

## WHAT DISEASE IS DOING FOR US.

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

March 2, 1911, at 8:00 P. M.,

By

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I am going to show you some pictures tonight that will tell their own story, something of a miscellaneous collection of pictures, and altogether I hope you will find them interesting. First a few words about what disease is doing for us. Disease is the most costly luxury we support. Unfortunately we are getting so wealthy, the average man is getting to have so much property that he can afford to be sick. He does not have to be well. He can be sick now and then. If he has not got money laid up in a bank he belongs to a benefit society, and he is rather hoping to have a chance to make use of the benefits of his association in some way or other.

In Michigan alone, a state with only two million 800,000 inhabitants, less than three millions, one hundred people die every day. Now, just think of that--one hundred funerals every day, four every hour, one every fifteen minutes. Fourteen thousand of those deaths ought not to occur. One person in every 28,000 dies every day in this whole State of Michigan. In every city where there are 28,000 people living, one person dies on an average every day. Fourteen thousand, or one half of these deaths are easily preventable. Prof. Fisher showed that in his report on national vitality, made as chairman of one of the sub-committees of President Roosevelt's conservation commission. Out of the 28,000 people who die every year, seven thousand, or one quarter of them, would not have died



thirty years ago. In the state of Michigan, we have 13.4 persons die every year in every thousand people. Of every thousand people living in the State of Michigan, 13.4 die every year; and one quarter of those, or three and a half of them, ought not to die, and would not have died thirty years ago. Our health is depreciating, the race vitality is depreciating at such a rate that 25% of all the people who die at the present time would not have died thirty years ago, and would not die now if we were as healthy as the last generation was. We are away behind our ancestors in endurance and vigor. How many women at the present day can do as much work as their grandmothers did? How many have the endurance? How many have the hardihood, the toughness of their grandparents? My mother was a pioneer in the State of Michigan. When she was a girl seventeen years old, she rode forty miles through the woods on horseback over a trail without passing a single house the whole day to reach her school. And she found when she got to her journey's end an empty loghouse without any windows or doors. She stayed there over night, and the next morning she found bear tracks all around the house; and she was not afraid. She taught her school in the woods. She raised a family of thirteen children,--not all her own, because she found seven children in the family when she took charge of it. And she took the wool from the sheep's backs and carded it, and spun it, and wove it into gowns, and made for me the first gowns I ever wore, and all the gowns I wore for several years. None of her daughters can do it, and none of her granddaughters can begin to do the hard work that she did. She was a small woman, smaller than I am,--not what could be termed a robust woman, but of tremendous endurance. The women of the last generation, and the men of the last generation were men and women of wonderful fortitude, and wonderful hardihood, and wonderful endurance. If it had not been for that fact, we would not have this great Republic that we have at the present time.



Some years ago the Chief Justice of Great Britain was over here in this country visiting some friend in Washington, and he was taken out upon the banks of the Potomac and shown the place where George Washington threw a silver dollar farther than any man has been able to throw it since. He said, "How did he do it?" Said the senator who was talking with him, "Oh, you know dollars went farther in those days than they do now." And not only dollars, but muscles were able to go farther, and brains were able to accomplish more, considering the advantages which they enjoyed in those days, than now.

We are a dying race, and the things that are killing us--I am going to show you some of them--cancer, for example. One tenth of all the people who die between the ages of forty and eighty die of cancer. One out of every ten of all the people who die between the ages of twenty and forty,--one tenth of all the people in this room, for example, are going to die of cancer. Now, that is not a pleasant thing to think about. Here are perhaps 300 people, and thirty out of this audience are going to die of this awful disease. You needn't, you needn't die, I dare say, if you turn from your sins, repent, and reform this minute, you might escape that awful death; but you won't, all of you; some of you will go on in your old, wicked ways.

One half of all who die of cancer die between the ages of forty and 75. Eighty-five per cent die between the ages of forty and eighty; and 96% die between the ages of thirty and ninety years of age; so you see cancer is a disease of old age, of adult age. One seventh of all the women who died in the year 1909 between the ages of forty and sixty years died of cancer--one in seven. Well, there is Bright's disease, another thing. We are awfully scared when we see the Black Death coming. When we used to read in former times that cholera was knocking at the doors of New York, we were frightened; we dreamed of cholera. A man down in St. Louis, when he heard cholera was coming into New



Orleans, was scared so much that he had his wife get some cholera medicine, and he put it on the table beside the bed, to be sure to have it ready, for he was sure the cholera would strike him in the night. He woke up in the night with a pain in his stomach, after having some ~~boiled~~ deviled lobsters for supper, and he said to his wife, "Oh, I have got it, I've got it; give me the cholera mixture quick." So she passed over the medicine; he took a big dose of it, rubbed some on the outside, felt better and went to sleep. You can imagine how he felt next morning when he found he had broken into an ink bottle. But it helped him just the same; he felt better. Well, we are frightened when we hear of the cholera coming near to us; but the plagues that we have with us all the time, little plagues, are far worse, they are far more deadly. How many people get well of Bright's disease, do you suppose? Nobody. A man who once has had Bright's disease is absolutely certain to die of it sooner or later if something else does not kill him quicker. He is going to die of Bright's disease because Bright's disease is a disease of the kidneys. The kidneys are essential to life. Bright's disease is a disease which is gradually consuming the kidneys like a fire burning in a house, and the kidneys are certain to be consumed sooner or later. The disease can be stayed, held at bay for a time; but it will certainly destroy that man's life sooner or later, as I said, if something else doesn't kill him quicker. He gets pneumonia, perhaps, or an attack of grip, or arteriosclerosis, heart failure, or something else that may carry him off before Bright's disease does; but that is the thing that is really sapping his vitality and carrying him away.

Three quarters of all the people who die of Bright's disease die between the ages of forty and eighty years. Ninety-three per cent of all the people who die of Bright's disease die between the ages of twenty and ninety years; so you see that is an old age disease also.. No<sup>w</sup>, more people die of



Bright's disease than of cancer. One ninth of all people who die between these ages die of Bright's disease. Most of the people in this room are over forty years of age--ladies excepted. But I dare say several of the ladies are pretty near that age also; so we may say that of the people in this room one out of every nine is going to die of Bright's disease; probably more than that; some have got it already. So you see, here are two great plagues, here are two diseases that ~~xxxx~~ together kill one fifth of all the people who die--more than that. One out of five of all the people that die in the United States die of those two maladies.

Here is another disease, consumption,--another great plague that is with us all the while, that kills another tenth of all the people who die. Two hundred people out of every 100,000 die every year of consumption in the United States--two hundred, two persons in every thousand, or one person in every five hundred dies of tuberculosis every year. In a town of twenty thousand, forty people die of tuberculosis every year. Think of it, my friends, what a terrible thing that is. Thirty-five per cent of all who die of tuberculosis die between the ages of twenty and thirty-five. Sixty per cent of all ~~whom~~ die of tuberculosis die between the ages of twenty and fifty; so ~~here~~, you see, is a disease of early manhood or early womanhood. It is not a disease of old age, but a disease of infancy. ~~ixix~~ Not a great many people die of consumption in old age, because so many people get it that have not the power to recover from it, and they die off before they get old. That is the reason. So here are three diseases that are carrying off multitudes of people every year.

The annual average deaths from heart disease in the United States is forty thousand people, just from that one disease alone, forty thousand people. That is the average, or was the average between 1901 and 1905. Now, after these years, see how the average goes up. In 1905 44,000; in 1906, 53,000,



in 1907, 59,000, and in 1908, 60,000; in 1909, 65,000, and in 1910 almost 66,000. Just think of it,--more than 50% increase in five years. Think of that, my friends, how that dreadful malady, this plague of heart disease, is growing upon us, marching right in like a great tidal wave, increasing at this enormous rate. Angina pectoris, the annual average 1901 to 1905 is 2000. It is a form of heart disease, and just see how it is coming up,--2200, 2700, 2900; 1909, 3481, an addition of more than fifty per cent in five years. Think of what a terrific gain that is. These chronic diseases are increasing at a terrifically rapid rate. It is not simply the slow march of centuries to gain a few per cent, but it is multiplying at the rate of fifty per cent, 75%, in five years; and it is every year. It is not simply a sort of irregular advance, but it is a steady advance, every year a few more than the year before. Disease of the arteries, that dreadful disease, arteriosclerosis, a man decaying while he is still alive,--hardening of the arteries, turning to chalk while he is still living. ~~1905, 3000~~ 1901-1905, 3000; 1905, 4000; 1906, 5400; and so up to 1909 when it was 10,174. Why, see what a tremendous addition there is there in just five years. An average of three thousand from 1901 to 1905, and ten thousand only five years later,--more than three times as many. That is the actual number of deaths. The death rate in 1900 was 6.1; and in 1909 it was 20.9. Of course, the population has increased somewhat, but this was the death rate independent of the number of deaths, independent of the population, and it shows an increase of more than 300% in nine years. That is 100% every three years. Just see what that would be in a century. Thirty three times as many in a century. Multiply thirty-three by six and see the number of deaths we would have in 100,000 in one century, in one hundred years from now. It would be 198, wouldn't it, or 200. The rate would be 200 to the hundred thousand, or one person in every five hundred. At the present rate of increase the mortality from heart disease in 100 years from



now would be just as great as the deathrate from tuberculosis at the present time, and tuberculosis kills one out of every ten persons who die, of all the people who die in this country; and in 100 years from now just as many will be dying of heart disease as now die of tuberculosis.

This idea that the general customs of the world are means of cultivating death rather than cultivating health, that our civilized habits are somehow wrong and death-dealing is not a modern idea at all. One of the most famous artists who ever lived, one of the most cultivated men who ever lived, a universal genius who was exceeded by no one perhaps but by Michael Angelo--Leonardo da Vinci who lived from 1452 to 1509, recognized the fact that we were getting far away from Nature. He was opposed to flesh eating because it was unnatural, as he said, ~~ka~~ ~~xxxxxxxxxx~~ inhuman. The time would come, he declared, when all intelligent men would discard flesh eating. The greatest of all Romans, Seneca, one of the best of all the Romans,--Seneca, the great teacher, the philosopher, who was so disgraced by one of his pupils, who was the teacher of Nero, and Nero was so unworthy of him that he put him to death, his own teacher, or rather compelled him to put himself to death, which he did by cutting a vein in a warm bath. He got into a warm bath and cut a vein and bled himself to death, as he had an opportunity to choose his mode of death which was a great favor shown him. Seneca, from his own thinking of the matter, decided that flesh eating was a harmful practice; that it was unnatural, that it was inhuman, and he discarded flesh, and declared that he realized an enormous increase in mental clearness, calmness of mind, and in working ability and endurance. Leonardo da Vinci bore testimony to the same thing.

You know that face. The great Napoleon was a genius in more ways than one. He recognized freely the close relation between man's eating and his thinking. Whenever he found himself out of sorts, found himself below par, he simply



discarded food of all kinds, and fasted, sometimes three days at a time, until he was relieved of his inconvenience. Whenever he was ill, he simply abstained from food. Now, that is horse sense; that is dog sense. You have noticed, some of you, that when a dog does not feel well, you can not persuade him to eat; and a baby has the same instinct. When a baby is sick it won't eat, refuses food, and the mother is so disturbed because the baby does not eat. She thinks the baby must eat, and if she can only make it eat it will be all right. I think the common feeling among the people generally is that if a person can be made to eat, he can be saved from almost anything. Now, of course, there is a little foundation for that idea, for when a person is well, he eats; so the idea is, if you can only get a person to eat he will be well--if you can only make him eat. This idea is so deep seated that it is the custom with most families to lay aside some particularly indigestible things for people to eat when they are sick,--some very rich jellies, or very rich cake, or some very nice rich pie with very rich piecrust. If a person is sick, the neighbors are always sending in these indigestible dainties ~~taxxaka~~ that will make them sicker if they eat them. An old friend of mine well illustrated this in a sort of involuntary way. He was an old gentleman about seventy years of age. He came home one night and shouted to his wife upstairs asleep, after rummaging about the pantry to find some cake, "Mary, where is the cake?" "Oh, John, I am so sorry, but there isn't any cake in the house tonight." He went back, hunted for pie, then came to the stairway and shouted again, "Mary, where is the pie?" Mary was obliged to confess there was no pie, at which he shouted back, "Mary, what would you do if somebody should be sick in the night?" The poor woman was sadly rebuked.

Thomas K. Beecher tells a story that when he was a boy his good aunt was making mince pie, and he had been eating a big piece of mince pie she had made, and he had eaten so much he was very sick at his stomach and was feel-



ing very much depressed. She noticed his unhappy appearance, and she said, "Thomas, you look ~~ill~~ pale. There is a nice mince pie in the other room; help yourself." She thought pie was just the thing to cure him, but he had already had too much pie. The majority of people do not seem to make any connection whatever between what they eat and their ill health. They never stop to think it makes any difference. The average man eats what he likes. He is taught to do it by his mother. His mother does not say, "Johnny, here is your breakfast; eat it"; but, "Johnny, what would you like this morning?" Johnny says, "I would like some pie", and he gets it; then he would like some more pie, and he gets that. He gets what he likes. A mother said to me, "What shall I do with Mary; I can't get her to eat her oatmeal mush. She wants pie all the time." I believed more in oatmeal mush then than I do now. I don't take much stock in oatmeal mush; it is really not a very digestible foodstuff, and not a very wholesome one. I suggested that she try this experiment: give Mary some oatmeal mush for breakfast; if Mary declined it, then tell her all right, she might have it for dinner; and take good care of it, and when dinner time came, warm it up nice and fresh, and if she didn't have it for dinner, let her have it for supper; and let her have nothing at all until she got an appetite for oatmeal mush. When we are not really hungry and haven't a natural appetite, we are not in condition to receive food and appropriate it and make the best use of it, unless we have enough appetite to eat a crust. When you have got a real appetite, a crust will taste good to you; it will make the saliva flow, and the gastric juice flow, and the appetite juice will develop in abundance; so you then have nothing to do but to chew well, and you can be sure it will digest. Thousands of people are haunting the doctors' offices, patronizing all kinds of pills that are guaranteed to cure dyspepsia without attention to diet. When the real cause of indigestion is that they never give themselves a chance to get really hungry; they never



give themselves a chance to get in a position where they actually, really need food.

Well, Napoleon Bonapart had sense enough, at any rate, to get good and hungry once in a while when he got indigestion. But he met his Waterloo once when he had a fit of indigestion. He was having an awful time with his stomach at the time of the Battle of Waterloo, and it is more than probable that that is the reason he lost the battle--because he hadn't possession of his faculties as he ought to have had to meet the advances of the enemy which proved too much for him.

Now, there is another man who exercised horse sense in the matter of eating. Some of the audience here may have known Horace Greeley, so you recognize his face. And he was a great thinker, and one of the great American editors. He was a man who thought it worth while to give attention to diet, and for a long time in his early manhood he was a flesh abstainer. He was a great sympathizer with the Brock Farm movement down in Massachusetts. He did not reside at the colony for any length of time, but he was greatly interested in the movement and encouraged it in every way he could. He was a believer to a very considerable degree in the doctrines of Fournier, which were also expounded at the Brook Farm by the Transcendentalists there. It is a fine face, isn't it? He thought it worth while to take pains to consider what he ate, to study the subject of diet. He became somewhat of a dyspeptic because he did not know how to masticate, didn't know about mastication of food, and he didn't understand about the proper balancing of the bill of fare; so for various reasons he came to suffer more or less from indigestion, and somebody made him believe it was because of his non-flesh dietary, that he must have a little meat; so he didn't adhere to that practice all his life, and died much earlier than he should have died, because of degeneration of the arteries. In his old age his arteries degenerated and



mental deficiency made its appearance; so that in his old age he did some foolish things which detracted very much from the luster of his life; and the same thing has happened to other people. It is the deterioration of brain structure that comes from this hardening of the arteries. Many a public man has lost in the last years of his life all the prestige he had gained in the earlier years because of that very thing. Now, we ought not to die in that way; we ought not to die piecemeal, as Dr. Wiley says; but we ought to maintain our faculties up to the end, and go to pieces like the famous "One Hoss Shay". That is the natural way to die--it is to have our faculties preserved alive up to the very end, and then pass into eclipse. The living death of the man that suffers from arteriosclerosis, or the man that has Bright's disease of the kidneys and dies of gradual poisoning, or the man whose liver is crippled, and becomes cirrhotic,--this living death is the thing to be most of all feared, and most of all avoided. If you lived natural lives you would not know anything about this hardening of the arteries until away on to the very, ~~xxxxx~~ very most advanced age. Old Parr who died at the age of ~~122~~ 152 years and nine months, is buried in Westminster Abbey, and you can see his slab there in one of the aisles, stating his age as 152 years and 9 months, and when he died he hadn't a hard artery in his body. He was examined by William Harvey who certified that he found his arteries perfectly health and soft; and he died of indigestion. The King fed him a big dinner and killed him.

Here is another famous man, Charles A. Dana, who was a member of the Brook Farm experiment, and he was a flesh abstainer, a vegetarian, the founder of the New York Sun, and he heartily accepted the idea and furthered the experiment in natural living. The people who came in there were not required to abstain from flesh eating, but they had a flesh abstaining table, and those who chose went to those tables, and they were the advanced thinkers of the place,--



Emerson, and Bronson Alcott, and others were heartily in sympathy with this diet reform movement. Here is another face, a face that will be famous so long as the world stands, Thomas A. Edison, a Michigan boy. I have had the pleasure of knowing Mr. Edison for more than thirty years. Some thirty-six years ago I first met him, and I have watched his career with great interest. Mr. Edison gives the greatest attention to diet. His sister-in-law was a patient with us last year, and his wife was with us for a week or two, so I had an opportunity of knowing from his wife personally about his bill of fare, and ~~xxxxxxx~~ his diet, and the great pains he takes in his eating. Lean meat he avoids almost as he would poison. His diet is made up of very, very simple food. He fletcherizes with very great thoroughness and conscientiousness. He gives just as much attention to stoking his own body as he would in the care of a piece of machinery. He looks upon his own body as the finest machine that he has ever had anything at all to do with, and he gives it the very best care he knows how; and Mrs. Edison helps him about it too--a very intelligent, charming woman.

Now, there are some people who haven't got so far away from Nature as we have, and among them are the Japanese, and they show ~~xxx~~ by their powers of endurance and their alertness, and their mental acumen~~k~~, they show the advantages of the simple life. Where in all history is there an example of a nation that has emerged from barbarism into civilization in one single generation? Think of it, my friends,--a great nation of forty millions of people stepping right out of barbarism into civilization, we may almost say into the very height of civilization in one single generation. Now, at the present time, we can not find a ~~maxxxxx~~ more skilled mechanic anywhere on the face of the earth than we can find right in Japan. The Japanese are making their own warships, they have their own founderies, they have their own machine shops. Anything any skilled mechanic can do in America, the Japanese mechanic in Japan will dupli-



cate. Their statesmen are not a whit behind the statesmen of any other country. They have shown that they can fight as well as any civilized nation. The war between Japan and Russia was an eye opener. We have heard since that time about the yellow peril. Nobody ever heard of the yellow peril before that, but the civilized world at the present time are becoming alarmed about the yellow peril. They say, "What is going to happen to us when these men that have adopted civilization and have borrowed from us all our arts and sciences and applied them to the art of warfare,--what is going to happen to the world?" And that is a very serious question, my friends; in fact, I think it is the most serious question civilized people have to face at the present moment,--is what is going to happen fifty years from now when those nations of the far East are thoroughly equipped with all the skill that will come from the knowledge of the arts and sciences we possess at the present time? And they will have it. The brain of the average Japanese coolie is bigger than your brain. The average Japanese coolie has got a bigger brain than we Americans have. When you get that big brain educated and trained it is going to be doing things.

Now, here is a Japanese sowing rice and cultivating rice, preparing the ground in the water. He does not wait for the water to run off, but he simply plows it with the water there. He rolls up his pantaloons and marches on. Then he goes along and sows the seed. Here is the rice being scattered in the water, and it is all laid out under the most perfect system of irrigation. Here is the rice being taken and put into pots, and here it is in the pots, and it is being watered; and then it is set out in little bunches. What an enormous amount of labor they give to the rice, and they raise two or three times as much per acre as we know how to raise. I was in Texas last fall just at the time of the rice harvest, and I was informed by the rice carriers there that native Japanese are settling in Texas in considerable numbers, and are going into the business of



raising rice, and they always get twice as much rice to grow as their American neighbors. They are ahead of us in agriculture, with all our experiment stations and all the efforts of chemists, and botanists and capitalists, and scientists to increase production, we have not caught up with the Japanese yet; because he works. They have been practicing rice culture for thousands of years, for they appreciate its value, while we have been wasting our time and spoiling our health in living on things that are unwholesome, on beef, if you please, and meats of all sorts, and trying to develop finer qualities of beefsteaks, hams and things, while the Chinese have been cultivating the greatest cereal that God ever made; the greatest food that the earth produces is rice.

Here, you see, is the rice harvest, where they are cutting the rice. Now they are threshing it, simply with a stick with some nails in it, and they are pulling the rice through it. I remember when I was a boy my father was a manufacturer. Among other things, he manufactured brooms, and one of my tasks when I was a boy was to thresh the seed off broomcorn in exactly the same. Great minds seem to run in the same channel, you see. Here they are winnowing the rice, tossing it up into the air. Here is a pair of primitive bellows used for blowing the chaff out. That is the old way. Here is the modern way. The Japanese has been to America, and he has seen the fanning mill, so he makes the fanning mill at home, and he is very quick to adapt himself to new methods of every description. Here is the rice mill where the rice is being hulled. The hulls are being ground off.

A Japanese is not the only rice eater. Away back in the centuries somewhere, brown colored men migrated eastward from Japan. Whether they were Japanese, or the ancestors of the Japanese, or some other people allied to them we do not know; but this we do know--they were people who knew something of the value of rice and rice came to this country, certain varieties of it, and at the



present time we have rice growing all over the United States rice is growing wild, wild rice. It is growing along the sides of the rivers. When the Kalamazoo river here reaches the wide flats down near Lake Michigan, we find wild rice growing there; and down through the South, and especially in Dakota and Minnesota, in the shallow lakes and ponds of Minnesota the wild rice grows in great abundance, and you see here in this picture something of the appearance of the wild rice seed. It is somewhat different from the cultivated rice, but it has a much greater nutritive value. The protein of ordinary rice is about six per cent, whereas the protein of this wild rice is about fourteen per cent--more than double the amount of blood-making, and brain and muscle building material as is found in the ordinary domestic rice. In harvesting the wild rice, the Indian pushes his canoe into the rice and beats the rice out ~~avax~~ from the heads into the canoe. The rice does not all ripen at the same time, so he has to go many times to the same field to get all the rice out of it, and it is a very slow, laborious process--the gathering of the rice. The squaws and children gather it in the boat, and then it is taken home to camp, and parched in great iron kettles, and stirred with a paddle. It is parched in this way so it will keep, for otherwise it would not keep.

This shows an old squaw who is over 100 years old, and her principal diet is wild rice. The Indians of the Northwest live principally on this article of food which they gather, together with the wild turkeys and other birds in great quantities in the autumn, and after toasting it, or parching, it can be kept for a long time. The process of cleaning, or recleaning the rice gets it into the form in which you see it sometimes upon our table here. After many years I have succeeded in getting in touch with the Indian tribes, through the Indian agencies of the different reservations, and have finally found out where we can get the wild rice. Although it costs several times as much as the ordinary



rice, still it is worth while. It has more advantages. It does not have the same tendency to produce inactivity of the bowels that wild rice does; it has more bulk to it, and it has more blood-making elements in it. It is really, I think, one of the very finest foods we have. If any of you wish wild rice, you can get it by ordering it at the table. If they do not happen to have it at the meal at which you order it, tell them you want it, and they will have it for you at the next meal. Any of you can have wild rice if you want it at any time. I have taken this means of telling you so you will understand the difference between wild rice and tame rice. Wild rice is better than tame rice.

Some time ago I promised I would tell you about an operation known as gastroenterostomy. I had to do the operation yesterday for a patient, so it reminded me of it, and I will tell you about it. This represents the stomach, and this is the place where obstruction has occurred. An ulcer has existed here at the pylorus that has closed the stomach up. There has been an ulceration all along here as you can see by the scar, and this has closed up the pylorus so that food does not get through at all, or only a very little goes through, and the stomach gets pushed down here and dilated. Now, the operation of gastroenterostomy consists in bringing the intestine up here, which you see by this dotted line, and making a permanent opening between the bottom of the stomach and the intestine at a lower point. I will show you some of the different steps of this process. First the colon is lifted out, and the stomach is approached underneath the colon. This shows the stomach which is drawn over and a little fold is taken up and grasped by a pair of forceps the blades of which are protected by rubber tubing slipped over each blade. This is the intestine dragged up below, and a little fold is ~~double~~ taken up in the same way, and these folds are brought close together as these forceps are brought up so that they are in close contact. Then with the needle, an ordinary sewing needle



about two inches long, a fine sewing needle, and fine sewing silk or linen that is saturated with celluloid, the two intestines are sewn together. This little suture does not go clear through. Then a little slit is made on each side, then these edges are sewn together as you see here. These two edges are sewn together, and now you see it is only necessary to sew these upper edges together, and you will have a permanent opening between the two, you see. The appearance after it is completed is as you see here. A loop of intestine is brought up, and the stomach has been connected to it, and there is an opening between, so here is a new pylorus. Now, the wonderful thing about this new pylorus is that in a short time it begins to operate just like the old pylorus. At the end of six months the muscle is formed around this new opening, and it operates just as the old opening did--one of the most wonderful miracles I know of is the creation of a thing that didn't exist there before, accommodated to the new circumstances. It is one of the most wonderful examples I know of of the intelligent, creative power at work in the body now, not away back somewhere else, ~~years~~ thousands of years ago, but doing creative work now to meet our emergencies and necessities.

Well, the whole purpose of this institution is to teach the natural life, to win people who have wandered away into bypaths of perverted civilization, back to the natural mode of living, to live naturally, which is the only way we can hope to live long, and to live well in this world of ours; for when we violate law, we must suffer the consequences. Take an animal out of its normal environment, and it suffers. Feed a canary bird things a dog or a cat or a pig should eat, and it will die pretty soon. The canary bird must have its natural food, and man requires natural things just as much as other animals do.

One of the ways we undertake to accomplish this is by our training school. We have a school of domestic economy in which we teach methods of conducting the home so far as possible in such a way as to avoid the evil conse-



quences of civilized life, and to make the health of the family as uninterrupted as possible, and to increase the efficiency of every member of the family. The cook, the caterer of the home, the housekeeper has a tremendous responsibility. They do not always realize and appreciate it. Unfortunately, housekeeping is not taught as it ought to be in our public schools. No woman should ever be allowed to graduate from high school, and it ought to be a disgrace to a woman to graduate from a university,--it is a disgrace to somebody that any woman should graduate from a university or finish her education, as I said, and to pass out into the world as an educated woman who does not know all that can be taught her in relation to the art of home keeping and of feeding babies or rearing and caring for children. It is a sphere of work in which women are prominent, which belongs to them, which falls to their lot by the order of nature; and for a woman to enter the responsibilities of matrimony, to take on the responsibilities of the home without any knowledge of it is most preposterous and most ridiculous; yet the average woman does that very thing. The average girl, the young bride often gloats in the fact that she doesn't know anything of housekeeping, never had to do anything of that sort, and don't know anything about it--actually gloats in her ignorance. Shame to her. I hope a new sentiment will get into our educational circles and that the time will come when no woman will be allowed to grow up to pass through our educational system without being instructed in the art of home keeping; so in order to do our part, to mend the evil ways or things, we have here a school of health and home economics. Miss Cooper is the principal, and we give a good deal of attention in this school, spend a good deal of money in developing the school. We have laboratories where foods of all sorts are studied, the chemistry of food and diet is studied in the most thoroughgoing way. There is no place in the world where this study is gone into deeper, more thoroughly than in the laboratories of this school. There are about



twenty or thirty young women taking it every year. Some of these gentlemen are looking for good housekeepers. I would suggest that you send the lady you intend to marry here and let us give her a course of instruction. Make that one of the conditions--that she should come here and get a diploma from this school that she is competent. Then we will guarantee at least that if you live according to the Battle Creek Idea you won't have arteriosclerosis prematurely. Of course, you won't smoke if you live according to the Battle Creek Idea, and you won't drink tea and coffee, and you won't eat any beefsteak. Then we have other schools. Our training school for nurses. There is another thing. Every woman ought to be trained in the art of nursing. It ought to be taught in our public schools. The universities ought to have a department in which women can study the art of caring for the sick. We know enough about the practical side of it. Women are the natural nurses of the home, and they ought to know how to care for their children, how to care for their husband, and how to ~~xxx~~ direct the care of themselves if they were ill. The idea that a man must lie and suffer, and that a little child must lie and suffer and die, perhaps, because its mother is so ignorant she doesn't know enough to apply a hot cloth over its stomach, perhaps, or to give the child a drink of water every fifteen minutes so as to dilute the poisons and carry them off. Disease is making headway among us, and we have got to raise our bulwarks against it. Degeneration is gaining ground every day, and we are a doomed race if we don't turn about and reform our ways.

Among our other schools, we have a normal school ~~of~~ physical culture. It began only a couple of years ago, and is still in its infancy, but growing; and this gives an opportunity to the young man or the young woman who wants to get an education in this line, to come here and get a thorough training, a more ~~xxx~~ thorough training than is given anywhere else in the world. All the instruction is given in physical culture here that is given anywhere else, and in



addition the art of caring for the sick to a considerable degree, nursing, and the use of physiologic remedies, and things that we feel are very important in physical education. We hope in time to bring out some young men and women who will be the most splendid specimens the world has ever seen of vigor and efficiency because of right living. It will take some years to reach great success in this line, but we have to have a beginning, and we are beginning. One of the advantages of these different schools is that a young man or young woman may come to this institution with ten cents in its pocket and what clothes he needs to wear for a year, and he can work his way straight through to the top; he doesn't have to pay a dollar more of money; so if when you get home you find some worthy young man or woman you know is of good character and has some ambition to be of some use to the world and to make the very most of himself, perhaps you will remember some of these schools and write for information. We will be very glad to give it to you. Here is a picture of the last summer's class, and the present prospect is we will have a larger summer class this year than ever before. I thank you for your attention.

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THE ANTITOXIC DIET.

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

March 9, 1911, at 8:00 P. M.

By,

J. H. Kellogg, M. D.



(Preceded by short talk by Dr. C. E. Welch on grape juice, which was not reported.)

I am glad Dr. Welch has given you this little talk. I can heartily endorse everything he said except one thing,--I don't think you can do yourself any harm by taking all you want of grape-juice. I am not sure but that is an artful advertising dodge--I am not quite sure about that. I know advertisers sometimes say, "Don't take too much." But I have just this suggestion about it. If you take a glassful of pure grape-juice, you ought not to take any more in that form. I always dilute the grape-juice--I don't know whether the Doctor will agree with that, but I find it much better for me, and I like it better, appreciate it better, it is so very rich and concentrated, to add a little water to it; and if one does this, adds a little water, makes a plain punch without any lemonade in it, you have something that you can take as freely as you can take water. A solution of one part of grape-juice and two, three or four parts of water, you can take just as freely as you can take water. The beautiful thing about fruit juices is that they furnish us food all ready for taking. With the exception of the water in the grape-juice, there is nothing there but food, and it is not only food, but it has the advantage over almost every other possible food you



can find that it is perfectly digested, ready to be immediately absorbed, ready for immediate assimilation; and that is the reason why it is so very refreshing. The sugar of grapes, which is levulose and dextrose, represents sugar which is completely digested and ready to be taken into the body and assimilated; and if it were separated from the grape-juice and injected under the skin right into the veins, it would be at once assimilated. Then there are other salts in the grape-juice which are of very great use in the body. People who eat beefsteak-- I am trying to persuade you all not to eat it, but if any of you insist upon eating beefsteak you must always take a glass of grape-juice afterwards as a sort of antidote for this beefsteak, and there are two or three reasons why you should do it. In the first place, beefsteak is going to rot if you don't put in some sort of preservative. Now, the acids of grape-juice are preservative and prevent putrefaction to some degree. If you put a pound of beefsteak into a gallon of grape-juice, it will not decay. I don't know whether Dr. Welch knows that or not; but it won't decay. You can keep beefsteak indefinitely in grape-juice; it will not decay so long as the grape-juice keeps fresh. The grape-juice would have to be renewed occasionally. We have down in our cooking school a beefsteak that has been in a bottle of yogurt buttermilk for two years and a half--more--it went into the yogurt bath two years ago the seventh day of last June. We have an anniversary of our beefsteak once a year, and congratulate it. Now, another advantage of the grape-juice is that it introduces salts which are of great importance to the body. That is the reason why it is so very valuable to the fever patient--it introduces food in a form in which it is ready to be immediately assimilated; and when a patient has a fever, he has lost his power to digest and makes no gastric juice; his mouth is dry, and he makes no saliva, makes no pancreatic juice; he has no digestive fluids. Put food into his stomach, and if he is in a very low state, unless that food is



all ready for assimilation, it simply lies there and decays, and the patient has fermentation. The old way was to feed fever patients with milk. I rebelled against that about twenty-five years ago, because when we discovered typhoid fever germs, we found that milk was one of the very best culture mediums for typhoid fever germs. If we wanted to raise a crop of typhoid fever germs, milk was the very best possible soil to plant them in. And I said it was silly to feed typhoid fever patients with the very kind of food that typhoid fever germs like. So we stopped doing that.

Now, in those days, we used to have a good deal of trouble with the bowels. They were enormously swollen up in typhoid fever. Tympanitis was one of the symptoms. There were ochre colored stools that meant simply decomposing milk, but we didn't know it then. But a few of us began to experiment, using grape-juice instead of milk in fever cases, and there was a very great advantage in it, because milk is chiefly a protein, nitrogenous food, and this protein decays, while grape-juice contains nothing that can decay; in fact, it prevents decay, and at the same time contains food which is already digested. Now, milk contains nothing which does not require digestion. Every element in milk must be digested before it can be assimilated, whereas grape-juice contains nothing which requires digestion; it is already digested, already prepared for immediate assimilation. The grapes have been ripened in the sun, or cooked in the sun, as they say down in Mexico. "Cossido in el sol" is the expression they use. It is cooked in the sun, and not only that but it has been digested by the actinic rays of the sun; so it is, as the Doctor has been telling you, a preeminently valuable food. The real fault with it, Dr. Welch, is the carrying on of the wine business. Dr. Welch is conducting one of the biggest temperance reform organizations in the world, because he is sending out so many millions of gallons of grape-juice to take the place of fermented grape-juice. I am quite convinced that a great number of people use wine because of the fruity flavor of wine,



and not because of its intoxicating qualities, but because they want something that has the flavor of fruit, and like the fruity taste; and if you can get the fruity flavor you have in grape-juice without the intoxicating effects of alcohol, those people are perfectly satisfied.

There is another element in grape-juice I have not mentioned that I ought to speak of, I think, and that is the grape acid. Many people do not know that this grape acid is a food, as well as the sugars of the grape. It has a real food value. The people who have chronic catarrh of the stomach to such a degree that fruit acids irritate the stomach--there are a few such cases. Persons who suffer from hyperacidity of the stomach, when they find a burning irritation, distress after taking fruit acids, they must sometimes avoid grape-juice for a time. But by discarding meats and adopting an antitoxic diet, that I am going to tell you about shortly, the hyperacidity will disappear, and the sore stomach will heal up; then grape-juice, especially if diluted with a little water, will come to be a very grateful food indeed.

Another good way to use grape-juice is in combination with cereals. That was not mentioned. Many persons who find the acid a little too strong, by combining it with some cereal like rice gruel, or any other cereal gruel, by adding the fruit juice to it makes a very excellent preparation. It should not be boiled, however.

