blood pressure twice what mine is, and getting ready to die, for he cannot live very many years anyhow. In spite of all we can do for him, he has not got twenty years, he has not got ten years ahead of him. It is not at all likely that he will

live ten years longer. Bright's disease will be creeping in pretty quick and apoplexy. When the blood pressure once gets to going up, you can hold it in check, but you cannot get it back to normal again if you let it go too far. Now, fortunately, sometime we catch a person with the blood pressure going up, but it has ~~not~~ just started ~~up~~ so we can get it down, but ~~you~~ we can never do very much even with those people because as soon as they find it is coming down a little, off they go. I had a letter a day or two ago from a man whose wife was with us four years ago whose blood pressure was 200, and we got it down to 120, and she was so elated that in spite of all I could say, she hurried home. She staid at home until it came up to 210. We got it down to 180, then she went home again. She lived near Indianapolis and she went back there and tried to take care of her blood pressure and found there was not a blood pressure instrument in the whole city of Indianapolis, and when she came back here we found it was over 200 again. She was in a very sad state, she was giddy, she couldn't walk straight. The condition is going right on and she has prehaps but two or three years more to live. Now it is a pity that people will not make a business of this thing when once the blood pressure gets up. It is a case of a house afire. It is not a trifling thing, it is not a thing you can put off. That degeneration of the arteries that is going on there, that is raising the blood pressure, that is advancing every day, every hour and every minute, ~~it~~ is like a great tidal wave that is rolling in, that is rolling in every minute and we have got to build up a barricade against it. Now when we change the diet, it will make a great drop in the blood pressure. The blood presasure will come down twenty points. So by a radical change of diet, by dropping tea, coffee, etc., your heart will have a chance to rest. The reason why the blood pressure comes down so ^u quickly, however, is because we take the poisons out you see, uric acid and all these other poisons which cause the arteries to contract, and then the blood pressure comes down. But now there is a hardening and a stiffening of the arteries that is due to fibrous changes

in the arteries, and that is a great deal harder, ~~it~~ it takes a longer time to get rid of that because that means a change of tissue, you see, and that has to come about by getting the blood absolutely pure. Now suppose you have here a garment you want washed, and this garment is dirty and you want to wash it. Suppose it is stained blue and you want to get that blue color out of it, somebody brings you a pail of water that has some indigo in it, you wouldn't want to wash that garment in that water with indigo. In order that you should be able to wash the blue out of the garment, you have got to have absolutely clean water, otherwise it wont dissolve the indigo out of it, you see. Now it is so with the blood, you cannot reduce the blood without changing the arteries and you have got to change the arteries. You have got to get out of the arteries the old diseased structures that have been deposited there because of poisons in the blood, so you have got to have the blood clean. You have got to get all the uric acid dissolved out of the body, but that takes time. There is another thing besides beefsteak that is bad, and that is tea and coffee, for the reasons I have already told you, that they have uric acid in every cup. Then there is cane sugar, that is another thing. At the present time ~~among~~^{no} intelligent physicians will allow his patient who has high blood pressure to use cane sugar because cane sugar somehow ~~raises~~^{raises} the blood pressure. Give a normal healthy man a little cane sugar and his blood pressure will go up. It is not quite so bad as cigars, but it helps along in that direction. Another thing is common salt, chlorid of sodium. A great deal of salt will raise the blood pressure. When we find a patient with low blood pressure, the thing to do first of all is to inject solutions of salt into his tissues, take a hypodermic syringe and inject salt water under his skin and that raises the blood pressue, and often saves the patient's life when the blood pressure is falling in shock. But if your blood pressure is already up, you do not want salt, cut the salt out of the bill of fare. Now some of the things I have mentioned, I am sure you will remember. Cut out the beef-

steak, cut out the tea and coffee, the cane sugar and the chlorid of sodium, or common salt. These are the most important things you can do so far as diet is concerned. Now there is another thing that needs to be done, and it is just as important as these other things, and that is to make the bowels move three or four times a day. Now the reason for that is this. A person either in early ~~manhood~~ manhood or womanhood can neglect their bowels with apparent impunity. I have known people whose bowels didn't move but once a week and they felt perfectly well. The reason why they felt perfectly well is because the liver and the thyroid gland and other poison destroying glands, the skin and the kidneys and other poison eliminating glands, were so active and so vigorous, so efficient that they were able to take out all the poisons that were put into the blood, they were absorbed. But as a person goes on in years these glands lose their integrity and the proof of it is those brown spots on your hands and that thin parchment like skin and the shrinking up of the thyroid gland in the neck, and the neck has a skiny look. When persons get so there are hollow places in here around the larynx that means the thyroid gland is shrinking or degenerating. Why there are a dozen people here in the house now that you cannot find have any thyroid gland at all, who have great brown spots on the hands and parchment like skins. It is because these glands have degenerated, that is a sign of their degeneration, and also of the degeneration of other glands. The brown spots mean degeneration of the suprarenal capsules, the little cap like organs that lie up over the kidney. These suprarenal capsules, or adrenals, as they are called, are of immense importance in the body because they burn up these poisons. And the coloring matter that is deposited in the skin makes liver spots, and these brown spots make the dingy skin. As we go on in years these glands become deteriorated, then these symptoms of degeneration appear. That is why old people have these spots and the dingy skin and lose the bloom of youth, it is because they have lost the power to eliminate poisons and the poisons are ac-

cumulating in the body. When a person has reached that stage of life, the bowels are usually more and more sluggish, the artificial habits of civilized life have been doing mischief all along the line. The sedentary habits of of people tend in the same direction. A person becomes less and less active as they get along in life so the bowel movement becomes less and less active, less and less thorough and complete, so it is necessary something should be done. In old persons the bowels should move every often, three or four times a day so as to carry off all the contents of the intestine so rapidly that there is no evidence of putrefaction, that there is no time for the formation of these poisons, so as to reduce the amount of poisons to the minimum. Now I have made this plain, I think, so everybody can understand it. But you say my bowels move once a day generally and isn't that sufficient? It is not sufficient. If you have high blood pressure, it is of the utmost importance that there should be ~~sufficient~~ frequent bowel movement three or four times a day so as to carry off the materials before there has been any time for putrefaction changes. Now those four or five things are very important. No meat, no tea or coffee, no cocoa, nor theobromin in any form, no cane sugar, no chlorid of sodium, and active bowel movement. Well, you say, how are you going to do that? I want to say if there is anybody here in this room whose bowels are not moving more than once a day, you had better see your doctor about it and have something done about it, because a person whom is sick needs to have more active bowel movement than that. It should be at least after every meal, and better more, until the body is clean, until the body becomes thoroughly purified.

Question. At what age should a child have vegetable food?

Answer. When it has teeth it may begin to eat vegetable food.

Question. What treatment would you prescribe for rheumatism and nervousness combined?

Answer. Well, simply remove the cause of the rheumatism and the nervousness, and the cause is usually the same, that is, putrefaction of food

material in the colon, autointoxication, colon germs growing in the colon and producing awful poisons that give rise to rheumatism in the muscles, nerves and joints and to neuralgia and various other troubles.

Question. What should be the proper diet of an anemic person?

Answer. An anemic person should eat a great deal of fresh vegetables, especially green things like lettuce and cucumbers. All those things contain a great deal of iron, much more iron than anything else that is suitable to eat. You don't need to eat meat. Meat is ~~a~~ the very last thing such a person should eat. This condition in many cases is due to poisoning by colon germs. Meat feeds the colon germ.

Question. What is the cause of arthritis deformans?

Answer. Welch's bacillus growing in the colon is absorbed into the body and causes these poisons and produce the disease .

Question. Is it a fact that invalids progress more rapidly and recover strength quicker in hospitals using meats and meat broths than in those where these are excluded?

Answer. I should say most emphatically no. This thing is known. You can ask any prominent physician about it that in the countries where little meat is eaten, for instance, in India and in Hungary and among the Turks in general, and in other parts of the world where meat is used almost not at all, where the diet of the people is mostly rice and simple foods, recovery from operations is astonishingly prompt, and the recoveries take place in cases in which recovery would not be expected at all in a civilized land on an ordinary meat diet. The fact was pointed out many years ago by an eminent French surgeon that the people of cities do not recover from operations so well as people from the country and he gave it as a reason that in the cities so much meat was eaten. The doctors are finding out more and more that the meat diet does not favor recovery. The worst subject a surgeon could have is a beef drinker or butcher, a beer seller, the barkeeper or the butcher is the very poorest subject a surgeon could pos-

sibly have. Why these butchers very often die of blood poisoning from a little cut on the finger when they are cutting off a beefsteak for your breakfast. The same beefsteak that is sent home for you to eat inoculated the butcher with the poison which killed him.

Question: Dr. Trudeau and other eminent authorities on tuberculosis, after long study and experiment, insist upon meat at least twice a day for their patients.

Answer. Well, they have not made a long study of that particular portion of their subject, they have been studying something else. That particular thing they have not studied; if they had, they would know better. We had here just last week a visit from a superintendent of a large colony for tuberculosis. He came here on purpose to study our diet. When he went home, he said they were going to establish our dietary in their institution. He said they were having a great deal of trouble to get their patients to do it, but they were going to have certain tables where they would not serve meat to their patients because he was easily satisfied that that was of great importance. I sent out a little while ago a little paper I wrote on the subject, sent it to all the tuberculous hospitals in the United States, and I got back a considerable number of letters confirming my views and observations on that subject. Perhaps it will be proper for me to tell you that among the others there is a letter from one of the former surgeon generals of the army, Dr. Sternberg, who has charge of a large institution for the treatment of tuberculous patients near Washington. He wrote me that he was thoroughly convinced that I was entirely right about it and he was making less use of meat continually in the treatment of his tuberculous patients. The idea that meat is necessary for tuberculous patients is an old delusion that is being rapidly dissipated, and will after a while entirely disappear.

Question. Does colitis cause a tired feeling?

Answer. If you have got colitis you can hardly have any other

kind of a feeling than a tired feeling, because colitis opens the door for poisons which are present in the intestine to simply flood into the blood and to pollute the tissues and intoxicate the body. If you had some snake venom here and rubbed it on your skin, it would not do you any harm, but if ~~you~~ there was a little raw surface on your skin and some of that venom gets on to that little raw surface, you are very likely to be dead after a couple of days after horrible suffering, because the snake venom will not go through the skin, but is absorbed when placed on a raw surface. The very same thing is true in the intestine. In colitis raw surfaces are produced and these poisons produced by germs in the intestines are akin to the venom of snakes, and when there are raw surfaces in the intestine these poisons are taken in through these raw surfaces very easily and so persons suffering from colitis always suffer from auto-intoxication and when these poisons are absorbed, that is what produces the exhausted feeling.

Question. When denouncing fish as an impure food, I have been asked why then did our Savior feed it to the multitude, can you give me a reply?

Answer. Now I am not bound to answer that question. I cannot answer for the motives of the Almighty in doing things. I am not expected to know. Emisience is beyond me. I cannot understand it. I am certain I would not give fish, so far as I am concerned, I would give something different. But why Christ gave fish I do not know, and I don't feel that I am under any obligation to try and tell you. Now this thing I want to call your attention to, however, that Christ at that time was not giving a lesson in dietetics as I am. I am teaching dietetics, he was not. He was teaching something else and the great purpose of his work was entirely different from the question of diet. The question of diet had nothing to do with it. The fish was simply an incidental matter and might have been anything else besides fish. This thing is of interest, however, in this connection that when the Almighty wanted to give the people of the world a lesson in dietetics at the very begin-

ning, when he wanted to teach Adam the first lesson in dietetics, he gave him a bill of fare and this was his bill of fare: "Every tree bearing fruit and every herb bearing seed, to you they shall be for meat." That you will find in the 29th verse of the First Chapter of Genesis. That is what the Almighty told Adam to eat, and we have never had any instructions to eat anything else. Yes we have because there in the 3rd Chapter, He said to Adam after he had sinned, you know, that Adam should earn his bread by the sweat of the brow, he told him ~~and~~ ~~cursed~~ shall be the land for thy sake. Thorns and thistles shall the earth bring forth, and thou shall eat the herb of the field." So He ~~gave~~ was given permission to eat grass, roots, asparagus, cucumbers and things. So far as that is concerned, there was no further permission came until after the flood when ~~then~~ everything was wiped off the face of the earth but the animals. Then He said to them, "Every moving thing that liveth, to you it shall be for meat." That is, He said you can eat them, but He said immediately afterwards, "Your life will I require, by the hand of every beast will I require it." He said another thing in there too. They were permitted to eat flesh. "Every moving thing that liveth shall be meat for you. The fear of you and the dread of you shall be upon every beast of the field." Of course, they would be afraid of them. When the beasts found that Noah and his descendants were likely to eat them at any time, of course, they would be afraid of them. Before that time they were not afraid. When Noah was gathering all those animals into the ark you can imagine that great picture of Noah standing up there whistling and the elephants and lions coming up and marching in there in perfect accord and harmony in that big managery in the ark, the biggest one that was ever gathered together on the face of the earth, and they were all living together in perfect harmony, and the lions were not chasing the sheep either, they ate the herbs of the field. Noah didn't have to take in a whole drove of sheep to feed those lions. Seven sheep went in and seven sheep came out. Now those lions either fasted the whole time, or else they lived on the natural food which was eaten by all the animals besides. Besides there was not room in the ark for all the sheep that would have been necessary to

feed all the lions and other carnivorous animals and all the food necessary to feed those sheep to keep them alive all that time you see. It would have taken forty arks to supply them. "Every living thing that moveth, to you it shall be for meat." Now see what happened. Noah lived nearly a thousand years, his sons lived six-hundred years, their sons lived three-hundred years and in four or five generations the length of life was reduced to one-hundred and twenty years, and when they got down to David's time it was only three score years and ten. It was the colon germ you see. Metchnikoff has proved that the colon germ is the anti-longevity germ, and that beefsteak cultivates it. But then there was another lesson. When the children of Israel were coming out of Egypt after they had gotten a little way into the desert they got out of meat, they had eaten up all the dried herring they had brought along from Egypt and everything else of that sort, and didn't have a thing left in the shape of meat to eat. They were hungry. What did God give them? He gave them manna. They were straving to death, they would have starved to death, but he fed them manna direct from heaven. That was like Corrientes seed. They were not given shrimps or crabs, but were given manna. So when God fed them on manna he gave them an object lesson as to what they should eat. Manna was pure delicious bread from heaven. God feeds us just as he did them. When we take the grain and wheat, apples, plums and peaches they are passed down to us from heaven in just the same way, just as clean, sweet and pure as those Israelites had. But they were semi-barbarians. They got to hankering after the flesh pots of Egypt, and they were by and by almost threatening to go back to Egypt, they wanted to get a taste of beef broth, or something of that sort. No they didn't eat the ox in those days, but worshipped him. But they wanted some sort of abominable things that the bible tells about. Then God let them have all the meat they wanted to eat. He sent them a flock of quail, and you remember an enormous, great flock of quail came in there and they ate all they wanted to and more than was good for them. They were taken sick. A great plague broke out among them while the ~~quail~~

quails were still in their mouths it said. They had an awful bilious attack. So, so far as the bible goes it does not give us any evidence that beef eating was commended by heaven, although it was tolerated. And Paul said that he would eat no more meat so long as the world stands. Paul said that. He said, "I will eat no more meat as long as the world stands", and so far as the record shows, he has not eaten any since. Now I will have to confess a little more than that. He said, "If meat caused my brother to offend, I will eat no more as long as the world stands." I have used that text simply as Lorenzo Dow did who announced he was going to preach a sermon on, "Topknot come down." He read the text "Top not come down." The bible says, you know, "Let him that is on the housetop not come down!" So Paul said he would not eat any more meat as long as the world stood if it caused his brother to offend. I can prove, I think quite conclusively that meat is a large cause of the crime that prevails in this country. Down in New York Juvenile Court not so very long ago an investigation was made by a man from the Carnegie Institute, an investigator under Dr. Davenport, the secretary of the Eugenics Section of the American Breeders Association. He made an examination of one hundred children in that Juvenile Court and the ninety-seventh child in that hundred children was found to be of sound mind and all the rest of those children were feeble-minded. And in the State of New Jersey one person in every three hundred is feeble-minded, and including epileptics, insane and feeble-minded persons, there is one out of every ninety persons in the whole United States. One person in every ninety in the United States is either a lunatic, insane, feeble-minded, idiot, imbecile or an epileptic. Now that is a terrible thing, and these feeble-minded people, these defectives, are increasing twice as fast as the population is. That has been proven within the last two years, proven at the Carnegie Institute by the researches they have carried on, that these defectives are increasing twice as fast as the population. Beefsteak is one of the causes of that, and if it

it causes my brother to offend, if it makes criminals, I will never eat any more as long as I live.

