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P O R T O R I C O

A Stereopticon Lecture at the Sanitarium Gymnasium, Monday, April 4, 1910,

At 8:00 P. M. By

J. H. Kellogg, M. D.

Ladies and gentlemen: I am sorry that you have been seated so far away, but I will try hard to make you hear if you will keep as quiet as you can. I had the misfortune on shipboard to get deluged, and we had a change of weather at the same time, and I took a severe cold.

I am going to talk to you a little while tonight about Porto Rico, and show you a few pictures. Porto Rico is one of the most interesting sections of the United States. It was quite a delight to visit this beautiful tropical island in the southern sea, and feel that one was still under the flag. I have been in foreign lands before, but this was the first time I was ever in a foreign land under the stars and stripes. It really was as foreign as Egypt or Africa, or Mexico, and yet one felt at home.

Porto Rico is a mountain; it is a mountain top, what we see of it, out of the sea. Just a little north of Porto Rico is what was formerly considered the deepest part of the ocean. The ocean is more than five miles deep just above Porto Rico, and Porto Rico rises from that deep ocean up to 3500 or 4000 feet above the sea level. So it is one of the highest mountains in the world. There are no mountains in the world, except a few of the Himalayas, which exceed the mountain of Porto Rico, for it really is a mountain, and the top of the mountain reminds one of a wrinkled pocket handker-

chief. Take a pocket handkerchief, wrinkle it all up, then spread it out, and that is the way Porto Rico looks. Only about one ninth of the entire island is level land; the rest of it is rolling or mountainous,--mountain tops. If you go up on a high peak and look out over the country, it is all hills, hills hills, with little narrow valleys between. So it is quite different from what one might imagine a tropical section to be. It really does not look so very tropical except that one sees the palms. You don't see the luxuriant vegetation growing about everywhere that you would naturally expect to see in tropical lands; you see only the vegetation that is cultivated. For the forests of magnificent trees that once covered this island long ago disappeared. Here and there are stray trees, but you do not see any of the great, old, monarchs of the forest such as you would expect to see in a tropical region, but only here and there a scraggly looking relic. Porto Rico was discovered, you know, the next year after the continent of America was discovered by Columbus, and I saw the place where Columbus landed. We saw also the spring from which he drank, so that it is now more than 400 years since this island was discovered, and the city of San Juan, which we shall look at shortly, is the oldest city in this continent.

Here is a monument which was erected to celebrate the 400th anniversary of the discovery of Porto Rico by Columbus in 1493. This is an interesting place, part of the city of San Juan. Here is the bay that is located behind the city of San Juan. San Juan is a city located on a piece of land which is almost an island, and the ships coming in from the north, sail around behind the city in order to anchor. San Juan is located on the northern side of the island. The island runs east and west, about 100 miles long, and a little more than thirty miles wide. The mountains which run lengthwise of the island climb up until they reach the center, and form a sort of ridge running

running down the center.

This is the old governor's palace. We only see the back part of it, facing the bay behind the island. This is the sun dial which has been there for centuries. You see the shadow here. I read the time when it was five o'clock in the afternoon, and I looked at my watch, and sure enough, it was exactly five o'clock. You note there are two of these projections here to cast a shadow, because the sun changes from north to south, you see. The sun is over head in Porto Rico. It never gets over head here, but in Porto Rico it is exactly over head. Then it goes off to the South in winter time, and it goes to the North in summer time. When it goes to the North in summer time, it gets north of the zenith, and when it goes to the South in winter time, it gets to the south of the zenith. Here it simply rises and sinks; but in Porto Rico it goes over the zenith; so they have to have these two projections to catch the shadow at different seasons of the year, first on one side, then on the other side to catch the shadow on the other side; but here the shadow is always on the same side. We always have the shadows on the north.

Here is a point of that famous old fort San Cristobal, which was the fort fired upon by one of our commanders, fired upon for three hours in order to test the strength of the fort. You see some of the wounds made by the cannon balls, and shells; and here is a curious old sentry box. The story is told that a sentry went into this sentry box one time, many, many years ago, and was never seen afterwards. It is supposed the spirits carried him away, or something of that sort. The probability is he climbed down on the outside and deserted; but the story goes that he was spirited away.

And this is the open sea just north of Porto Rico, and just beyond this rock is the gateway through which the ships sail in going around behind the city where the dock is located. This is old San Morrow, or El Morrow,--Fort

Morrow--one of the three famous forts of Porto Rico; and you can get an idea from the front there of the rocky ~~xxxxxxxxxxxxxxxxxxxx~~ coast of Porto Rico. A great share of the coast is this precipitous rock, because it is a mountain shooting up out of the sea. The rock is very largely lime rock.

This is a view taken from San Cristobal looking along the shore to Fort San ~~H~~eronimo. Here are three very ancient forts, located about a mile apart,-- San Cristobal in the center, San ~~H~~eronimo on one side, and Fort Morrow on the other side; and there is an underground passageway connecting these three forts, so the garrison could move from one to another. Here is a nearer view of San ~~H~~eronimo, or Fort Saint Jerome, as we call it; and you can get an idea of how the waves dash upon the rocky shore.

Here is the main plaza in the heart of the city. This is a very old city, and they did not lay out their plans on a broad scale as we do at the present time; and it is like the old cities of Spain, like Constantinople, and the cities of Turkey and Egypt. The streets are very, very narrow, little more than lanes; and this is the plaza. The city hall is here, and hotels here and here. Here is the hotel at which I stopped when I was in the city. Twice a week, on Sunday night, and on Thursday night, the people of the city come out and parade up and down around this plaza. Up and down here are streets on either side. The band plays, and the people of the city march round and round. They march around about five or six abreast, and in two lines, one line marching this way, and the other line the other way. These are the people that are called white people. This is one of the most densely populated islands in the world. It has a population as dense as that of Rhode Island,--has just about the same population as Rhode Island, and there are 264 people to the square mile. That is twice as many as Pennsylvania, and three times as many as in Illinois, and about half as many as England; for England is one of the

most densely populated countries in the world, as you know.

The people of Porto Rico are classified as white, gray, and brown. The brown people are what we call black in this country. They are black as your shoe, but they are called brown there, for there seems to be a different standard of colors in that country, and the brown people are black, and the gray people are what we would call mulattos, at least as dark as that; and the white people,--well, they don't feel quite sure that they are white. They are lighter colored certainly, than the others, but it is evident that hardly anybody on the island is wholly white; they all evidently have a little Indian or negro blood in their veins. However, two thirds of all the people are classed as white, and they are reported in the census as being white; but when you see them walking upon the streets, it is very evident that a large share of the white color effect is simply due to powder spread on rather extra thick; and there seems to be an ambition on the part of everybody to be white. The very blackest people, with thick woolly hair, come out covered with rice powder, and the perspiration running down makes avenues on their faces; so there is a rather curious appearance.

Here is another view of the coast and one of the rocky points. This is the white house, or the casa blanca, as they call it there, which means simply white house. This is where the government has its headquarters. This is a view ^{from} of fort San Cristobal, the old fort. You see nearly all the houses are flat roofed, built very much after the oriental style, the style that was in vogue in Spain when this island was discovered.

Now, this shows a little the appearance of the famous military road. These are royal palms growing on either side. This road was built by the Spaniards, occupied eight years in building, is 81 miles long, reaching from Ponce

on the south side near the west end of the island, to San Juan on the north side near the east end of the Island--81 miles. It goes over the mountains by zigzag turnings, and is a most wonderful road. It is as good as the Simplon pass which some of you have seen. It is constructed entirely of broken rock, about a foot thick, and is as smooth as a house floor. It can hardly be damaged by anything, and is one of the finest roads in all the world. The Spanish built this to connect their two principal cities to accommodate their artillery, so that they could be quickly moved from one part of the island to the other. Except where these roads exist, these hard roads, the roads during the wet season are almost impassible. A traveler described a trip from Yauco to Mayaguez. I have been over the same road myself, so I know something about it, but of course it was in the dry season, so it was not so bad; but he went over it in the wet season, and he said he arrived at his destination in installments, and whether he ever got there entirely or not he didn't know. He thought some portion of his anatomy had been left along the road. As a matter of fact, however, he had a very great time. His horses were buried in the mire and had to be pulled out by oxen that happened to come along, and he had a most terrible experience. That is the condition about the island everywhere. The roads in the rainy season are simply beds of mud two or three feet deep, so it is almost absolutely impassible. A very intelligent Porto Rican told me that the United States government has built four times as many roads in Porto Rico, four times as many roads in ten years as Spain built in 400 years, which is certainly quite a consideration for those people for the utility of the land, the commerce, the industry and the prosperity of the people depend almost entirely upon the possibility of getting their products to market.

It is said that not more than five or ten per. cent of the land is being cultivated that might be cultivated, because of lack of good roads; but

the United States Government is building roads, making various other improvements, and the people are appreciating it. I hunted all about when I was there, searched all around to find somebody who was discontented. I found intelligent people were very, very much satisfied with what has been done by the United States government and with the present administration. They had some reason for finding fault with some of the governors who have been there, who were weak men, not competent to fill the important position in which they had been placed; but the people as a rule are thoroughly satisfied, particularly the business people, the people of intelligence and who are competent to form judgment. I was talking with one intelligent man with reference to the matter, and he said, "Doctor, we are wholly content with ~~what the~~ the exception of one certain class of people. We have two kinds of people in Porto Rico; we have one kind of people who are good, intelligent, and very, very much satisfied; and we have another sort of people here who look good but are not good. We call them politicians, and they are very much dissatisfied because they have lost their control. The old politicians who held the people in bondage have lost their control entirely; a new class of officials have come in and they are left out entirely, and can no longer prey upon the people as they formerly did. The people of Porto Rico were formerly perhaps the most abused people in the world. They had not a thing to do with their government. Of the 117 governors sent there by Spain, not a single one has ever ruled over them intelligently and in a just way. The governor was the president of the supreme court--just think of it!--the governor himself was president of the supreme court and not at all subject to the orders of that court. If the court decided a question against his ideas, he paid no attention to it, but went right along as though nothing had happened. The governor made the laws and interpreted the laws, and the people were entirely at his mercy. He simply exploited the people. The people

paid large sums in taxes for making roads which were never made, and they were treated in the most unjust manner possible,--simply a prey.

This is a monument of Ponce de Leon--a wonderful master of men, who was the first governor of the island. Here is another view of the wonderful military road that I have been telling you about, and that you have heard so much about. It is a road that starts at Ponce and ends in San Juan, and is such a perfect grade that a man could easily ride over it with a bicycle, and an automobile, an ordinary good automobile will start out at Ponce, ride up this ascent 4000 feet, and down on the other side on the high gear, without ever having to introduce the low gears at all to help them up hill,--going full speed, at the rate of forty or fifty miles an hour, over this road, for it is one of the safest places for fast driving I have ever seen. There are the most beautiful views to be seen as the road winds along the hillsides, over the tops of the mountains and through the valleys,--it is a most beautiful view continually, rising higher and higher as it zigzags along the mountain side. This is a fair view of a Porto Rican farm. There is a house, here is another house, and it is built on a hillside at about that angle. How in the world the soil clings to the rocks is a mystery, but it is doubtless because of the great number of roots penetrating the soil in every direction that hold it together. I saw one of those places--a hill side where we could see absolutely nothing but rocks, but here and there was a cornstalk sticking up, and I was told a fine crop of corn was harvested a few weeks before I arrived. The corn thrived. It dropped in just a little crack in the rock where there is a little dirt to put it in, and it grows up and bears its crop. So the fertility of the soil and the great abundance of sunshine and rain in the rainy season make this a wonderfully fertile spot, one of the most fertile spots in all the world;

and probably it is one of the most delightful spots to be found anywhere in the tropics. Here is another view of the military road. You get something of an idea of the wonderful engineering which constructed this road. Here is a view of the road running along the mountain top, getting higher and higher continually, until at a point near the center of the island we come to a place where the great battle was to be fought which never was fought. It was where the Spaniards had made their stand in this pass, and they expected General Miles would pass through here; and he never would have gotten his soldiers through alive in the world, because they had fortified a narrow defile and there was no way to get across the mountains but to go through that narrow defile, and very likely every American soldier would have been slaughtered who attempted to go through that pass; but fortunately peace was declared the very day before the battle was to be fought which never was fought, and it certainly would have been a most bloody and disastrous battle if it had been fought, for the Spaniards had all the advantage in the world. General Miles was very wise in his attack on Porto Rico. He found notice had been given to the Spaniards that he was going to land at San Juan, and he intended to do so; but as the French government was in sympathy with Spain and had gotten notice of what his plans were; so the Spaniards were posted; so instead of coming in on the north side of the island, he slipped in on the South side with 4000 soldiers, and brought his soldiers up to this hill top which commands the valley, which is a very little ways from Ponce, on the south west corner of the island; and he made his headquarters in this old house, a couple of hundred years old, on top of a hill. This picture was a snapshot I took from a carriage, and you can see the head of one horse; it was taken when I was riding along. This is

the old house. We climbed up the hill, took the picture of the house, and this was Gen. Miles' headquarters while he was on the island, and he managed his campaign so adroitly that the Spaniards were surprised everywhere, and they very readily capitulated, so that there were very few lives lost. This old house is not inhabited now except by a man who lives in the basement and takes care of the plantation. And this is the stable where Gen. Miles kept his horse; and it is a fair example of the Porto Rican barn--open on all sides. They believe in the open air treatment for horses, although they themselves shut themselves up very tight in their homes at night.

The products of Porto Rico are, of course, those of the tropic zone. Everything that grows in the tropics anywhere will grow in Porto Rico. One can find there all the marvelous fruits and vegetables that grow in tropical lands. This is a picture of the breadfruit tree. The breadfruit is about as large as a good sized pippin. It is green on the inside when it is cooked. It may be boiled or baked or roasted. It reminds one a little bit of the potato, although it is apparently not quite so nourishing, although it is very wholesome and nourishing fruit, and is said to be one of the great drawbacks of Porto Rico, because it fruits in so great abundance. When the season of ripening of this fruit arrives, it is almost impossible to get a Porto Rican to work, because all he has to do is to shake his tree, or climb the tree and pick a breadfruit, and he has a whole meal. Why should he work when he has all the food he wants? The cane sugar planters there say the bread fruit tree is a very, very great embarrassment to them, because it furnishes such an abundance of food and so very cheaply.

This is a picture of a coffee plantation, and you see it is on a side hill. Porto Rico is said to produce the very finest coffee,--and that means

the worst coffee possible, of course, on the face of the earth. It has a fine aroma, and contains a large amount of caffeine, and is very intoxicating, and brings a high price; so that the planters have made a great deal of money in coffee. The island is said to produce three or four million pounds of coffee a year. The coffee, after being stripped off the plants, is brought down here, spread out upon this level surface to dry in the sun; then the skins are beaten off. Then, after it has been dried in the sun, it is ground. Every Porto Rican grinds and roasts his own coffee. The coffee is sold in a raw state, and in every Porto Rican home, even the poorest little hut, you will see the coffee roasting in a little mortar, and you see the peasant women grinding the coffee with a pestle in a mortar.

Coffee, tobacco, and sugar cane are the three great products of the island. The cocoanut and the pineapple are coming to be produced more and more, and oranges have been recently planted and are coming to be quite a profitable crop. This is a picture of a valley devoted to tobacco culture. Certain valleys are supposed to produce very fine tobacco, and that means very bad tobacco, and the tobacco is raised under cover. The sun is so very hot they have to cover it with cheesecloth, so it looks very much like one great hothouse. The cheesecloth which you see in this valley is spread out and covers more than 5000 acres; you see that would be seven or eight square miles of land, all devoted to the culture of tobacco. Here is a picture of the cocoanut tree. The cocoanut tree grows in Porto Rico 100 feet tall; it lives 100 years; it bears every year 100 nuts; and it is used for 100 different purposes; so it is the 400 tree. Here is a Porto Rican going up a tree. I took his picture when he was climbing it. He was willing to climb that tree for ten cents and bring down some cocoanuts for me. You will see the Porto Rican in the top of the tree in the next picture here. Here he is up in the tree, and you can get

an idea of the size of the man compared with the bunch of cocoanuts. There are always to be found upon the tree there, blossoms, green cocoanuts, and cocoanuts which are nearly ripe. The man climbs up the tree in that way, slips a rope over one of the branches, ties the rope to a bunch of cocoanuts, then cuts it off with his machete and climbs down the tree after he lets the bunch of cocoanuts down. That is a little bit hazardous. I asked a gentleman at a hotel where I was stopping if he had any cocoanuts, and he said, "We haven't any in the house at the present time; we have plenty on the trees, but I don't dare send a man up for fear he might fall, and I would have to pay the damages." He was afraid he would fall on purpose, and insist on laying up or charge him a serious damage. So I had to send a man up at my own risk in order to get the cocoanuts.

Here is a picture of the beautiful royal palm--the most beautiful palm that grows. It is a magnificent palm, used for shade, and the fruit is also used for food for cattle and for pigs, for, I am sorry to say, there are pigs even in Porto Rico. Here is a picture of a pineapple plantation. In certain parts of the island, the finest pineapples in the world grow. I visited one plantation where pineapples that weigh 22 pounds grow. Fifteen pounds is very common. This is the hacienda; there is a large sugar mill there, and here are the pineapples; and here is another view of the pineapples. You see the magnificent fruit growing here almost ready to be picked. The Porto Rican pineapple is now shipped in great quantities. At this season of the year, every ship from Porto Rico brings great quantities of pineapples to New York. In New York they are sorted over, and those which are keeping well are put upon the market and sold for \$3.50, \$4.00, and \$5.00 a box. In Porto Rico they are sold at \$2.50 a box. It costs about 80 or 90 cents to get them to New York. So it is really a profitable business. A gentleman who was going into the

business told me he could clear about fifty dollars an acre on his pineapple plantation, and he expected to do better than that when he got started.

This is the primitive method of plowing which is still used by the peasants,--simply a stick sharpened at the end and stuck into the ground, with another stick attached to it, and the opposite end attached to the horns of the oxen, lashed to the horns; and this horizontal beam is attached to this stick. Here are several yokes of oxen pulling plows. The ground is simply scratched. The Porto Ricans know nothing about thoroughness in agriculture. The soil in the valleys is so very deep, it seems impossible to exhaust its fertility. Of course, Porto Rico is mostly mountain tops, and the soil has been washed off the mountain top down into the valleys where it is so deep nobody knows how deep it is. American farmers who have gone in here have introduced plows which turn the soil up to the depth of three feet. Steam plows are used very largely, more than any other kind, by the American planters.

This is a primitive sugar mill. You see these oxen are traveling round and round grinding the cane which is put through the rollers here, and the juice runs out down into this shed where it is evaporated ~~off~~ in great kettles. You will see there in the shed three great kettles, about ten or twelve feet across. In the first one the sap runs, and the man stands in front between these large keetles, continually dipping out juice. He puts the juice down upon the plank, rubs it with his foot, and when it acquires a certain degree of vicidity,-- he notices how sticky it is, how it adheres to his foot, and when it reaches a certain degree of vicidity, then it is dipped out to the next kettle, and the next man there does the same thing; and when it reached a certain point, he dips it to the next kettle, and the man at the next kettle is doing the same thing. Then when the right time comes, he dips it out of the kettle, puts it into a big

vat and it is ready to crystallize then; the molasses is allowed to drain out of it, and the molasses is separated in that way. That is what makes the old fashioned brown sugar. The molasses made in this way is the only molasses that is good that is sold on the market at this time; that is, that is considered really wholesome, and is sweet enough to be attractive. Ordinary molasses is not very good, and is not fit to be eaten by anything but cattle. The very best is not very good, ~~but~~ because the cane is put into the mill just as it comes from the field with all the dirt and everything in it that has been deposited on it from the air,--the dirt and all the filth goes into the kettle along with the cane and is ground up into the syrup, and this syrup is allowed to settle. Lime is put in with it, and that helps the sediment to deposit, and the sugar is then spread out, with concentrated sap, and the molasses runs off, all the soluble part of it, and the sugar is crystallized, so of course that is comparatively clean; but the brown sugar still had the dirt adhering to it; but the process of refining is a process by which the sugar is made cleaner; but the molasses contains all the dirt which is not so coarse and heavy that it has settled out.

This is another sugar mill with a rude cover over it. The Porto Rican is very fond of cane. He eats it continually. You will always find a Porto Rican gnawing a bit of cane.

This is a view of the greatest sugar factory in the world. Our friend, Mr. Grief, who is with us every summer here, is the manager of this great sugar plant that makes a million, sometimes 1,200,000 pounds of sugar a day while it is running, during five or six months of the year, and it is running at the present time. Here is a railroad running along here which brings in the cane, 300 carloads a day; and it runs around here, and there are four tracks leading into the mill from this side, and each track running up to the center road.

Half a carload of cane is lifted off at one time by a great clutch that comes down, draws it up, and drops it into the hopper, and it goes into the mill; and a perfect stream like a mountain torrent runs out of each one of these mills, and runs into the evaporators. This great factory grinds up 300 carloads a day, a carload every fourteen minutes, and turns out between three thousand and four thousand bags of sugar of 310 pounds to the bag, every day. The profit of the company, I understand, is considerably more than a dollar a bag. The duty on sugar gives the company a protection of one dollar a bag, which is all clear profit, and there is a nice little profit besides, so that the duty on sugar is a very great comfort to say the least to the sugar manufacturers in Porto Rico. They can make sugar as cheap as it can be made in Cuba, and get a dollar a bag in addition to the profit which the Cuban manufacturer is able to get. This is one of the interesting things about sugar.

There is quite a city here. A row of cottages reaches from the farther side of the bay at the head of which it is located, ~~half~~ around the bay nearly; and these are occupied by the employees. This is just a corner of the bungalow in which my friend, Dr. Knapp, lives--the medical director of the place, and in whose home we were stopping. From the porch of this house this view was taken. Some of our nurses here are acquainted with Dr. Harry and Mrs. Dr. Knapp, and will be glad to know something of their location here. This is a little hospital which has been built, planned by Dr. Martin when he was there last year, and is now erected, and is a beautiful little hospital.

This is a picture of the bay into which Gen. Miles sailed when he landed on Porto Rico. Gen. Miles sailed in there a couple of miles from here; his gunboat came in there when he came to take the island. The manager of the

sugar factory lives over here on the island; and here are the great sugar works, the greatest in the world. This is a view of Dr. Knapp's bungalow taken from the road. This row of cottages goes on clear around. This is really a very delightful place, as the breeze continually blows in from the sea. This breeze is always blowing during the day time, and a land breeze at night, so the temperature, no matter how hot it may be, there is always a breeze.

This is a cottage under a palm, and these are native Porto Ricans of the peasant class, the peon class. This is a traveler's palm, that you have heard about, which grows in the island,--a wonderful ~~to~~ ~~the~~ comfort to the traveler sometimes when he is dying of thirst and meets one of these wonderful palms which has the power to resist drouth to a most marvelous extent, and always keeps on hand a pint of water in the stems of its leaves. In each one of these stems, the traveler will always find a pint of water, so he is sure to have a drink when he can find the traveler's palm.

Here is a Porto Rican home. This one is made of grass. They are made of various materials, as you will see by the examples I will show you; and here are some little Porto Ricans standing outside. It is not every Porto Rican house that has as picturesque surroundings as this; in fact, it is very rarely so. The better classes of Porto Rican houses, which are built of cement or of brick, or of mud and dried, you see represented here. The house is built around an open space, and this is known as the patio. Here you see the people standing at the entrance to the patio. Here is the inside of the house of a wealthy Porto Rican, and it shows the sort of furniture which they have, and the general style and arrangement of the Porto Rican home of a wealthy planter, the very wealthiest class. Here again is a peasant home of a different style,--a little steeper roof, and these sides are made of palm leaves.

The royal palm has very broad and very long leaf stems, and these flat leaf stems are simply spread out, and when dried make very good boards, and are made to form the sides of the house. The top of the house is made from portions of leaves. Here is another Porto Rican bungalow. The sides of this are made of a sort of a ~~xxx~~ cane; and here are portions of old mills lying about, and here are some little folks and chickens and various other inhabitants. This house is made entirely of palm leaves, you see. The stem portion of the leaf is used for lumber, and these are held together by these poles lashed across the side. Here is still another Porto Rican home, possibly a little better one, with a very picturesque location. Here is a market. The Porto Rican market is a very interesting place. You see many different things there that we never see at home. They have a very curious way of disposing of their wares. They are more often placed upon the ground, but sometimes are on tables. You see here a lot of hats for sale. They are very much like Panama hats. Porto Rico produces a palm known as the hat palm that some of these hats are made from, but most of them are made from a cheaper palm, hence are not quite as good as Panama. When a Porto Rican discovers an Americano down there, he thinks he doesn't know anything about hats. Ask him how much, and he will say, "Fifteen dollars." "Oh, but that is a very high price." "Well, but I paid \$12.50 for it, and I could not afford to sell it for any less." "I don't care for it then" and go off. "Oh, come back, come back; look at it again." So I look at it again. "Well, pay me ten dollars for it; I will make a great sacrifice." "Oh, no, it is not worth ten dollars. I will give you \$2.50." "All right all right; you take it along; you can have it. I make a very great sacrifice; I lose nine dollars and a half, but I let you have it because you are very courteous and kind to me; so I will let you have it for \$3.00." So the Porto Rican is quite a fine dickerer. He asks two or three times as much

as he expects to get, so you must know in advance about what the goods are worth.

This gives you an idea of the faces of the negro class. I showed you a little while ago the plaza in the principal city where the people were on parade. Most of the people call themselves white, but as a matter of fact, probably there is not a very big per cent of them that don't have a mixture of colored blood. These white people, so-called, march up and down in the center, and outside of them there is another ring going in the opposite direction, made up of the blacks, or brown people. Here you see the people of this class. Their art of carrying things on their heads is a very curious and interesting thing. It is observable that the people of Porto Rico are very erect, and they all carry things on their heads; the women especially are erect. This little girl has a great bucket of water, and is walking along the street just as straight as an arrow, and is a sturdy little girl, perhaps ten years old. You sometimes see a woman carrying a load on her head big enough for an ox cart. You see several men picking up a bag of sugar, and lift it up ~~and~~ quickly, and drop it on the head of a man; then you see that man start and run for the ship as hard as he can run; and he keeps at it all day long. He is not working by the day, but he is working by the bag, gets so much a bag, and with that incentive, he makes great haste to deposit as many bags as possible in the ship; but it is astonishing the amount of labor these men do, their hardihood. They are so very simple in their habits, and they live upon the very simplest food, comparatively little food. It is really surprising, how little food the Porto Rican eats. One would hardly think it possible; Mrs. Dr. Knapp told me she did not see how it was possible for the hired help to live, they ate so little. They are satisfied with very little. And I noticed they are very particular to chew their food well. They are generally accustomed to the habit of thorough mastication of food. It is a natural habit. A sheep chews its food thoroughly, and the ox chews well, and the horse does; so does the Porto

Rican. And so should we. Don't forget to fletcherize. Their food is made up almost entirely of carbohydrates and fats, with very little protein indeed. Meat is almost entirely unknown to the native people. They have no means of getting it; they can not afford to buy it. A man works all day, hard, for forty cents and has a family of five or six or seven people with the children, and how can they buy meat? It is a hot country in which meat does not keep. They have no ice houses, and no refrigerators; it is a very hot country, and meat won't keep twenty-four hours. It is swarming with maggots in a very few days, and it would be positively loathsome to the scent, to the sense of smell as well as taste in forty-eight hours; so it must be eaten at once. It is really impossible to preserve meat. Besides, they have very few cattle. There is very little pasturage, and very few cattle, and very little milk; and the consequence is the people are naturally vegetarians, and always have been. The vegetarians are the hardiest of people. I met a man who has a large pine apple plantation and a large orange grove, and he told me he employed men to set out orange trees for him, and it was astonishing the number of trees the men were able to set out in a day. He assured me the Porto Rican working for forty cents a day, would do as much work as three American would do at home. They begin early in the morning, and work all day in the hot sun, work most vigorously the entire day, and ~~xxxxixaxaf~~ instead of bringing a lunch with them, the Porto Rican will start out and run three miles to dinner, eat his dinner, then run back again and do the whole thing in an hour, so as to have the pleasure of eating with his family. And I imagine he liked what he got at home better than what he found there.

Here is a bunch of Porto Ricans, and this shows how they work. This woman is working in the patio, where she can get plenty of fresh air, and also

so that she can get plenty of light, for the Porto Rican houses have no glass windows at all, and there are few windows of any kind. At night the house is shut up absolutely tight, as tight as they possibly can make it, for the people are very much afraid of night air. They imagine that there is malarial disease in the night air, and they have reason for thinking so, because the malaria comes from mosquitoes, and the mosquitoes come with the night. When a Porto Rican goes out at night, he carries an umbrella as though it were in the day time. On a moonlight night, the Porto Rican is certainly to have an umbrella to protect his head from the rays of the moon; and he also has an idea the umbrella will protect him from the dew that is falling. He finds dew upon the grass, and he imagines that the dew falls upon the grass, and he carries an umbrella to keep the dew from falling upon him. He does not know that the dew forms upon the grass, condenses upon the grass just as water condenses on the outside of a glass or pitcher in a warm room.

This is a Porto Rican laundry. ~~It~~ Every pool of water is a laundry. The woman here spreads her clothes down in the water and soaks them, then puts them on the rocks and beats them, and rubs on a little soap, then dips on water with a gourd, then slaps them with a piece of wood, then after while spreads the garment out on a rock and leaves it there in the sun; takes it home at night, brings it back the next day and does the same thing over again; she repeats this four days in succession, until they are clean and white, and thoroughly disinfected by the sun's rays.

Porto Ricans are all very fond of gambling and fighting. It seems to be as natural for them as for most other dwellers in the tropics. One finds the same thing in Mexico, and in Egypt, and in all the tropical regions I have ever visited, I have found the people very much addicted to gambling. In fact, the governments generally encourage it. In Mexico, the expenses of the govern-

ment are very largely born by gambling. And in Porto Rico, in the old times at any rate,, it was the custom of the Catholic Church to have a lottery whenever the church needed funds. But at the present time the diversion of the Porto Rican is cock fighting, so far as he can manage to do it without being caught by the police, for it is against the law. For long years, for centuries probably, it has been the favorite pastime of the Porto Ricans. It is their substitute for bull fighting which is so common in Mexico. And you see in the back yard a lot of fighting cocks that are each one tied to his own stake, and each one furnished with a very sharp, steel spur, sharp as a needle; and when they have a cock fight, the people gather around, form a ring, select two of the cocks which are brought out, and they fight until one's head is pierced by the spur of the other; then another couple will be brought out, and so on until they have all had a chance to show their prowess. It is an extremely cruel sport, and it has been suppressed by the United States government, and is only practiced now on the sly.

This is a picture showing the making of hats, made as the Panama hats are made, and some of the very finest hats require several months for their completion. Some of you can imagine how you would feel if you were riding in an automobile in Porto Rico and your automobile broke down and you had to be hauled fifty miles home by oxen. All the freight is hauled by oxen, and horses are used only for carriage driving. I did not see once such a thing as a horse drawing a heavy load, a load of freight. The freight is all drawn by oxen. All the hard work is done by oxen. There is another illustration of the same thing. I suppose the oxen bear the great heat better. Here the oxen are drawing sugar cane to a freight train that is being loaded up.

It is deposited in a great heap here, then two or three canes at a time are loaded upon the car. The cane must be handled many times, cut in two, the leaves stripped off, then the ox cart comes along and loads it on the cars, take it to the train, and then it is loaded on the train and is taken to the factory. This shows you a train of oxen, and these trains travel almost entirely at night. The heat of the day is so great, the oxen are trained to travel during the night. All night long you will hear the ox drivers shouting at their oxen, for they are largely guided by the voice.