I want to ask Dr. Welch to do one thing more for us, however. He has invented a great number of things, and I wish he would do one thing more; that is, provide us with a grape-juice that has not been cooked at all, even at so low a temperature as 100 degrees--provide us with absolutely raw grape-juice; and the man who can do that will confer an enormous favor upon the human race. We need raw foods. The grape-juice is not an absolute substitute for the grape cure, for the reason that the grape in its natural state contains certain enzymes, certain subtle substances which are of very great value to the body. . Sometimes



persons are almost miraculously lifted up from the very brink of the grave by the use of these raw fruit juices of various sorts. A child, for instance, fed on sterilized milk, on milk that has been boiled, gets scurvy, rickets, and dies, has malnutrition. The same child fed on sterilized milk and the juice of one orange, or the juice of one lemon, or of an apple every day, thrives. We now know that sailors suffering from scurvy do not suffer because they used salt foods necessarily, but because they live on cooked foods. They had formerly no raw foods of any sort. Fresh, raw food substances will prevent scurvy and cure it. I knew a man eighty years of age, one of the pioneers of the West, and a very wealthy man who went out there a good many years ago, and his name was well known throughout the country. When a boy he was shut in with a whole lot of men in the mountains of California by snow fourteen feet deep. Very soon they began to suffer from scurvy. He noticed the mules were digging, and pawing away at the snow, and they finally goe down to the bottom, tunneled under the snow, and ate the grass; and he followed suit and ate grass along with the mules, and he was the only one in the whole company that did not suffer from scurvy. The juice of the grass, being a raw food, contained some elements that were very important. I hope the Doctor will furnish us with raw grape-juice. I am sure it can be done; it will be a somewhat intricate process, but it can be done. It has been done on a small scale, but it ought to be done on a large scale. If we can have the juice of the grape absolutely as it is in the little grape bottle on the vine, we would have something of inestimable value; but the grape-juice as it is is a marvelously valuable food, and I am glad to do anything I can to promote its use; and I certainly heartily recommend it.

All fruit juices are valuable. The juice of the grape is one of the richest and one of the best of all.

Now, I am going to tell you about some toxic foods and some antitoxic foods; but first of all, I must tell you about how the body deals with toxic



and antitoxic food substances. Now, the body is prepared to deal with both toxic and antitoxic food substances. We have here, for example, the intestine which is thirty feet long. The mucous membrane of the intestine is a filter. It is a more valuable filter than the Pasteur filter, a better filter than the Pasteur filter, it is a far more perfect filter than the Pasteur filter because it has a selective power and selects out of the substances which are presented to it those things which are wholesome and allows them to pass through; and the unwholesome things it holds at bay. It is exactly like the watchman who stands at your door. He lets the friends in and he keeps the enemies out. So the mucous membrane is a live filter that has judgment and discretion, and exercises in a most skilful way an expert discretion in relation to the character of the substances which are presented in solution for absorption. So the intestinal filter is an exceedingly valuable thing. It is a thing that preserves us, preserves our lives. We would not live forty-eight hours if it were not for this intestinal filter. The contents of the intestine of the average person living upon the ordinary diet is in a state of advanced decomposition, a mass of festering, putrescent material. That is what is found in the colon of the average man or woman. If it was not for the fact that the mucous membrane is able to hold these poisons at bay--there is <sup>enough</sup> ~~making~~ poison in the colon of the average man or woman to kill him in half an hour if it were introduced into the blood directly; but the mucous membrane holds it at bay, does not allow it to get in. However, there are certain poisons that do pass in there, and sometimes this mucous membrane filter gets incompetent; it gets worn out. Sometimes the quantity of poisons that are presented to it is so enormous, the amount is so very great that the filter can not keep them all out and some of them find their way in, and they they come in contact with the liver. The liver is one of the most wonderful organs in the body. It has more different things to do than a Jack-of-all-trades has or



has or undertakes to do. It does more things than any other organ in the body, and more different kinds of things. Just let me give you a little brief resume of a few of the things the liver does.

You know, in every great city they have what they call rendering establishments, and the public scavenger goes around and ~~pick~~ picks up all the dead cats and dead dogs and dead horses and other things that drop on the streets and takes them to this rendering establishment, and the hair is taken off to be used for plastering our houses; the bones are made into fertilizer, the hides are made into shoes, the hoofs are made into calves' foot jelly, the fat is made into oleomargarine butter, etc; so it is all utilized; there is nothing gets away. If there is anything left it goes into fertilizer; and sometimes they go so far as to sophisticate our coffee. In London not very long ago a discovery was made that the coffee had been adulterated with roasted horses' livers; so nothing gets away; ~~it~~ it is all utilized.

Now, the liver is a rendering establishment. There are deaths taking place in various parts of the body all the time. The number of deaths in a single body is greater than the number of deaths of people in the whole United States. The deaths in the body in one day are more than in all the world. Eight million white blood cells die every second of our lives, and their corpses go floating down the stream of life. Think of it. Something must be done with those dead cells. They must be taken care of. The liver is a rendering establishment and gathers them up, and it utilizes those red cells. They are rendered in the most complete and perfect manner. The coloring matter is carefully saved out and sent back into the body to be used in tinting the hair. That is why your hair is red, or brown, or black--because the liver has been filtering out the coloring matter of these dead cells and using it to paint your hair with. Then there is this wonderful photographic gallery in the black part of the eye, the black screen



on which pictures are made in the very reverse of the ordinary manner. The photographer makes pictures by making dark lines, or the action of the sun makes dark lines upon a white screen or a colorless screen; but it is different here. We have a black screen which is covered with brownish coloring matter, and upon this the pictures are bleached in white so that they appear like a chalk picture on ~~black~~ a blackboard. That is the way the pictures are made in the back part of the eye, so that these pictures are bleached out, and the coloring matter must be restored continually, so we will be ready for another picture. So there is much use for coloring matter in connection with the organ of sight. Then there is the potash in these red cells. These red cells contain a large amount of potash and this potash is very valuable in the body. You remember when you were boys and girls, if you lived in the country, your mother had out behind the barn a barrel of ashes, and it was your duty to carry out a pail of water and turn into it occasionally, and there was a big iron kettle underneath that caught the lye that was washed through. And once in a while this was gathered up and made into soap for laundry purposes.

So the liver gathers the ash out of the blood and sends it down into the intestine in the form of bile. And this bile combines with the fat you swallow. It goes down into the small intestine, and there it is made into soft soap in the very same way, and if it is at all decent so it can be absorbed, it is absorbed, if it has not got too much poison mixed up with it, it is absorbed into the blood. Fats never could get into the blood if they were not first made into soap. If they are made into soap, they are soluble; so you see of what great value these dead cells become to the body through the aid of the liver. That is only one thing the liver does.

Now, as the blood comes coursing through the ~~liver~~ liver, the liver inspects it. The blood is absorbed from the liver and the intestines, the spleen,



the pancreas and the lymphatic glands, and all the various organs of the abdominal cavity, and is carried by these large vessels here up to the liver and filtered through the liver before it is allowed to enter the general circulation. Now, it is the duty of the liver to sort this blood all over. Now, with the foodstuffs we take in are various poison substances, and the liver must sort them all over. If you are drinking water that comes from lead pipes, the lead gets into the liver and is recognized at once, and the liver captures and stores it away in its own cells. Maybe the doctor is giving you a dose of calomel now and then, and the liver does the same thing to the calomel, to the mercury. Some of it gets into the blood, and the liver gathers that up and stores it up. Some of you, I suppose, have got a fine collection of calomel in there, and perhaps of other poisons. Maybe you smoke a cigar after dinner, or a cigarette, or smoke a pipe all the time, or chew tobacco, or do something of that sort--drink alcohol perhaps; the liver does the very same thing to all those poisons--it captures them, soaks them up and retains them in itself for some time until it can dispose of them in some way.

Now, another thing the liver does is to take certain poisons and destroy them. For instance, Prof. Roger made a very interesting experiment. He injected some nicotine into a vein on this side of the liver, into the portal vein, then he injected the same amount of poison into a vein on the other side of the liver after the blood had passed through the liver. He found by his experiments that it took half as much poison injected after the blood had passed through the liver--~~twice~~<sup>half</sup> as much poison to kill the animal as it did before it was passed through the liver. If he injected the poison on this side of the liver it took twice as much poison to kill the animal as when injected on this side of the liver, because half the poison was destroyed in passing through the liver. He found when he took a fresh liver from the body of a dog and chopped



it all up fine, mixed nicotin with it, that even that chopped-up liver destroyed the poisons, the nicotin, to a large extent; so its poisonous effect was more than half destroyed, was reduced at least one half. Other experiments have been made of similar character, which prove the liver not only retains poisons, captures poisons, metallic poisons particularly, and holds them in itself, but that it actually destroys poisons. The liver makes digestive fluids that aids in the digestion of food. It is an excretory gland, gathers up alkaline poisons and removes them from the body. But one of its most important functions is that of destroying poisons; and it is that thing we want to talk about particularly tonight; so if poisons escape the intestinal filter, pass on into the blood when they reach the liver, the liver does its best to destroy them. If it succeeds in destroying them entirely, then the blood goes on pure; but if it does not succeed in removing all the poisons, then some of them pass on and you suffer, as a lady I saw a few minutes ago, writhing with pain, rolling about in bed, suffering so great pain in the head she was nearly beside herself, because her liver is not able to destroy all the poisons brought to it, and they pass on into the body and are irritating her brain. You sometimes have headache or feel stupid for the same reason; you sometimes feel irritated, made angry and scold somebody, and it may be because your liver has failed to do its duty. That is responsible for that.

I remember a lady came into my office some time ago, sat down and began to cry, put her handkerchief to her face and began to weep, and said finally between her sobs, she said, "Doctor, do tell me; am I sick or am I wicked. Why, Doctor, I used to be a very agreeable woman, and I used to be very kind and amiable, but for the last six months--oh, Doctor, how can I tell you about it? Doctor, I scold my husband, I scold my children, and I scold my neighbors, and I am a general, all-round scold. Do tell me, Doctor, am I sick or am I wicked?"



"Well," I said, "let me see your tongue." I saw her tongue; I didn't care to see her heart, and we didn't have the X ray in those days any way so we couldn't; but I wanted to see her tongue, and I saw her tongue, and it looked as though it needed the city scavenger after it. It was her tongue--no, not her tongue; her tongue had been making mischief, it is true, but it really was not to blame for it all. The whole difficulty was her liver had broken down in its power to protect the body against poisons. Poisons were generated in her alimentary canal. Her whole intestine was swarming with poisons. Poisons were being absorbed, and the liver was not able to deal with them. That is the difficulty. Now, I was glad to tell this lady that her case was not a case of total depravity, but a case of total indigestion, and she got well and went home happy, and was the same cheerful woman she had once been.

And the neurasthenic is in the same situation--simply suffering from chronic toxemia, chronic poisoning. It is a poisoning that is worse than ordinary intoxication. A few months ago I examined a lady and found she had auto-intoxication. She had a bad breath; I knew it before I examined her. As a matter of fact, she had such a dreadful bad breath it smelled like a dead rat; and I looked at her tongue--great, brown circles around her eyes, pimples on her face, and I said, "Madam, I see you are suffering from auto-intoxication." "You are entirely mistaken, sir, entirely mistaken; I haven't had a drop since night before last. I do admit that I take a toddy at night to make me sleep, but I didn't have any last night." She had been here where she could not get any. I said, "Your intoxication is a great deal worse than liquor intoxication; that is not what I was talking about. You are suffering from intoxication a great deal worse than whiskey intoxication; you are suffering from food intoxication, food rotting in your intestine, in your body, and absorbed into your blood. That is what is really the trouble with you." Well, I suppose that is what



led to the whiskey intoxication. You know thousands and thousands of people who drink take alcohol simply to drown their trouble--the irritation, the nerve tension, the distressing sensations of various sorts that grow out of this intestinal autointoxication or food intoxication. Well, now, the liver protects us against it to a considerable degree; but the liver can not do it all, and some of the poisons are in too great quantity to get through. Then there is another organ, the pancreas, that helps about it, and the spleen perhaps helps about it to a considerable degree. These make substances which antagonize the poisons.

This shows you the little cells that do the work. As the blood comes along here in the arteries, it is sorted over, inspected by these little rows of cells that lie right along beside the blood vessels, and the poisons are destroyed. They are absolutely annihilated; but when the poisons come in such great quantities they can not all be dealt with--it is just as you may imagine a great flock of mosquitoes coming down upon you. If there are only two or three you can catch them and kill them, but if they come in great swarms and the whole way is blocked with them, the mosquito will be likely to get the best of you. So with these poisons. When they come, the blood is saturated with them, the cells are themselves inoculated, they become paralyzed by the enormous quantities of poisons ~~which~~ with which they are obliged to deal, and after while they undergo degeneracy. Here are some of these cells as they appear under the microscope, and when poisons come in in too great quantities, they undergo a change such as you see here which is known as cloudy swelling; and after while particles of fat are deposited in the cells so they are permanently disabled; they have undergone degeneration, and that liver is crippled forever. Now, I suspect that more than half the people sitting in this room have got crippled livers, not so badly crippled but what they can do an ordinary amount of work, but so



badly damaged that you never can do the things that you once did; you never can drink the toddies and the cocktails that you once did, perhaps, if you ever did such things as that; you never can smoke the cigars and the pipes you once did; you never can eat the beefsteaks and let them rot in your colons as you used to do. You have got to reform and stay reformed; and the tea, coffee, mustard, pepper, peppercorn, ginger and all those things are all simply mediums for conveying poisons into the body, and these poisonous substances must all be discarded from the dietary, every one of them, because they are loading the blood with toxic matters which ~~sometimes~~ sooner or later result in the destruction of these anti-toxic glands which destroy the liver. When the liver is once destroyed, it never can be restored. This liver has become so badly damaged that cancer has begun to grow in it, and it has become a thoroughly damaged liver. The liver will stand an enormous amount of abuse. There isn't any organ in the body that will stand so much abuse as the liver will, because it has marvelous vitality. A German investigator some time ago took a rabbit, cut off half its liver. A few months afterward he examined it, and found the half had grown on again, and the liver was just as good as ever. Then he cut off the other half, and in a few months the other half had grown on; so the rabbit had a brand new liver and was perfectly happy over it. Now, that is what the most of you want, and I am glad to tell you it is possible for livers to be removed to a considerable degree if you give them a fair chance; but if you keep all the time chopping them off as some of you have been doing, I am afraid the poor liver will get discouraged after while and cease to reproduce itself. This liver has given up and gone to pieces.

Here are the pancreas, ~~the~~ and the spleen that are engaged in this poison-destroying work. These are absolutely essential to the maintenance and of the vigor and efficiency of the body. Now, here is a little gland up here in the neck that people used to think was put there chiefly to make business for



doctors and to make trouble. It is the gland that enlarges and becomes what is known as goiter when it is enlarged. There are some parts of the world where these goiters grow to be enormous. In Switzerland, for example, there are certain deep valleys where you can see these enormous goiters hanging almost down to the waist. They wear bands to support them, and people compare notes as to which has the biggest goiter. This gland has been found to be an antitoxic gland and to have a wonderfully important function. Its purpose is to examine the blood, test the blood, to pour into it the necessary substances to destroy those poisons that have escaped from the liver and these other antitoxic bodies.

There is a little bit of a gland up in the brain called a pituitary body. This pituitary body is half nose and half gland, if you please. It is a sort of smelling organ--it smells blood, tastes it, examines it, finds out whether it has got an unusual amount of poison in it; and if there are poisons present they stimulate the gland part to secrete a very subtle substance in very small amount, and when this is present in the blood it reaches the thyroid gland and causes it to pour out this secretion thyroïdin. This secretion is poured into the blood, circulates in the kidneys, causes the suprarenal capsules of the kidneys to produce adrenalin which is poured into the blood and is an antitoxic substance which destroys the poisons of the blood and all these different organs--the intestine, and the liver, and the pancreas, and the spleen, and the thyroid gland, and the suprarenal capsules and the pituitary body,--when these organs do their work the poisons are destroyed and the blood is kept clean and the kidneys have only to eliminate the poisons which have undergone a change, which have been changed into substances which are not particularly poisonous by the oxidizing process. They carry out the toxins and so the liver remains in a healthy state. But when large quantities of these poisons are present, the liver becomes enlarged, congested, and the kidney becomes contracted and what is known



as gin kidney. We find this sort of kidneys in people who are dyspeptic, who use tea and coffee, who have not adhered carefully to the antitoxic diet as they should have done.

Here is a picture, you see, of the stomach, and here are ulcers in the stomach. It has been found that these poisons which are formed in the colon and in the intestine, through the putrefaction of foodstuffs, ~~when they~~ are excreted into the stomach, and when they are excreted into the stomach, the stomach loses its power to defend itself against the germs that are swallowed with the food and against the digestive action of the gastric juice, and so ulcers are formed. I heard a doctor say not long ago at a great medical society meeting in Chicago that ulcer of the stomach is a beef eaters' disease. So if you want to have ulcer of the stomach, you know just how to go to work to make it.

This is the colon in its normal position. It shows the small intestine attached to the colon here at this point, but it shows an attachment over there. A London Doctor has found a way of getting rid of the auto-intoxication that takes place in the absorption of poisons from the colon by making an anastomosis here, joining the small intestine onto the colon at this point, so the colon is reduced to this short distance, so the foodstuffs instead of entering the colon and having five feet to pass through here, enter the colon at this point. Instead of passing through the cecum, and passing the whole distance through the colon, they enter at this point in the sigmoid flexure, and thus do not fill the colon with putrefactive material. Dr. Lane, who invented this operation, found that sometimes food materials back up in the colon and make serious trouble; so he has adopted the plan of cutting the entire colon out. I have seen him do the operation, but I have never had to do the operation in this form, although I sometimes have to remove portions of the colon, but I have never undertaken the operation for this purpose, because I have become satisfied that it is only



necessary to change the diet, to cease the use of these toxic food substances that are capable of undergoing decay, to get rid of these difficulties for which Dr. Lane is removing the colon. I have proved it in hundreds, I may say thousands, of cases,--that by corrections of the diet we get rid of the putrefactive process. Suppress the putrefaction, and it does not make any difference if the colon is a little too long. If the colon gets tangled up in this shape, the foodstuffs remain too long in the colon and undergo putrefaction to an extreme degree, and the poisons are absorbed, and the auto-intoxication which results is productive of a great number of diseases.

Now there are various sorts of toxic foods. Here are some of them. Here is pork that has trichinae in it, for example. That is a parasitic infection. The United States government published a notice not very long ago and sent it out throughout the whole United States--"Look out for pork, look out for pork; don't eat any kind of pork without cooking it very thoroughly", because one out of fifty of all the hogs has trichinae. One out of fifty of all hogs is infected with trichinae. That has been proved by the government inspections in Kansas City and Chicago and elsewhere; so they know that to be true. If you eat this hog with trichinae without taking pains to cook it thoroughly, the trichinae will still be alive when they get down into your intestine; and they will bore a hole through the wall, get into your blood, be circulated all through the body, and you will be going about with a zoological collection of trichinae the rest of your life.

Some time ago I had occasion to remove a cancer from a man's lip. I had to take off part of his lip, and when we examined the cancer under the microscope, the very first thing that came into view was some trichinae. We found his lip was all full of trichinae, and not only his lip, but the rest of his body, his hands, thighs, scalp, muscles and his whole body was simply swarming with



those living worms. Now, just think of that state of things. When I was a medical student at Bellevue Hospital Medical College, my demonstrator of anatomy, my teacher, was the late Dr. E.G. Janeway, who died recently in New York City, one of the most eminent physicians in the United States; and I noticed when I was making dissections, some little white specks in the red muscle. I called the Doctor's attention to it, and he said, "Why, those are trichinae. Put it under the microscope and you will see." So I put a little portion under the microscope, and sure enough, they were trichinae. They were not alive; they were dead, but the muscles were all full of these trichinae; and Dr. Janeway told me that the statistics which have been collected for many years at the Bellevue Hospital morgue, at which all persons found dead, or who died of violence or accident in New York City were brought there to this place, and the post mortem examination showed that one out of every seventeen had trichinae in their muscles. Now, that is three times as many as the pigs, don't you see. Two per cent of the pigs have trichinae and six per cent of human beings. One out of fifty of all the pigs, and one out of seventeen of all human beings. How many are there of us here? Perhaps 300. How many trichinae? Well, let me count and see how many of you have got trichinae. Eighteen persons in this room have got trichinae in their muscles, and perhaps two or three times as many have got trichinae in their bodies. It is not a pleasant thing to think about. Forget if you can, if you think you have got it, but don't take any chances of getting any more. If you have been eating pork, ham, sausage and things of that sort--bacon, that has not been well fried and well cooked--they are tough little fellows that will resist a whole lot of heat, then you run a whole lot of chances of getting trichinae. When they get into the body, each trichinae produces a thousand. They are very prolific. The trichinae that are swarming in the body in a very short time will be numbered by millions.

You have noticed sometime when you were down in the market, a shoulder



of beef or a quarter of beef that had rather a pale look. That animal had tuberculosis when it died. "What," you say, "tuberculosis in the meat markets?" Certainly; certainly. Not long ago the Boston papers published a statement to the effect that it had been found the State Board of Health of Massachusetts had a special slaughterhouse for slaughtering tuberculous cattle; that when they went out inspecting the dairy cattle in Massachusetts, and found cattle that had tuberculosis, the state had to pay for them, and they wanted to make their administration economical; so they carried these tuberculous cattle to this slaughterhouse, slaughtered them, of course cut off the tuberculous pieces, and sent the rest to the markets; and they were put on the general markets in Boston, and the people of Boston, rich and poor alike, people who thought they were getting the finest kind of tidbits of meat, were eating tuberculous cattle. There was no discrimination whatever, and there ought not to be, for that matter.

Sometimes you notice beef that has a rich golden color. That means the old ox had jaundice when he died, and probably had gallstones. I thought of that when I removed a gall-bladder yesterday that was brimful of gallstones, just packed as full as it could be; and that man had been having an awful time with those gallstones a good many years, and when I removed it, I said to myself, "Now, then, when that old ox had gallstones, did he feel the way this man said he felt? And if he did, who would like to eat a piece of an ox that had headaches, and side aches, and was pale and jaundiced and had gallstones?" It is a very common thing for butchers to find gallstones. Sometimes the meat is very dark in color. That means the animal had fever when it died, and had been excited, just about infuriated, and the flesh is very poisonous.

Isn't this a pleasant change. This is antitoxic. The other one was toxic, and this is antitoxic. Here we are. This farmer is taking advantage of the friendly spirit he has been cultivating between himself, the friendly rela-



tions that existed between himself and that animal, and suddenly sprang upon him with a knife and is cutting his throat. Here he has strung him up to a tree, and now he is disemboweling him, and you see the flies are all around, and the air is full of dust. Here he is cutting off his head. Now, you know, I took these from an official bulletin. This is published by ~~the~~ a state agricultural department for the purpose of instructing farmers how to do it. These are not caricatures at all, but they are pictures I took from an official bulletin showing the farmer how to do it; so I know this must be the way it is done. But, of course, there is the creature lying there in the dirt and getting more or less of it, and the flies all around it as I say; and here is the inside of the creature with great masses of tubercular tissue here; and this cow had lumpy jaw. Now, what do you suppose they do with those lumpy jaws? You see the mass of tuberculous liver over there, and these tuberculous ulcers in the intestine, and what do you suppose they do with all such things as that, and these tuberculous kidneys? Well, they are all buried. They are made up into little strings like that, and afterwards they are buried--you know where they go--you know where they are buried.

Here is another creature, a very interesting creature indeed, one of the most interesting creatures I know of. It is known as an oyster. Did you ever inspect an oyster? Did you ever study an oyster, and dissect one? I presume not. I suppose you swallowed him whole and never stopped to think that he had liver, kidneys, intestines, stomach, and hadn't any brains--he has no brains to speak of, though he has got a few nerves; and there are a whole lot of typhoid fever germs scattered all around here, and oysters are very fond of typhoid fever germs. If you will look through the oyster closely, you will find them in the stomach and intestines and around their gills, and the oyster broth is swarming with bacteria, with typhoid and putrefactive bacteria. Why, oyster-juice is like a silver mine in Colorado--it has millions in it, wriggling mil-



lions. The next time you think of eating a live oyster on the half shell, just before you eat it, take a drop of it and put it under the microscope, look at it, and you will see the things running all over the plate there--germs of all sorts. You won't want to eat it. The oyster is a highly toxic food; and these creatures after they die are quickly permeated with germs; their whole bodies are penetrated in every direction with germs of putrefactive sorts that produce decay. and cause flesh to become prime beef. Prime beef means simply beef that has been rotting three months and been neglected to be buried. That is what prime beef means. That is true to such an extent that the flesh becomes completely filled with bacteria within twenty-four or thirty-six hours after the animal dies; if these creatures are put into cold storage, the process is not stopped, as most people suppose; but it continues, goes right along, only at a somewhat slower rate, and a different class of germs grow. These germs are found to grow at a temperature as low as 34°. Thirty-two degrees is freezing point; but at any point just above freezing the germs are growing, and that is the reason why cold storage meat has been recognized everywhere to be objectionable. Down in Pennsylvania the other day they tried to pass a law that meat should not be kept in cold storage for more than a year. Just think of it. I believe they have got it modified now so it is only three months. But just think of the state of a corpse that has been three months unburied. We had a gentleman here some time ago from Chicago who had a cold storage warehouse there, and he told me to his positive knowledge one man had twenty thousand ducks stored away in his warehouse there that had been there for more than two years. Just think of those dead things. I said to him, "What is he going to do with them?" He said, "Oh, he is going to sell them." He said, "Why, these restaurant people don't have any trouble in disposing of them. They season them up a little more and no one knows the difference." In fact, I suppose they have a particular



haut gout; they are very gamey in flavor.

Now, just look at the analysis of some of those foods. Here is bread, wheat, barley and so on. Please notice that they contain a large amount of the carbonaceous element. Now, we will look at some of these other things, mutton and so on. Here is mutton, beef, veal, all have a large amount of protein, the putrefying element, and only a very small amount of the carbonaceous elements,--about one half or one quarter carbonaceous, and three fourths ~~or~~ four fifths protein element. Here, look at rice,--80% carbonaceous which does not putrefy, and six protein which does putrefy. Now, when there is such a large proportion of carbonaceous as this, acids are formed which prevent putrefaction. So cereals can not putrefy. You never heard of such a thing as putrefaction of wheat. Wheat may mould, it may sour, but it can not putrefy, because the amount of starch present is so very great. On the other hand, you never heard of the fermentation of a fowl. You never heard of a chicken fermenting; it putrefies, rots, decays; and that is the difference between these animal substances and vegetable substances. Animal substances decay and rot, but this is not true of vegetable substances. There is another exception in milk. You see we have in cows' milk 4% of protein and 9% of carbonaceous. That is why milk sours instead of rotting. Now, beeftea will rot. It has a bad smell after a few days because it does not contain much of the carbonaceous, but milk sours, and the same thing is true of all the ~~XXXXXXXXXXXX~~ farinaceous foods. Look at the egg, for example. Here in the egg we have fourteen per cent albuminous, and only ten carbonaceous; so eggs may decay, may undergo putrefaction. By the way, some of you I suppose know they have discovered down in Philadelphia and New York recently that a large part of the custard pies that are made by bakers and sold are made of rotten eggs. It was found that there were some thousands of dozens, four or five thousand dozen rotten eggs being used every day in New York and Philadelphia in mak-



ing cakes and custard pies. Those bakers found a way of flavoring them up so that the rottenness did not show. In fact, the sulphuret of hydrogen could be driven off by certain processes.

See what we have here in fruits. Grapes, for example, fourteen carbonaceous, and only eight tenths protein,--fifteen or sixteen times as much carbonaceous. So all the way along. There isn't a single fruit here that contains as much as one per cent of protein, and they contain anywhere from five up to fourteen of the carbonaceous. There is no fruit but the cherry which has so much nutrient material as the grape. That is why grape-juice is such a valuable food, and its nutrient material is in soluble form, and predigested form, ready for immediate assimilation.

Now, if we had a table showing the salts, we would see that in beef there is only one half grain of lime in a pound of beefsteak. There are several grains in a pint of fruit juice. In a pint of grape-juice, for instance, there are several grains of lime. Now, we need lime. In wheat there are four grains of lime in a pound. There is one grain in a pound of wheat bread. There are eight grains of lime in a pound of peas, and five or six grains in a pint of grape juice; so we must take these vegetable substances if we are going to get our due proportion of lime. There is lime in the corn. The pig eats the corn, and the lime goes into his bones, and the other substances go into the flesh, and when you eat the pig you do not eat his bones, you see. If you are going to eat the hog, you must eat the whole hog or none, in order to get the lime back again; and if you will eat pork, you must take some grape-juice--Welch's is the best--to antidote it. Just look at meats. We think they are so very important. We found rice with 86% of nourishment, and that means 100 calories to the ounce. And that is true of all the cereals,--corn, wheat, rice and all the cereals furnish more than ~~100~~ 100 calories to every ounce. Just think of it. Why, even



milk has twenty-one calories to the ounce, and Welch's grape-juice has 24 calories to the ounce. We have tested it and examined it. I don't believe Dr. Welch knew that; but we have found in our laboratory that it has twenty-four calories to the ounce and so is more nourishing than milk. Milk has 21 and grape-juice has 24. Apple-juice has seventeen. Beef juice has seven calories to the ounce. In other words, an ounce of grape-juice has more than three times the food value of an ounce of meat juice. This is not meat broth, mind you; it is not bouillon; it is meat juice that is squeezed out of the meat, so that you have got everything that there is in the meat with no water at all added to it, all the soluble part of the meat. The meat juice has seven and a half calories to the ounce. That is the report of Dr. Wiley, the chemist of the agricultural department. He published this in a bulletin, and if you get the bulletin, you will find it figured out in his bulletin, although there you will find the amount for the pound instead of the ounce stated. Here is beef liver 41. Here is beef soup, eight. Now, we come to bouillon which people think is so very strengthening--just think of it--only three calories to the ounce. Then it has besides that a whole lot of uric acid. There is more uric acid than there is food in bouillon,--positively more uric acid than there is food. If you take that bouillon and analyze it, and put the analysis right along beside the analysis of an equal quantity of urine, you would not be able to tell the difference. The constituents are the same; they are exactly the same. What you find in the urine you find in the bouillon, and you do not find anything in the bouillon that you do not find in the urine. They are practically identical, practically identical. The urea, uric acid, and all the rest of the filth is all there in the bouillon. It is necessarily so, because bouillon is an extract of tissues; and that is exactly what urine is. Urine is extract of tissues. The tissues are washed out <sup>by</sup> of the blood, and the poisons are washed out; then the blood goes to the kidneys, and the kidneys



filter the tissue washings out. The urine is extract of tissues, and bouillon is the same thing only bouillon is before it has passed through the kidneys, and the urine is after it has passed through the kidneys. The kidneys are simply a filter; that is the truth about it. I did not discover this idea. Dr. Flint, the great New York doctor, the father of the present Austin Flint Senior,--I knew him well, was a private pupil with him thirty-five years ago; and Dr. Austin Flint stated in public before his medical class of which I was a member that he had analyzed urine and beeftea, and he found they had identical composition; and he put it also in his large work on medical practice which was published more than thirty years ago, the same statement, and stated that thousands of people had been starved to death on beef tea which was supposed to be so very nourishing. That is one of the most ridiculous things you can possibly give to a fever patient. Beeftea, or beef broth, or chicken soup--any of those abominations--I think they are referred to in the Bible under abominable things--they are absolutely unwholesome, nauseous and loathsome.

Now, here is brain, 37. People who lack brains and appeal to the calf or some other creature for help, are getting only 37 calories in an ounce of brains; whereas in one ounce of grape-juice, or a couple of ounces of bread, they would be getting far more. Now, look at this--lobster. People think it is so very nourishing; and the oyster that is believed to be so wonderfully nourishing, so easily digestible,--only eleven calories, less than half as much food value in a pint of oysters as in a pint of grape juice--less than half as much. Only half as much as there is in a pint of milk. A couple of tablespoonfuls of milk have nearly twice as much nourishment as the same quantity, the same weight of oysters; so you see the oyster is entirely a deception. Frogs' legs, clam chowder, deviled crabs, bedeviled lobsters, and other wicked things so many people are addicted to and ignorantly swallowing supposing that they are highly



nourishing, are a snare and a delusion; they are not worth the trouble taken to digest them.

Here we have a table which gives the food values of fruits. You see they are not by any means insignificant. They are not all water by any means. Here are dates with 1600 calories. Beefsteak only has 1100 calories. Fish have about 400 of 500 calories, and dates have more than twice as much nourishment as the average beefsteak. Figs, 1400 calories. These are by no means insignificant. Here is the banana, 460 calories. Now, there is more nourishment in a pound of bananas than in a pound of fish. A pound of mackerel, for example, or a pound of trout has less nourishment in it than a pound of bananas. The banana is a very highly nourishing food, and a most digestible food provided it is thoroughly chewed. Raisins 1600 calories. That is 100 calories to the ounce, and one ounce of raisins has ten times the value of an ounce of oysters. So if you get hungry sometime, you don't have to appeal to the oyster or the flesh pots for help; you can find it in fruits anywhere. Grapes are 450 calories to the pound. That is one fifth of a day's ration. Five pounds of grapes would give a person all the food he needed for a day. Now, there are some people who have sense enough to use these antitoxic foods, and they are the hardiest, toughest, most enduring people in the world. The Japanese will take a person in a jinricksha and run all day, and keep up with a horse. The secretary of agriculture of Japan, an American physician who was over there for a good many years, told me that one day he started out from Tokio to go some twenty miles into the country in very great haste. There was a wagon road, so he went with horses. As he got into his carriage, a couple of Japanese boys, young fellows, unfastened his horses for him, and when he got to his destination,--he drove his horses rapidly all the way, and when he got to his destination, to his astonishment these same boys ran out from behind his carriage where they had been running all



the while and held his horses for him while he went in to do his business. And when he went back, they ran home with him, and when he got there, they were there to tie his horses when he arrived. These are tough, hardy, enduring men that are able to cope with the strongest military nations of the globe. One of the things, my friends, that is before us at the present time is the yellow peril; and there is a peril; there isn't any mistake about that. If those people break loose upon the world after they have gotten all the arts of civilization without getting the Christianity of civilization; if they are civilized without being Christianized, I want to tell you this world is going to be a very unsafe place to live in thirty or forty years from now, and very likely a good deal sooner than that.

Now, we are able to show by actual scientific tests that an antitoxic diet is conducive to far greater endurance, vigor and efficiency among people who perhaps have been ~~waxyxxxxxxxxxxxxxxxx~~ formerly accustomed to a toxic diet; ~~and~~ there is a reason for it. When these toxins are circulating through the blood, they paralyze the bodily forces and produce a sensation of weariness. A beefsteak will make a man more tired than a whole day's work. It makes him feel fine for a little while, and then the after effects come. At first he absorbs from the ~~xx~~ beefsteak the uric acid and the creatin, creatinin and various other poisons that are in it, and those poisons are stimulating, they are highly exciting to the nerves and stimulating. By and by the ptomains which come from the putrefaction of meat begin to circulate in the blood; then come the paralyzing effects that result from the influence of these poisons upon the nerve centers. Prof. Fisher, of Yale, head of the political economy department, came up here some years ago and said to me, "Doctor, I want to test your doctors and nurses here, anybody I can get hold of, and see how much endurance they have." One test was to lie down and raise the legs to the perpendicular as



many times as possible until they could not raise them again. Another was to bend the knees until the hips touched the heels, and rise again, the so-called deep knee bending movement, as many times as possible, until they could not rise up again. Another was to hold the arms out until they could not keep them out any longer. So he selected thirty-two of our people here for these tests. And he found fifteen of our men were able to hold their arms out 1336 minutes. One of them held his arms out 200 minutes, three hours and twenty minutes. The average of the entire thirty-two was 49 minutes, only a little less than an hour. Then he went back to Yale, got the athletes of the Yale Gymnasium, trained under Dr. Anderson, men who held records in inter-collegiate contests and national contests and had won prizes. These men were subjected to these tests. Fifteen of them held their arms out an aggregate of 150 minutes--athletes, wrestlers, boxers, rowing men, men in training for events. And they were the best men in the Yale gymnasium. Fifteen of them were able to hold their arms out an average of only ten minutes; and the average of our thirty-two men was 49 minutes, five times as long, and fifteen of our men were able to hold their arms out nine times as long as the fifteen Yale gymnasium men. Now, that shows a difference. None of our men were in training at all. This was the first time they had ever taken a test. They had no precedents before them, had no examples, no incentive to do as well as they possibly could. But when Prof. Fisher was standing before a wrestler, one of the prize men of Yale, a man with tremendous arms, and he saw his arms at the end of seven minutes begin to shake and tremble, he said, "Why, you can do better than that. Why, just think of it, those Battle Creek boys held their arms out one of them three hours; you aren't going to give up now!" So he stood there and stimulated him, but in spite of everything, before ten minutes was gone, his arms were down at his side and he could not raise them again. It makes a difference, not a difference in strength, but a difference in



quality and not only a difference in quality of muscle, but a difference in quality of blood. It is the character of the blood that gives endurance. The size of the muscle gives strength, but it is the quality of the blood on which endurance depends. A diet into which meat enters very largely, a toxic diet, loads the blood with toxins, putrefactive poisons absorbed from the intestines, imperfectly oxidized waste matters taken in, borrowed from the ox, the sheep, the goat, and the pig, waste matters which are intended for their kidneys to eliminate, for their livers to destroy, that are often poisons that don't belong to the body at all, flesh poisons, the products of putrefaction and of tissue disintegration that are taken into our bodies in addition to those which are generated within our own bodies. It is exactly the same thing, my friends, as though your neighbor had made a hole in your chimney and was sending the smoke from his furnace into your chimney with the smoke of your stove, and was choking your fire. A man that eats meat regularly eats perhaps a couple of pounds of beef a day, and that means sixty pounds of beef a month, and that means a whole ox in less than a year. A beef eater eats an ox a year, and that means he has to eliminate through his kidneys, to carry off that whole ox in addition to the poisons that are naturally developed within his own body; he has to strain that whole ox through his kidneys and through his liver, has to burn up all those poisons that ox generated in its body and would have eliminated himself if he had lived and had had a chance.