Question. Will the stomach digest typhoid fever germs, and why?

Answer. It will if there is gastric juice in it, but if you take the typhoid fever germ in some water when there is nothing in the stomach, when the stomach is not digesting and you are short of hydrochloric acid, or if you have not got enough hydrochloric acid, under those circumstances, the typhoid fever germ will go right on down into your intestine and grow, and you may get typhoid fever.

Question. Will the stomach digest the Yogurt Bacillus?

Answer. No the Yogurt Bacillus is able to endure the contact of acids so it usually passes through. If it staid there long enough, the stomach would naturally digest it.

Question. What is your opinion of bananas as food?

Answer. The banana is a splendid food, but take it in the form of a puree. Don't take it green or withered or tough, but take a thoroughly ripe banana, make it in the form of a puree, then crush it against the roof of your mouth with your tongue and make a smooth paste of it before you swallow it, otherwise it will lie in your stomach and will not digest, for the stomach will not digest bananas. Bananas must be put into a liquid state before they get into the stomach then the banana will pass through the stomach into the intestine where it will digest. But the stomach cannot digest bananas. There is nothing in the gastric juice or saliva that can digest a banana. The banana does not require the kind of digestive work that is done in the stomach, it requires a kind of digestive work that is done below the stomach, so the banana must be taken in the form of puree or pulp. The baked banana is in the form of a pulp. If you cannot get the banana served in the form of a pulp, get a real ripe banana with a dark brown skin and take off all woody strings on the outside, cut it up into a glass and with a fork cut it up fine, then beat it up and in less than two minutes you can whip it up like the white of egg, beat it up to a froth. It is aston-

ishing how easily the banana can be reduced to a fine pulp.

Question. Why is the Jewish race as a whole healthier than the other races?

Answer. One reason is they have followed so many of the laws of hygiene for so many generations. They have not eaten pork, for example, and they have taken care to investigate carefully the cattle before they ate them when they did eat meat, and as a race the Jewish people the world over have not been very large eaters of meat.

Question. What is the best diet for an anemic child?

Answer. The best thing is to get out in the sunshine. Such a child needs more sunshine, and that is a more important matter than food. But when it comes to food, give the child no meat, give it an abundance of fresh vegetables and potatoes, lettuce and things of that kind and carrots, and give it an abundance of fat, all it can digest, but not, of course, an excess.

Question. Why is the juice of a lemon good for one without acid?

Answer. It is not particularly good only as an appetizer and to stimulate the flow of the gastric juice.

Question. What do the Swedes eat?

Answer. They are very largely vegetarians, though they do eat too much pork as the Germans do.

Question. Is it advisable to drink milk and fruit juices at the same meal?

Answer. There is no objection at all.

Question. How can the thyroid gland be stimulated?

Answer. By cold baths, massage to the thyroid gland and applications of electricity.

Question. Here is a quotation from an interview given by Capt. Amundsen: ~~stating~~ "For food we relied entirely upon pemmican, biscuits, chocolate, powder milk, and, of course, dog meat. We never felt an undue craving for something to eat or any feeling that we had not had sufficient nourishment.

Answer. The biscuits, chocolate and powdered milk furnished a good deal of wholesome, natural food. Dog meat was only eaten when they had to and the pemmican was only taken as a source of fat. Pemmican is meat, raisins and fat. The raisins furnished the raw ~~fruit~~ fresh fruit which they could hardly get any other way perhaps. However, when Dr. Hall made his great expedition to the Arctic regions in the excursion in which he got nearest to the Pole, he says: "On a very cold day with the wind blowing sixty miles an hour and the temperature forty below zero, I sat down on a iceberg and took dinner on graham crackers." Leut. Shackleton said the greatest craving of his people was for the things made of flour. It was very natural that they should have such a craving because they ate a great deal of meat and those things were instinctively demanded as an antidote for the meat they were eating.

Question. Is fish meat as objectionable as other meats?

Answer. Yes, a little worse because it decomposes more rapidly. Meat, oysters and fish are the worst kinds of flesh food. If you are going to eat anything at all, don't eat those things. The best thing I could recommend, if I were to recommend anything at all, would be a thin scrap of fat meat fried very hard. I do not know of anything else I could recommend of meats that would be less objectionable. There is nothing in that that can decay. It is true it is rather hard to digest, but it does not rot, and that is the worst thing that comes from meat.

Question. What is Para-lax and what is it used for?

Answer. It is an emulsion of a refined paraffin oil, and the purpose is to lubricate the intestine and absorb poisons, carry them off, and to protect diseased surfaces in colitis.

Question. What are some of the symptoms of rheumatic pleurisy?

Answer. There is no such a thing as rheumatic pleurisy. Possibly rheumatism of the muscles of the chest is referred to. There is usually tenderness of the muscles of the chest, pain on deep breathing and in the use of the arm. Hot applications are the best means of temporary relief, but the real root

of the trouble will be found in a polluted colon.

Question. What would be a balanced ration in three meals a day for a severe case of autointoxication.

Answer. I would suggest that you call on the dietitian in the dining room. Ask the matron in the dining room to send a dietitian to you and she will make a bill of fare for you that will be very nice and satisfactory. It would be a little difficult to take the time necessary to make it up here.

Question. What do the Italians eat?

Answer. Well as a class they eat peas, beans, macaroni and chestnuts. Those are the most popular foods in Italy. Some thirty years ago in traveling in Italy, I saw one morning some boys out getting their breakfast about 10 o'clock in the morning. The boys were working in a tannery close by and a woman on the corner of the street had a kettle full of great big Italian chestnuts, and she ladled out about a dozen of these big chestnuts for each boy, a big handful for each boy, and they gave her a copper for these chestnuts, and that was the breakfast of those boys. That was all they had for breakfast and that was ten o'clock in the morning. They would work then until about Four o'clock in the afternoon then they would have another meal, and they were living almost entirely upon chestnuts.

Question. Is it possible to follow the colon from the surface of the body?

Answer. Yes, especially when the colon is filled with hardened material and the abdominal walls are very thin, the colon can be easily marked out.

Question. What causes carcinoma? What kind of cancer is it?

Answer. Carcinoma is a true cancer. There are other forms of malignant disease, one of the most common of which is sarcoma. But true cancer is a disease in which the epithelial cells are affected, and it is produced by an abnormal disease in the tissues of the body which is probably induced, according to Dr. Ross, by the presence of products of putrefaction in the blood and tissues.

Question. What is a good diet for one with an enlarged or hardened spleen?

Answer. Now if you have an enlarged or hardened spleen, you have autointoxication. The autointoxication is the thing that has produced it. You should take a non-putrescent dietary, that is the thing which ~~will~~ you should follow and that is the most important thing. ~~if possible~~

Question. If one has chewed tobacco and smoked to great excess for a period of thirty years or more, how long does it take to eliminate the nicotine from his system?

Answer. It does not take very long to take the nicotine out of his system, perhaps a week or ten days, but it takes a long time to ~~put~~ repair the damage done and often the damage never can be wholly repaired. It is just as it is with a house afire. It may not take very long to put out the fire, but it may take weeks and weeks to repair the damage done by the fire.

Question. Do you advise an operation for floating kidney?

Answer. Generally not. It does not do any good. ^{The} Floating kidney is not the real source of the trouble. Generally it is prolapsed bowels that pull the kidney down. If you attach the kidney, sew it up in place, then the bowel and all are hanging and the pain is generally worse than before.

Question. What is the general effect upon the blood and nerves of excessive hydrochloric acid in the stomach?

Answer. The general effect is to produce a very neurasthenic state, a very disturbed condition and generally pain. If the hydrochloric acid is present in very large amount, there is likely sooner or later to be ulcer of the stomach or duodenum.

Question. What is the cause of sciatica?

Answer. There are several causes. It is sometimes due to gout or uric acid, sometimes to rheumatism, sometimes to reflex irritation through the sympathetic nerves.

Question. How should one deal with a case of autointoxication?

Answer. Clean up, clean out and keep clean, that is the whole story.

Question. At what age should fruit first be given to a child?

Answer. You can give fruit to a child at any age when the child can swallow. A little fruit juice ~~was~~ or fruit pulp can be given at any time and will do no harm.

Question. What do you think of the so-called Viavi treatment?

Answer. I think it is moonshine and poison.

Question. What causes goitre?

Answer. Autointoxication. Poisons in the colon, overworking the thyroid gland and wearing it out.

Question. If one is anxious to gain in weight, has slow digestion and no appetite for supper, would you advise eating?

Answer. No, don't eat supper, but before you go to bed, take one-third of a glassful of Malt Honey, put some water in it and mix it up to make a tumblerful of water, then drink it. You have got a nice supper in that Malt Honey already digested and ready to be absorbed. I met a lady the other day who had gained fifteen pounds in weight taking that prescription at night. Malt Honey you can take between meals, it is already digested; or you can eat it with food, dilute it with water and drink it, and it will all absorb and will be assimilated and will make fat.

Question. What is neurasthenia?

Answer. It is autointoxication.

Question. Can it be treated at home.

Answer. You must treat it at home. If you have had neurasthenia or autointoxication once you have got to be careful to treat yourself as a cripple all your life. You never can do the things you have done before. You must cut out meat, tea, coffee, everything of that kind that taxes the poison eliminating and poison destroying glands, and never return to them. You have simply got to walk the line.

Question. Do you believe in the method of mind mental healing known as the Emmanuel Movement.

Answer. Well know, I should say I don't believe much in it because it does not strike at the root of things. If I had time I would like to tell you some of my experience with it. Here is a man, for instance, who has a headache. He has headache because he has autointoxication and the autointoxication is due to a colon that acts perhaps only once a week, and he can be prayed for as much as you like, he can have all the hypnotism you like and have Emmanuel treatment or anything else and ~~hocus~~ as much as you like to persuade him he does not have that headache, so long as he has the horrible poisons in his colon, he has autointoxication and there is no kind of hocus pocus that will ever make the thing different until the colon is cleaned, cleared out. I told that to a man down in Boston at the Emmanuel Church there when I was talking to some of the officials up there about it, and I suggested that kind of a case. Oh, well, he said, "but then our treatment is good for the bowels too." "Is that so?" I said. "Yes, indeed." "Do you mean to say you can relieve inactivity of the bowels by this Movement?" "Yes, yes, yes" The young man said he was a student of the subject there. He said, "Yes, one of the prophets there ~~sk~~ had a patient call on him whose bowels hadn't moved for fifteen years naturally, and he suggested that the bowels should move three times a day and the bowels got to moving so often she had to come back and have it stopped, then he suggested to her again and stopped it, so you see the thing can be made to work both ways!" It is only because there are a few of a peculiar kind of very susceptible people that this system will operate. The Emmanuel Method is all right for people who think they are sick, though they are not sick and for hypochondriac old ladies and hysterical men it is a splendid thing. But when we come to deal with real disease, with ulcer of the stomach, with hyperhydrochloria with redundant colons and colons that have got kinks in them, they are really prolapsed or out of place, it is quite another proposition. It takes more faith than the whole Emmanuel Church has got I am sure to lift a prolapsed colon.

I thank you for your attention.

Duplicate Cardura

QUESTION BOX LECTURE

At the Sanitarium Parlor, Battle Creek, Mich., Monday March 18, 1912, at 8 P. M.

-by-

J. H. KELLOGG, M. D.

Question. What is the cause of gray hair?