Here is the grocer, you see, with a little box full of compartments, and each compartment contains its stock of lettuce, or carrots, or something else you are likely to want.

This is a splendid man I had the pleasure of meeting down there, and I am glad to mention him as a splendid Porto Rican of a very intelligent type. I found him living in a very plain, humble cottage, after riding five or six miles on horseback, in the midst of a large pineapple plantation. It is a very simple, humble cottage indeed, and the family live in the very simplest style, no luxury, everything very plain, the children dressed very plainly; his wife and daughters prepared ~~the meals~~ and serve the meals upon the table. I was very much interested to see that no meat was served, which interested me very much, and I found this intelligent Porto Rican gentleman didn't eat meat, didn't believe in it. He was very proud of his fine plantains growing in his back yard and in his great plantation; he had a thousand acres of pineapples, and a large cannery. He had several stores. But the thing in which he took the greatest pride was his agricultural college. He became possessed of the idea that it was necessary the Porto Ricans should be taught to till the soil. So, at his own expense, before the United States government would undertake to do a thing, he erected a fine, large building, and opened up a free school, free

so far as tuition is concerned--only required to pay their board,--to which any Porto Rican young man or young woman can go and study, not only the ordinary branches of knowledge, of common school education, but also study agriculture. He had them work out on the soil, and learn how to do it, to plant, and what different crops to cultivate, how to till them and how to manage different soils; and he did this entirely at his own expense. This man began about forty years ago as a poor boy, with absolutely nothing, and ~~has worked~~ his own way up till he has come to the point of affluence, where he is worth I suppose several hundred thousand dollars, and he is expending every dollar of his income in this philanthropic way. You can be sure I felt myself very much drawn toward this good man. I found him a noble, splendid specimen of a man, and greatly interested in progress of every sort,--not so very much education himself, but anxious other people should have education, and appreciating all the advantages of education, and doing all he can for his countrymen. He said to me, "Why should one wish to accumulate wealth? Why should one wish to accumulate money? Money is worth nothing except for use, and I prefer to use my money, and to see it used while I am alive, while I can see what becomes of it. I don't propose to leave money I have earned for somebody else to squander after I am gone." In his school I found two very intelligent teachers in charge, with a primary department and a higher department, for he has a high school; and one of his teachers has been graduated from the high school, and I found the highschool was taught entirely in English. The entire work is done in English in the high school. When they go to the high school, every single subject is taught in English. One of his daughters, a very bright young woman of seventeen spoke English very nicely ~~and~~, indeed, and was very anxious to chat a little in English, and to get information about the United States and what

a great country it is that they have so recently become allied with; so I am very glad to show you this picture of Don Ortez. And I learned that there are many noble minded men like him in Porto Rico who are real patriots, working for the benefit of their country. There was pointed out to me a home in which lived until very recently the man who was the pioneer in freeing the slaves of Porto Rico. The forty-second anniversary of the freeing of the slaves was celebrated in San Juan just before I left the island, and the people were most enthusiastic in celebrating the day when fifty thousand blacks had been set free. This man had been working all his life, and he finally got the nation interested, and succeeded forty-two years ago in setting the slaves free. He himself freed his own slaves of which he had a large number; then he encouraged his countrymen to free theirs. The people of Porto Rico are not all of the debased class, by any means. They are ignorant; there are only a very few who can read or write. Until the United States took possession of the island, there was only one school in the island, and Spain had never furnished a single school to this island of almost a million people, and only one school. There was a so-called university but it had no buildings and carried on its work, which was of a very miserable character, very poor, cheap, slovenly work indeed, in hired rooms. Now the United States government is establishing schools all over the island, and the people are eagerly learning. Almost any little boy you find on the streets now can speak a little English. I would pause in front of a schoolhouse, see a lot of boys in front of it playing, and I said to the little boys, "Who is President of the United States?" And a little chap, not more than ten years old, stood up very straight, and he said, "William H. Taft, sir." I said, "Now let us have three cheers for the United States flag", and you ought to have heard those little fellows hurrah for the United States flag. I gave them each a copper, and they ran away in high glee to get a piece of sugar

cane.

Now, Porto Rico is making progress. They have even got a sanitarium down in Porto Rico. I was very much surprised to find away up in the mountains a little town where you find this sanitarium which I show you here--a very beautiful place. I had the pleasure of spending a week here, and found it a really very delightful place, kept very clean and sweet in every way, well patronized by Porto Ricans, and a good many Americans come there, and it really is a place where one can be more comfortable than in any other place I know of in Porto Rico. So don't forget to visit this spring, Coamo springs, when you go there. It is on the road between San Juan and Ponce. You stop at Coamo, and two or three miles in the hills you find this beautiful place known as Coamo Springs. They have hot springs there, just hot enough to be comfortable, and not too hot; and these are very enjoyable. Some of the Porto Ricans patronize the place, because even the Porto Rican enjoys the baths very much. A story is told of a gentleman who visited a Porto Rican house of the better class. The lady was showing him the bathroom, with a beautiful, tiled floor, and bath tub, and she said, "This bathtub has not been used since grandfather died, thirty-six years ago", so you see, the bathtub is not so very popular. The people are often very much afraid of taking cold. There is some danger of it, because the nights are cool, and out in the sun it is hot, and in the shade it is cool, because nearly always the breeze is blowing, so if one perspires outdoors in the sun, and then goes into the shadow, he is very likely to take cold. The skin gets relaxed by so much perspiration, then is chilled by exposure to a draft.

The people of Porto Rico are acquiring clothes quite rapidly, but they are not all dressed by any means. It is said that there are only 200,000 people out of the million in Porto Rico, or one in five, that wear shoes.

There is only one in five that ~~has~~ is able to own a pair of shoes. They go barefooted from infancy, and the skin of the feet becomes so thick and tough that thorns and briars are no terrors at all to the Porto Rican's feet. Their feet are very seldom washed, and they are very much like the hoofs of a camel,-- have thick soles like a dog. They are almost impervious to heat or cold, or to thorns or briars they might meet along the road. The little folks do not wear anything at all--that is most of them, or many of them at any rate,--until they are six or eight years old, sometimes not until they are older. Since the Americans have occupied the island, the children in the schools have been required to wear clothing and shoes. When they took the island, the children were almost all absolutely nude, wore no clothes at all. Not entirely because they were poor, but because there was no necessity for it. It is not cold except in the night, and in the day time, the clothes are really an impediment, an annoyance. I can imagine that clothes must be very disagreeable to the Porto Rican boy when he first has to put them on. Some years ago out among the Yuma Indians, I found they were having hard work to get a school started there. I asked the sisters who had charge of it why it was. They said the Indians complained that the children got sick when they came to school. On the reservation, I found the children running all about in the Garden of Eden state; but in school they were all clad, all wore shoes and clothes, and I asked the teachers what was the reason they got sick. The teachers said they didn't know. "Well," I said, "what do the old Indians think?" "Well, the old Indians think it is because they wear clothes." As a matter of fact, when you come to think about it, this habit of wearing clothes is really a very dirty habit. Of course, it is necessary in this climate, for hygienic reasons, and it is necessary among civilized people everywhere for reasons of modesty and decorum;

but for the Porto Ricans, it doesn't seem to be necessary for either purpose, that is at least for the little folks, for they seem to be absolutely without self-consciousness, and their skin is hardy and tough and even on chilly mornings and evenings these little folks seem to be entirely comfortable; and at the present time they are required to wear some clothes.

That shows just the way you find them all the time. If you meet them forty times a day, you meet little people from one year old to six or seven years of age running about the streets absolutely nude. They are required to wear clothes when they go to school, and to wear shoes and stockings even, which seem to be really superfluous in that warm climate; but the little folks are economical of them, and save their shoes and stockings. They carry them to school and put them on just as they get there, and wear them while they are in the school; but when school is out, they hustle those shoes and stockings off and carry them home. That saves the discomfort of wearing them, and saves the shoes and stockings. The Porto Ricans are still in a state of primitive innocence, you see.

This island that we have recently acquired is certainly an important field for us that affords us very great opportunity. The duty of the United States is to take this island, and the Philippines, and to help them up, to lead them up to splendid civilization with which we are acquainted. We have certainly a duty to do for these splendid people; and I was very sad to find 500,000 of them there without a doctor,--no doctor accessible for medical aid; and we are going to try to do something for them. Now, I just want to suggest that if any of you ~~want~~ feel disposed to do something to help this little sister state of ours--soon to be a sister state at any rate,--if you care to do anything, to contribute anything, hand it in at the business office, and I will

see that it is used to the best possible advantage in sending down a visiting nurse. We are going to try to send one, and we will be glad for any assistance any one will be disposed to give us. I thankk you for your attention. If you would like to look at some of the Porto Rican fruits and vegetables, you can see them here. I will show them to you first before you come up. This is a cocoanut in the green state. They cut off the end with a machete, then the water is turned out. Just come up and look at them, and try some of the water from these cocoanuts. It is very fine.

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food

WHY FLESH EATING IS WRONG

A Lecture at the Sanitarium Parlor, Battle Creek, Mich., Thursday, April 14,
1910, at 8:00 P. M., By,
J. H. Kellogg, M. D.

The other night we had a question which I didn't have time to answer. Perhaps we will talk a little upon that subject tonight. The question was asked, "why do you consider meat an unwholesome article of food?" Now, I confess I am somewhat ambitious to convert every man and woman who comes here to this institution from the error of his ways as a flesh eater. And I take some pride in believing, and a good deal of satisfaction in believing that in the course of my life-time I have won a good many meat eating sinners from the error of their ways. So I am very willing to speak upon this subject. I think no one has ever found me averse to speaking upon this subject for a good many years, and I think I may speak with some authority for the reason that I have myself put the matter to a test.

When I was a boy of fourteen years of age, I read in a work on comparative anatomy, a statement by the great Cuvier, Prof. Cuvier, the great French comparative anatomist,--one of the greatest comparative anatomists who ever lived, in fact,--which set me to thinking. The statement was this: Man is a frugivorous animal. His natural diet is that of the ape, the chimpanzee, the orang-outang--the higher apes. These animals live upon fruits and nuts and soft grains. Well, now, I said, if that is true, I am glad to know it, and I am young still, and it would be a good thing to try the experiment, to see how it works. It won't do any great harm anyhow; I am just one person,

and I will try the experiment. So when I was fourteen years of age--that was 44 years ago, and you know how just how old I am,--I discarded flesh food, and I have not eaten a pound of meat since.

Now, at first and for a good many years I had some misgivings. When I saw people about me eating such large quantities of meat and listened to the arguments that meat was necessary to make people strong; and recognizing the fact that the beef eating Englishmen ruled the rice eating Hindu--that a little handful of meat eating Englishmen were able to control and rule millions upon millions of rice eating Hindus--I sometimes had some misgivings, and especially this argument was raised,--that meat eating was necessary to build up the blood, so as to fortify the body against disease; that non-flesh eaters were more subject to tuberculosis or consumption than flesh eaters. The fact was brought forward that cows were very subject to tuberculosis, while dogs are not, and I recognized the fact that people who were not flesh eaters did sometimes die of tuberculosis. I knew that I had some hereditary predisposition in that direction; in fact, when I was sixteen, I was given up to die. For about a year I had a very bad cough, and it was thought I had consumption. I don't believe I did, but I used to cough when I was asleep, and I kept the people in my house awake coughing at night, so I felt some misgivings about it; but I held myself for twenty years out of the 44--I held myself in readiness to make a change the moment somebody would come to me and give me answers to my arguments, and give me satisfactory scientific evidence that I was wrong,--I was ready to make a change; but for the last twenty years or more, I confess I have considered myself pretty thoroughly established in my heresies regarding flesh eating, because I have seen all this time scientific evidence piling up. The facts developed by the science of bacteriology and physiology and chemistry

have simply built a very mountain of evidence that is absolutely unanswerable. Now, I am going to give you just a few of these facts tonight.

Now, in the first place, Cuvier showed that flesh eating was unnatural, and this was his argument: He said, if we are going to study an animal, to know what its habits of diet are--a fossil animal,--we compare the skeleton and its organs so far as we can get them, and the teeth and the prehensile organs, the extremities--the hands or feet--we compare these with those animals whose habits are known. Suppose, now, we take a man, consider that we have found him as a curiosity--a gorilla has captured a man, and he says, "Now, what in the world am I going to feed him? He is a very interesting animal, and I want to keep him alive; what shall I feed him?" So he goes to hunting about in the forest to find some other animal that is like him; then he will watch that animal to see what he eats. He looks at his teeth. Now, what sort of teeth has he? He has four incisors in front; then on each side a pointed tooth; then on each side of those, are found pointed teeth with two points--two teeth with two points--the bicusped teeth; then beyond these are the ~~xxxxxx~~ multi-cusped teeth, or the molars, as they are called--sixteen teeth in all. Four incisors, four cusped teeth, and four bicusped teeth, and six molars; and those are the teeth in the jaw; and they are exactly even along the top; they are all the same height, and they are all set close together; there are no spaces between. He looks to see. Then he looks at a wolf's teeth. Now, here is this wolf. He has got six beautiful incisors in front that look very much like human teeth, but then those teeth that come next, those cusped teeth, they are long and sharp points, twice as long as the other teeth, and they are set apart from the other teeth, so that they will have room to lap by, and they are very useful in tearing flesh; then there are the molars that come in next behind, and they are shaped just like saws.

Now, here is a cow. This cow has incisors in front in one jaw, and none at all in the other jaw. Then there are molars behind, and those molars are made up of alternate plates,--instead of being covered with enamel, they are made up of alternate plates of enamel and bone. They have sharp, corrugated cutting surfaces on top, and they are very different from the teeth of a dog. Then here is the horse. He has these incisor teeth, cutting teeth, in front above and below; then he has some cusped teeth on the side called bridle teeth that look very much like the dog's teeth, set a little apart from the other teeth too; then he has molars behind that are very much like the molars of the cow. Now, these teeth do not any of them look like a man's teeth; they don't any of them look like the teeth of this interesting animal we have discovered. The gorilla might be saying to his wife, "What shall we feed him?" So they go hunting about, and by and by they find an orang-outang, examine the orang-outang, and they find he has four incisors in front for all the world just like those of the human teeth; then on either side a cusped tooth, just exactly like ~~xxxxxx~~ the cusped teeth in the man's mouth, only they are just a little longer, and they are spread just a little from the other teeth; then behind those the bi-cusped, and behind those the molars exactly like those of the human jaw. So they say, "Now, we know what to feed this creature; he has teeth exactly like those of this ~~xxx~~ orang-outang. Now, we will watch this orang-outang and see what he eats." And they see this orang-outang climbs up the palm tree and shakes down a cocoanut, cracks that cocoanut, scoops out the meat, and he thrives on it. Sometimes he digs down in the ground and finds a ground nut, and he nibbles that; and when the corn has reached the stage when the ears are fit for roasting, this orang-outang ~~xxxxx~~ gets up a band of comrades, comes down to the corn field, picks those ears of corn, passes them from one to another along the line away up into the woods, toss

tossing the ears of corn from one to the other, and in that way they rob the corn ~~xxx~~ field when the corn is in the milk. They say, "Well, it must be the cocoanut, and ground nuts, and fruits of various sorts are the natural foods of this interesting creature we have discovered."

Now, that is the way to test the diet of a creature--to ~~find~~ compare it with other creatures whose diet is known; and when we study man from that standpoint, there is not left the least bit of chance for doubt that the man is a fruit and nut eating animal; that his diet is that of the chimpanzee, the orang-outang, and the other higher apes.

The anatomist goes a little further into the question. He examines the alimentary canal. Of course, the gorilla could not dissect a man, so he could not make such an examination, and he does not shed blood, by the way. The gorilla will kill a man if he attacks him, but he will not eat him. But he himself ~~man~~ is a fruit eater just as much, perhaps, as the chimpanzee and the orang-outang, though he is perhaps the fiercest beast that roams the forest--the king of the forest in the region where he lives. In the regions in Africa where the gorilla is found, there are no lions. Lions roam over every ~~part~~ other part of Africa except the part where the gorilla is, and in that part the lion is not found. The gorilla lives there, and he loves his home, and so will not permit the lion there; at least, the lion does not care to stay there where he is. The gorilla sometimes kills the elephant. He will spring upon his back, as he is passing under the tree, with a club in his hands, and beat his brains out. And he will attack a leopard armed with a club, and men from the Congo region have told me that leopards have been found dead in the forest that have been killed by the gorilla, and the gorilla was found beside the leopard.

Now, when the anatomist comes to examine a man, as I said, he goes further down into the alimentary canal. He compares the alimentary canal of

all the different animals with that of the new animal. For instance, he measures the sheep, and finds it is three feet long; measures his alimentary canal, and finds that is 33 feet long--eleven times as long as the body of the sheep. He measures the dog and finds the dog two feet long, and his alimentary canal twelve feet long--six times as long as the dog. So he measures the alimentary canal of the dog and finds it is short compared with the length of the animal. He examines the alimentary canal of some of the carnivorous fishes, and finds it is just the length of the body. He examines the alimentary canal of the eagle that lives on meat, and finds it is very short. He examines the colon and the alimentary canal of cows, and finds that the alimentary canal of the cow, which lives on grasses is enormously long. He finds that the alimentary canal is always longer in animals that live on non-flesh foods, in the non-flesh eating animals, and that it is short in the animals that eat meat--the flesh eating animals. He sees that this must be so, because in the meat eating animals, the alimentary canal must be short so that the remnants of the flesh can easily and quickly escape from the body so that they will not have time to decay in the body.

But now, animals with long alimentary canals are short lived when flesh enters into their diet. So we compare the carnivorous animals--their alimentary canals one to six times the length of the body; and then here are the herbivorous animals with alimentary canals from ten to twenty times the length of the body. And here are the frugivorous animals with alimentary canals from eight to twelve times the length of the body.

Now, here we have the carnivore--the dog, the wolf, the cat, the lion, the leopard, and the other carnivorous animals. In the herbivora, we have the ox, the sheep, the goat, etc. The frugivorous animals are represented by the

higher apes of various sorts.

Now, let us see where man belongs. We measure the alimentary canal of man and find it to be thirty feet long. And the man himself is, say, six feet long; so that would be thirty divided by six, wouldn't it? and that equals five. That is what Dr. Woods Hutchinson was writing about some time ago, and he was making fun of people who were non flesh eaters. Dr. Wiley, you know, stated recently that if we stopped eating meat, we would all become molly coddles. Dr. Woods Hutchinson said something similar, and he showed up the absurdity of interdicting the use of flesh food by this argument. "Why," He said, "the man's diet is indicated by his alimentary canal. Carnivorous animals have short alimentary canals. Man's alimentary canal is thirty feet long, and he himself is six feet long, and that makes his alimentary canal only five times as long as his body; and that puts him right in with the carnivora; that proves him to be carnivorous, a carnivorous animal." That is Dr. Woods Hutchinson's argument, and it looks very specious, doesn't it? But it is like a good many others of Dr. Woods Hutchinson's arguments--it is superficial. We will make a diagram here to represent a dog if you please. We will get the length of the dog and of his alimentary canal; and we measure from the end of his nose to the end of his back bone. That is the length of the dog; and we compare that with the length of his alimentary canal. But when Dr. Woods Hutchinson measured the man, he forgot that the man was standing up erect on his hind legs, so when he measured him, instead of measuring from the end of his nose to the end of his backbone, he went on and included his hind legs, don't you see; and that makes him six feet long whereas, if we put the man down on all fours, like the dog, why then he is only three feet long; so we must divide thirty by three, and it makes it ten instead of five. We

multiply five by two, don't you see, and that puts man right up here in the middle of the frugivorous class where he belongs, you see.

Now, I think that is plain enough so you can all see it, as plain as anything can possibly be. And I have found that same argument in medical books, and sometimes in medical works on diet; I suppose I have met it twenty times in the last thirty-five years, and it always struck me as being a very good illustration of the superficial way in which our writers upon diet have studied this question. It is evident that they are looking, not for real truth, not for foundation facts, but are simply looking for something with which to bolster up the conventional practice. That is a very common thing for scientific men to do. Dr. William Roberts, of England, some years ago studied, for instance--set out to study alcohol and its effects upon digestion. Twenty years ago Dr. William Roberts was in the habit of recommending wine, quoting the old text in justification of it that Paul wrote to Timothy--to take a little wine for his stomach's sake. You remember a little girl when asked to take a little wine for her stomach's sake, said, "My stomach don't ache." So she didn't take any wine for her stomach's ache. Dr. Roberts was in the habit of recommending wine, so he made a series of experiments to determine the effect of alcohol upon digestion with the expectation, evidently, of being able to prove scientifically that alcohol aided digestion; but before he had gone very far in his experiments, he found, as a matter of fact, that alcohol hindered digestion; in all doses it hindered digestion, interfered with the action of the gastric juice seriously, interfered with the action of the saliva, interfered with the whole digestive process, and didn't help digestion an atom, but hindered it; but nevertheless, Dr. Roberts didn't interdict alcohol; he discovered that there had been an error about it, that they had been recommending

alcohol to aid digestion, whereas it was not ~~aid~~ that the digestion needed. He said he had made the wonderful ~~discovery~~ that modern cookery had advanced to such great perfection that it had rendered our food too digestible, and that the greatest danger we were in at the present time was an ~~undue acceleration~~ undue acceleration of nutrition because of the too easy digestion of our food--the too great digestibility of the food, so we needed alcohol to hinder the digestion. We had too good digestion, and we must take a little alcohol to hinder it. That is the actual fact. Dr. Roberts put that down seriously in the book in which he detailed his experiments which proved that alcohol hindered digestion; so we can not put very much reliance, as a matter of fact, upon the dicta of scientific men unless it gives the facts right along with their pronouncements. When a scientific man says a thing is so, you ask him why; get his reason for it, and if the reason is not a good one, it is not worth any more than as though somebody else said it. The fact that a scientific man says such a thing does not make it true. As a matter of fact, ^{the world has been} the ~~old~~ ~~man~~ of groping in darkness all these centuries, because of too much faith in scientific men,--too much faith in authority; too much confidence in authority. It is only in these modern times, when men have rebelled against authority in everything, in medicine, in politics, in theology, in everything else,--in these modern times there has been a general rebellion, as ~~the~~ education has become more universal, and men have been taught to think, and to think independently--we find men entering protest against preconceived opinions, against antiquated notions; so we are making progress, marvelous progress, in ~~every~~ digestion; and there is just as much room for progress in our habits of life, in what we eat, in our practices in relation to eating and drinking,--there is just as much room for progress there as in other things; but somehow

we have missed progress in this line; we have not been keeping up with the march of science, with the discoveries that have been made in these matters. The time has come when it is important that people should know what wonderful discoveries have been developed in these recent times.

Here is the comparison that Cuvier made showing that man was almost exactly like the orang-outang, and the chimpanzee--the higher apes; consequently his diet was the same; so it would be perfectly safe to follow the indications of nature in this respect. When you get a new bird, a bird you have never seen before, the first thing you ask is, if it is a new species of bird, "What shall I feed it?" If you can find out what that bird had to eat in the forest when it was living its natural life, that is the thing you would like to get for it. You would know that would be the proper thing. Now, that is exactly what we should do for men--find out what man ate when he was living in his great strength, in the glory of his pioneer vigor in the forest--not as a poor, depreciated, degenerated savage, but as a man living under the best possible conditions, under his most natural environment in the tropics, for example; and when we make that inquiry, we find, sure enough, that man lives upon the things upon which the monkey lives--adding some other things, adding those things which can be rendered more digestible by means of cookery. The hard, dry cereals must be cooked to be readily digestible; and yet they are somewhat digestible, even if they are not cooked. Fruits are already digested, cooked in the sun, digested by the sun. That is why a man may take fruit, or fruit juice with almost absolute impunity if he has a sound stomach, at all times, at any time, because they require no digestion. If you haven't any special irritation of the stomach, have an ordinarily good stomach, you can eat fruit at any time, if you take pains to chew it well, for it requires no digestion. That is true of most fruits. There are only a few exceptions. The chestnut

contains a large amount of starch; and the olive contains a good deal olive oil, and there are a few others that contain some indigestible matter; but in general fruits are already digested, and require no digestive activity to amount to anything. Then, there are nuts which are also very largely digested by the sun, and which consist chiefly of protein and fat. The fat is emulsified and ready for very prompt and very quick digestion, and the protein is in a xaxy form which undergoes very quick and prompt digestion, if it is thoroughly masticated. So these foods are quite natural.

Now, when we come to consider the matter from other standpoints, other than the physiologic standpoint, and the anatomical standpoint, we find the strongest sort of arguments against the use of flesh food. For example, suppose we consider it from the standpoint of purity. Now, we take an apple from the bough--there it hangs, red cheeked and mellow in the sun, and we examine that apple, take off its skin, and it is absolutely pure. There is not a thing inside of it but what is absolutely pure, not a germ in it, not a poison in it. It is absolutely pure food. We take a potato from the soil--it is covered with dirt; we wash off the dirt, and there is this cellulose covering, a little woody shell around it, the brown paper, if you please, in which it is done up, that keeps it absolutely clean and pure, so when you take that covering off it is absolutely pure food, pure as the driven snow. Now, this is true of all vegetable foods, of the fruits, and all the nuts, and all the cereals, all the vegetable foods that grow are absolutely pure inside. Now, on the other hand, take the animal under the best conditions under which you can find it. Go down in the butcher shop, get the freshest meat you can buy in the meat shop,--a pullet with its neck wrung yesterday; or an ox that had its throat cut day before yesterday; a pig that squealed for the last time a couple of days ago,--any animal flesh, anything in the form of animal flesh--take it home

with you, put it under the microscope, if you please, and you will find it swarming with bacteria--multitudes of germs of all sorts in every direction; scores of different kinds of germs have been discovered in flesh, and some of them the most deadly kinds of germs. As an illustration of that, I might tell you a thing that happened not so very long ago. I saw an account in a paper of a man who once owned a lion, who had been a lion trainer, and he sold this particular lion to a menagerie. Some time afterwards he visited the menagerie, and he found the lion there in his cage asleep. He thought this lion would recognize him as he was his old master, and he was so sure he would, that he put his arm through the bars of the cage and touched him. The lion was suddenly aroused in this way from his sleep, and he seized his arm before he knew that it was his old master,--seized his arm, crushed it, crushed the bones. The man was delivered from the jaws of the lion, taken to a hospital at once, but in three days he was dead. He was swollen from head to foot, bloated beyond all recognition; his whole body was filled with gas, not simply the bowels, but his tissues were filled with gas; his muscles, every part of his body, was just blown up with gas, and the most offensive gas. And the man's body was found to be filled with a peculiar germ, a germ that was discovered by Prof. Welch, of Johns Hopkins University a few years ago, a very peculiar germ that produces a deadly poison, and a most offensive gas. This man was inoculated with these germs from the lion's mouth. Where did the lion get those germs? He got them from the meat upon which he had been fed. They are found almost universally in meat. You can hardly ~~gax~~ go to a meat shop and get a piece of meat without getting those germs with it. Sometimes a butcher in cutting off a piece of meat, accidentally cuts himself, and gets blood-poisoning, and dies. Now, suppose that same piece of meat he was cutting goes home, and somebody swallows it, swallows that whole beefsteak, a mere drop of

the juice of which causes blood poisoning in the man who cut himself. Why doesn't it kill the man who eats it? It does not kill him, but only for the reason that he does not actually put it into his blood; for the reason that his mucous membrane has the power to fight off germs and germpoisons; it is a filter that keeps them out. It is for the same reason that if a rattlesnake bites a man ~~and~~ he dies; but if he takes that snake's virus into his mouth and swallows it, it does not destroy his life. That is the reason. Such things are happening all the time. Thousands of people are dying every year who are supposed to die from typhoid fever, but are simply dying of beefsteak poison. That is an exceedingly common thing. Some of the germs which are found in meat as it comes from the butcher shop produce a disease which so nearly resembles typhoid fever that it can not be told from it without an examination of the blood. The symptoms are just exactly the same--there is a prolonged fever. Any number of people are suffering from it and they are supposed to be suffering from malaria, supposed to be suffering from malarial disease, when it is nothing but beefsteak poison. The germs in the meat produce the poison, the poison is absorbed and produces a chill, and then fever, and every now and then there is a recurrence of it, and the patient never knowing that it is coming from the beefsteak he has eaten. Very often we have people here who have fever that we can trace directly to the germs which are rampant in the intestine, and the original source of which was beefsteak.

Now, we find no such things in vegetable foods. It is true it has been reported recently that a peculiar and very deadly disease known as pellagra is due to the eating of spoiled, musty or mouldy corn. It is not proven yet that this is true --that it is due to eating spoiled corn. I saw the report in a paper the other day that a doctor down in Tennessee stated that he had met three cases of pellagra that had spent some time at Battle Creek and eaten

the food prepared at the Sanitarium,--stated that in a public meeting. I suppose it was intended to indicate that people who come to the Battle Creek Sanitarium were getting pellagra. The only case we ever saw here was a woman who came up from Tennessee and brought pellagra with her. No cases have ever been discovered in Michigan. Pellagra has been discovered in Illinois and some other states, but no case of pellagra has ever been discovered or known in the State of Michigan, and I doubt if it will ever be discovered here, unless it is imported. There is more to be said upon this question.

It is not simply the germs to be found in meat, though there are many of them. The best beefsteak you can get in the market is simply swarming with germs, not a few, but millions upon millions of them. For instance, in an examination of this sort that was made here in our laboratory last year, the insignificant number of one billion 200 million was the average number found in one dram, one eighth of an ounce, one little morsel about what you would take into your mouth at one time to chew,--in one bite of beefsteak,--one billion 200 million bacteria in it; and poison-forming bacteria, bacteria that are capable of producing the most deadly kind of poisons. So, friends, you see it is not a matter of small concern. There are certain foods that are richer in bacteria than others. For instance, the salt mackerel, and codfish, and herring, and sardines, and oysters--all kinds of so-called sea food are simply swarming, swarming with bacteria, countless numbers so that it is almost impossible to estimate them; but the freshest, best possible beefsteak or mutton or pork you can find in the market,--you will find it swarming with bacteria. You can not get such a thing as a piece of meat in the market that is clean, that has no bacteria in it. You talk about milk being so dirty, so impure, and there is such a fuss made about it, because milk contains a few million bacteria. Why, milk is not allowed to contain over 300 thousand in

a teaspoonful. That would make these quantities correspond--800,000 to the teaspoonful, of bacteria will condemn milk as not fit for commercial use. It can not be sold, and the so-called certified milk--that must not contain over 20,000 germs to the teaspoonful any way, to be certified. But now, here is beefsteak, that you can depend upon it has got anywhere from a billion to ten or twenty billion bacteria in the same quantity, which would be condemned in milk if it contained only 800,000. So you can see just about how they compare here. There is more than one thousand times--meat contains on an average more than one thousand times as many germs as milk which is so bad that it would be condemned by the inspectors as being unfit to be sold. Now, that is a fact, yet we are afraid of milk, and the meat we think nothing about. Why, my dear friends, it certainly is like straining at a gnat and swallowing a camel to object to milk because it is dirty, because it just has a few germs in it; then swallow beefsteak that has, we may say, a whole nation of germs.

Well, some time ago a man went up to Newfoundland and made an inspection up there, and he found people there that dressed the fish up there, and the people that packed the fish were a very tuberculous lot of folks; they are old people, ~~decrepit~~ decrepit old men and women, spitting all about, and that the fish became enormously infected with tubercle germs, and that tuberculosis has been contracted, the germs have been found in these dried and salted fish that come from that region. Now, I don't know anything about that. I published an article in Good Health about it, and a man in Worcester, Mass. wrote me a very solemn protest about it. I have not had a chance to go up to Newfoundland to look into the matter, but I will find out about it one of these days,--have an investigation made so we will know.