Other tests came out practically the same way. In all the tests, the non-flesh eaters went far ahead of the flesh eaters. People say, "We can not make blood if we do not have meat; we must have meat in order to make blood and tissue." I had a letter from a man yesterday who said, "I am pale, thin; my blood is down to sixty, and my doctor says I should eat raw meat in order to get blood." I said, "You must do what your doctor tells you to do if you believe in him, but if you were here I should tell you not to eat any meat at all; and



if you should go to Berlin and consult Dr. Krauss, or Dr. Von Noorden of Vienna, both of them would tell you to eat no meat at all if you have got anemia, because anemia is not due to the lack of blood-making materials in the food; that is not the cause of anemia. You can take a healthy man and starve him, give him nothing at all to eat for a week or a month, and he does not have anemia. Examine his blood, and you can starve a man for two weeks, and he will be up to par at the end of that time. The cause of anemia is the destruction of blood by poisons that are produced in the intestine and absorbed into the blood, ~~and~~ which dissolve the blood. Dr. Herter, of New York, one of the greatest bacteriologists of the present day, who has lived in recent times, made an investigation of this matter. He took twenty different people who had pernicious anemia, the worst form of anemia, examined their stools, found a germ in their stools which produced a poison which when put into blood dissolved the blood before his eyes. It became simply a transparent colored liquid, a pigment, instead of being an opaque, red liquid. Prof. Herter put the germ into some beeftea, or agar-agar, made a culture of it, put the culture in with some blood, and it dissolved the blood as water will dissolve salt. But these same poisons taken into the blood dissolve the blood in the blood vessels, and that is the case of anemia; it is the destruction of the blood. I have seen people eating beefsteak and getting more anemic every day. I remember when I was an assistant of the late Dr. Lawson Tait, more than twenty years ago--I used to assist him in the dispensary, and one day I remember a lady who came in who was very anemic, and the Doctor said to her, "You must eat more beef." She said, "Why, Doctor, I don't eat anything else." The Doctor had been talking to her for months, telling her to eat more beef, and she hadn't been eating anything but beef, and she was getting more anemic all the time. Frances E. Willard, one of the great women of the last century, was killed by a beefsteak diet. She had pernicious anemia, went down to New



York to Dr. Salisbury--she had not eaten meat for many years; she had been here at Battle Creek, and adopted our dietary, and she had adhered very closely to it, but she got anemia some way, and went to see Dr. Salisbury, and he said, "You must have Salisbury steaks", and it killed her in just a few weeks; for it made her worse all the time, simply encouraged the growth of poisons.

Here is a test of the condition of the blood which is a practical test. Everybody who comes here has the blood examined, and I took a thousand of these patients just as they came in our records. We have more than thirty thousand such records, and I took a thousand of them and got the average. I found they had 3,885,200; and after they had been here for a time, when they came to go away, we had another count of that same one thousand, and we found the average 4,359,000, or a gain of 12 per cent. Now, we have a low protein diet and no meat. Not one of these persons had any meat. There may have been some solitary instances in which somebody had been so foolish as to go down to the Post Tavern and get what they call a square meal once in a while, but I think those instances are very rare. The majority of the people who come here are conscious of the fact that they can get all the beefsteaks they want at home, and it would not be worth while to ~~travel~~ travel 500 miles to visit the Post Tavern to get beefsteak. They can do that at home. The hemoglobin showed a gain of 15%. If the lack of meat was so dangerous, we would certainly find a depreciation; but it is not meat that furnishes us with our blood-making material. We get our blood-making material in the lecithin we find in the cereals. All the cereals are very rich in blood making material. We can get our blood material from the very same place where the ox gets his blood. The horse and all these other creatures get their red blood-making material from cereals. Lettuce contains a large amount of iron in a form that can be readily assimilated. In thirty cases of pernicious anemia with a blood count of 989,000, a gain was made of 58%, and



the hemoglobin made a gain of twenty per cent. So you see this is a substantial evidence that can not be disputed, because it is an actual practical application of the principle and it proves it out. Just see what you find in beefsteak. Think of that sausage you thought was so very fine. Four hundred and twenty million germs in a gram of it. Do you know how much a gram is? It is a quarter of a dram. There are thirty grams in one ounce, so you have to multiply these figures by thirty to see how much you get in an ounce of sausage or beefsteak. Just look at it--669 in a small sausage. Sometimes we have examined sausage and it didn't have any germs in it at all. It had so much sulfites in it, had been disinfected to such a degree that germs could not grow; and that kind of sausage could not be digested either. Hamburger steak 129,000,000; sirloin steak, 378,000,000. Multiply by thirty to get the quantity in an ounce, and it would be somewhere about one billion and 300 million. Now, multiply that by sixteen and you will find out how much there was in a pound,--over sixteen billion in a pound of beefsteak, sirloin steak.

Well, now, we sometimes say the cooking kills them. Here is a tenderloin well done, with 25,000,000 in it, and a rare tenderloin with 168,000. In one instance we found more germs after the beef was roasted than before. Roasting simply warmed them up enough to tickle them and make them grow faster.

Doesn't that look better. I am sure there isn't anybody here who doesn't feel better for the change. I would like to have you think about that other picture then think of this one. Did any of you ever hanker for an ox as you saw him coming down the street, and think you would like a piece of him, or of a sheep? Now, I am sure that there is not one of you that passes an apple tree or a pear tree, or a luscious fruit of any sort hanging from a tree that you don't feel as though you would like to pick one. This whole business of eating



animals is abnormal, it is inhuman, it is irrational, and it lacks reason. It is going to disappear one of these days. It will cease to be the practice of human beings to subsist upon the dead bodies of their lower relatives of the animal kingdom.

I thank you for your attention.

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v-4-4-11.



EXPERIENCE OF MR. A. W. GRABE; AND  
QUESTION BOX LECTURE

At the Sanitarium Parlor, Battle Creek, Mich., Monday, March 13, 1911, at 8 P.M.

By,

J. H. Kellogg, M. D

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Ladies and gentlemen, we are going to give you a treat tonight.

I have called for assistance to answer some of these questions. I am going to ask some questions myself. When you investigate a workman, if he can give you a sample of his work, of his product, it is the very best sort of test you can get, isn't it. And I feel very proud tonight that I have a good sample to present to you, a product of what the Battle Creek Sanitarium can do for people that are pretty well broken down. About eleven years ago a gentleman came here and gave a history of having been an athlete, a very strong man, and a professional baseball player for a great many years. He had left the baseball fraternity and become a steam engineer, and was superintendent of the large Plankinton estate in the city of Milwaukee, had charge of the great hotel, packing house, and an electric light establishment. He was an electrical engineer and a steam engineer, a man who is thoroughly posted, and a thorough expert in all those branches, a practical man as well as a theoretical man, and had free access to the prime beef of the Plankinton packing houses and all the goodies afforded by the Plankinton hotel with a fine chef to feed him up; and he came to us. Some of you have been through experience at good hotels and you know just what they do to people. My friend, Mr. Grabe, arrived here eleven years ago a pretty unhappy sort of man. He was very depressed and melancholy, and he had an awfully bad tongue, and he could not sleep, had headaches, was dreadfully depressed, and he



felt he had got pretty nearly to the end of his rope, and he had to do something, and he had every evidence of chronic intestinal autointoxication, not of the alcoholic sort, but something worse than that--Plankinton hotel intoxication. That is the thing he was suffering from, and we taught him a new road. Now, I am very proud of Mr. Grabe, because when he found out the right road, he took it as a dog takes to water. He said, "This thing is right, I know it is right; it is natural, sensible; it is the right way, and I am going to follow it." And for eleven years now he has been following it. He is about fifty years old, and I want him to stand up here and talk to you a little bit, and to tell you about the old way and the new way, and how it suits him and what it has done for him. He is not here as a patient, but just drops in once in a while to shake hands; but he was in town on professional business, and I caught sight of him, so I lassoed him and brought him in. I have great pleasure in presenting Mr. Grabe. (Applause).

Mr. A. W. Grabe. Doctor, I would sooner chop a cord of wood than get up here and talk before an audience. I have never done it before in my life. But I want to say I am very grateful to this institution for the good I have got out of it. As the Doctor says, eleven years ago I was almost a physical and mental wreck. And I came here after I had consulted doctors in Milwaukee for about five years, taking medicine, thinking I could get my health that way; but I found I could not. I came down here, and I believe I was in bed for two or three months; and after I got out of bed, I went to the outdoor gymnasium, got out next to Nature, and in one week's time I wanted to go home, but the Doctor seemed to know better, and he telegraphed home to have them keep me here. I stayed here another two weeks. Three weeks after I got out of bed I went back home, and I want to say I have worked ever since, and have lost no time with the exception of coming down here for a month or two sometimes in the spring of the



year just to enjoy the good things here and to learn the new facts and principles which I learn every time I come here. I want to say that years ago I used to think it was necessary for a man to eat about two or three pounds of meat to keep in good physical strength. I can assure you that that is all false. I kept for years a little tablet with figures in calories, of what I ate, and I average about 1650 to 1800 calories of food; and for physical endurance, I run two miles every morning, rain or shine; it doesn't make any difference to me about that. I exercise at home for half an hour, take my shower bath, eat my breakfast, and that consists of foods from here, and go down to work. I have a ~~xx~~ big opportunity there. The estate is worth probably five or six or seven million dollars in investments; so you see I have plenty of opportunity to expend my energy with it and the big power plant. In the evening I have just a little fruit and one rice biscuit; and after supper, I enjoy my family, or go out to walk, or perhaps to the theater or something like that; and I do not lose any weight. I weigh 157 pounds without any clothes, and I want to say my physical strength is better today than it was twenty-five years ago, and I am certainly glad to be here, and to be among you, although I am not much of a speaker in a place like this. I didn't come prepared for anything. Now, if you want to ask any questions on my way of living or anything, I would be glad to answer them.

Dr. Kellogg: How much beefsteak have you eaten in the last eleven years?

A. I haven't tasted it at all, haven't touched it. I have not eaten any eggs for two years now. I am better for not eating any eggs. I eat cereals, fruits, nut foods, plenty of baked potatoes and raw foods occasionally, every day or two.

Dr. Kellogg: Aren't you tempted to fall grace sometimes?

A. Oh, my, yes. I am tempted every day, being around the Plankinton



hotel; and besides, I used to be quite a drinker and quite a smoker, and I have given all that up.

Dr. Kellogg: What was your blood pressure when you came here?

A. It was 220. The doctor at that time called it hardening of the arteries.

Dr. Kellogg: What is your blood pressure now?

A. The last tests it has run about 115.

Dr. Kellogg. Climbing down, you see, instead of climbing up.

A. Yes, it is almost normal I understand.

Dr. Kellogg. That is normal. I will have to look out you don't get ahead of me.

A. If you don't stop working eighteen or twenty hours a day I will.  
J.H.K.

Q. You said you have as good strength as you ever had in your life.

Do you ever try any gymnastic feats?

A. Last summer, at 49 years old, I took the mile and a quarter boat race in Milwaukee, off the wharf, the mile and a quarter race in the competitive function. I was training on rice biscuits, corn flakes, protose as they call it, and they didn't suppose I was going to last; but I found the fellow on a meat diet was explosive, quick and all this, but he didn't seem to have endurance. He started off about a boat's length ahead of me, but after a quarter of a mile he began to fall back, and I kept on my same old speed, and when I got through I was as good as I ever was.

Q. Who was your antagonist?

A. We went in with the Chicago Rowing Club.

Q. You are a member of the Milwaukee Rowing Club?

A. Yes, I am a member of it.

Q. You mean you are the champion, then, of the Milwaukee and the



Chicago rowing clubs?

A. Well, I feel as though I am one of the champions.

Q. You came out at the head of the best of them?

A. Yes, sir.

Q. Forty-nine years old?

A. Forty-nine years old last August 15.

Q. And won a rowing race of a mile and a quarter in what time?

A. Some eleven or twelve minutes.

Q. Between eleven and twelve minutes?

A. I don't want to go on record for that.

Q. I caught Mr. Grabe on the fly; that is the only way you can catch him. Now, I want to know, Mr. Grabe, if you ever feel at any time that your diet is not amply sufficient to keep you up in your hard work. You are only eating 1600 to 1800 calories a day, you say.

A. I can say to that that about five or six years ago I was called upon to go down to some big cement works in the middle of winter, 32° below zero down there, and Mr. William Plankinton and two or three other men went down there with me to make a test. We got down there and I had my meals in a satchel for six days. I would not go to the dining car or to any hotel. I just simply ate my breakfast and dinner right in the hotel room from my satchel. The second day Mr. Bartlett, not being careful with his food and water, I suppose, was laid up, sick, took the train and left the place, Yankton, Dakota. Mr. Plankinton caught a cold that kept him in the hotel, and the other man took sick; and I ran that plan for five days making evaporating tests, and tests of the quality and amounts of the cement from the beginning right down to the end, and I telephoned the results every half hour up to the hotel; then at the end, on Saturday afternoon about two o'clock, I had almost to carry Mr. Plankinton from



that hotel, and Mr. Plankinton died two months after, and never left his home. Somebody said a few weeks ago, "There is the man that I call a crank, and I want you to have him explain to you how he lives."

Q. It was a very special test,--day and night?

A. Yes, owing to the fact that the tension was great. It was a test from Milwaukee down to Yankton, Dakota.

Q. You were kept on duty a good many hours?

A. Oh, yes, kept right on at the thing myself, taking no time off at all.

Q. You only eat about half as much as the ordinary manx does. Don't you get faint and hungry every now and then?

A. Not as much as I used to when I ate the most; and I don't seem to get so faint or hungry any more.

Q. If you miss a meal do you feel really used up?

A. Oh, I never miss one, Doctor. The meals are so good I don't miss them any more.

Q. He hasn't got a lot of sick people after him; he is lucky. I want to ask you this, Mr. Grabe; you said you used to use tobacco?

A. Yes, I smoked fifteen or twenty cigars a day to stimulate, to stimulate, to always keep up. I saw how foolish it is. My stimulus now is to get out into the fresh air and work up stimulation that way,--get active,--run two or three miles any time,--do it now.

Q. You used to drink some beer you said?

A. I used to drink a lot of it, yes,--an old German family, you know, the old turners,--the more beer you drink the stronger and bigger you get.

Q. Did you find when you changed your diet, stopped eating beefsteak that the appetite for those things disappeared?



A. Yes, very rapidly. I tried a little to stop it there in Milwaukee; but when I came here and went back, nobody could tempt me any more, although I admit I was careful to avoid the temptation; but the appetite left me. The appetite left me for all the strong peppers and all the strong desires, and all that left me; in fact, I do not use any pepper or salt of anything; I use the food just the way Nature makes it, and no meat. I don't have to smother my food with pepper or black mustard.

Q. Doesn't your wife have to refuse you once in a while?

A. I have had trouble with my wife, you know. There is my hardest battle, I want to say. Every little while, here and there, they want me to take this thing or that. I have one daughter twenty years old, and she thought I was right six or seven years ago, and she stopped eating meat, and I was glad of it, and glad to say she weighs 148 pounds, swims, and can do all kinds of stunts in the gymnasium, and she is the strongest in the family, and has been a vegetarian for six years. She was down here for a while too. And I have a granddaughter too; I am a grandfather too.

Q. Is the youngster a vegetarian?

A. Hardly. If the daughter carried out my ideas, the youngster would be a vegetarian, but she is the one that eats meat. But the meat bill amounts to about a dollar and a half a month, so they don't eat very much. That is with four in the family.

Q. Would you have any objection to letting our folks have a look at your arm here? See what sort of arm there is here. It feels just like a piece of wood.

A. Yes, and yet when I first came here I was tied up so I could hardly move, from rheumatism and uric acid. I can take myself now and bend down and place the palms of my hands upon the floor without bending my knees,



and tie myself into all kinds of shapes. (Illustrating.) (Applause). I want to attribute that entirely to this diet. I am not bound any more. It doesn't seem as if I could spend any energy at all in doing work any more.

Q. When you run a couple of miles in the morning, do you get short of breath?

A. No, I never get short. It seems as though after a mile or so something opens up, and I breathe a good deal easier; and it seems as though I create a vacuum inside, and it seems as if I don't have to make any effort to breathe. My wind is never affected.

Q. Did you find some of your friends a little skeptical?

A. Oh, yes, they called me a crank, and this and that. While they are eating a great, big heavy meal, I am sitting down and enjoying simple foods. I happened down at Chicago yesterday, and I sat down at the table, at the Blackstone, and they all had their great big steaks, and this and that; and I sat down, drank a glass of water, joshed with them, joked with them; and I finally got on my train, opened my satchel, got my food and ate it, and I want to say I enjoyed it very much.

Q. What was your dinner yesterday, for example? You brought your food with you?

A. I had some rice biscuits, two slices of graham bread with dates and nut mixture, and I could not carry my yogurt with me. I am a great believer in yogurt; I have it three times a day; my wife makes it; but I had some yogurt cheese, and I spread it on it. I can not assimilate butter very well, because when I do take butter, it seems as though I get pain in my stomach; but when I use malt honey, it seems to be what I want. So I have malt honey and butter on the bread, and two or three leaves of lettuce in that, and some pecans, and wash that all down with a fine orange. When I came here in the evening, I was



ready to go into the gymnasium and do a good ten or fifteen minutes' work. I had no supper. Of course, my supper doesn't amount to very much. I have a glass of yogurt, probably two rice biscuit, and some stewed fruit of some kind. As a rule I feel better if I do not eat raw food in the evening, but have it morning and noon.

Q. How much time do you occupy in eating your meals?

A. On an average perhaps about half an hour. ~~Ixxxxxxx~~ do masticate my food better now than I used to. When I first came here, they found I ate altogether too fast, and I had that test breakfast and was told to chew, and I think they were more particular about that then than they are now. I was swallowing right down quick, you know, and they watched me pretty close. I don't pay much attention to that. I chew and masticate thoroughly, and I would not admit--when I first ate these foods, I thought I was eating hay or sawdust; I could not seem to get any juice in my mouth. When I ate my old way I drank coffee and washed all my foods down with liquids. But I was told not to use any liquids, to make the saliva run more freely by exercising it; and I did so, and the first ~~time~~ thing I knew I began to get a lot of moisture. I didn't eat any liquids or anything of that kind. I drink my yogurt, and I find I get the best results from it when I drink it first thing before I eat anything. For a year I drank my yogurt after a meal, but it seemed to agree with me less than when I drank it before. Last summer I was out of yogurt for a month or two, but that was all the time I have been out of it. Your tablets didn't seem to work well either, and now I will roast you. The tablets did not seem to work right any more, and I had to get something else. My wife wrote down here and complained that the tablets were not right, and they sent up another box, and we had a little trouble with ~~them~~ again, so they sent me up a box of capsules, and then we began making yogurt again. That was last summer.



Dr. Kellogg: The cause was we had a man in charge who was getting ready to take up another job, and he got slack. We are very much obliged to Mr. Grabe, and he has given us a very interesting talk. (Applause). We sometimes feel as though our work was almost useless because so many of our patients backslide when they get home; so it does us a lot of good. But we find once in a while a man who has been making a practical application of what he learns. Mr. Grabe is an engineer, and he had gradually developed great expertness in his profession by giving ~~pro~~ particular attention to every new point he got hold of. He studied with a good many different engineers, and when I first got acquainted with him, I learned something about his work. He knows all about his lamps; he tests all his lamps, and when their efficiency begins to diminish, then they go back to the factory; he does not wait until the lamp wears out, but sends it off as soon as its efficiency begins to drop. He can not afford to make current to make up for a poor lamp, so he sends it back. So he tests his coal. If his coal is the least bit deficient, it has to go back, and he does not pay for it. So he is all the time testing his boilers to see that the engineers and firemen are getting the proper amount of work out of the coal, the proper amount of steam. And he tests his heating plants, and is applying these tests all the time. With his photometer to test his lights, and his dynamometers and various electrical means of measurement, he very easily got hold of the idea of applying the same sort of principles to himself; and when he studied calories, in a few days he began to keep track of calories. He had been estimating the calories in his coal, and he saw the point right away of estimating calories in his food, because food is fuel. Now, the thing that has been very interesting to me, as I have met Mr. Grabe occasionally as he comes down here about once a year to be looked over and to look the institution over and see what new thing he can find out, it has been a matter of very great interest to see this man



keeping right straight along the line without any coaching. I never had to say to him, "Now, Mr. Grabe, you must not go back to your coffee; you must reform; you must not backslide, or eat any more beefsteak or do this thing or that thing." He has not required any following up. It is not everybody, I think I am bound to say, that has got character enough to do what he knows he ought to do. The majority of people know perfectly well what they ought to do a great deal better than they do it. But when a man finds out what is the best way to feed a horse, he feeds that horse just that way. When a farmer finds out how to cultivate his land to get the largest returns out of it, he does it in that way. When a business man finds out how to do business in a way to make money, he takes care to keep on doing it in that way. But when a man finds out how to get out of his body the greatest amount of efficiency, how long does he do it? He does it just as long as he ~~is~~ is afraid he is going to die pretty quick if he don't. But just as soon as he gets over being scared, he goes back to the flesh pots, cigarets, cigars, beer and all the other things he used to enjoy. Now, it is a good thing to get thoroughly converted and reformed, and to get so thoroughly reformed that you won't have any hankering for those old things any more. I asked Mr. Grabe a question to find out whether he had any hankering for the old beer bottles he used to patronize, the cigars, etc., and he tells us he hasn't; that when he reformed his diet, it took away all the ~~o~~ old appetites. I want to say to you, my friends, it pays to be good. That is why I brought Mr. Grabe in here--so you can see that this thing is not theoretical. So many people I know think that the talks to you here in the parlor by Dr. Riley, myself, and others,--that we are theorists, that we are faddists, perhaps; but I disclaim the honor of being a faddist, if you please, or of being a mere theorist. I don't take a bit of stock in any theory that can not be demonstrated to be right in actual practice. Everything we are teaching you here, everything we are



recommending to you in our work in the institution here has been tried, tested thousands of times before it ever was recommended to you. Why, my friends, every last man and woman that comes here is an experiment. We are experimenting on every one of you; and the next people that come here are going to have the benefit of our experiments upon you, don't you see; and you are having the benefit of the experiments that have been made upon one hundred thousand people before you. This thing is practical if it is anything at all. Every single meal at the dining room is a practical experiment. Every patient that comes here and gets a bath in the bathroom is being made the subject of a practical experiment. And when we find a way that lifts one man out of a very deep pit of disease, why, we recommend that way to another man. You know, in the old days in Egypt, when a man got sick, if he had something the matter with his hand, for example, a sore on his hand, he put himself in the market place where the most people went by, and he would hold out his hand, and the people who came by would notice it, and if anybody had ever had any trouble just like that, he would stop and tell him what he did for it. That is the way the medical practice was carried on in Egypt five thousand years ago. That is just exactly what medical practice is today. The thing that we recommend is the thing that has been tried and has been found out to be valuable; but we don't wait for the sick man who had the same trouble you have to come along. You come here to the Sanitarium where we make it a business to gather up the experience of the whole world. We give people the benefit of it. Now, when Prof. Chittenden, about nine years ago, made his famous experiments in which he demonstrated that people could live on half the ordinary amount of food, do better on it, improve on it, do more work and feel better on it, and ~~get~~ remain in good health on one third the amount of protein, and could drop out the beefsteak altogether if they wanted to, it wasn't really necessary,--when he demonstrated that in his famous experiments at Yale



University a great number of people were skeptical, and he published it to the world. Thousands of people were skeptical about it. I knew he was absolutely right. I did not feel skeptical about it, because we had been doing that very thing right here in this institution for thirty years; so I knew he was perfectly right about it, and I felt a little more sure than I did before; but because here had been a laboratory experiment, with all the scientific tests that could be possibly applied to it, it had been proven and demonstrated scientifically by people who were not faddists, and who were not dietitians, especially who were in no way committed to any dietetic theory, and who were not connected with the Sanitarium or any other institution; simply plain science, pure scientists who wanted to find out the fact, wanted to get at the real truth; they had made this study not for the benefit of this institution, but merely for the purpose of finding out the truth, just how much food was necessary, and how much protein was necessary. Protein is the sort of element we get in eggs, in meat, and the gluten of wheat. It is the nitrogenous element of food, you know. Now, Prof. Chittenden's results have been more and more confirmed as the years have gone on. Since he published his experiments, we have had over four thousand people here in this institution who while they have been here have had these principles applied to them, and have been repeating Prof. Chittenden's experiment. Next July Prof. Chittenden is going to be over in England reading a further report on his work, and I have been asked to furnish to them a report of the experience of the Battle Creek Sanitarium in relation to some forty thousand people we have had here on this low protein dietary; and I am glad to be able to say that we find ourselves every single day more and more pleased and satisfied with the results of the low protein idea. Beefsteak is not the thing that makes strength. Beefsteak gets strength out of a man instead of putting it into him. I knew a man some time ago who had gone to Alaska, who was one of the first men who opened



the trail to Nome when they were making the great rush to the gold fields there, and he with some others took the shortest cut. There were three ways to get there, and he took the shortest cut that was considered to be impassible in winter, and only six men got over there out of twenty thousand who started. A few died on the road, but most of them came back. Six men got through by that trail, and all the rest failed, it was such a tremendous trial of endurance. This man told me when he was going over that trail, they didn't know what in the world they were going to do when they got half way over there, because their meats were all gone, and they hadn't a thing left but pink beans. The bread was all gone, and there wasn't a thing left but beans. They had nothing else to eat but they thought if they could only live through until they could get to the moose country they could have some fine moose steaks, and then they would be all right. So they put the beans on in the morning and they cooked them all day; then at night they had beans for dinner, and in the morning they had beans for breakfast, and they ate two meals a day--supper and breakfast. They had two sledges, and they had to pull one at a time; so they would pull one up a ways, and then go down and pull up the other; so they made only a short distance every day; and they had to go over the same road a good many times. Well, after while they got into the moose country and killed a moose, and each one ate a great, big moose steak, as big around as that and that thick. I am simply telling you just what he told me. It seems a pretty big story. And he said, "We used to eat a big steak like that every morning; but you can't imagine how astonished we were when we found that when we began to eat those moose steaks, that in three hours after we had eaten a steak we had to eat again; we just could not stand it; we got so faint we just had got to have something more to eat. There we had been working all day long on beans without any trouble at all; but when we ate a big moose steak, we could only work two or three hours, and then we were so faint and hungry we had to eat again. After four or five days of it, we finished up our journey



on pink beans; and when we got into Dawson City we had better health than we had ever had in our lives before; we were absolutely, perfectly well. Then we went to the hotel and stayed there eight or ten days with the rest of the boys that had gotten through, and at the end of ten days every last one of us was sick; we were all sick, poisoned by the hotel diet." And that is what is the matter with a good many of you. It is the high living that is bringing people down, but the thing that is necessary is to get just a little higher. We live on the top shelf here, clear up to the top; and we live just as high as we can get; and we believe in high living; but beefsteak living is not ~~hi~~ high liveing; that is low living; that is going down on all fours with the dogs and gnawing bones, and there isn't anything high about it. Well, we are very much obliged to Mr. Grabe. I wanted you to see Mr. Grabe, because I wanted some of you who may be thinking, "Now, when I get home, I am going to have a nice beefsteak; I am going to have some fried chicken and things", and I want you to see that there is once in a while at least a man who comes here who has character enough, a man who has grit enough, and has good sense enough to keep right on the good road after he has found it, and to profit by it. Now, Mr. Grabe does not have to come back here every summer or so to get over the cigars, the coffee, the beefsteak he has been using, and the autointoxication he has been cultivating, although he lives at the Plankinton Hotel and can have everything the hotel affords--he does not indulge in those things. When he travels on the cars, he has his food put up in a little box, and that is what I do myself. People often say to me, "How can you get along when you go away from home?" I take my food along with me--just a small supply, so I can get something good to eat. But at a good hotel you can always get fresh vegetables, you can always get potatoes, you can always get fruit, and you can always get bread, that is if you make out your own bill of fare. I myself don't have the least bit of difficulty in getting all that one

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needs for a good, wholesome dietary. It pays to be good, to eat right, to live right. Why, if your horse digressed from the natural diet, if your horse should eat as you do yourself,--you would not have a horse that would be all the time going off and eating a lot of rubbish, making himself sick so he could not work. Suppose you had a horse that was complaining every other day that he had got such a headache he didn't want to go out this morning. What would you do with that kind of horse. Suppose you had a horse complaining every little while of a bilious headache, who was not ready for business, had ~~an~~ bad taste in his mouth, had a coated tongue,--you would say such a horse was not ~~fat~~ to have around. Why, my friends, we do not keep ourselves up to the standards that we demand for our horses and our dogs; positively, we do not keep ourselves up to the standards that we expect from parrots and our canary birds, and our household pets. A lady that has got a canary bird and a lap dog uses more sense in taking care of them than she does in taking care of her own children, treats them in a more rational way. When she gets a canary, she says, "What is natural for a canary to eat? What is best for a canary to eat"; and that thing that she learns is best for the canary the canary gets every day and all the time--the things that are best for the canary. She doesn't try to tempt that canary to eat everything under the sun. She does not offer the canary everything she eats herself. If you had a pet ~~canary~~ <sup>monkey</sup> you would treat it in the same way. I lived with a monkey for some years, about twenty-five years ago. I sent to Prof. Hornaday, a friend of mine, who is superintendent of the Bronx Zoological Garden at New York, the Bronx park. I have known him a great many years. I wrote to him and asked him to send me a pet monkey; so he sent me a nice little pet monkey, a most delightful little fellow, and we got to be very good friends very soon, and I learned a great many good lessons from that monkey. The first thing I learned was to ches. I didn't know very much.



about chewing in those days. I talked a good deal about it, but didn't do it. That monkey taught me that I must chew. I remember my first lesson. I gave the monkey a few cherries, and it was astonishing to see how fast the cherries disappeared. Both hands were going in just as fast as possible; and I said, "Dear me, that monkey will choke himself to death; the cherries are disappearing so fast." I hadn't studied it very closely then. A little while afterwards I took the cherries away, when he had taken in about a double handful; I thought certainly that was all the monkey ought to have at once; and I put them away. Pretty soon I noticed a thing that surprised me very much--that this monkey had ~~trunkxxxx~~ terribly large glands on the sides of his neck, and I said, "Why, the poor little fellow has got tuberculosis; look at those great lumps on the sides of his neck"; and I was feeling very bad about it, for I thought Mr. Hornaday had sent me a tuberculous monkey, for his lymphatic glands were in great large masses. I noticed that every little while the monkey took a skin or a pit out of his mouth; he was very careful not to swallow skins or pits. I had been watching him pretty sharp, and pretty soon I noticed that every little while he made a quick motion with his hand, and I noticed one of those glands disappeared. Every time his finger went up, a lump went away; and after a short time, I made the discovery that those cherries that he was swallowing so precipitately were all stored up in his capacious cheeks. He had a couple of big pouches in his cheeks, and in gathering food, he simply stores it up, and then he deliberately takes it morsel by morsel and thoroughly masticates it at his leisure, just as a cow chews her cud. Well, I noticed another thing about the monkey--that the monkey was always ready to eat things that were good for a monkey to eat, and he never once asked for anything that was not good for a monkey to eat. Things that didn't belong to a monkey's diet, he hadn't any demand for. Now, how far we have gone astray in things that are natural for us, in cultivating



unnatural tastes and teaching them to our children. A great man died--I won't give you his name, I have so much respect for him, but it is not very long since a great man of the country, a man whose name is known throughout the entire world, died, and I happen to know from his own confession to me personally, and from his wife's account of him, that he died of gluttony; that the only thing that killed that man was his appetite for everything under the sun. His wife said to me, "My husband is all the time hunting for something new; and if he hears of a new sauce that has a little more piquant flavor than anything else he had ever heard of, he wants it right away. He has a chef to prepare something new and tasty for him all the while. That man acquired an appetite for everything that is produced under the sun, pretty nearly, that could possibly be eaten. Now, that is a great mistake. The appetite was not given us to be treated like a musical instrument to play a tune on and have a good time with, just simply to get amusement out of. The palate is a ~~fixum~~ trained for a guide and a leader, if you please, a director, a dietitian if you please, to tell us what to eat and how much to eat, and when we ought to eat and when we ought to stop. But I will hurry on here with a few questions.

Q. What is the cause of portal congestion or congestion of the liver?

A. A great many people imagine themselves to be suffering from liver disease. So many times a man has said to me, "Doctor, if you will just stir up this old, lazy liver of mine, I will be all right." Now, the liver never was lazy in the world. There never was a liver that needed to be stirred up, that needed to be made to do more work than it is doing. The liver is always doing all the work it can possibly do. It is never refusing to do its work. It is the most faithful servant we have got in our bodies, stands more abuse than any other organ except the poor stomach. The stomach does go on strike once in a while, and absolutely refused to do what is demanded of it, absolutely refuses



goes on a strike, and we have to wash it out, or relieve it of its task in some way; but the liver never goes on strike; it goes right on doing its work all the time, the very best it possibly can. "But," you say, "what does it mean when one is bilious?" It means simply he has given his liver more work than it is possible for the liver to do. It means that the poor donkey is loaded down so heavily he can not stagger under his load; that is all it means. Now, the thing to do when the liver gets in that state is simply to ~~skaxxixxaxt~~ unload it, take off some of the load from the poor donkey, let him get on his feet, on his legs again, and he will take up his journey all right. Now, when the liver is in the condition that we call biliousness, it is because the alimentary canal is full of rotteness. Food has stopped in the alimentary canal, digestion has ceased, and the food is in a state of putrefaction, and the liver is being flooded with these putrefaction poisons. That is why you have got such a bad taste in your mouth; and it is no wonder your mouth tastes bad, for your whole body tastes bad. If a cannibal should get a bite off you, he would not like the flavor of you, because every bit of you tastes just as bad as your breath tastes. It is not simply the mouth, the tongue, where the bad taste is; the whole body is saturated with the bad taste, with that horrible effluvia, and that bad odor of your breath, that dead rat flavor, that is escaping from your lungs. That is only a specimen of you. It is not simply your breath that has that bad odor; but the breath simply takes some of this odor out of your blood. The blood has got it there. The blood is simply saturated with these stenches that have been absorbed from the rotteness that is in the colon and the whole body is saturated with it--the brain, nerves, muscles and every part of the body; that is the reason why those gold seekers were so tired after they had eaten that beefsteak--it was the poisons in the beefsteak, the uric acid; it was putrefaction, the poisons that were produced in the intestine after the beefsteaks



were eaten. That is the universal testimony. I find Mr. Grabe here at forty-nine had more endurance than his antagonist who was forty-two, seven years younger, and a seasoned athlete. He had more endurance though he was seven years older, because he had cleaner blood. Cleanness of the blood is the thing that gives endurance, and the thing that gives one endurance under hard tests of that sort, that very thing gives one the ability to fight his battles against old Father Time. Old Father Time is after every one of us, and we have got to fight him off, and the best means in the world of fighting Father Time off, the best means of keeping young is to keep the blood clean. You can not keep the blood clean unless you have a clean tongue, a sweet breath, unless you have got a clean alimentary canal,--you can not possibly have clean blood, because these poisons are all the time being absorbed.

Q. What would you give a convalescent to eat, one who was recovering from grip, with enlarged liver and inactivity of the bowels?