Answer. That is a subject that I judge from looking about is of interest to at least three quarters of my audience. The majority of people here, I think, have gray hair or none at all, or at least very little. The cause of gray hair is a very interesting physiologic question. A question that was really very little understood until a few years ago when Metchnikoff, the great French bacteriologist, worked out the problem. Prof. Metchnikoff made a careful study of certain cells of the blood called the white blood cells. These are large cells which have the power to change their form. If you look at one of these cells you will notice at one moment it will be nearly spherical and the next moment it will be elongated in one direction or another. Sometimes they draw themselves out into long masses so they look almost like snakes. They are very, very versatile in their movements. Now these little white cells are very small so small that it would take about 2500 of them ranged side by side to make a row an inch long. These curious little creatures are really independent living animals. They live in the blood; they thrive in the blood just as fishes swim and thrive in the water of a river or lake. They live in the blood, they work for us, they are slaves. They work for the body just exactly as slaves work for a master, and they are of very great service to the body. They eat up and destroy the germs that get into the blood. There are in the blood, multitudes of germs, myriads of germs, are

continually swarming into the blood and these little bacteria or creatures swimming in the blood are eaten up and captured by the white cells just as the oysters eat up the germs in the sea. That is their function in the body and a most remarkably and interesting function it is. They do another kind of work too, they are scavengers. If you have had a boil somewhere, have got a hard lump under the skin, you watch it and it will gradually disappear and by and by it will be gone. What has happened to it? These little creatures have gnawed it away. They have actually gnawed it away and carried it off. That is the way we get rid of lumps and pimples. If you have got a little pimple on your face, perhaps, that is all red and swollen, but by and by your face is smooth again, that is due to the efforts of these curious little creatures that have come in there all around that little pimple and have carried away every particle, picked up and carried off the material out of which that lump is composed. So they render very great service to the body. But under certain circumstances they seem to lose their natural useful function and assume functions which do not properly and naturally belong to them. When the body gets into certain conditions of disease these curious little creatures take advantage of the situation and prey upon the body itself. They are scavengers. Now we might illustrate the same thing. Here are men that come around the city gathering up all the dead cats and horses and cows and carrying them off to the bone yard, and they come around to the back door and empty the garbage box so they keep the cities clean, and they empty the gutters and sewers. But suppose these men, instead of stopping at the garbage can should break into the kitchen, get into the larder and carry off the bread. Well they might carry off that old cod fish or hen that was hanging up in the cellar somewhere--that would be good scavenger business--but suppose they carried off your coal or other useful things about the house, broke into the house and robbed you, suppose they should do that. That is exactly what these phagocytes sometimes do. They are not satisfied under certain conditions, apparently, with doing the proper work of the body as scavengers and

protecting the body, destroying the germs, but they seize upon the body itself in certain conditions--these are conditions of abnormality, conditions of disease. For instance here is a man who smokes, his body is polluted by tobacco smoke, the tobacco smoke lessens the vitality of his cells and his whole body gets into the condition of a garbage can, you see, into an unhealthy, unnatural state. It has a bad smell about it, it has a taint about it, the whole body is in a polluted condition, so these scavengers seize upon that man's tissues and they attack the body itself because the body has been reduced to a low state. Now tobacco is not the only thing, it might be tea or coffee instead of tobacco; instead of cigarettes and cigars, it might be the teapot and teacup and the coffee cup, that is what it might be. These concoctions contain poisons of a most deadly and destructive character. In every cup of tea there are four grains of caffeine, and do you know what ~~caffeine~~ caffeine is? Caffeine is the equivalent of uric acid. To the chemist they are the same thing, caffeine and uric acid is the same thing. In the body caffeine becomes uric acid, and it is the same thing. In every cup of tea there are four grains of caffeine. Dr. Wiley of the Agricultural Department, the great government chemist, analyzed cups of coffee as they are served in hotels, and he found the average cup of coffee ^(?) has four grains of caffeine in it. Now then if that cup was filled with urine instead of coffee, there would not be so much uric acid in it as there is when there is coffee in it. There would be only from a grain to a grain and a half of uric acid in a cupful of urine, whereas, there are four grains of uric acid in a cupful of coffee. There is more uric acid in coffee than then there is in urine. That is a good thing to remember. Next time you are tempted to drink coffee or tea, just remember that, that it would be less unhealthy, so far as uric acid is concerned, to take that quantity of renal secretion. Well I would like to have you just plant that down in your memory so you wont forget it because it is a good thing to remember that when you are taking tea or coffee, you are taking poison into your body and you are polluting your body. Now suppose one takes beefsteak (applause)— I am

glad to see that you welcome this subject so enthusiastically. We are really getting enthusiastic over this question of beefsteak aren't we? When we take beefsteak we can digest and utilize a part of that beefsteak. Beefsteak is food, there is no question about that. It is food because the corn was eaten once and used and digested. It has been food originally and so it is food still just as when you go into a secondhand store and see some ragged, dirty garments hanging around there--there are coats, pantaloons, shawls, dresses--they have been made for that purpose, they have been used that is all. That is the way it is with beefsteak it is secondhand food which has been used before. Now when you eat beefsteak you are able to digest and assimilate and utilize a part of it. How much do you think? Now Dr. Haig of England, who advocates a high protein diet, says that a person ought to eat every day about three ounces of protein, which would be equivalent to twelve ounces or three fourths of a pound of beefsteak. So if one in the course of the day didn't eat any other food at all if he eats in the course of a day just two pounds of beefsteak, that would be thirty-two ounces of beefsteak, he will utilize twelve ounces of that beefsteak and twenty ounces he could not utilize. Now what becomes of that twenty ounces he did not utilize? Now suppose instead^{of} that that a man was eating bread and meat and beans and peas and potatoes and other foods such as people usually take, a mixed diet, he would get all the protein he needs in the other things he eats. For instance if beans and breads make up half his diet, for example, half his daily ration, and the other half were made up of beefsteak, he would get in the bread and beans all the protein his body needed. All that he actually required he would get in that half, and what he got in the beefsteak would be surplus, so if he ate half a pound of beefsteak it would be so much surplus protein that he did not need. What becomes of that surplus protein, whether it is four ounces, or eight ounces or twelve ounces, a pound or a pound and a half? I met a man some years ago who bragged that he had eaten nine pounds of beef at a single sitting. It was at a beefsteak contest and they had to eat with their hands tied behind them, just simply had to

gnaw it as a dog does. That is the proper way to ~~eat~~ do for really one gets down on all fours with the dogs gnawing bones when he eats meat. It is proper to eat it in the natural way. Well he ate nine pounds of beefsteak at a sitting and he said his shoulder got so stiff before he got home he could hardly move it. He knew it was the beefsteak that did it. He had tried it before and it had just that same effect, ~~apanshim~~ but he said I did not eat so much beefsteak as some others did because one of the ex-mayors of New York said he had eaten eleven pounds of beefsteak at a sitting, and an Eskimo claimed to have eaten forty pounds in the course of a day. Now what becomes of all that extra protein when a person eats it. The same thing happens to it that happens to a dead rat in the closet, the very same thing happens, or an old cow that lay down and died in the fence corner, the very same thing happens, and the mere fact that you have swallowed it does not make a particle of difference about it. It undergoes all the same changes of putrefaction, of decay and decomposition, the development of germs, horrible stenches happen just ~~the~~ the same after you have swallowed it as would have happened if you did not swallow it, except that portion that we have digested, absorbed and utilized. All the surplus simply rots. That is all there is about it, it rots, and that is the great difficulty with beefsteak, with meat eating. The great difficulty with it is that so large quantities of it remain behind in the colon, putrefying, decaying and spoiling the appetite. Now when a person has been living in that kind of a way for some weeks, months, or years more properly some years, and his body has been polluted all this time with these foul stenches and these foul poisons that are being produced in the colon continually and his skin begins to be dingy and pigmented and to have big brown spots on it-- I met a lady today who showed me her hands with a great deal of pride and pleasure. Just look at my hands they are not parchment like the way they used to be. I was here last August and you told me I ought to stay until March, but I only staid until October then I went back to Boston to my home, but I stuck right to it. I have been living right up to the letter and just look at my hands.

Those brown spots have been fading out, they are not half as big as they were, and my skin is soft now, there is some flesh to my skin now, it is not like parchment ~~like~~ as it was last summer. She has come back to get rejuvenated now, I suppose, to get twenty-five years younger. I asked her what she was going to do after she left here. She said she was going to stay right here. I told her I meant what was she going to do when she left the Sanitarium. She said she was not going to leave, but she was going to stay right here. Now if you found a gold mine and could fill your pockets with gold every day, you would stay right there and work it, but that is not what the people do who come here. The men get up and flit away after twenty-seven days, just think of it, and the women stay thirty-five days, ten days longer than the men. Perhaps it is because they are sicker, or perhaps they want to be well for their husbands' sakes so they give themselves a better chance. Men have urgent business, of course, and they must get back to their business. The average business man is dedicated to his business, soul and body, and he will sacrifice his life any time for his business. It is the strangest thing the fascination that business gets for men and how we become slaves to our routine duties and business. Why if you can make a man only understand it that the man himself at the head of his business is the most important asset in the business, and the keeping of that machine of his, of that corpora-mobile, as Mr. Fletcher calls it, in the finest possible shape for work, is the most important thing he can do for his business. It is a very difficult thing to make people understand and really believe that, but I am doing the best I can with the people I come in contact with. But now suppose by cigars and alcohol, tea, coffee and beefsteak, by neglect to take care of the bowels, the body has become polluted, suppose the body has reached a deteriorated state, than these ~~mac~~macocytes just seize upon the body itself, they turn upon the body and destroy the body. Now each hair is a hollow tube. This represents, if you please, a hair. There is a little hollow tube in the center of it, and in this part of the hair there are pigment cells, little

specks of brown pigment in some cases and other colored pigment in other cases. There are different pigments that give the colors to different kinds of hair. Now these phagocytes I was showing to you on the black-board a moment ago, climb up this little tube, they creep up this hollow tube and steal this pigment away, swallow it and carry it off, and that is what makes the hair gray. The hair has simply been robbed, it is like a house in which the furniture has all been stolen out. They climb up in the ~~sk~~ hair and tear away these little specks, and Metchnikoff has actually seen them doing it. I have shown slides here repeatedly that show this going on. That is what makes the hair gray. It is the deterioration of it. Now sometimes it is only temporary deterioration. It may be a fever. A person has a fever, and after the fever is over his hair is gray. A person goes through a period of terrible anxiety. We have heard about people having their hair turn gray in a night. That never happened, but the hair has turned gray in a week, ~~sk~~ In three or four days the hair has become perceptibly grayer, but it never happened in one night. But passing through some period of great anxiety, or great strain the body has been so reduced by that strain, burden, anxiety and worry, has been so depreciated that these phagocytes have turned upon the body. So anything that reduces the vital resistance of the body, exposes us to the attack of these servants of ours that are working in the body for the maintenance of our lives, yet are the most dangerous of enemies because they are liable to turn upon us if we lose the power to resist them. Now just the same thing happened in the old South when the slaves sometimes in certain sections of the country made an insurrection against their masters. So long as they were kept in subjection, they were working for their masters, but when they turned rebels, they attacked their masters. It is the same with the body. These phagocytes are slaves, they are working for us, that is, their duty and it is proper for them to stick to their business and do their duty, but when we cease to have the power to maintain the mastery over them, when the body loses its power to maintain its own resistance, when the

body cells lose their power to resist the attack of these phagocytes, then they fly upon the body and may actually destroy it. That is the way we get arteriosclerosis; that is what makes the arteries get hard; that is what makes the kidneys become infected with Bright's disease; that is what makes the liver become cirrhotic and harden up--these degenerative processes that result in dropsy and in early decay of the body, in premature senility, old age and finally death, and this results from the action of these phagocytes. That is the way the skin becomes parchment like, so that instead of having a nice pinch of skin when we take hold of your flesh, there is nothing but a little paper on it, a piece of oiled paper on it. That is the way these phagocytes have stolen from the skin this underlying cushion that lies beneath that leathery covering of skin. The little cushion underneath the skin has been stolen away and there is nothing but the thin horny part of the skin left, and that is why it has this parchment like appearance. So you see it is best for us to keep these phagocytes at their proper work and not allow them to turn upon us and destroy us as they are likely to do. How are you going to do it? Be careful how we treat them; be careful to keep the body and the tissues clean because it is when the blood and the tissues get unclean that they mistake the body for garbage that needs to be removed, don't you see. These blood cells make a mistake. They think these polluted tissue cells are dead cells, so by mistake they seize upon the body itself when it is deteriorated and think it is debris that needs to be removed.

Question. What may be done for a girl of sixteen who suffers with nervous headaches, can she be cured?

Answer. Certainly she can be cured. Nervous headache is nothing but toxic headache. That term is an utter misnomer. You couldn't have any other kind of headache than nervous headache, that is the only sort of headache there is because it is only nerves that can ache. You see bones cannot ache, finger nails cannot ache, hair cannot ache--nothing can ache, but nerves.

Nerves are the sensitive structures of the body. No other structures of the body have any sensibility except nerves. Consequently a headache is always a nervous headache. There is not any other kind of ache but a nervous ache. Can such a case be cured? Certainly every headache can be cured. These so-called nervous headaches are all toxic headaches due to the fact that the poor girl has not had proper outdoor exercise and has had wrong diet. The bowels have not been properly trained. There is an accumulation of poisons in the body, and this nerve storm that you call headache is simply a protest of the body against its treatment. It is the body rising up in arms and complaining because it has been abused. We hear a great deal about nervous diseases, nervous headache, neurasthenia, nervous prostration--the most ridiculous term that ever was formulated--these are all of them misnomers. They do not represent anything at all that is real, except a group of symptoms. They represent no morbid conditions whatever because there is one morbid condition that is back of it all, and that is simply poisoning of the body. Nervous headache is poisoning, nervous prostration means simply the body has been poisoned until it is prostrated, that is what it means. A bilious attack is nothing but acute poisoning. You might have been poisoned with carbolic acid or by swallowing atropin, or a big dose of opium, or something else. You are simply swallowing backwards, if you please, the horrible poisons that are generated in the colon, and that is what makes these nervous headaches, neurasthenia, nervous prostration, etc.

Question. Should one eat salad and drink milk at the same meal.

Answer. It depends on how stout a stomach you have. Milk is not the most easily digestible of all foodstuffs, though it agrees fairly well with vegetables, and the reason is because the vegetables remain in the stomach for a long time because of the large amount of cellulose which they contain, and the milk clings to them. Now the vegetables do not ferment very easily, but milk does ferment very quickly and putrefies very quickly, so when the vegetables

remain in the stomach and some of the milk clings to these undigested vegetables, the milk will ferment, decay and putrefy and cause a bilious attack when milk and vegetables are combined together. But now if the vegetables are ground up to a pulp and taken in the form of a puree or chewed until they are in the form of a puree before you swallow the vegetables, then the milk does not make any disagreement with them because there is no innate disagreement between vegetables and milk, it is only in the form of the thing eaten.

Question. At what age should a child be given lettuce?

Answer. When it has teeth and can eat the lettuce.

Question. Is meat injurious when slaughtered according to the Mosaic law and prepared as follows:- one-half hour soaking in water and one-half in salt before being cooked?