Some time ago the Boston papers were almost red hot with disclosures about

about the doings of the State Board of Health in Massachusetts. The State Board of Health, you know, would go around and examine the the bodies of cows, the herds of cows to see whether they ~~was~~ were fit to produce milk to be used by children, invalids, and other people, or not. Whenever they found a cow that had tuberculosis,--they make an injection of tuberculin to find out about it--the tuberculin test,--when they find a tuberculous cow, they take the cow out of the herd. What do you suppose they do with those cows--kill them, throw them away, bury them? Not at all. That doesn't agree at all with the New England idea of thrift,--not by any means. Those cattle are put on board the cars, carried out to special slaughter houses--special ones that are kept in the State of Massachusetts for that very purpose,--of killing tuberculous cattle, cancerous cattle, cattle that have actinomycosis and other kinds of infections, and they are carried there, the cow is found to have tuberculosis of the lung for instance. The tuberculous lung is probably fed to swine or something else, but the rest of that tuberculous cow is cut up and sent down to Boston and sold in the open market. That was the state of things that was discovered. What do you suppose the people of Boston said about it? They didn't say, "We won't eat such flesh", but they said, "If you are going to make us eat such flesh, we must know it; we want to know it. And these tuberculous carcasses should be labeled as tuberculous flesh from a tuberculous cow."

I learned just yesterday that the same thing is going on in Wisconsin now. I met last night a gentleman from Wisconsin who knows all about the cattle business, and who just came down to this city with a whole carload of the finest cows that could be found in Wisconsin. One of the Sanitarium farms has been sold to some friends of the institution, who are establishing a model

dairy upon it, and we had this gentleman, who is an expert, buy a carload of the very finest cattle they have got--paid \$250 a piece for some of them--and we are going to have there a model dairy, and are going to see if we can not produce milk without a single germ in it; and I learned from the party that up in Wisconsin they are doing the same thing. These cows have all been tested, so we know none of them have any tuberculosis. I said to him, "What do they do with the tuberculous cattle?" "Oh," he said, "they slaughter them." "Well, what then?" "Why, of course, they cut off the diseased parts, and the rest goes into the market to be eaten, and the people don't know but it is all right." That reminded me that I have over in the museum of our college a portion of the head of a cow with a cancer on it. That cow came from one of the big slaughter houses in Chicago. I sent a doctor over there some time ago, and he stayed there three days, to see what went on. And he saw that cancerous head cut off, but the rest of the animal went right on as choice beefsteak. He saw animals cut open with their intestines all filled with ulceration and sores. These intestines were so rotten they would not do for sausage, and would not hang together. And they would not do for tripe; but the rest of the animal was all right; the rest of it passed along all right. Why, one of the health officers of Chicago said some little time ago that if all the diseased cattle were condemned, the price of beefsteak in Chicago would be a dollar a pound." That was ten years ago or more; so you can see about what the proportion of diseased animals is. The government has been keeping an account of the animals, hogs, in which trichinae were found.

You know, the German government, and the French government, in fact, most of the foreign governments, refused to take any more American pork because it had so many trichinae in it; so the United States government had to see, in order that the meat should be sold abroad,--they had to establish an

inspection service at every large slaughtering establishment, to inspect the hogs that were to be shipped abroad. So they make careful inspection of all hogs that are to be sent abroad. The German peasant must have inspected pigs to eat; he must not be allowed to eat any trichinae if it can be helped, if the United States government can help it, but the American sovereign can eat just as many trichinae as he wants to. There is no inspection made of hogs that are eaten at home. Now, it is found that two per cent of all the hogs that are examined for export have trichinae in them. Probably a much larger per cent would be found to have trichinae in them if the whole body was examined. They do not know what part of the body to examine to find the trichinae, but they just take a little pinch here, and a little pinch there, and if they don't find any trichinae, the hog is reported as not having any. If they examined the whole body, they would doubtless find some ~~XXXXXXXX~~ in many cases that are supposed to be free from trichinae, and that are pronounced to be free from it. Now, a large proportion of the animals eaten at home are not inspected at all. Isn't the American sovereign entitled to inspected meat? Are not the kings and queens of America entitled to just as much care and supervision of their diet, to see that it shall be clean, pure, sweet, and free from vermin, as are foreigners? I don't mean to say foreigners are not just as good as we; but aren't we just as good as they? Certainly we ought to be protected just as much as others are protected; but the trouble is we swallow anything that comes along without any protest. So long as the American people are willing to swallow hogs, trichinae and all, there will be no pains taken to protect them against trichinae. In some states the proportion is found to be a good deal larger than two per cent. Down in Indiana some years ago, Dr. Sutton made an investigation, and he reported that ten per cent of the hogs in Indiana had

trichinae.

When I was a medical student 35 or 36 years ago, I found some little white specks one day in the subject I was studying, and I called the attention of Dr. Janeway to it. This may shock your sensibilities to some extent, but I want you to know the facts about this thing. I called the attention of the Professor to some little bodies, white specks, a great number of them. Prof. E. G. Janeway, the great New York physician--you have heard of him,-- he was my teacher of anatomy at that time, and I called his attention to it. "Oh," he said, "those are trichinae." So I took a little specimen home and examined it under the microscope, and sure enough, there it was, a little sack, and here was the worm coiled up inside of it, and one of them had two inside of it. This is what I want to tell you: Prof. Janeway said, "I have kept careful track of the subjects that come into this anatomical laboratory, and I have found that one in every seventeen of all the people examined here-- one in every seventeen of all persons examined here have trichinae!" That would be six in one hundred, don't you see,--practically six persons in every hundred.

Now, this is the query I want to raise for your consideration. You know the hogs, two hogs out of ~~xxx~~ every hundred have trichinae, but among men, six out of every hundred. How many are there here, let's see. Perhaps 200 people in this room. So twelve people in this room have trichinae, right here. Unquestionably there are people in this room that have got trichinae crawling around in their bodies,--no, they don't crawl around; they are coiled up in little sacs in the muscles, and they stay there quite contented when they once get settled down. A German doctor states that a great many pains in the muscles, rheumatic pains, etc., are caused by trichinae. They settle down in little sacs in the muscles, and surround themselves with chalky masses. I see a lady here rubbing her shoulder. She thinks she has got them, and

maybe she has. But after they get settled down, there is no danger; but it is while they are on the rampage, rambling about that it is dangerous. Hundreds of people are dying of trichinosis every year who are supposed to have typhoid fever. It resembles typhoid fever very closely indeed. It resembles it so closely that Dr. Osler in his great medical work says that the majority of cases of trichinosis poisoning,--cases with this disease are treated for typhoid fever, and die of what is supposed to be typhoid fever; and that is the reason why we do not hear more about it.

But now, why is it that six people out of one hundred have trichinosis, and trichinae in the muscles, and only two hogs out of every hundred,--why is it? Can you explain that phenomenon? Why? There is only just one reason for it, and that is--there are more men who eat hogs than there are hogs that eat men. Men eat hogs that have trichinae--more men eat the hogs that have trichinae, than the number of hogs that eat men. The natural history of trichinae is very interesting. It was discovered fifteen or sixteen years ago in a German dissecting room, and it was considered a medical student's curiosity. That is where it was first discovered--in Germany. After while, there was a great feast, and a great number of people were taken sick with trichinae, and an examination was made of the sausage they ate, and it showed this sausage was filled with trichinae, and it was found where the trichinae came from; and it came from hog. Then the next question was, where do the hogs get it? It was noticed by and by that there was a relationship that they had not observed before,--rats visited the dissecting rooms, dead houses, undertakers' establishments, and such places, and the rats also visited pig pens; so you see how it is.

Here is a man who has trichinae, dies of trichinae. Then the rat eats the man and the rat gets trichinae. The rat then visits the hog pen

and is stealing the hogs' corn, and one of the hogs catches him at it, and eats the rat; so the hog gets trichinae. Then the hog **dies**; the man eats the hog, and he gets trichinae. Then the hog dies; the man eats the hog and gets trichinae. So you see one scavenger eats another, and passes the trichinae around. Now, that is a fact. When we live on a scavenger diet, we have to take the consequences. A rat eats a dead man, gets trichinae; the hog eats the rat and gets trichinae, and the man eats the dead hog and gets trichinae. If we did not eat these dead animals, we never could have trichinae, because trichinae are found only in beasts; they are not found in vegetables. They have been found in fish, and the fish are carnivorous animals, and when flesh having trichinae is thrown into the water, when it happens to be the refuse of the slaughterhouse, the fish sometimes eat this refuse, and in that way get trichinae, and it is possible to get it from fish in that way. Chickens, when fed upon refuse of that sort, may get infected; so we may get trichinae from eating chickens also. That is not the common way of getting it, because chickens are seldom eaten raw. Cooking will destroy trichinae. A cooked trichinae will not do any harm. Perhaps some of you think it would be very delectable to eat cooked trichinae. There is comfort in that, isn't there? Roast trichinae can not squirm and wriggle, so that some people may consider that a very nice sort of diet; but I don't care to have any of it in my bill of fare.

Then there is tapeworm, and many other parasites that are found in flesh, that I haven't time to talk about tonight. No one would ever have tapeworm if he didn't eat dead pork. Then there is measly beef or pork,-- meat with little bladders all through it. When you swallow such meat, those little bladders are dissolved off, and the little worms inside fasten upon the mucous membrane, begin to grow, and they add joint by joint, and joints to joints, and by and by there are yards and yards of tapeworm flooding back and

forth in the intestine. Tapeworms have been reported one hundred feet in length. They are generally only a few yards in length. Some people's lives are made miserable by these tapeworms: They are sometimes a source of infection with typhoid fever. They bite the mucous membrane of the intestines, germs get in there through those bites, and so very great harm is done.

Well, now, there is more trouble for the man that eats meat. Suppose there were no parasites; suppose there were no germs; suppose the meat was just as sweet as it could possibly be; suppose you took it just as the Kalmuk Tartar takes it,--simply take a slice off the warm, living, walking animal; simply carve out a slice of steak, of warm, quivering flesh, and eat it raw. The Porto Rican eats his meat while it is still warm. If he waits a while, it decomposes. He can not keep it cool, he can not cool it off in Porto Rico, as we can in this country; so the meat has to be eaten the same day it is killed, and it is even likely to be decomposed if it is left for a very few hours; so it is generally eaten while it is still warm. Now, if you do it that way, so that there are no germs in it, and if you find the animals are perfectly healthy so that there are no parasites in it, still there are evils so great that it is impossible to believe that flesh was ever intended to be eaten as food. Consider, now, in our natural diet, we have just the proportion of protein that we need. The ox eats grass, and he finds the protein he needs in the grass; the hog eats corn, oats, grass, and hay, and he finds all the protein that he wants in those things; and the horse does the same. Now, meat is almost pure protein. There is almost nothing else in meat but pure protein. Protein and fat are almost the only food elements found in meat. In lean meat, it is simply pure protein--nothing else. That element we don't need much of; we need only a very small proportion of it. The proportion is so small that we do not need any more than what is

what is found in bread, and in rice, and in our ordinary cereal foods--all we need. We don't need any more protein than the ox himself does. The horse needs just as much protein as we do. The horse has large muscles, and uses these muscles, works hard, and needs protein in just as large proportion as we do; It was formerly supposed that these animals needed a great deal of protein, and protein food was fed to animals; but fifteen or twenty years ago in the Minnesota agricultural experiment station, some investigations were made, and they discovered the fact that they could raise better, healthier hogs if they gave little protein. The discovery was made that animals that worked were healthier, and more hardy, and grew faster, and were much better and finer if they had little protein; so the protein has been cut down; but it is only within very recent years, since the experiments of Prof. Chittenden, at Yale, begun about six or eight years ago,--it is only in these recent years that it has been discovered that the same thing applies to men,--that the protein in the ordinary foods is quite sufficient. As Prof. Folin said in Boston, during Holiday week, between Christmas and New Years, just a few months ago,--we don't need to bother our heads about protein; we don't need to worry about it at all. He said that the doctor when he makes a prescription for his patient, with reference to his diet, doesn't need to take protein into consideration even, only to be careful that he doesn't eat too much. And the lean meat is all pure protein; so when we eat lean meat, we take a great excess of this element. We can not use but very little. You know, when the locomotive is tearing its way over the track, the fireman has to keep working hard to transfer coal from the tender to the firebox. He doesn't throw in bolts, and iron and brass nuts, and things of that sort; but it is coal, coal which supports the fires of the locomotive. Now, fats and starches are to the human body exact

exactly what coal is to the locomotive. They furnish the heat, and the power which the coal furnishes to the locomotive. Protein is the other element which simply furnishes the necessary material for building up the body, building up the machine and keeping it in repair. I think you will get the idea if you remember that the locomotive stops now and then, every two or three hundred miles, and goes into the roundhouse for repairs, and another locomotive takes its place. About once in two or three hundred miles, the locomotive is taken off the track, another one takes its place, and it goes into the roundhouse, and is looked all over, and a bolt is put in here, and nuts that have dropped off are replaced, and new brass and iron castings are put in to replace those which are broken or worn out; and these metals are put on the locomotive to make the machinery intact. Now, that is exactly what the body requires. The protein is the metal repair, just exactly what the brass and iron bolts and nuts are to the locomotive; and the body does not need any more protein in proportion to its other food elements, than the locomotive needs of iron and other pieces of metal to keep its machinery intact. The starch and the fat are the things that keep the machine going. Protein is simply to keep up repairs, to keep the body machine intact. Now, then, you see when a man sits down and eats a great, big beefsteak, makes his dinner mostly out of meats, precisely the same thing happens to him that would happen to the locomotive if the fireman, instead of putting in coal in large abundances, puts in great chunks of iron, billets of pig iron, and great masses of copper, and lumps of steel, brass, etc. He would very soon have the fire out; the grates would be clogged, because they can not burn; they are very poor fuel, practically not fuel at all. That is exactly what happens to the body when too much protein is eaten. The body can not use but very little protein, and when we take a large amount of

protein into the body the consequence is there is a large mass of material left out that can not be used, left in the intestines. And what happens to it? It simply rots; it undergoes putrefaction; the very same thing happens to that excess of protein you have eaten,--the same thing happens to it inside of the body that would happen to it if you left it outside the body in a warm place. That beefsteak you put into your stomach undergoes exactly the same change that would happen to it if you should ~~allow~~ lay it right on your stomach and keep it there, only it happens quicker; that is, it happens to that portion of it which has not been digested and absorbed, which includes a considerable portion of it. So when we eat meat, we eat a disproportionate of the protein element of which we need only a very small amount. We sit down at the ordinary hotel table, and see there the bill of fare is made up ~~of~~ almost entirely of meat,--meats, meats, meats, meats,--all sorts of meats,--the whole bill of fare of all creation is there, as I was telling you the other night; and it takes at least thirteen stomachs to digest that kind of bill of fare ~~and~~ those different kinds of foods, and we haven't got but just one puny, little stomach to walk up to that monstrous bill of fare; and the man wonders then because his stomach gets out of order now and then; wonders that his stomach fails, when he has been trying to digest everything the whale eats, everything the cow eats, everything the monkey eats, everything the dog eats, everything the scavenger eats,--he has been trying to digest all of those things with one poor, puny little stomach, and there is only one creature in all the world that can do it, that has got stomach power big enough to meet such a demand; and that is the woodchuck. The woodchuck has fourteen stomachs, so he can manage to get through with it. ,

Now that is one great evil in eating so much meat, but here is another serious matter. Prof. Sherman, of Columbia University, has called attention recently to the fact that we are in a state of lime starvation, that more than half the people of the United States are suffering for lime. Did you ever think of it--here is the hog that lays hold of an ear of corn and eats it. Now, every little kernel of that ear of corn has in it everything that hog needs; it has some lime for its bones; it has protein for his brain, muscles, and blood; it has starch and fat to produce adipose tissue to keep up the energy and heat; so everything needed is in that little kernel of corn. Every little morsel of vegetable food, every grain of wheat, every kernel of corn, every grain of rice, every nut, is a little bundle of well assorted foodstuffs, don't you see? It is like the dinner basket the mother puts up for the boy to take to school. There is bread, and there is butter on the bread, and there is fruit--a little jelly or something else; so the boy has a variety, has everything his body needs; and that is all put into every little grain. Every food that Nature prepares--she prepares right. Now, the hog eats that corn which is distributed to his whole body. The lime goes to the bones. Nine tenths of all the lime in the body goes to the bones, and the protein goes to the muscles, and the starch and the fat go into the fat of the hog. Now, when a man comes to get that hog, to eat him, what does he do? He sits down and eats the lean meat, or eats the fat and the lean. He gets the protein and the fat, but how about the lime? He does not get the lime, because it is nearly all deposited in the bones, you see. So if you are going to get that corn back again, you have got to eat the whole hog,--it is the whole hog or none, in this case, you see; you have got to eat the whole hog to get all that corn back. The lime is all in the bones. Then if you eat the lean meat and without the bones, you are suffering from lime starvation.

Well, there is another source of lime starvation too, and that is the use of sugar. Now, when we take our sugar in the form of wheat, the starch of the wheat is all converted into sugar, in the process of digestion, and there is the lime right along with the starch, you see; so we get our sugar and lime together; but if instead we take our sugar in the form of cane sugar, the lime is all left out, don't you see. I was in a sugar factory in Porto Rico a little while ago, and I saw the enormous amount of material that comes out of the cap. The sugar is crystallized out, and the sediment of lime is all deposited, left behind, and they can not get rid of it in any other way, and it goes off in the molasses. So the sugar has no lime in it at all. If a person, then, eats a diet largely made up of cane sugar and other sweetstuffs, and meats of various kinds, he is not getting his supply of lime at all. That is why we have so many people with decaying teeth; that is why the bones are going to pieces; and Prof. Sherman, of Columbia University has called attention to this thing very forcibly. He was not the first one. Prof. Bunge, the great professor of Basle, Switzerland, was the first one to call attention to this important fact, and it is a very important fact. You see at once, then, that ~~ix~~ meat is not a natural dietary, and never was intended to be eaten, or at least if it was intended to be eaten, we ought to take it just as the lion does--the lion eats the whole animal; if it is a deer, it eats the whole deer, eats it all up until there is nothing left but a few of the big bones. Prof. E. Bland Sutton, of London, was some time ago called to the zoological gardens of London to see what was the matter with the lions. They had some magnificent lions there, and some beautiful little cubs, but these cubs all died; they were deformed many of them, and they were ricketty, bowlegged, and had all kinds of deformities, and they died early. They were getting worse all the while, so that they were running out. And the professor was brought there to inspect

the lions to see what was the matter. He said, "What are you feeding them?" "Oh, we are feeding them the best butchers beef." "Well, now," he said, "the trouble is they are not getting any lime." So they got some fresh bones, ground them up and fed them to the lions, and they got well right away, and the whole difficulty disappeared. You say, "Well, why can't man do that?" Well, that is what we ought to do. If we are going to eat meat, we must grind up the bones and eat the bones. There is no other way about it; we must do it; we must eat the whole beast in order to get back all of that ear of corn the animal ate; but I want to ask you, my friends, how much benefit is that corn going to get in passing through an animal? The hog swallows an ear of corn, rolls it around in the mud for six months, and then we eat it at secondhand, and how much has it been improved by that kind of treatment? The hog has got the best of it, and we haven't much left. The hog has the best of it in himself, and we get only a poor, paltry remnant, second hand food, and secondhand diet. It is like wearing secondhand clothes; it isn't a bit better.

There is no end to the story, and I may as well stop here. I will just say this word further, that it is impossible to use flesh food and use it physiologically unless we eat the bones along with the lean meat; but we must go a little farther than that, and say that even then it is not physiologic, because the flesh itself has an opportunity to undergo putrefaction and decomposition in the body, and that is something that never could have been intended.

Now, just one word more from the esthetic standpoint. An apple, a peach, a plum, a pear, a cocoanut--anything you can think of that is natural for human beings to eat, is attractive. What is more attractive than the luscious fruit that hangs down from the trees. We reach up for it, and how it invites us; how it makes our mouths water! Now, there are some people who have got so perverted that their mouths water even at the sight of a fat animal. I

remember walking along the streets of Chicago some years ago with a gentleman, and an enormous great ox was going by--it was in the stockyards district,--and I saw him smacking his lips, and I said, "Why, my friend, what do you mean?" "Oh," he said, "I was just thinking how I would like a piece of him for dinner." "Just think of it, my friends?" "Oh," I said, "my friend, some day I shall expect to see you go out into the street and take a bite off a sheep or some other beast that is coming along down the street. Think of it! Now, when you see the apple or the pear, you just reach up and take it, you just long to pick it and eat it. Whoever had a hankering, when he saw a fine, small, handsome little pig, to seize him by the tail and take a bite of this pig off his back, or out of his ear or somewhere else? Why, my friends, this idea of flesh eating as a natural dietary is abhorrent to our good sense. The idea is obnoxious; it can not be otherwise. The hog is killed ~~xxxxxxx~~ out of sight, and it is brought upon the table so disguised that you would never recognize it as a thing that had been walking around on four legs, looking out of bright, shining eyes, blinking at us, and thinking about us. We never think of it in that way, because it is so obscure; but it is the same pig; when we look at that flesh on the table, it is the same kind of pig, the same kind of flesh as our own; the same sort of quivering muscle as our own; the same white tendons, the same white nerves, the same glistening bones and cartilages. It has flesh just like ours, so it looks to be really almost a kind of cannibalism to think of slaying and eating a beast, as Plutarch said. The author of Plutarch's lives, you know, wrote an essay on flesh eating, in which he scores flesh eaters well. He says if a man is going to eat meat, he ought to take it as the lion takes it,--cut its throat with his own knife, tear off its skin, lay open its body, tear out its entrails, tear off the flesh and gnaw its bones just as a beast does.

When one is going to eat an apple, he eats it just as a monkey does.

So if one is going to eat sheep, why shouldn't he eat it just as the dog does? Why not? Why, my friends, the whole thing is outside of our normal experience; it is only because the old savage that used to roam the wilds of Great Britain dressed in warpaint and a string of beads or something, feasting on his enemies,-- it is only because that old savage still lives and yells in our hearts that we are able to eat roast beef and other forms of flesh. The more we think about it, the more experience you have in the better way, I am sure the more you will be disposed to gree with me that flesh eating is ~~not~~ an absolutely abnormal and perverted practica; that it is as unnatural to eat meat as it is to eat scorpions or spiders or snakes or any other sort of flesh; it is not normal to the human dietary; that we can live well without it, and are not at all, the least bit, dependent on flesh as a part of our proper sustenance. I thank you for your attention.

v-4-15-10--815-922.

LECTURE 7.

May 2, 1910.

Christian Science 4,5,6,7.

Dreams and pains are not things 7.

New dictionary needed to understand Christian Science 7,8.

Jumped out of Berkeleyism 8,9.

Cannot wash out indigestion 9.

"Revelations" 10.

Fasting-Weekly fast day, In fever, no appetite juice 11.

Ulceration of stomach 11.

Warm blood 12.

Burning without a flame 13.

Losing weight 14.

Fasting, bad results of 15,16.

Brain cannot diminish in size 15.

Fuel famine 16.

40 days fast-Vegetarian meat 16.

Fasting a solemn thing 17.

Swapping fruit for human flesh 17,18.

Fruit juices in fasting 18.

Eating stimulates activity of intestine 20.

"Giving the alimentary canal a joy" 20.

Wrong sitting posture 21,20.

Bowel movement once in three months (Illus) 21.

Bowel a cess-pool 21.

Fish as good as cats 22.

Double distilled extract of fish 22.

Christian Science and organic disease 24.

Right living-Old age 24,25.

Long life of elephant 25.

" " " men (Illus) 25.

Down in the hole-Tremendous ancestral handicap 25.

Maple sugar-Cane sugar 26.

Natural sugar 26.

Dyspeptics 26.

Getting the vicious circle reversed 27.

Taking good care of what is left 27.

Wrinkles 28.

Skin stiff with advancing age 28.

Pulling up the corners of the mouth 29.

Emotions pictured on face 29.

Keeping the mind straight 30.

LECTURE No. 7.

cane & maple sugar 26.

Christian Science 4, 24.

Dyspepsia 27.

fasting 11.

longevity 25.

mastication 3.

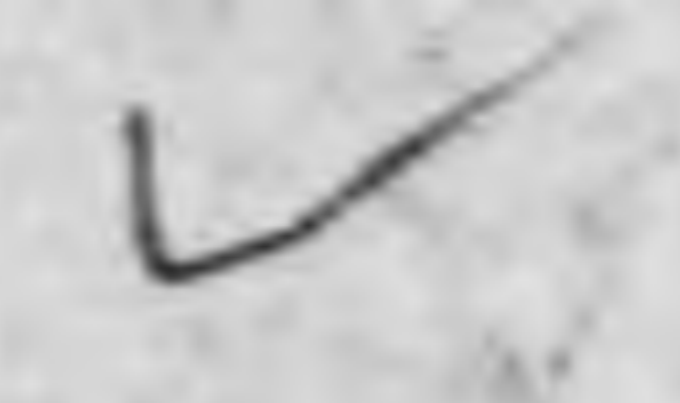
nerve energy 22 ✓

tonsils 1.

wrinkles 28.

nasals
stication 3.
ation Science 4
ting 11
ne energy 2.2
ion Science 2.4

cane & maple Sugar 16
dyspepsia 27
wounds 28



QUESTION BOX LECTURE

At the Sanitarium Parlor, Battle Creek, Mich., Monday, May 2, 1910, at 8 P. M.

By

J. H. Kellogg, M. D.

Question: If a child has spots on the tonsils that look like scars from canker sore throat, what causes them and what would you advise, treatment or the removal of the tonsils?

Answer: Well, these spots that look like scars are scars, and they are due to inflammatory processes, and the ulcerations that have occurred as the result of infection. When the tonsil becomes simply a mass of disease, and is continually infected, becoming inflamed every few days, the very best thing in the world is to remove it, just as if you have a large gland in the neck, continually inflamed, it better be removed, because it is the seat of infection and the poisons which are formed by the germs which grow in these infected tissues--these poisons are absorbed into the body, and do more or less mischief. An enlarged tonsil is simply an inflamed lymphatic gland; that is what a tonsil is. A tonsil is a lymphatic gland, and it is a large gland sticking right out in the throat to protect the body from the germs which are continually growing in the mouth. The reason why we have these large glands there is because of the great exposure of the mouth to the absorption of germs. Now, when they become inflamed, hypertrophied and enlarged and chronically diseased, they are useless; they are no longer of any value, and they are a source of disease. The germs which are lodged in the little pockets in these tonsils spring into activity every little while and set up inflammatory processes, and the poisons are absorbed into

absorbed into the body; and a child continually exposed to the influence of these toxins, poisons taken into the body, is often dwarfed in its development. Many times I have seen children who have been suffering for years from frequent attacks of inflamed tonsils, and infection resulting from this state; and I have seen great changes result when the tonsils were removed. The general poisoning of the body resulting from the absorption of germ poisons which are developed in the tonsils, produce very serious consequences. Does not removal of the tonsils injure the voice? I hear somebody saying! No, not if the tonsils are properly removed. The tonsils are two little columns of muscles, the anterior and the posterior fauces, and the tonsils are placed between them. Formerly it sometimes happened that surgeons in removing the tonsils would remove a portion of these muscles also, and when the muscles were cut into in that way and wounded, injured, of course the voice might be somewhat affected. Now, instead of introducing a large instrument with a sort of ring, and a hook to catch the tonsil and pull it out and cut it off like cutting a slice off the end of your thumb, the modern surgeon simply introduces a finger, and with the fingernail cuts around the tonsil and enucleates it, works it out just as you would enucleate the kernel from the nut; and it is simply torn out and no harm is done to any other tissues at all; the tonsil is removed, and nothing but the tonsil; and in this way there is no danger of a hemorrhage, there is no danger of injury to the voice; there is no danger whatever; it is a very proper, and really a very important operation when the tonsils are subject to chronic inflammation. When the tonsils are enlarged, I should say, there are generally also some other enlargements in the nose,--hypertrophied, large, thickened tissues higher up in the posterior region of the nose which obstruct the breathing. A child with enlarged tonsils generally sleeps with the mouth open, and the upper

jaw projects. Breathing through the mouth instead of the nose causes closure of the passage into the nostrils, accompanied by it, and the hard palate, the roof of the mouth becomes extended very high, and is very narrow, and the upper jaw is contracted, and the upper teeth project over the lower jaw, and the voice becomes more or less modified, and the ~~ixxx~~ sometimes ~~gek~~ ^{changes} so far as to even affect the brain and the character. They become seriously modified by mouth breathing. It is a most pernicious thing that ought to be suppressed. When a child snores in sleeping, it should be taken at once to a competent person, and a thorough examination should be made; the difficulty should be corrected, the tonsil should be removed, the obstruction at the back of the nose should be removed, and the difficulty should be overcome before the child gets a permanent facial deformity and suffers other serious injuries.

Q. Is rapid and thorough mastication just as effective as slow mastication?

A. Now, I don't know as I should say rapid mastication. I should say industrious mastication. A person who wants to masticate efficiently and thoroughly, in the most effective way, should simply give his attention to it, to see that his food is thoroughly chewed, and he need not move his jaws very rapidly, but should simply give careful attention to the practice of chewing, should chew efficiently. He should give care enough to the matter to know that the food is placed where it will receive the action of the jaws in the most effective way; and to use the tongue as well as the teeth. It is surprising how much mastication one can do with the tongue. Many things can be crushed thoroughly with the tongue pressed against the roof of the mouth, and that really is one of the most effective means of mastication. If when you are chewing, you find the food works out to the molars on one side or the other, then it gradually works up to the palate, and the roof of the mouth for the purpose of examination,

the tongue examines the food, then a suction movement is produced which draws the liquid part of the food back down the throat, and leaves the harder, unmas-ticated particles adhering between the tongue and the roof of the mouth. That is a sort of method that is a very efficient method of sorting the food, so to speak, so that the liquid part only goes back and down the throat, while the unmasticated portions remain, and go back between the teeth again. By rubbing the tongue against the roof of the mouth, many things, like banana pulp, for example, ripe bananas and many kinds of ~~ripe~~ fruits can be sufficiently masti-cated or chewed, or at least reduced to a liquid state or a pultaceous state, and may be at the same time inspected; and this, I think, is quite an important feature of thorough mastication.

Q. Referring to your objection of a week ago to the principles of the Christian Science religion, may I ask what is your principal objection? What do you mean by their principles?