A. That person wants simply an antitoxic diet. Fruit juice is good. I would recommend Welch's grape-juice as one very good thing, and I can recommend apple-juice. Apple-juice is almost as good as Welch's grape-juice. Good, ~~plain~~ plain apple-juice you can make in your own home. Apples have the advantage over many other fruits that we can always have them fresh. And we have apple-juice on the table that is made fresh every day. You know I think fresh juice made from the fresh grape, or from the fresh apple, or fresh fruit of any kind is a ~~lot~~ lot better. As I told you the other day, it is a lot better than cooked or preserved. But a great advance has been made in the preparation of fruit juices in the fact that the very high temperature is not employed. The boiling temperature destroys the flavor and some of the nutritive properties. So fresh fruit-juices and fruits are the best diet. A person who has had fever and was fed on grape-juice instead of being fed on milk, when he gets through the fever, won't have such a long time convalescing. You know the Irishman said



he didn't like a certain doctor's medicine because it took him so long to recover after he got well. He took the medicine, and the doctor said he was well, but he had not yet recovered. He was convalescent. You ~~xxxxxxx~~ heard of a doctor down in Indiana, a quack doctor, I am glad to be able to say, who had a consultation with doctors over a patient who was sick. The doctors declared him convalescent. "Convalescent", he said, "I have cured many cases of convalescence", and he wanted to be called in. Convalescence gets well of itself; it does not require any attention, although sometimes a person is a long, long time convalescing, and the reason is because they have not recovered just right to have made a good, sound recovery. A person with typhoid fever, for example, treated in the old fashioned way, with drugs that hide his symptoms but do not remove the cause of the disease, will be a long, long time convalescing. A person who has fever and a temperature that is quite high for a long time, will have a long, and very tedious convalescence; but if the temperature is kept down, and he is treated in the right way, then the convalescence will be short. For instance, in typhoid fever there is only one thing necessary, and that is to flood the body with water. That is why grape juice and fruit juices of all sorts are such an exceedingly good food--one reason--in typhoid fever, because it supplies a large quantity of liquid, and then it supplies food of just the kind the body needs in a form in which it can be at once assimilated. No digestion is required; there is not much digestion in typhoid fever. We don't want any protein any way. What we want is something to support heat; and the sugar in the grape-juice is the very best possible food for that purpose, for it is ready for immediate absorption, and does not require any digestion at all. Then there is the liquid. A person having typhoid fever should be given one glassful of water every hour, and if made to drink that glassful of water every hour, he really would not require any other treatment at all. Just keep his skin clean, he does not need any medicine; he wouldn't need any baths,--just nothing but cleanliness, and he



would require hardly any care, if he would be so fortunate. If you ever get typhoid fever, my friends, just remember that thing--that you must drink, that you must drink for dear life, drink water; you must drink; no matter how you feel about it, you must drink a glassful of water every half hour if you can, at least a glassful every hour. If you took a glassful of water every hour when awake, it would amount to six quarts of water in twenty-four hours. It would be sixteen half pints, and that would be eight pints or four quarts, so you would get four quarts of water in twenty-four hours. That is a full gallon. That goes into the body and it has to go out, and when it goes out it carries away the poisons ~~that~~ with it, you see. It is the poisons produced by the germs which make the trouble, so the important thing in convalescence is to have a good convalescence by having proper treatment before. Ninety-one thousand people die of typhoid fever every year. Ninety-one thousand people in the United States die of typhoid fever every year--just think of it. If that thing was only known and practiced, if every one of those ninety-one thousand people were made to drink water, and if they could not drink it, have it introduced into the bowels and retained so that at least a gallon of water would be swallowed every day by the average typhoid fever patient, my friends, the number of deaths probably would be reduced to three or four thousand. It would be only very feeble infants, or feeble old people, somebody who had a very weak heart, or degenerated arteries, or some other serious deficiency--they would be the only victims of this dread disease. It is a good thing to remember that.

Q. Is numbness of the feet and ankles any indication of approaching paralysis?

A. Yes and no. If you have high blood pressure, these symptoms are very likely to be present. They are common symptoms of arteriosclerosis, but they are still more commonly produced by neurasthenia. Autointoxication is the principal cause of those sensations, and they will disappear very quickly when



you get your tongue clean and get your alimentary canal into a wholesome state.

Q. What is the cause of melancholy thoughts and loss of energy?

A. Beefsteaks. That is the biggest cause I know of. Our friend, Grabe, here, used to have plenty of that sort of thing; but when he got rid of the beefsteaks, he got rid of his melancholia. I have seen thousands and thousands of people who have been lifted out of despair into sunshine by simply a change of diet; and the best thing in the world is to get rid of dead things and seek to sustain your bodies by living things. Now, such live things as a live apple, for example--it gives to one all the energy and the life that is in it. When you eat an ~~oyster~~ <sup>oyster</sup> the ~~oyster~~ <sup>oyster</sup> has to die. You swallow the ~~oyster~~ <sup>oyster</sup> full of life and kicking, and he strangles down there in your stomach. I don't suppose he feels the least bit grateful for the treatment he is getting, and very likely he may get even by giving you typhoid fever, or autointoxication or some other thing. Now if, instead of that, you swallow a bunch of grapes, or an apple, or a plum, or a pear, or a cherry or peach,--why, those living things communicate to our bodies something of their own life. That is what they are for. That is the mechanism of Nature. The sun's rays come down from above, and they shine upon the green leaves, and the green leaves gather in the sunshine, store it up in fruits and cereals, and in wholesome foods; then when we take those foods into our bodies, we take the sunshine in; we simply utilize the sunshine. When we burn coal, and it by and by creates steam, which runs an engine, the engine runs a dynamo, and the dynamo creates current and the current shines out in these electric lights here, we are simply looking at resuscitated sunshine. It is the ancient sunshine shining out again. Now, that is exactly true of our own bodies when we eat fruits which are the product of the action of sunshine upon trees and plants; and we take this sunshine food into our bodies, and it is the sunshine that generates the energy within us, and that



we are utilizing.

Q. Can you cure hay fever of several years' standing?

A. It can be very greatly mitigated if not entirely curable. It is not always curable in a week. If one is going to be cured of hay fever, he must begin sometime in advance.

Q. If one is very sleepy in the afternoon, especially after dinner, do you advise sleeping or fighting it off?

A. The best thing is not to eat quite so much. Eat a little less heartily, then lie down. If you must sleep a few minutes, do so. Sleeping a few minutes does not do any particular harm; but a long sleep is objectionable because the stomach does not empty itself properly while one is asleep. The muscular action of the stomach is diminished, so the food stays in the stomach too long, and the accumulation of gastric juice is too great.

Q. Whenever I eat anything sour, the perspiration immediately starts out on my bald head. How do you explain this?

A. Now, it is due to the stimulation of the gustatory nerves. I remember very well a patient who had this most embarrassing difficulty, that as soon as he began to eat, or within three or four minutes after he began to eat food at the table, the serum would begin to run from his nose a perfect stream would pass out of his nose and eyes, so he had continually to hold his handkerchief at his nose. It was a most embarrassing thing. It was because the stimulation of the gustatory nerve in the mouth excited the mucous membrane of the nose as well. Now, in this case, it extends to the nerves of the scalp, so the scalp is excited.

Q. What foods do you recommend for low motility?

The most important thing for low motility is to take care that the food enters the stomach in a thoroughly broken up state. The food should not enter the stomach in the form of liquid, because the stomach can not absorb very



much, and the liquid is likely to overload it; but it should enter the stomach in the form of a soft, smooth pulp, and it should be chewed in the mouth and thus reduced to an absolutely smooth pulp. A person with that sort of stomach should not eat very much of coarse things like cabbage and lettuce, but should take care to chew them to a pulp; everything must be a pulp when swallowed into the stomach.

Q. What is the easiest way to get rid of a cold in the head and chest?

A. A hot bath taken at night, and a chest pack applied when you go to bed, a cold bath in the morning, and drinking a glassful of water every hour-- that is the most important part of all. A cold is simply a retention of poisons in the body; that is what it is,--and interruption of the eliminative processes by which poisons are removed. The accumulation of these poisons in the body produces what is called cold.

Q. What is the cause of perspiration breaking out on the forehead?

A. Drinking anything hot. Hot water taken into the body always raises the temperature of the body, and when the temperature of the blood is raised, then perspiration is formed.

Q. What causes darts of pain at the top of one's head?

A. This is a neuralgic pain. It is sometimes rheumatic in character.

Q. Should hay fever patients be restricted to a special diet?

A. Yes, an antitoxic diet has a very great advantage for the hay fever patient. It is a very great advantage, for the reason that when a person has hay fever, his resistance is lowered. Now, if he takes a diet which produces auto-intoxication, the resistance is lowered still more; so he is increasingly subjected to this aggravating disease.

Q. Is bees' honey a healthful food?

A. It is splendid food for bees. It is not the best food for human



beings. It is not the best form of sweet. It is better than cane sugar, however, because it contains all the properties of the sweet juices of plants, whereas cane sugar does not. Cane Sugar is a crystalline sugar, and there is no lime present; and it also requires digestion, and is an irritant to the stomach. The sugar of flowers is fruit sugar, and the bees gather this fruit sugar, deposit it in little cells. If they did not do anything more, it would be the most perfect of all sugars, but unfortunately bees like flies are not altogether tidy. They do not use the doormat before they come into the house, for example, to wipe off their feet. And they gather up more or less dirt as they are soaring about and get dust on their fuzzy bodies, and get dirt upon their feet as they visit filthy places which they often do, and of course, some of this gets into the honey; also some of the pollen of the plants, and some of the essential oils of the plants; and if the plants happen to be poisonous, then some of these poison flavors are put into the honey. Then there is another thing they do. The bee has a poison bag as well as a honey bag. I remember that very well from an experience I had when a boy and exploring a bee, I discovered the poison bag and thought it was the honey bag, and that little drop of nectar which I touched to my tongue made me so sick I didn't get over it for a good many years, and was not able to take honey without being made sick by it. That little poison bag contains formic acid which is a very irritating and poisonous substance. It is a powerful disinfectant. It is this formic acid you use when you disinfect your rooms, by burning formaline candles; that is made from formic acid in combination with alcohol. Now, this same poison is in the bees' poison bags. It is an antiseptic, destroys germs, is very deadly to germs, and the bee manufactures it for that purpose; also for the purpose of defense; but the chief domestic use of the poison bag is to make formic acid to preserve the honey. The bee adulterates the honey, in other words, uses antiseptics. The United



States government prohibits the use of antiseptics without putting a label on the package, but the bee does not do it; so he violates the pure food law. When he gets the little cell filled with honey, he puts a minute speck of formic acid out of his poison bag down into that cell so the honey won't ferment. He puts some formic acid in it, since he hasn't any benzoate of soda. There are some people who are very susceptible to this formic acid, and just the small amount of it that the honey contains is enough to make them ill and cause a breaking out or a nettle rash,--the same sort of rash you get if you get stung by the nettle plant; that is formic ~~also~~ acid also, if you get stung by the nettles of the plant.

Q. Are multiple neuritis and locomotor ataxia curable diseases?

A. Multiple neuritis generally ends in recovery if the patient has a chance, provided he does not continue to cultivate it. Poisons absorbed from the intestines poison the nerves and set up irritation of the nerves. If one continues to eat beefsteaks, cultivates the multiple neuritis, he gets a new one as fast as he gets over the old one, and so never gets rid of it. If he will cease to do evil and learn to do well, he will get well of neuritis if he did not do another thing. The curative power in his body will heal him. The important thing, the most important thing is to cease to do the things that make multiple neuritis. Locomotor ataxia is a much more serious trouble. It is due to a degenerative process of the spinal cord. This degenerative process may be checked. I have seen it done in a great many cases, even when the gait has become very bad so that the patient could not walk straight at all, by a proper system of gymnastics, training the feet to walk straight without any deviation at all, the gait can be reacquired, so that a symptomatic cure may be accomplished, and the patient may be relieved of all inconvenience.

Q. What is the primary or underlying cause of trifacial neuralgia, or tic douloureux?



A. There are several causes for it. I remember very well a lady who came here some years ago and she suffered terribly from this disease. She had had an operation upon the nerve, the nerve had been cut on the right side, and a portion taken out. She wasn't any better. The doctor went a little further and cut away a portion of the jaw in order to cut out a part of the nerve down in the jaw. She was no better. Then he said it must be the teeth, and they pulled all the teeth on one side first, then on the other side of the jaw. They were all pulled out and she was no better. Then he said it must be reflex from the other side of the jaw, and they pulled the teeth and broke her jaw, and she was still no better. She had a very bad tongue and a very bad breath, and suffered most excruciating pain every day of her life. I am glad to be able to say to you that in three months the lady went home well, and has been perfectly well ever since, and no surgical operation of any sort was required. We simply corrected this condition of her alimentary canal, put her on a clean, wholesome dietary, and cured her up. Every case, perhaps, may not be curable. There are certain cases in which the trouble is deeper in the brain, and something must be done there, and such a case requires surgical procedure.

Q. Can asthma be relieved?

A. Asthma can certainly be relieved, that is, the spasms of the bronchial tubes. Hot applications to the back, chest, and legs particularly, are generally helpful and effective in giving temporary relief. The cause must be removed, and this cause is generally found in the colon. The bronchial tubes are irritated by bronchial poisons absorbed from the colon which are eliminated from the lungs.

Q. What per cent of each of the three kinds of food would you advise a man in good health to take to increase his weight when fifteen pounds under weight?



A. Let him eat ten per cent of protein and thirty per cent of fats, and about eighty per cent of carbohydrates. Now, you say that is 120%, and so it is; but he wants to eat a little more than he ought to eat. He does not need any more protein, and it probably would be difficult for him to digest any more fat; but he can take some more carbohydrates; so the best thing to do would be to take some malt honey, a couple of extra portions of malt honey at the close of the meal, and to put a little cream on top of it; eat it with a little cream, and you will find it will be very good. Another very good plan is to use malt honey sugar, the brown sugar which is furnished on the table. Use it very freely for example, with rice flakes, or wheat flakes; take a lot of it, three or four great heaping spoonfuls of it, all you can get on the spoon. You can eat any quantity of it, and it is as harmless as bread, and stir it up thoroughly with the flakes, then put a little cream in the bottom of the dish. Then in eating, spoon from the bottom of the dish, and that will introduce a little cream into the spoon along with the flakes, enough to flavor them, and you will still have the crispness of the flakes. Remember to mix the malt sugar with the flakes and put the cream in the bottom of the dish. Eat it in that way, and you will find it a very excellent means of increasing, not only flesh, but increasing power to digest other foods. It is a good fattening food itself, and helps other foodsto make fat.

Q. How long should a person rest after eating?

A. If you have a sore stomach, rest half an hour to an hour.

Q. Does excessive smoking ever affect the hearing?

A. Yes, it affects the hearing, and the seeing, the feeling, and it affects the heart beati, and affects the breath, and by and by stops the whole of them.

Q. What is the cause of hardening of the arteries?



A. The cause is poison in the blood. It may be alcohol, it may be tobacco, it may be mustard, pepper, peppersauce, ginger--any of those condiments. All of them are stimulating, irritating things that injure the blood vessels first of all, and the poisons found in decomposing flesh. There is no question about it; this is the cause--these poisons. Dr. Ross, of Liverpool, has shown that these poisons are the cause of cancer; they are the cause of hardening of the arteries, because it has been produced by actual experiment. When present in large amount, this hardening process goes on very rapidly. Whenever a man gets hardening of the arteries, Dr. Ross always says to him, "Stop eating beefsteaks"; and there is no intelligent physician anywhere that would not say that to his patients when he finds that he has got hardening of the arteries--stop eating beefsteaks. Now, suppose you should stop the beef, you would not ever get the poisons, you see. When your house gets afire, you send for the fire department to come and put the fire out, put water on it. Suppose you had had the fire department there before the fire started, and put the water on,--the fire would not have started, you see. That is the way to do it; that is why we say stop the use of beefsteak and that will cure arteriosclerosis, or stop the advance of it; and it will also stop the beginning of it, don't you see? If stopping the use of beefsteak will prevent the further development of arteriosclerosis, certainly, if you stopped before you had the arteriosclerosis, you would not get it unless you produced it in some other way. That is the way you got it before.

Q. What is infantile paralysis and what is the cause of it?

A. It is caused by germs; it is an infectious disease. The infection is communicated by the nasal ~~fa~~ discharges. Discharges from the nose and throat cure this disease. Patients suffering from infantile paralysis should be isolated, and very careful ~~xx~~ to avoid exposure, because it is really a very infectious disease.



Q. Is trunk rotation good for one with low motility?

A. If you have got low motility, the best way is to lie down on your face. If you stand up on your feet, the stomach is dragged down, and the difficulty of emptying itself is increased. But if you lie on your face over a pillow, so the weight of the body compresses the stomach, then each breath that is taken will contract the diaphragm and compress the stomach just like squeezing water out of a water bottle which helps it to empty itself of its contents.

Q. Why does the lower jaw drop down leaving the mouth open when one goes to sleep?

A. It does not always do that. I think the real cause why the jaw drops is because in most cases there is a little obstruction in the nose, and that has to be looked after. The nose is obstructed, so the mouth opens to admit air.

Q. What is the best treatment for catarrh of the nose?

A. Go to a nose specialist and have him examine your nose and see what the trouble is. If you have chronic catarrh, the probability is there are some places in your nose where the parts are grown together, and there the germs catch and they collect in that little spot where the parts touch together--germs collect in there, grow, multiply, and cause infection which extends to the rear of the nose. Now, the thing that is necessary is that those surfaces should be separated so the air can circulate freely through the nose. I must explain a word further about that. These germs that produce catarrh are what are known as anaerobes. They can not grow where air is present in abundance. They have to grow in a warm, hidden place. They are like the germs that produce decay of the teeth. The teeth don't decay on the top or on the side, but between the teeth; and that is where food gets in and accumulates, hides the germs and covers them up so they are not exposed to the air, and they can grow and attack



the teeth. The same is true of the nose. There are little places there where germs can hide, get away from the air, and they can grow there and produce ulceration and throat infection that extend throughout the nose. So the surfaces must be opened up so the air can pass freely through the nose, and that is the most important thing to be done in nasal catarrh.

Q. Is a person whose father ~~xxxxxx~~ or mother died of tuberculosis likely to contract the disease?

A. Tuberculosis is not a hereditary disease. There is only a hereditary tendency to it, and that tendency can be obliterated by proper care and treatment. In Massachusetts they don't kill all the cows that have tuberculosis, but they turn them outdoors, keep them there until they get well. In Chicago, the monkeys were dying off with tuberculosis, and Dr. Evans turned them outdoors, and they stood there shivering in the cold and people were very sorry for them, but they got well, got hardy and tough and didn't die.

Q. Can a lady of 23 years or thereabouts expect to grow taller, and if so, how much?

A. I am afraid it is too late. Oliver Wendell Holmes said almost anything can be done for a person if you can only begin early enough; but early enough means two or three generations back in some cases.

Q. Do you advise eating eggs and meats only in diabetes?

A. No, the meat diet is a dangerous diet in diabetes. It was the old fashioned diet, but it is known now to be dangerous, because it promotes the very greatest danger in diabetes, which is diabetic coma. A person who has diabetes is likely to die of diabetic coma if he doesn't ~~xxxxxxxxxxxxxxxx~~ die of something else before he dies of that. He begins to be sleepy, gets more and more drowsy, and by and by goes to sleep and never awakens. He gradually sinks deeper and deeper in coma, until he finally dies. It has been proven that



meat is the thing that encourages this condition more than any other foodstuff. This is due to ~~xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx~~ <sup>acidosis</sup>, to the accumulation of acetone and diacetic acid, or oxybutyric acid--this poison accumulates in the body from meat more readily than from any other substance. It may be produced to some extent from fats, also from starch, but it is produced more actively and readily from meat than from any other cause; so it is really a very dangerous thing for a person ~~who~~ to depend largely upon a meat diet in this disease. Gluten does not have this disadvantage. The protein which is found in vegetables is not so likely to undergo this peculiar chemical change.

Q. What is the cause of angina pectoris?

A. This condition is due to a diseased condition of the arteries of the heart. But I have reached the bottom of the box at last. I thank you for your attention.

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*Muscles*

A Stereopticon Lecture at the Sanitarium Parlor, Battle Creek, Mich., Thursday,  
March 16, 1911, at 8:00 P. M.,

By,

J. H. Kellogg, M. D.

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Ladies and gentlemen: Mr. Washington told us down at the Tabernacle last night that the white race is degenerating; that we are going down, while the black race is coming up. I think that was the biggest thing he said. And I am not sure but what he is entirely correct about it. He said he had been traveling through Europe, and in Southern Europe he was satisfied that he could see evidences of degeneracy; and he told me afterwards in my office that when I was walking along the streets of London, especially East London, he could hardly see anybody that didn't look to him to be degenerated; and I am sure any of you who have been in East London will say the same thing. Down around Whitechapel, in that region, the people you meet upon the streets show the marks of degeneracy in their faces. There can not be any doubt about it. There has been an English commission appointed, a number of years ago, by the English parliament a commission was appointed of the most learned men to study the question of race degeneracy and ascertain whether it was really a fact that the English people are degenerating, or the race is going down; and this commission reported the facts which were incontrovertible, that show beyond any possibility of doubt that the English race of people, who live in the British Isles, are steadily deteriorating and at a tremendously rapid rate. Since that time other investigations have been made which are still more conclusive. For example, a short time ago an exami-



nation was made of the school children in Cambridge, and it was found that of children nine years old, there were only one and a half per cent that did not have decayed teeth--think of it,--and of children eleven years of age in the public schools, there were only nine tenths of one per cent that did not have decayed teeth. Why think, my friends, of what that means--teeth decaying already in children only eleven years of age--only one per cent with teeth not decayed. Suppose you bought a flock of sheep, and you found ninety-nine out of 100 of them had rotten teeth, you would say you had been swindled; you would reject those sheep as being degenerate sheep, at least.

Now the same things that we would recognize as marks of degeneracy in the lower animals are clearly manifested in the human race; there can be no doubt about it. Now, one reason for this is to be found in the fact that we are an old fashioned race, and we seem to be out of date. There are only a few relatives of the human race that are now living on the face of the earth; most of them have died off. They went to the wall with the great trees, the great trees that made the vast coal beds that underlie ~~us~~ our soil in so many places--gigantic trees of which we only have a few specimens remaining over in California, and a few less vigorous specimens in Australia. The old animals, the old fashioned animals, the prodigious animals, the long lived animals, the hearty animals have all died along with the great trees. A few escaped. The chimpanzee, the orang outang, and the gorilla, and their physically inferior relatives are still extant upon the earth. But man has managed to keep himself alive only by his wits; he has managed to keep out of the way of the icebergs, and the avalanches and dodged the glacial periods in some way or other, and managed to keep alive by living in holes in the ground, and by killing other animals and wearing their skins, and by adapting himself in a thousand ways to exigencies and emergencies--he has managed to live through. All of these things have been telling upon him, and because of his departure so far from the normal



conditions of life he is steadily deteriorating. The same things that have destroyed other races that were allied to him, and that existed along with him, that were coevil with him--the same forces which destroyed those races are destroying him; and while we have managed to evade the fate that has been impending over us up to the present time, it is a very serious question, my friends, a question which the paleontologists and the scientists are discussing among themselves very earnestly these days as to whether there is any future for man; whether there is any future for the human race.

Now, in my opinion, it need not be so. This is only true because man has too widely departed from his normal habitats, from his normal conditions. At the present time there are some places on the earth where a man can live perfectly well in a perfectly normal state. There is no doubt about that. Man certainly was a tropical creature to start with, naturally a tropical creature that lived upon the products of a tropical region, upon the products of the earth that grow in a tropical region. Somebody asked me some time ago what about the Eskimo. They must have meat. They can not raise wheat, corn, oats, barley, rye, and other cereals, fruits, nuts and things up there, and how can they get along without meat? It is evident they can not. But what will the Eskimo do? My reply to that question always is, he ought to move south. He ought to move south. He is lingering behind in a region that is not fit to live in, that is not normal for a man any more than it is for a monkey; and he ought to move south, to a country where he would find more normal and natural conditions of life. But man refuses to do that. His desire to explore the earth, to taste everything, to see everything, to experience everything that is possible for a human being to see and hear and smell, and taste, and experience, has led him to explore the whole earth, and to undertake to do the impossible. He is not content with living upon the earth, and must soar into the air, sail on the water, do every-



thing that is possible to be done, live everywhere it is possible to live, without considering the possible effects upon the race of the long continued influence of this ~~kind of~~ change of environment and the adoption of unnatural practices.

Now, one of the things that man has done, which is perhaps the most violent departure from his normal state of ~~life~~ life, is to live indoors, to shut himself away from the sun. It began with the cave dwellers away back in the ages, who moved into holes because it was cold outside, I suppose, and perhaps to hide away from their enemies. At any rate, the cave dweller, the pre-historic man, moved into a hole ~~in~~ the ground, and the race has never gotten out of it; we are still in the hole. We have built a roof over the hole, and built one or two stories or more under the roof; but we are still living in a hole; we are still indoors; we shut ourselves away from the sun.

And another rather wide departure was the wearing of artificial clothing. In the normal climate in which man naturally lives, he does not need this artificial clothing, but wears as little clothes as possible. You see a native of central Africa going about his work, and he does not require any more clothes than a pocket handkerchief or a few fig leaves. This is enough to give him all the clothes he needs; and he does not need anything for warmth, does not need any protection except enough to satisfy the demands of etiquette; and they have a delicate modesty in that region as well as we do here in this, and perhaps they are just as modest, as far as that is concerned.

Now, another departure perhaps equally as great as those I have mentioned, and more direful in its effects, is in relation to diet. If there is any one thing that affects the welfare of an animal it is diet. There can be no question about that. A farmer is far more particular about the regulation of the diet of his horses, his cows, and his pigs,--far more than he is about the regulation of their air supply. He pays a great deal more attention to his



horses, to the proportion of oats, corn, and hay that he feeds them, than he does to the ventilation of his barn or his stables,--a great deal more. It is really a matter of more immediate importance. If the horses eat too much, they are likely to suffer from indigestion. If his horses don't have enough, he can't get enough work out of them. If there is a little falling off in the feeding of his cows, there will be a falling off in the milk supply, the output of milk. The farmer sees an immediate relation between the regulation of the diet of his horses, cows and animals,--between the regulation of their diet and his income; so he studies that matter with a great deal of care. Why, out in Minnesota nearly twenty years ago they found out that pigs did best on a low protein diet. They found that out ~~in~~ the agricultural experiment station of Minnesota twenty years ago. But it is less than half that time since Prof. Chittenden, by elaborate experiments at Yale, found out that the low protein diet was best for man as well. Why couldn't the farmer have taken a hint from his pigs? Why couldn't he at least have been willing to try the experiment upon himself? He found it was better for pigs, and everybody knows it is better for oxen or horses. Feed an ox or a horse too much corn, and he gets sick; he must have a large quantity of hay; he must have a great amount of roughage.

Now, a man's alimentary canal is studied very much in the same way. The colon is very long, sacculated; it very closely resembles that of a herbivorous animal, far more than it does the colon of a carnivorous animal. Take the alimentary canal and the colon altogether, and it is nearer like that of a horse than of a dog. The horse has a single stomach. It is a graminivorous animal, and his colon is sacculated; he has an alimentary canal that is long as compared with the length of his body. So has man; and he has salivary glands which produce a large amount of saliva which is able to digest starch; whereas the carnivorous animal has a saliva that has very little effect upon the starch,



and is very small in quantity. The horse is an animal that sweats, perspires; so does man. Man exercises and perspires profusely. The dog does not sweat. His skin is perfectly dry; no matter how vigorously he exercises, he does not perspire. If there is any increased outflow of liquid, it is from his mouth, and not from his skin. These two animals are very unlike. The dog has an enormous liver, four times as large as the human liver in proportion to the size of the animal. It has to have that big liver in order to take care of the enormous quantities of poisons that are generated in his body on a flesh diet.

Now, man's departure from the normal state of things has entailed an enormous number of evil consequences, so diseases are spreading very rapidly. In the last ten years, for instance, one disease, the hardening of the arteries, arteriosclerosis, one of the most hopeless of all maladies, one of the most absolutely incurable of all diseases when it is really fully developed,--hardening of the arteries has increased 300% in ten years. Now, think of that, my friends. Just think of it--three hundred per cent in ten years. That is a terrible thing to think about. And here is cancer increasing at a dreadful rate.

I had a chat with Mr. Washington in my office, after his talk, and we chatted till about midnight, in fact. I found he is very much interested in some of the things I was showing him. And he insisted on continuing the interview; so we chatted till nearly midnight. One of the things he called attention to last night, as I remarked a little while ago, and which I think is absolutely correct, is that the white race is going down, and he said the black race is coming up. Now, that may be so and it may not be so. I called his attention to this very interesting fact which the United States Census Mortality report shows beyond any question at all, that so long as the black man keeps approximately near to his original primitive habits of life that he followed in Africa, he is stronger, more vigorous physically than the white man is; but



when he undertakes to imitate the white man in his diet as he does in not paying his taxes, as Mr. Washington says,--when he follows his habits in diet, he begins to deteriorate rapidly. Now, a very good illustration of that is this fact. Down in South Carolina where the colored man still lives on hoeecake and corn, and lives comparatively an outdoor life, lives in a log cabin with plenty of chinks between the logs so that he has ample ventilation even though he doesn't have any windows in his hut,--so long as he lives there and on that sort of diet, he is almost as immune against cancer as in his native land, Central Africa, where cancer is entirely unknown. At any rate, the number of deaths put down in the government report of deaths for the State of South Carolina is only twelve deaths from cancer in 100,000. That is the annual mortality. While for the same region, the white people are dying off at the rate of eighty to 100 to the 100,000--ten times as many; the mortality is ~~ten~~ eight or ten times as great--even as high as 120 in some instances. But when the black man moves to Chicago in the vicinity of the stockyards, and has all the cheap meat he wants to eat, and helps himself to it liberally, his mortality goes up to 200 to the 100,000. And the same thing is true in Brooklyn, N. Y., in Fresno, Calif, in Boston,--in every one of our northern States, the mortality from cancer increases just in proportion as the black man adopts the habits of the white man. So it is not because the black man is intrinsically tougher, stronger, and a more vigorous race that he is not deteriorating as rapidly as the white man; it is only because he has not yet adopted the habits of luxury, the luxurious habits, the pernicious habits that the white man has adopted to some extent; or at any rate, they have not been operating upon him for so long a time. The North American Indian, when America was discovered, was absolutely free from cancer; and today cancer is beginning to show itself, and it comes to be ~~mentioned~~ mentioned among the causes of death among the North American Indians. Twenty-five years ago it was not



mentioned at all. Today it is appearing and increasing year by year. The North American Indian has been living now since the Civil War on government beef very largely, and done only a little in the way of agriculture. So he has been dying off very rapidly from cancer and tuberculosis, but not nearly so rapidly as the white man, as yet, of cancer, though the deaths from tuberculosis have been very great, the mortality has been very great.

So it is the habits of the white man that is the cause of his degeneracy, and not intrinsic racial weakness, but his luxurious habits and practices. He has adopted habits that are abnormal, absolutely artificial and unnatural, and ~~has failed~~ ~~and xxxxxx~~ to adapt himself to these new conditions of life. If we are going to take a wild creature from the forest and bring him into a civilized state, we must somehow modify our conditions to suit his needs.

Now, what is true of man is equally true of domestic animals. Wild animals are free from cancer, but domestic animals are infected with cancer to a terrible extent. Eight per cent of sick dogs have cancer, and seven per cent of sick cats have cancer, and five per cent of all human beings who die in the United States ~~xxxxx~~ die of cancer. More cats and dogs have cancer than human beings, but when the cat begins to get sick, nobody stops to inquire; there is no post mortem examination made to see what she did die of. You never think of calling the coroner when you find the cat dead and you don't know what she died of. Now, she has been living on the same diet you lived on, and she died of cancer. What are you going to die of? She has been eating from your hand the same things that you ate yourself; and what are you going to die of if the old cat died of cancer? W

We are cultivating degeneracy, we are cultivating disease.

Now, another reason why we are going down hill so rapidly is because we have adopted the idleness of civilization. Mr. Washington said a very good thing



when he spoke of idleness as being full of danger. Idleness of every sort was a wicked thing in his opinion. Idleness of all sorts is evil; and it is evil physically as well as morally, mentally, and socially; and I want to call your attention to some things particularly tonight; so I am going to throw upon the screen here some pictures relating especially to the muscular system, and to show you our duty to ourselves, especially those of us who live a sedentary life in relation to exercise. A sedentary life aggravates and accentuates all the evils that grow out of errors in diet, and errors from the lack of sunshine, and errors from clothing our bodies, protecting them from the sun.

Here is a general picture of the muscles--500 muscles, every one of them a distinct organ, every one of them exactly adapted to the uses for which it is designed. These muscles are attached to the bones. We haven't time to study the bones, but the bones are the blood making organs. Every muscle is a pump. When for example, these muscles of the arm are at work; when they are actively at work contracting and blood is being pumped through the muscle, the amount of blood circulating through the muscle is six to ten times the amount which circulates through the muscle when it is idle. Think of that, my friends. The amount of blood circulating through an active muscle is six to ten times the amount which is circulating through the idle muscle. Now, suppose you are sitting ~~still all day, loafing about the Sanitarium lobby or some other place, or suppose you are sitting down~~ in your room quiet, reading a paper, reading a book, doing fancy work, or lying about on the sofa, lounging around--your muscles are in a stagnant state--no blood coursing rapidly through your veins, but instead there is a stagnation. The situation is exactly that of the water that comes dancing down the mountain side, thrashing itself into a spray over the rocks, and gurgling along over the stones--by and by the water is clear as crystal; it is cool, sweet, pure, and you would not hesitate to drink it. By and by it gets down to the foot of the mountain, accumulates in the hollow and stays there.



In the course of two or three weeks in hot weather, it will become covered all over with green slime, covered over with slimy, filthy, loathsome scum, and the frogs will croak in it, and the vermin will swarm in it till it becomes a filthy pool, because it is stagnant. Living water, moving water, is always healthy, and always fresh and pure; but stagnant water very soon becomes unclean. It is exactly so with the body, and we let our bodies stagnate by lack of exercise; the blood becomes impure, waste matters accumulate.

Now, every muscle is a pump, and while the muscle is active and working, it is like a pump in vigorous motion, and it pumps ten times as much blood as when it is inactive; it is pumping a little all the while, and the blood is pumped down through the muscle, and some of it goes into the brain. <sup>The</sup> ~~same~~ artery which ~~xxxxxxx~~ brings blood to the muscle, ~~xxxx~~ brings blood also to the ~~xxxx~~ bone which lies under the muscle. Now, in these bones the blood is made. Think of it, my friends--the bones are the factories in which the blood is made. The great laboratory in which blood is manufactured is the skeleton; that is what the skeleton is for in part. While the outside of the skeleton is for a framework, a rigid framework to support the body, to build the body upon, the inside of the bone is all made up of minute little laboratories in which blood is made--this wonderful process by which eight million blood cells are turned out fresh, brand new blood cells are turned out into the blood current every second of our lives, and this process is carried on in our bones. Upon the activity of this process, the state of it, the condition of the body depends--upon the amount of blood circulating through the muscles and brain, and the kind of blood in the muscles depends upon the activity of the muscles.

Here is the deltoid muscle and other muscles around the shoulder.

Here are some of the muscles of the leg, and the wonderful tendons by which these different muscles are connected with the several parts of the foot. Here are



the muscles of the pelvis which control the thigh, the upper part of the leg. Half the strength of all the body is in the legs. Half the strength is in the legs. About one third the strength of the body is in the arms, and the balance, a little less than a third, is in the trunk of the body. Here is another view of the deeper muscles of the feet. Here are other muscles in the bottom of the foot, the muscles which give to the foot its springiness. Here is another view of the muscles of the feet and of the thigh. Here are the wonderful muscles of the face that give to the face its ever varying expressions. Here is a little muscle here attached to the upper lip and the side of the nose here and runs along the side of the nose, and has the very euphonious name of levator labii superioris alaeque nasi muscle--don't tell anybody about that. Here are some of the muscles which draw the corners of the mouth back. When you feel like smiling, all you have got to do is to contract that little muscle, then you smile. You may not feel like smiling, but you ~~XXXXXXXX~~ can contract that little muscle just the same, the levator anguli oris muscle, pull up the corners of your mouth, and you smile. Here is a muscle attached to the corner of the mouth that pulls it down, and when you ~~xxx~~ pull the corner of your mouth down you are looking cross and sad and melancholy, no matter how you feel. So if you are unhappy, and find the corners of your mouth down, all you have got to do to get out of that unhappy state is to contract those muscles which are pulling the corners of the mouth upward, and you will be all right; at any rate, you will look all right; and if you get the front side of your face ~~at~~ right, the first thing you know the back side will be all right too. These muscles are attached to the skin, and they pull the skin around in different ways, to make it conform to the varying states of the mind. The face is a mirror of the mind. If one has got wrinkles on his brow that he don't like, it is because he is maintaining a state of mind that was not good, and that was not pleasant. Sometimes people



come and want to have wrinkles gotten out of their faces. You know, I notice it is the vertical wrinkles that people want to get rid of, these scowling wrinkles. These other wrinkles that come from smiling, nobody cares anything about. The only way to get rid of the vertical wrinkles is to reverse them, to set the horizontal wrinkles to going and straighten them out.