Answer. That is not according to the Mosaic law. According to the Mosaic law it was to be put in salt water and soaked over night and must be washed until all the blood is washed out of it. The animal must be examined before it is killed and after it is killed every organ of it must be examined thoroughly to see if any part is diseased and when there is a tuberculous lung, does it say, for example, according to the Mosaic law, that the lung should be taken out and the rest eaten? Not at all, the entire animal was to be rejected. But the law of the United States is that the tuberculous lung, or the pair of tuberculous lungs, or the tuberculous kidney, or a rotten intestine or liver with a big abscess in it, that the part that has the abscess or the infection should be removed and the rest shall be pronounced as good as any. That is the sort of beefsteak you are likely to get any time. The last beefsteak I ever ate in my life was when I was a boy fourteen years old, and I shall never forget it. A portion of tenderloin had been brought home from the butchers and the cook cut off a slice and it had been cooked and eaten for breakfast and the next morning another slice was cut off to be prepared for breakfast, and when that second slice was cut off the knife cut right into the middle of a

big abscess. I have never forgotten to this day that the last piece of beefsteak I ate was a piece of beefsteak that lay right next door to a big abscess, and it didn't improve my appetite at all. But you have done the same thing many a time. ~~Some~~ Some time ago a Professor in a Medical College wanted to show some tapeworms to his students. So he telephoned down to the butcher that he wanted to get ~~some~~ hold of ^{some} measly pork that had some little spots in it where the young tape worms were, each tape worm in a little bit of a shell, don't you know. When he got hold of some measly pork he wanted him to be sure and send it up to him. So after a couple of weeks he hadn't heard from him and he telephoned down to him, "why didn't you send me up that measly pork?" "Why", the butcher said, "I did send it up last week." "Oh, for heaven sake", he said, "Then we ate it." Now that sort of thing is going on all the time, probably every one here has eaten beef with measles because you are ten times as likely to get it from beef as you are from pork. I shall never forget a case in which I came very near getting into trouble. I did get into some trouble, but I got out of it. I used to recommend meat. Why, I have prescribed whole carloads of meat for people. We used to use several oxen a week here in this institution ~~regularly~~ ^{regularly} when we didn't have nearly as large a family as we have now. Up to ten years ago now meat was regularly served on the table here. I have had charge of this institution for thirty-six years this year, and during that thirty-six years meat was served here all the time until ten years ago when we got so thoroughly convinced the thing was damaging and harmful that we threw the whole thing away and the whole faculty voted unanimously to exclude it from the premises because we became so thoroughly convinced it was a harmful thing and was doing our patients harm. And one of the things that convinced us was this. I had a patient for whom I had recommended scrapped beef and Salisbury steaks-- that was about twenty years ago, pretty nearly. I have not prescribed meat for anybody for as much as twenty years, but some of my colleagues continued to do it, and we let them have meat if they wanted it, but we were constantly telling them

it was not good for them. I prescribed meat for hyperacidity in those days. We did not know any better. Patients always got worse and worse. They were relieved by the beefsteak when they ate it, but they had to have more beefsteak the next time and less bread, so they kept getting worse and it never cured anybody, but it made the patient feel very comfortable for the time being. This lady had her Salisbury steaks. She was here six or eight weeks and went home. About six months afterwards I got a letter from her. She said, "I have a bill against you for \$6.54." I wondered why. I hadn't had any dealings with her that I knew of. She went on, "I was up there at the Sanitarium and you gave me beefsteak and with it you gave me tape worm, because you gave me Salisbury steaks and I am sure I got a tape worm there, for I got home and my doctor found out after three months that I had tape worm and I had to pay him \$5.00 for coming to see me and \$1.54 for medicine to get rid of my tape worm, and I think you ought to pay the bill." I pondered over that for two or three days as to what I should say about it because she seemed to have proved the case on me pretty well. I wrote back and said, "You have your doctor examine that tape worm, look at his teeth and certify to his age, then if he can prove that the tape worm was born here, I will pay the bill." I never heard another word from it, but I said, I won't take such changes again, having to pay for a tape worm, that is too much. Well every sixth man in the country has got trichina in his tissues. When I was a medical student in New York a professor of demonstrative anatomy there, Dr. E. G. Janeway, who died not very long ago--I was a private student with him--Dr. Janeway told me that 6 per cent or one-seventeenth of all bodies that were brought into the anatomical laboratory there had trichina in the muscles. Now down in Chicago they have examined the pigs there for some years and the Government certifies that 2% of all pigs have trichina. It was 6% of people, or one in seventeen. 6% of all men had trichina at Bellevue, and 2% of pigs have Trichina at Chicago, and that represents the country at large. Now how does it happen that three times as many men have trichina as pigs. Only 2% of pigs have trichina and

and six percent of men, women, boys and girls, one out of every seventeen. How does that happen? How do we get trichinae. The natural history of trichina has been worked out. The first trichina ever seen was found in rats. Rats visited the dissecting rooms of dead houses and got trichina from people who died with it. Next it was found in in pigs. Pigs ate the dead rats that had trichina, you see, and the pig got it from the rate, then it was found in human beings. Human beings ate the pigs and got it. So the rat had trichina, died; the pig ate the rate and got trichina. The pig had trichina, died, and man ate the pig and got trichina. Man had trichina and died and a rate ate the man and got trichina; another pig ate the rate, another man ate the pig, another rate ate the man and so it goes around. Well one scavenger ate another and passed the parasite around.

Well now, my friends, you see when we get into a scavenger diet what we are likely to get. A hog is a scavenger and as part of his business as a scavenger he gets trichina. The rate is a scavenger that eats the dead body of a man and gets trichina, that is the compensation he ~~gunk~~ gets for being a scavenger you see. Now when a man joins the trio and eats a scavenger pig, he has to suffer the same penalty that the scavenger pig did, he gets trichina too. Nobody would ever get trichina in the world if they did not eat the flesh of a dead animals. Sometimes chickens have trichina and sometimes fish. If pork containing trichina was fed to the chickens, the chickens will get it, and if the flesh is thrown into the water, the fish will eat the flesh and get trichina. All scavenger animals are likely to have trichina. Don't forget that now will you? I am sure you wont forget it. The only thing that troubles me when I am talking to people is the fear that they are going to forget, because the things I am telling you I consider very, very important. We are degenerating in this country; we are going down at an awful rate.

Question. When may one expect normal health after experiencing a

~~Question~~ mild attack of heat prostration?

Answer. Well if the person has had a mild attack of heat prostration he ought to get over it pretty soon, in the course of a few weeks, but very severe heat prostration sometimes leaves a person in a very serious state because it sometimes involves such damage to his brain that it may take several years to recover from it. I think a person who had an attack of this heat prostration, even if very severe, if he could have proper treatment right away and a regular process of elimination and up-building and a right diet,-- I think his chances for speedy recovery would be very greatly improved. Exercise should be very moderate. Long neutral baths are very excellent in these cases and very gentle tonic applications, that is, tonic applications of cold water.

Question. What nature of food should one use in high blood pressure, and is walking of ^{any} benefit?

Answer. Answering the last question first, yes, a large amount of walking is of very great benefit when the blood pressure is high, but slow walking, moderate walking, never get out of breath. A person with high blood pressure should be very careful not to get out of breath. Why does one get out of breath? Because the heart is already doing too much work. Suppose the blood pressure is 220. That is twice what it ought to be. The normal blood pressures is 100 to 110, so when it is 220, it is double what it ought to be. The heart has to do four times its ordinary work, you see. It has four times as much work to do as it ought to do, because it takes as you know, ~~four times~~ for a steamer to cross the Atlantic in one week four times as much coal as it does to push the steamer across the Atlantic in two weeks. To push a locomotor along the track at forty miles an hour requires four times as much coal as it does to push it over the track at twenty miles an hour because the resistance ~~the resistance~~ increases with the square you see of the velocity. So it is of the greatest importance that a person who has high

blood pressure and who is overworking his heart enormously, making his heart do four times the work it ought to do, such a person should be very careful not to increase the work of the heart. Whenever one hurries upstairs or runs to catch a train, that is when the extra strain comes upon the heart. Now when a person's blood pressure is 110, there is a great margin you see. His blood pressure can rise up to 220 temporarily without any very great risk or danger, but when it is standing up there all the time, when the heart is doing the same amount of extra work all the time, every minute, it is doing just what it does for the man who is running to catch a train. When a man runs to catch a train his heart is on a very great strain, but when the man's blood pressure is up to 200 his heart has to do that extra work every minute of his life, so the heart wears out too fast. Such a person should be very careful to do nothing that puts him out of breath, nothing that overtaxes him. He should walk a great deal and walk slowly. Again the nature of the food is a matter of very great importance. There are some that are very harmful for people who have high blood pressure, and the thing that is most harmful of all, perhaps, is beefsteak. Now I saw somebody looking very sad about that. I saw one lady actually turn her head away. Now why? Let me tell you a little story. There came into my office two years ago a tall, stately looking man with a military air, and he was introduced to me as the Surgeon General of the army, retired, and I said, "Why, Doctor, I am glad to see you." He said, "I came to consult you." I said, "I am very much surprised that the Surgeon General of the army should come here to consult me, a little country Doctor off here in a country town." He said, "Doctor, I have been watching you for some years, particularly the last twelve years, and I have been reading many of the things you are writing, and I have made up my mind you are absolutely right in your theories about the colon and this auto-intoxication and the horrible things that result from it. I have made up my mind you are absolutely right, and I was over to Hot Springs on an errand for the Interior Department, and I am on my way home, but I

stopped in to see you because just the day before yesterday our surgeon down there took my blood pressure and found it was 210." Now he said, "Doctor, I have retired from the army and I was counting on having a pleasant life for twelve or fifteen years. I arranged to travel; I wanted to visit the art galleries of Europe and have a good time, and I don't like this at all because this blood pressure of 210 means a funeral two or three years hence, and I don't like it a bit. So when I found my blood pressure was up to 210 I made up my mind to come right straight here, have you examine me and tell me how to live. I want you to look me over thoroughly and tell me just how to live, and I will do it." So we began to talk it over. I said, "Well, Doctor, you smoke don't you?" Oh, yes I smoke, no harm in that I suppose is there?" "Well", I said, "It is just this way, a single cigar will raise the blood pressure twenty points in thirty minutes. One cigar will raise the blood pressure twenty points in thirty minutes. Now suppose you smoke ten or fifteen cigars a day." "Well", he said, "I will cut that out, I won't smoke but three times a day." "But?" I said, "Then you will raise your blood pressure twenty points three times a day. Your blood pressure is 210 now, how much more do you want ~~it~~ it to be?" "Well, Doctor," he said, do you think it would do any harm to smoke a very mild cigar-- I smoke the very mildest kind of Turkish cigars--and about half a one ~~is~~ after each meal, how do you think that would do?" "Well", I said, "Of course if you only want to get your blood pressured up ten points instead of twenty, it might not be so bad. Of course it is up and it is not down, what are you going to do, get your blood pressure up or down? If you want to get it down you will have to cut out cigars altogether." "Do you really think these mild Turkish cigars, the finest I can get that I pay 50 cents a piece for, are bad?" I thought that they were rather harmless." "Well, the fact is, Doctor, the only difference between the mild cigar and the strong is that the mild cigar is strongest in prussic acid and mildest in nicotin, while the strong cigar is strongest in nicotin and mildest in Prussic acid. There is just as much poi-

son in one as in the other, only it is a different kind of poison." "Well, I guess we will have to cut them out." He looked kind of sorrowful, but he said, "I guess I will have to cut them out." "Well, Doctor, how about tea and coffee?" "Oh, well I am very fond of coffee, but I don't drink tea." I told him the story about coffee. "Well, I guess I will have to cut it out, but I enjoy my coffee very much." "Well, Doctor, how about beefsteak?" "Well, of course," he said, "we army men eat a great deal of meat, that is really the principal part of the diet." "But, do you know, Doctor, that there are fourteen grains of uric acid in a pound of beefsteak and that the body eliminates only six grains a day? A whole day's work for the kidneys is to eliminate six grains of uric acid, and every pound of beefsteak has fourteen grains of uric acid in it." He said, "How about Sweet breads, they are not so bad are they?" "Sweet breads have seventy grains to the pound, that is the difference, four times as much and more." "Well, Doctor, what are you going to leave me?" I don't know about it that looks like a pretty hard row to hoe." ~~What~~ I said, "Well you try it." He said, "Well I tell you what I will do, I will try it three or four days." At the end of four days he came into my office, caught me in the hall, led me to the office, sat down in a chair and said, "Doctor, Doctor, this is just ^{simply} marvelous, it is just simply marvelous, why, Doctor, my blood pressure has come down thirty points in four days, it is only 180 today. I took his blood pressure and sure enough it was then 180. That is the way to get the blood pressure down. I got a letter from him a few months afterwards, and he said he was sticking right to it. He had departed from it but just once. He had smoked a little piece of a very mild cigar, that was the only backsliding he was guilty of, and he was getting along fine. Now, my friends, there is that splendid man, just about my age, about sixty years old, with a blood pressure twice what mine is, and getting ready to die, for he cannot live very many years anyhow. In spite of all we can do for him, he has not got twenty years, he has not got ten years ahead of him. It is not at all likely that he will

live ten years longer. Bright's disease will be creeping in pretty quick and apoplexy. When the blood pressure once gets to going up, you can hold it in check, but you cannot get it back to normal again if you let it go too far. Now, fortunately, sometime we catch a person with the blood pressure going up, but it has just started ~~up~~ so we can get it down, but ~~you~~ we can never do very much even with those people because as soon as they find it is coming down a little, off they go. I had a letter a day or two ago from a man whose wife was with us four years ago whose blood pressure was 200, and we got it down to 120, and she was so elated that in spite of all I could say, she hurried home. She staid at home until it came up to 210. We got it down to 180, then she went home again. She lived near Indianapolis and she went back there and tried to take care of her blood pressure and found there was not a blood pressure instrument in the whole city of Indianapolis, and when she came back here we found it was over 200 again. She was in a very sad state, she was giddy, she couldn't walk straight. The condition is going right on and she has prehaps but two or three years more to live. Now it is a pity that people will not make a business of this thing when once the blood pressure gets up. It is a case of a house afire. It is not a trifling thing, it is not a thing you can put off. That degeneration of the arteries that is going on there, that is raising the blood pressure, that is advancing every day, every hour and every minute, ~~that~~ is like a great tidal wave that is rolling in, that is rolling in every minute and we have got to build up a barricade against it. Now when we change the diet, it will make a great drop in the blood pressure. The blood pressure will come down twenty points. So by a radical change of diet, by dropping tea, coffee, etc., your heart will have a chance to rest. The reason why the blood pressure comes down so ^u quickly, however, is because we take the poisons out you see, uric acid and all these other poisons which cause the arteries to contract, and then the blood pressure comes down. But now there is a hardening and a stiffening of the arteries that is due to fibrous changes

in the arteries, and that is a great deal harder, ~~as~~ it takes a longer time to get rid of that because that means a change of tissue, you see, and that has to come about by getting the blood absolutely pure. Now suppose you have here a garment you want washed, and this garment is dirty and you want to wash it. Suppose it is stained blue and you want to get that blue color out of it, somebody brings you a pail of water that has some indigo in it, you wouldn't want to wash that garment in that water with indigo. In order that you should be able to wash the blue out of the garment, you have got to have absolutely clean water, otherwise it wont dissolve the indigo out of it, you see. Now it is so with the blood, you cannot reduce the blood without changing the arteries and you have got to change the arteries. You have got to get out of the arteries the old diseased structures that have been deposited there because of poisons in the blood, so you have got to have the blood clean. You have got to get all the uric acid dissolved out of the body, but that takes time. There is another thing besides beefsteak that is bad, and that is tea and coffee, for the reasons I have already told you, that they have uric acid in every cup. Then there is cane sugar, that is another thing. At the present time ~~many~~ ^{no} intelligent physicians will allow his patient who has high blood pressure to use cane sugar because cane sugar somehow ⁺ raises the blood pressure. Give a normal healthy man a little cane sugar and his blood pressure will go up. It is not quite so bad as cigars, but it helps along in that direction. Another thing is common salt, chlorid of sodium. A great deal of salt will raise the blood pressure. When we find a patient with low blood pressure, the thing to do first of all is to inject solutions of salt into his tissues, take a hypodermic syringe and inject salt water under his skin and that raises the blood pressue, and often saves the patient's life when the blood pressure is falling in shock. But if your blood pressure is already up, you do not want salt, cut the salt out of the bill of fare. Now some of the things I have mentioned, I am sure you will remember. Cut out the beef-