A. Well, now, the fundamental principle of Christian Science, as I understand it, is simply this: God is good. God created all things. A good God could create ^{not} no evil things. Disease is an evil thing; hence disease does not exist, because a good God could not create an evil thing. God is good; God created all things, pronounced them all good. Disease is an evil thing hence disease does not exist; for a good God could not make an evil thing. Now, that is the foundation of the Christian Science philosophy. And it is absolutely ridiculous. It is specious. It really looks as though it ~~wax~~ had something in it; but it is absolutely empty; there is nothing in it at all, as you will see in just a moment. The word "thing" is used in different ways. We say, for instance, this box is a thing; and somebody tells you something, says something, and you say, "It is no such thing." Now, the word "thing" when you use the word in such an expression as that does not mean the same thing as the

word "thing" relating to this box. The Christian Scientist juggles on that word "thing" in that way. God created all things. Disease is an evil thing. A good God could not create an evil thing, and disease, being an evil thing, God did not create it; hence it does not exist, because he made all things, and if he did not make disease, then disease can not exist. Now, disease is not a thing in the sense in which a box is a thing. God created all things; the Power, the great Power--whatever you may choose to call it--the scientist prefers to call God the Unknowable; another scientist perhaps calls God the Original creative Force, the Thing which exists in itself. But whatever term you may apply to the great Power from which all things originate, the great Source of all things, the Source, the Christian Scientist says God created all things. That means simply that God created all objects, you see. God created all material objects; that is what that word "thing" means when used in that way. God created all material objects, created all things; he created all material objects of earth, the earth, and all the things in the earth, all the animals trees, and everything else, were all created by the original Force; and that is true. Disease is an evil thing. But disease is not an object at all. Here is the word "thing" used in an entirely different sense, with an entirely different meaning, and a different application of it, you see; and the Christian Scientist puts this thing on a different meaning, right along side the other. They draw a conclusion from premises which do not belong together. Now, your principles of syllogism in logic require that the major premise and the minor premise shall belong together; that the words ~~xxxxx~~ used should mean the same thing, should have the same meaning.) We say here, man is a biped. We will put it a little different if you please. (We will say man is a biped, and a rooster is a biped, hence a rooster is a man. There is a syllogism, a group of words, that has the form of a syllogism, but there isn't any sense in it, and the con-

dusion is wrong. All men are bipeds; the rooster is a biped, hence the rooster is a man. Of course, there is no sense in that. But it is a form of logic as the Apostle said,--"a form of godliness without the power thereof", and there is a form of logic without the power thereof; and that is exactly what the Christian Scientist does when he says God made all things; disease is an evil thing, and a good God could not make an evil thing; hence disease does not exist. Disease is not a thing in the sense in which this box is a thing. In the sense in which God created all things, disease is not a thing at all; but disease is a relation of things, a bad relation of all things. God made all things, but he did not make all relations of all things. God made all things at the beginning, but he did not make all things that have been made ever since. Somebody says God made the country and man made the town; and that is very true, isn't it? Man builds houses; God doesn't. The houses God makes are very different from those that man makes. There is a multitude of things, most of the things which exist on the face of the earth at the present time, in the cities and towns, are things which man made, and which God never made at all. So, when we say God made all things, the Bible says that, but that hasn't any relation at all to the great multitude of artificial constructions that we see about us at the present day; it has nothing at all to do with disease, because disease didn't exist at the beginning of things. Disease is a modern creation, so to speak; it is a creation of man. Man makes things as well as God. God made all things at the beginning, all objects. He did not make disease, because disease did not exist at that time, and disease has come into existence not as a thing, but as a relation of things. I think you can all see that. Now, for instance, here is a man swallows a dinner and forgets to masticate it, and swallows it in such a hurry he does not chew it properly. Perhaps he swallows a lot of cherries

and then swallows some milk along with them. He eats a few oysters and some deviled crabs, and some cheese, and other unwholesome things, and has a terrible fit of indigestion, a nightmare in the middle of the night. Now, the nightmare is not a thing. He has visions of things, but there is nothing there; it is only a vision of things. He has horrible dreams. Well, a dream is not a thing. He has a fit of indigestion, has an awful pain in his stomach. A pain is not a thing. A pain is a sensation, and a sensation is not a thing. So you see there is where Christian Science juggles with words. I made some remarks similar to these some years ago, and it got into the papers somehow, and shortly afterwards I received a letter from one of the leading Christian Scientist apostles whose duty it is to watch the press, and if there is anything said in criticism of Christian Science, to ~~wxixz~~ get right after it, and to challenge it, and he challenged what I had said, and I immediately called his attention to ~~this~~ what I have been telling you about the word "thing", that when the Bible says God made all things, the meaning and significance of the word "thing" is entirely different from the expression which Mrs. Eddy makes when she says disease is an evil thing. Now the word "thing" there in the other case was not synonymous with the word in this case at all. They are not synonymous. One is talking about a relation, and the other is talking about an object. We may speak of a relation as a thing, using the word in an accommodative sense; but it does not mean an objective existence. Well, that is the reply I made. I have forgotten the name of this man, but he was a chief apostle of Christian Science teaching, and he said, "Mrs. Eddy has attached new meanings to words, and one can not understand the Christian Science without he understands the meaning which Christian Science attaches to words", so it seems in order to understand Christian Science, we have got to have a new dictionary; we have got to have a dictionary that is adapted to Christian Science. Christian Science attaches mean-

ings to words that don't belong to them, and ~~xxxxx~~ with which they are not commonly used and commonly understood. So, as I said a moment ago, the solution of that riddle Christian Science brings forward, or did bring forward formerly-- I don't see so much or hear so much of it lately, but it always brought forward in former years some years ago, as the absolute demonstration of the solidity of the foundation of Christian Science--God is good; God made all things. A good God could not make an evil thing. Disease is an evil thing, hence disease does not exist. And going on a little farther, this toothache of mine does not exist. God never made it, hence there can not be any toothache. God never made a corn or an ingrowing toenail, so there can not be such a thing as an ingrowing toenail. And there can not be such a thing as a pain, or a distress of any sort. And one very advanced Christian Scientist went a little farther, and he said, there can not be such a thing as a toothache, of course there can't, because there is no such thing as a tooth, and if there is no such a thing as a tooth, there can not be an ache, of course; ~~but~~ because if there is not any tooth to ache, there can't be a toothache. The foundation of that is the old doctrine of Bishop Berkeley--the doctrine that there is no tangible, material existence; that existence is all ideal; that there is nothing but pictures; that nothing exists but ideas. We have visions of things, ideas of things, mental conceptions of things, and that is all there is in it. That there is no such real thing as a chair; a chair is not an actual, material object, but it is only an image, a picture. About the best answer I ever saw to this philosophy of Berkeleyism was that given by Lord Byron. Somebody was talking to him about Berkeleyism, and he replied, "When Bishop Berkeley said there is no matter, 'twas no matter what Bishop Berkeley said." Which was very good, I think. A young student in a Catholic university some years ago said to one of the good fathers, "Did you ever study Berkeleyism?" "Yes, I did." "Well, how did you

get out of it?" "Well," he said, "I jumped out of it." That is about the only way anybody ever can get out of Christian Science. I have met a good many people who got down so deep in it that the only hope in the world for them was to be lifted out or to jump out. We have got a lady in the house now that has got so very deep into Christian Science she is really afraid she is going to lose her mind. I am afraid there is the least little bit of danger of it. She has not lost her mind, but really, if she doesn't get rid of that continual grind about Christian Science in her head, some part of the brain may get worn out some day and break. But she talked to me about it the other night,--"How can I get rid of this Christian Science obsession? It obsesses me; how can I get rid of it?" And I advised her to jump out of it, and told her this little story, and I gave her a boost, and told her if she did not get out of it to come around, and I would give her another boost in a few days." Well, it is marvelous how many people have been captivated by this thing. It is the sophistry of it; it is a purely sophistical thing, and the sophistry runs all through it. I have presented to you just one little feature of the sophistical reasoning that runs entirely through this whole Christian Science doctrine, so-called. It is just as reasonable as the fundamental proposition I have been talking to you about--that God made all things, but did not make disease, because disease is an evil thing, and God could not have made it. You see how absurd that is. Disease is an evil thing. A man has a fit of indigestion, there isn't a thing in his stomach that can be cast out; you can not cast out indigestion from his stomach. You can not put down a stomach tube and wash out the indigestion. You can wash out the undigested material, but you can not wash out the indigestion. The indigestion is simply a wrong condition, a wrong relation between that man's dinner and his stomach. It is like a disharmony, a discord; that is the thing.

You say, "That song was the sweetest thing I ever heard", yet a song is not a thing; it is only a relation of things. Here is a cord; there is something sweet about it. There is a discord. Now that discord is not a thing. You could not weigh it; you could not see it; you can not see a discord. It is simply a relation. A cord, a harmony is simply a rythmical relation of sound waves which produces a pleasant effect upon the ear. I don't remember exactly the technical definition of it, but I think a harmony is a combination of sounds in which the number of beats doesn't exceed a certain number. The beats are not so many as to produce an unpleasant effect upon the ear. A discord is one in which these beats, throbbings, pulsations you can hear in sound are numerous. You can not see anything. There is nothing ~~xxx~~ in the air; there is nothing at all that you can measure as a ponderable thing; there is no object there. So you see that there can not be such a thing as sound, because God created all things, and sound is not a thing, hence God did not make it; because God made all things; hence sound is not a thing; hence there is no sound. Mrs. Eddy with many other things that are equally absurd, says in one of her books--I might bring it here and read it to you. I have, by the way, one of the early editions of her book, "Science and the Bible," or "science and the Scriptures," or something to that effect. And I have the early edition of it, and I have read it frequently in public. Several times Christian Scientists have come to me afterwards after the lecture was over, and said, "Why, Doctor, is that actually there in Mrs. Eddy's book?" "Yes, here it is, you can read it yourself." "Well, I have got a later edition, and it is not in my later edition." "Well," I says, "I don't see that that makes any difference, because Mrs. Eddy says in the preface that these things were given to her from a super-human source; that she has revelations from God, and these things came from on

high, and I don't see how the Almighty is going to change the text very much, if he told her these things twenty-five years ago they must be just as true now as they were then." But I am told the modern editions have had a great many things cut out, a great many amendments.

Q. Don't forget to tell us something about fasting.

A. All right; just a word about fasting. It is good to fast. I think think the custom that prevails in the Catholic Church of having a sort of fast every Friday, or at least once a week is a good one; at least, to abstain from beefsteak on Friday, I at least endorse it that much; that is a splendid practice. And the occasional fast days are unquestionably more or less beneficial. There are conditions under which fasting is of great importance, and absolutely necessary. Here is a man has a fever, and he hasn't any appetite. His tongue is all covered over with thick fur, his stomach does not make gastric juice; his tissues don't assimilate food substances; his temperature is high, and food has the effect to raise his temperature; and for that man to eat is of no advantage to him; it is a disadvantage; the stomach won't digest the food if he eats it, it can not digest it, and he can not taste it, and has no appetite juice; there is no digestion, and it does him no good to eat; he could not assimilate it, could not digest it even. So it is a burden to him. He better wait until the fever is gone, until it has subsided somewhat, or at least reduce his eating to a very small measure. Here is a man has ulcer of the stomach. If a man has a sprained wrist or a fractured arm, he lays it up in a sling, takes good care of it until he gets well and gives it rest. So when a man has a sore stomach, an ulcerated stomach, the best thing in the world is to let that stomach rest until it can heal over. When food is taken into the stomach, the gastric juice is poured out, and the gastric juice acting on the ulcerated surface will eat deeper and deeper into the tissues, and so it makes the stomach

more sore. But if the stomach is allowed to rest, then no gastric juice flows in, and the sore has a chance to heal. So in cases of ulceration of the stomach it is quite necessary that one should fast. There are some other conditions under which fasting is very important and very advisable. But ~~thax~~ thing which I believe is a very great mistake, is the general publication throughout the world in newspapers and magazines that fasting is a panacea for almost every sort of trouble. The idea that most people should take these long fasts is pernicious. The idea is that the person has somehow got loaded up with poisons, and now by fasting an opportunity will be afforded for the body to clear itself of all these poisonous matters; so the blood will get clean, and the body will get clean, and the whole system will be purged; and a person fasting generally loses a large amount of flesh. As a rule, a person loses through fasting, or during fasting, one eightieth of his weight every day. The human body is like a furnace; it is burning all the time. Your cheek is warm. If the blood runs out of a vein, it is warm, it is warm blood. We speak of the warm blood, and the hot blood. It is almost hot. The temperature of the blood in the interior of the body is from 101° to 103° , and in some parts of the body the temperature of the blood is 106° . Although the normal temperature of the body as taken in the mouth is 98.4° . So the body is a furnace; there is a slow burning going on all the time in the body. It is this sort of burning: You know if a wet garment has a nail lying down on it, and if the garment is moist, or the air is moist pretty soon you will see a streak of rust where that nail was in contact with that garment, and that rust continues, and by and by there will be a hole through the garment. The rust will destroy the fabric. Now, why is that? It is because the nail is burning. The moisture and the oxygen which is present in the air about the nail combines with the iron in the presence of moisture, and the oxygen is set free, and attacks the fibers of the cotton fabric or the

linen fabric it is in contact with,--it attacks these fibers, burns them up so the fiber is destroyed. There is burning going on there by the contact of the nail and the cotton. Now, that is a burning without a flame. That is combustion without there being any visible flame. Now, the same thing takes place in the body. There is a slow burning, a moist combustion going on in the body of the same sort as that which takes place when the nail rusts and the fabric is eaten ~~by the~~ and injured by the rusting process. But there is a sort of rusting process in the combination of oxygen with the substances of the body. The oxygen taken into the lungs combines with the tissues of the body in that way. And this oxidizing process is attended by the production of heat; and the rusting of the nail is attended by the production of heat. The heat is so small in quantity that we do not notice it. This burning is consuming something, and that is why we eat. We take food, for the purpose of supporting this combusive process that is going on. We have to eat every day enough food on an average, have to take enough fuel into our bodies to raise a ton of water one degree in temperature. We have to take enough fuel into our bodies every day to produce heat enough to raise a ton of water one degree in temperature. That is quite a little isn't it. It is necessary for us to do this, because our bodies are throwing off heat. We are throwing off heat from our bodies continually, heat enough to raise seven and a half pounds of water one degree in temperature every minute, or a pint of water seven and a half degrees. Every minute our bodies are producing heat enough to raise a pint of water seven and a half degrees in temperature, so you see that in ten minutes it would be enough to raise a pint of water 75° in temperature; and you see it would not be very long before we could make the pint of water boil with the heat that is thrown off by the body. In half an hour one would throw off from his body heat enough to boil

raise one quart of water to the boiling point. The amount of heat is escaping from the body all the while. Where is that heat coming from? Why, it comes from the food we eat. Food is fuel. Now, if one does not eat, the process of burning goes on just the same; our bodies must be kept warm. You do not eat today, perhaps, and you do not eat tomorrow, but you are still warm; but you find you are losing weight right along. The body will lose about $1/80$ of its weight every day during fasting. If you take the trouble to weigh yourself at night, then the next morning, and weigh yourself again, you will be surprised to find there is a difference of a pound or even two pounds. When a person is working very hard, then this burning process goes on much faster. I had a friend some little time ago who took a little pains to weigh himself out in the mornings, then he took a morning walk, or a morning climb up the mountains, and he weighed himself before and after, and found he had lost $7\frac{1}{2}$ lbs. during that morning climb. Now, a good deal of it was water which was sweated off through the skin, and some of it was solid material that had been burned up. But, now if one keeps ever so quiet while he is fasting, he is burning his body, and we see the evidence that he is burning his body in the fact that he is losing weight, getting thin, becomes emaciated, and a man may lose as much as 40 or 50 pounds in a prolonged fast. That loss of weight goes on at the rate of one to two pounds a day, and sometimes more than that, at first. So you see when one is fasting he is burning his body. Let us see the practical deduction we have from this. Here is a person who weighs normally about 150 lbs. That is about his proper weight. He feels his body is more or less impure, and that he ought to get rid of these impurities in some way, and he says, "I will fast." Suppose we make an estimate as to how much impurity there is in the body.

Suppose we make an analysis to find out how much uric acid and other things there ^{are} is in the body that ought to be worked out--how much would you estimate he had in his body? You could not possibly estimate these toxins to be more than a pound. It would not be possible, because if it was more than a pound, it would kill him. These poisons all need to be eliminated. If a man had a pound of uric acid in his body he could not live at all. But we will put it at a maximum of a pound. A man has got a pound, then, we will say, of these tissue poisons in his body, and he wants to get rid of them so he begins to fast; he wants to get rid of that one pound. He fasts the first day, and he loses two pounds, and the next day two pounds, and so on until he has reduced his weight to 90 pounds, you see. He has thrown away, burned up 60 pounds of his body in order to get rid of one pound of poison. Don't you see, that is a very extravagant procedure? But it is not only fat he has been getting rid of, and fat is wholesome; but he has been losing muscle, and he has lost weight, and he has lost strength; and if you examine this man, you find his liver is not so big as it was before; the liver is not more than two thirds as big as it was in the beginning of the fast. His heart diminishes in size. Every organ of the body diminishes except the brain, and the brain can not diminish, because it is shut up in a tight box, just fits in there and there isn't any chance at all for it to shrink, and it would be a very dangerous thing for the brain to diminish. I think also ~~it should be said~~ it should be said that in many instances the brains of some of these fasting people are so small at the beginning it would be dangerous for them to contract. So you see that one is throwing away 50 pounds of good flesh in order to get rid of one pound of poison. If there were some way of getting rid of that poison without throwing away all that flesh, wouldn't that be a good idea? Wouldn't there be some sense in that? There is a serious thing about the matter in this way, that one loses the fat without any difficulty,

and without any injury so long as the feeding is going on upon his fat; but when one gets the fat consumed in fasting, when one's fat is gone, then he begins to prey upon his muscles, and to prey upon his heart, to ~~prey~~ prey upon his liver, and upon these other internal organs; and so he suffers vital damage. You see, when one has a house here, we have got a pile of coal back in the woodshed or down in the basement there is a heap of coal, and besides that we have a house and the furniture in the house. Now, the fat that we have stored up under our skins and around between the muscles, and about the other organs of the body,-- this fat is residual tissue; it is reserve tissue, just like coal we have stored up in the coalbin to feed the furnace with. That is what the fat is; but the muscles and the nerves and the glands and the other structures of the body, these are the house itself, and the furniture of the house, don't you see. Now, when a man has a fuel famine, the first thing he burns up is the coal, and when the coal is gone, if it were really very cold weather, he would probably begin to tear up the floors, and burn up the furniture, the tables and chairs, and attack the partitions, begin to tear down the house, to keep up the supply of heat. That is exactly what the body does. In a prolonged fast, the body attacks itself. The man becomes in other words, autophagic, he becomes a ~~cannibal~~ cannibal, and eats himself. Some of these folks claim to be vegetarian and set out on a forty days fast, but they are fed on vegetarian meat all the time. They are eating vegetarian. It is better to eat vegetarian than to eat a cow or a pig; but the vegetarian faster should recognize the fact that after the first day or two he is feeding upon himself, and he is a meat eater; he is just as carnivorous as though he was eating the pig, or something else; he is subsisting upon the flesh of his own body, and that is not a profitable thing to do when there is no absolute necessity for it; there is a great disadvantage in it. So I must say to you that I think there is a very satisfactory alternative to

fasting. Why do we fast? We fast to get rid of certain poisons, and the poisons that we want to get rid of, which are the uric acid poisons, and poisons which are of the same nature as uric acid poisons, which come from flesh. Now, it is only necessary, then, for a person who thinks he needs to fast, who wants to get rid of these poisons, to take out of his diet everything which can produce poisons of that sort. In other words, to cut the protein out. All these poisons come from proteins. The poisons people think they want to get rid of in fasting, those poisons come entirely from proteins, from meat, from eggs, from oysters, fish, chicken and things of that kind which are of an albuminous character. If we cut out meat, and all these proteins entirely, then we are accomplishing all that we can possibly accomplish by fasting, provided, of course, we do not take a great excess of other things. So the proper kind of fast to take, instead of abstaining entirely from food, is to eat only carbohydrates, such as fruits, in the form of fruits and fruit-juices. The grape cure, and the apple cure, the peach cure and the cherry cure,--these various fruit cures which have been famous for centuries accomplish for a person everything that can be accomplished by fasting, except in cases in which the stomach must have absolute rest, as in the case of ulceration of the stomach where there is a diseased condition present. So I think it is important the public should be informed upon this question, because there are certainly enthusiasts that have gotten well in spite of fasting, or gotten better at any rate, who are advocating it in such an enthusiastic way that people are likely to be harmed by adopting the strenuous method. It is a serious thing to fast. It is a solemn thing to eat somebody says, but it is a much more solemn thing to fast, because when one fasts he is eating still; he is not eating at the table, but he is dining upon himself. He is simply swapping apples and pears and peaches, and potatoes, cherries, and plums and other fruit--those things,--he is swapping

those things for human flesh. That is the thing the fasting man is feeding upon, and there is no possible way of getting away from it. We don't want to feed upon our own tissue. What we want to do is to **gut** out those things that are harmful and take those things that we need. When a man gets bilious and suffers from autointoxication, he can cut out the protein entirely for a while, with great advantage, but it is far better to go on taking fruit and fruit-juices, and carbohydrates than it is to fast entirely, for this reason--a very important and practical reason as you will see.) Fasters have always observed that the first two or three days after they begin to fast, the tongue gets very coated, coats up worse and worse every day for some days, and it seems it goes on for a long time. I met some time ago a man who had been induced to fast, and he was a man stopping at the Sanitarium here, but without consulting me he had undertaken to fast, and I met him out on the lawn one day, and he called to me. He said, "Doctor, come here and look at my tongue. I wish you would tell me what is the matter with this old tongue of mine. Just look at it. Why, I have been fasting twenty-two days, waiting for my tongue to clean off, and it is worse than it was when I started." His tongue did look very bad. It looked as though there was a job there for the city scavenger if he could find it. It certainly was **very bad**, and his breath was horrible. I said, "You have been fasting 22 days?" He said, "I have not eaten a morsel of food for twenty-two days, and yet my tongue is coated. Why don't it clean off?" "Well," I said, "how long since your bowels have moved?" "Oh, of course, my bowels haven't moved at all. I haven't eaten anything. Why should my bowels move when I haven't eaten anything at all?" I said, "Your liver is there all right, isn't it?" "Yes." "Isn't your liver making bile? What are you doing with that bile?" The bile is the most poisonous excretion the body makes. It is six times as poisonous as the urinary secretion. When the bile is so poisonous, six times as poisonous as the urine, yet, that bile was being poured into his intestines day by day, the bile was

being secreted and poured in there and there had not a bit of it been discharged from the body in 22 days. Suppose the excretion of the kidneys had been penned up all that time. The bile was there, but fortunately it had not all been absorbed into the body, but he was absorbing it and being poisoned continually; and that retained bile was poisoning him, and not only that, but the whole intestine is an excretory organ. There are seven square feet of intestine, of intestinal surface; there are about 21 square feet of skin surface, and one third as much mucous surface in the intestine, and this mucous surface is very active in secreting poison, just as the skin is, but very much more so. The intestine is most active, and has a very much greater circulation than the skin has, and is pouring out poisons continually. It is one of its functions--the excretion of toxins, of these poisons. I said to this man, "You better have something to move your bowels right away quick." He said, "It isn't any use; I haven't eaten anything." I said, "We will see about it." So I had a saline laxative administered to him, to move his bowels. I saw him a couple days afterwards, and he said his bowels had ~~xxxxxxxxxxxx~~ been moving the most of the time since I saw him. He said, "Doctor, it is simply prodigious." He said, "Doctor, I passed from my bowels a half pailful of the most horribly putrescent, loathsome stuff you ever encountered in your life." I inquired of his doctor about it. These are not very nice facts to tell you about, but this is a very practical question, and we are all medical folks here, one side or the other, so we won't be horrified, I hope, beyond endurance. I inquired of his doctor here about it, and the doctor told me that while he could not swear to the exact quantity, of this horrible material that had been discharged from this man's bowels, still it was simply amazing he said the quantity was prodigious, it was simply amazing. Now, for twenty-two days this man had been accumulating these

poisons in his body, waiting for the tongue to get clean. That is what the man does when he fasts. The bowels won't move. Why? Because he doesn't eat anything. Food is the natural stimulus for the bowel activity. When food is taken, it sets up rythmical contractions of the stomach, and these move all the way down the intestine. So foodstuffs stimulate the activity of the intestine. When a man eats breakfast, it starts movements which carry the breakfast along, and when he eats dinner, the breakfast has got several feet along down into the intestine, and down into the colon, and absorption is going on; part of the breakfast is gotten into the colon. It takes fourteen hours from the time you eat a meal until the meal all gets into the colon. When a man eats breakfast first, and five hours later eats his dinner, the food is down there somewhere in the intestine, and the intestine is working upon it, but things are going kind of slow, and the dinner is eaten, and that sets up strong, active movements of the stomach, and sends things on along, in his alimentary canal, and gives the whole thing a jog, and it moves it further down, and when something else comes into the stomach, it is the same thing,--there is another stimulus of intestinal movement, another installment of energy, and the remnant of foodstuff is moved further on; so the effect of each meal ought to be the discharge, the aiding of food into the alimentary canal, it ought to cause this movement to pass along the whole alimentary canal so the bowel should move after every meal. That is the normal way. That is the way it is with a normal healthy child. That is the way it is with the healthy animal--a horse, or any other animal. That is the way it ought to be with healthy people, but we have acquired the unnatural habits by our sedentary mode of life, sitting so still, eating concentrated food, violating the laws of health in such a great variety of ways, sitting down all doubled up

like a jackknife with the abdominal muscles relaxed, so there is not tension enough to keep up this movement. So we find people whose ^{bowels} bowels move only once a day, or once in two days, or once a week, or once occasionally. A man down in New York reported to Dr. Austin Flint once that he had a movement of the bowels only once in three months regularly. So in the meantime these poisons are pent up. Then he had two or three weeks in which he just had to attend to his case quite closely. That man used to increase fifty or sixty pounds in weight, and this was an accumulation of horrible excretions. Now, that is what is happening to the man who fasts; for the reason that he does not eat food, and, taking no food, there is no bulk for the bowel to act upon, and the natural stimulus is lacking, the gastric juice is not secreted, there is nothing to stimulate the bowel, so the bowel is simply a sack, a cesspool into which these excretions pour and accumulate. Then the man who is fasting supposing that there are impurities in his brain, and in his nerves, and in his tissues that ought to be washed out, simply sets out and accumulates the worst kind of poisons for three or four weeks, and wonders why his tongue does not get clean. You see this is a most absurd thing, it is a damaging thing, and it is important people should know the actual fact, the plain, simple, commonsense facts which I am telling you; and there is a good deal more to tell you about it, but I will take that up another time.

Q. Should a hot bath be taken before entering the swimming pool, and a cold one afterward? If not, what is the best way to do it?

A. The swimming bath should be the end of the bath. It is the cooling off, and the exercise in it should produce a splendid reaction. It would be better not to take any bath of any kind after the swimming bath, unless one is seeking to reduce flesh. If one is too fleshy about the abdomen or the shoulders

or any other part of the body, and wants to get rid of that surplus weight and takes a sweating bath, then he can take a swim after the sweating bath, and then have another sweating bath, and then another swim; that is a most effective means of reducing flesh.

Q. Are salt enemas beneficial or harmful in case of auto-intoxication?

A. They are beneficial if not used too much.

Q. Is fish a wholesome diet for a well person?

A. Fish is just as good as cats. Fish is as good as a cat and no better. A fish is a carnivorous animal. You go fishing, and you take worms to feed the fish; you do not take cherries, bread crumbs, and things, you take worms. The fish is a carnivorous beast, and is a cannibal at that. The big fish eat the little ones, so the fish is the concentration of fish. That is why fish has that strong flavor--because it is double distilled extract of fish.

Q. Why do I sleep soundly during the day time without dreaming, and at night dream constantly and wake up frequently, going from one worried dream to another?

A. Now, it may be because you eat too much supper. I should advise you to go to bed without your supper, and I think you will not dream so much.

Q. What is the difference between Caramel Cereal and Postum?

A. I wouldn't dare tell the difference. Some years ago I told the difference, and Mrs. Post has not yet got over it. I would not dare say anything about it.

Q. What kind or form of energy passes from the nerves to make the muscles contract?

A. Now, nobody knows. It is nerve energy, simply nerve energy; that is all we know about it; but there is something marvelous about this nerve

energy. Just a little bit of a tremble, a quiver leaves the brain, and travels from the brain to a nerve fiber, from the nerve fiber to the muscle and the muscle may strike a murderous blow, or do some act of heroism, may lift a prodigious weight, may enable a man to run with marvelous rapidity--it is a wonderful thing--the exhibition of power that comes through that little crinkle of a nerve. It is like the explosion of a percussion cap that sets off an enormous cannon or a gun, or something that explodes a mine. We have a wonderful illustration of it in the light of the firefly. That little glimmer of light in the firefly is the most economical light that is known on the face of the earth. The scientists have been testing it out to see how much energy there would be required to produce that light in the firefly, and the amount of energy was measured down to the ten thousandth part of a milligram, and yet it was not small enough to detect the energy that was used in that light. It is nerve energy, a light produced by nervous energy. And there is something marvelous about it. We do not know much about it except some of the things it does. It is not electrical energy, because that travels at the rate of 180,000 to 200,000 miles a second, whereas nervous energy only travels 90 feet a second. It is a slow coach, you see, comparatively, whereas electrical energy travels a couple of hundred thousand miles a second. There is quite a difference, isn't there? It is simply nerve energy; that is all we know about it.

Q. A lady whose mother died of cancer of the breast had her own removed for same trouble. In about three years the breast bone near the neck became enlarged, and a cough ensued. The surgeon said the trouble was too near the vital organs to operate again. As a last resort she placed herself in the hands of a Christian Scientist, having been told by a friend that she had in this way been cured after three operations had failed to benefit her, and she had been turned over to die. The lady in question seems in good health otherwise.

wise. Do you think that any kind of treatment might benefit her, or that an operation would necessarily prove fatal?

A. I thought she was going to say this lady was cured, but it seems she was not cured. She has still got it. But this is a serious case, and I should say, no, that case is an inoperable case. She has been told of a friend who had the same trouble and was cured by Christian Science. My observation is that it was always somebody else's friend that you have been told about; it is not the real case. If this lady who had the actual trouble had been cured by Christian Science, I should have offered to pay her fare from any part of the world where she was to the Sanitarium so we could investigate her case, because I have never yet been able to find one single case of organic disease that has been cured by Christian Science. I don't believe such a case can be produced. There are cases in which people having organic disease, even cancer, have recovered. I have myself seen one case of spontaneous recovery from cancer. And there is a doctor down in New York who recently reported a case of a tremendous cancer of the abdomen from which a lady suffered, and she had recovered after having been abandoned by everybody as a hopeless case. The body itself had effected a cure in some way. Those cases occur occasionally. If it happened that a Christian Science doctor had come along just then, of course, he would have taken the credit; but so far as I know, there has not been any such coincidence as that yet.)

Q. If the physical body is completely renewed in a few months or years, why is it always growing older instead of younger? Do you think proper diet and exercise could eventually banish old age from the list of human ills?

A. Now, that is a practical question. If we could live exactly right, and if it were true the body was perfectly renewed, it might be possible to

to lengthen out life almost indefinitely; and I am perfectly frank to tell you that I believe if from the beginning of man's existence, he had lived a perfectly normal life, there is no reason in the world why he should not live a thousand years, just as easy as to live a score or two. I don't for the life of me see any reason why he should not. I think one of the menageries going about the country is now reporting an elephant 200 years old, and history tells us of an elephant that lived to be 300 years old. If an elephant lived 300 years, why couldn't it live 100 or 200 years more? There is no question at all that the maximum of human life has been astonishingly abbreviated within the last few centuries; there is no doubt at all about it. There are records of persons living within the last few hundred years to the age of 150 years. I am sure there are persons living in the world today who are 140 years old or more. It was only a short time ago that the Smithsonian Institution reported an Indian in California who was living at the age of 140 years. His age was attested to by records in the Catholic church at the place. He was blind, but he still lived, and he lived upon pine nuts and simple foods, as he had been living all the years. But there is something more required than simply proper living at the present time. When a man gets down in a hole, he has to be lifted out. When he gets lifted out, if he takes care where he walks, he won't get down into the hole again. The whole trouble with the human race is it is down in the hole, and we have got to be lifted out and up, on account of the effects of bad heredity that have come down to us all the way from Adam down to our present time, all the way from our first ancestors, the accumulated evil results of wrong doing we are suffering from must be abolished in some way before we can start out with a fair chance. We have a tremendous ancestral handicap, and we can not shake it off.