Here are those splendid muscles of the back. Aren't they beauties? Those are human muscles. That is not the back of an ox we are looking at; it is the back of a man. The ox has muscles that look just like them, you know. When you eat a piece of beefsteak, just think of it--that looks just like human muscles. I have got muscles just like that. The ox is a relative of mine. Now, here is this great trapezius muscle attached to the back of the neck, along down the back face of the shoulder blades and the tops of the shoulders. It is the muscle that holds the head back. Here is the ligamentum nuchae that supports the head. The ox has this muscle large and strong so it holds his head up; he has to pull his head down. I think the human ligamentum nuchae is not quite as strong as it ought to be. Notice how many people there who keep their heads down. We have to cultivate that muscle in order to keep the head up.

Here is a deeper layer of muscles. Take off those great muscles and there are veritable nets of muscles running down the spinal cord here which are used in the various motions of the body, and here are some of the still deeper muscles that help to close in the trunk, and the muscles between the ribs. Here are a few of the muscles of the side of the body. Here is a great external abdominal muscle here, the serratus magnus muscle here that runs down between the ribs. Here is the dorsi muscle that comes up and attaches to the arm. This external oblique muscle is one of the important muscles of the body; but I want especially to call your attention here to the form of the body, of the health body--this convex line in front, and this concave line behind. That is the natural form of a healthy, vigorous body. It is maintained by the natural tone



of the muscles. If you put your fingers in your ear and just listen--just try it once now for experiment, and notice the throbbing you feel, just like a low vibratory note of the great pipe organ,--you feel a pulsing. Set your muscles up real hard in the arms, and press the fingers in the ear, and you can hear the throbbing. That is muscle music. That is the muscle singing about its work. The muscle is taut all the time. If you cut that muscle, for instance, the moment you cut it it will shorten right up like a piece of rubber on a stretch. The muscle is always on the stretch when it is alive and when it is healthy, and that tension in the muscle is what is called muscle tone, and it is produced by a series of impulses being rained down upon it all the while at the rate of about ten to twenty to the second, to cause it to move, to contract. Now, you sometimes have seen people who had shaking palsy, or paralysis agitans--that is what it is. These impulses come too strongly to the muscle, and that is the cause of it. It is because this muscle tone has become too great, the tension is so great, and you notice this person who has shaking palsy, and you see his fingers are set, and he walks very clumsily because there is too much tension in his muscle--so much that his hand vibrates and shakes.

Now, this muscle tone is very important. It is maintained by a high state of nerve tone. The muscle tone is kept up by a stream of energy pouring into the muscle all the while from the nerve centers, and when the nerve centers lose this tone, when one has neurasthenia or nervous exhaustion, when one is tired out, then the energy is exhausted, the muscles lose their tone, and there is a relaxed condition. When a person gets feeble, when a person gets weak, when a person gets debilitated, the tone is relaxed, and that is the reason why he feels like falling down; that is the reason why he feels like dropping his head and like dropping his chest. That is why the abdominal muscles get relaxed; and when they get relaxed, then it falls in here, bulges out down below, because



the muscles are so weak and relaxed that the weight of the abdominal viscera which are being held up in place forces the weak muscle out so that the shape is changed. A good many of you can find a good illustration of that if you will just look at yourselves when you go to bed tonight. You will see exactly what shape I have reference to,--a bulge in the lower abdomen, and a relaxed condition about the waist; and it is all due to weakening of these muscles.

Now, here is one of the splendid muscles you have in front, a band of muscle that runs down each side from the lower end of the sternum to the pubic bone--the rectus abdominis muscle--a splendid great muscle, and you see this muscle divided into three different parts so that its points of fulcrum are nearer by. It contracts, shortens here, as you see, then this section shortens; then the upper section shortens, and in that way the muscle can make a more complete shortening and shortens with far greater vigor. Now, a well trained athlete can contract that muscle, set it up in such a way that you can see a little furrow in these little white lines here; and these muscles have become so tense the athlete can strike most any sort of blow without the slightest inconvenience ; he can receive a tremendous blow without the slightest injury. I find very often in my office people so sore, so sensitive about this region, that if you point a finger at them they dodge it, they want to get out of the way. If you just point your finger towards them they jump back a foot or two, they are so sore and so congested; and that means the whole abdominal region here is in a state of chronic congestion, filled with blood, so the nerves are abnormally sensitive. The eye that is full of blood is sensitive to light, you know, and to touch. It is because these muscles have become so relaxed they are not able to compress and support the organs properly, and they fill up with blood in an abnormal way. So these abdominal muscles have a very important relation to the health of the organs that lie within.



Here is one of the most important of all muscles, the diaphragm. It forms a roof, if you please, for the abdominal cavity. It ~~is~~ is a partition which lies between the chest and the abdomen. Here is where the large vessels come through, you see. Here is this muscle and tendon in the center, and the muscle around the outside, and when this muscle contracts, it straightens out, so that the roof is lowered. It moves up and down when one is in an erect position, and compresses all the organs which lie beneath it, as we will see. Here is the diaphragm running right along here, you see; and when the diaphragm comes down, it gives the liver a hearty hug, gives the stomach a good squeeze so it contracts upon these organs, compresses them; and if the abdominal wall that lies in front is strong, vigorous and tense, then when the diaphragm contracts it forces these organs against the abdominal wall; they are compressed and the blood is squeezed out of them just as you would take a wet sponge in your hand and squeeze it and squeeze the water out of it--in just the same way. So the blood is forced out and forced along, and the food in the stomach here is squeezed out in the same way. That is the reason why we have these light gymnastic exercises after breakfast, and why we have them after dinner, and after supper,-- it is because the most of you have crippled stomachs; they are tired out, more or less sluggish, more or less dilated, more or less--almost everybody is more or less subject to slow digestion, troubled perhaps with heavy feelings after meals, and other discomforts; the food remains too long. Now, with these exercises after meals, the movement of the stomach is stimulated, the food is hurried along, the diaphragm is made to dance up and down upon the stomach here every time you laugh, and every time you bend, and every time you take a deep breath, the diaphragm comes down, ~~is~~ and gives the stomach a little nudge, hurries it up and pushes the food along through the pylorus; so these exercises are of very great importance. Then exercises such as lying upon the back,



raising the legs, taking a deep breath at the same time are especially good in helping to unload the stomach. One of the very best things is to lie down after dinner. People whose food stays too long in the stomach lie down after dinner a little while right upon the face with a pillow next the stomach here and take deep breaths,--if they will do this they will find it increases the benefit to be derived from these movements.

Here is the liver, a portion of it. Here is the gall-bladder; here is the pancreas, the great pancreatic gland here, and here is the spleen. These lie behind the stomach. This pancreas and the spleen lies at the left end of the stomach, and the liver at the right end over in front of the stomach. All of these organs are influenced by the movements of the diaphragm in breathing, and you see these enormous great blood vessels. When the diaphragm contracts, it compresses all of the blood vessels, drives the blood along in the veins, up into the chest and the heart, and so aids in the circulation of the blood, aids in the work of the stomach and the liver, and not only these organs of the abdomen but the organs of the chest are wonderfully influenced by these exercises which promote respiration. The chest is made to expand fully so that the lungs are filled up with air, and the air finds its way through all these little ducts down through the little bronchial tubes, and finally to the air cells to which the blood comes to be purified, coming in blue on one side, and going out red on the other side as the carbonic acid gas is taken out through the air, and the oxygen is drawn in by zymotic change.

Here is another view of the lungs with the heart between the lungs. the heart is also influenced by these exercises. As the diaphragm moves up and down, it compresses the heart. Whenever it comes down, it compresses the heart, lifts it up into the chest, and so forces the blood through the heart. By this compression it is more completely emptied and is encouraged and helped in its



work. And these large blood vessels that enter the chest are operated upon just as a suction pump operates. Some time ago I was operating upon a patient who had a large tumor under the arm, and it was grown fast to the great vein that comes down to the arm; it is a very large vein in the axilla, the axillary vein. It was an enormous great growth, and it was attached right to the vein; so I had to dissect the vein, and to do this without cutting the vein was of course a very delicate piece of work, and I was greatly troubled, because every time the patient took a breath, every time he inhaled in this way, the vein collapsed; so I had to make my cuts between the breaths, and the patient breathing rather rapidly, I had to time my cuts to the time of the breaths,--the patient taking a breath, before breathing out I could make my little cut; then another breath, so we had to work in absolute rythm in order to do the work; but there right before my eyes was the evidence of the suction power of the chest. Every time the patient took a deep breath, this ~~maxxian~~ vein collapsed because the blood was all pumped out of it; then when he breathed out, the blood was forced in, and the vein was distended. Now, what was happening there in the vein, the change was taking place in ~~thxx~~ these large veins here. They run into the chest, and when the chest wall expands, it is like the piston in the suction pump, or a vacuum pump. The ~~area~~ of the chest is expanded, so the blood passes in to help fill the chest. There is an old saying that Nature abhors a vacuum. It is not that; it is the pressure of the air outside that is driving the blood in, and not the coaxing from within. So we see how exercise influences every function of the body. Respiration, aeration of the blood, purification of the blood, the movement of the heart, the action of the heart in forcing the blood around the body, the action of the muscles in pumping the blood along into the next parts, of pumping the blood through the bones, the digestive process, the action of the liver and the spleen--of all the great abdominal viscera--they are all



influenced by exercise. Exercise, indeed, is a means of raising the wind, so to speak, to set the sails of life in motion. It is a means of getting up steam. I happened to meet Governor Osborn the other day, and he said "I have just been out for a walk. I have taken a little cold, and I have been out to take a walk. I thought it would do me good." That was a sensible thing to do. You have done that thing. How is it a walk makes one feel better? Simply this: by pumping the blood around through the lungs for purification, and sending the vitalized, oxygenated blood with greater vigor into brain, nerves, glands, muscles and tissues everywhere, the vitality is raised, and the vital activities are all increased; so exercise, as I said, is a means of raising the wind; it is a means of promoting every activity in the entire body.

Now, there is another thing. Exercise has very much to do with symmetry, and symmetry has a good deal to do with health. Here are a few outlines the purpose of which is to give a right conception of what the feminine form is. For instance, here is an outline of an Italian woman who was a model in Paris. Here is the Venus de ~~Mika~~ Medici, and you see the size of the waist. Here is an American woman who never had worn a corset. Here is an Italian marble. The picture from which this was made I took myself in the studio of an artist friend of mine in Paris some years ago--a model that was posing for an undraped figure, and while she was posing I got her picture for the purpose of showing it to American women as a model of the normal human figure which has been untrammelled by a corset. This girl was about seventeen years old. I said, "Did you ever wear a corset?" "No, I never wore a corset." "Why?" "Because my artist would not let me; because it would spoil my figure."

This is the American waist. That is the kind of waist American women have who have worn a health corset. A health corset is an invention of the devil if anything ever was. The women think if it only has the name "health" attached







over a single garment, and they show the exact shape of the body. Now, you would not think this young woman is the same person, but she is the very same person. This young woman came from the South, a school teacher, and that was just her condition. She was downhearted, down in the mouth, and she was down in the liver, a hypochondriac the ancients called it,--when one was melancholy and blue, they called it hypochondria, and that means simply under the ribs; her stomach and liver were away off down here. Now, we got this young woman to work in the gymnasium, taught her Swedish gymnastics, and gave her a chance to develop herself, and that is the beautiful figure she had a few months later; and she became a teacher of physical culture and earned her livelihood by it, and I believe she is living still. She supported an invalid sister who died of consumption, and afterwards was married and lived a happy and useful life.

This is the normal feminine skeleton, broad pelvis and narrow chest. This is the deformed human feminine skeleton. It is not a feminine skeleton--it is the fashionable woman's skeleton; it is a monstrosity. I have actually seen the ribs crowded together until they overlapped, until they positively overlapped. Now, when we remember that the stomach lies above this line, and the liver lies entirely above the lower border of the ribs, and the pancreas lies behind the stomach, and the spleen lies above the lower border of the ribs, and the kidneys--all these great, heavy, important vital organs lie above the lower border of the ribs,--when one looks at such a figure he can not resist the inquiry, where is that woman's stomach, if she has one? Where is her liver? Where is her spleen? Echo answers, "Where, where?" If they are anywhere they are away down here; they have been turned out of house and home. There is absolutely no room for them, no room for them in that contracted chest. Now, you have seen just such figures as that. Open the fashion magazines at any time, and you see fashion leaves no room for liver or stomach. Fashion mongers have absolute-



ly forgotten that woman has a liver and a stomach and a spleen. Yet, as a fact, woman has a larger liver, and a larger stomach, larger spleen and larger kidneys than man has. Woman has more stomach and less heart than man has. The heart is smaller because the fist is smaller, and the muscles are smaller. The woman has only half the strength of the man, and her fist is to back up her muscles; so it represents strength half that of man. The heart has to stand behind the fist. So the man's heart is the size of his fist, and the woman's heart is the size of her fist. Her fist and her heart are only half as big as man's. But the liver is bigger than man's, and there is good reason for it. The stomach is larger than man's, and there is good reason for it. Woman's liver and her stomach must sometimes do work for two. That is the provision for motherhood. It is the absolute physiologic necessity that these vital organs should be larger in women than in men; yet the woman imagines she does not need a waist of any particular size, and that the smaller she can make it, the more beautiful she is, and the more really feminine she is. That is the greatest mistake in the world. I have measured thousands of women's waists. I have found that the civilized woman's waist is smaller than man's. I found a most remarkable thing--little girls of fourteen or fifteen with 24 inch waists, and young ladies twenty years old with waists of twenty-two inches. Why should that be? I have found many little girls with waist measurements of twenty-two, or twenty-three inches, while the average Wellesley college girl has a waist of only 24. The Venus de Milo of the same height required a waist of thirty-one or thirty-two. If you want to know how large your waist ought to be, all you have to do is to find what the stretch of your arms is, find what your height is. The stretch of your arms and your height ought to be practically the same. Divide your height by two and it will give you what your waist ought to be. 47.6% of the height is the proportion of the waist of the Venus de Milo; and I found a woman among

*the model of symmetry for the*



the Yuma Indians twenty years ago when I was studying the Yuma Indians. They hadn't learned yet to wear dresses, but wore bark aprons about a foot square. They had the most beautiful bodies; and the men did not wear so much ~~zkanax~~ clothes, and they had still finer bodies than the women had. In Cairo I examined women from away up the Nile, and I examined Indian women in Mexico, and Chinese Women in San Francisco. At the World's Fair in Chicago, on the Midway Plaisance, I made a number of visits there, and by paying for the opportunity, I had a chance, with the assistance of the managers there, to make a considerable number of measurements of the Zulu men and women, and Samoan men and women--people from different regions of the earth; and I calculated hundreds of measurements of that sort, and I ~~fixx~~ found that the proportions of the Venus de Milo were exactly the same as that of many of these women--47.6% of the height. I found a Yuma Indian woman 20 years of age who had exactly the proportions of the Venus de Milo, and I found a woman as black as a coal in Cairo from away off up the Nile who had exactly the proportions of the Venus de Milo, just the same,--47.6% of the height. Suppose your height is sixty inches--what ought your waist measurement to be? Twenty-nine inches. If your height is five feet eight inches, 68 inches, your waist measurement ought to be 33 if you are a woman, and if you are a man it might be a couple of inches less. But men have smaller waists than women under the same conditions of health, vigor, and development. I can prove that to the satisfaction of anybody that wants to look into it.

Here is a man who has a model masculine figure. See the broad shoulders, narrow hips, splendid waist, and the convex line from the upper end of the sternum down to the pubic bone. That is the natural graceful contour of the body. But we do not find that always. Here are some more figures showing various sorts of deformities that are created by wrong postures in sitting, by deformities that are the result of abnormal dress. Now, this woman certainly



looks as graceful as the other one. Her figure is pretty nearly straight as it ought to be in front, and a convex line behind. The dressmaker knows that is good proportion, so when a woman is straight behind instead of in front, the dressmaker proposes to provide various appendages to help things out, and adds something behind and something in front to cover up these awful deformities. The natural woman has a natural outline, and her dress naturally falls into graceful lines, a very graceful figure; but the woman who has become deformed because of the compression of her body, has to have things pieced out in various ways. The fashion makers know the real standard; they have recognized the real standards of beauty, and they try to approximate them without reforming the woman.

Now, the very first thing for a woman to do who wants to reform her dress is to reform her figure. She has got to do it. She could not tolerate a healthful dress or endure the appearance of it, or her friends either, if she did not first reform her figure; but when she does that her difficulties all disappear. A large part of the difficulty comes from wrong sitting posture. When you are engaged in sewing or reading, or working at a desk, or engaged in any sitting position, that is the usual position--concave line in front, and convex line behind. When the diaphragm contracts, it does not contract against resistance; it does not squeeze the liver against the firm abdominal wall and so aid the circulation; it does not compress the stomach--only moves it down without any compression at all. It does not influence the stomach to the movement of its contents, but it simply flaps up and down, so to speak, like a sail flapping in the wind, and there isn't any aid for the circulation of the blood or the movement of foodstuffs through the stomach into the intestine.

Now, here is a man sitting in the proper way. This we call relaxed sitting, and this the correct position we call forcible sitting, in which the chest is raised, the back has its normal concavity, and the anterior line of



the body, the front line of the body has its normal convexity; and the abdominal muscles are tense, the internal organs are all held up in place, and the muscles of the back are taut also, and energized. But you say it is very uncomfortable to sit in that position, as it would be if you had to hold yourself in that position; but if one acquires the habit of sitting--here is a boy sitting in the wrong way at the desk, and here is a boy sitting in the right way. If one forms the habit of holding his body erect, by and by the muscles get trained so it is uncomfortable to get into a different position.

These pictures are to show you how to get into a correct position. Suppose you are sitting in a chair, and you want to know how to do it. Here is a lady sitting relaxed, and here she is sitting right. This is the way to do it. Put the hands upon the hips, bend forward, throw the head back, then come up, look up at the ceiling, then gradually lift up, pressing hard with the thumbs upon the hips, lift up and come up into the normal position. Here is the same woman standing relaxed before a wall. She stepped back against the wall, then steps out in a correct position, and how does she get this correct position? Stand against the wall, first the heels against the wall, then the hips against the wall, then the shoulders against the wall, and finally the head against the wall. Then bend the head back, allowing the shoulders to move forward; then without moving the shoulders backward, keeping the hips and heels well against the wall, <sup>draw</sup> ~~the~~ the chin back, and now you see she has shoulders and head free from the wall, while the heels and hips still touch the wall. She steps out, and ~~xxx~~ you see what a dignified, fine carriage she has. Anybody can put himself into a fine position if he simply adopts this method. Here it is illustrated again. Here you see the man sitting in the chair with the convex line in front and the concave line behind. Now, in order to make him perfectly comfortable, all you have to do is to put a cushion in that place.



These cushions do not cost very much. We had some made for 35 cents apiece, and they can be easily fastened to the chair with a little silk cord so that they remain in position; then when you sit down in a chair, you can not get down; you have to sit right. That is why the Sanitarium chair you find in your room felt so funny when you sat down in it for the first time; it seemed as though you must have something to support your head. That is the reason why the chair is made in that shape--to help you to get into the correct position and learn how to stay there. You see here the back is supported by the curve in the chair, and this woman is sitting in a physiologic position. Now, we have all gotten so accustomed to these wrong positions our muscles are made weak, and we have difficulty in holding ourselves erect; and that is one reason why we have the manual Swedish movements here, why we have our patients go through all these various experiences in the manual Swedish movement department. There is hardly a patient comes to this house who would not be greatly benefited by these movements. The patients do not always understand the value of them. Sometimes, when the doctor makes a prescription for the Manual Swedish, the patient says, "Oh, I guess I won't bother with that." Now, if you take it, at the end of a month you will find you begin to have evidence of the benefit you have derived in the fuller freedom, the freeness and fullness of lung movement you did not feel before, and did not appreciate. It is the greatest benefit to liver action and lung action and stomach action--of immense benefit. Every one of these movements has been carefully studied from a scientific standpoint. They were first invented more than 100 years ago by a Swedish lieutenant by the name of Ling, and that is why they are called Swedish movements; they are based upon movements which have been known and practiced among the Chinese for training their soldiers more than three thousand years. I have in my library a Chinese book which was written 2000 years ago, and I had a translation made of it, and it shows a very con-



siderable number of these movements that were used in training the soldiers and that go along together.

This shows some of the mechanical movements--rubbing the feet, shaking the trunk, vibrating the hands and shoulders, leg raising movements, the tilting table, kneading of the abdomen which is most excellent for stomach and bowels; and here are other movements which are being illustrated also. Here are some more manyal Swedish movements. We haven't time to explain all about them tonight. They all operate upon the same general principle and have the same purpose--to strengthen the muscles of the trunk, to stimulate the breathing movements, to aid the action of these great viscera--what we might call the vital laboratories of the body in which the food is elaborated and prepared to support nutrition.

Here is the men's Swedish movement department. Here are some movements you can practice at home,--one of the very best movements. Lying upon the face, raising the head and chest backward; and the complement of it is to lie upon the back and raise the legs upward. This is a splendid movement for the muscles of the trunk, a splendid means of developing the abdominal muscles, and so encouraging the action of the diaphragm and of the other viscera.

Here are some different views of the men's Swedish movement department. These movements are of great value. Do not neglect them. Those of you who have sluggish stomachs and bowels will find it a great advantage to spend half an hour twice a day in the mechanical Swedish movement department. There is no extra charge made for that department, and on that account perhaps it is not quite so popular as it otherwise would be. If we charged fifty cents each for tickets, I presume it would be crowded all the while. Here is a device for those who find it tiresome to raise the legs. As the machine sinks, the legs can be easily thrown into the vertical position, and they come back as the machine returns to horizontal again, and breathing movements are practiced at the same time. This



is found to be a most excellent means of warming the feet--the vibration of the feet, especially in cold weather.

You know what these exercises are. Some of you enjoy them every day. Every patient in this house ought to take some kind of physical exercise every day, and several times a day. I see sometimes the lobby is quite full of people when the exercise is going on in the gymnasium. I would give a great deal for the opportunity to spend a few hours in the gymnasium every day. Now, I am going to tell you a little secret; I am going to tell tales out of school. We have a doctors' gymnasium class in this institution, and we have helpers' gymnastic classes, and our nurses are all trained, and the members of the nurses' and domestic science classes are all trained, and have their regular periods of exercise every week. They have the same things recommended to you, and some much more strenuous exercises are recommended for them and are taken by them. Every member of our physical culture school, and nurses' class, and domestic science class, when they come their strength is tested the same as yours is, a chart is made, and they are encouraged to increase their vigor and development while they are here; and, as I said, we have a class for our doctors under Prof. Schatzel; they have a course of training which they enjoy and are greatly profiting by. You have a great deal better service than you would have if our doctors didn't have the benefit of gymnastics.

You say, "Oh, I can take exercise at home." Yes, you can, but you won't, unless you form the habit of it, and the habit can be easily formed while you are here until it comes to be the greatest delight to get the physical exercise that one ought to have every day. Every human being requires exercise the equivalent of walking eight or nine miles a day,--eight or nine miles--at least that much.

This is Mr. Horace Fletcher taking a leap in the dark. He shut his



eyes, then made the summersault, and landed in the water feet foremost every time. He is sixty years old, yet he does this feat with as much agility as any young fellow I know, although he had not practiced it since he was a boy until comparatively a short time ago. And you see the dog is very much surprised to see an old gentleman like Mr. Horace Fletcher launching off into space in that way. Here is another exercise very much enjoyed by our patients in summer time. Prof. Schatzel has recently organized a wood chopping class for men, and he told me today he had thirty in his class, and they were having a splendid time. One has an object in view in picking up the chips. It is a great deal more agreeable to make the actions with an object before one than it is to be doing it in a purely mechanical way. The Professor said he had only one difficulty. He wanted to know if I ever tried it before. I told him the first thing I did when I took charge of this institution thirty-six years ago was to organize a class in chopping wood. We had about a dozen in the class, and somebody said one day, "How much pay am I getting for this?" He said, "That is exactly what a man said to me this morning. I said, 'None at all, only just health.' 'Well,' he said, 'I believe I won't do it then.'" "All right," the Professor said, "You are discharged right now, if you don't appreciate the advantages you are getting from this splendid exercise! It costs more for the exercise than the wood is worth to support this department; but it is a capital thing. It is a good thing for the ladies as well as for the men. I remember a young woman who came here to this institution thirty-five years ago, a complete invalid. She was a poor, worthless creature about eighteen years of age. We soon got her on her feet, and she went home, bought an axe, she went into the woods, went to work with her axe with her father, and she chopped her way up into most robust health; and when she came back the next year to offer herself as a candidate for a position in the Sanitarium, she had the clearest skin, the brightest eyes, and the rosiest cheeks I ever saw, almost, in my life. Indeed, she more than doubled her



physical strength and beauty in a little while as the result of her outdoor exercise. Here is an indoor exercise that is very agreeable; and here is the outdoor gymnasium in summer time. Here is a swimming contest, and we have swimming lessons. Here are some of our invalid friends having a fine time in the sand. We have some carloads of sand sent up every year, white sand, not seasand, but sand that ~~may~~ we get from a glass factory where they obtain the flints and powder them up by machinery into clean, white sand, as clean as it is possible for anything to be; and it is really a very delightful thing to roll in and burrow in the warm sand.

Here is the strength testing device. If you haven't had your strength tested with the dynamometer, it ought to be done. It is the only machine in the world that will do it. There is going to be an exhibition of hygiene in Dresden this year, and I had a letter from the president of the department devoted to individual hygiene asking that we would at least send over a dynamometer, and he wants photographs of the Battle Creek Sanitarium gymnasium, and of our exercises and a dynamometer and a chart. Prof. Zuntz, the great German physiologist, is the man who sent for it. He said if we would just send it over there, he would put it up, take charge of the exhibit, and when the exhibition is over they will pay for it. It seems as though we ought at least to do that much; but we are going to have a good exhibit over there. I want you to see that the dynamometer is appreciated in foreign lands. You can get a chart made which you can not get anywhere else in the world except by this dynamometer. The United States government has one of these machines at the naval school at Annapolis, also one at West Point; and ordered one sent to the Philippines a little while ago for the military training there.

When you go home, sleep outdoors. Build on an addition somewhere over a wing. Make arrangements somehow to sleep outdoors. If your occupation is



indoors, you can to a very considerable degree compensate for it by living outdoors at night. It is the easiest thing in the world to do. Simply accustom yourself to it. Last night when I went to bed, I pulled a hood over my head, and down over my ears. When I woke up this morning, my moustache was all covered over with icicles, and I had to break off the ice before I could get started; and I slept sound and sweetly as a child. When I woke up, I thought I had just gone to bed. If I dreamed at all, I dreamed about jingle bells and sleighrides, and having a joyous time. In that way one can spend eight hours of his life every day out of doors if he chooses to.

Why couldn't we be sweet and beautiful as those flowers? Why should we go around with a breath like a dead rat? Why should we have skins looking leather when the flowers are sweet and perfumed and beautiful, and we were intended to be just as beautiful, and just as sweet. We ought to be just as sweet as any flower you ever saw, and why shouldn't we remain ~~xxxxx~~ so? Why should we spoil ourselves by our departure from Nature? My friends, I invite you all to return to Nature, and when you get back, don't backslide. I thank you for your attention.

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TALK TO Y. M. C. A. CONVENTION

At the Sanitarium Chapel, Battle Creek, Mich., Sunday, March 19, 1911, at  
11:00 A. M.

By,

J. H. Kellogg, M. D.

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In my opinion, the biggest business in the world is the Lord's business. I want to tell you I don't know of any organization that could be more welcome in this institution than this one. I consider the Young Men's Christian Association, one of the great forces that is working for the uplift of a sinking humanity. Perhaps you are surprised at that word "sinking", for the general feeling is that the world is gaining ground very rapidly. Now, I am very optimistic naturally, that is my natural disposition. I think if I were not, I should have given up in despair long ago; but when you come to look right into the facts, to look the facts square in the face and look right into the heart of the matter, there is not a bit of question that the civilized portion of the human race especially is going down very fast. Mr. Booker T. Washington spoke here in Battle Creek last Wednesday evening, and he said that there was one thing in which the colored race had the advantage over the white race. He said the colored race is coming up while the white race is going down. He had been traveling around through Southern Europe, and he had made up his mind that the Latin races, at least, were rapidly going down, and he suspected that the white race in general was declining. The colored race was a young race, and had its future before it, while the white race had its future behind it, as I said. Now, Mr. Washington is right about that. When you come to look the thing right square in the face, and study the statistics carefully, there is abundant proof that the human race, the civilized part of it, is degenerating



rapidly. And I am very much interested in the fact that you have recently started a health movement in your Association. Dr. Fisher has started a health league, and I am hoping that it will prosper and flourish. I do not know of any force that could be brought to bear on this question in the United States that would be so effective, and would accomplish so much as the Young Men's Christian Association. I will give you just a fact or two so you will know that I am not talking altogether at random.

Statistics show that chronic diseases have doubled in mortality in the last thirty years. The mortality rate of chronic diseases equals half the people who die in this country, and these chronic diseases in thirty years have doubled in fatality. Twice as many people die of chronic disease in general today as did thirty years ago; and that means that one fourth of the total mortality of this country at the present time, which is something like 375,000 people, are dying in the United States who would not have died in this way thirty years ago. Bright's disease, for example, has increased at such a terrible rate that 267 people in Chicago die of Bright's disease today where only 100 died thirty years ago, and the same thing is true throughout the country. 231 people die in the United States of Bright's disease where only 100 would have died from this disease thirty years ago; and that is a terrible mortality from Bright's disease. Something like 75,000 or 80,000 people die of this disease every year. That is a great number.

This is true of chronic diseases in general. Arteriosclerosis, a disease that is causing hardening of the arteries, and premature old age, is increasing at such a terrible rate that it has doubled its mortality in ten years. Ten years ago only 6.1 persons died of arteriosclerosis in 100,000 each year, while today more than twenty die. Just think of that, an increase of more than 300% in just ten years. Hardening of the arteries is a disease that comes from



from wrong habits of living, from wrong diet, neglecting to masticate the food, and from erroneous habits; so it is an important ~~that~~ thing that we should take hold of this matter. The expectancy of life after forty years has declined 34%--that is, the mortality has increased 34%. In thirty years the mortality of people over forty years of age has increased 34%; in 28 years in fact. The expectancy of life has diminished proportionately. That is a terrible thing to look at. The life insurance companies are thinking about raising the rates. They have got to do something, and they are getting stirred up about it. I have a letter on my desk just received from the president of one of the large life insurance companies of New York City, the Provident Life Assurance Association, and he has gotten so stirred up over it that he is sending out 3000 tracts to members of this association, little health tracts, telling about these things I am telling you. He says the same things and worse things than I have told you; and he is stirring them up to get them to help as far as possible; and they have formed an association to try to keep their risks alive. They are afraid they are going to bankrupt their life insurance companies under increased mortality. The mortality over forty years has increased 34%, and you see that is a tremendous fact--in thirty years,--and that is a tremendous fact for the life insurance companies to consider. It means they have got 34% more money to pay out; their losses are increased 34%. Well, that is enough to swallow a whole lot of dividends, and they have got to look after that matter. The hope of the country is in the young people, the young men, the strong young men and the Christian young men in this country can do more toward antagonizing these degenerating influences than any other force I know of. Fundamental reform has got to begin in the physical man. I know the general feeling is that it must begin at the other end, but I find a great many people who are wicked because they are sick. You know somebody said every sick man is a rascal. A man who



is sick is not altogether responsible for what he says or for what he does. I recall just this moment a lady who came into my office a while ago, sat down, put her handkerchief to her face, and began to sob and weep, and could not say anything to me for some little time. By and by she ~~came~~ got sufficient control of herself so that she began, and she said, "Doctor, how can I tell you? How can I tell you?" I said, "Yes, you can tell me anything you want to tell me. Doctors don't reveal secrets, you know. Tell me anything you want to tell me to relieve your mind." "Well, Doctor, Doctor, I am cross. Now, I didn't use to be cross, but now I am cross; I scold my husband, I scold my children, I scold my neighbors", and she cried and wept and sobbed. "Now, Doctor, do tell me, am I sick or am I wicked?" "Well," I said, "let me see your tongue." Now, I didn't examine her heart, but I looked at her tongue and that was enough. It looked as though it needed the city scavenger. It was perfectly horrible and loathsome; it was just covered over with a brown slime. It was simply terrific; and her breath--why, it had the odor of a dead rat. I looked at her tongue, and I said, "How long have you had this condition? It is something awful?" "Oh, Doctor, my tongue has been like that for ten years. Oh, Doctor, do tell me, am I sick or am I wicked?" She said, "I am so terribly disturbed about this thing; I scold my husband when there isn't any sense in it at all; I scold my children for the least little bit of thing, without any reason in it, and I am so ashamed of it. What shall I do?" I said, "Just be quiet, calm yourself; your case is not a case of total depravity; it is a case of total indigestion." So we got after that case, and in three weeks her tongue was clean, her mouth was clean, and her conscience was clear too. She was a happy woman.

It is amazing how many people there are going around under a terrible, terrible load of misery and distress. I have had simply hundreds of people who thought that they had committed the unpardonable sin against the Holy Ghost when they had only sinned against their stomachs and their livers ignorantly.



And I would not lay up against them anything, because they were ignorant. It was the fault of their parents or their grandparents, or somebody else, maybe of the family tree. They had never been informed. I do my best to clear myself; and I hope there are some thousands of people that are today happy and rejoicing in religion and enjoying religion as the result of their visit here to this institution, simply learning how to eat, learning how to chew the food, learning to keep their bowels open and regular.

Why, I met a man some time ago and asked him if his bowels were regular. "Yes." "How often do they move?" "Once a week." And he was thankful that his bowels moved regularly once a week. He didn't know there was anything wrong about that. That man was simply saturated. He had a regular cesspool odor. His skin was throwing off the foulest kind of putrefactive smells and his breath. The man thought he was healthy, and his brain was just filled up with stenches,--just think of it. He was saturated with stenches. It isn't any wonder he was in a depressed state of mind; it isn't any wonder he was wretched and miserable, and unhappy. I am talking rather plain, but I want to say something in such a way that you won't forget. I want to make my few minutes here count for something.

Now, the bowels actually ought to move after every meal. That is the proper way for the bowels to behave--after every meal. I see two or three people looking with consternation into their neighbors' faces. Now, just take note of your neighbor's face, and see if it hasn't got a brown tint to it; and notice the breath when you get a chance. He would not have that brown tint, he would not have that bad breath if it were not for the fact that the body is saturated with poisons, the same kind of poisons that are developed in a decomposing rat, in a mass of rotten filth of the worst sort you can imagine anywhere. And all this material being absorbed into ~~the~~ the blood, taken into the blood,



and staining the skin, staining the brain, coloring ~~the~~ one's whole life, and entering into even his character. There is no doubt about it. About twenty years ago I went down to Chicago with the idea of starting a sort of health mission. I went down to New York about twenty-two years ago and visited the Jerry McAuley mission, and I found out what the gospel was when I went there. I never heard the gospel before. I had been a professed Christian since I was ten or twelve years old, a member of the church, but I never had heard the gospel preached in my life till I went to the Jerry McAuley mission twenty-two years ago, and I didn't know what the gospel was, what it could do for people. I didn't know how it could lift a man out of a hole, right off quick, that it could take away the appetite for tobacco, that it could take away the appetite for liquor or ~~anythings~~ else he wanted to get rid of; and I sat there and heard those men testify as to what the religion of Christ had done for them, and saw that it had done it, and saw upon their faces the changed characters; that there had been a miracle wrought for those men. And I didn't have any peace, and couldn't have any peace until I got something of the sort going right here at home, down at Chicago. I said, "That is just what we want in the Battle Creek Sanitarium, just exactly what we must have there to complete our work." And I went down to Chicago, thought that was a good place to start, and I went to the Chief of Police and told him ~~xxxx~~ what I wanted to do, that I wanted to start a mission, and I wanted him to tell me the dirtiest place, and the wickedest place in Chicago, and that there was where I wanted to begin. I very soon discovered a most remarkable thing, in visiting the different missions, and talking with them, and telling the persons in charge of the missions what I was going to do, and I found there wasn't any room in Chicago for another mission, and there wasn't any place for one. So I went to the Chief of Police to get his suggestion where to start, and he pointed out a place to me, and it was right around in the vicinity of the Pacific Garden Mission. I was told



that they didn't need any more missions there. I said, "We will have a different kind of mission; we will have a laundry mission where men can wash their clothes and we will have some bath departments where we can give men baths, and shower baths, and we will have some nurses there to bind up their wounds when men get into fights, and to treat their sores and things; and we will try to be brothers to them." They said, "Oh, we don't need any cleaning up mission. Get a man once converted and he cleans up right away. Get the gospel into his heart and he cleans up quick enough; we don't want any baths." Well, it so happened that we started our mission, nevertheless, right there next door to the Pacific Garden Mission, and when we had been going there about three months, I met Harry one day, and I said, "Harry, what do you think of the mission?" "Well," he said, "Doctor, it is the best thing that ever happened to this community"; and I ~~xxxxxxxxxxxx~~ noticed that in every report he sent out he took pains to mention the Customhouse Place mission which was next door. We worked right hand in hand together, and became the very best of friends, and we got on very nicely. Here is just one case to show you.