steak, cut out the tea and coffee, the cane sugar and the chlorid of sodium, or common salt. Those are the most important things you can do so far as diet is concerned. Now there is another thing that needs to be done, and it is just as important as these other things, and that is to make the bowels move three or four times a day. Now the reason for that is this. A person either in early ~~manhood~~ manhood or womanhood can neglect their bowels with apparent impunity. I have known people whose bowels didn't move but once a week and they felt perfectly well. The reason why they felt perfectly well is because the liver and the thyroid gland and other poison destroying glands, the skin and the kidneys and other poison eliminating glands, were so active and so vigorous, so efficient that they were able to take out all the poisons that were put into the blood, they were absorbed. But as a person goes on in years these glands lose their integrity and the proof of it is those brown spots on your hands and that thin parchment like skin and the shrinking up of the thyroid gland in the neck, and the neck has a skiny look. When persons get so there are hollow places in here around the larynx that means the thyroid gland is shrinking or degenerating. Why there are a dozen people here in the house now that you cannot find have any thyroid gland at all, who have great brown spots on the hands and parchment like skins. It is because these glands have degenerated, that is a sign of their degeneration, and also of the degeneration of other glands. The brown spots mean degeneration of the suprarenal capsules, the little cap like organs that lie up over the kidney. These suprarenal capsules, or adrenals, as they are called, are of immense importance in the body because they burn up these poisons. And the coloring matter that is deposited in the skin makes liver spots, and these brown spots make the dingy skin. As we go on in years these glands become deteriorated, then these symptoms of degeneration appear. That is why old people have these spots and the dingy skin and lose the bloom of youth, it is because they have lost the power to eliminate poisons and the poisons are ac-

cumulating in the body. When a person has reached that stage of life, the bowels are usually more and more sluggish, the artificial habits of civilized life have been doing mischief all along the line. The sedentary habits of of people tend in the same direction. A person becomes less and less active as they get along in life so the bowel movement becomes less and less active, less and less thorough and complete, so it is necessary something should be done. In old persons the bowels should move every often, three or four times a day so as to carry off all the contents of the intestine so rapidly that there is no evidence of putrefaction, that there is no time for the formation of these poisons, so as to reduce the amount of poisons to the minimum. Now I have made this plain, I think, so everybody can understand it. But you say my bowels move once a day generally and isn't that sufficient? It is not sufficient. If you have high blood pressure, it is of the utmost importance that there should be ~~sufficient~~ frequent bowel movement three or four times a day so as to carry off the materials before there has been any time for putrefaction changes. Now those four or five things are very important. No meat, no tea or coffee, no cocoa, nor theobromin in any form, no cane sugar, no chlorid of sodium, and active bowel movement. Well, you say, how are you going to do that? I want to say if there is anybody here in this room whose bowels are not moving more than once a day, you had better see your doctor about it and have something done about it, because a person who is sick needs to have more active bowel movement than that. It should be at least after every meal, and better more, until the body is clean, until the body becomes thoroughly purified.

Question. At what age should a child have vegetable food?

Answer. When it has teeth it may begin to eat vegetable food.

Question. What treatment would you prescribe for rheumatism and nervousness combined?

Answer. Well, simply remove the cause of the rheumatism and the nervousness, and the cause is usually the same, that is, putrefaction of food

material in the colon, autointoxication, colon germs growing in the colon and producing awful poisons that give rise to rheumatism in the muscles, nerves and joints and to neuralgia and various other troubles.

Question. What should be the proper diet of an anemic person?

Answer. An anemic person should eat a great deal of fresh vegetables, especially green things like lettuce and cucumbers. All those things contain a great deal of iron, much more iron than anything else that is suitable to eat. You don't need to eat meat. Meat is ~~a~~ the very last thing such a person should eat. This condition in many cases is due to poisoning by colon germs. Meat feeds the colon germ.

Question. What is the cause of arthritis deformans?

Answer. Welch's bacillus growing in the colon is absorbed into the body and causes these poisons and produce the disease .

Question. Is it a fact that invalids progress more rapidly and recover strength quicker in hospitals using meats and meat broths than in those where these are excluded?

Answer. I should say most emphatically no. This thing is known. You can ask any prominent physician about it that in the countries where little meat is eaten, for instance, in India and in Hungary and among the Turks in general, and in other parts of the world where meat is used almost not at all, where the diet of the people is mostly rice and simple foods, recovery from operations is astonishingly prompt, and the recoveries take place in cases in which recovery would not be expected at all in a civilized land on an ordinary meat diet. The fact was pointed out many years ago by an eminent French surgeon that the people of cities do not recover from operations so well as people from the country and he gave it as a reason that in the cities so much meat was eaten. The doctors are finding out more and more that the meat diet does not favor recovery. The worst subject a surgeon could have is a beef drinker or butcher, a beer seller, the barkeeper or the butcher is the very poorest subject a surgeon could pos-

sibly have. Why these butchers very often die of blood poisoning from a little cut on the finger when they are cutting off a beefsteak for your breakfast. The same beefsteak that is sent home for you to eat inoculated the butcher with the poison which killed him.

Question: Dr. Trudeau and other eminent authorities on tuberculosis, after long study and experiment, insist upon meat at least twice a day for their patients.

Answer. Well, they have not made a long study of that particular portion of their subject, they have been studying something else. That particular thing they have not studied; if they had, they would know better. We had here just last week a visit from a superintendent of a large colony for tuberculosis. He came here on purpose to study our diet. When he went home, he said they were going to establish our dietary in their institution. He said they were having a great deal of trouble to get their patients to do it, but they were going to have certain tables where they would not serve meat to their patients because he was easily satisfied that that was of great importance. I sent out a little while ago a little paper I wrote on the subject, sent it to all the tuberculous hospitals in the United States, and I got back a considerable number of letters confirming my views and observations on that subject. Perhaps it will be proper for me to tell you that among the others there is a letter from one of the former surgeon generals of the army, Dr. Sternberg, who has charge of a large institution for the treatment of tuberculous patients near Washington. He wrote me that he was thoroughly convinced that I was entirely right about it and he was making less use of meat continually in the treatment of his tuberculous patients. The idea that meat is necessary for tuberculous patients is an old delusion that is being rapidly dissipated, and will after a while entirely disappear.

Question. Does colitis cause a tired feeling?

Answer. If you have got colitis you can hardly have any other

kind of a feeling than a tired feeling, because colitis opens the door for poisons which are present in the intestine to simply flood into the blood and to pollute the tissues and intoxicate the body. If you had some snake venom here and rubbed it on your skin, it would not do you any harm, but if ~~you~~ there was a little raw surface on your skin and some of that venom gets on to that little raw surface, you are very likely to be dead after a couple of days after horrible suffering, because the snake venom will not go through the skin, but is absorbed when placed on a raw surface. The very same thing is true in the intestine. In colitis raw surfaces are produced and these poisons produced by germs in the intestines are akin to the venom of snakes, and when there are raw surfaces in the intestine these poisons are taken in through these raw surfaces very easily and so persons suffering from colitis always suffer from auto-intoxication and when these poisons are absorbed, that is what produces the exhausted feeling.

Question. When denouncing fish as an impure food, I have been asked why then did our Savior feed it to the multitude, can you give me a reply?

Answer. Now I am not bound to answer that question. I cannot answer for the motives of the Almighty in doing things. I am not expected to know. Omniscience is beyond me. I cannot understand it. I am certain I would not give fish, so far as I am concerned, I would give something different. But why Christ gave fish I do not know, and I don't feel that I am under any obligation to try and tell you. Now this thing I want to call your attention to, however, that Christ at that time was not giving a lesson in dietetics as I am. I am teaching dietetics, he was not. He was teaching something else and the great purpose of his work was entirely different from the question of diet. The question of diet had nothing to do with it. The fish was simply an incidental matter and might have been anything else besides fish. This thing is of interest, however, in this connection that when the Almighty wanted to give the people of the world a lesson in dietetics at the very begin-

ning, when he wanted to teach Adam the first lesson in dietetics, he gave him a bill of fare and this was his bill of fare: "Every tree bearing fruit and every herb bearing seed, to you they shall be for meat." That you will find in the 29th verse of the First Chapter of Genesis. That is what the Almighty told Adam to eat, and we have never had any instructions to eat anything else. Yes we have because there in the 3rd Chapter, He said to Adam after he had sinned, you know, that Adam should earn his bread by the sweat of the brow, he told him, "And cursed shall be the land for thy sake. Thorns and thistles shall the earth bring forth, and thou shall eat the herb of the field." So He ~~gave~~ was given permission to eat grass, roots, asparagus, cucumbers and things. So far as that is concerned, there was no further permission came until after the flood when ~~there~~ everything was wiped off the face of the earth but the animals. Then He said to them, "Every moving thing that liveth, to you it shall be for meat." That is, He said you can eat them, but He said immediately afterwards, "Your life will I require, by the hand of every beast will I require it." He said another thing in there too. They were permitted to eat flesh. "Every moving thing that liveth shall be meat for you. The fear of you and the dread of you shall be upon every beast of the field." Of course, they would be afraid of them. When the beasts found that Noah and his descendants were likely to eat them at any time, of course, they would be afraid of them. Before that time they were not afraid. When Noah was gathering all those animals into the ark you can imagine that great picture of Noah standing up there whistling and the elephants and lions coming up and marching in there in perfect accord and harmony in that big managery in the ark, the biggest one that was ever gathered together on the face of the earth, and they were all living together in perfect harmony, and the lions were not chasing the sheep either, they ate the herbs of the field. Noah didn't have to take in a whole drove of sheep to feed those lions. Seven sheep went in and seven sheep came out. Now those lions either fasted the whole time, or else they lived on the natural food which was eaten by all the animals besides. Besides there was not room in the ark for all the sheep that would have been necessary to

feed all the lions and other carnivorous animals and all the food necessary to feed those sheep to keep them alive all that time you see. It would have taken forty arks to supply them. "Every living thing that moveth, to you it shall be for meat." Now see what happened. Noah lived nearly a thousand years, his sons lived six-hundred years, their sons lived three-hundred years and in four or five generations the length of life was reduced to one-hundred and twenty years, and when they got down to David's time it was only three score years and ten. It was the colon germ you see. Metchnikoff has proved that the colon germ is the anti-longevity germ, and that beefsteak cultivates it. But then there was another lesson. When the children of Isreal were coming out of Egypt after they had gotten a little way into the desert they got out of meat, they had eaten up all the dried herring they had brought along from Egypt and everything else of that sort, and didn't have a thing left in the shape of meat to eat. They were hungry. What did God give them? He gave them manna. They were straving to death, they would have starved to death, but he fed them manna direct from heaven. That was like Corrientes seed. They were not given shrimps or crabs, but were given manna. So when God fed them on manna he gave them an object lesson as to what they should eat. Manna was pure delicious bread from heaven. God feeds us just as he did them. When we take the grain and wheat, apples, plums and peaches they are passed down to us from heaven in just the same way, just as clean, sweet and pure as those Israelites had. But they were semi-barbarians. They got to hankering after the flesh pots of Egypt, and they were by and by almost threatening to go back to Egypt, they wanted to get a taste of beef broth, or something of that sort. No they didn't eat the ox in those days, but worshipped him. But they wanted some sort of abominable things that the bible tells about. Then God let them have all the meat they wanted to eat. He sent them a flock of quail, and you remember an enormous, great flock of quail came in there and they ate all they wanted to and more than was good for them. They were taken sick. A great plague broke out among them while the ~~quails~~

quails were still in their mouths it said. They had an awful bilious attack. So, so far as the bible goes it does not give us any evidence that beef eating was commended by heaven, although it was tolerated. And Paul said that he would eat no more meat so long as the world stands. Paul said that. He said, "I will eat no more meat as long as the world stands", and so far as the record shows, he has not eaten any since. Now I will have to confess a little more than that. He said, "If meat caused my brother to offend, I will eat no more as long as the world stands." I have used that text simply as Lorenzo Dow did who announced he was going to preach a sermon on, "Topknot come down." He read the text "Top not come down." The bible says, you know, "Let him that is on the housetop not come down!" So Paul said he would not eat any more meat as long as the world stood if it caused his brother to offend. I can prove, I think quite conclusively that meat is a large cause of the crime that prevails in this country. Down in New York Juvenile Court not so very long ago an investigation was made by a man from the Carnegie Institute, an investigator under Dr. Davenport, the secretary of the Eugenics Section of the American Breeders Association. He made an examination of one hundred children in that Juvenile Court and the ninety-seventh child in that hundred children was found to be of sound mind and all the rest of those children were feeble-minded. And in the State of New Jersey one person in every three hundred is feeble-minded, and including epileptics, insane and feeble-minded persons, there is one out of every ninety persons in the whole United States. One person in every ninety in the United States is either a lunatic, insane, feeble-minded, idiot, imbecile or an epileptic. Now that is a terrible thing, and these feeble-minded people, these defectives, are increasing twice as fast as the population is. That has been proven within the last two years, proven at the Carnegie Institute by the researches they have carried on, that these defectives are increasing twice as fast as the population. Beefsteak is one of the causes of that, and if it

it causes my brother to offend, if it makes criminals, I will never eat any more as long as I live.

Question. Will the stomach digest typhoid fever germs, and why?

Answer. It will if there is gastric juice in it, but if you take the typhoid fever germ in some water when there is nothing in the stomach, when the stomach is not digesting and you are short of hydrochloric acid, or if you have not got enough hydrochloric acid, under those circumstances, the typhoid fever germ will go right on down into your intestine and grow, and you may get typhoid fever.

Question. Will the stomach digest the Yogurt Bacillus?

Answer. No the Yogurt Bacillus is able to endure the contact of acids so it usually passes through. If it staid there long enough, the stomach would naturally digest it.

Question. What is your opinion of bananas as food?

Answer. The banana is a splendid food, but take it in the form of a puree. Don't take it green or withered or tough, but take a thoroughly ripe banana, make it in the form of a puree, then crush it against the roof of your mouth with your tongue and make a smooth paste of it before you swallow it, otherwise it will lie in your stomach and will not digest, for the stomach will not digest bananas. Bananas must be put into a liquid state before they get into the stomach then the banana will pass through the stomach into the intestine where it will digest. But the stomach cannot digest bananas. There is nothing in the gastric juice or saliva that can digest a banana. The banana does not require the kind of digestive work that is done in the stomach, it requires a kind of digestive work that is done below the stomach, so the banana must be taken in the form of puree or pulp. The baked banana is in the form of a pulp. If you cannot get the banana served in the form of a pulp, get a real ripe banana with a dark brown skin and take off all woody strings on the outside, cut it up into a glass and with a fork cut it up fine, then beat it up and in less than two minutes you can whip it up like the white of egg, beat it up to a froth. It is aston-

ishing how easily the banana can be reduced to a fine pulp.