Q. If cane sugar causes extreme biliousness, will the same be true of pure maple sugar? If so, why?

A. Yes, for the reason that pure maple sugar is simply cane sugar with a little dirt in it and a little flavor from the maple tree, and considerable dirt from the woods. That is all there is to maple sugar. It is cane sugar, and it is virtually the same thing. Cane sugar is a product of the sap of trees,-- the hickory tree, the maple tree, and the palm tree. I had a sample sent me the other day of palm sugar that came from Africa, and it was very nice, that is, as good as any cane sugar, and really had very much the flavor of maple sugar. And it is found in grass--in corn, sugar cane, and sorghum; and in certain roots. Cane sugar is a tree, grass, and root sugar. It is not the natural sugar for man. The natural sugar for man comes from fruits. The sugar of the grape, the peach, the plum and the cherry--these fruits all contain fruit-sugars--and the fig. They are natural sugars; they are adapted to man, and so do not irritate the alimentary canal, because they are absorbed at once, whereas cane sugar is not adapted to man; so it is irritating to the stomach when taken in any but very small quantity, and in any but very dilute form, and is not readily digested or readily absorbed. Cane sugar can not be digested until after it has been absorbed, and it is not absorbed because not digested, until several hours after it is eaten. The digestive ferments which digest cane sugar are not secreted, they are not formed in the alimentary canal until three or four hours after the cane sugar has been eaten; so it lies there unabsorbed, and produces more or less irritation, and afterwards it is slowly absorbed, unless it undergoes fermentation.

Q. If, as you say, when a man has been a dyspeptic for 20 years, there is no hope for him but to take care of what is left, why are we advised to remain at the Sanitarium until eternity?

A. I wat to say to you I don't care to enjoy the society of an old dyspeptic till eternity. I should recommend him to make a change of climate. We don't expect anybody to live here forever. I more than once have advised a dyspeptic patients to go elsewhere for a change--a change for me as well as for them. But I don't wish to make any sport of this question. This is really a practical question. Here is somebody who is discouraged because of what I said--that a chronic dyspeptic can never get well anyhow, and he says to himself, "What is the use of staying here, then? If I have been a dyspeptic for twenty years and can't get well, and all I can do is to take care of what is left," there is just a little left out here. I said, take good care of ~~his~~ what is left. Now, the important thing for ^{the} this dyspeptic is to learn how to take good care, the very best possible care of what is left; there is just a little left, and he must learn to take the best possible care of what is left of his body. He must get rid of these handicaps; he must get his stomach trained to healthy action again; find out exactly how to take care of his stomach, how to feed it properly, how to nurse himself,--he must build his body up, accumulate a little energy so the stomach will be able to do its work better. When one gets a bad stomach, things are working down all the while. A bad stomach makes bad blood, and bad blood makes bad nerves, and bad nerves make bad digestion, and bad digestion makes bad blood; and the worse blood makes worse nerves, and the worse nerves make worse digestion, and the worse digestion makes worse blood, and so on it keeps going down worse and worse all the while. Now the thing the dyspeptic can do here at the Sanitarium is to get this vicious circle reversed, this vicious spiral; so he is getting better digestion, getting better blood; the better digestion makes better blood, and the better blood is building better nerves, and the better nerves make better digestion, and the better digestion makes better stomach, and still better blood; and so on away

up until he gets up just as high as he can; then he wants to know how to stay there, to keep there. That is what the Sanitarium undertakes to do for people who have bad stomachs or any other chronic ills.

Q. Why is it that in advancing years the face and hands wrinkle, but the body remains so youthful?

A. Now, this is a lady's handwriting, and why she says face and hands I am sure she is thinking mostly about her face, because she can wear gloves on her hands, but her face she can not wear gloves on, and she is thinking about those wrinkles there. So many ~~of~~ ladies have said to me, "Doctor, can't you show me how to get rid of these wrinkles here?" I have noticed there is just one kind of wrinkles they want to get rid of. If people have this sort of wrinkles, they do not care anything about them, but that kind of wrinkles we want to get rid of. To understand the subject, we must know what wrinkles are, and why we have them. There are two reasons. With advancing age, the skin becomes a little stiff, so that when it is folded and held in any particular position for a little while, it leaves an impression upon it, just as you see there is a wrinkle left in this paper when it is folded. If this were a soft silk, a piece of the very softest silk, and had been doubled up in that way and straightened out, it very likely would not show those wrinkles; but it is the stiff, rigid paper, so when it is folded it leaves a crease there, a ridge. It is exactly so with the skin. In youth, the skin is soft and flexible, so that when it is folded and the pressure is released, it springs back to its normal form again right away. But in old age, the skin becomes wrinkled, loses its elasticity, wrinkles are formed in this way. We have muscles, you know, set in the face, one end attached to the bones of the face, and the other end attached to the skin. So the whole skin of the face is underlaid by these muscles which

are attached to the face, to the skin. Some are attached to the skin at both ends, and some are circular muscles. For instance, here is the little whistling muscle that runs clear around the lips here, and when you pucker the mouth to whistle, it is because that circular muscle contracts. Here is another muscle here attached to the corner of the mouth, and when one feels happy, these little muscles contract; and that is what makes you smile,--because the corners of the mouth pull up, you know. That is all there is in being happy--just simply having the corners of your mouth pulled up. So if any of you get the blues, and you feel despondent, all in the world you have to do is to contract or pull up the corners of your mouth. Just set these levator angulæ oris muscles at work, and they will pull up the corners of your mouth, and you will be happy with a nice broad grin on your face. If you can not feel happy, then find a looking glass, then say to the muscles, "Contract", and see how happy you feel when you look into the looking glass. Here are some other muscles attached to the upper lip here, and the side of the nose--the levator labii superioris alaeque nasi muscles, they are called. Please don't repeat those words, for folks might think you were saying something you ought not to say; and don't tell anybody I say such things here; but the levator labii superioris alaeque nasi muscle gets contracted once in a while and pulls the nose into a very unpleasant shape, and one looks scornful; in other words he turns up his nose. Suppose, now, one is in the habit of doing it, you see. These muscles of the face are all the time moving in harmony with the brain. When one has an emotional state in the brain, it is pictured in his face, right away, instantaneously, because the telegraphic wires, the nerve trunks coming out to the face are active all the while, so there is always an expression upon the face which corresponds with what is going on in the brain. Of course, there are some faces more ex-

pressive than others; but the face corresponds to the brain, and when you see a person with these wrinkles on his face, persons with that sort of wrinkles, you see such folks every now and then--I have seen them,--it means that these face muscles have been contracted, a state of mind has existed which has kept those muscles contracted so long the skin has become rigid and fixed in that shape, and the muscles have become too strong for the rest of the face, so that they pull the nose and the face out of shape, and the wrinkles there are the result. So you see there is a good deal in this matter of wrinkles. / Somebody said that if one only keeps his face straight, that is all in the world he needs to do; that the whole science of right living consists in keeping the face straight. If one keeps his face straight, he has got to keep his mind straight; if he keeps his mind straight, his face will be straight. So, in the first place, if you have got cross wrinkles of this sort that come from frowning continually, if you have got that kind of wrinkles, the only way in the world you can do is to reverse the thing, and smile. You must put on the very opposite kind of wrinkles on your face; just cultivate right wrinkles, and that will straighten things out; and if your nose has been pulled up too much, you must get at it and get these other muscles to pulling the nose down. If one has been going about with a long countenance, looking ugly, cross, surly, unhappy, he must get at it and exercise the other muscles, and pull up the corners the other way, and in that way things will straighten up.

I have not finished the questions, but we will leave them in the box and finish them up next Thursday night. I thank you very much for your attention.

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THE BATTLE CREEK SANITARIUM METHOD.

A Stereopticon Lecture at the Sanitarium Parlor, Battle Creek, Mich.; Thursday,
May 5, 1910, at 8 P. M.,

By

J. H. Kellogg, M.D.

I will talk to you a little while tonight about the Battle Creek Sanitarium method of treating the sick, and will illustrate ~~it with~~ my remarks with some slides of our Prescription Booklet, a copy of which you all ought to get from your doctor. I hope you will all read this booklet through very carefully, so as to get an intelligent understanding of what we are trying to do for you while you are here. I will read a little from these slides:

"The Battle Creek Sanitarium method is a system of training which aims to restore health by removing the causes of disease and aiding the body to remove the effects of disease by establishing natural conditions."

Now, notice, in the first place, the Battle Creek Sanitarium method is a system; it is not a routine. People come here sometimes and say, "Well, Doctor, I have been up to Hot Springs and took a course of baths there", or "I have been down somewhere in Indiana to some mud springs and had a course of baths, and I didn't get any better, and now I have come up here to take your course. How long is your course?" And they generally have an idea that we have a course of baths lasting two weeks, or three weeks, or six weeks; that is the usual method at mineral springs, in mineral bath establishments and most so-called health resorts. Go to Carlsbad, or Mariennbad, or almost any of the European health resorts, and that is the thing you find there-- a course of two weeks, or three weeks, or four weeks. But we have nothing of the sort here; that is not scien-

tific; that is empirical; that is a routine. But here every patient is examined, and the treatment for that patient is indicated for him, is determined by the conditions present as found by the examination. No two patients have the same prescription exactly; no two patients are treated exactly alike; none of our doctors has a routine course to put his patients through. The prescriptions are made to suit each individual case.

Now, when patients are treated according to their disease, for instance one man is treated for Bright's disease; another man is treated for dropsy; another man is treated for dyspepsia, and another is treated for something else, there is a different course of treatment and baths arranged for each one. The same bath does not fit every individual case. And what the patient needs is determined first by careful examination. So we have laboratories across the road, very extensive laboratories--the most extensive clinical laboratories in the world. I don't know of any place in the world where so much clinical work is done as is done in our laboratories. Over there we have experts, the very best experts to be obtained. I don't know of any one laboratory in the world where such a large amount of expert work is done as in our laboratory. I hope every one of you will make a visit to the laboratory, and you will certainly be surprised with the great care, precision and accuracy with which the work is carried on there, and the great amount of detail in it, the large amount of apparatus required. We have to have about a dozen different persons at work all the while in the working out of the reports. Now, it would be impossible for any one of you to get such a report as is made in your individual cases,--you could not get it for fifty dollars anywhere else in the world. It is only because we have such a large number going through at once that you are able to get it here at such a low price. The gastric examination here,--it would take a good expert chemist almost a whole day to make such an examination as is made in the gastric

laboratory, in the gastric examination; but because there are a number made at the same time, they can be put through all at once at less expense. It would be impossible for such an examination to be made, or even approximately such an examination, approximately as complete an examination of the gastric fluids as is made here, and if you could get it done, it would cause from twenty-five to fifty dollars anywhere else; it could not be done for less, because it requires an expert man. Our chemists do not require five thousand or ten thousand dollars a year. As this is a charitable, benevolent institution, our chemists work here for less-~~than~~-the expert men that have a reputation, that we have working here, work for less than the salary of a laboring man. For instance, a carpenter or a mason, or a brick layer, or a plasterer, receives higher pay and larger salary than any of our most expert chemists. They only work here because the work is a good one that they believe in, and they believe in its principles. So we have a system, and this system is carried out after a careful adaptation to each individual case.

"Since most chronic diseases are due to wrong habits of life, the first thing essential is a complete change of habits and an effort to conform to the natural laws of health in every way." This is absolutely essential. Suppose here is a house that has gotten afire because there were parlor matches all around the house, and shavings in the house, and combustibles of various sorts lying loose about--and greasy rags, etc. in the basement, and the children were allowed to play with matches,--you would say the house would get afire, and if it gets afire and you put it out, it would get afire again in a little while if you didn't clear out those matches and correct the habits of the people living in the house--you would certainly expect such a house to burn down.

Now, here is a man who has been doing the same thing--filling his body up with poisons in the shape of intoxicants of various kinds,--beer, for instance, or wine, or something else; then setting his body afire with tobacco, maybe

with mustard, or tea or coffee, pickles, spices or something else which the lady of the house has been indulging in. Sometimes ladies smoke cigarettes, I understand, ~~kk~~ and they are just as bad or a little worse than cigars, and it seems to be getting somewhat fashionable in certain circles. Now, all of these wrong habits must be cut right out, to use a very common and a very expressive phrase of the street,--they must be cut out, they must be absolutely cut out of our experience, every one of them. If you are in the habit of bolting your dinner, sitting down and swallowing everything that comes along asking no questions for conscience' sake, or stomach's sake or anything else,--asking no questions about anything that comes along, just so it smells nice, or tastes nice, or causes the right kind of a tickle as it goes down, just as a dog gets hold of something and swallows it just as quick as he possibly can. If one has been eating that way, he must cut that out; he must stop eating so. That is why we have that big sign up in the dining room, "Fletcherize." A lady asked the other day what language that was, whether it was Greek, or Latin, or Italian, or what it was. Some body explained it to her. She saw the people fletcherizing at the table, and she very soon learned how. It is no use to learn the way unless you follow it.

Now, I want to say to you that it is just as absolutely impossible for any one of you to get well, even approximately well, without correcting these wrong habits and turning away from these things that made you sick,--it is just as impossible as it is to fly without a flying machine. We used to say it was impossible to fly any way, but now we know it isn't; but it is just as impossible as it is to fly without a flying machine. It is utterly impossible to recover from the effects of bad habits until you stop those bad habits. The ancient prophet said, "Cease to do evil, and learn to do well." Now that is exactly what every one of you must do. There isn't a man or woman here I suppose in the

sound of my voice tonight that is not here largely because of his own wrong habits. I believe we have a man in the house who has gout and who insists it was his grandfather who drank the wine, and he never drank any wine himself at all, and he has been living right up to the line for thirteen years, yet he has got the gout because his grandfather drank a great deal of champagne. But such cases are extremely rare. And it is quite possibly due to the surplus of beefsteak--and it is all surplus. That may have had something to do with it in this gentleman's case, although he has been living very strictly for a number of years. All of these habits, every one of them must be corrected if you want to get the maximum result that you can expect. A farmer could not expect he would raise good crops on his farm if after his gardeners had been working hard all day, and his farmers, cutting out the weeds, pulling out weeds, pulling them up and subduing them, getting his farm up in fine shape, if he himself went out every night while his gardeners and farmers were asleep and sowed Canada thistle seed all over his farm. What would you think of a farmer carrying on his business in that sort of way?

Now, that is exactly what the man does who comes up here and lets the nurses work over him in the bath room, and lets the doctor work over him in the office, labor over him, and then goes down to the park here and smokes long nines cigars. That is exactly what he is doing, and he is not going to get anything but tares for the harvest; he won't have any wheat at all for his harvest, or if he does, it will be very little. If he sows tares, he will get tares. "Whatsoever a man soweth, that shall he also reap" is a divine axiom. "Whatsoever a man soweth, that shall he also reap" is absolutely certain, my friends; we can not dodge it; there is no dodging it; you can not dodge it any more than you can dodge the law of gravitation. If you sow disease, you will get disease, and the only way you can ever get health back in the world, if you

have once lost it, is by cultivating it; we must cultivate health; you have to work at it tremendously hard and industriously for years and years and years. I think it was Ingersol who said that if he had been present when the world was made, he would have made a suggestion to the Almighty. That was a very presumptuous thing to say, wasn't it? but he thought he had an idea he could have made a suggestion on that occasion that would have been a very great advantage to the race. He said he would have suggested to the Almighty that he make health contagious instead of making disease contagious, and he thought he had said something wonderfully smart; but, my friends, it is exactly as Mr. Ingersol wanted it to be: health is contagious, far more contagious than disease. We are catching health all the time when we are cultivating it. We go outdoors, and we spread our chests, spread our lungs, and take in a deep breath of fresh air, and we are just inhaling health; we are imbibing it, simply sucking it in with our breath; we can draw it in by the gallon, we just drink in health in that way. When we find pure, sweet water, we can just swallow health. Every drop of it has health, life and vitality in it. So with food, when we eat the right sort of food, it is brimful of health. An apple, a peach, a plum, a cherry, or the potato or anything else that is fresh and sweet and good, wholesome, natural food, is brimful of health and life and energy; God put it there, and it has been crystallized, if you please, from the sunshine, concentrated there in this food material; and when we swallow it, we incorporate it into ourselves. This process of eating, digesting and assimilation is a most marvelous example of divine transfiguration. Why think of it,--when we sit down at the table today and eat tame, dumb things that can not talk or act or do anything at all,--plain white bread, and yellow carrots, and white potatoes, and green lettuce, and various other things of sundry colors,--we swallow them, and tomorrow those inanimate things are walking around and talking. The very things we eat today are walking

are walking around and talking tomorrow. As I say, it is a veritable transfiguration,--a dead thing made alive, made to talk, to think. Well, now, if we eat the right things, then that thing works marvelously. It is a most transcendental thing we see going on about us and in our bodies, in the taking in of these life-giving things about us, provided we do it rightly; provided we work in harmony with the laws of heaven, the laws of our being.

Now, ~~ka~~ after having become thoroughly acquainted with the patient's case, and summing up the results of the various examinations, there are prepared for each patient carefully adjusted programs, adapted to their individual conditions. I wonder if you look that program over. "After your physician has become thoroughly acquainted with your case by summing up the results of the various examinations, he will prepare for you a carefully adjusted program of diet, exercise and treatment, in which many efficient measures are brought to bear simultaneously, each being given its proper time and place in the daily program, so that you will receive many times a day a lift toward recovery."

A lady said to me the other day, "Doctor, it isn't any use for you to prescribe baths for me; I have taken baths; I took 100 baths at such a place, and it is no use for me to take electricity either; I have taken electricity. It is no use for you to prescribe massage, for I have tried that until I was completely disgusted with it. I have had the rest cure and that didn't help me." She went on and enumerated nearly everything we have in the house, and she said, she had tried them all and they didn't do her any good. I said, "Well, you don't expect anything to help you then?" "Well, not unless you have got something new," she said. I said, "We have just one thing new, and that thing is that we are going to apply to you all these things at the same time." I remember some years ago I saw a man trying to roll a big stone out of a hollow, and he could not budge it. There were several strong men around there, and each

one of them tried it, but they could not move it an inch; then they all took hold together, and one shouted "Heigho, he !! and they all lifted together and it rolled down the street. The idea that you can not get any benefit from this thing or another thing because you have tried them one at a time, is just like trying to raise a house up with one jackscrew. You say, "I have worked hard with that screw, but it didn't do any good." But if we put 100 screws under the house and work them all together, you can see that house slowly rising up and up; and the biggest stone block in existence could be lifted if you could get screws enough under it. Archimedes said he could move the world if he could only find a place to put his fulcrum and had a lever big enough; and he could have done it.

That is just what we do here at the Battle Creek Sanitarium,--we bring together all the healthgiving agencies, all the lifting agencies known to science, and get them all to work at one, first getting the bad habits out of the way, the things that make disease--getting them out of the way, stopping sowing for disease, and starting to sow for health; that is the thing to start with; then to reach down into the hollow where the poor, sick man is, and lift him up, for he has got to be lifted up; we have got to get down beneath him and give him a boost, and give him a dozen boosts with everything we can get to work to lift him out of his shough of disease, and in this process of boosting water is one thing, electricity is another thing, and massage is another thing, and Mechanical Swedish movements is another thing, and manual Swedish movements is another thing, and exercise is another thing, and diet is another thing--all these different things working together are what makes the thing a success; and when a man comes here to the Sanitarium who has tried this thing and that thing and the other thing and didn't succeed in getting any benefit, he comes here and makes a business of getting well,--here are all these lifting agencies, these

health giving agencies,--by applying them, bringing them to bear upon him all at once, at one time simultaneously, that gives him the life that he needs. It is the combined effort that succeeds.

"The scientific precision with which the various therapeutic measures are adapted to the case, and to one another forms a chain of health-promoting factors, each link of which must be preserved intact." Now, don't forget that. What is a chain good for that has one broken link in it? The chain may be all right; there may be one hundred links in it, and every one of them intact, but just one broken,--what is that chain good for? That is the way it is, my friends, with you; there is a chain of things that is going to heal you. If you yourself deliberately break one link of that chain, the whole thing is spoiled. A man said to me the other day, "Now, Doctor, you don't suppose one cigar three times a day, just a little cigar would do me any harm would it?" That is just smashing one link in the chain, you see. He proposed to get well without a complete chain; proposed to be lifted out without having the whole thing intact. He thinks he is going to be lifted out of his hollow, ~~he~~ out of the hole into which he has fallen, and carry his bad habits right along with him. I said to him, "My dear sir, your request reminds me of the ridiculous story I heard one time of two Irishmen. A couple of Irishmen were out over a stream, and were trying to climb down to get something, so one hung onto the frame work of the bridge or trestle where they were, and the other climbed down and hung hold of the first man's feet. The man holding to the bridge above shouted out to the man below, "Pat, hold on tight while I spit on my hands." He had got to let go and spit on his hands so he could get a better hold, and asked his friend below to hold on tight a minute. Now, it is exactly that sort of case. That is a ridiculous story, of course, but this man wanted to be allowed three

times a day go go out and let go of his support and smoke a cigar. It is just as ridiculous as the story of the Irishman, and just as absurd. While that man was smoking he was cultivating disease, absolutely letting go of almost all of the things that had been done for him, letting himself down, digging himself down deeper into the rut we were trying to get him out of, and that is exactly what happens whenever any person indulges in any wrong habit that has been making him sick.

Here is another man that has been made sick by drinking too much at his meals, and has overstretched his stomach, overloaded it until it has become sacculated, until a big pouch hangs away down so that it can not empty itself; it has been over-excited, and he has got hyperacidity in consequence. That habit of drinking at meals is so inveterate it is hard to break it; so he indulges himself, swallows three or four glasses of water and calls for more. The proper way for him to do is to sit down at the table and begin with a big saucer full of toasted rice flakes or granose flakes or something of that sort, and eat them dry. A man told me today that he had a fine boy in College, and he said, "I will tell you how I brought that boy up so that he is a perfectly healthy boy. I was here thirteen years ago, and I learned some things, and ~~ixfamed~~ they have been doing me good ever since; and I said to this son of mine thirteen years ago, 'now, John, I want you the first thing when you sit down at the table for breakfast in the morning to eat a large piece of zwieback, a big slice of bread that is well baked in the oven, twice baked; you eat that big slice of zwieback dry and chew it well--you can not swallow it without chewing it well,--then you can eat anything you want to after that; but you eat that big piece of zwieback dry, and then eat what you like after that.'" That boy's health is thoroughly well because he was taught to chew, and he got his salivary glands trained in well so he made an abundance of saliva, and it just poured out, and the glands

keep right on pouring it out. Some years ago we had a young man here who was a long distance bicycle rider, and I think he had the world's record for ten miles, and he came here from Texas. I said to the young man, "Why did you come here?" "Well," he said, "Doctor, I am perfectly healthy and well, but I came here because I want to learn more of how you are doing things here. You know, I have stopped eating meat myself, and I eat everything dry." "Well, how did you get into that idea?" He said, "While I was training, I said to myself, a horse is a tremendous runner, and he has tremendous speed and endurance, and he eats everything dry, and I thought there must be something in it, and I eat everything absolutely dry." I said, "Wasn't it rather apt to choke you at first?" He said, "For the first day or two it was, but after a few days, I had more saliva than I needed. The saliva just poured out of my salivary glands, and I have not had any trouble since." That is the way it is. This thing is a little hard at first, but if one will make the effort to train himself into line, and get into correct habits and accustom himself to it, there is an immense deal greater enjoyment in the normal ~~gaxkrixabikity~~ exercise of all our faculties than one can possibly find in the abnormal use of his faculties. One who takes pains to chew his food soon comes to enjoy eating, and as Mr. Fletcher says, he becomes the real epicure. The real epicure is the man who gets the most pleasure and the most satisfaction out of eating; and it is not the man who bolts his dinner or swallows his breakfast so fast he is likely to get choked on it--it is not that man who has a good time, eating, but it is the man who fletcherizes, the man who chews. It is a little laborious at first, a little awkward, but when one gets thoroughly used to it, then it becomes a real pleasure.

"It is desirable that you should see your physician every day."

Don't forget that. If the doctor is not accessible, report to the medical office. Be sure to call your doctor up about anything that comes up. Don't

be worried. If any unpleasant or unfavorable symptom appears, see your doctor and get it off your mind.

"While here make a careful study of the Battle Creek Sanitarium System-- its methods and principles. Read Good Health and other literature;" I met a young lady yesterday who didn't know there was such a magazine as Good Health. I was very much surprised. Here I have been getting out that magazine regularly every month for thirty-seven years, and this young woman hadn't found it out yet. She was only eighteen years old, so I suppose it was not so much her fault; she was not so much to blame, had not had so much time to find it out as some other people have had; but we have a journal which is devoted to this question of scientific health, of personal health, and so far as I know, it is the only journal in the world that undertakes to present only scientific proven facts, in relation to how to live properly. There are some health journals of various sorts but many of them are purely empirical, follow whims, fancies, fads of various sorts; but Good Health undertakes to be scientific, accepts nothing but what has been actually proven, and proven scientifically. "Read Good Health and other literature; attend the School of Health lectures. The Cooking Class is interesting and profitable. A knowledge of the principles of the institution will convince you of their soundness. The Battle Creek Sanitarium method is not a course but a system." You want to take something home with you when you go home my friends; you don't want simply to be patched up here and go back home and be as bad off in five or six weeks as you were before. You want to find the way to permanent improvement, increased efficiency, increased comfort in living. You want to add some years to your life as a result of your visit here, and there is no reason why you should not. I heard Mr. S. S. McClure, proprietor of McClure's Magazine, say at a ~~dinner~~ Chautauqua last year, before an audience of several thousand people, that he had spent six weeks here at this institution,

and he was certain it would add twenty-five years to his life. He said it had made a new man of him. He thought the end of his career had come. He was offering his property, his magazine, for sale at a great sacrifice; but he came her and got well, and got himself on his feet. I met him at the Hotel Belmont in New York,--he came over to see me when I was coming through on my way home from Porto Rico a few weeks ago, and he said, "Just look at me; I am certain I never worked so hard before in my life as I am working now, and I simply enjoy it, and I am in the finest kind of physical condition", and he owes it to the fact that he is living right up to the mark so far as he possibly can, to the Battle Creek Sanitarium principles. We sat down at the table at the Hotel Belmont, and Mr. McClure said, "Let me order the dinner," so he ordered the dinner. We could not have got a plainer dinner anywhere, or a more healthy or hygienic dinner. It was simply plain vegetable soup, some baked potatoes, dry toast, and some fruit, and that was the dinner. And Mr. Fletcher was with us, and we were all satisfied, had all we wanted to eat.

Now, see what the next paragraph is: "Most people are sick because by wrong eating, drinking and otherwise they have cultivated sickness." We have been talking about that. We must stop it; and we must correct our sedentary habits. We must get out of this habit of eating, sitting around and doing nothing; we must stir ourselves up. I met a man some years ago down in Chicago, and the first time I met him he was away down in the gutter. I used to visit Chicago to see what I could do for the people down there. I spent every Sunday of my life for seven years working in the slums there. I started a mission down there, and the mission is going yet, I am glad to say. One day when I was there a poor fellow came in there, a most sodden looking man, the ~~maxt~~ worst looking man of this sort I think I ever saw in my life. He was literally covered with dirt, vilthy and vermin. His black hair was all matted together sticking up through

a little hole--or a big hole, rather--in his hat; his toes were sticking out through big holes in his shoes, and he was covered with rags and tatters, and when he reached his hand up to where I was standing on the platform, and said, "Doctor, won't you give me a bowl of soup?" his dirty coat sleeves and shirt sleeves fell down and left his arm bare to his shoulder, and there was nothing but a dirty arm sticking up. That man somehow got a start. I whispered a few words to him when I gave him the bowl of soup, or gave him a ticket to get it. I never saw him again for three years. When I next saw him it was in a public audience, and he got up and said before the people in the meeting, "A bowl of soup that Dr. Kellogg gave me saved my soul." He said that that morning he had made up his mind to try to see if he could not do better. He had been living a miserable life of a drunkard for forty years. He was regarded as the meanest and most contemptible man in Chicago, for he got his living by hiding in alleyways and recesses in the streets of Chicago, and then springing out with a knife upon a man and ~~the~~ putting the knife into him if necessary, in order to get fifty cents. That is the kind of man he was. He could not read nor write. He had grown up in a saloon. But he got to the point where he saw the folly of it, and he wanted to turn over a new leaf, and he got on his knees in the morning and told God if he would give him something to eat that day, he would not steal; and when I gave him that bowl of soup, he went out, came back for a moment, and he said, "Doctor, now I know there is a God. I prayed this morning for the first morning in all my life. I told God if he would give me something to eat today, I would not steal, and I have got something to eat now, and I know there is a God." Now, it is rather curious; that man had never had any religious education; that was his start, and from that time ~~he~~ went on. Three years afterwards I heard him tell this story as I was sitting in a public audience in a mission in Chicago. Well, I got acquainted with him, and brought him up here, and he

turned over a new leaf in his eating, and the rum blossoms disappeared from his nose, and the blossoms from his face, and he blossomed out in a little while a very handsome man, and since that time for seventeen years now, he has been working like a Trojan to help other people up and at the present time he is holding meetings ~~att~~ in Salt Lake City, and is one of the most successful evangelistic workers in the whole country. Thousands and thousands of men he has helped up. This was Tom Mackey. He was here once talking to our folks, to our helpers here, and he was trying to stir them up to good works in missionary lines, and he thought we were rather slow up here. He said, "I will tell you, my friends, what you want; you want to get a great, big sanctified hustle on and get to work and do things." Now, I think that is what a good many of you want, and a good many of our sick people sittin' around in the lobbies here, sitting about, lounging about in a sort of lackadaisical way want. I would just like to bring Tom Mackey in and stir them up. He is like a regular cyclone; he is brimful of energy and push to help men. Why, when he was in town here, he went down town and found a man on the street here, ~~tryin~~ and he was trying to get him reformed, and got him into a barn down on his knees, got him straightened up; so he was pitching ~~pushing~~ into everybody like a rat terrier, only he was hunting for men. He himself lives exactly as he recommends other people to live. He has got a big hustle in him, and he is working to save men.

Now, if I could get sick people interested in getting well, if we could ~~only~~ get them interested so that they would go about it in a business like, earnest way, why, my friends, we would see such prodigious results here at Battle Creek that the whole world would be coming here; but we can not get people interested. A man comes here and says, "Doctor, well now how long do you think it will take to get me on my feet?" That man has arteriosclerosis, perhaps, or has got the grave staring him right in the face, and he has almost lived his

out his last day of grace. "Well, I think you ought to stay six or eight weeks with us at least to get a good start." "Heavens, what will my business do? Why, I promised to be back to my bank in two weeks." He has got to be back there at his desk in two weeks to go right on with that same killing grind that has reduced him to where he is. We don't appreciate health, we don't appreciate it. Why, my friends, the Sanitarium here is a bank of health. Here you can break into the vault and help yourself. There is no policeman here keeping you away, but the thing is so easy, so open and free that people think it is not worth while. Why, here are the gold and silver just piled up around here, mountains of wealth of health that you can appropriate and carry off with you if you only will. We are glad to help you to it, to serve ~~you~~ it to you. But you must appropriate it.

Now, as I said before, I wish I knew some way in which I could get people really waked up to get well, and not be satisfied with just a little health, but just go in for all the health that is coming to you, and all the health that you are entitled to. You are not entitled to as much as you once were, but, as the Methodists say, I think for most of you you are still on saving ground; if you will allow yourselves to be saved. If you will just give us a chance to do something for you; but you have just got to go right after it and hustle, work, and make a desperate, earnest effort to get it for yourself.