Here was a man came in one day, and we found him in the gutter, a friend of mine brought him, and we cleaned him up, bought him a new suit of clothes, and when we took his old clothes off the wild beasts were running in every direction, of course. We gave him a good bath and put on clean clothes. He went out, got drunk, and in a couple of days was back again. We fitted him up again. He pawned everything we gave him. The sixth time we got him sober enough so he got around the corner into the Pacific Garden Mission and made a start, and the people who saw him put up his hand said, "Curly is trying to work the mission", and I have heard somebody say a good many times since that he has been working the mission ever since. You have met Tom Mackey, and that is the man. Tom Mackey says it was a bowl of soup he got at our place one day



that saved his soul; and it was simply getting cleaned up. Now that thing, you see, works just as well as the other; there isn't any doubt about it. Religion and cleanliness--somebody said that cleanliness is next to godliness. Somebody asked John Wesley which side, and he said both sides. I have told you one little experience so you will see it works the other way just as well.

I met a man out on the porch the other day as I was coming in, and he looked the picture of despair. He seemed to be muttering to himself. I took him as a stranger who had recently arrived, and I hadn't met him yet, and I was so troubled that I went back after I got to my office,--I at once went back, got him, brought him into my office. I felt impressed that I ought to do so, and I got him in, sat down, and I said, "My friend, are you feeling bad? I thought you didn't look very well this morning." He said, "Oh, Doctor, I am feeling awful, it is something awful." "What is it?" "Doctor, I am afraid I am going to do something to myself. I am afraid I am going to do myself harm. Why, I can not get these awful thoughts out of my mind. I am in terrible despair, black as midnight over my head, and I don't know what I shall do." "Well," I said, "What is the trouble? Didn't you sleep well last night?" "Never slept a wink last night, nor the night before. I have not slept for three days." I said "I believe I would be almost beside myself if I didn't sleep for three days. What is the trouble?" He said, "I can not sleep, Doctor, I can not sleep; I am just in despair." I said, "Well, I knew a man just in your condition." "Did he get out of it?" "Yes, he got out of it." "Tell me about it, Doctor." I said, "Are you a member of the church?" He said, "Yes, I am a Hebrew." "Do you pray?" "I say my Jewish prayers every morning." I said, "This man was a relation of yours." "Tell me about him." So I opened the Bible which is always found on my table, and I said, "Here he was, and he had just the same trouble you have exactly. His name was David, and he told his experience in the sixth



Psalm." "I am weary with my groaning; all the night make I my bed to swim; I water my couch with my tears." "That's me, Doctor, that's me; that is exactly my situation." "Now," I said, "he got out of it. Just listen. He prayed, and he said, 'The Lord hath heard my supplication; the Lord will receive my prayer.' And now just see what happened to him. 'Thou hast put gladness in my heart. . . . I will both lay me down in peace and sleep: for thou, Lord, ~~xxxxxx~~ only makest me ~~ix~~ dwell in safety.'" "Now," I said, "shall we try it?" "Yes, indeed," he said, "Yes, indeed." And we got down on our knees. I prayed a short prayer, then he prayed, and he began, "O Lord, thou great and mighty One who dwellest between the cherubim--O God help me. O Lord, thou great Creator of the world--O God help me sleep." So he went on, and mixed his Jewish prayer--tried to say the Jewish prayer, and got in a word for himself once in a while. And when we got up from our knees, he went out from my office. And half an hour afterwards I met him again as I was passing through the lobby, and he was on the other side, and he hurried up to meet me, got hold of my hand,--"Doctor, I am another man; I am another man; I am happy as I can be." God put gladness into his heart. That is the real mind cure, my friends. That is the real Christian Science. There isn't anything like it. The old fashioned ~~xxxxxxxxxxxx~~ Christian prayer is the thing that will do more for a man mentally and psychologically than all the psychotherapy the world has ever known anything about. The ~~xxxxxx~~ Emmanuel movement doesn't compare with it. It is simply old fashioned faith, old fashioned prayer as a remedy. But I have seen it a great many times. I remember very well a young woman who got so terribly homesick she had got to go home right off, was dying of homesickness, and her lady doctor brought me in to see what was the matter. It seemed a hopeless case; we could not do anything, and we got down on our knees and prayed, and we got up, and she was entirely well. The homesickness was ~~all~~ gone. God put gladness into her heart. So it is a splendid thing to



to know that we are in touch with the great healing power, power that is always on hand to help us out and will help us physically, mentally and morally. The trouble is the world has got too far away from God. We have I suppose more or less the conception of God that John Fisk said he had when he was a boy. He said that when he was a boy he thought that God was an austere being, away up in the sky somewhere standing behind a desk with a set of books looking out ~~xxxx~~ from behind the desk, putting the things down in the books every little while; that God had made the world, set it going and then went off and sat down to see it go and hadn't had anything to do very much since excepting in cases of emergency. Now, I think there are a great many people have that idea too, ~~xxxxxxxxxx~~ but, my friends, the real truth the biologistx knows today, and the scientific man knows today is that when God created man he had to put himself into him, and he had to stay right there with him to keep him alive. We could not live a second without God. There is a creative power going on within our bodies of exactly the same character as that which was necessary to make the very first man. God has to keep right on making man when he starts to make him. When he made man he had to stay right there and keep on making him, because he is dying dying every moment. There are eight million blood vessels dying every second, and eight million more have to be created to take their place; so we have God with us all the while, and the whole thing is to be in harmony; and it seems to me it is a part of religion to find out how to be in harmony with God physically; and what we need to do, what is our duty in relation to our physical being, and how to be in harmony with God from a physical standpoint--to be in harmony with him morally; and we can not be in absolute harmony with God morally when we are combating him physically; it is absolutely impossible. It is just exactly as impossible as for a man to be coming in at the front door and another coming in at the back door who could not be friends at all. We can not be in harmony with



with God unless we are in harmony in every relation of our being, because God is with us; he is with us, he is in us, and whatever we do to ourselves physically, affects us mentally and morally.

I am very glad we have you with us. I hope you will look at the Sanitarium as one of your homes and headquarters, and anything any of us here can do to co-operate in your good work at any time, we are always glad to do it. I thank you for your attention. (Loud Applause).

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LECTURE 25.

March 20, 1911.

Rheumatism-Mud baths I.

" acute I,2.

" chronic 2,3

" and cancer 3 (Dr. Ross' observations)

" and beefsteak indulgences 3. A feast instead of a funeral 3.

" a dinner-table disorder, not a weather disorder 3,4.

" and a run down farm 3.

Tuberculosis and meat-eating 4.

Defying the Meat Trust 4,5.

High-priced beef 5,6.

American pig is eating us up 5,6.

Dumdum bullets for natives of Africa (Illus) 7,8.

Black man deteriorates faster than white man 8.

Tuberculosis a disease of degenerative organism 9. (Dr. Wright's observations)

Tuberculosis and smoking 9,10.

Drugs and the opsonic index 10.

Tuberculosis and low-protein diet (Exper) II.

" preparation for II.

" diet in II.

Extracts of vegetables II,12.

Raw foods-brand new cellulose of lettuce I2,I3,I4.

Cooked foods-Gruels I2,I3.

Milk (Exper) with dogs I3.

Tuberculosis-Cod-liver oil I4.

Cod-liver oil, impurity of-Cream I4.



Tuberculosis-No meat needed in I5,I6,I7. (Illus)

Stomach,gas on I8,I9.

Chronic diseases-Out-of-door life 2I,22.

Protein-animal and vegetable 22,23.

Colitis 23,24.

Osteopathy-Cats and dogs like rubbing 25,26.

Living high in Colorado 27.

" " " *Chicago*

Pancakes 28.

Race degeneracy 29,30.

Natural living-reformed appetites 30,3I.

Fish proper diet for a whale 3I.

Fish digestion needs seven stomachs 32.

Sick headache 32,33.

Gray hair-Thyroid 34.

Addison's disease 34.

Dates 34.

Blood pressure 35.



LECTURE 25.

Addison's disease 34.  
altitude 27.  
colitis 24.  
dates 34.  
diabetes 21.  
diet, tuberculosis 4.  
gas on stomach 19.  
headache 32. ✓  
leukemia 34.  
mud baths 1.  
osteopathy 25.  
race degeneracy 29.  
tuberculosis diet 4.  
virility and vitality 31.



Mud baths

Phthisiculosis list 4

Gas on the stomach 19

✓ Diabetes 21

✓ Colitis 24

✓ Osteopathy 25

✓ Altitude 27

✓ Race degeneracy 29

✓ Virility & vitality 31

✓ Headache 32

✓ Additions disease 34

✓ Dates 34

✓ Leukemia 34

QUESTION BOX LECTURE

At the Sanitarium Parlor, Battle Creek, Mich., Monday, March 20, 1911, at

8:00 P. M., By,

J. H. Kellogg, M. D.

Lecture 25

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... We have just as good mineral springs in this country as in any other country. Some of the mud baths of Italy have become quite famous, so much so that the mud is shipped over to this country and is offered for sale at \$300 a ton, which is, of course, a modest price for mud. American mud is just as dirty as Italian mud, and is in every way just as effective as any other in relieving rheumatism. The cure of rheumatism is quite another thing. These applications are valuable as a means of relieving pain, but they do not cure. The relief of pain and the cure of disease are two entirely different things. As regards the nature of rheumatism and the cure of the disease, as I said, that is quite another question. There are several different kinds of rheumatism. The kind of rheumatism that seems to be cured by mineral baths, by hot baths at some mineral bath establishment is <sup>acute</sup> ~~this kind of~~ rheumatism. A man has an attack of rheumatism that hangs on for quite a while, an acute rheumatism, and when he is convalescent, begins to get upon his feet, his joints are stiff and he is still crippled, and it hurts him to move his joints. He goes to a mineral bath establishment and gets a few hot baths, and he is on his feet, his joints are limbered up and he says those baths work miracles. "It is almost a miracle; see me. I was brought here on my bed, but now I am on my feet.") That man was cured of rheumatism before he got his baths. (It was the stiffness of the joints as the result of long inactivity, and that was quickly relieved by the hot baths. The heat is relaxing, and the elimination <sup>of poisonous</sup> ~~and~~ the sweating is the thing that



affords him relief. Now, if this man had taken the hot baths at home, he would have had just the same relief.) If he had simply taken hot baths in his bath tub in his own bath room, he would have gotten just the same relief. If he had put a little salt in the water, he would have got all the relief. (If he dissolved <sup>had</sup> and half a pound of chlorin of calcium ten pounds of salt in the water, ~~put it in his bath, a hot bath,~~ he would have got all the benefit from the hot bath that he can get from any mineral spring in the world, so far as the cure of rheumatism is concerned.) If he wanted to make the bath perfect, he could put in ten pounds of salt, and half a pound to a pound of chlorid of calcium, which is the thing that makes the mineral baths most effective. The chlorid of calcium is a very decided irritant to the skin, and when the water contains chlorid of calcium--that is not chlorid of lime, it is hyperchlorid of lime which is quite another thing. I must tell you that, because we must not try to take a bath in bleaching powder or in the disinfecting powder which you scatter around the back yard. Some skins need disinfection--there isn't any doubt about that; a great many people need disinfection inside and outside; but you might find it somewhat unpleasant. It is chlorid of calcium which corresponds with the chlorid of sodium. It is a combination of the chlorin with chlorid. It is really ~~xxxx~~ another combination than chlorid of lime. The chlorid of calcium and common salt together will give to any water anywhere all of the efficacy that any mineral water in the world can possess in relation to the cure of rheumatism. As I said, there are cases that seem to be cured, but it is these cases that really recover from rheumatism, but it has left behind simply the effects of the rheumatism. Now, all we want is simply to be limbered up by sweating baths. (There is another kind of rheumatism, chronic, deforming rheumatism. In this form of the disease, sweating baths are not beneficial. These patients ~~xxxxxxx~~ go to mineral springs, take sweating baths, or mud baths, and the pain is sometimes temporarily relieved; but if the baths are con



continued any length of time at all, the patient is made very much worse. The blood is depreciated, and the effects of the baths is debilitating and depressing. Such patients are more benefited by cold than by heat. Heat is necessary, as a short hot application will relieve the pain of the joints, but applications of cold water are effective as tonic measures for building up the blood. In these patients generally there is very likely to be an anemia; and curiously, Dr. Ross, of Liverpool, has recently shown that in these cases of chronic rheumatism there is a very decided predisposition to cancer. We find cancer is very much more common in these cases of chronic rheumatism than in other people, and in a cancer hospital, where there are a great number of people suffering from cancer, it is a very common thing indeed to find persons suffering from chronic rheumatism and cancer at the same time. So if you find chronic rheumatism coming, that is an advertisement that there is something worse coming, and you better reform your ways right away quick; you better stop those beefsteak indulgences, and the tea and the coffee, and the ~~xix~~ roast peacocks, and fried chickens and such things--you better discard all those corpses; and when you sit down at the dinner table, have a feast instead of having a funeral. I suggested to a man the other day that when he went home, if the wife insisted on having a beefsteak for dinner, he would say, "All right", and send for the orchestra and have them come and play Chopin's funeral march for them while they <sup>ate</sup> it. Now, another thing I want to say with reference to the treatment of chronic rheumatism, is that there is no specific for this disease; it is a dietetic disorder. There is no kind of food that will cure it, there are no hot baths that will cure it; there are no mineral springs that will cure it; there is no medicine that will cure it; there is no cure at all for this disease except a reform of habits, because it is a disease that results from wrong habits; it is simply deterioration of the body, and general depreciation of the vital domain. It is like a run down farm where the fences are down, and the gates are off the hinges, and the house and barn need



painting, and everything has fallen into disorder because the vital stamina has departed as a result of long continued fighting against bad habits; so a reform of habits is the thing that is necessary. Beefsteak, over-eating, tea and coffee, sedentary habits,--those are the things that bring about inactive bowels; those are the things that are the real causes of rheumatism; it is not a weather disease at all. A good many people imagine that rheumatism is due to climate. That is one of the greatest mistakes in the world. There isn't any climate in the world where people do not suffer from rheumatism if they violate the laws of life. In Mexico, a tropical country, for example, I don't know of any place where rheumatism is more common than in Mexico. Florida--a delightful climate with a great deal of sunshine, yet rheumatism is a very common malady there. It is the dinner-table climate that makes rheumatism; it is not the meteorological changes to which any climate is subject.

Q. Give a specific diet for persons with tuberculosis of the lungs.

A. Now, a person who has tuberculosis of the lungs needs simply general upbuilding. ~~The xxxxxxxxxxxxxxx~~ The proper thing for that person to do is to avoid the things he is generally recommended to eat. The usual recommendation is a beefsteak diet--meat, meat, meat--more meat, and raw meat, if you are willing to take it, and I have actually seen recommended a diet of raw meat and blood, and recently some of the newspapers are trying to create an impression in the public mind that there is nothing so good for tuberculosis as meat. The discovery was made recently that the American people are eating less meat than they did. The beefsteak trouble that occurred about a year ago put a flea into the ears of a great many people. A million or more people swore off against meat for thirty or sixty days, hundreds of thousands of people took an oath that they would not eat any meat, and promised they would not eat any meat for sixty days, and we do not see anybody commiserating them. There wasn't a single instance



published in the papers that I got any account of--and I don't think there was any, because two or three clipping agencies send me ~~xxxxxxx~~ all the time items that they think will be of interest to me; every mail brings me some; and anything that is printed about beefsteak comes straight to me. If anybody died from eating meat or fish, I get hold of it right away. If anybody is making fun of Battle Creek ideas, the report is sent right straight to me right away. I get everything of that sort that is going. I pay five cents apiece for them, so of course they are ready to send them along. I kept watch of the thing, and I didn't observe a single instance in which anybody suffered because of the discarding of beefsteak for sixty days. (There were hundreds of thousands of people who dropped off beef eating right off, all of a sudden--did not taper off at all, and they didn't find any fault about it, and I didn't see a single indication that anybody thought those people were going to suffer; nobody commiserating the miserable state of these poor souls that were not going to have any beefsteak for sixty days. Everybody seemed to recognize the fact that beefsteak was a luxury and anybody could get along without it if he wanted to. The laboring men are not educated up to the point where they know they do not need to have beefsteak, but they are perfectly willing to defy the beef trust, and say, "If you are not going to furnish us with beefsteak cheaper, we won't buy it." That is the spirit of the Boston Tea Party. They threw the tea overboard. Now they are throwing the beefsteak overboard.) That was a very interesting thing to me, for I knew the price of beefsteak would not be materially reduced. The thing that is responsible for the high priced beefsteak is the wiping out of those great free pastures where cattle were fed; and it is not the beefsteak at all,--where cattle were fed without any expense; and the settlement of the West--that is the thing that makes the price of beef high. The fact is, we are getting almost to the point where we can not raise any more beef than what



we eat ourselves at home. As the country is settled up, the price of beef will rise higher and higher and higher and higher, and there isn't any help for it; and it must be so necessarily because it takes forty times as much land to raise food in the form of beef as to raise food in the form of corn. Here is a farmer who has got 160 acres, and he can raise corn enough to run himself and his family of five persons and twenty chickens for 100 years, if he didn't raise but forty bushels to the acre, and I think sometimes 130 bushels have been raised to the acre. That farmer on 160 acres can easily raise food enough to run him and his family of five a whole century, just think of it--in one year. So nobody need lack for food. But instead of eating it himself, or drying it off for something of similar value for the sake of variety--a neighbor might raise oats, perhaps, another man might raise rye, another raise rice or something else, and he can make an exchange on an equal basis so he can have variety enough; but instead of doing that, he raises enough corn to feed his whole family for a century, and he feeds it away to 200 hogs for a year, and then he eats that pork for five years and has got to starve the rest of the time, you see. Now, that is what is the trouble with the American farmer; that is the trouble with the country. The American pig is eating us poor; the American pig is eating us up, eating up our wealth, and we have got to get after the American pig and exterminate him. I must go back now to speak of the lungs. The temptation to get after the pig is so great I can not resist it whenever I get a chance. Now, Mr. Booker Washington was here the other day, and he told me he had not eaten meat for a year. I was very glad to hear it. He got on first rate with the Sanitarium diet, and I suggested to him that he introduce Battle Creek ideas into his school at Tuskegee. It would not cost so much to run it, and he could make his \$ 250,000 go farther. He could support two students on what it now costs him to feed one; so he could do a great deal more good. And he seemed considerably interested



in the idea. And he said, "Doctor, I don't eat meat. I was down in New York last year, and I was not feeling very well, and I consulted one of the leading doctors of New York, and he said, 'Do you eat beefsteak?' and I said, 'Yes.' He said, 'Cut it out, cut it out immediately; cut out meats of all sorts; do not eat any meats of any kind at all, and avoid tea and coffee too.'" And he said, "I felt a lot better right away, and I do not eat meat." So I arranged with Mr. Washington to send one of our cooking school teachers down there, and one of our lecturers the first half of April when he is going to be at home and have a dietetic revival at Tuskegee, and is going to get those people started on the Battle Creek idea. And I think that will do him more good than the twelve thousand dollars he got while he was here. (A colored man in Africa is so tough and hardy it is almost impossible to kill him. Some time ago, at the first peace congress, there was a proposition made that dumdum bullets should be excluded from warfare; and you know every nation in the world voted against the dumdum bullet--the bullet that explodes after it gets into the body and tears a great hole in a man--they proposed to exclude this. Every nation in the world voted against the dumdum bullet but one, and that was Christian England. Now just think of it. England said, "We can not dispense with the dumdum bullet; we can not get along without it." Why not? "Because the people we have to contend with in our colonies, especially down there in Africa are so tough and so hardy that it takes a dumdum bullet to kill them when they get to going after a man." The representative of England told a story that in a conflict with some savages down there in Africa, an officer and a number of soldiers who were standing about him, saw a savage chieftain making a raid upon this officer. He had raised his big ax in his hand, and he had started for an officer. The officer put a bullet through him, and eight other men put bullets right straight through the body of that man, and he came right straight on and finished his



mission, split the officer's head open. He fell dead himself then, but it took eight dum-dum bullets to kill him. And he says, "We can not get along without dum-dum bullets as long as we have got to fight savages. We could get along if we only had to fight civilized men, but when we have got to fight these savages, they have got such tremendous vitality, and they have such tremendous health and vigor that we have got to have something that will stop them." Now, that is the difference between the savage man and the civilized man; he is deteriorating.) When the negro came over to this country--well, Mr. Washington said he was brought over, but his fare was paid; he didn't come without a very pressing invitation; but when he came over here and adopted the habits of civilization, he began to deteriorate; and now he is becoming subject to tuberculosis, more subject even than white people are. (I do not think the savage is as tough intrinsically as the white man. I mean to say, the ~~XXXXXX~~ negro has not as much vitality and vigor in my opinion as the white man has, because, see what the white man has endured all these centuries, and he is still alive. He is still alive. The negro is adopting the habits of civilization, and he is getting cancer, getting tuberculosis, and getting tumors and other diseases more rapidly than the white man has been getting them. When they are put side by side, under just the same conditions, the black man eats as much beefsteak as the white man does, and lives under the same deteriorating conditions that the white man does, he is going down faster than the white man. So it is not quite true, as Mr. Washington said, that the white man is going down and the black man coming up; it is only so in appearance. It will be so only a very short time. If the colored man goes on adopting the habits of civilization and pursues the course the white man has pursued, he will go down more rapidly than the white man has. We will all go down together. It is time to turn over a new leaf.) This question of race degeneration is such an important question I do not miss a chance to



be making a hit at it. (Tuberculosis is a disease of a degenerative organism. A healthy man does not have tuberculosis; you can not give it to him. You might inject tubercular germs into a thoroughly healthy man, and he kills off the germs. He has defensive power to resist those germs, he can kill them, swallow them up. The cells of his body are capable of capturing these tubercular germs and eating them up. We have a means now of finding out whether a man is in that state or deteriorating and has got below that level. Dr. Wright, of England, made a long series of researches by which he found out a means by which he could take a drop of blood from a man, put it under a microscope, watch it, put some tubercular germs with it and watch what happened. He could see the battle between the tubercle germs and the white blood-cells, could see the battle and could see which came out ahead; and by that means he could find out whether a man was able to resist tubercle germs or not. Now, it is the blood that defends us against these infectious diseases; and if one drop of blood can make a successful battle with tubercular germs, two drops of blood can do it, and every other drop of blood in the body of the man too; and if the blood can do it, then the rest of the body can do it; so you see that is a very excellent means of testing a man's capacity for fighting tuberculosis. This test figures out and gives a result which is known as the opsonic index--the tuberculo-opsonic index. The opsonic index is put down as 100 if a man's white blood cells are able to destroy in a certain number of minutes a certain number of tubercle germs. That means that man's opsonic index against tuberculosis is 100. He is proof against tuberculosis. He is all right, and can fight tuberculosis successfully. But now suppose that man's tuberculo-opsonic index is 50 instead of 100. That means that tubercle germs have got into his body and they are going to master him. A man was examined by Dr. Wright who had tuberculosis. His tubercle index was found to be zero, and the reason was probably because he was a smoker. It has



been found that men who smoke are twice as likely to have tuberculosis as men who do not smoke. And Dr. Wright showed that smoking reduces the opsonic index more than almost any other thing, brings it down rapidly, and alcohol brings it down; tea and coffee bring it down--every single poison brings it down. I said to Dr. Wright in his laboratory, "Doctor Wright, is there any drug that will raise the tubercular index?" He said, "No. Every drug lower<sup>s</sup> it." Why? Because all drugs are poisons; that is the reason. So drugs of all sorts lower the tubercle index; and these drugs like nicotin, like alcohol, tea, coffee, drugs of that sort that people take continuously day after day,--they are extremely pernicious; they invariably bring down the opsonic index.) Now, if any of you want to know how you stand in relation to tuberculosis, it is an easy thing to find out. Just a drop of your blood is all that is necessary to tell the story. It can be examined in our laboratory here, and we can find just how you stand. Sometimes the opsonic index is high. That is a good sign--that is, provided you have not got tuberculosis. When a man has tuberculosis and his body is making a successful fight against it, the opsonic index rises higher and higher. For instance, a man has got tuberculosis, and we examine ~~ax~~ him and find his opsonic index 150; that means his body is making a successful fight and is going to get the best of the disease.) (Some time ago the question was raised about our diet here at the Sanitarium. Somebody said, "A low protein diet is good for auto-intoxication; there is no doubt about that; but how about tuberculosis? The low protein diet will certainly produce tuberculosis, because we find that a meat diet cures tuberculosis, and a raw meat diet, and a diet of blood is the best thing in the world to cure tuberculosis. So it must be that a low protein diet will produce it." That set me to making an inquiry. So I got after our young people about here that were living on a low protein diet, and we have several hundred of them here; I suppose we have about a thousand



connected with the institution here in this Sanitarium community; you might call it at least a thousand people that are living on a low protein diet, that don't eat meat, and going year after year, and year after year without using meat. And I had an investigation made. I took 100 people who had not eaten meat for months, some of them for years, some of them for a great many years, and including myself in the research, and I found the average was above 100. There was scarcely a single one of them that didn't have an opsonic index more than 100; and I found mine was 200 of which I felt very proud. I was the worst sinner of them all, so far as meat was concerned, yet I had the highest opsonic index<sup>sex</sup> of them all. I have not eaten a pound of meat in forty-five years, and my opsonic index was 200; so I am not the least bit afraid of tuberculosis, and I am not afraid that a low protein diet is going to induce tuberculosis in my case. I am not the least bit scared about that. (It is the sedentary life, it is reducing, lowering the whole vitality~~xxx~~ stamina--that is the thing that prepares the way for tuberculosis. Autointoxication is the very best possible preparation for tuberculosis.) There is not any doubt at all that it will induce it. (Now, about diet for tuberculosis, that is the question here, and we get back here once more. What is the best thing for a man to eat when he has tuberculosis of the lungs? The first thing of importance is for him to find out what he can digest most readily. It is the quantity of food he can get into his blood in an assimilable form, the largest quantity; that is the thing that will do the most good. Now, in general, we may say cereals. Cereals and fresh vegetables are the most important things for this man. Perhaps with that he can eat such things as lettuce, just ordinary lettuce. If he can not get lettuce, let him eat raw cabbage. He must eat something raw. A New York doctor some time ago had remarkable success in curing people of tuberculosis by making extracts of vegetables. He would take carrots, turnips, potatoes and other vegetables, grind them all up, squeeze out the juices and make his patients take a cupful of that every day.



There seemed to be a decidedly good effect from it. However, I am quite sure there is no better effect from those vegetable juices than from eating the vegetables themselves. I am confident there is no advantage in eating raw potatoes; they have a disagreeable flavor, and are not particularly digestible; but lettuce is a raw vegetable that is very digestible. It has been found for example, in recent studies of lettuce, that this young cellulose, cellulose which is made fresh, brand new,--such cellulose is quickly digestible; it is almost completely digestible in the alimentary canal. It is almost as readily digestible as starch; almost as completely digestible as starch in 95% and in some instances in 100% of it is digestible. The very tender, white heart of cabbage is equally digestible, and it is found to digest in some instances in proportion of 100%; all digested, no cellulose left. It is a very important thing to know this, and these vegetable juices contain certain elements that are needed for the building up of the body.) Many a child has died of ricketts and of malnutrition, and of scurvy because the mother was so afraid of germs she was feeding the baby on sterilized milk. Now, sterilized milk is certain to kill a baby if you feed it long enough. (No child, no human being can live on a sterilized diet, on a thoroughly cooked diet, a diet made up exclusively of cooked food--nobody can live on that sort of diet for more than ten days without being damaged by it, without beginning to show bad effects. I am satisfied that invalids are very often damaged very greatly by being fed on gruels and things of that sort that are cooked, for a long time. We must have some raw foodstuff, something which brings to us in the ~~raw~~ crude form in which the Creator made it for us, the sustenance which was designed for us. God knew what we needed. The Creator knew what man needed, and he put into our food not only the ~~few~~ few things we know--the starch, the protein and the fats and the salts, but a whole lot more of most subtle, delicate, refined substances that we do not know a thing about; they



they are there. Here is an experiment made some time ago with some dogs. A quantity of milk was taken. Some of it was dried. The rest of the milk was taken all to pieces. It was not only dried, but separated--the casein was put in one place, and the fat in another place, and the sugar in another place, and the salts in another place. Now, two sets of dogs were selected. One set of dogs were fed on the dried milk with water added to it, and the other set of dogs were fed on the milk which has been analyzed and was put together again. The casein and the fat and the sugar and the salts and the water were all put together in just the right proportions, just as they existed in milk before, and it looked like the milk fed to the other dogs. They fed it to these dogs in the second set, and they all starved to death, every one of them. The dogs that were fed on milk that had been simply dried and the water added to it, they lived and thrived and got along all right; but the dogs that were fed on the milk that had been taken apart, the casein, fats, salts, sugar and water, in just the right proportions put together again--those dogs all of them starved to death, died. Why? Why, because there is something more the chemist has not discovered in milk. There is something more besides the casein, fats, sugar, salts and the water; there are other things there that the chemist has not discovered. Now, what is true of milk is equally true of every other food-stuff. The foodstuff that comes to us from the hand of nature is constructed in a wonderful way, and we don't know much of anything about it. It is the product of the sunshine. The sunshine shines down upon the leaves and the chlorophyl of the leaves takes that sunshine in, and important elements of the earth--air, water, soil--takes these elements and weaves them into a fabric that we call food; and we do not know much of anything about what it is; we only know a few of the most important things.) (So you see it is very important to have something raw at every meal; so you see why we must eat lettuce, fresh fr



fruit, cereals of which rice is perhaps the very best one of all. Then the man suffering from tuberculosis of the lungs must have fresh vegetables--turnips, carrots, potatoes and all kinds of fresh vegetables; he must have plenty of fat, as much fat as he can digest.) (Some of those persons suffering from tuberculosis have an excess of gastric acid, and some have a deficiency of acid. Now, those who have a deficiency of acid find a great difficulty in taking fat; so when the doctor prescribes cod liver oil, they say, "Oh, don't tell me to take that." Cod liver oil is such a nauseous thing. It is a good thing for such people to know that good country cream is just as good as cod liver oil, every bit, tastes just as good, has all the nutritive values of cod liver oil. The only difference between cod liver oil and good country cream is the presence in the cod liver oil of the products of putrefaction. An analysis of cod liver oil was made by the most expert London chemists some years ago, chemists that were employed by the men who deal in cod liver oil, manufacturers of cod liver oil; and they published a report over ~~xxxxx~~ their own signatures, men who were engaged in manufacturing and selling cod liver oil; they had their chemists examine their oil, and they found the peculiar characteristic property of cod liver oil was the presence of certain putrefaction products. The cod are taken off from the boats in great masses, and it takes such a long time to get through with them, the great heaps of dead cod livers lie there under exposure, and they begin to decay. It only takes an hour or two or three--only three hours, and it takes a long time before the process of extracting the oil is really far enough advanced to prevent decay; so they contain these products of decay, certain putrefaction poisons; and that is all that cod liver oil is. We do not need cod liver oil; all we need is fat.) The patient needs as much fat as he can digest; he needs an abundance of food, simple food, wholesome food. But he doesn't need a bit of beefsteak. He doesn't need a particle. We know



that. It is not purely theoretical. We have had an opportunity to try it out. Some years ago I was instrumental in starting, with my colleagues, an institution for the treating of tuberculosis in Colorado. We didn't expect to treat any other sort of cases there. We started that for the purpose of treating just that class of patients. One of my colleagues, Dr. Riley, who is here now, went out to take charge of it, and treated a very large number of cases of tuberculosis there. I am going to tell you a story on Dr. Riley now. At that time, when he went out there, he believed in beefsteak. I had not been able to convert him yet to the low protein idea. He was brought up the old way, and while he didn't battle against the idea, and was not a bit enthusiastic about it; but he went out there to take the responsibility entirely on his own shoulders; so he had to study into the thing very closely, and it was not very long before he made up his mind that beefsteak was entirely superfluous, and it was better to get along without it, especially in consumption, for he very soon noticed that when one of his tubercular patients got hold of beefsteak, or ate a quantity of meat, his temperature went up right away, and he was worse, and was not so well. And he found people got along a great deal better without meats of any sort at all. And the success in the treatment of tuberculosis was very very great; it was greater than I believe has been attained in any other institution that I know anything about, in the treatment of tuberculosis. I remember very well a young man I sent out there, and I sent him out there never expecting to see him again. His case was so far advanced, I thought it was absolutely hopeless. I examined him and sent him out there so he could get the benefit of the fresh air and the sunshine more easily than he could here, and I saw him out there some six months later, and found him just as I last saw him, and said to myself, "This is the last time I shall ever see this young man." He was very thin; his temperature was 103°, and he was just barely able to drag himself



self out of doors and lie on the grass in the sun out upon a little hill behind the institution; but in another six months, I went out there and that young man challenged me to take a race with him up the mountain side; and the next time I was out there, he had built a road awayx up to the mountain top, two or three miles, clear up to the top of a high peak in that vicinity, and was inducing other people to take trips up there several times a day. When he came away at the end of a couple of years, he had become an athlete, a strong, vigorous healthy man, and he is now in Berlin; he is a physician. He afterwards finished his medical course--he was studying medicine when he broke down,--<sup>he</sup> finished his medical course, and he is a practicing physician in the City of Berlin, Germany, at the present time. I hear from him quite frequently. He is the picture of health. xfixx When he was here a few months before he went away, he used regularly every day to take a twenty-five mile run, and said he didn't feel first rate unless he ran fifteen miles every day; and I saw him one day making a run on a quarter-mile track we have out here, and I inquired what he was doing, and he said, "I am running twenty-five miles." He ran the twenty-five miles, and he was only just a little below record time. He was a few minutes below record time in running that twenty-five miles. He came pretty nearly up to the world's record time. Now, just think of that man, who had been a tubercular patient with half his lung gone, but he brought himself up on a non-flesh diet to that point where he could run twenty-five miles without stopping; and he without the least bit of injury in consequence of it, and the next day was able to go right along about his business as usual. So the idea that meat is necessary in tuberculosis is a monstrous delusion, my friends. Meat is one of the worst things a person could eat when he is suffering from tuberculosis. I haven't a particle of doubt of it, and I certainly should never want to take any changes, if I had tuberculosis, in eating beefsteak. One doesn't know but



what he is eating the flesh of an animal that died of tuberculosis, or was just about ready to die. You don't know. How in the world is a man going to be cured of tuberculosis when eating the flesh of an animal that was sick with tuberculosis when it died? Think of it.

Q. Do you think the method of stuffing a patient, such as is commonly employed in the treatment of this disease is necessary?