Question. Why is the Jewish race as a whole healthier than the other races?

Answer. One reason is they have followed so many of the laws of hygiene for so many generations. They have not eaten pork, for example, and they have taken care to investigate carefully the cattle before they ate them when they did eat meat, and as a race the Jewish people the world over have not been very large eaters of meat.

Question. What is the best diet for an anemic child?

Answer. The best thing is to get out in the sunshine. Such a child needs more sunshine, and that is a more important matter than food. But when it comes to food, give the child no meat, give it an abundance of fresh vegetables and potatoes, lettuce and things of that kind and carrots, and give it an abundance of fat, all it can digest, but not, of course, an excess.

Question. Why is the juice of a lemon good for one without acid?

Answer. It is not particularly good only as an appetizer and to stimulate the flow of the gastric juice.

Question. What do the Swedes eat?

Answer. They are very largely vegetarians, though they do eat too much pork as the Germans do.

Question. Is it advisable to drink milk and fruit juices at the same meal?

Answer. There is no objection at all.

Question. How can the thyroid gland be stimulated?

Answer. By cold baths, massage to the thyroid gland and applications of electricity.

Question. Here is a quotation from an interview given by Capt. Amundsen: ~~sticker~~ "For food we relied entirely upon pemmican, biscuits, chocolate, powder milk, and, of course, dog meat. We never felt an undue craving for something to eat or any feeling that we had not had sufficient nourishment."

Answer. The biscuits, chocolate and powdered milk furnished a good deal of wholesome, natural food. Dog meat was only eaten when they had to and the pemmican was only taken as a source of fat. Pemmican is meat, raisins and fat. The raisins furnished the raw ~~fresh~~ fresh fruit which they could hardly get any other way perhaps. However, when Dr. Hall made his great expedition to the Arctic regions in the excursion in which he got nearest to the Pole, he says: "On a very cold day with the wind blowing sixty miles an hour and the temperature forty below zero, I sat down on a iceberg and took dinner on graham crackers." Leut. Shackleton said the greatest craving of his ~~men~~ people was for the things made of flour. It was very natural that they should have such a craving because they ~~ate~~ ^{ate} a great deal of meat and those things were instinctively demanded as an antidote for the meat they were eating.

Question. Is fish meat as objectionable as other meats?

Answer. Yes, a little worse because it decomposes more rapidly. Meat, oysters and fish are the worst kinds of flesh food. If you are going to eat anything at all, don't eat those things. The best thing I could recommend, if I were to recommend anything at all, would be a thin scrap of fat meat fried very hard. I do not know of anything else I could recommend of meats that would be less objectionable. There is nothing in that that can decay. It is true it is rather hard to digest, but it does not rot, and that is the worst thing that comes from meat.

Question. What is Para-lax and what is it used for?

Answer. It is an emulsion of a refined paraffin oil, and the purpose is to lubricate the intestine and absorb poisons, carry them off, and to protect diseased surfaces in colitis.

Question. What are some of the symptoms of rheumatic pleurisy?

Answer. There is no such a thing as rheumatic pleurisy. Possibly rheumatism of the muscles of the chest is referred to. There is usually tenderness of the muscles of the chest, pain on deep breathing and in the use of the arm. Hot applications are the best means of temporary relief, but the real root

of the trouble will be found in a polluted colon.

Question. What would be a balanced ration in three meals a day for a severe case of autointoxication.

Answer. I would suggest that you call on the dietitian in the dining room. Ask the matron in the dining room to send a dietitian to you and she will make a bill of fare for you that will be very nice and satisfactory. It would be a little difficult to take the time necessary to make it up here.

Question. What do the Italians eat?

Answer. Well as a class they eat peas, beans, macaroni and chestnuts. Those are the most popular foods in Italy. Some thirty years ago in traveling in Italy, I saw one morning some boys out getting their breakfast about 10 o'clock in the morning. The boys were working in a tannery close by and a woman on the corner of the street had a kettle full of great big Italian chestnuts, and she ladled out about a dozen of these big chestnuts for each boy, a big handful for each boy, and they gave her a copper for these chestnuts, and that was the breakfast of those boys. That was all they had for breakfast and that was Ten o'clock in the morning. They would work then until about Four o'clock in the afternoon then they would have another meal, and they were living almost entirely upon chestnuts.

Question. Is it possible to follow the colon from the surface of the body?

Answer. Yes, especially when the colon is filled with hardened material and the abdominal walls are very thin, the colon can be easily marked out.

Question. What causes carcinoma? What kind of cancer is it?

Answer. Carcinoma is a true cancer. There are other forms of malignant disease, one of the most common of which is sarcoma. But true cancer is a disease in which the epithelial cells are affected, and it is produced by an abnormal disease in the tissues of the body which is probably induced, according to Dr. Ross, by the presence of products of putrefaction in the blood and tissues.

Question. What is a good diet for one with an enlarged or hardened spleen?

Answer. Now if you have an enlarged or hardened spleen, you have autointoxication. The autointoxication is the thing that has produced it. You should take a non-putrescent dietary, that is the thing which ~~with~~ you should follow and that is the most important thing. ~~It is the most important thing.~~

Question. If one has chewed tobacco and smoked to great excess for a period of thirty years or more, how long does it take to eliminate the nicotine from his system?

Answer. It does not take very long to take the nicotine out of his system, perhaps a week or ten days, but it takes a long time to ~~fix~~ repair the damage done and often the damage never can be wholly repaired. It is just as it is with a house afire. It may not take very long to put out the fire, but it may take weeks and weeks to repair the damage done by the fire.

Question. Do you advise an operation for floating kidney?

Answer. Generally not. It does not do any good. ^{The} Floating kidney is not the real source of the trouble. Generally it is prolapsed bowels that pull the kidney down. If you attach the kidney, sew it up in place, then the bowel and all are hanging and the pain is generally worse than before.

Question. What is the general effect upon the blood and nerves of excessive hydrochloric acid in the stomach?

Answer. The general effect is to produce a very neurasthenic state, a very disturbed condition and generally pain. If the hydrochloric acid is present in very large amount, there is likely sooner or later to be ulcer of the stomach or duodenum.

Question. What is the cause of sciatica?

Answer. There are several causes. It is sometimes due to gout or uric acid, sometimes to rheumatism, sometimes to reflex irritation through the sympathetic nerves.

Question. How should one deal with a case of autointoxication?

Answer. Clean up, clean out and keep clean, that is the whole story.

Question At what age should fruit first be given to a child?

Answer. You can give fruit to a child at any age when the child can swallow. A little fruit juice ~~xxx~~ or fruit pulp can be given at any time and will do no harm.

Question. What do you think of the so-called Viavi treatment?

Answer. I think it is moonshine and poison.

Question. What causes goitre?

Answer. Autointoxication. Poisons in the colon, overworking the thyroid gland and wearing it out.

Question. If one is anxious to gain in weight, has slow digestion and no appetite for supper, would you advise eating?

Answer. No, don't eat supper, but before you go to bed, take one-third of a glassful of Malt Honey, put some water in it and mix it up to make a tumblerful of water, then drink it. You have got a nice supper in that Malt Honey already digested and ready to be absorbed. I met a lady the other day who had gained fifteen pounds in weight taking that prescription at night. Malt Honey you can take between meals, it is already digested; or you can eat it with food, dilute it with water and drink it, and it will all absorb and will be assimilated and will make fat.

Question. What is neurasthenia?

Answer. It is autointoxication.

Question. Can it be treated at home.

Answer. You must treat it at home. If you have had neurasthenia or autointoxication once you have got to be careful to treat yourself as a cripple all your life. You never can do the things you have done before. You must cut out meat, tea, coffee, everything of that kind that taxes the poison eliminating and poison destroying glands, and never return to them. You have simply got to walk the line.

Question. Do you believe in the method of mind mental healing known as the Emmanuel Movement.

Answer. Well know, I should say I don't believe much in it because it does not strike at the root of things. If I had time I would like to tell you some of my experience with it. Here is a man, for instance, who has a headache. He has headache because he has autointoxication and the autointoxication is due to a colon that acts perhaps only once a week, and he can be prayed for as much as you like, he can have all the hypnotism you like and have Emmanuel treatment or anything else and ~~xxxx~~ as much as you like to persuade him he does not have that headache, so long as he has the horrible poisons in his colon, he has autointoxication and there is no kind of hocus pocus that will ever make the thing different until the colon is cleaned, cleared out. I told that to a man down in Boston at the Emmanuel Church there when I was talking to some of the officials up there about it, and I suggested that kind of a case. "Oh, well," he said, "but then our treatment is good for the bowels too." "Is that so?" I said. "Yes, indeed." "Do you mean to say you can relieve inactivity of the bowels by this Movement?" "Yes, yes, yes" The young man said he was a student of the subject there. He said, "Yes, one of the prophets there ~~xx~~ had a patient call on him whose bowels hadn't moved for fifteen years naturally, and he suggested that the bowels should move three times a day and the bowels got to moving so often she had to come back and have it stopped, then he suggested to her again and stopped it, so you see the thing can be made to work both ways." It is only because there are a few of a peculiar kind of very susceptible people that this system will operate. The Emmanuel Method is all right for people who think they are sick, though they are not sick and for hypochondriac old ladies and hysterical men it is a splendid thing. But when we come to deal with real disease, with ulcer of the stomach, with hyperchlorhydria, with redundant colons and colons that have got kinks in them, they are really prolapsed or out of place, it is quite another proposition. It takes more faith than the whole Emmanuel

Church has got I am sure to lift a prolapsed colon.

I thank you for your attention.

QUESTION BOX LECTURE

At the Sanitarium Parlor, Battle Creek, Michigan, Monday, March 25, 1912, at 8 P. M.

by

J. H. Kellogg, M. D.

Q.—How does the electric light purify the blood and how is the electric light beneficial in other ways?

A.—Now there is no treatment that will purify the blood in itself. If there is anything that comes anywhere near doing that, it is radium. Radium has some very remarkable effects and it enters the blood in the form of gas, what is known as Radium Emanation. ~~It enters the blood~~ and travels all over the body everywhere so that the atoms of radium come in contact with all the living cells and the body is saturated with it and every one of these little atoms of radium is sending off rays like those which come from the X-ray tube, only much more powerful rays that are traveling with the speed of light and these powerful rays act upon the impurities of the blood and burn them up, especially uric acid and some other things and it seems to have the effect of increasing the oxygen and burning up all the poisons in the body. That is one of the many effects of radium and in this respect it comes nearer to be a purifying agent than any other thing I know of, but the electric light is beneficial because it stimulates all the organs of the body, causes the function to destroy poisons.

It is a very interesting fact that the body is a factory of poisons. That is the great thing that accounts for chronic disease and that accounts for old age and that accounts, finally, for death. Everybody who dies, dies of poisoning; every animal that is slaughtered dies of autointoxication. That seems to be a pretty large proposition, doesn't it? Now I must proceed to prove it to you. That is the only way in which the body can die is by autointoxication.

In the first place, death is a little different from what we generally suppose it to be. I think I was telling you some time ago of a visit

I made once, some twenty-five or thirty years ago, to Key West and in the morning on going down from the hotel to take the steamer at the wharf, I saw a man coming up hill with a tray on his head and there was something on the tray trying to get off and he kept putting up his hand to push it back, to push back those things on the tray that were crawling off and they looked very much like steaks and I couldn't understand how beefsteak, mutton chops and such things, could be crawling off the tray. I kept looking back at him until he got out of sight.

Finally I had to pass through an arcade to get to my boat and on passing through the arcade, the first thing I noticed on entering the door on the left hand side was a counter and it is as plain before me as though I were looking at it this moment. There was a man behind the counter and on the counter chops, steaks, cuts of all kinds of meat that were squirming, wriggling and creeping all about the counter and the man every little while was stepping up to the counter and pushing back the steaks, chops and things, herding them, so to speak, to keep them from getting away and right in the midst of all these things was a great heart that was beating, just beating regularly, as though it was in the body of an animal. I confess my hair almost began to stand on end. I said that is something different from anything I have ever seen before and I said to the man "What does this mean? I have never seen any thing like this before". "Why", he said, "Don't you know? This is ^{the} turtle market and these are slices of turtle and turtles have nine lives. They never die until you put them into the pot." I bought that heart and took it away with me and it was beating still the next morning. Now you see that turtle had its head cut off. It was all cut up in pieces, but its flesh was still alive so the turtle was not dead yet. As the man said, it didn't die until it was put in the pot and boiled. It had to be boiled before it was dead.

Now exactly the same thing is true when an ox dies. When the throat of an ox is cut, or you hit it in the head with an axe or a bullet, the

ox falls, becomes insensible, the heart ceases to beat, but the tissues of the ox are still alive, the cells are alive and the proof of that is the fact that Dr. Carroll of the Rockefeller Institute of New York has found it possible to remove the kidney of a cat and put it in cold storage for three months, then graft it into another cat in the place of that cat's kidney and to make it grow, take up its functions again and then by and by he removed the other kidney of the cat and put it into the third cat in place of one of its kidneys so that the first cat had two kidneys that belonged to other cats and none of its own and the cat prospered and was alive six months after the operation was performed. That is not a fairy story, but it is a part of medical history as published in one of the reports of the Rockefeller Institute and in a very recent medical journal which I was glancing through the other night, it told Dr. Carroll's experience very minutely, how he did this operation. He performed the operation, spliced the ends of the blood vessels together and permitted them to grow and they grew together. It seems at first an impossible operation, but when you read his description of it, it really is very simple, after all. I made up my mind I could do it myself if I had to, but I don't propose to operate on cats for idle curiosity, because Dr. Carroll has demonstrated with cats and shown that it can be done by operating on cats, dogs and other animals and recently the operation has been several times performed upon human beings, similar operations, with success.

In one case, the doctor actually cut a leg off the animal, put it in cold storage, then some weeks later grafted that leg onto another animal and the animal is walking about with another dog's leg. So you see death does not occur when the animal ceases to be active, when it ceases to be conscious. Really death only occurs when the individual cells die. Now the individual cells do not die until after the poisons which are produced by their activities have accumulated to such a degree that the cell is destroyed, poisoned, paralyzed by its own toxine. In other words, the fire is put out by its own smoke. You know what will happen

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Everything else was occupied with gambling holes, saloons, etc., more "and so forth" than anything else, and we started down there in this basement and it wasn't very long until we had a patronage. Why, I have been down there some Sunday mornings,—I went to Chicago and worked in this mission every Sunday of my life for seven years and we had a number of nurses, and we had, at one time, as many as one hundred forty people working in Chicago in the stockyard districts and through that region endeavoring to apply Battle Creek principles to the lower stations of society to see what they would do for them and they did some remarkable things. I am telling you this only to give you the illustration.