Here is the program arranged with that idea in mind. Don't forget to read the hints to new patients in that book, and the reason why of things. You will take more interest in it, perhaps take pleasure in it, if you see there is a rational, scientific common sense reason in everything that we do for you. Here is the cold bath in the morning. But that does not mean you have to take a cold water bath. Get up in the morning and right in your own room, or down in the bathroom, if you like, expose the skin to the cold air and rub it with a

dry towel. If you don't feel like taking a cold water bath, take a cold air bath, but take some kind of a cold morning bath every day. Get in the habit of it while you are here, then keep right on doing it. Then the morning exercise. After the cold air or the cold water bath, dress and go outdoors, and take a walk before breakfast. It is wonderfully conducive to good digestion. If you get out of bed and go down to the table and try to eat breakfast without taking a cold bath or any exercise, your stomach is not half waked up yet, it is still yawning, gaping, and has not got its eyes wide open yet. Why the stomach can not make gastric juice, don't get any appetite juice, and doesn't make any chemical juice; so the stomach is not prepared to deal with your breakfast. You swallow it into your stomach and it lies around there like lead, and undergoes fermentation and decomposition and makes an immense deal of mischief because you do not have any appetite for your breakfast. And then, of course, you do not have any appetite for dinner, because you didn't start in right. These exercises before breakfast, every one of you ought to have them. The people who take the morning exercise and the morning bath get a great deal more than the people who do not. What is the object of it? It is not routine at all. It is necessary. You see what happens when you breathe this cold air. Take in a deep breath and it lifts your chest up. What happens then? Why the stomach gets squeezed, the diaphragm comes down, and your stomach and liver get a good hearty squeeze every time you take that deep breath. The liver and stomach are squeezed every time. It is just like squeezing a dirty sponge, full of dirty water,--squeeze it hard, squeeze the dirty water out of it, then wash it with clean water, and squeeze it again, and the dirty water runs out. Then let the fresh water run in again and squeeze it again. By and by the sponge gets clean.

Now, the liver is just like a sponge. The diaphragm comes down here

and squeezes it and takes the old, sluggish poisons out of it, and drives the bile out of it, and these poisons and the bile move on; then when the diaphragm ascends again, you see the fresh, new, clean blood comes into that liver, and the stomach, so they are prepared for breakfast, don't you see,--they are all ready for it. And that is the advantage of that chest exercise. I don't know of a thing that is more valuable than that. If you don't get it in the gymnasium, get it somewhere else. Get out and take a run and you can get it that way; but these special exercises are of special value also because they help you to get started, to get your chest up, get to breathing right, then you want to keep it going all day. That is ~~the~~ what the exercises in the gymnasium are for--not simply to exercise, but to show you how to stand, how to sit, how to get the chest up, what it feels like to take a deep breath; when you straighten up to get the right kind of curve in your back, to get your chest forward where it belongs, where it ought to be; to get your chin in where it belongs; to get rid of the ugly hump you have been carrying around. You know so many folks go around carrying their chests behind instead of in front, and these exercises get you out of that bad habit.

Then the morning prayers. That is a good thing to come in here. There is no sectarianism about it, no claptrap and no cant about it. Come in to the morning prayers. What for? To recognize the fact that there is a Creator somewhere that made us and that heals us and takes care of us; and put ourselves in line. Religion is just exactly as natural as breathing. Man is naturally born a religious animal; and a man that is irreligious has simply somehow become abnormal. Every one of us is naturally a religious being. When a man gets right down into serious trouble, and sees death staring him in the face, has troubles he doesn't know what to do with, he reaches out for help naturally; he calls for help, reaches out to a Power beyond himself; and certainl the man

who is sick of all man in the world, the man that is seriously sick he ought certainly of all man to recognize the fact that there is help for him, and to reach out for it; and we ought to get ourselves into a good frame of mind. This is a good quiet place here. Some years ago, a good many years ago, we had a couple of young ladies here, nieces of General Burnside, the great military commander. He had been here. They were very accomplished ladies, and one of them said she would not stay. One was sick, and the other was here to stay with her. The well one said she could not stay here any longer. She said, "I never saw such a poky place in my life; we don't have any balls or any entertainments", and she could not stay here, and off she went. I was glad she went, for that matter. This was not the place for her. We make this a slow place on purpose. We do not want any of these hilarious entertainments. We don't need them. We don't cut them out on any particularly religious grounds; that is not the reason; but they are unwholesome, and a thing that is unwholesome is irreligious; it is not religious. My belief is that religion is natural, that it is just as natural to be religious, that religion is just as natural a thing as breathing; and that on that account we should mingle religion with all our every day affairs; that it should enter into our eating, and our drinking, and into all our deportment; that it should be a part of our every-day life, and not confined to one day of the week. Now, we have this morning prayer, as I said, now, and what about it? There is no cant about it at all; no ceremony about it; it is simply to recognize God, recognize him as the author of our being, and as the healing Power. If a sick man gets well, it is God that heals him. It is not the doctor; it is God, or he could not be healed at all. Be sure to follow that prescription.

Then be sure to count your calories. Here are Swedish gymnastics. These are different hours left vacant here so that the particular hour when

where you get your Swedish gymnastics can be put down here. The open air treatment. So many people house themselves up indoors and don't think of getting out. I met a man the other day who had not been out in three weeks when he ought to have been out every day nearly the whole time.

And dinner--don't forget dinner. Dinner is served from one o'clock to 2:30, or a little later if you want to get it later. You say, "I believe in eating two meals a day." So do I; I only eat two meals a day, and it is a great deal better for me, and I think it will be better for most people, especially for people who work their brains hard. You can get dinner as late as 2:30, so you can have breakfast at 7:40 and dinner at 2:30, and take your dinner so late you won't want any supper.

Then after dinner come the fresh air rides, walking parties, the chest gymnastics at three o'clock, the school of health, then treatment at various hours in the afternoon and in the evening. These are hours when the different kinds of treatment can be put in, such treatment as you have in the afternoon, whatever it may be, and gymnastics. Then there are the mechanical gymnastics that come in here, the mechanical Swedish movements down in the basement under the gymnasium--a very valuable thing--don't neglect that. Then luncheon at six to seven in the evening. Don't make it late; don't eat much at luncheon; don't eat vegetables and things of that sort at luncheon; don't eat bread and butter and cake and things, but eat something very simple and light, a little fruit, or rice flakes, or something of that sort that will digest in half an hour, and you won't have to worry about it all night, or have to have a bad taste in the mouth in the morning and no appetite for breakfast, and you wonder what is the matter.

Well, nine o'clock; that is to go to bed. It is nine o'clock now; I am keeping you over time, but we have lectures Monday and Thursday evenings,

and then we grant indulgences a little once in a while--run a little bit over time.

Dr. Riley's lecture on Wednesday evening is extremely interesting and very instructive. The cooking school Tuesday and Thursday, and the school of health Monday and Wednesday,--don't forget to be there. Every lady who comes to this institutbn ought to learn how to cook. You don't expect, of course, to follow cooking as a profession, but you ought to be able to teach your hired girl, to train her, to criticise her at any rate, and to teach your daughters how to cook. Then the demonstration of health foods in the gymnasium.

Now, we will rapidly go over a few things here. Here is the appointment for examinations. Don't fail to get every examination you ought to have. There is no place in the world where you can get so much examination, for so little money as you can right here, and get such accurate and precise examinations. Here are different sorts of baths. Get your doctor to fill that out for you. Here is the regular treatment--treatment in the morning, treatment before meals. Perhaps you have got pain in your stomach, hypopepsia or hyperpppsia, and there may be something you can have just before dinner or just after dinner that will be a great help to you; You have had your gastric fluid examined after a test meal, and the doctor will explain ~~ix~~your chart to you. Here is the graphic chart of the gastric examination. Here is the normal, right here, the middle, and this is too high, and this too low. This man was away down here. He went up a few points on one occasion, ~~xxxx~~ a little later, but you see he had no free hydrochloric ac id~~x~~ at all, and that poor man's stomach was very nearly on strike. It was not doing very much, but after a course of treatment a few months, it came up to normal, you see. There is a normal stomach. In hundreds

of cases we have seen that very thing happen--a stomach doing almost no work taking up its work and marching along in the jolliest sort of fasion, if you please, doing its work as well as any stomach could.

Here is the second week, so you can have the prescription for two weeks put down. And here is the diet prescription. Ask your doctor how much you must eat, how much fat, how much carbohydrates, how much protein, and the total amount he wants you to have. Figure it up so that you get the amount, and put it right down. Ask your doctor about the special meals, about water drinking and all that. Ask him how much you should drink. I found a man the other day who was not drinking at all. He didn't know it was necessary to drink. He didn't know he had to be washed out inside as well as on the outside. A man who has been accumulating debris and poisonous matters for years and years and years, smoking or using tobacco in some other form, inhaling stale air of the counting room,--he has a whole lot of residues in his body that need to be washed out. Two or three quarts of water a day would not do such a person any harm to be rinsed through. When we have a fever patient nowadays, what do you suppose we do? We just deluge that patient with water; and we don't apply so much water outside as we used to apply, but we apply a great deal more inside. We have a stream of water flowing right through him all the while. We give him a glass of water every half hour. If he can not drink it, it is introduced into the bowels, so a stead stream is pouring right through him, you see, measured in and measured out again, sometimes three or four or five or six quarts a day are passed through the kidneys in that way, and that carries the poisons out and saves the man's life. Nothing else reduces temperature so fast. That is the way with the man who needs reconstruction. Such a man needs to get rid of the old man of disease by means of water, and in that way we will wash him away. We will just wash him out, dissolve him, carry him off.

Here is a list of the different dietaries. Look it over and see if you are sure you are getting all the good you can get from such a diet list as that. Get the diet list and study it well. You will find good representations of it on every bill of fare. Now, here is the daily record of calories, so you can put it down. It is a splendid thing to have such a record. It is a small matter to learn how to add up your calories,--it is a very small and a very easy thing to put the record down every day, for breakfast, dinner, and supper--the amount of protein, of fat, and of carbohydrates, and the total. If you don't take the trouble every day to put down the amount eaten of each element, be sure to put the total down any way. I met a lady the other day who was not gaining, and she said, "Doctor, why don't I gain? I have not gained an ounce." I looked into the matter of calories and found she was taking 700 calories a day. How could she expect to gain on 700 calories? She ought to take 2000 calories. I sent her off with a prescription for 2500 calories to make up for lost time. She thought it would kill her sure, but she is not dead yet.

Here is another week, you see--the electrotherapy, and radiotherapy,--see all the different things, the applications and methods that are here ready to give you a boost if you need it. Make sure that the doctor is giving you the benefit of everything there is in the institution that can do you any good. Sometimes the doctors are busy, and sometimes the patients are modest and don't make all their complaints known. Talk to your doctor, get your money's worth out of your doctor and out of the institution while you are here, and get all you can from the advantages that are offered here. Our doctors are only too anxious to help you; don't be afraid at all to tell them and to take a little of their time. Of course, these remarks don't apply to everybody. Sometimes doctors have more of their time monopolized by a patient than is really necessary.

Here are exercises in the gymnasium--different sorts of apparatus there. Get your exercise prescription; be sure you have your strength tested with the dynamometer. This dynamometer is the only instrument of precision for testing the total strength of the man in existence. It is an instrument of precision. It was developed here. I worked many, many years on it. The United States government uses it. They have it at West Point; the naval cadets at Annapolis are trained with that same instrument that you find in our strength test department here. Every cadet at Annapolis and every student at Westpoint is tested with our dynamometer. The United States government has also purchased the dynamometer, and has shipped it over to the Phillipines. And the leading colleges of the United States, where they train men for athletic contests, use this same dynamometer. It is the only means by which the strength of the whole man can be tested. I found it necessary to devise such an instrument in order to know what kind of exercise a man should have. I worked about ten years on it, and finally we have it perfected so we can rely upon it. You can get your strength tested, know what your exercise should be, know what is safe for you to do, then do it. Then you can watch week by week and see how you are rising in strength. A lady said to me the other day, "Doctor, will I gain very fast?" I said, "Why, you will gain a thousand pounds the first month, I am sure of it." "Oh, I don't want such a thing; I would not weigh a thousand pounds for anything in the world." It doesn't make much difference whether you gain a little in weight or lose a little in weight in the average case; but it makes a wonderful difference whether you gain strength or lose strength; and it is a great satisfaction to get your test; then get it again at the end of a week or two weeks and see if you have gained 500 pounds in strength; and then just keep on going up from 1500 pounds to 5000 pounds. We had a young lady here some time ago who had been a feeble girl that was able to lift 6000 pounds.

That is more than the average man lifts. She was a girl of eighteen, and she was able to lift 450 pounds back lift, without doing herself the least bit of harm, because she had been symmetrically trained.

Here are the mechanical Swedish movements--all these machines, and every one has its purpose. Every one has a use, and the various methods for by which they are employed producing different effects. There is no one thing that we have in the house really that produces more immediate, excellent, and perceptible results than these different appliances. This is exercise for strengthening the abdominal muscles, which nearly always need strengthening. Here is a machine for shaking the muscles, and there is no better means for improving the circulation in the abdomen. Here is friction for the trunk, and shaking, vibration of the hands and arms. This is a vibrating couch on which the patient lies. It is a very capital means of exercise for the trunk muscles, and particularly for the viscera to improve the circulation through the central portion of the body. We have a department for ladies, and another for men, so that the treatment can be given simultaneously, and many of you will find it advantageous to take this treatment twice a day,--in the forenoon, and in the afternoon. The vibratory movements taken to the abdomen, soon after a meal will generally relieve completely the discomfort that many persons experience soon after eating. These are several people vibrating together in unison. Here is a further list of these machines, but we will hasten on.

Here are various exercises, indoor and outroad. At this time of year, we ought to live outdoors every minute we can. Don't sit about the halls and the parlors; get outdoors. If it is a little cool, walk about, but get out of doors, and get into the sunshine. The manual Swedish movements, where exercises are specially adapted to individual conditions, are of very great value,--one of the very best things we have in the establishment here. The modern

name for these movements, which were originated more than 100 years ago, is osteopathy; but osteopathy has a few things added to these movements. This is the scientific system upon which osteopathy has been developed. Osteopathy works in a little mind cure, and a good deal of humbuggery, so it does not always accomplish all that is claimed for it. I noticed an audible smile just then, and I presume some of you may have had some experience with it. I suppose there are some people in this room this moment that have tried osteopathy. Osteopathy is god as far as it goes, only it should not undertake to kill germs by rubbing the back of the neck. If a child has got diphtheria, I don't believe there is much chance for curing him by rubbing the back of his neck. If a person has got a congested liver or a disordered stomach because of wrong diet, you can not expect that man is going to be cured by manipulating the spinal cord. You have got to reach the cause of the trouble. So, while we do not fight osteopathy, or denounce it, still, I must tell you the truth about it. The real thing is the manual Swedish movements; that is the scientific application of these manipulations which have in modern ~~xxx~~ times become popular under the name, Osteopathy.

This is just to show you the difference between right position and wrong position. When you get wrong positions corrected, remain corrected. Here is the right position, and here is the wrong position in which the person is cramped up and can not breathe properly so there is a congested condition of the internal viacera. This shows how to get right. Stand against the edge of a door, or against the wall, with the heels, hips, shoulders, and head against the line. Then bend the head back and move the shoulders forward. Then pull the head down and leave the shoulders there, and that is the correct position. That shows you how to get a correct position without a trainer. You can train yourself, or you can have a trainer if you are round shouldered.

Here are some good exercises for correcting the round shouldered conditions. Turn over on the face in the morning, and lift the head back as far as possible, and so correct that wrong position. This is the way people get round shouldered. This poor woman, you see, has got her chest sticking out here behind the back, and that is such a very common thing. Now, notice here again, the same thing. Here is the wrong position, and here is a person trying to sit straight, trying to get straight--bending forward, putting the hands on the hips, straightening up. Here is the same thing you saw before. It finally brings the patient, who was in a bad position, as you see, back here with the shoulders forward and the chest flattened; and here is the same woman standing in a correct position. This shows the whole thing in one picture. Here is a man against the wall with the head back; here he is straightened up and is sitting up.

Then we have electric lights, and the phototherapy, and the electric light baths, and the local applications of phototherapy in various forms--the electrical applications of various sorts, the arc light which is captured sunlight,--all of these things are ready for work to help the sick man get well. It is by a combination of all these various things. This shows how a congested stomach and liver are relieved by these applications, you see. The blood is brought to the surface so the internal parts are relieved. It is not by any guesswork that these applications are made, but they are made with scientific accuracy.

Now, my friends, as I said before, we want to have you get all the good you can while you are here. The doctors are all interested for you, the nurses are interested, and the whole institution is interested to give you a good start toward health, on the road to health,--such a start that when you go home you will keep right on. A year from the time you leave this institution you ought to

be a great deal better than when you left. The results of what you are doing here, of the change of habits and the change of physical conditions--these results won't appear while you are here one tenth part as much as they will appear six months afterward and a year afterward, if you keep right on, because health is a matter of growth. It is like a wheat field or a corn field--you sow the grain, then you must wait for it to grow. It takes months for it to develop, for diseased conditions to change; but if you work industriously, earnestly and faithfully, in harmony with the principles you are learning here, you are just as certain to reap a harvest of good results, increased efficiency, and increased comfort and longer life and happier life,--just as certain as the farmer is to reap a good crop when he cultivates his crop faithfully and well. I thank you for your patient attention.

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HOW TO LIVE SANITARIUMWISE.

A Lecture at the Sanitarium Parlor, Battle Creek, Mich., Thursday, May 12, 1910,

At 8:00 P. M. By

J. H. Kellogg, M.D.

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I expected to have a stereopticon tonight, but it is not here, so I will have to ask you for a subject. Has anybody a subject for me? Somebody asked a question the other night. I was trying to think what it was; I don't remember now. It was too long a story to tell then.

Q. Give us some practical hints about right living after leaving the Sanitarium.

A. Well, that is a pretty hard question--how to live Sanitariumwise out in the great, wicked world. Now, the Sanitarium is a sort of little, sanitary heaven where you escape for a while from the temptations and the wiles of the wicked world, and when you get out into the world ~~the~~ of temptation, it is a pretty hard thing to live right. However, in the matter of diet, if one takes a little forethought, he can make provision for himself so he can live healthfully almost anywhere on the face of the earth. I have traveled a great deal; I have been in Europe, Asia and Africa as well as America, and I have never found any difficulty in finding wholesome food and living hygienically. I have been getting on now for forty-four years--more than that--without eating flesh; I have not eaten a pound of meat in 44 years, and I have been in most countries of the world except the very far East, and the orient. Now, I am always thoughtful, when I am going out to take a trip of any sort, of the fact that I am going to be placed under circumstances where I can not get easily and find readily at

hand the things that I consider wholesome, so I put into my trunk something that will be wholesome. For example, in traveling, I often take along a few boxes of health chocolates, or of health candy, and some shelled nuts. Now, with a handful of health chocolates, health candy, and another handful of nuts, one can make a splendid meal, and you have all the elements of nutrition, everything you need, everything you want. You have in the nuts the fat and the protein, and then you have in the candy, the health candy, malt honey or malt honey chocolates, or the health candy, as it is called, which is made from malt honey, you have the carbohydrates; so you see you have the whole thing there, a whole meal; and one can live with a little fruit in addition--can live indefinitely upon that sort of food.

Q. Suppose they do not appeal to you?

A. I was just going to tell what other things to get. Now, you do not have these things in your bag, perhaps, and you find yourself in some place, as ~~ix~~ I found myself in Cairo. When I got to Cairo a few years ago, I hadn't any health candy. I paid duty on health candy until it had cost me a dollar and a half a pound, then I thought it was time to give it away--what I had left; so when I got to Cairo I hadn't anything at all, and I had to live on the fat of the land, as the Bible says; and I found everything I needed. There were figs, dried figs, and dates, which furnish all the carbohydrates you need, just as well as the candy; and then there were nuts, there were pistachio nuts, Turkish hazel nuts, and Jordan almonds, and plenty of nuts of various sorts. When we find nothing else, there are coconuts, and they had what ~~as~~ they call monkey nuts over there, which we call peanuts. So one can get nuts and fruits and sweet things like figs, dates, and raisins. There are figs, dates and raisins, three fruits which will give you carbohydrates in great abundance, because they

are very sweet; then nuts of various sorts, and juicy fruits. With those three things, you have all the real essentials of living. And you can get all you really need. But now one finds some very comfortable things besides. There is bread, you can always find bread, and it is good bread if you have it toasted. Just ~~say~~ say to the water, "Now, I want this toasted dry and brown", and the poorest bread you can find will be good, it will be all right if it is thoroughly toasted. It may be heavy as lead, but if you will just have it toasted, it will be all right, because the toasting will finish the cooking. Then one can always find fresh vegetables, find vegetables of some sort; and if you can not find anything else in the way of fruits, you can find canned fruits everywhere you go. The most difficult thing of all is to find fat, to find wholesome fat. And about the best resource is olive oil. If you are accustomed to the use of olive oil, you will find that really is a pretty good standby. It is a great deal safer in any hot climate or tropical climate, or in traveling--olive oil is a great deal safer to use than butter. Butter contains so many germs, and germs of all kinds. There have been found more than fifty different kinds of germs in milk, and in the butter you have the concentrated quintessence of those germs, so to speak, because when the cream rises, it carries the germs up with it. There are very few germs in skim milk. Skim milk is comparatively entirely free from germs at any rate--almost entirely free from germs. The little germs become entangled with the globules of fat in the milk and are carried up to the top, so when the cream is skimmed off, it carries the germs off with it, and in the process of churning the germs are again accumulated in the fat, so there are almost no germs in the buttermilk. Buttermilk is quite free from germs, except lactic acid germs--butter has all the germs stored up in it; it is the very dirtiest thing that ever comes upon the table. If you go

back and trace it back to the barnyard and the dust along the road, and the dust from the hay and the stable litter, and follow it all through all the processes of manufacture and the various things that come in contact with it, when it finally comes upon the table it is a great accumulation of bacteria and microbes of various sorts.

Q. Couldn't you kill them with yogurt tablets?

A. Well, yogurt is a very good defender, a very good friend, there is no mistake about it; and if one is bound to swallow germs, he ought to be sure to have some good, healthy yogurt germs along to fight for his ~~light~~ life for him; but nevertheless, we are getting germs enough all the time--take all the care we possibly can, we are getting germs enough without swallowing any with malice aforethought. We better leave them out of the bill of fare as far as we possibly can. A gentleman came to me the other day complaining about his baby. He said, "Now here is this baby~~x~~ of mine, that I have been bringing up according to your ideas, and we have taken the greatest pains to keep this baby in the most immaculate conditions, that it should not get contaminated with a single germ, and now it has got colitis, and what are we going to do?" "Well," I said, "Did you give the baby any yogurt tablets?" And he said "no." "Well, all right, just start in with yogurt tablets, and we will try to fight those germs off." The fact is, the air is swarming with germs. Everything we come in contact with is simply smeared over with germs which we can not possibly escape unless we go up to the Arctic region, or away up on top of a high mountain somewhere a couple of miles high--then we can possibly get away from germs; but as we are situated, there are germs all about us, and the skin is covered with germs; the saliva is loaded with germs; we can not possibly escape them. So we must take all the pains we possibly can to fight, to reinforce other parts, and not

to swallow germs in unnecessary quantities.

Now, there are certain things that abound with germs. There is butter, and cheese--ordinary cheese is mightily full of germs, so to speak. It may be said that cheese has more in it--well, it is like a silver mine in Colorado--it has millions in it. A man figured up some little time ago that if the moon was all covered with people as thickly populated as the United States, that a single pound of cheese would have more germs in it than the moon could hold of people if it was populated as thickly as the United States. There are other things in cheese besides germs, by the way. Perhaps some of you remember the story of Charles Lamb. His sister sent him down one night to the cheese monger's to get some cheese, for she could not go to bed without having some roasted cheese for supper. So he hobbled away off down the streets of London--for he was lame, you know, on one stormy night, when he was very tired. He went to the cheese monger's and ordered some cheese, and as the cheese monger was cutting off some cheese, Mr. Lamb observed that it was a rather lively variety of cheese. The cheesemonger said, "Mr. Lamb, shall I send it home?" "Oh, no," said Mr. Lamb, "lend me a string and I will lead it home." Well, this sort of stuff we better keep out of our stomachs. Metchnikoff is so particular about his food he is so afraid of germs--as nearly all bacteriologists are,--anybody who has once studied germs and gotten into the real mysteries of bacteriology will be afraid of these things; he certainly will be afraid of them. It not infrequently happens that a bacteriologist while simply working about germs, happens to get a few into his mouth, gets infected, and dies in consequence. A doctor who has been studying some of these new parasites out west, that cause Mountain fever, has actually got inoculated,--he is down in Mexico lying at the point of death,--with all the precautions he has taken, the contact with that infectious

element,--he has become inoculated with it in spite of his care, and was likely to die. I haven't heard yet whether he has died or not. Some time ago, over in Europe, an assistant in one of the laboratories there who was studying cholera germs, got inoculated with cholera, and he nearly died of it. And over in Cairo when they had the last cholera epidemic there, Prof. Koch was over there, and there was a French expedition there at the same time, and one of the members of that expedition died with the disease by becoming contaminated with it from working about it, although taking the greatest pains to avoid actual contamination. So it is well to be careful.

There are other dirty things that we eat. Ordinary raised bread is not the cleanest thing, by any means. Some time ago my attention was called by some boy in the city here to some bread that had a slimy appearance, and they could not understand it. It seemed slimy. When they would break off a piece of bread, long strings would be pulled out. Perhaps some of you have met such bread as that at some time. On examination it was found it was full of germs that had a sort of slime around the outside of them. They were a peculiar, encapsulated germ, and on further study it was found that the flour itself was filled with these germs, full of them. When one stops to think of it, flour is necessarily really a dirty article. It is really a very unclean sort of thing. You think of the wheat standing up with the heads of wheat projecting into the air, and each one containing a great number of little cups to receive the dust that is raised and scattered by the passing teams. The dust of the street is always swarming with germs. The filth deposited by animals as they pass along is ground up into dust, and that filth contains all sorts of germs,--germs of putrefaction, germs that produce various sorts of disease, and colonies of germs, numbers of them are ground up into fine dust, and this dust is thrown up into the air, and as the dust settles down over the wheatfield, it settles down upon

the wheatfields, and when the wheat goes to the mill, the wheat is cleaned, and some of you, perhaps, who have been in the mill, know what an enormous amount of dust is thrown out by the cleaner--the filthiest sort of dust. Then there is a crease down one side of the kernel of wheat, and it is impossible to clean the dust out of this, no matter how much pains is taken, and when it is ground up, this dirt and germs all goes right into the flour. Now, the germs themselves are finer than the very finest particle of flour, so the bolt does not take the germs out. The bolt will take out the bran and the coarse lumps of dirt, but it won't take out the bacteria, and they go right along into the flour, and they make a great deal of trouble. The housekeeper that undertakes to make her own bread knows something about the trouble the germs produce, but she does not know it is the germs which make the trouble, as a rule. She measures out her flour, measures the water, has the dough exactly right, and puts in a certain amount of yeast, and she gets a splendid batch of bread, and she is very proud of her success in making bread; but the next time she does exactly the same thing, takes the same amount of flour and just the same amount of water, at the very same temperature, and uses the same amount of yeast, and her bread is not good, and she says her luck is bad. She says, "I had a little bad luck with my baking today", and she knows it is luck, because she knows, and she is absolutely certain about it, and she wonders why it is. She has done her part all right, but the trouble is she got hold of some flour that had some different kinds of germs in it. Those germs had been working in the bread along with the yeast, and they have been doing things there which she did not want to have done, and so often she does not have good bread. That is why the housekeeper often has such trouble in making bread--is because of the continually changing varieties of germs that are found in the flour. Now, the reason why toast is better than bread, why zwieback is better than raised bread, and the reason why

raised bread is an objectionable article of food is because of these germs in the flour. I am continually saying to people, "Don't eat raised bread." I never touch it myself except under circumstances of necessity. If I do eat it, I ask the waiter to put it into the oven ~~xxxxx~~ or over the toaster, and to toast it very thoroughly until it is dry and brown all through, so all the germs will be killed. In the soft crumb of the bread, there is an abundance of these living germs, and that is one reason why raised bread, bakers' bread disagrees with so many people. It is a very common cause of indigestion and dyspepsia. There is no doubt of it.

Well, now, is there any other question? The question was asked how to live well after one goes home. One thing is you must adopt regular habits. Irregular habits unquestionably are productive of disease to a very high degree, especially irregular habits in eating. Now, there are certain kinds of irregularity that are not so bad as other kinds, but they are all bad. To live wholesomely as regards diet, we must eat regularly, twice a day, or three times a day, just as you arrange for your meals. If one eats three times a day, he should eat one hearty meal and two light meals. A light meal should be eaten for breakfast, and a light meal for supper, and a hearty meal in the middle of the day. Never eat a hearty meal at night. That is, ~~is~~ just before you go to bed. That is a most objectionable thing to do. You ask me why. You have a right to ask the reason why, and I don't ask any one to follow any suggestion I make unless they can see a reason in it. Now, the reason is simply this: it is possible for you to digest while you are asleep, but you can not sleep well while you digest. You can digest pretty well, that is true, but you can not sleep well, because the brain is kept stirred up continually. Here is the great abdominal brain down here, called the solar plexus, in the lumbar ganglia; and while digestion

is going on in the stomach, this brain is kept wide awake. It is closely connected with the cerebral brain, with the cranial brain, and it is closely connected with the heart also, and the heart is excited, and the brain is excited; and every one knows that when he goes to bed soon after eating a hearty meal, he is likely to have dreams, does not sleep soundly, and he has a broken night's rest, because his brain does not get entirely rested. It is excited and irritated. Now, as a result of this imperfect sleep, one wakes up in the morning without being refreshed; he does not have the refreshment he would have if he had got sound sleep. I wonder how many people there are here who know anything about actual, dreamless sleep, the sleep of childhood, in which you awaken feeling so completely renewed, so full of energy. How many of you get up in the morning feeling as though you had not ~~sleep~~ slept, as though you were not rested, feeling languid and as tired as when you went to bed at night? You don't know anything about being thoroughly refreshed. To get thoroughly refreshed, one must have sound, really sound sleep, because it is while we are asleep that our bodies are rested and repaired. Actual repair as well as growth takes place during sleep. That is why the child needs to sleep so much. The child ~~can~~ needs to sleep all the time day and night, pretty much when it is very young, and an older child needs to sleep a great deal more than a grown person, and it is because it is during sleep that growth takes place. Did you ever measure a climbing vine, a hop vine or a morning glory vine? Measure it at night, and in the morning, at six o'clock in the morning, and then at six o'clock at night, and then again at six o'clock in the morning, then measure it again at six o'clock that night, and compare the morning with the night measurements, and you will see that it makes the greatest growth during the night. It is just as true of animals as of plants that growth takes place during sleep and that repair takes

place during sleep. Sick people get well while they are asleep. They do not get well when they are awake to any great extent; you only do things while you are awake; but you only get well while you are asleep. So it is important that sleep should be as sound as possible. So here at the Sanitarium, as well as after you go home, it is well to make provision for sound sleep by avoiding filling the stomach with food hard to digest within an hour or two before going to bed. One should not eat within three or four hours before retiring.