A. No, it is not only unnecessary, but it is pernicious. Most institutions where tuberculosis is treated at the present time have found it out. Probably there is not more than one in ten at the present time where the stuffing process is believed to be beneficial or is practiced. I had a letter not very long ago from Dr. Sternburg, formerly Surgeon-General of the United States army, for many years, and a very efficient man, a man who made great discoveries in bacteriology, and has a world-wide fame as the result of his discoveries in bacteriology. He now has charge of an institution for the treatment of tuberculosis. He has retired from the government service, and he wanted to make use of the practical knowledge he gained, so he is the superintendent of a large institution for the treatment of tuberculosis near Washington; and I had a letter from him some little time ago. I sent him a paper which I wrote and in which I told some of the things I have been telling you here--that the use of flesh food is not necessary in the treatment of tuberculosis. I sent Dr. Sternburg a copy of my paper which was read at the International Congress on tuberculosis in Washington two or three years ago, published in the Medical Record of New York. I got a letter back from him in a week and he said, "I have read your paper with a great deal of interest, and I want to say to you I am convinced that you are entirely right in this matter. I am using less and less meat for my patients all the while, and the stuffing process I have discontinued altogether." Now, I got a letter  
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similar to that from a good many men in charge of institutions for the treatment of tuberculosis to whom I sent copies of my paper. So I am satisfied that idea is no longer prevalent. I am speaking of these personal matters here because I want you to be thoroughly convinced ~~afixt~~ that that idea is not universally received by physicians. There may be a few who are--some doctor who has not made a careful study of this subject, and was stuffing his patients feels it is necessary because that idea was once prevalent; but it is being abandoned rapidly, and at the present time I may say it is almost entirely abandoned. The thing was tried out in Germany a couple of years ago; an institution was established there for treating cases of tuberculosis by a raw meat diet. The patient was given raw meat and nothing else; and the result was that inside of three months the institution starved to death. Beefsteak could not keep it alive; and the institution starved to death, and it was soon closed, and the effort was pronounced a failure and was advertized as such by the medical journals throughout Europe.

Q. What is the cause of gas on the stomach after eating, and how to get relief?

A. Now, I suppose I may say the same thing here, that here is another error, a great popular error--the belief that the gas is formed in the stomach after eating, and is formed from fermentation, because the starch is not digested, it is due to fermentation of starch, or the indigestion of starch; but this is entirely an error. The formation of gas after eating in the stomach is not due to the fermentation of starch; there is no fermentation of starch there. The examination of the stomach fluid in these cases again and again and again has proven conclusively that there is no fermentation there; there are no germs of any sort there. The persons who suffers most from gas in the stomach are persons who have a large amount of hydrochloric acid, who have so much hy-



drochloric acid that no germs could live in the stomach. Yeast germs of all sorts would be destroyed at once if they were in the stomach; the stomach is sterile; there are no germs of any sort in the stomach fluid at the time, and there can not be any fermentation. What is the cause of the gas, then? It is purely mechanical. The reason why gas is troublesome is because the pylorus closes up so tight that the foodstuffs can not pass out readily, so when the stomach contracts, ~~for the purpose~~ for the purpose of forcing the digested foodstuff down into the intestine, the gas which is always present in small quantity,-- the gas in passing down--instead of passing down as it should do, passes up instead. It is simply a mechanical matter, and the thing that is necessary is that the pylorus should be relaxed, so the gas can pass on down; then the difficulty disappears at once. A half glass of real hot water, with a little drop of peppermint, perhaps, is a very excellent means of relieving this difficulty, because it causes the pylorus to relax in some way. ) Now, here is a very interesting thing in reference to the action of the pylorus. Perhaps you are not all acquainted with it. A very interesting fact has been discovered by Pawlow and other investigators. The stomach has a different shape from what we used to think it had. That is about the shape of the stomach. I was operating upon a stomach just the other day and I took pains to observe it, and I found it practically in just that shape. Here is the part of the stomach into which the food is received, and the food passes into the fundus, of the stomach here, and forms a large mass which kept here, and the digestive process goes on at the surface chiefly. Inside, the food that is last taken in, goes right down inside, so the last food eaten is in the inside of the mass, and that that was first eaten is on the outside. On the inside the saliva continues to do its work. If you have mixed enough saliva with the food, the digestion goes on on the inside, and on the outside the gastric juice acts upon



the food and dissolves the starch, digests it; then there is left the protein, and the protein is acted upon by the gastric juice on the outside. As food becomes liquid, it passes down into the lower part of the stomach; then this part of the stomach contracts. Here is a sort of valve, the pylorus, this end that closes the lower opening of the stomach, and the wave starts up here and travels along down, and it shuts up like that, then contracts just like a bulb of an atomizer and forces the contents out. As the acid contents of the stomach comes down and touches the muscle here of the pylorus, the pylorus opens; and when the acid gets down below the pylorus here and strikes the duodenum, at this point, the effect of this contact of the acid contents of the stomach with the mucous membrane of the intestine at this point, is to cause the pylorus to shut up again, so the arrangement here is similar to what you sometimes see in a farmer's gate, where the wheel runs over a little arrangement which opens the gate, and you pass on through, and the wheel runs over another lever and it shuts the gate. It is exactly the same situation here. The acid contents of the stomach cause the pylorus to open; then when it passes out, it causes the pylorus to shut again, so the food is doled out, you see, dose by dose, doled out in small quantities; and as it remains here in the intestine, the pancreatic juice is poured down, and the bile, and gradually they neutralize the acid contents of the stomach. The bile and the pancreatic juice mixed with the acid of the gastric juice gradually neutralize it, and then the pylorus opens again, and then some more of the acid contents gets down, and causes it to shut up. Now, when the gastric juice is present in large quantity and is too strongly acid, then when it strikes down here, it shuts the pylorus up so tight it doesn't open again right away, and it may be a long time when the bile and the pancreatic juice are not passing out in sufficient quantity, it may take a long time before the pylorus can open; it is a spasm so strong it shuts up so tight the



pylorus does not open again right away,; the arrangement does not work very well, and the pylorus is closed up tight. Now, the stomach, ~~xxxxx~~ has the gastric juice in increasing intensity; the gastric juice present in the stomach is increasing in its acidity, so the stomach is contracting more and more and more vigorously under the stimulus of this highly acid gastric contents, and the waves come down to force the food through the pylorus, but the pylorus will not relax, and the result is that as the stomach contracts, the contents must go somewhere, and the gas can not pass down through the pylorus--there is always a little bubble of gas at the top of the stomach, and as the stomach contracts this little gas slips up through the mouth; and that is the cause of the eructations of gas. It is not due to fermentation; it is not due to the indigestion of starch; it is due entirely to the excessive acidity of the gastric juice, and the lack of the proper action of the pylorus. But now you say you don't have too much acid, but you have too little acid in your stomach, and you have gas just the same. Well, now it may be that you have fermentation. It is possible that you have fermentation, but your case is a very exceptional case. There are a very, very few cases, not more than one or two cases in one hundred in my experience, in which the gas is the result of fermentation.

Q. In diabetes, do you recommend an outdoor, farm life in preference to indoor work?

A. Certainly I do. I recommend it for diabetics, I ~~xxxxxx~~ recommend it for dyspepsia, I recommend it for auto-intoxication, I recommend it in tuberculosis, I recommend it for every disease that the human being can suffer from. If there is one panacea in the world, it is the outdoor life. The same thing that will cure tuberculosis, the outdoor life, you know is the great cure for that; everybody knows that now; the same thing that will cure that will cure every other chronic disease, because ~~xxxxxxx~~ every chronic disease is simply



a vital deterioration. A man has acute disease because he catches it from somebody. A man has small-pox because he runs across another man who had it, and he caught it from him. That is acute disease, and these acute diseases are invaders, they creep into our homes. The old cat goes off, visits the neighbor's cat, and the neighbor's cat has been playing with a little baby that had diphtheria, got infected with diphtheria, so when the housecat comes home, she brings diphtheria germs home with her, and the children get diphtheria. It came in from the outside, you see. It may be the dust of the street brings in an infection that came from some other home, but chronic diseases are a home product, manufactured right at home. The cook is largely responsible for it; the caterer, the housewife, the persons who visit the market and pick out the indigestible dainties. The management of the home, our own personal habits, are responsible for the chronic diseases that we suffer from; so the only cure comes in reformation. The outdoor life is good for every chronic disease I know of.

Q. What diet do you recommend when sugar is below fifteen grams, and the quantity of urine is 1200?

A. Such a person should eat a moderate amount of carbohydrates, and a considerable amount of fats and vegetable protein. Animal protein must be carefully discarded. There is a decided difference between animal protein and vegetable protein. Animal protein very readily undergoes putrefaction, whereas vegetable protein does not. Now, animal protein is represented in lean meat, and in the white of egg. Eggs and beefsteak represent animal protein, whereas the gluten of wheat, bread, represents the vegetable protein. Now, this vegetable protein is not readily fermentable; it is not readily decomposable; and when it does decompose, it does not produce the same sort of poisons that are produced by the decomposition of animal protein. For example,



animal protein contains two per cent of sulphur, whereas vegetable protein contains only one per cent of sulphur. Now, that is quite a difference. Animal protein contains a larger amount of nitrogen--vegetable protein contains more nitrogen; animal protein contains about fifteen per cent of nitrogen, while vegetable protein contains 16% of nitrogen; so there is more nitrogen, more nourishment in the vegetable protein than in animal protein, and there is less sulphur. Now, indican, skatol, indol--these horrid smelling things which give to the fecal discharges their terrible loathsome odor,--they owe their peculiar odor to the presence of sulphur compounds. If the sulphur were not present, we could not get those horrible odors. They are not only horrible in smell, but in effects. They are poisonous. Now, these poisons are largely the result of the sulphur in the protein, and the vegetable protein contains very much less of this element; and that is the reason why vegetable protein is less harmful, can be eaten in larger amount with less injury, in excess, than animal proteins. There is another reason, and that is that animal protein contains a great number of germs, germs present in enormous quantities in animal protein, and in very small amount indeed, in vegetable proteins, or not at all. Vegetable protein is absolutely sterile; and there are no germs at all there, practically none; but in animal protein there is always a great quantity of putrefaction germs present, because of the putrefactive process that is going on.

Q. Is colitis a disease of the colon alone, or of the bowels?

A. It does not affect the colon alone; it is likely to be in the colon, but it works its way all along up through the intestine. It gets clear up into the gall-ducts, and into the gall-bladder. It affects the liver. A man who has what is known as infectious jaundice every little while has a chill and fever, ~~xxxxxxx~~ thinks he has malaria, then he has a yellow skin; that man is suffering from infection of the liver. It is the same disease he has in his colon



colon and has worked all the way along up the intestinal tract, and finally has gotten into the liver. This disease is due to the presence of a large number of putrefaction germs. The common germs of putrefaction are responsible for colitis. If you should take a piece of beefsteak and put it on your skin and keep it there a week, you would have colitis of the skin, so to speak; you would have the same kind of disease of the skin that you have got in the mucous membrane of the intestine when suffering from colitis. If you should take the beefsteak off for a short time, you would find a scab ~~xxxxix~~ formed on the skin, thrown out there to protect the skin. The ~~xxxxmex~~ mucus thrown off in colitis is simply a form of defense. It is a soft scab, a coating formed over the raw surface to protect it from the absorption of poisons and to fight off germs.

Q. What causes neuritis?

A. The toxins in the blood which are generally formed in the intestine.

Q. Explain the gastroenterostomy operation.

A. The gastroenterostomy operation is simply this. A loop of intestine is brought up and attached to the stomach in a new place. The operation is never justifiable unless the pylorus is closed up or nearly so--unless there is obstruction. In my opinion, that is about the only case in which this operation is justifiable. Sometimes when there is cancer occurring, even if there is not an obstruction, it is necessary to cut out a portion of the stomach and make an anastomosis with the portion of the stomach which remains. The stomach is cut off at this point, and this point is left, because here is the duct where the bile and the pancreatic juice come in, and they can not be cut off; but it can be cut clear down to where the pancreas are joined right onto this point here, and can not go any further; so it is cut off as far as possible. Then the loop of intestine is joined to the stomach. A person in



this condition gets on very comfortably indeed, ~~xxxxxxx~~ gets along apparently without any inconvenience. A patient for whom I did the operation some time ago, I met on the porch a few weeks later, and I said, "Mr. Jones, how are you getting along?" "Fine, Doctor, fine; I have gained seventeen pounds with my stomach in a bottle." Just think of it. We had his stomach in a bottle, and he was still getting on first rate. He was a skeleton when he arrived here. His weight, I think, was only ~~xxxxx~~ 87 pounds, and his weight now is 170 or 180 pounds.

Q. Do you recognize the lesions described and defined by Osteopaths? If so, to what extent?

A. Well, I will say if I found a man with a dislocated neck, it would be a proper thing to set his neck, to put it straight. But if I found a man that had a pain in the back of his neck, I would not tell him his neck was dislocated, because he had a pain there. I should take an X ray and see. The X ray is showing up Osteopathy in pretty bad light. The osteopath examines a man who has a pain, and he says, "Oh, you have got a dislocated neck; your head is twisted, don't you see?" So he pushes it around ~~again~~ so you may look into a glass, and of course, it is twisted; the neck is intended to be twisted. That is why it is made flexible, so it can be twisted in all sorts of ways without incurring risk of losing your life by a little twist. Then he twists it about, grinds it around, and by and by makes a little snap in there, and he has the knack of twisting it in such a way as to make one bone ride over another bone and snap. "Now, I have put it back in place, don't you see"; he says, "You felt it slip back into place. Five dollars, if you please." The X ray, as I said, is showing up the osteopath in a bad light, because this man comes here that has been treated by osteopathy, to have his dislocated neck put back into place, and we put him under the X ray and find his neck



is all right; there isn't anything wrong there. The great mistake of Osteopathy is trying to cluster all diseases and apply to them a pathology which recognizes only one, and they have everything clustering around one thing--a dislocated bone. A dislocated bone is a very great mistake. The rubbing of osteopathy is good. Everybody likes to have his back rubbed. That is the great success of osteopathy--is the fun there is in having your back rubbed. The osteopath never fails to rub your back, and you feel a whole lot better for having your back rubbed good and hard; that is a good thing. But Old Aristotle ~~xxxxix~~ away back five thousand years ago, wrote in one of his philosophy books about massage, and he said, "If you want to see what massage will do, just rub a dog's back, then pick him up by the tail, turn him loose, and see how he enjoys himself." So you see it is not a new thing. The old cat likes to have her back rubbed. I think cats and dogs would be an excellent field for osteopathy.

Q. When there is no HCl. and there is catarrh of the bowels, what is the case and can the difficulty be remedied?

A. If the hydrochloric acid is entirely lost, it is not always possible to get it back. Sometimes, after while, it can be restored to a very considerable degree. I have seen this happen more than once, but it is not always so. It depends upon whether the glands of the stomach are entirely degenerated. But a man can get along without the stomach. I have sometimes had to cut the stomach almost entirely off, yet the patient got along first rate. We have a patient in the house now upon whom I performed this operation five years ago. In this case, by use of the ~~ax~~ X ray, we find that the stomach receives food and passes it on into the intestine in less than two minutes. In less than two minutes after the food is passed into the mouth, it is sailing away off down into the small intestine, and everything is going well. The stomach is a sort of ante-chamber in which food is disinfected, and the pro-



cess of digestion ~~has~~ begun; but the real work of digestion is carried on in the small intestine. That is the great, important digestive organ. The entire stomach has been removed in human beings, and frequently in animals, for experimentation, and it has been found the patient gets on comfortably well without the stomach at all. So the important thing is to see that the stomach does not make trouble by getting in the way. When the stomach gets to be an inert pouch, in which the food banks up, ferments, sours, decomposes, then things are in a sad way.

Q. What is the effect upon the nerves of living for 25 years in a high altitude?

A. Now, living high out in Colorado is not half as bad for the nerves as living high in Chicago. I am quite certain that the Chicago style of high living is a great deal worse than the Colorado style. After all, it is not the climate at all, it is the mode of life. I am satisfied a person can live in Colorado especially if he ~~gets~~ cuts out beefsteaks, as well as he can live anywhere. A few hundred feet or a thousand feet, or a few thousand feet does not make any particular difference, so far as the nerves are concerned. It is the style of life.

Q. Do you advise colax for inactive bowels when there is low motility of the stomach?

A. Well, there is generally low motility of the stomach if there is low motility of the colon. This low motility is a thing that exists all along the line of the alimentary canal. But the stomach is able to deal with colax in cases of low motility when other things are not well dealt with, because colax does not ferment. The stomach deals with it mechanically entirely. It does not produce gastric juice, does not irritate the stomach; it is perfectly bland, so a stomach that would retain food for a long time will cause the



spasm of the pylorus, perhaps, will pass the colax on, or the agar-agar of which it is composed, along without any difficulty.

Q. What is the cause of palpitation of the heart?

A. This is generally a reflex trouble, irritation of the stomach very often gas in the stomach, perhaps.

Q. Are not buckwheat cakes or pancakes easily digested if baked without grease?

A. Well, if they are baked. But generally they are only baked upon the surface, and they are raw inside. And it is pretty difficult to get griddle cakes without any grease. I think the grease is really a part of the recipe, and a part of the thing that is almost indispensable. It is not a very wholesome sort of food. It is pasty inside, and is not properly cooked. The only way you can get a griddle cake in a wholesome way is to cook it as the tortillas down in Mexico. They are put upon a hot tin without any grease of any sort, and baked, and afterwards dried out thoroughly until they are perfectly crisp. They call them down there tortillas toastados,--tortillas that have been toasted. If you make zwieback out of the pancakes, there might be no particular objection to them.

Q. What is autointoxication?

A. It is simply putrefaction in the intestine, and absorption of these putrefaction products.

Q. How many calories of protein in one portion of Horlick's malted milk?

A. There would be just 100, because a portion is 100 calories, you see. That is what a portion is. A portion is 100 calories.

Q. Is colitis and ulcer of the bowels the same thing?

A. No, but ulceration is a common result from chronic colitis.



Q. In a case of hyperacidity, what causes a certain amount of acid liquid in the stomach?

A. Now, that is what is called gastro-sucorrhoea,--a condition in which there is a continuous secretion of gastric juice. The gastric juice is commonly secreted only after taking food into the stomach. Food is the normal stimulus in the stomach to cause it to form gastric juice, and in the intervals between meals there is no gastric juice in the stomach, and no acid there; but in certain cases there is a continuous secretion of gastric juice, and these cases are in my observation cases in which there is chronic auto-intoxication, and the products of putrefaction are absorbed from the intestine and excreted into the stomach, and act upon the stomach just as foodstuffs do; so that the stomach is under continual stimulation. The remedy is to get the bowels to acting properly and this can usually be done. Such patients should eat no salt, and should eat no meat because it excites the stomach, and should take pains to have the bowels move two or three times a day, and the difficulty will soon disappear. At times it is necessary to wash the stomach out, for a time; for sometimes there is a lack of motility.

Q. Is man descended from the monkey?

A. Now, whether man is descended or ascended is a question which has not been absolutely settled. My opinion of the matter is that man has descended, not from a weaker man, or a feebler man, or a more ignorant man, or from an inferior man, but he is descended from a superior man. That is my opinion of the matter; that is my guess; of course, I don't know. The Bible record and the traditions of all nations, of all people--the traditions of all people look back to a time when man was superior to what he is now. Now that may be a myth; I do not know; That may have been so far as I can tell from a scientific standpoint; but if you believe the Bible, and if you believe the traditions of the race, and even of the most ignorant races that have some tradi-



tions,--of a time when man was stronger, better, larger, finer than he is now; and I am very strongly inclined to the opinion that that is the right one. Of course, I can't prove it from a scientific standpoint; neither ~~can~~ do the scientists prove the other thing. They have never proved the connecting link. Of course, there is the cave man and his inferior brain. Two or three others have been discovered in Europe that show that these men were very inferior; but there has been recently discovered in England a skeleton of a man found in gravel which, according to the geologists must have been deposited 170,000 years ago. That is what geologists say about it. And this man is found to be a modern man in every particular. He ~~is~~ has a modern skull, and his whole makeup is that of a modern man. He is in no way inferior to modern man; so that indicates that as good a man as lives at the present time on this earth lived 170,000 years ago. So if we are going back to a time when the decadence began, we must go back beyond that, according to the geologists. I don't think we can draw conclusions from a few specimens of inferior men, of mental imbeciles or idiots like the wild men of Australia whose remains were found in some cave where they were living with the wild beasts--I don't think that is any indication at all of what the race once was.

Q. How is the best way to build up and maintain one vitally and increase virility?

A. The thing is to build up the man in a natural way, to restore his natural forces by natural living. You see, my friends, this building up of health is not an artificial thing at all. The power that builds is within. And the same power that made us heals us. The power that created man in the first place is still present with him and creating him, and the reason why we are so miserable as we are is because we have been getting in the way, because we have been hindering, we have been fighting, contending against this beneficent power that is seeking to restore us, seeking to heal us continually, and the



thing to do is to cease to do evil, as the old proverb said, to cease to do evil and learn to do well; obey and live. ~~Saxtka~~ That was the dictum of the old Prophet,--obe and live. That is really the whole thing. I am going to tell you honestly I don't attach very much importance to the things we are doing for you here in the bathroom, or the massage, or electricity, and all those other things,--I don't attach very much importance to these things. The important thing is what we do to you up in the dining room. That is the most important thing in this institution--is the dining room, learning to eat right; and if you can take home with you reformed appetites and correct habits of eating, that thing will do for you more in time than all the things we can do for you here in the institution while you are here--a great deal more; it will steadily promote you from week to week and month to month. Now, it is true some people have special ailments for whom there are special treatments that are good. Here is a man that has a skin disease. Now, the real cause of that skin disease is autointoxication. But the X ray will help to cure it up very much faster than it would be cured if it depended wholly upon the recuperation of his vital resources. It is exactly like somebody going along and paying off some of his debts for him. He can get on his feet quicker financially if somebody will pay off some of his notes that are coming due. And that skin eruption is a mortgage being foreclosed on him. So the treatment is helpful, but the real thing is returning to Nature, to natural habits of life; stopping the beefsteak, tea, coffee, and all those poison things you have been accustomed to.

Q. Can tuberculosis live in any sort of tissue?

A. Yes, for some time, but not very long.

Q. Would you recommend fish as a prescription for diet?

A. It is the proper diet for a whale. It is the only thing the whale can get, and he has to live upon it. For a man, it is another proposition.



You know, a whale has seven stomachs to digest fish ~~with~~, with and you have only one. It takes seven stomachs to digest fish and do it well. And you undertake to digest fish with ~~only~~ your one, single puny stomach that was never intended for that at all, but for fruits and nuts, like the monkey's stomach, and soft grains. The fish won't digest well. The undigested parts that lie around there rot, and you get auto~~int~~oxication and infection of various sorts.) To digest fish in good shape needs seven stomachs. Yet we see a man sit down at a hotel and undertake to digest the bill of fare of all creation,--think of it. There are fish that require seven whale stomachs. Then there are grasses of various sorts that require a cow's stomach or a goat's stomach. Four stomachs there. That is seven and four are eleven. Beefsteak requires a dog's stomach and that makes twelve. Then there are the nuts, and the fruits that require a monkey's stomach to digest them; and that is thirteen. And a man sits down there with one puny little stomach and expects to be able to digest the bill of fare of all creation. He doesn't do it. He breaks down. There is only one animal in the world that has got stomachs enough to do such a job, and that is the woodchuck. The woodchuck has fourteen stomachs, and can digest a wholesale bill of fare.

Q. What physical or chemical action takes place when a diseased skin is exposed to the X ray?

A. The X ray stimulates the circulation in the skin at first, after while contracts, obliterates superfluous blood vessels, destroys hypersensitive nerves.

Q. How can sick headache be cured in the quickest time?

A. The time to cure sick headache is before you get it. That is the only time you can absolutely cure it. But if you have got a sick headache coming on, if you can get it in time, you can unquestionably mitigate it to a



great degree. The thing to do is to wash the stomach out, wash the colon out with a quantity of water; flood the body with water, because it is a poison disease; it is a toxemia, and it is an ~~intoxication~~ intoxication like getting a drink of whiskey or something else; you have got a drink of food poisons; wash the poisons out. Get out of the stomach what is there, and get out of the colon what is there. If you wash the stomach out with very hot water, the effect is better than if you use ordinary water only. A little salt should be added to the water, about one percent of salt and water at 110°. This is very often surprisingly effective.

Q. Should one retire after eating?

A. If he has painful digestion, he should lie down right away, if he has pain and heaviness in the stomach. If he is going to bed to go to sleep, he ought to have four hours.

Q. What is the cause of premature gray hair?

A. It is an evidence of physical deterioration. It is particularly an evidence of insufficiency of the thyroid gland. The thyroid gland takes care of the skin. That is one of the things it does. ~~xxxxx~~ Its secretion is a stimulus to the skin, and when you find the skin dry and the hair falling out and getting gray, that means the thyroid gland is degenerated, because of auto-intoxication, chronic auto-intoxication. That is what it means. And if you find your hair getting gray, find your hair falling out, find your skin getting dry, and skin eruptions, that means the thyroid gland has been overtaxed, so that it has ceased to do its duty as well as it might. "Well," you say, "can't we take sheep's thyroid?" Yes, that is one of the remedies for falling hair. I have known cases of baldness being cured by taking sheep's thyroid, five grains a day for three or four or five days, then resting a week, and then beginning again. I have known cases that got an entirely new



head of hair whose scalps were nearly bald, by the use of the thyroids of sheep.

Q. What is Addison's disease?

A. It is a disease of the suprarenal capsules. The little capsule at the top of the kidneys is a very important organ. The thyroid gland and the suprarenal capsules, and the liver are the great poison-destroying organs of the body. When the liver is overtaxed, great work is thrown upon the suprarenal capsules and the thyroid. The thyroid degenerates, and the suprarenal capsules degenerate. Persons suffering from Addison's disease always have dry and dingy skin, the result of the saturation of the skin with poisons. It is the duty of the adrenal glands to destroy these poisons. It is a disease not always curable because sometimes the adrenal glands are subject to tuberculosis, and sometimes there are other forms of degeneration which are incurable.

Q. What particular kind of dates, if any, is it that do not contain any cane sugar?

A. All dates contain cane sugar excepting dates which nobody wants. Certain wild dates that are incomplete and imperfect dates are not eatable. The date of commerce is a peculiar date in which the ferment~~xxxx~~ which is properly present in the perfect date and converts the cane sugar into fruit sugar when present is not present, and so the sugar passes on in the form of cane sugar and is deposited in the fruit. A great number of tropical fruits are very little sweet, because the cane sugar is not present. The dates of commerce all contain cane sugar. But it is cane sugar manufactured by the tree. It is not added to the date in curing.

Q. What is leukemia, and can it be cured?

A. It can sometimes be cured. The X ray is one of the things which helps about it, but it is chiefly a product of intestinal autointoxication, and the



the curing of the intestinal autointoxication is the most important thing to be done.

Q. What is the cause of neurasthenia?

A. Autointoxication.

Q. What is blood pressure?

A. It is pressure produced by the heart when it forces blood into the arteries. The heart contracts and drives blood into the arteries, and the blood inside of the arteries is under pressure. If you cut an artery, there is a spurt because of the pressure. It requires about as much pressure as it would to raise a column of mercury four inches. To support a column of mercury four inches high requires the pressure that is ordinarily exerted in the arteries-- or about twelve times as high a column of water. That is the pressure that is necessary to circulate the blood. Now, when the arteries begin to wither, so that the passages are closed up, like water pipes getting obstructed with sediment, the heart has to work harder, and the pressure has to be raised to get the proper amount of blood through the different organs. That is why the blood pressure is high.

Q. Do you eat meat when nobody is looking?

A. If I do, nobody knows it. I don't know it myself. I have not eaten one pound of meat in 45 years. I thank you for your attention.

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March 27, 1911.

Coated tongue I-7.

Keep back side of face clean-Bad taste in mouth) Sample of yourself-

Best peaches on top-Brown stone front-Scouring the tongue 2.

Any old cook will do 3.

Digging our graves with our teeth 4.

Special seed for different birds 4.

Any food will do for children 4,5.

Home diet 5.

Chronic diseases like a house afire (Illus) 5,6.

✓ *Your house is afire*  
Some houses slow to burn 6.

Right living 5,6.

Chronic invalid like drowning person 6,7.

High blood pressure-Smoking I2.

Arterial diseases, deaths from <sup>1900</sup> 1908-1909. I3.

Life Insurance Companies cultivate death I3, I4.

Health Insurance Company I4.

High blood pressure (John Hunter) I4, I5.

Cancer and flesh-eating-Wolves, Dogs I6, I7.

✓ Habitual smokers and drunkards "uncommon tough" I7, I8.

Autointoxication-Mental obscureness I8, I9.

Flesh, reducing 19, 20, 21, 24.

" " by exercises in room 24, 25.

All cases of autointoxication "Extraordinary". 21, 22.

" diet in 22, 23, 24.

" exercise in 24, 25.

William Cullen Bryant-Dipping forty dips 25.

Acidity of the stomach, diet in 26, 27. Autointoxication-Eggs 29.

Ridges on finger-nails 27, 28.



L E C T U R E 26.

acidity (diet) 26.

autointoxication 22.

blood pressure 9.

coffee and alcohol 12.

cancer 16.



Blood pressure  
Blood pressure, tea,  
coffee & alcohol 12  
Causette

Acidity (acid) 26

Lecture

QUESTION BOX LECTURE

At the Sanitarium Parlor, Battle Creek, Mich., Monday, March 27, 1911, at 8 P.M.,

By,

J. H. Kellogg, M. D.

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Question. What is the best thing to do for a coated tongue?

Answer. The only essential thing to do for a coated tongue is to keep the back side of your face clean. It is a great deal most important to attend to the back side of your face than the front side of it. When your tongue is dirty, it is not simply the tongue that is dirty, but there is a layer of dirt spread out over a wide surface. If it was only confined to the tongue, it would be a very small matter, not more than three or four square inches, but there are seven square feet of small intestine. I dare say you didn't know it was so big. Of the large and small intestine together, there are seven square feet of mucous membrane, and when you have a dirty tongue, you have got seven square feet of dirt. Now, you know how bad that coated tongue tastes, don't you? Now, multiply that ~~by~~ tongue until it is seven square feet of it. Suppose, now, there is twelve square inches of tongue which is coated, and has a very bad taste. Now, that is one twelfth of a square foot, and there are seven square feet of mucous membrane; so there will be eighty-four times as much dirty surface as this coated tongue, you can see--almost 100 times as bad as it looks, you see; and this bad taste you have in your mouth is not simply the taste of your tongue, it is not a sample of your tongue you are tasting, it is a sample of yourself; it is your blood that has that bad taste; it is the blood and every part of the body that has impurities, these poisons, that metallic taste, that bad taste are pouring out from every pore of the skin, pouring out



with every breath. The body is saturated with poisons. That is why such ~~havoc~~ havoc is wrought by this chronic intestinal auto-intoxication. I can ~~not~~ look about here and see all the symptoms of that disease. For instance, there is a lady over there that has got little bags down under her eyes. That means auto-intoxication. There is a man that has got it too. And there are more than 25 I see around here have brown circles around their eyes. That is another sign put out, of auto-intoxication. It means that things are not clean inside.

A boy on the street in Detroit some time ago was selling peaches, and he had very nice, large, plump, rosy cheeked peaches on top of the basket, but underneath they weren't so good. A man inspected his peaches with reference to buying, and he said, "How is it, Tommy, that you have all the nice, fine peaches on the top, and nothing but little knurly ones in the bottom?" "Oh," he said, "it is for the same reason that the front side of your house is made of brown stone, while the back side is chiefly sloop barrel." It is a matter of esthetics, you see, entirely. Now, we are very particular about the front side. (It is more important to take care of the back side of the face, as I was saying before, than to take care of the front side,--a great deal more important. Yet, how many people there are who neglect their teeth, and who neglect their tongues. If you have got a dirty tongue, it needs scouring every morning, because that dirt will be swept right down into the stomach. All those filthy germs will be carried down with every sip of water you swallow, and every morsel of food you take. ~~If you~~ Did you know that the surface of your tongue was a great deal cleaner after breakfast than before? You have scoured off all those filthy germs, and they have gone down into your stomach with your breakfast; and they do not stop in the stomach; they go right on down into the small intestine, get down to the colon which is the hold of every unclean and hateful germ.) Now, there are some other symptoms of that too. Just look at the back of your hand, and see if you do not see there some brown spots. You thought those



were freckles; they are not freckles at all; they are liver spots, and a liver spot is simply a deposit of poisonous matter in the skin. The liver is not in any way to blame for it. It could not help it. It did all in the world it could to help it. It is the duty of the liver to destroy those poisons, burn them up, but there are more than it is possible for the liver to deal with, so they get by. Suppose there was a pig trying to get through every opening of your fence, tearing off the boards and breaking into the garden; suppose there was a pig at every one. You could not attend to them all; some of them would get in. Now, that is the way it is when one is careless about diet, when one lives upon the ordinary bill of fare; suppose you pay no attention very much to what you are eating, but swallow everything you think would taste good, without any reference to its properties at all. When one eats the ordinary bill of fare, he is simply providing for mischief. That is why you are here--because you didn't pay any attention to diet. You ate the things that came along because they taste good. You have been eating things that the old, ignorant cook prepared for you without any reference whatever to their nutritive properties. Think of what a preposterous thing that is. If a man is making sewing machines, he would not take any old thing that came along to make sewing machines out of. He would get the very best kind of material. ~~xxxxxxx~~ He gets the very choicest of material, and the best kind of workmen; but when you go to building bodies, when you are building brains, bones, nerves, muscles, any old Irish cook will do; any old Scandinavian, or anybody else that has just come over to this country and can not find a job anywhere else,--you take her right into your kitchen, and she will furnish food and nutriment for your family, and decide what you are to have for breakfast, and what you are to have for dinner, perhaps, very largely; it is too much trouble to direct her; so you turn it over to this ignorant person and let her rule the entire household, in reference to a matter which is of far



greater importance than any other. It doesn't make much difference what kind of clothes you wear; it may be a suit that costs ten dollars, or may cost one hundred dollars; it doesn't make a bit of difference if it keeps you warm. It doesn't make much difference what kind of carpets you have on the floor, or none at all. To have bare floors, is a great deal better than to have carpets and rugs on the floor. You better sleep on a pallet of straw and with bare walls, in your home, and the plainest sort of food, than to live in the ordinary way. Why, my friends, an old Irish doctor said, "We are digging our graves with our teeth", and most people do dig their graves with their teeth. The food we eat is more largely responsible for the diseases we suffer than any other one thing. There can't be any doubt about that. We don't stop to inquire whether this food was intended to be eaten or not. If you are going to feed your canary bird, you ask very carefully about it--"Is this the kind of food a canary bird ought to have?" You go to the store, and you want some seed for your bird. You have to tell the merchant what kind of bird you have got. Suppose you should go and say, "I want some seed for a bird", what would you get? He would say, "What kind of bird is it? Is it a mocking bird, or is it a canary bird, or a cockatoo? What sort of bird is it?" And you would have to tell him whether you had a mocking bird or a canary bird, or a robin, or a parrot, or a crow. He would want to know. Because you would get different kinds of seeds for different kinds of birds. Now, then, suppose you say, "I want some food for the children." Now, he doesn't ask you what kind of children they are; he doesn't ask anything about it--whether these children are healthy, or whether they are unhealthy; he doesn't ask you anything about whether their teeth are all crumbling, decaying, falling out, as they are likely to be; he doesn't inquire at all as to whether they are growing as fast as they ought to grow or not. He doesn't say anything about it; but any old thing



you want you can get. And you take it home, and if you can only make it taste good, the children probably will eat it; because they have become perverted. My friends, it is strange we are so ignorant, and willing to be ignorant, with reference to matters that are of so infinite importance in reference to our welfare.) (The most of you here are sick because your nutrition has been wrong. Diseases of nutrition constitute nearly all the maladies, chronic maladies, from which we suffer. Scarcely a person in this room would have been here if he had eaten right at home, if he had lived a wholesome, natural, proper sort of life. Now, my anxiety is that while you are here, you will learn how to live so when you get home you can keep right on getting well. We want to give you a nice start here, give you a good boost, so to speak, so when you go home, you can just keep right on going up. There isn't a bit of reason why you should not do it. I do not know a person that is here but who ought to be a great deal better next year than this year. With the start you can get here, with the instruction we can give you, with what you can learn here, you ought when you get home to just keep advancing every month until after you have gotten to the end of two years from now, you ought to be able to look back and see that you have climbed up a long way. A good many people take a different course. I fear the majority of people who come here go home and think they are better, and they say, "I am all right now," and so will rapidly, or at least gradually drift back into the old ways pretty soon, the old diseases will come back. A gentleman said to me today, "Now, my blood is bad; I have got anemia, and I am not quite well yet. I am going home, and if I find I do not improve, I am coming back, and if I come back you can help me up again, can't you?" I said to him, "Perhaps, but we don't feel so sure about that." Now, you know that man is a good deal like this sort of man. Suppose your house is afire, and the fire department is out and they are pouring streams of water upon the building, and the fire is soon quenched, and the flames subdued, and there is very little smoke and flame, you see just



a few flickers here after while, and you say to the fire department, "You can go home now. If the fire should get to blazing up, get big again, I suppose I can get you to come back and put it out, pour more water on it." Now, see what a silly thing that would be. Nobody can conceive of anybody being so silly as that. When your house is afire, you go to the telephone and shout, "Fire, fire, fire," and you run out into the street and shout, "Fire, fire, fire", and get your neighbors out, and they all come rushing out to help you put the fire out. Now, my friends, I want to tell you every one of you that is sick here with chronic disease, every one of you that has got anemia, or hyper-acidity of the stomach, or that has got chronic intestinal auto-intoxication, or that has got high blood pressure, that has got any serious, chronic deviation from health,--every one of you has got a house afire. There isn't any doubt about it; your house is afire, and that fire will destroy your house, it will as certainly destroy your house as a fire that has broken out in the basement and is climbing up through the partitions and is working its way up through the roof--that fire will destroy the house unless it is put out. That is just a true of every chronic disease. Acute disease gets well of itself. But when a chronic disease gets started, it is just like a fire. It is sure to burn away until the combustible material is all burned up. You say, "Oh, I have had this trouble for a long time; I have had it for years and years." So you have. Some houses are of slow burning construction, you see, hard to burn; that is the difference. And other houses are constructed so they burn fast. That is all the difference. Now, I appeal to you, my friends, while you are here, learn to live right, learn how to live, get on the right road and stay there; stay there, don't drift back into the same old roads where you once were. If you do, you will find retribution coming quick and sure. It will come quick and sure. Because you haven't the power to resist that you once had. (When one has once broken down and comes to the Sanitarium, gets better, he is like a man that



has been drowning, with his nose down under the water, and he has been pulled up until he has got his nose out of the water, and that is all. He never gets clear out of the water; you always have your feet in the water; you are ready to get back down in again; you can never get anything more than your nose out--just a little more, perhaps, if you are young and you have not had your troubles long, maybe you can once more get up on dry land, on terra firma; but the poor, chronic invalids that come to an institution of this sort, emaciated, and with tawny skins, and with large finger joints, and every other evidence of chronic toxemia--I want to say to you that such people can never anything more than just get their heads out of the water where they can breathe; they are ready to get right back under the water again. Just a little bit of digression, and down they go. But perhaps you say, "Well, I am satisfied if I can get my nose out." You say, "It seems to me as if the waves are all over my head." Almost every day somebody says to me, "Doctor, do you think I will ever get well? Will I get well? Do you really think I will?" "Why, you are getting better. I saw you last week and you are looking a whole lot better." "I don't feel a bit better." Now, that is a man who is 100 feet under water perhaps. Pulling him up with a rope, and he has got hold of the rope, and he says when he gets up within ten feet, "I don't feel any better than I did at the bottom." You get him within six inches of the top, and he doesn't feel any better than he did at the bottom. But when he gets his nose out into the fresh air, the instant he does that, he is going to feel better. Now, my friends, you have been away down deep; you are coming up; the doctor can just see you coming right along, and if you only hang on, hang on, perhaps tomorrow morning your head will emerge from the water, and you will breathe the fresh air of heaven again, and you will find yourself on the road to life once more.) (A coated tongue is a very significant thing, and it means not simply something wrong with the tongue, but something wrong with the whole body. It is just a sample of what the body is.) I saw



a lady yesterday who had a coated tongue, and I said, "How long have you had this coated tongue?" "Oh, a long, long time." "Well, how long? For years?" "Oh, yes, a long time." "Fifteen or twenty years?" "Yes, at least that much." Now, just think of it, just think of it--going around with that coated tongue, ~~far~~ with a dirty face for fifteen or twenty years. It wasn't any wonder there were great big brown spots on her hands, and the blood pressure was going up, and she was getting to be an old lady when she ought to be just in the very height of her vigor and activity.