One of the nurses said to me one day when I went down there "It is just wonderful to see how these principles work. Why, these poor fellows come in here looking as though they were almost dead, and in a week they brighten up and look like new creatures. It is marvelous beyond conception the way these men improve!"

One old fellow came in one day with a big sore about three inches wide that went clear around his leg. In a couple of weeks he was well. He had been going around through all the hospitals and dispensaries in Chicago for years and years and was the despair of those places because they could not cure him. He came into our mission and in two weeks he was well. He didn't have a thing done for him but hot and cold sprays applied to his old sore and no whiskey and no tobacco. The nurse took him in, got him down on his knees and got the man converted from tobacco and from whiskey so that he reformed, and the clean blood, you see, healed up that old sore in earnest.

Now this man was so enthusiastic that he went to every hospital in Chicago and to all the dispensaries and when people came along with their old sores, he started them over to our place and it wasn't long before we had forty people every day, and they were a most distressing lot of poor fellows. Poor, old ragmuffins with their sore legs and one of the nurses told me they

had forty-five under treatment at one time and they got well, each one of them, when they stopped whiskey and tobacco and the nurses said they never saw hot and cold treatments work the way they did down there in Chicago. The reason why hot and cold did those men so much good was because there was such a load lifted off from them, don't you see? It was such a tremendous load they were struggling under and when that load was lifted off, they came right up at once. The reciprocative powers of the body responded at once when they had a chance, and were not yet completely worn out. When the reciprocative powers of these men were built up, they had a new chance for recovery. So the important thing for us to do is to take care of our poison-destroying glands.

Now that is where the light treatment is of so great value. The skin is one of these poison-destroying glands and applications of light to the skin have a marvelous influence upon these poison-destroying glands and upon their purifying ability. That is why sunlight is so beneficial. That is why a doctor, when a lady asked him what to do with her three puny, weasened little boys, he looked at the children and said to her, "Roast them, madam", and of course, she looked terribly horrified. "Roast them in the sun". That is the thing to do, roasting in the sun. Apply vital stimulants to all these poison-destroying activities of the body, not only those of the skin, but those deeper down. The thyroid gland is one of the poison-destroying glands. Now when the thyroid gland is diseased, the skin is always diseased. When you have skin that is shiny, thin, parched, skin that is all wrinkled up and seems almost ready to crack, it is because your thyroid gland is worn out. I see some young folks looking at their hands. You

haven't got skins like that. It is the old people that have that kind of skin. You say that is because you are old. That is quite a mistake. You are old because your thyroid gland is worn out. That is why you are old. That is why your skin has gotten old and why the rest of you is old because it is your thyroid gland that keeps you young by burning up these poisons that produce old age and because the poisons are no longer consumed. They accumulate in the body and the smoke is putting out the fire, don't you see? The fire is beginning to burn low because smoke is accumulating and the chimney is filled with soot.

Now, there are other glands. The liver is wonderfully helped by applications to the skin. The light applications to the skin stimulate the activities of the skin and cause the skin to become filled with blood, and when this poor, thin, shriveled, puny skin, pale and bloodless, is filled up with blood, it relieves the liver.

I remember once I was in a medical society meeting and a doctor was discussing certain diseases and a doctor arose and said "Whenever I have a case of this sort to treat, the first thing I do is to give the patient a few doses of calomel to unload the liver. Then after a week's dosing with calomel to unload the liver, I begin to do so and so". When it came my turn to speak I said, "That is the way I begin my treatment. I always unload the liver the first thing, but it doesn't take a week to do it. I can unload the liver in a few minutes." You should have seen them open their eyes. They hadn't thought about it in that particular light, you know. They thought I was going to the liver or do something else. I said "I can unload the liver in a few minutes. All in the world you have to do is to take a deep breath. Then your

liver is unloaded, because you have sucked all the blood out of it. The liver is right down here by your diaphragm and abdominal muscles and when you take a deep breath, you just squeeze that liver right up against the abdominal muscles and when you squeeze it, it is just like ~~squeezing~~ a sponge, and you squeeze the blood right out of it. The liver is unloaded right away. That is why you feel so much better after a little run. That is why it does you so much good to take a walk, why it does you so much good, when you have been hunched over a desk somewhere, to straighten up, to draw yourself up and yawn, and take a deep breath, and you feel better right away. It wakes you up. It is because you squeeze the blood out of the liver and get the blood to moving freely through the portal circulation. A great many people wonder what is the matter, wonder why their brains are so stupid, wonder why they can not concentrate their minds and half to read the same paragraph through three or four times to understand it when their only difficulty is that they are trying to run a mill without any water, so to speak. The blood they need up here in the brain all accumulates down here in this cesspool, in this sort of portal cesspool, and the abdominal muscles are relaxed, doubled up, so it is like a big ~~hole~~^{cavity} down there and the blood that ought to be up here in the brain at work is down there, don't you see? When you get the blood to stay up there in the chest,— I will turn around a moment while you straighten up— when you do that, get the chest up high, contract the diaphragm, then this circulation is emptied out, then your brain is full of blood and you feel like another person.

I was in New York some time ago and I had been working pretty hard and I had to have a picture taken. So I looked up a photo-

grapher and told him I wanted him to take my picture in about five minutes. He said "Come on now, then. I know just how to do it. Run as fast as you can around the room, hop over that chair," and so he kept me going and before I knew it, he had snapped my picture and he said "All right, I have got a good one". He said, "That is the way I took Henry Ward Beecher's picture and I couldn't get anything at all that looked like anything until I chased him around the room and him to jump over two or three chairs and then I took his picture before he knew it and it was fine." There is no doubt that that photographer had gotten hold of that secret and why was it that it helped the photographer? Because the man was dull and stupid, don't you see? His face was bad, and he wanted to satisfy him so he made him exercise, so as to make his diaphragm contract and that chased the blood out of the portal circulation down there in the cesspool where it was all stagnating and sent it up to his brain, set the wheels of his brain to going so that his face showed a man of vigor and snap and there was some ginger in his expression instead of the dullness that was there, instead of the result of lack of energy.

Now I mention this as a very practical thing. You sometimes feel as though you have got to the end of your rope. I have, many a time, when it got to be about three or four o'clock in the morning when I have been working a couple of days, working for 48 hours and getting on into the fifties without any sleep, I found it necessary to get more blood. So I lie down on the sofa, get my heels up just as high as possible, so instead of having the blood down in my heels where it was not doing me any good, I got it into my head and made it work. Sometimes I would lie down and take some exercise, raising the legs, raising the head

and that is why we have you exercise in the gymnasium, that is why we have you take these leg-raising exercises and head-raising exercises and all these other exercises prescribed for you. It is to get the blood out of this stagnating place here in the lower abdominal cavity and driving it out, getting it out where it will do some good, so as to stop this degenerating process.

Now, by this unloading of the liver, that is accomplished by these simple means, by this unloading of the liver, the liver is better able to do its work. When there is too much blood in the liver, it is completely overwhelmed, stretched, distended, congested, and can not work properly and when we unload the liver and get the blood off somewhere else where we want it, the liver can begin work and can work much more actively.

That is one of the things that the electric light bath does, is to cause congestion of the skin, to double, treble and quadruple the blood in the skin and relieve the liver. This is a matter of more moment than you think at first, unless you are acquainted with the facts. The skin is a vascular organ, it is capable of holding two-thirds of all the blood in the body. Think of that. Two-thirds of all the blood in the body may be held in the skin. Half of all the blood in the body can be put into the muscles. It is necessary for this arrangement in order that we may be ready for emergencies, because when a muscle is heated, through, ten times as much blood is going through the muscle as when it is idle so you see, there is another advantage of these exercises. They enormously stimulate the movement of the blood through the body, and when the muscles are active, ten times as much blood goes through the body when it works as when it is idle, so you see it makes a tremendous difference whether you carry out all of your program +

that is given you or whether you carry out only a part of it. If you carry out only a little of it, you get, perhaps, just enough to make a great failure of the whole thing.

The electric light gets the blood into the skin, relieves the liver, relieves the heart and restores normal balance of the circulation so it is by this means a wonderful benefit in cases in which it is necessary to have a purification of the blood.

Q.--What is the difference between strength and endurance?

A.--There is a great difference between strength and endurance. The lion has tremendous strength, but the lion has very little endurance and it is because of its diet. The lion is a meat eater and his endurance is low and what is true of the lion is true of every meat eater on the globe. All meat eaters have little endurance. They may have enormous strength, for strength depends upon the size of the muscles, it does not depend upon the purity of the blood, but upon the size of the muscles. Ex-President Roosevelt, when out in Africa, wrote an account of his exploits. Some of you read it and some of them were very amusing and all of them were more or less interesting, and instructive. One of them interested me very much. He said he found that a large man on horseback could run down a lion in a mile and a half any time, that any lion could be run down, brought to bay, within a mile and a half by a horse with a man on his back, and the lion without any man on his back. So you see there is a tremendous difference between those animals in the matter of endurance. Now, if a horse could get started, say twenty feet away from the lion and could get under way and get started, the lion could not catch him. If the lion is going to get him at all, he has to do it within the first three leaps, for if he doesn't, by that time the horse is

under way and when he once gets under way, no lion can catch a horse. A good horse, with a man on his back, will save them both, as far as the lion is concerned, unless the lion can catch them within the first two or three jumps. Now, simply because a lion has no endurance, the lion is completely winded and that is the reason why hunters never give their dogs meat. When hunters go out to hunt lions, they do not feed them meat but they feed them cornmeal mush and bread, give them something besides meat. They do not allow them to eat meat. The same thing is true of those hardy dogs in Scotland, they are never allowed to eat meat. They are brought up on oatmeal. I asked a Scotch man what he gave his dogs, and he said "The same as I eat myself" and when I asked him what that was, he said it was brose and bannox. Then I asked him why he did not give his dogs meat, and he said because his dogs would have "nae su guid wind". That was the reason why.

Now, the difference between strength and endurance is this: Endurance depends upon the ability to continually repeat a movement. Now, a test of endurance, a simple test, is to hold the arm out straight. It is not hard work to get your arm out, but it becomes quite a matter to hold it there. Try it, sometime, and see how long you can hold your arm straight out. Hold your arm out fifteen or twenty minutes, and you will find that is quite an exploit. I knew a man who had not been eating meat for twelve years, who held his arms out three hours and twenty minutes, two hundred minutes, and when this test was tried down at the Yale Gymnasium, not a single man among them all was able to hold his arms out thirty minutes, not one. Wrestlers, boxers, rowing men, strong men in the Yale gymnasium were brought out and put on their

mettle because of the things that had been done here in our bathroom by our bath boys and by our nurses and our men, who were not athletes at all. Records they had made were held out before those men and they were asked to do better, and stimulated, Professor Fisher staid right by them, begged them to try to do a little better, if they could, so as to hold up the Yale record and Dr. Anderson staid right by them and urged them on and preserve the glory of old Yale, so they did the best that they could, and there was not a man among them who held his arms out thirty minutes, not one, and the average of the fifteen men was less than 10 minutes. Fifteen men held their arms out, altogether, 149 minutes, and the average of fifteen men in our bathroom was ninety minutes, and the average of the Yale men was a little less than ten minutes, so you see our men held their arms out nine times as long, on an average, as the Yale men did. Now, those Yale men, any one of them, could have picked up two of our men, put them on their shoulders and carried them off. They were giants, but they hadn't endurance. They had strength, but not endurance. Endurance depends upon the cleanness of the blood, not upon the size of the muscles, but upon the cleanness of the blood because it is the individual cells that are involved in this thing, don't you see, and when poisons are generated in the body, the cells accumulate to such a degree that the cells are intoxicated by it. Then comes fatigue and the next thing that comes is coagulation or stricture of the muscles. of the cells, and that occurs after death, but the first thing is fatigue and exhaustion. Strength, as I said before, depends upon the size of the muscles, while endurance depends on cleanness of the blood.

Q.--Is operating for movable kidney ever to be advised?

A.--Very rarely, indeed, and only in cases where the kidney is

is prolapsed, in such a way that it makes a kink in the ureter and then it is sometimes necessary. For instance, suppose this to be the kidney. Here is the ureter that runs down here and conduction the secretion of the kidney to the bladder. Now, when the kidney falls down, drops down, we will say in this way, sometimes it makes a kink in the ureter like this, and this shuts off the secretion so it accumulates in the kidney and it can not pass along. It might make quite a fall here and in such a case, it is necessary, sometimes, to perform an operation, but these cases are very rare. The operation for movable kidney has practically been abandoned by the best surgeons, because it does no good. The pain is not relieved and it is of no value, so the operation is practically worthless.

Q.--What is blood pressure?

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their water bags with hot water, but in such a case, fill it with cold water instead and you will be surprised to see what a comfort it will be to you. Fill your rubber bag with cold water instead of hot water and it will be a great help.

Q.--What should the blood pressure be of a person 56 years of age?

A.--It should be 110. That is my blood pressure and I am sixty, so I consider myself a good standard on blood pressure. At any rate, as long as I am able to work and work hard with a blood pressure of 110, I don't see any reason why anybody else should not be able to do it. The longer you can keep your blood pressure down, in other words, the longer you can keep your liver going at low pressure, the longer you have got a chance to live. So it is a good thing to be able to work under low pressure. If you have a pump that is so efficient that it can do all the work with low pressure and slow motion, you have got a good pump and it will last a long time. But if things have gotten so out of repair, if the valves are worn out and the pipes are obstructed and that pump is just going on with such velocity that there is tremendous wear and tear upon it, it is going to wear out pretty soon. Instead of lasting twenty years, it will be, perhaps, not more than six months before it will have to go to the repair shop and in six months more to the junk heap. So it is a good thing to be looking after that pump, keeping good track of it. The heart is the pump.

Q.--What success has the Sanitarium had treating pellagra?

A.--I am glad to say we have had pretty good success in treating pellagra. I thought, at first, it was a hopeless case, but we have had really remarkable success. I had a letter today from a lady who was here last year, a very pronounced case of pellagra, a very severe case, too. It looked perhaps as though she would not

live, but she went home in four months and had gained 49 pounds in flesh and was the picture of health. I had a letter from her doctor the other day saying she was still in perfect health. This patient was treated simply as a case of severe intestinal autointoxication. She was put on a diet of strawberries, milk, and Yogurt buttermilk. She did not eat another thing as long as strawberries lasted. Then she took raspberries and by and by peaches and apples and she lived on a diet of fruit and milk, nothing else.

Now, the purpose of that was to starve out the germs that were making the mischief. I am satisfied pellagra is due to poisons generated in the alimentary canal and absorbed in the intestines. We combat this condition by giving the person Colax, also, so as to carry off the bacteria as rapidly as possible, and this patient made a splendid recovery and I have seen some others who have benefited by the same plan.