Another important fact in this relation is that food which is taken into the stomach just before one goes to sleep remains there too long a time. If one eats just before sleeping, the food does not get out of his stomach soon enough. Why? There is a reason for it. One thing is the activity of moving about. All sorts of activities help the stomach to empty itself, but a more important thing is this: Suppose this to be an outline of the body. Here is the diaphragm, and here is the stomach down underneath the diaphragm here. The diaphragm is a muscle that contracts, comes down like that, shortens, and contracts, rises up into the chest here in a fold like this, and then it contracts with each breath; and now, of course, when one breathes very deeply, the diaphragm goes down strongly. When one only breathes very superficially, there is very little movement of the diaphragm. When one is awake talking, acting, moving about, even thinking, when one is awake, the diaphragm moves more vigorously, then it does when one is asleep. When one is asleep, lying quietly upon the back, the movements of the diaphragm are so small it is almost impossible to see that the person breathes at all; there seems to be almost no movement at all in the chest, and the consequence is the stomach does not get the assistance it otherwise would. When the diaphragm comes down upon the stomach it gives the stomach increased force, and helps the stomach to force the food out of it.

The diaphragm moves about eighteen times a minute when we are awake, and the stomach gets a little jog sixteen or eighteen times a minute, and that greatly facilitates the process of digestion. But when one is asleep, he does not breathe more than thirteen or fourteen times a minute, and one has very little assistance in this way; so the food remains too long a time in the stomach, and the consequence is the stomach is irritated, excessive acidity is produced, there is excessive stimulation of the flow of gastric juice; the stomach is over-excited and over-stimulated, and when one wakes up he does not have any appetite; the stomach is all tired out; and has not had a chance to rest, and the stomach having been exposed in this way to excitation, to irritation, a catarrhal condition is likely to arise, and this condition very often becomes extremely painful, and very chronic and is very difficult to cure.

Now, as I said, the meals must be regular. Suppose a person misses his breakfast. You say, "Well, no great harm will come to him from that." That is true; the harm won't be very great, yet there will be some harm. Because the food enters the stomach in a rhythmic way, enters the body naturally in a rhythmic way, and leaves the body in a rhythmic way. The alimentary canal, the intestine, is about thirty feet long. Now, suppose this canal were a rope, and you take hold of the rope at one end and give it a shake--a little wave will travel down to the other end of the rope. Now, the same principle applies here to the stomach and intestine. When food enters at one end of the alimentary canal, a little peristaltic wave is started which passes clear down to the other end. When breakfast is taken, --here is the breakfast, we will say. Now, after a few hours have passed, that breakfast gets down here; and then dinner is eaten. Now, this is breakfast here, and this is dinner. Now, after a few hours more, have passed, the breakfast has traveled along down until it is here, and the dinner is down here; and here comes the supper. Now, the alimentary canal is

occupied now. Next thing comes another breakfast, and when the supper has been moving along here, and the dinner has been moving along, and the breakfast is moving toward the colon, now comes another breakfast. Now, when this other breakfast is introduced, everything moves along; so there naturally must be, while food is entering at one end, there must be an emptying out of the wastes from the other end of the alimentary canal; and when the next meal comes along the same thing will be true of a succeeding meal, and so on all along. So the natural rhythm of the intestine is that there should be a movement of the bowels after every meal. And there is no doubt about that in my mind--that this natural rhythm of the intestine is the proper plan,--because when food is introduced into the upper part of the alimentary canal, there is a movement all along the whole canal, and ~~xxxx~~ it is an artificial condition which leads to the retaining of the food substances in the colon for hours and hours and hours after the process of digestion has been completed.

As a result of this retention, after the process of digestion has been completed, the food undergoes putrefaction and fermentations, and germs are cultivated, and they take root upon the walls of the intestine, become fixed there, colonized there, so mischiefs of various sorts--colitis and other things are set up--ulcerations too, as a result of this infection. Now, just stop to think of it a moment--what it means to have a mass of fermenting putrefying material in contact with the living flesh. ~~xxxx~~ Suppose some of this putrescent material that is discharged from the colon were put in contact with the body, with the skin for example, and retained there a long time,--how long would it be before the whole flesh would be a mass of disease? The greatest care is necessary in the caring for fever patients, for example, to prevent them from getting bed sores by infection from the colon, from the bowels--this putrid

material that is so virulent in character and so likely to produce a diseased condition of the skin. Now, what is true with reference to the skin is true to a degree with reference to the mucous membrane--not quite to the same degree, because the mucous membrane unquestionably has become accustomed to taking care of itself, and has acquired the ability to take care of itself; but when this condition becomes intense, when it is chronic, and the mucous membrane is exposed to extremely virulent bacteria constantly from day to day, and week after week, and month after month, by and by the resistance breaks down, ulceration occurs, catarrhal conditions are set up, and that is the real cause of colitis; that is the real cause of ulceration of the intestine; and that is the reason why the bowel is so commonly subject to cancer,--cancer of the rectum, cancer of the sigmoid, cancer of the stomach--are the most common forms of cancer; and it is because the bowel is so habitually abused by these putrefactive materials so long retained in connection with it. So it is of the utmost importance that the natural rhythm should be maintained. I have been ~~stating~~ studying this question very carefully for the last three years, and have been making ~~my~~ observations upon men and young children, upon infants, and upon animals of various sorts, and personally I have become thoroughly convinced that the natural rhythm is a bowel movement after every meal. Now, if one, then, interrupts a meal, why the procession of foodstuffs, you see, will also be interrupted. ~~When~~ One can readily see how that would be. If breakfast is omitted, why then when the time comes that this breakfast should have passed down to the lower portion of the alimentary canal--when that time comes, there will be no breakfast there, because there was no breakfast eaten, and the consequence is there will be nothing there for the bowel to act upon; there will be nothing there for the bowel to expel, so the natural rhythm of the bowel movement will be interrupted. So it is import-

and that this rhythm should be maintained. When one is in the habit of eating three meals a day, one should eat something at each meal-time. If you have not opportunity to eat a meal, take an apple, take a little fruit, take something, because it is important that the alimentary canal should be stimulated at that time, so that an impulse should travel the whole length of the intestine to bring the portion of digesting food where it ought to be, to the point at which it ought to arrive. An eminent physiologist made this remark, and I think it is a very forcible and a very correct one,--"Food is the natural stimulus for the bowel; food is the natural laxative. When food comes in contact with the stomach it stimulates the stomach movement, and this movement that starts in the stomach travels the whole length of the intestine." So you see it is an evil thing to go without a meal; that is, it will do something that is objectionable; it will interrupt the natural rhythm. If a person is accustomed to eating at night, and he omits his supper, the next morning his bowels will not move, or if there is a movement of the bowels, it will not be the full, the free movement of the bowels that there ought to be. If a person eats no breakfast who is accustomed to eating breakfast, there will be no movement after breakfast, because there is nothing to stimulate the bowel. When the brain awakes and begins its activity in the morning, that ~~is~~ is sufficient stimulus to the stomach and intestines to set up a peristaltic movement; or a little exercise, taking a walk, will be sufficient to stimulate this peristaltic activity. As a matter of fact, all of these things ought to come into play together. Walking in the morning, and the morning cold bath are valuable means of stimulating this activity. Some people find that taking a glass of cold water before breakfast is a valuable means of stimulating the intestine. That starts the peristaltic activity in the intestine, and the stomach, even before breakfast is taken. With many

people a little food of some kind must be taken, as orange-juice, or eating a couple of oranges before breakfast--that is an very excellent plan, because it will stimulate the intestine to contract. ~~The stomach~~ With some persons a little more stimulus is needed, so an orange eaten at night on going to bed, and orange or two, or an apple, on going to bed, at bed-time, is a most excellent means. A little malt honey answers the same purpose. A person who can not take acids may take three or four ounces of malt honey with a little water taken at night. I say malt honey because malt honey is a very excellent laxative; it stimulates the bowel and does not irritate; it is not irritating, but it is stimulating to the intestine, and it is entirely absorbed. It is a foodstuff which requires no digestive activity on the part of the stomach, and it is in liquid form so it passes quickly into the intestine, so it does not impose any extra labor on the digestive organs. I

These are practical questions that may be of some help to you when you go home. I think they are important. Here is another error, however, with reference to the rythm of meals, which is still greater, a still greater error, and attended by far greater evils; and that is the lapping of one meal over another. Breakfast was late this morning; we didn't get breakfast until ten o'clock, or so. Now, at twelve o'clock comes dinner-time. It is dinner-time, you say, and "I didn't really have any appetite for dinner; ~~but~~ I ate my breakfast so late, and my breakfast is only half digested", so you ate your dinner while a part of the breakfast was still in the stomach, you see. That is almost the most insulting thing you can do to the stomach,--to take in food when there is already food there that is only partially digested. What should we do under those circumstances? Well, the thing to do under such circumstances is to, if you must eat something, if you think you must eat breakfast at ten o'clock in-

stead of eating something that requires three or four hours for digestion, eat something that will digest in a couple of hours. Eat a very light breakfast if you must take something. Eat something that will be digested in two hours. Say it is ten o'clock and you are going to have dinner at twelve o'clock; all right; eat something that will digest in two hours. Any kind of liquid food will pass out of the stomach in two hours. Any sort of liquid food, you can depend upon it, unless it be icecream. There is no telling how long ice cream will take; it will stay in the stomach quite a while anyhow, because of the fat that is in it, and because it is cold; the cold paralyzes the stomach completely, and the fat that is there will delay things in the stomach for two or three hours anyhow. A Half tumbler full of cream, for example, will stay in the stomach for three hours and a half, or four hours, some of portion of it, and that would cause delays of the movement of food out of the stomach, it would very very greatly delay the natural movement of the food from the stomach; so a bit of bread and butter--you say, "Now, it is only a sandwich; I will eat a sandwich now, and eat something more a little later"; but bread and butter will stay in the stomach three hours and a half. It requires a long time for bread and butter to get out of the stomach, whereas if it were something like boiled rice, that would be gone from the stomach in an hour; or if it were some simple thing like a little flakes, wheat flakes or rice flakes, or a little milk or cream, that would be out of the stomach in an hour and a half or two hours; than you have an appetite for dinner. A little rice with fruit, or a little baked apple with a little rice or something of that kind would be disposed of in an hour to two hours; then the stomach would be ready for another meal. Meats, fat meats are particularly slow to digest. So we should exercise care to get that particular thing that will leave the stomach in a short time. We should be very care-

ful, then, you see, about that thing--~~taxation~~ not to allow one meal to overlap another, as well as to maintain the normal rhythm.

Now, another thing of exceeding importance at home is living outdoors. We are naturally outdoor animals. We haven't any right to shut ourselves up in cages as we do. The sedentary life we live is so abnormal, so unnatural it is a great marvel that we live so long as we do. It is the greatest marvel that we are not all killed off, were not all killed off long ago, because our indoor life is an entirely unnatural life. Go down to Porto Rico, where I was a few weeks ago, and you see the people there living practically outdoors there. The houses have no windows, it is true, except little holes in the wall; and at night time they shut themselves up tight in their houses; but in the day time they live outdoors, upon the porches. They never have any fire in the houses, and there is no occasion for shutting the air out of the house. At night-time, the poor, foolish natives are so afraid of the night air that they shut themselves up tight. It is the mosquitoes they are afraid of, but they do not know it is the mosquitoes that do the harm; but they shut the doors up tight at night and hide away in the house; and the result is they are exceedingly subject to consumption in a country where consumption ought to be unknown; and it is one of the worst scourges of the island, and they get it unquestionably by shutting themselves up in those unventilated homes at night.

Now, another thing, when you get up in the morning, have a bath of some kind. It may be a cold water bath or a cold air bath. The cold air bath is just as good for some people as the cold water bath, and a great deal better. It is only necessary that the skin should have the stimulus of cold, and cold air is stimulating just as well as cold water. For many people, it is safer to have the cold air bath in the morning than to have the cold water bath, because with the cold water bath the slow evaporation that takes place afterwards

often induces chilliness. If your hands and feet are cold after the cold bath, you better dispense with the cold water bath and take instead the cold air bath, rubbing the skin well with the coarse towel, rub yourself well with the towel, and that brings the blood to the skin and relieves the liver, and the stomach, the heart and the other internal viscera of blood, and gives you a feeling of vim and energy and exhilaration that is really very delightful.

Now, another thing that I think is important for the average civilized man is to know that exercise is necessary, that work is necessary. When Adam was told that he must earn his bread by the sweat of his brow, it was not a curse that was pronounced upon him but a blessing. The people who suffer are the people who do not sweat. The man who ~~thinks~~ thinks, "Now, then I have got so much money I don't have to work, and I can just enjoy life", he won't enjoy much life. He will find that he has omitted one of the essential elements to the real, natural, actual enjoyment of life, and that is the sweating which works out of the body the toxic matters, the waste substances, some of them of the very worst possible character, which render life miserable if they are retained. One should do enough hard work every day so he will sweat. If you have not had a good sweat today, you better get a sweat somehow before you go to bed tonight. Exercise somehow, do something to get up a good sweat. Every body, the most common and simple hearted, and simple people, primitive people knows this. Away up toward the north pole, the Laplanders that live up in that region do not have any chance to sweat in winter time; there is almost no work to do, and they are shut indoors; so they compensate for the lack of sweating which they get, and for the sweating which they do in the summer-time, by means of sweathouses. Every single house in Lapland has a sweat house behind it. When a young couple get married up there, the first thing they do is to build the sweathouse. And they live in the sweat house for a while, until they get able to get a

a bigger house. Now this sweat house has a big brick stove in it, and a fire is built in the stove, and then stones are heated by the fire underneath, and when the stones get very hot, they throw a little water on, and the door is wide open, and a great gush of steam comes out into the room; then they throw a little more water on the stones, and a little more steam comes out; then more water. I have taken a sweat in these very sweat-houses myself, up in northern Russia. I know just what it is like; and they have a little ladder there that you climb up and get on a little shelf in the top of the room, and you lie down on it. I remember just at this moment my sensations when I was lying on such a shelf and a great volume of steam was coming out of the throat of a big stove; and it by and by gets so hot you can not stand it, and you come down to a lower shelf, and finally get down to the floor, and then you have cold water thrown over you. But the Laplander does not have this elaborate arrangement; he simply has a room and the hot stones, and throws some water on the stones, and gets almost parboiled until his skin is as red as a boiled lobster, and then he rushes out and rolls in the snow; and he gets some more sweating until he has had a thorough sweating and a hot and cold bath, ~~xxx~~ of the most vigorous sort. This is compensation for the lack of exercise. He finds it necessary to keep him well, finds it necessary for his health, and it does keep him well.

Away off down in New Zealand, among the Maoris there, they have a method which ~~xxx~~ compensates for work, or lack of work. The old chiefs down there that didn't have any work to do, they get to feeling stupid, or rheumatic, so they have some stones, get a lot of stones, make a little hole, dig a long trench and the stones are put in there, and a fire is built on the stones, and when the stones get very hot, then they are all covered over with plantain leaves and banana leaves, and green leaves of some sort, and after a thick layer of

leaves has been put on the stones, the old chief lies ~~down~~ down upon those leaves, upon the bed of leaves, and then the natives cover him all over with a great mass of blankets, and the heat from the stone causes the steam from the green leaves to rise, and the steam will arise and envelop the body, and so he has a very vigorous perspiration, and splendid results in the form of a vigorous sweat. You can readily see that that will produce a very fine sweat.

The North American Indians, when this country was discovered, were in the habit of using the sweating bath. They would make a small wigwam of skins, and the sick man, or whoever was to take the sweat, was put in there with some hot stones, and water was ~~put~~ put upon the hot stones, and there would be lots of steam, and when he was nearly dead from the heat, he would be brought out and dipped in the river or some stream that was running near by. So, as I said before, primitive people--I could tell you of many more similar things about the habits of primitive people--the negroes of Africa, even, have very similar practices as I have learned from missionaries and ~~ix~~ other travelers there,--these are all indications of an instinctive knowledge of the fact that sweating is necessary for health, and it is not necessary ~~when one gets~~ simply when one gets sick, but that he should sweat a little every day; then we won't have to sweat so hard when we get rheumatic. Why, my friends, you would not any of you have been here if you had lived right at home. It is our bad habits that bring us down, our wrong habits of eating and wrong ways of living, and the wrong ways of relating ourselves to life that brings ^{punishment} upon us the ~~pain~~ we call disease. So here are some essential things. Eat right, eat simple food, food which was intended we should eat; eat Sanitarium wise, if you please; adopt the Battle Creek Sanitarium bill of fare at home as nearly as you can. You do not need to buy our health foods if you don't ~~xxx~~ want to. You can get along without them, although they are very convenient and handy to have, but you can get

along without them. If I was going to take a trip across Asia, I would not take any along. I would expect to find wholesome things to eat wherever I was. I have no doubt I should be able to do so. I have never been anywhere yet that I didn't find enough to satisfy a simple taste. When I was traveling some years ago down on the west coast of old Mexico, I spent a week in the mountains there, the very wildest part of old Mexico, and among the most uncivilized people to be found in Mexico. I slept in their mud huts, and ate at their table with the pigs and chickens underneath, and I ate just what they ate--not everything they ate, but I ate the things they provided, and I didn't have a bit of trouble. I got beans cooked--frijoles--they call them down there,--cooked in the finest sort of way. They cook beans a long, long time down there, and the longer they are cooked the better they are. Just before they are served upon the table, they add a little lard, but I took mine before the lard was added. Then there were the tortillas. The tortillas are little flat cakes made out of corn. The corn is hulled first by soaking it in limewater, then it is afterwards boiled for a little while in lime water until the skin is loosened and rubbed off; then ~~it~~ this corn is thoroughly washed to get the lime off, and to get it all washed out of it; then it is dried and then ground on a flat, rough stone, with a round stone rubbed up and down upon it, very much as a woman washes clothes on a washboard, and in that way the corn is rubbed into ~~the~~ paste, and the paste is worked in the hands, and the Mexican woman tosses it back and forth from one hand to the other in this way until she makes a nice, flat, round cake--and she becomes very expert at it, and this cake is sometimes so fine you can almost see through it. If she wants to do a particularly fine job,--I have seen cakes as big as that (indicating), and almost transparent; they were done so dextrously. This is thrown on a hot tin over a ~~few~~ little charcoal fire, and when it is done on one side

she takes hold of one corner of it and flops it over, turns it back again until the tortillas are done. The Mexican seems to like them half cooked or raw, but you can just say to your Mexican hostess that you want your tortillas toastades and she will bring them out nicely toasted, and put them back on the tin until they are nicely browned over a moderate fire; and you could not find a more wholesome bread anywhere in the world than the Mexican tortillas when they have been well toasted; so there are beans, and tortillas, and fruit. Now, you may need a little something more than that. The next difficulty was to get some fat; but the cocoanut is always at hand, and you can always find it, and it is perfectly wholesome if you fletcherize it well. If you fletcherize the cocoanut very thoroughly, it is entirely wholesome, to swallow the whole pulp. If it is not well fletcherized, then it is well to reject the residue, after getting the rich milk or creamy juice out of it. When I was in Porto Rico, I made some experiments of this sort, and I found the cocoanut can be eaten without any difficulty if one only takes pains to ches it very thoroughly, and it has the advantage also that it is a very excellent laxative when it is thoroughly masticated in this way, and produces no ill effects whatever. There are various other kinds of nuts, however, one can always get.

So, as I said before, one can travel in any part of the world and he can easily find sustenance which is wholly suitable to his needs, if he has a simple taste, and will keep close to Nature. The fact is it is only civilized people that have gotten so far away from the natural ways. When you mix with primitive people anywhere, you will find they are living a great deal more simply than we Americans do or than any civilized people do, but I see it is pretty nearly nine o'clock. I think the clock has already struck nine.

Just one word more about how to live at home. When you get home, when you go away from here, say to yourself, "Now, then, I am going to live up

to all the principles I have learned here. I am going to live naturally." That is the keystone of the whole thing--to live naturally. Find what is natural, and if you learned something here of what is natural, be sure that is the thing that is right, that that is the thing that is best for you, and it is perfectly safe to follow it. You say, "Well, now, Dr. Kellogg is something of a crank, and he says that we should not eat meat. I think that is a fad of his." I used to be a little afraid of it, but I want to tell you that is not so much of an experiment today, that thing, as it was thirty years ago. When I started out to live without meat 44 years ago, I started out to make the experiment, and I said to myself, "I am only one person, and I don't amount to much anyhow, so I will try the experiment and see how it works." It was predicted I was going to die right off quick. When I was a boy I was not considered worth raising, as a matter of fact, so I was left to myself. I was such a puny little chap they didn't think I was worth raising, that it was worth while to bother with me. I was not allowed to learn to read, was not taught a thing until I was nine years old; then I was sent to school for a couple of weeks, and I learned my letters and how to put a few letters together, and I worked the rest out myself, so far as reading was concerned, and I didn't have much of a chance in that way until I was nearly twenty years old. I was left almost entirely to myself, because I was not worth raising. I was such a puny boy. It was supposed I would die. No one thought I would live until I was sixteen; and when I was sixteen everybody knew I was going to die in a year or two; when I was twenty it was a marvel to everybody that I was alive; because I was such a puny creature. My father's father said to me thirty years ago on his death bed, "John, if I had ever supposed you were going to amount to anything, I would have taken more pains with you." But perhaps it is just as well that I had a chance to ~~xxxxxxxxxxxx~~ rustle for

myself, and it was a good experience for me; I was getting so I thought I didn't amount to much anyhow, and I was going to die early anyhow, and I thought I might as well experiment upon myself, so I said I would make the experiment; and for forty years it was an experiment simply; but now after forty-four years of experimentation, I am satisfied that it is an awfully good thing--this discarding all sorts of dead things, things that rot ~~inside~~ within your body, for things that will rot outside will rot inside; and things that are unclean outside will make things unclean inside. Why, here are two creatures that get into your house--a sheep goes there, perhaps a sheep and stays there over night in some one room; and a dog stays in another room over night. There is a lot of difference in the situation of those two rooms the next morning. The room where the dog stayed has a horrible loathsome smell about it. The room where the sheep was perhaps has something of a sheepish odor about it; nevertheless it is not putrescent; it is not loathsome, horrible. There is an awful difference between those two things, a tremendous difference. One of these animals harbors all sorts of putrefactive poisons. The alimentary canal of that animal is just swarming with filth. The dog eats dead things, and those dead things the dog eats fill his body, so that his whole body is saturated with the products of the decay of those dead things in his body. Why, my friends, just think of it! A person eats good, sweet, clean food, swallows it through his mouth into the stomach,--is there any reason in the world why that food should become putrescent, horrible, and loathsome while passing through the alimentary canal? Is there any reason why that clean, sweet, pure food that we take at the table, why that food should be the extract of rottenness when it leaves the body? There isn't any reason. I know all about it, because I remember a period of my life when I made free use of eggs, when I was constantly ashamed of myself because I had a bad breath and a coated tongue,

and I knew from the character of the bowel discharges that there must be a very putrescent state of things in my intestines, and I was very much ashamed about it, and hardly knew what to do about it; and I didn't get rid of that state of things until I adopted a different dietary, until I discarded eggs; until I learned the important principle I was telling you about a little while ago--that the bowels ought to move after every meal so there would not be time for putrefaction and decay, so that this procession of foodstuffs should be passing along so rapidly that as soon as digestion has ceased and as soon as the wholesome ~~is~~ digestive material has been absorbed, that the wastes will be cast off at once so that there will be no opportunity for it to lie around and putrefy and ferment and rot. Now, I certainly should feel disgraced when I find myself in such a condition that there is a malodor connected with any of my bodily discharges; I know there is something wrong, and there is something wrong because my whole body is exposed to that. My whole body, the millions and millions of absorbing organs in my body are soaking in all that impure material, and I must make haste right away to find out what is the matter. If I have got something that is impure and decaying within my body, I know my breath must be bad, and I know that the excretions of my skin must be irritating, and I know my whole body must be exposed to these poisonous elements. These are not pleasant things to talk about, but they are practical, everyday things that are of immense consequence to every one of us. We should manage our diet, and manage ourselves in such a way that there will be no horrid smelling thing about us outside of the body nor inside of the body; that we will be clean and sweet throughout; and when one is living in that condition he is getting just as near to the normal state of things as it is possible for ~~him~~ to get. That is the only thing that is necessary

for one to be healthy and wholesome.

Just as I was coming into the door a little while ago I met a lady I had not seen for a good many years, and she remarked to me, "Why, Dr. Kellogg, I am surprised to see you looking so fresh; I supposed naturally that after all these years I would see you looking, well, sort of wrinkled, old and infirm." I told her I should feel very much ashamed to look in that sort of way. She said, "certainly one has a right to look old." Of course, one has but certainly not at sixty. A person ought to be young at sixty, and ought to be pretty young at eighty. The idea of being old at fifty or sixty is really ridiculous, and there is nothing necessary about it; it is only because we are exposing ourselves to conditions that makes us prematurely old, because our tissues become soiled, and our skins become stained with the products of putrefaction. In youth the body is able to deal with these poisons and carry them off, but as we go on in years, the body gets worn out; the liver gets tired out; the kidneys become worn out and the organs of the body get exhausted, and are no longer able to keep the body clean and to dispose of this unnecessary and harmful rubbish.

You hear me say a good deal against flesh eating, as I began to say a little while ago; you go home, and some friend will say, "Oh, Dr. Kellogg is a crank; now it is all nonsense; here, have a piece of nice beefsteak." You will have to stand up against some of these temptations. You pitch right into that friend of yours and convert him; show up to him the horrible things he is doing; present it to him from a physiologic standpoint, and from an esthetic standpoint,--show him the absurdity of seizing a beast, cutting its throat, tearing off his skin, then gnawing his bones. The idea that a human being, that man, with his lofty place in the world, man with his marvelous powers and his wonderful gifts,--that man, the noblest of all God's creatures, should get down on all fours with the dogs to gnaw bones,--why, my friends, it is a terrible

terrible humiliation; it is the most marvelous thing that the human family has ever been contented to do such a thing. How in the world we ever got into the habit of flesh eating. It must have been through some misadventure, through some emergency some time when all food was gone, when men were reduced next door to cannibalism, with death staring them in the face, that they seized upon these lower animals, our inferior friends that are so much like us. The Lord told Noah he might eat the flesh of all living creatures--everything that creepeth. This, you see, includes earthworms, thousand-legged worms, and snakes, mosquitoes, and all sorts of things. It is possible for one to live, you know, in case of emergency, upon these other creatures. Noah did not know it. Noah didn't know any better than to suppose it was impossible for him to live upon any other food except the foods he took into the ark, foods that were suitable for creatures to eat.

By the way, speaking of Noah, you can see that up to the time of the flood meat was never eaten. God told Noah to take into the ark of all food that is eaten, "for it shall be meat for thee and for them." He had various kinds of animals, you know. The carnivorous animals went in two by two; the herbivorous animals, the clean animals went in by sevens. Now, you can see that was not sufficient to provide for the carnivorous animals' sustenance. For instance, here is a pair of lions, and how many sheep would be required for the lions to live on during a year? A pair of lions would require one sheep a day; and they were shut up in the ark there a whole year, and that would mean 365 sheep you see, and there were only seven sheep went in there. Besides, if they had had 365 sheep for the lions and the same proportion of other animals for other carnivorous animals, you will see how much in the way of food they would have had to take in in order to feed the animals themselves. Figuring one sheep every

day for the lions, they would have had to support half that number, or 180 sheep for the whole year; so for every two lions that went in, they would have had to carry food enough to support 180 sheep to feed the lions, you see; so you see at once, how utterly impossible it is that if the story is literally true as told in the Bible, how utterly impossible it is that there should have been any such thing as flesh eating among animals before that time; and so far as Noah was concerned, he had no permission to eat flesh until afterwards, and the practice of flesh eating began; and see the consequences of it. Noah lived nearly a thousand years. His sons lived 200 or 300 years less,--about 600 years if I remember rightly; and their sons lived about 400 years, and their sons 300 years; and it was only a few generations before we find David saying that a man's life is three score and ten years. So you are reduced down to 70 years. This shortening of human life came right along with the flesh eating; and Metchnikoff has explained to us the reason why--because meat supports the germs which produce shortness of life; meat supports the growth of germs which produce destruction of the arteries, produce arteriosclerosis, and produce premature old age.

So the best thing you can do if you want to live long is to return to that diet upon which Methusela and his contemporaries lived--very close to 1000 years. I thank you for your attention.

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THE POSSIBILITIES OF PREVENTIVE MEDICINE.

Abstract of an address delivered by Dr. J. H. Kellogg, Superintendent of the Battle Creek Sanitarium, and President of the American Medical Missionary College, in Legion of Honor Hall, Boston, June 1, 1910, at the commencement exercises of the College of Physicians and Surgeons, Boston.

The speaker called attention to the enormous saving of human life which has been accomplished within the last century by the discovery of the causes and methods of restriction of acute diseases, especially typhoid fever, cholera, yellow fever, malaria. He showed that within two or three centuries the average length of life has been doubled. Great progress has also been made in the study of the causes of death among children, and with the result that the mortality of infants and children has been diminished nearly 40 per cent. within the last thirty years. Attention was especially directed to the fact that while this remarkable decrease in the mortality from acute diseases has been made there has, during the same period, been an even greater increase in the mortality from chronic diseases. For example, it has been shown by Mr. Rittenhouse, the president of the Provident Savings Life Assurance Society of New York, that within the last thirty years mortality from heart disease, Bright's disease and diseases of the blood vessels has been doubled. Dr. Williams, a member of the Royal College of Surgeons of England, has shown that the mortality from cancer has increased in this country within fifty years more than 500 per cent. At the present time the mortality from cancer and diseases of the heart, blood vessels and kidneys amounts to nearly one-fourth of the total mortality. Since the mortality from these maladies has more than doubled in thirty years, it is evident that at least half of these deaths might be saved if we could get back to the health standing of thirty years ago. In other words, one-eighth of the total number of deaths could be easily prevented if the mortality from chronic diseases mentioned could

be restored to the rate of 1880.

These considerations show that there is in the United States alone unnecessary mortality from chronic disease of not less than 200,000 persons. Professor Fisher, head of the Political Science Department of Yale, has shown that the mortality from diseases recognized as preventable is at least 600,000 a year greater than it ought to be. The money value of these lives to the nation is not less than two billion dollars. Hence the question of prevention of disease is one of the greatest importance.

It is especially important that inquiries should be made respecting the causes of the increasing mortality from chronic diseases thus destroying the lives of more than 200,000 persons annually in excess of the death rate of thirty or forty years ago. Chronic diseases differ from acute diseases in the fact that while an acute disease is like a fire which breaks out in a room of a house from the explosion of a lamp or some trifling accident and quickly burns out doing little damage to the house, a chronic disease may be properly likened to a fire in which the house itself is burning. Bright's disease, for example, does not begin when the usual symptoms, Albumin and casts, are first recognized, but when these symptoms appear the disease has been in progress a very long time. Such a case may be likened to a house in which a fire has been burning in the basement, through the partitions upward to the roof, and has finally burst out through the roof. The neighbors shout, "The house is afire!" The fire department comes in, puts out the fire, but the house is gutted. It soon falls down because the supports are weakened. So when Bright's disease has progressed so far that the ordinary symptoms of the disease are easily recognizable, the patient is not just getting sick but he is approaching the end of the fatal malady. Little can be done for him. The time to cure Bright's disease is before it has begun, or at least before the pronounced symptoms of the malady have made their appearance. And the same is true of every other chronic disease. The time to cure the patient

is before the disease has gotten headway, while the symptoms may be yet undiscoverable from a cursory observation. The time to attack a fire in a house, if we desire to save the house, is when it first starts rather than when the flames are bursting out of the top story windows and the roof is falling in.

We know that acute disease can be controlled. If the knowledge at present existing in relation to the nature or the methods of combatting acute disease could be universally and thoroughly applied, nearly all the acute maladies would in a short time disappear from the face of the earth and the average length of human life might be easily increased by a quarter of a century.