Q. Do adults have a blood pressure ranging from 150 to 170 without its being an indication of disease?

A. No, nobody does. The normal blood pressure is 90 to 110. Anybody that has blood pressure above that is on the way to disease, is already diseased if it is much above that. Now, of ~~course~~ course, we will say a person's normal blood pressure is 110. Now, such a person gets hold of something and lifts as hard as he can lift, takes a deep breath and lifts with all his might, and his blood pressure will come up twelve or fifteen or twenty points; but it will come down again as soon as he stops lifting. He goes out and takes a run for five or ten minutes, and that will send the blood pressure up; but it will come right down again. A person whose blood pressure is 125 or 130 constantly, that runs that way right along all the while is diseased; there is something wrong. His heart is working against an abnormal amount of pressure; it will wear out sooner than it ought to wear out. A lady ~~came~~ came to see me a day or two ago, almost in horror, "Doctor, my blood pressure was 180 when I came, and now it is 210, just think of it; it is going up." Well, she really felt as though something was going to explode pretty soon. But I said, "How glad I am to hear it." "210? Why, think of it. I thought that was dangerous." "Well, but it is necessary, it is necessary. You would not have a blood pres-



sure of 210 if you didn't need it. Old Mother Nature is not a fool. Old Mother Nature is very, very wise, and she doesn't raise blood pressure, unless it is necessary that the blood pressure should be raised. Suppose you go out some morning in the winter time and you get some snow on your hands, and go to snowballing, and pretty soon your hands get red, and if you stop snowballing and go into the house, those hands will tingle, burn with the hot blood that is coursing through them. Now, Nature has sent the blood into your hands to keep them warm, because the snow was likely to freeze them. Now, when the blood pressure is high, is raised, it is necessary for it to be high; you could not live without its being high; it is absolutely indispensable to your existence to have that blood pressure up high. If it was not you could not live. Now, why? Why, because the blood is the life of the body. Every tissue must have blood. Every cell must have blood. The blood is necessary for the activity of every brain cell, and every nerve cell, and every muscle cell, and every gland cell. They all depend upon the blood; the blood is the life. The Bible says that." That fact seems to have been known away back in the ages. Moses said to the Children of Israel, "The blood is the life; the life is in the blood." Away back in Noah's time, Noah was told he might eat animals of all sorts, and creeping things if he wanted to--angleworms, and thousand legged worms, and bugs of all kinds--Noah was given permission to eat them if he had to rather than to starve to death; but with that permission was this interdiction, "But the blood thereof which is the life thereof, thou shalt not eat of it." If anybody offers you a blood pudding, you think about that. The next time you see anybody eating a juicy beefsteak with blood running out of it on all sides, and sopping a piece of bread in that blood, you just think about it, what the Lord said to Noah--"But the blood thereof, which is the life thereof, thou shalt not eat of it." And that was repeated to the Children of Israel by Moses.



Then, when it came down to the Christian dispensation, the question was put to all the apostles up there in Jerusalem, twenty-five years after the death of Christ, and the edict was then, "It seemeth good to the Holy Ghost and to us to lay upon you no other burdens than these four ~~things~~ necessary things--to abstain from flesh offered to idols, from fornication, from things strangled, and from blood." So it is just as binding on the Christian people of today as it was on the Jews, the old Hebrews, and on the whole human race after Noah. We all came from old Father Noah. So as I said, the next time you see somebody sopping a piece of bread in some blood of an ox running out on his plate, just think about that. And that rare roast beef is all full of blood. Those ancient hebrews used to take the meat, soak it in salt, get the blood out of it, then they used to wash and wash it until it was nearly white. We used to serve laundered steaks here. The last beefsteaks we had here, we endeavored to purify as much as we could. And they were very much less harmful, very much less harmful, because we got the blood out of them. When it is dead, it is the very worst possible thing. Down in South America, it is said the Indians poisoned their arrows by dipping them into decomposing blood. The cold storage beef you get is full of rotting blood. The wonder is that anybody lives that eats cold storage beef and fowl of various sorts--ducks, geese, etc., that have been lying around neglected to be buried for a year or two. It is the poisons, you see, circulating in the blood vessels that raise the blood pressure, and these poisons cause hardening of the arteries, and withering of the arteries, so they are only half as large, so there is only half as much room for the blood to get through. Now, we must have blood, so the heart has to work harder to raise the pressure. If you have got an opening of one inch, you could not get as much water through it with the same pressure as through an opening twice the size, you see. So when the arteries shrivel up, as they do in hardening of the



arteries, then it is necessary for the heart to work harder to raise the blood pressure in order to get the blood circulating throughout the body. So the blood pressure is never higher than it ought to be. In this particular case I was speaking about, the blood pressure was too low when the lady came. It had fallen down to a point so low that her nutrition was not good. Now, it is this way about the blood pressure. When it begins to go up it is 100 or ought to be, and it begins to rise--125, 150, 175, and by and by gets up to 200, and sometimes even goes higher than that, but in most cases after it gets up to 200, then it begins to come down. Why does it come down? Because the heart is getting weak; the heart is failing, the great pump is wearing out; that is the reason, and it begins to leak, and keeps going down on the other side from 200, down to 175, and 150, and so on down the other side of the hill, and it gets down here to 130, by and by gets down to 100, and the patient ~~gxxxxxxx~~ ~~thinks~~ thinks he is getting better, but he will soon be dead, because he can not live, because he can not get blood enough through those clogged up arteries to keep things going. Now, in this lady's case, it happened she was away down when she came here. She had got up to the top of the hill again, and down a little on the other side. The first thing that happened when she began to get well, she began to climb to the top of the hill again, you see. You see, you have got to go over the hill top to get hom. So if your blood pressure is down too low on the wrong side, you have got to climb up over the hill again to get back. So the very first symptom of improvement in that sort of case is a rise of blood pressure. I have seen the blood pressure go up to 250 from 180, clear up to 250, and then it began to come down; after it got up, then it came down on the right side. You see, it makes a difference on which side you are. It is all important to find that out.

Q. How can <sup>high</sup> ~~each~~ blood pressure be reduced and kept down?



A. Now, the first thing to do is to stop lifting it up. Suppose you are smoking cigars. You better stop smoking right off quick. One cigar will raise the blood pressure twenty points in thirty minutes. That is, if it was 130 and you smoked a cigar, it would be 150 in half an hour. That is what that means. No man has an elevated blood pressure <sup>who</sup> can smoke without an imminent danger, because when this pressure gets high enough, when the arteries become sufficiently diseased, there is going to be a rupture in the brain or somewhere else one of these days; the arteries are getting feeble, they are getting weak, they are getting brittle; and when the blood pressure keeps on rising, and he is smoking, one of these days he will smoke a cigar when he is feeling first rate, and that elevated pressure that results from that smoking will rupture an artery and he will fall down with apoplexy. That has happened to a great many public men. Every little while you hear of some politician, some public man, a great financier who has suddenly dropped off with heart failure or apoplexy. It was the cigar that killed him. Maybe he doesn't get apoplexy; maybe he does not rupture an artery, but the heart fails. Why? Tobacco weakens the heart and at the same time increases the work that it has to do. It raises the blood pressure, contracting the arteries and at the same time lessens the power of the heart to do the work.) So what a ridiculous thing it is to smoke. Abraham Lincoln said if he had a boy that would smoke cigarets and part his hair in the middle, he would maul him to death with a squash. Now, about tea and coffee. A cup of coffee has four grains of caffeine in it. A cup of good coffee such as you make when you have headache. You probably make it a little stronger when you are alone, but ordinary, good coffee--you don't want your neighbors to know how black you take it, perhaps; but just ordinary good coffee, so-called, has four grains of caffeine in it, and a grain of caffeine is equivalent to a grain of uric acid. The composition is practically the same; they are both the



same thing; so a cup of coffee has four grains of uric acid in it. That is four times as much as a cup of urine has. That is the actual fact. Coffee as ordinarily made has four times as much uric acid in it as urine itself has. Think of that the next time your neighbor offers you some coffee,--please think of that. I have told it to you in the most ~~in~~offensive way I knew how so that you would remember it, so you could not possibly forget it, because it is a serious thing. (I have down in my office the mortality reports of the United States government, of the Census Bureau--a big volume they send out, giving the mortality report for the year 1908. It gives the reports from 1900 down to 1908 in a comparative table, and it says in that table that in the year 1909, in every hundred thousand people who lived in the United States, 6.1 persons died of disease of the arteries. I got just the otherday the report for 1909, and in 1909, twenty and a fraction people died of disease of the arteries in every 100,000 living people,--more than three times as many; and every year between these two there was a rise. So that disease has increased more than 300% in nine years, that one disease.) (A man called on me today and wanted me to take some stock in a life insurance company, and I said there were several reasons why I do not want to invest. "In the first place, your life insurance companies are all going to the wall, they are going to be broke, all going bankrupt every one of them." "Why, why so?" he said, "Because one of these days your risks are going to die off so fast you will have so many losses to pay that you will go bankrupt." "Why is that?" "Well," I said, "it is because you are not teaching people how to live. You are insuring <sup>any</sup> old fellow that wants to come along to get insured provided he hasn't any deadly symptom at present with him. Anybody who wants to get insured can get insured, and you don't take any care of them to keep them alive. If it were horses, and sheep, and pigs, you would be taking care of them, looking after their food to keep them alive as long as you



as you could; but instead of that you let them go helter skelter, any way they want to, and cultivate death instead of life. So as the result, during the last thirty years, the mortality from chronic diseases has doubled. It is going to double in the next thirty years. If the mortality is doubled during the next thirty years as it has in the past thirty years, it will bankrupt every life insurance company in the country. You have got to change your rates." "Is that so? Why, I didn't know that." I said, "Just look into this book here." So I opened up my book and showed him. When he saw disease of the arteries was increasing so fast, that it was coming up 300% in ~~xxxxx~~ nine years--that is the disease most people die of--~~is~~ this disease of the arteries. If they die of pneumonia, it is because the arteries are diseased and make so much work for the heart that the heart gets weak and ~~cannot~~ is not able to stand the extra strain of that disease, and that is why they die. Most of the people who die of pneumonia are old people or babies. The great mortality from pneumonia is in old people and babies, babies because they are weak, have not got strong yet, and the old people because their hearts are weak. (Another reason why I didn't care to invest in a life insurance company business at all, was because if I ever did it would be in a health insurance society. I would like to see that started by somebody,--a health insurance society, and agree that the people who will join this society and pay so much a year, shall be kept in health provided they will obey certain rules, and you don't have to pay them anything as long as you keep them well, but when they get sick, then you have got to pay out something. That would make it worth while to cultivate health, you see.) Another reason why I could not invest was because I didn't have any money to invest; so I thought I had three very good reasons, and sent him along.

Q. Are high blood pressure and arteriosclerosis one and the same thing?



A. No, because a person can get very ~~xxx~~ angry and have high blood pressure. John Hunter, the great English anatomist, got very mad one day, and dropped dead. It is dangerous to get mad. An assistant in his museum was carrying a jar which contained a specimen upon which he had spent many weeks labor, a most beautiful specimen, and he saw this man carelessly drop it and smash it to atoms on the floor, and he was so angry about it he exploded something at the man, and then exploded his brain. An artery ruptured and he fell dead at once. So it is dangerous to get angry, very dangerous. Now, his blood pressure probably was too high already, and people who have very high blood pressure, should be very, very careful not to let their emotions run away with them. They should not get too happy, should not get too much depressed, should not get angry, particularly, should not get excited about anything. High blood pressure which is continuous generally means high blood pressure. If you have got arteriosclerosis, or disease of the kidneys, both of them generally go together. If you have a blood pressure of 140 or 150 right along, week after week, it is more than probable that disease of the blood vessels has begun, but it may not have reached an incurable stage. There are three stages of this disease. There is the first stage when the arteries are simply contracted, in a state of spasm, and a second stage in which they become fibrous, and a third stage in which they become chalky. They become fibrous, then fatty; perhaps I should mention the third stage in which they become fatty; then Nature puts chalk in the place of fat to keep the arteries from breaking open right away,--a protective means to maintain the rigidity of their walls.

Q. Is one who has hyperhydrochloria likely to have autointoxication at the same time?

A. He is almost certain to have it. The autointoxication is the cause of the hyperhydrochloria. It is the origin of it.



Q. Is gas in the bowels always an indication of auto-intoxication?

A. No.

Q. What is the best treatment for an enlarged liver?

A. Enlarged liver is generally due to auto-intoxication. The liver has had such quantities of poisons to deal with that it has become congested, irritated, and perhaps permanently enlarged. Adopt at once an antitoxic diet--no tobacco, no tea, no coffee, no vinegar, no pepper, mustard, no meats of any sort and plenty of simple, natural food.

Q. Will the constant use of rectal irrigation do any harm?

A. No.

Q. Have tried repeatedly to concentrate on certain subjects, but invariably find my mind wanders from them without having completed the line of original thought.

A. That is a symptom of neurasthenia, and that is due to auto-intoxication.

Q. What is the cause of cancer?

A. Well, I think the cause of cancer is--one of the most common causes, not the absolute cause, or the only cause, but the most universal and common cause is flesh eating. I haven't a bit of doubt of it--that flesh eating is the great cause of cancer. Here is the evidence ~~xxxx~~ of it; flesh eating nations, as has been shown by Dr. Williams of England, are the ones that suffer from cancer. Flesh eating races of men and animals suffer most from cancer. Five per cent of all the people living in the United States today are going to die of cancer. <sup>Five</sup> ~~Two~~ per cent of the people who died last year died of cancer--one out of every twenty. One out of every seven of all women between the ages of forty and sixty who died last year, died of cancer--one out of every seven. Out of the women who died last year between the ages of 45 and 55, one out of every six of them died of cancer. My friends, see what a scourge that is.



I was surprised myself when I looked it up a few says ago and found that one out of six of all the women who died in the year 1908, in the United States, between the ages of 45 and 55 died of cancer. Now, that is a most awful thing, and the cause of it is meat eating, flesh eating; and the sedentary life,--the two things combined together. The wolves in the forest or on the prairie do not die of cancer; but the dogs that dine at the same table with us, they have cancer; that live in the same house with us; they have cancer. Eight per cent of dogs, and seven per cent of cats have cancer, and five per cent of the human beings. And nearly twice as many women.

Q. Why is it more prevalent among women than among men?

A. Because they are more sedentary. Out of five persons who die, two are men and three women. They do not eat more meat; they eat less, but drink more coffee.

Q. One hears of people smoking and drinking and still leading healthy lives to a very old age. Why is this?

A. I never heard of such a thing. First they get hardening of the arteries. Some of those people are very hard to kill; but I can not admit that they live healthy lives. A man that is drinking a pint of whiskey every day is not sober a minute; he is drunk all the time. And a man who is smoking fifteen or twenty cigars is intoxicated with tobacco all the while. He is not himself. If he is a neighbor of yours, you do not know anything about what kind of a man he is. You really do not know. That man's character is colored, and tinged by nicotin, don't you know? He may be a better man or may be a worse man than you think he is. But certainly he is a different sort of man than you know. Some people are uncommon tough. Sam Jones was accosted by a man in Kansas City some years ago, and he had been lecturing, talking against tobacco and whiskey, and a man got up and he said, "Mr. Jones, I took some stock in



what you have been saying up to tonight; but tonight I don't believe a word of what you say. I am 86 years old, and I have smoked ever since I was ten years old, and have been taking a pint of whiskey every day for the last forty years. How do you account for that?" Said Mr. Jones, "That means nothing but that you are uncommon tough. If you had not smoked and drunk ~~some~~ whiskey, they would have had to kill you with an ax on judgment day." ( We can not take these extraordinary examples of people who manage to live and exist a long time, notwithstanding the violation of all the laws of health-- you can not take them as a rule. Where there is one such man alive, there are hundreds, maybe thousands that have died imitating him and trying to do what he did. Now, suppose you start out a thousand men, each one smoking ten or fifteen cigars a day, and drinking half a pint of whiskey. Why, at the end of forty or fifty years, there will be only one or two of those men alive. The rest of them have been killed off long ago. That man was uncommon tough. That is the only reason why he survived. )

Q. Is it possible for one to recover from diabetes?

A. Sometimes, but not so very often. You have got to learn how to tolerate the disease, and live in spite of it.

Q. What can be done to make one's mind more active, for one to see things quickly, and to think quickly?

A. The greatest thing to do is to get your blood clean. When you get clean blood, it will wash out the brain and get the brain clean. The reason why your brain is clumsy and dull and slow is because it is intoxicated, it is stupefied with drugs and poisons that are generated perhaps in your intestine. A great many people are suffering from food intoxication, more people a great deal than suffer from whiskey intoxication; and of the two, it is the more deadly, because it is the more universal. And that is the principal cause of mental



obscureness, stupidity and dullness,--the principal cause is intoxication with waste products that ought to have been eliminated.

Q. Is too much ~~xxxxxx~~ mercury injurious?

A. Yes, indeed. Mercury is a very deadly drug when it is used continuously for a long time; it generally leaves a very deep mark upon the constitution.

Q. What is the cause of neuritis?

A. Toxins generally, ~~poisonous~~ matters absorbed from the intestines; and sometimes a cold; and sometimes a bruise, but it is generally toxins.

Q. I have reduced my weight to 200 lbs. from 250 pounds, but find myself too nervous at that weight. In three years I have increased to 220 lbs. When I try to reduce my weight by dieting, I get very nervous and suffer from nerve exhaustion and brain fag. I eat no beef or salt. I get a hot and cold shower bath every morning and a great deal of outdoor exercise. What else can I do to keep down my weight and build up my nerves?

A. Now, this is a very practical question. In the first place we should know more about this patient. We should know how tall he is, how large he is naturally. If he is a man of six feet and two inches tall, for example, 200 to 220 lbs. would not be a very excessive weight for him. It is better to have a little surplus of flesh than to have a deficiency. Now, it is true that what is called the average weight is probably a little too high. Life Insurance companies have shown that the people who are underweight live longer than the people who are overweight, so that probably our standard of average weights, what is called the average weight is probably a little bit too high. Nevertheless, as I said before, it is better to have a little overweight than to be actually underweight; to have less weight than you ought to have, because fat is a reservoir of energy. It is not simply a burden; it is a reservoir of energy.



energy. This residual tissue is food that is stored up ready for use when you need it. If you ~~have~~ find in trying to reduce your flesh that the amount of exercise you have to take or the restrictions in diet that you make makes you nervous and weak, you better not do it, better not do it. You are getting no benefit from it. If one suffers injury as a result of an attempt to reduce flesh, then he better not reduce the flesh. For some people, it is natural to have a little more flesh than other people have. Some people have a constitutional tendency to take on a little more flesh than others. I may say that the methods of reducing flesh are essentially these: In the first place, limit the diet. Take just a little less than your height naturally calls for. If your height calls for 2000 calories a day, take 1500 calories, if you want to reduce more rapidly take 1000 calories. A good way to do this is to live on a diet of fruits and grains, vegetables, parsnips, turnips, cabbage, lettuce, spinach, and things of that sort, leaving out potatoes; and fruits. You can eat almost any sort of fruits except bananas and figs, and dates which are rather highly nutritive fruits, and one should avoid an excess, of course. Take a little fat, but not too much fat; take a little butter, but be careful not to eat an excess of butter. Cut the calories down to a thousand for a week or two, then increase them. But keep a little under, say seventeen hundred or eighteen hundred calories--200 or 300 calories under the amount required, until you have reduced the weight to pretty nearly the normal standard for your height. But if your weight ought to be, we will say, 150 lbs., and your actual weight is 250 lbs., you must not try to get down to 150 lbs. You never should think of trying to cut your weight down to less than 180 anyhow, because your body has been adapted to this increased weight. You are larger inside than you would have been if you had not been so overweighty, so over fat. The kidney is surrounded with fat. If you should take that fat away, the kidney would be



hanging all loose, joggling about, and so with the other internal organs. They need the fat as backing, and if the fat is all removed, you will be left in a very miserable condition. Some fat has accumulated inside of the body, and in some people the largest accumulation of fat is within the abdominal cavity, and in this case, ~~if~~ the fat is dispensed with, if it is starved off or worked off, then you have great, loose, flabby abdominal walls here, and the blood flows in to take the place of the fat, and you feel anemic, and you feel nervous and weak because ~~the~~ blood has all accumulated here in the center of the body and you haven't got it for use in the brain. That is just the situation that sometimes happens in the country when the money gets all accumulated in the banks, and we have not enough money to do business with; it is just the same situation.

Q. How long ought it to take to cure an ordinary case of auto-intoxication?

A. I never yet saw an ordinary case of auto-intoxication; they are all extraordinary cases. Every case is a new case and a peculiar case, and it has got to be dealt with according to its merits. And we can not do much for a person who is suffering from auto-intoxication in two days. But we can make a start. The majority of such cases ought to ~~xxxx~~ feel a little better in two weeks-- a whole lot better. You say, "I don't feel any better." Then it is because your effort is not quite strenuous enough. We have just simply got to work out our own salvations; take off our coats and work for our selves, and keep at it continuously if you want to make headway against auto-intoxication. It is a hydra-headed monster, a veritable Pandora's box of disease.

Q. What is the proper way of going at it?

A. In the first place, cut out all things that create poisons. Eat nothing that could rot. If you imagine that the foodstuffs you have before you were lying in a warm place exposed for an indefinite length of time, think



what would happen to them. Imagine, for instance, you have five bottles here, and you put into one bottle, or fruit jar, some oysters, and into one of them some beefsteak, and into another one some potatoes, and another some apples, and another some bread. And we put on the covers, put them away in a warm place for a week, and then take them out. Now, we will open the jar with the bread in it. Perhaps it will be a little bit musty. Open the potatoes and they will smell a little sour; open the apples and they will be all right. Open the beefsteak--we better have some fresh air. We open the oysters, and we have to flee. Now, you know just the situation. Now, what happens to those things outside of the body happens to them inside of the body. So (the very cardinal principal of diet for auto-intoxication is to take food that will not rot, that will not decay. Now, there are plenty of them. There are the fruits, there are the cereals, there are the fresh vegetables. "Oh," you say, "the potato rots"; but it is only under peculiar circumstances, and it is mould. You never saw a baked potato rotting. The baked potato will sour, but it won't rot. It is a very peculiar form of mould that causes decay of the potato, but it is not at all akin to the decay of meats of any sort. Now, that is one thing. Now, another thing is to drink a large quantity of water. Drink ten or twelve glasses of water every day. It is easier to drink hot water than cold water. If you don't feel very thirsty, you can not swallow cold water, but you can swallow hot water; with a little flavor in it you can take it easier. Very weak lemonade or soda water you can take easier than you can plain water. Siphon water some people can take. That is simply water charged with carbonic acid gas. But drink ten or twelve glasses--that is about three quarts--of water a day. Nine tenths of this water should be returned through the kidneys, and in doing so, it washes the blood, washes the poisons out of the blood, and it is of immense advantage, taking this extra quantity of water during the period



of treatment. Now, another thing is the bowels must be made to move three or four times a day, and it is a good thing for the bowels to move more often than that at the beginning of the course of treatment. The thing is to get the undigested remnants ~~xxx~~ of foodstuffs out of the body before there has been any time for ~~ix~~ putrefaction, and putrefaction takes place pretty quick; Suppose you see here a pan of sour milk, and you empty it out and put some fresh milk into that pan, how long will it be before it will be sour? The same thing is true of food. Take the freshest, cleanest, nicest food and swallow it, and it goes down and mixes with great masses of putrefaction further down in the intestine.) Then the use of anti-ferments is important. We have one ferment called Tissane. This is I think the most valuable one we have. We have another called yogurt. Ordinary buttermilk has some value, but not so much value as these others because they are made up of friendly germs which naturally belong in the intestine, and which have the power to drive out these unfriendly, putrefaction organisms. Tissane ought to be taken between meals--about three o'clock in the forenoon, and five o'clock in the afternoon, and just before going to bed. A good way to take it is with very cold water with a little ice in it. If you take it ice cold, then swallow it as rapidly as possible, drop it down as fast as you can without stopping to fletcherize it, ~~itxgixxxxkxex~~ you do not get so much of the aroma, which is not particularly agreeable. It has not a particularly agreeable flavor. Take a good deep breath, then drink it, then breathe out. Drink a little sip of cold water and you won't get the flavor of it at all, especially if it is cold. The tablets should be taken three or four or half a dozen half an hour before the meal in a little water. That is the best way to take the tablets. Some people can not take yogurt buttermilk, and some people are benefited by it.

Q. Would raw wheat soaked in water twenty-four hours, be in the same



consistency as wheat in its green milk state?

A. Oh, no, because the cellulose which forms the envelope of the wheat when it becomes dry in the process of ripening, loses its digestibility; it is no longer digestible; but in the green state, while the wheat is still in the milk state, the cellulose is readily digestible. It is digestible to the extent of about 100 per cent. Whole wheat is a wholesome food in its green state. (If a person wishes to take ~~xxxxxxx~~ reduce weight, he should drink a great deal of water, because it helps to dissolve the waste matters and carry them off. The electric light bath is an excellent means of reducing weight. The cold bath is another excellent means. If I wanted to reduce weight, I would take an electric light bath about fifteen or twenty minutes, perspire freely, then get into the swimming pool and swim half an hour, and spend as much time in the cold tank as I could because the colder the water, the more rapidly the tissues will be burned up. Then I would go out and take a walk about nine or ten miles. You have got to walk about ten or twelve miles a day, because you see it figures out half an hour in the warm bath will burn up an ounce of fat; half an hour in the cold bath will burn up an ounce of fat; walking three miles will burn up an ounce of fat. Now, how many ounces do you want to lose? Just figure it up yourself. If ~~you~~ starve, ~~you~~ eat nothing at all, you lose a pound a day, and if you eat half rations, you lose half a pound. You can regulate the thing, you see, very nearly as you like. Walking three miles equals one ounce of fat; half an hour in a sweat box means another ounce of fat; half an hour in the swimming bath takes off another ounce of fat. So you can make your own calculations to lose rapidly or slowly as you like.) (If it is rainy and unpleasant outdoors and you do not like to walk nine or ten miles, you can do it faster if you want to. Just stand up in your room and dance up and down this way. It is very good. You can do that about five hundred times and you will



have had quite a walk. When one walks, in walking forty feet, he does the same thing that he would to lift himself one foot high. Walking forty feet is equivalent to lifting yourself up one foot. Suppose you rise upon your toes four inches. That is one third of a foot. So that three times, and you have raised yourself one foot you see. And 260 times that would be a mile, don't you see? Just teeter up and down like that 260 times, and you walk a mile. Now, if you want to go faster than that, all you have to do is to put a load on your shoulders. If you have got somebody of your own size on your shoulders, and then go through the same exercises, you will walk a mile in half the time; 130 would be a mile. So one can stand up in the corner of his bedroom divested of most of his clothes, and with the windows open, and the cold air blowing in upon him, he can work off flesh very rapidly at this rate by ~~xxx~~ rising up and down in this way; one can easily rise and sink 150 times a minute. That would be a mile in two minutes. You see that is going some, isn't it? Well, you just try this exercise, and you will be astonished to see how much work you can get out of yourselves in a little while. William Cullen Bryant, the great New York editor, used to do that 500 times every morning. That was a very essential part of his exercise--500 times; then he had another exercise which was a very good one. It was to get a couple of chairs, then support himself upon the back, then let himself clear down on a level with the tops of the chairs and up again, forty times. He called that dipping forty dips every morning. And he kept himself in fine condition notwithstanding his sedentary life until he was well on into the seventies.

Q. What is the cause of a constant ringing in the ears?

A. Go see Dr. Read. He will examine your ears. Probably there is some disease of the Eustachian tubes or of the middle ear.

Q. Will hot malted nuts or breakfast toast be a well balanced food



for breakfast?

A. Yes, it is very good. Be sure to use graham bread or Granose biscuit, which are better.

Q. Give diet for acidity of the stomach and loss of flesh.

A. I am going to tell you the diet and give you the reason for everything I tell you to do. Now, if you haven't got a very good stomach, if you have a slow stomach, just an ordinary stomach, I recommend you to chew your food a long time. Why? Because the longer you chew it, the more gastric juice you have got to digest it. But you have got too much gastric juice already. Then you should not chew so much, don't you see? There are some people who should not fletcherize; and the man who should not fletcherize is the man who has hyperacidity; because the more you chew your food, the more appetite juice you have; and this appetite juice is a very powerful and acid juice which will irritate the stomach and create too much acid there, so if you have too much appetite juice, then you will also have too much chemical juice, so the whole digestive process will be too intense. We must take food in such form that it will pass out of the stomach quickly, because the longer the food stays in the stomach, the more acid the contents of the stomach become through the stimulation of the mucous glands of the stomach, the gastric glands, by the presence of the food. This is what is called the chemical juice. The amount of chemical juice depends in part upon the length of time the food remains in the stomach; so we must get it out of the stomach as fast as we can. On this account it is very necessary that the food should be taken in such form that it will pass quickly out of the stomach; in other words, in such form that it does not need chewing; so we should take food in the form of a pultaceous mass, soft, but not too much water with it; a very typical food for a person suffering with hyperacidity is breakfast toast, cream toast, zwieback with hot cream. Nothing could be better. Or granola



mush. The food is dextrinized; then it is just about the right consistency, and it should be swallowed. Or a granose biscuit soaked with cream, either hot or cold as you like; or if you do not like cream, or it does not agree with you, soak it with a little hot water and add a little butter to it. Now, the next point is that a person who has hyperacidity should take considerable fat, a considerable amount of fat. Because the fat hinders the formation of the gastric acid; so we should take a considerable amount of fat. He should also take a little olive oil, if he has it pretty bad, at the very beginning of the meal. Now, another thing to be done is toward the close of the meal or at the end of the meal, take a quantity of maltose with butter, that is malt honey with butter. The maltose of the malt honey checks the process of digestion and hinders the action of the gastric juices upon the gastric mucous membrane. Dr. Hirschel of London has called attention to this point particularly--of the power of maltose to check the digestive action of the gastric juice upon the mucous membrane of the stomach; so that is important. So with reference to the diet, we will say begin with something fat--olive oil, if you have it very bad. Then take the food in the form of a pulpy mass--not gruels, because there is too much water, and the water will excite the stomach to make more hydrochloric acid; so it must be in the form of pulp, as granola mush, or a little zwieback softened with or some other food of that sort. Next, one must be very careful to avoid chewing the food very much. Take the food into the mouth and swallow it quickly without much mastication; then there will not be an excess of hydrochloric acid formed. Then take some malt honey with butter toward the close of the meal, and about two hours after the meal take one or two glasses of hot water to dilate the fluids of the stomach, and to wash them out into the small intestine.

- Q. What is the cause of little ridges on the fingernails?
- A. Each one of these ridges indicates an arrest of growth of the nail.



It means you lost a night's sleep, or had a fit of indigestion, or violated some law of health so that your vitality was reduced to such a degree that the nail stopped growing just at that time for a little while.

Q. I have pain in the region of my appendix. Can this be overcome?

A. Yes. Fomentations applied every day, the heating compress at night, the use of the antitoxic diet, care to keep the bowels moving freely three or four times a day will afford relief. Appendicitis is due to infection communicated from the intestine to the appendix.

Q. If you do not consider fish a proper food for man, how do you account for the fact that Christ ate fish? The Bible speaks of his doing this on several occasions.

A. I am not at all responsible for that. I can not say anything about it. There are a whole lot of things I can not explain. I haven't any responsibility about that; I am only responsible for what I eat myself. I know from observation and experience that fish are not a wholesome dietary.

Q. How can a weak heart be strengthened?

A. By exercise, by use. The heart must be strengthened by use just ~~as~~ same as any other muscle. By exercising the muscles in a gentle way gradually increasing the vigor of the exercise, the heart may be at the same time exercised and developed. An athlete always has a large, strong heart. A sprinter has a very well developed heart.

Q. What is the cause of small watery eruptions on the face?

A. This is doubtless herpes. It is one symptom of autointoxication and means lowered vital resistance.

Q. Is it possible for the food eaten in the Sanitarium dining room to give us autointoxication?

A. There are some things there which may produce autointoxication.



Eggs, for example. I never find eggs on my bill of fare for that very reason.

✓ Eggs will decay, and it is better for persons who want to get over auto-intoxication as quickly as possible to avoid all kinds of animal protein, all sorts of animal food for a time at least.

Q. Are raw cabbages easily digestible?

A. Yes, if they are well chewed.

Q. Should one with gas on the stomach take baked potatoes?

A. Baked potatoes are all right provided they are thoroughly chewed, especially if taken with a little fat of some sort. I have taxed your patience tonight I fear beyond endurance. I thank you.