Q.--Is sulphur a good remedy to take into the intestine?

A.--No, because it is poisonous. Very little is absorbed. If you are going to take anything at all as an intestinal antiseptic, probably sulphur is the most harmless of anything you can take. Still, I don't recommend it indefinitely.

Q.--Is riding horseback too violent exercise?

A.--It depends entirely upon the horse and how fast you ride. I have seen some horses that made it very violent exercise to ride them, even at a slow pace. Riding horseback at an easy pace, can be done with advantage. Horseback riding is good exercise for persons with arteriosclerosis, if they have not gotten so far advanced that they get exhausted very easily. A large amount of very moderate exercise is the thing for such cases.

Q.--What is a good strengthening diet for very old people?

A.--The most strengthening diet for old people is the most strengthening diet for young people and middle aged people. It is the natural diet, a diet that will secure active movements of the bowels, three or four times a day. Three times a day is better than less, and the diet that will furnish the body all it needs, a low protein diet with plenty of fresh things, like radishes and cucumbers. Don't be scared of cucumbers, because they are perfectly wholesome if we only take the trouble to chew them and if you have not yet learned to do that, order your cucumbers in the form of a puree. The cucumbers are fresh and crisp and make a very fine puree and the flavor is all there. Be sure to drink plenty of water. That is very necessary for old people and for young people.

Q.-- In case of acidity of the stomach, is it best to drink hot water or cold water?

A.--Hot water is better than cold water. Half a glass or a glass of hot water half an hour before the meal is good in hyperacidity and two hours after the meal, but not with the meal.

Q.--What causes redness of the hands?

A.--That depends upon the case. Sometimes it is a raw wind. Sometimes it is vasomotor disturbance, or something that makes a throbbing and burning, and sometimes the same thing occurs in the face. It means simply a nervous disturbance, generally.

Q.--How can the hips, back and abdomen be reduced without reducing the rest of the body?

A.--When flesh accumulates in some part of the body, it is generally an indication of deficit exercise in that part. The hands, arms and calves of the legs are very rarely too fat. The flesh accumulates about the hips and thighs because there is not enough

vigorous walking. Cavalrymen among the soldiers very often get very fleshy because of sitting in the saddle so much. Somebody has called it "a sedentary life in the saddle". Sitting about a great deal is very likely to cause one to become fleshy. Fat accumulates about the center of the body. This fat can be reduced by exercise of these parts, by special exercise of the trunk and the center part of the body. Also a very excellent thing is hot and cold applications to those parts and massage of those parts. Diathermy, or thermopenetration, is another very excellent measure, in which the electric currents are passed through these obese parts and the current, passed through the body, is converted into heat deep down in the body, and burns up the fat.

Q.-- What is the best tissue builder?

A.--Simply the best food that is best assimilated.

Q.--Are such spices as cinnamon, nut meg, and cloves good foods?

A.--They are not foods at all, they are poisons.

Q.④-What is the cause of a steady, dull pain in the heart?

A.--That is heartache. The trouble is probably in the stomach.

The stomach is the seat of most heartaches just as the seat of the most depravity is in the colon. The great cause of a large share of our mental and nervous disturbances and of many of the mental lapses that we see in the world, a great share of these may have really a physical basis that can be driven out and removed only by physical treatment. Still, I am not going to say that people who are perfectly healthy never do anything wrong. I am quite sure that is a mistake.

Q.--How is it that in this Sanitarium, which claims to serve a strictly vegetable diet, that baked Indian pudding appears on the bill of fare?

A.--I will have to pass that up. We will send this to the dietitians for them to have a conversation upon the subject.

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She had one operation first that was followed by adhesions. Then ^{had been} six more operations/done to break up the adhesions and they got worse every time.

I had a letter today from a man in Philadelphia about his son who had been advised to have an operation for appendicitis. Adhesions had formed and he had been advised to have another operation and had consulted a number of surgeons and they all said "Operation, operation, operation", but one surgeon in Philadelphia, and that was the eminent Dr. Deaver and I was very glad to learn that Dr. Deaver had said "No operation". That is exactly what he should say, too. Dr. Deaver has found out by experience that operations do not cure adhesions, but make more adhesions and he has found that many of these cases can be cured without. This lady I was telling you about was with us three months and went home without any pain and without any sign of any adhesions left. I suppose the adhesions were there, by the fact is adhesions do not always do harm. It is the inflamed condition of adhesions that makes the pain. It is not the adhesions themselves, and the various treatments we have here so improved that woman that she got well and she doesn't know she has any adhesions and she is just as well as though she didn't have them.

There is a little more to be said. I wrote a book a while ago while I was away on this subject and I hope to get it into the printers' hands pretty soon. I am going to devote Good Health for the next six months to educating people how to take care of their bowels and I think it is one of the most important things that can possibly be done so the Journal will largely be devoted for the next six months to educating people how to take care of the bowels and if you will take care to read it right along, you will get posted.

These remedies and this regimen must be continued ~~for~~ a long, long time until the colon has a chance to gradually contract and

return to its proper ramification, to be restored to its normal tone. If there is anybody here in this room or in the institution that finds himself in doubt as to what he should do, finds the bowels ^{not} are/getting into a normal condition, are not getting along in a satisfactory way, in that particular, I want to hear from you. I don't want you to go away from this place without getting straightened out and going home right, because you can be helped if you will follow a right line that can be marked out for you in your particular case. You will certainly be relieved.

Q.--What is the best treatment for general neuralgia?

A.--General regeneration is necessary in that kind of a case, for there is generally a depreciative state of the system.

Q.--Are custard pies and other sweets commonly served as desserts healthful or injurious?

A.--I am bound to say I do not recommend pies and other desserts, that are served on the table upstairs, very highly. I have been complaining about them and I think they are open to criticism. I won't feel the least bit hurt if you will tell the dietitian you don't want to eat them and will send them back to the cook.

The crusts of pies and cakes are too rich, sometimes, and the desserts are too sweet, but I find it very difficult to maintain a reform in that particular. Our people say "The people want things sweet and want things rich" and the cook is all the time catering to the depraved appetites of people that we are trying to cure.

Q.--Would you advise anyone with slow digestion, having more or less gas in the stomach, to lie down after each meal?

A.--Well, yes, it would be a good thing to lie down, provided you take deep breaths. Lie down on the right side and take five deep breaths every minute.

Q.--What is the cause of exophthalmic odor?

A.--Poisoning, autointoxication.

Q.--What is the remedy for slow and weak digestion?

A.--In the first place, chew well. In the next place, exercise well. In the next place, live a generally healthful life, particularly an outdoor life. Take a cold bath every morning. There is nothing like cold water to wake things up.

Q.--Is a broken coccyx a serious matter?

A.--No, because it can be easily removed.

Q.--Is the use of the electric light bath cabinet advisable in the home?

A.--It is one of the most advisable things you can introduce into your home, one of the most useful pieces of furniture is the electric light bath because you have got there a Turkish bath and almost the whole Sanitarium. You can take this electric light bath for two or three minutes and it has a very powerful effect. Taken in the morning, or even on going to bed at night, the very short application of the electric light bath is a splendid means to get the blood into the skin, and it is a good preparation for the cold bath. At night it is a capital application to go to sleep, getting the blood out of your brain and so you can go carefully off to sleep. The electric light bath can be put up in the bedroom and will be no expense at all except while you are using it, and it is really a very useful piece of furniture.

Q.--Tell us something about aortitis.

A.--Aortitis is a disease in which the lining membran of the aorta becomes irritated. It is different from acute inflammation, inflammation of a joint, or a felon, or anything of that sort. It is an inflammation of a very slight character, perhaps hardly ought to be called inflammation, as it is not accompanied by a rise of temperature. It is really a chronic congestion rather than an inflammation.

Q.--Can severe headaches be caused by nervousness alone?

A.--Yes, but they ^{are not} very likely to be. The nervousness itself is caused by autointoxication. Headaches are almost always, not absolutely always, but nearly always, due to toxins absorbed from the intestine.

Q.--Why is it that meat is so much more satisfying than cereals?

A.--It is not because it is meat, but because it is fat. It is the fat taken in the meat that is the satisfying element. When you leave off meat when you go home, when you take it off the table, give your folks a little more butter or a little more cream, because because it is the fat that goes along with the meat which is the satisfying part of it. It is not the lean of meat.

Q.--What causes jerkings or twitchings when one is about to fall asleep?

A.--That is due to a chronic state of the nervous system, lack of normal inhibition. The muscles would be jerking around all the time if it were not for the fact that there are certain inhibitory centers that have charge of them and keep control of them. These centers have become weakened somewhat and then there

Sometimes the people sitting in church or at a lecture or a concert keep changing their position, wriggling about, putting one leg over the other, then the other way. Such people are suffering from figits and figets ~~are~~ due to the same thing we are referring to here. It is a lack of inhibitory power. It is a neurasthenic state.

Q.--Would you advise operation for chronic appendicitis?

A.--Generally, yes, but not invariably, for often the so-called appendicitis is really nothing but colitis. It is a diseased condition of the cecum and does not affect the appendix at all. It is very

important to have the matter investigated, which may be done by an X-ray after taking a Bismuth meal and a care study of the case would find out what the real trouble is.

Q.--Much of Dr. Riley's interesting talk referred to excessive acidity of the stomach. Tell us of shortage of hydrochloric acid.

A.--Shortage of hydrochloric acid is an advanced stage of excessive hydrochloric acid. Excessive hydrochloric acid is due to excessive irritation of the glands of the stomach and this overwork wears them out and then they fail in their activity rapidly until by and by there is too little hydrochloric acid produced and by and by the glands degenerate. Then there is no hydrochloric acid produced and then there is an open door for cancer and other malicious diseases.

Q.--Would the vibrating chair be a good thing to use in one's home?

A.--Yes, indeed. The vibrating chair is an excellent means of getting rested quick when you are tired. It is a normal, physiologic stimulant and a person who is very tired walking may sit down in the vibrating chair and be vibrated fifteen minutes and then get up and walk as much farther as he did before.

At the World's Fair in St. Louis, the vibrating chair was on exhibition and it acquired the name of the "rest chair" there. At the door of the Educational Building, where the exhibition was made, the sentry at this door told me that over five thousand people in one day asked for the "rest chair". The place was completely and we had to have four chairs down there all the while from the time the place was open in the morning until it closed at night and hundreds went away who could not get a seat in the "rest chair". People would walk sometimes half a mile across the grounds in order to get rested in the "rest chair", when they were already tired out.

I wonder that merchants don't introduce the vibrating chair

into their stores so as to let their clerks, who have gotten so tired standing, sit down and rest, for it would be a means by which they could rest ten times as fast as in the ordinary chair.

Q.--You have told us much of the causes and dangers of high blood pressure. Please tell us something of the causes and dangers and cure of low blood pressure.

A.--There are only two conditions really in which blood pressure is really dangerous. When a person has a surgical shock or a bad accident, and faints away, it is because of low blood pressure. That is the condition. A short application of cold water over the heart, and percussion over the heart are among the most effective means to correct this condition. But there is another form of low blood pressure that comes after high blood pressure. The blood pressure first climbs up higher and higher and higher and it keeps requiring more and more work of the heart and by and by the heart gets to the limit of its ability, the trouble still goes on, and then the heart, being worn out, gradually begins to lessen and fail and flag in its work until by and by the blood pressure comes back to the normal again and that condition is a great deal worse than it is to have high blood pressure. That is called secondary low pressure and that means worn out heart. It is a very hard condition to deal with.

Q.--Is chewing gum good for a person?

A.--No, nor for his neighbors, either.

Q.--Tell us how amebic dysentery should be treated.

A.--By keeping the colon thoroughly clean. Various remedies are used, and one of the best things we have ever found is the introduction of ice water.

Q.--Tell us something of the reflex action of a diseased colon which

causes pain in the chest.

A.--These sore places in the diseased colon, by their action on the sympathetic nerves, will give rise to pains almost anywhere. Pains in the back, lumbago is most often due to this cause, far more often than to disease of the kidneys. Appendicitis is often due to the same cause. Pain on the right side, or left side, running down the legs, in the hips, and between the shoulders, these are nearly all of them caused by these diseased colons and it is through irritation of the sympathetic nerves.

Q.--Is there anything that will take the place of Colax? Will pop corn do it? If not, what can one take?

A.--Yes, pop corn is very good, and bran is a good thing. In some cases, ordinary bran answers very well. Sterilized bran is better because it is clean. All kinds of food which contain a large amount of cellulose are substitutes and should be principally depended upon. Of all foods, nothing contains so much cellulose as the huckleberries. They have more cellulose than any other, so you better lay in a good stock of cellulose next year, if you are needing anything of that kind.

Q.--In the swamp lands of the South, we have chills and biliousness called malarial fever. What is the best treatment for same?

A.--The best treatment is to move away from the place. That is the only treatment that is any good. I don't know of anything that is really radical, but that, because the infection comes from the mosquito and if you have been once infected, with it, you are sensitive to it, and a few bites will give you another attack, so the best thing is to change your residence.

Then the next best thing is to fence yourself in from the mosquito. If you keep yourself fenced in at night, you are pretty safe, because the mosquitos fly particularly at night, and not

in the day time to any considerable extent. If you take care not to be bitten by the mosquito, you won't get the attack. At the time of the attack, the quickest way out of it is to take some reasonable doses of quinine in rapid succession, just before the chill. Then, in addition to that, take a dry sweating bath. You will find in the little book "The Home Handbook" at the book stand a full description of just how to deal with that disease.

Q.--In case a patient refuses food absolutely and will not take water in sufficient amount, what course would you suggest to introduce water?

A.--Introduce water through the colon. That is the only proper way, and some food can be introduced through the colon, also. Food can be given in such cases in very small amounts and often repeated. A very good plan is to give the patient some little food, however, ~~if you are able~~, apple juice, or grape juice. Apple juice is an excellent thing in such cases to get the thing started.

Q.--How would you account for the fact that some women who never have worn corsets or tight bands have as bad, or sometimes worse, cases of prolapsed stomachs than those who do?

A.**Well, there are other causes. Bad position is a cause. I have seen men whose stomachs went away down in the pelvis simply ~~from~~ sitting in a bent up, doubled over position about their work, and sometimes men were belts about their work.

I knew an army officer who had a terribly prolapsed kidney and stomach that he got by wearing a heavy sword suspended by a belt and it dragged his stomach and vital organs down.

Q.--Will radium cure chronic bronchitis and asthma?

A.--No.

Q.--Is rheumatism the cause of sciatica?

A.--Yes, it is very often. Rheumatism is a disease of the whole body. It is a state in which the resistance of the body is low, in which poisons are being flooded into the blood and these poisons, by irritating certain joints, set up disturbances of various sorts. In parts where the resistance is low, they set up various destructive processes.

I have reached the bottom of the box. I thank you very much for your attention.

jhk-v-s-5-12-12.