The suppression of chronic diseases would accomplish still more. It is very rare indeed to meet a case of death which can be justly charged to old age. Centenarians are getting scarcer every year. Race degeneracy is appearing everywhere in the older civilized nations. One manifestation of race degeneracy is the rapid increase in insanity. The proportion of the insane to the million in the United States is now more than 1800, which is three times as great as fifty years ago. There is also about an equal number of idiots and imbeciles, a class of defectives which has increased in the same ratio as the insane. At the present rate of increase, in fifty years we will find one per cent. of the entire population insane; and if the same rate of increase should continue without interruption, in 265 years from the present time the whole population will have become insane or idiotic. In England the proportion of the insane to the whole population is nearly twice what it is in this country, doubtless the result of the fact that the causes of degeneracy have been longer in operation in that country than in this.

There are numerous other evidences of race degeneracy, among which is the great increase in crime. Each year ten thousand murders occur in the United States, twice as many, in proportion to the population, as in India. Eye diseases are increasing. The almost universal early decay of the teeth in this country is a very certain indication of race degeneracy, doubtless a result of line

starvation, which Professor Sherman, of Columbia University, New York, has shown to be the result of the use of cane sugar and meat. When a hog eats an ear of corn, he finds everything necessary to nourish all his different tissues--protein for his muscles, brain, nerves and blood, fat for his adipose tissue, and starch to furnish energy for his muscles. Then there are lime and other salts for his bones. When a man eats a hog, he leaves the bones behind, consequently he leaves the lime which has been deposited in the bones and so loses this important food element. In other words, when a person takes his corn second-hand in the form of pork he does not get back all of the corn, the lime being left out, and so the bony tissues, including the teeth, are starved. We must eat the whole hog or none. Professor Sherman calculates that half the people in the United States are suffering from lime starvation.

Another evidence of race degeneracy is the increasing number of incompetent mothers. Fully one-fourth of the mothers of New England are unable to nurse their babies. This accounts for the enormous increase of the baby-feed industry in recent times. Bottle-fed infants do not have half a chance for their lives, and if they do live are likely to suffer from scurvy, rickets and other diseases. The daughter of a mother who is not able to nurse her child is herself incapacitated for motherhood in the same way. Arteriosclerosis, or degeneration of the blood vessels, has been shown by Mr. Rittenhouse to be increasing at a fearfully rapid rate. This accounts for the increase in cases of apoplexy and certain forms of insanity, aneurism, heart failure and certain forms of kidney disease. The cause of this degeneration or hardening of the arteries has been shown to be the long-continued action of poison circulating in the blood. Lead derived from water that has passed through lead pipes may cause this degeneracy, but it is more frequently due to the nicotine absorbed from smoking cigars, pipes and cigarettes, to alcohol and other drug habits, among which must be classes tea and coffee. Uric acid is well known to be a cause of hardening of the

arteries as well as of acute disease of the liver and kidneys. It is not so generally known that tea and coffee contain a poison that is practically identical with uric acid. Probably many people who drink coffee regularly would hesitate to do so if they knew that each cup of "good" coffee contains, according to Dr. Wiley, not less than four grains of caffeine, which produces in the body effects practically the same as those of uric acid. A pint of coffee contains three times as much of this poison as a pint of urine. Recent experiments made by eminent German authorities have confirmed the observations made some years ago by Boix that mustard, pepper and other spices produce hardening of the arteries. Boix showed that pepper has more than six times the power of gin to produce gin liver, while the acetic acid of vinegar is twice as active as alcohol in producing disease of the liver and kidneys.

But perhaps the most important fact developed in modern times is that brought out by Professor Chittenden, the head of the Sheffield Scientific School of Yale. Professor Chittenden by experiments upon sixteen soldiers, four college professors and several athletes continued during nine months showed that protein, the element of food represented in the lean portion of meat, is eaten in this country in very great excess. His experiments demonstrated that the protein ration may be reduced to one-third the usual amount not only without injury but with great benefit. When the proportion of protein is reduced so low as this, it is quite unnecessary to add meat to the dietary, as shown by Professor Chittenden, since the ordinary foodstuffs, such as bread and oatmeal for example, contain a great abundance of protein. Protein is to the body what metal repairs are to a locomotive. What the body needs chiefly is fuel in the shape of fat and starch, which correspond to the coal supplied to the locomotive. So the amount of protein actually required is very small indeed. Dr. Folin, Professor of Physiologic Chemistry in Harvard University, worked hard for two weeks on a diet which contained no protein at all without losing in weight or strength.

Professor Fisher conducted an extended series of tests of endurance for the purpose of determining the effect of a high protein diet. The first tests were made upon thirty-two flesh abstainers at the Battle Creek Sanitarium. The same tests were later applied to fifteen athletes at Yale University. The Battle Creek subjects were nurses, bathmen and physicians, only two or three of whom had given any attention to gymnastics. The Yale men were all fine athletes in the pink of condition, football players, members of rowing crews, sprinters, members of baseball teams. The athletes were shown the records made by the flesh abstainers and urged to do their best to excel them, but in spite of their best efforts the results demonstrated that the flesh abstainers in at least one series of tests showed nine times the endurance of the athletes, which was a most unexpected result. This result showed that endurance and mere strength are wholly distinct qualities. So a man may be very strong and have little resistance to disease. Strength depends upon size of muscle, while endurance depends upon purity of blood and cleanness of tissues. Battling Nelson says that he lost a fifty-thousand dollar prize once because he ate an extra beefsteak. The beefsteak made him tired and he was humiliated by defeat. He calls that his fifty-thousand dollar steak. The recent Marathon race in New York was won by a flesh abstainer, who lowered the world's record. In the annual international walking contest held in Germany recently, in which the contestants were required to march thirty miles on the double quick carrying a weight of sixty pounds on their shoulders, a flesh abstainer carried off the prize for the seventh time in succession. One hundred and forty persons entered the race, many of whom were soldiers. The winner of the prize was a merchant; he was not a trained athlete, but he possesses the marvelous endurance which goes with clean tissues and pure blood.

The enormous increase of cancer in recent times, which has been 500 per cent. in this country and 700 per cent. in England, has been shown by Williams to be due to the increasing prevalence of a high protein dietary; that is, excessive

meat-eating. Williams shows that nations which live on little or no meat suffer little or not at all from cancer. The same is also true of animals. Flesh-eating animals are very subject to cancer, while herbivorous animals and animals who subsist upon fruits and nuts as do the gorilla, chimpanzee and orang-outang are rarely, if ever, subject to this disease. In Egypt the Arabs and Copts who eat meat have cancer, while the blacks who eat little or no meat do not.

It seems evident that we are going downhill physically and that race extinction is staring us in the face, and that we must turn about speedily to save ourselves from the ultimate consequences of progressive degeneracy. Civilization has advanced so rapidly in modern times that the human race has not been able to adjust itself to the conditions of civilized life. Man is naturally an out-of-door animal. It is impossible for him to live indoors in safety without adopting certain precautions such as out-of-door sleeping, systematic exercise out of doors, thorough ventilation of living and workrooms, and the avoidance of overheating houses and factories. The practice of wearing clothing, while necessary, is nevertheless productive of disease unless care is taken to subject the skin to special gymnastics by exposure to the air, by the cold bath and by light and porous clothing. Perhaps the most important of all is attention to diet. Mr. Fletcher has shown us the absolute importance and the marvelous advantages of thorough mastication of the food. Digestion begins in the mouth, and unless the mouth digestion is successful more or less complete failure attends every separate process all the way along the alimentary canal. Professor Chittenden has shown us that we should eat less meat, and his experiments clearly enough indicate that we may get along without meat altogether, since we can find nitrogen enough in milk, eggs, and such vegetable products as peas and beans if we chose to do so. Combe, Metchnikoff, Tissier and others have shown us that a meat diet produces putrefaction in the intestine. Observations made at the laboratory of the Battle Creek Sanitarium show that meat in the form in which it is served upon the table always contains millions of bacteria. Ordinary meat, in fact, contains more

bacteria than the very worst specimens of commercial milk, and bacteria of a worse sort, for they are of the kind that produce putrefaction, a process which is always attended by the putrefaction of poisons.

An experiment recently carried on in the laboratory of the Battle Creek Sanitarium is of considerable interest. A dog and a goat were for sometime fed on their ordinary diets. The dog took meat, and the goat had bread, corn and other vegetable products such as it ordinarily eats. Careful examinations were made of the excretions, especially the urine. No putrefactive poisons were found in either one. The dog is able to eat meat with apparent impunity for the reason that it has a liver four times as large in proportion to its size as human beings have, and so is able to burn up the poisons produced by the meat putrefying in the intestines. After two or three weeks the bills-of-fare were changed, the goat being given meat, as much as it could be made to take along with its other food, while the dog was given a diet of bread and milk. At once putrefaction poisons appeared in great quantities in the urine of the goat, and the fecal matters became wholly offensive, while the opposite change appeared in the fecal matters of the dog.

Man is no more adapted to a meat diet than is a goat. His natural diet is that of the higher apes, the gorilla, the chimpanzee and the orang-outant.

Intelligent men and women everywhere are giving increased attention to the matter of diet as related to health and efficiency. Man's body is the tool which his mind used for the execution of his will for purposes of business or pleasure. The effectiveness and the character of the work which it does must depend upon the care given it. The present is an era of change in every department of life. Old dogmas are passing away. New principles in reference to living, physically, mentally and morally, are being recognized and put into operation. Time-honored errors are being shown up by laboratory researches. A new hygiene has been developed, the dominant principle in which is a return to nature. The

value of the out-of-door life, not only as a means of preserving health but as a means of curing disease, is being appreciated. Sanatoria for the treatment of consumption by the out-of-door life have been established in nearly every state of the union, and thousands of lives are being saved as the result. Man is naturally an out-of-door animal, and many thousands of lives could be saved annually if people could be made to appreciate the importance of living out of doors as much as possible and sleeping in out-of-door air. We must return to nature. We must find out what is natural and normal for our bodies and secure these conditions as far as possible. And in this way only may we check the race deterioration which is speeding us on to race extinction.

The preaching of this new gospel is one of the most important duties before the medical profession. Medical men everywhere should be not only teachers of health but examples of normal, healthful living. History tells us the great Socrates was a model of simplicity in his mode of life. It is related that in one of the campaigns in which he participated he was able to march better, to endure cold and hardships better than any of his companions because of the extreme frugality and simplicity of his life.

President Hill has pointed out the fact that the recent complaint respecting the high cost of living applies only to high living, that the cost of the actual necessities of life really cost but very little. Mr. Long, one of the most brilliant students of Harvard University, who is known as the strong man among the athletes, has lived for six years at an average cost of one dollar a week.

There is at the present time a bill before Congress known as Senator Owen's bill, which has for its purpose the creation of a national department of health. It would be a part of the business of this department when it is established to investigate the relation of habits to health, to establish normal standards, to find out what is the height and weight of the normal man, how strong he should be, how long he should live, how much he should eat,

what he should eat, how he should conduct himself in such a way as to maintain health and efficiency in the highest degree and for the longest time.

The question of prevention is the most important of all questions relating to disease. There is a great field of useful opportunity before every physician who will become a preacher of the new gospel of hygienic living. The coming specialty in medicine will be prophylaxis. The health specialist is more needed today than any other specialist. Men and women are inquiring, "What shall we do to be saved from dyspepsia, Bright's disease, and the thousand ills that are preying upon humanity?" The medical men of the future must answer these inquiries. If men and women can be taught how to live naturally, human life might without doubt be doubled within a century.

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QUESTION BOX LECTURE

At the Sanitarium Parlor, Battle Creek, Mich., Monday, June 6, 1910, at

8:00 P. M., By,

J. H. Kellogg, M. D.

I have been down to Washington fighting with the wild beasts of Congress. I have been with Prof. Fisher and others laboring with the House Committee on Interstate Commerce and Labor, in behalf of a national department of health. I found to my great surprise, that there was a tremendous opposition on the part of the congressmen against this department. They say, "What do we want of a department of health? Aren't we healthy enough?" They evidently have no appreciation of the fact that race degeneracy is taking us down, is eating us up; that chronic diseases are multiplying on every hand. I had an opportunity to talk to them for about half an hour. They asked me to; I didn't ask for the opportunity; I asked to be excused, for I didn't think it was worth while; but I told them something about what I thought about the situation.

Think of it: thirty years ago chronic disease was just half as frequent and as fatal as it is at the present time; in thirty years chronic diseases have multiplied 100%. If such a thing had happened in a century, or in a thousand years, it would be a terrible calamity. If we should look back a thousand years and find chronic diseases were twice as fatal now as they were a thousand years ago, we would think that was an awful thing; but it is only thirty years, only thirty years is the period in which chronic maladies have multiplied 100 fold, 100%; more than that in some of the great centers that are particularly wicked and bad--like Chicago, for example,--chronic diseases have multiplied

multiplied nearly 300%. The mortality from diseases of the kidneys in Chicago is 167% greater than it was thirty years ago; and in Massachusetts, 135%; and in the whole United States, the mortality from diseases of the kidneys is 131% more than it was thirty years ago. Well, that is a very serious matter indeed. While acute diseases have been diminishing, while the mortality from typhoid fever, scarlet fever, small-pox, mumps, measles, chicken-pox, and so on is lessening, has notably diminished in thirty years, there are some instances--for instance, typhoid fever has diminished to such an extent that instead of having 300 deaths in 100,000 from typhoid fever every year, a city will report 25 or 30 deaths instead; and a few cities have gotten down as low as ten; and one city as low as two in one hundred thousand,--typhoid fever almost wiped out entirely. While these other maladies, chronic maladies have been gaining, and multiplying.

Now, I made some remarks of this sort that showed up the facts about it, and a congressman from Georgia said, "What do you think is the cause of the great increase in chronic diseases?" I said, "I Don't know, sir. That is what we want a National Department of Health for--to find out." "Well, but haven't you any opinion?" I said, "Well, I have opinions, but other people have opinions too, and we want a department of health to find out who is right." "Well, now, don't you think that it is largely due, probably to the habits of the people, the bad habits of the people who live in cities, and particularly in Chicago?" I said, "I haven't any doubt of it at all; I am very decidedly of that opinion, but I can't prove it; I don't absolutely know it. We want a national department of health to find out about it, to study the relation of habits to health, to see what makes the difference between one man's habits and another's; what difference there is if a man thinks one way, and another

man thinks another way."

There was a Chicago congressman some time ago declared he had eaten 86 wagonloads of food in his lifetime more than he ought to have eaten, so he probably had some excuse for dying of Bright's disease. But overeating is one of the most common causes of that disease, without a doubt. Well, another congressman said, "You say that there has been this enormous increase of kidney diseases?" "Yes." "Well, what is the cause of that?" "Well, I don't know--probably smoking and some other things like it." "Well, but do you know that?" "No, I don't know it; I can't prove it; we want a national department of health to investigate this thing and find out whether smoking is killing people; if it is people ought to know it." The majority of people imagine that when they smoke just a little, that is moderately, not more than twenty-five or thirty cigars a day,--you know, that that is not going to do them any harm. Mark Twain who smoked strong cigars all day and smoked a pipe between times died, and yet his doctors declared that it didn't hurt him, and he knew it didn't hurt him, and his doctors, after he had died of angina pectoris, which is well known to be a typical tobacco disease,--the doctor declared his tobacco smoking had not hurt him; he didn't die of that; that was not what was the matter with him." You might just as well say a man who has been shot through the head did not die by a bullet through his head. Somethine else killed him; it was a special act of Providence, or something of that sort. Now, you know, this congressman sat up and looked pretty solemn when I told him that Bright's disease was a hopeless malady, and that when a man waited until he had found out that he had it, it was too late to do anything for him; he was just as good as dead, and might as well make arrangements for a funeral. I noticed his jaw drop, and he rather looked pretty solemn. Of course, we can not report this for the newspapers. But the next day I learned that he had it himself; so he

had pretty good reason for feeling that way; but that is the real truth about it. The man who has Bright's disease hard enough so the doctor can tell it by examination of his excretions, that man is just about dead. The symptoms of Bright's disease that are recognized as symptoms of Bright's disease--castes, albumin, and those well known symptoms that are talked so much about by quacks in newspaper advertisements--these symptoms indicate that that man is not getting Bright's disease, but that is almost the end of it. That is not the beginning of the disease, but the end of it. The beginning of the disease is indicated in other ways,--the little symptoms of the disease, which, as one French clinician says,--the little symptoms of the disease are altogether the most important, because when a man has only the beginning symptoms of ~~ix~~ a malady, it is like a little fire which is beginning in a house, and it is easy to put out,--a lamp that has tipped over onto the floor and has not set the house afire yet, you can put it out; you can smother it out. So with chronic disease, when it is just beginning, it can easily be extinguished; and it is highly important, then, to know what these symptoms are; and they are easily determined nowadays; we can tell these symptoms. A man, for instance, whose blood-pressure ought to be 105 or 110, or 120, and it is going up to 130, 140, or higher, that means that there is a degeneration started; that means that his house is on fire, just as certainly as though you could look into the basement window of a house and see a blaze breaking out there, and striking up on the ceiling, and beginning to get hold of the partitions of that house so that the house is afire just as much as though you could see the flame bursting out through the roof. But in one case it is down at the bottom and has not yet gutted the whole house; while in the other case, it has burned clear up through the house and spoiled it completely.

So the man who has had Bright's disease long enough so that the symptoms can be easily discovered by a physical examination, by an examination of his excretions,--that man is like a house that has been afire until the fire has burned all the way up through, and is bursting out of the upper story windows; then it is too late to save the house. You can put out the fire, perhaps, before the roof falls in, and the house will stand there a little while; but it is a ruined house.

Now, I think we are going to have a national department of health. We won't get it this session, but I believe we will get it next session. It takes a little time to overcome prejudice. It takes a little time to get the people waked up. People have not studied these questions, they have not given any attention to this question of health and do not appreciate that this is the biggest thing before congress today, and the greatest thing this congress could do, the thing that would immortalize it and distinguish it from its predecessors from the beginning of history down to the present time, would be to create a national department of health, and give it the power to investigate the causes of disease, to stop this terrible desolation ~~xxxxxx~~ of homes that is going on all about us through these insidious maladies that creep in through the kitchen into the diningroom and attack us at the dinner table; for really that is the way chronic diseases come. Acute diseases come from the outside. Acute maladies are accidents, more or less, but a chronic disease is a thing that we cultivate. We sow the seeds of it ourselves, and of course we cultivate the crop; then, by and by, when the harvest comes, we wonder why Providence has been so hard to us, and we see people dying all around us.

Well, another congressman said, "What do you think is the real cause of this great increase of chronic maladies? Haven't you any opinion about it?"

"Well," I said, there are differences of opinion, but Dr. Chittenden thinks it is because we eat too much meat--a too high protein diet; and his experiments showed that when men ate less protein, that their vigor, and endurance, and strength and health was improved." "Well, what do you think?" "I think so too; I think he is right about it; but I can not prove it absolutely, but Dr. Woodruff, on the other hand, says we are having a nitrogen starvation; that we are having a nitrogen famine, and want to eat more meat." I was very much pleased with an article that appeared lately in the Sunday American of New York. I do not altogether like the New York American in every particular, and I presume some of the rest of you do not; perhaps some of you do; there are some good things in it. It seems to be a mixture. But I found one page in it that was really very excellent. It was a dissertation on diet, and I could say Amen to every word I read of it. There were two or three articles, one very interesting article was by a Mr. Long, a member of the graduate school of Harvard University, and he is recognized as the strong man, the very strongest man, I understand him to be, of the whole university. He is the pitcher of the baseball team, and he is a general, all-round athlete, and, and of most remarkable physical ability; and the best of it is he is just as much ahead of the rest of his fellows in intellectual feats as he is in physical prowess--just as much. He has reached the very highest honors Harvard can give to a man. Now, this man gave an account of his diet. He lives on the very simplest food--cereals, a little milk, an egg, ordinarily, and a few fresh vegetables and lettuce and some different simple things of that sort, and the total average cost during his whole six years in college--and he is a graduate student,--the total average cost has been one dollar a week. His board has cost him just thirty-nine dollars a year--think of that--\$39.00 a year, or fourteen cents a day is all it

costs him to live, for what he eats; and he has saved enough by this means from his college expenses so he has been able every summer to take a trip abroad; and he has gone to Asia, to Africa, to South America,--every summer he has taken a trip abroad with the money that he has saved in economizing in diet. And the best thing of all is that he has saved more energy and more strength, and more vigor than he saved in money; so he is gaining in a double way, you see.

But I ran across another thing in glancing over a paper riding along on the cars yesterday that was interesting. It was a little account of Battling Nelson. Some of you know about Battling Nelson. He is one of the pugilists, and one of the very successful pugilists, a man that has very seldom been beaten in a pugilistic encounter, and Battling Nelson told a story about his fifty thousand dollar beefsteak. That was a pretty good price for a beefsteak, wasn't it; but he paid fifty thousand dollars for a beefsteak once. He said it was just before a fight; it was his last meal before the contest; and the waiter by mistake presented him with an extra steak, with a second serving of steak. The temptation was so great, he has such a ferocious appetite, that he ate that steak, and it made him logy, as he said; and it was the result of his being whipped, or the cause of his being whipped. He lost the fight, so it cost him fifty thousand dollars--the eating of that steak. And he knew it; he knew that was the exact thing that did it. And these men who are in training for physical encounters of this sort in which the man goes to the very extreme limit in his endeavors,--these men study the matter of diet with the greatest care. They give the greatest attention to it, and they are beginning to find out that beefsteak sometimes does things to people--puts them to sleep, makes them stupid and dull, and sleepy. Now, the same thing happens to the business man who wonders why he can't win in his encounters with his competitors after

dinner as well as before. I remember very well a judge out in Iowa who could not do anything after dinner; he was stupid all the afternoon, and could not do anything, and he was greatly disturbed about it. Some one persuaded him to stop eating beefsteaks. There was a little natural food, or vegetarian restaurant opened up in Des Moines about that time, and the judge was induced to take his meals there, and after two or three weeks he came and reported to the manager that it was the greatest service to him,--finding this restaurant, because he was able to work just as hard in the afternoon and just as well as he could in the forenoon, when he took his dinners there,--simply because he did not have the beefsteak, and the poison from the beefsteak that saturated his body.

One of the managers of a baseball nine, of one of the National League teams, said the other day that over-eating had lost more games of baseball than anything else; and that is what makes the players fail--because they eat so much. So this question of eating is one of tremendous importance. So with sick people. It is this matter of wrong eating that brought you here, the most of you. The most of you have found at the dinner table the thing that has floored you and brought you here. Some time ago there was a woman, a Mrs. Webb, who kept a restaurant down town here. I never saw the restaurant or the lady, but she had a restaurant here for a number of years. I used often to encounter the consequences of her restaurant. A gentleman said to me one day, a gentleman I knew very well, a business man in the town, who took his dinners at this restaurant,--he said, "Mrs. Webb told me to tell you that you and she are in partnership." I said, "For pity sakes, how did she make that out?" I did not suppose I was running a restaurant; that is the last thing I was thinking of. He said, "But she said you tell Dr. Kellogg he and I are in partnership in business. You know he gets up there people who have worn out

their stomachs, and he patches them up, and then they come down to see me, and I give them a good, square meal, and that upsets them again, and they go back to Dr. Kellogg, and he fixes their stomachs up again, and then they come back again to me; so you see we play right into one another's hands." This woman had discovered the same thing, you know. She knew the influence she had; she knew the things she was feeding people were not good for them.

I stepped up to a railroad lunch counter one night about midnight, and I saw some people going up there and gorging themselves with oysters. Now, oysters are bad enough under the best conditions. If you are going to eat an oyster, at all, the only way to do it is to take him raw, alive and kicking, and swallow him right down just as he comes from the sea; but when he is fried, it becomes almost absolutely indigestible; it can be digested raw, because it is only a big bunch of slime anyway, but when you take that slime and saturate it with fat--the oyster is the scavenger of the sea; the oyster lives on slime; you watch an oyster down there at work, getting his dinner, and you will see he is licking the slime off the stones and the seaweeds at the bottom of the sea; he has got his great mouth spread around the seaweed licking the slime off of it. That ooze and slime on the ocean bottom--that is what it is after, and he helps to keep the ocean clean. I am surprised, ladies and gentleman, that you did not know that. I thought everybody knew that. As much as thirty years ago I took a drop of oyster juice, put it under a microscope, and I found it was like a silver mine in Colorado--there were millions in it,--millions of wriggling microbes, and the first place I studied germs was in oyster juice. Now, I saw this waiter passing out fried oysters to people as they came along. And after they were all gone, I rather carefully slipped up to the counter, and he thought I wanted some, and he passed them out, and I said,

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"Can you recommend those? Do you think those are good for a man to eat?"

"Oh, bless you, no, bless you, no; I would not eat one of the things for the world. You wouldn't catch me putting those things down into my stomach; but there are any number of people coming along and ordering them." And he was serving them because they wanted them. They would have them anyhow, and if he did not do it, some body else would.

Now, there are plenty of hotel keepers who do not eat their own victuals. They cook for other people. That is not this institution, however. I am willing to eat anything that is served upon the dinner-table here; in fact, they have nearly all of them been tried on me before you got them. I was experimented on for about twenty-five years. They tried the things on me, you know. You have heard about tying things on a dog, and they tried them on me. If I survived, then they fed them to sick folks.

I am hoping that the congressmen in thinking this matter over during the summer and fall, will be ready to vote for a department of health. It has got to come. A great many people are behind it; the American people are behind it. Sweden has got away ahead of us. In Sweden the average length of life is fifty years, and in this country, it is about forty years. Sweden is almost ten years ahead of us in longevity, and simply because they are more civilized. The Scandinavian countries, Sweden, Denmark, and Norway, are probably the most civilized country in the world; their society is more thoroughly organized than is any other, in any part of the world that I know anything about, and these people are giving so much attention to gymnastics and their style of living--living in a simple way,--to such a degree that their longevity is 25% greater than ours. That is worth something. And we have got to begin to hustle a little bit, or they will get further and further ahead of us. And

these chronic diseases which are overcoming us so very rapidly will reduce us to the very last degree of degeneracy, because they are due to degeneracy.

Q. Some years ago no alcohol was used in this Sanitarium; now alcohol rubs are employed. Why this change?

A. We used to use witch hazel, but we found the principal thing in it was alcohol. It was simply alcohol flavored with a little tannic acid, and we concluded we might as well use the real thing. The purpose of the alcohol rub is simply to cool the skin. It is not absorbed into the body; We do not get any physical effect from it. If we did, we would not have it; but it is simply to cool the skin. The rapid evaporation of the alcohol contracts the blood-vessels of the skin, and it is a useful method of cooling when patients are in such a low state of vital resistance that the cold application would not be good for them.

Q. What substance causes liver spots?

Brenz Catechin. I am going to write it down so you will see it. Brenz catechin is a brown coloring matter produced by the decomposition of protein in the alimentary canal. Germs get hold of the protein and set up putrefaction and decomposition, and this Brenz catechin is one of the products. An eminent German investigator has found it out; it is a very interesting fact that vegetable protein will not produce Brenz catechin. It can not be produced by putrefaction in the intestine from vegetable protein; but it is produced only from animal protein; and that is the reason why people who have liver spots are the people that are using meat; and people that don't eat meat, have almost universally a lighter and clearer complexion, clearer skin than people who do eat meat. Some years ago we had a visit from Jacob Riis. Some of you know who Jacob Riis is. Mr. Roosevelt said he was New York's most useful citizen. Mr. Riis was here, came in in the evening, and the next day as he was leavi

~~xxxxxx~~ as he was leaving at noon, he said, "Doctor, I formed a wrong impression when I first came in here. I came in here last night, and you know, I thought your people around here were rather pale, and I thought you did not get enough beefsteak; but this morning I have revised my opinion. It is not a pale look; it is a clean look." I thought that was a very nice distinction. I was glad he was able to see it. There is a difference between a pale look or pallor, or sallowness, and a clean look, the clearness of the skin. Now, when a person has a dingy skin, ~~xxxx~~ that dinginess is dirt; that is the plain truth about it; it is dirt, and it is dirt that is more than skin deep too. It is not dirt on the skin; it is dirt in the skin; and it is more than skin deep, as I was saying. The brain is dingy. Now, if you ever saw a post mortem examination, as probably you never did,--well, I will tell you--yes, you have, because you have been down to the ~~xxxxx~~ meat markets sometimes, and you have seen hanging up there some fore-quarters of beef, and some of them you have seen are sort of yellow. Now, that butcher shop is a morgue; those are corpses hanging around there; don't forget it. Each dead creature is a corpse, and it is dead. You noticed some of them had a yellowish slook. That is because the old ox had gallstones, and had jaundice when it was killed. That is the reason why it is yellow. Now, you say, you don't believe that. I was passing through the Paris market some three years ago, passing through the market in Paris, and I saw, as I was passing the meat portion of the market, where they sell salt meat, some great, big, round curious looking balls on the counter, and I said to the man in charge there, "What are those?" "Why," he said, "those are gallstones." "What kind of gallstones?" "Why," he said, "those are from an ox." So I bought some of those ox gallstones and brought them home, and we have got

them here, and I heard not long ago that the Chinese use them for medicine, and they have been buying up all the gallstones they could get in America here, at a high price, and sending them over to China to be used for medicine.

Now, the ox had jaundice. When the ox has jaundice, his flesh is yellow, ~~xxxx~~ and his brain is yellow; so when a person has a dingy skin, it is not simply the skin that is dingy. And the significance of this dingy skin every physician understands. When you go to a doctor and the Doctor says, "You look bilious," that does not mean simply that your skin is out of order; it means your whole body is out of order, because it is ~~xxxxxx~~ saturated with those poisons which have been formed in your body, or perhaps taken into your body, and which should have been burned up and eliminated. You are like a house full of smoke when the ~~xxxxxxx~~ chimney does not draw well, and the smoke pours out into the room--pretty soon the ceiling is covered with soot, and the walls, and the whole room gets sooty, has a sooty appearance. It is exactly so with the body, when the body fire does not burn well. When the fires in the body have not draft enough, haven't oxygen enough, are not burning sufficiently, with enough vigor, and the flame of life is weak, the result is the poisons are not burned up and they accumulate in the body. But I must hurry on.

Q. What is the effect on the stomach of continually eating meals before the previous meal is out of the stomach?

A. The effect is catarrh of the stomach after while. The stomach is kept so constantly congested that the mucus glands become overactive; then a person has catarrh. You see the stomach always becomes congested during digestion. There is a physiologic congestion. But after the meal is over, this congestion disappears, and when the stomach has time to rest, it returns to its normal state, and the congestion is relieved. But every meal you eat causes

causes congestion of the stomach. Now, if you eat one meal right after another one, this congestion becomes continuous. Now, it does not do any particular harm to rub your eye a little bit; but if you rub your eye it is red, and so becomes congested. Now, then, that congestion will disappear in a little while, if you only rub your eye two or three times a day; but if you rub your eye constantly, every few minutes, it won't be very long until your eye will be permanently red. That makes a chronic congestion or inflammation; and that is exactly what happens in the stomach, as a result of constant digestion, of frequent eating; so you should not be eating all the time. There was a man here some time ago who asked me the same question, and I asked him how often he ate, how many meals a day he eat, and he said three meals. His wife said, "You know better than that. Doctor, he eats only once a day, but that is all the time. He eats from morning to night."

Q. Is there any way of effacing these liver spots to any extent?

A. Yes, a clean, atoxic diet, so that there is no further formation of this coloring matter in the body, or contribution of it to the body, will clear them out. The body cures itself, my friends; that is the great hope of the sick man, and what a splendid hope it is--that there is a healing power within. One does not have to depend upon a doctor; one does not have to depend upon a nurse to cure him; one does not have to depend upon something he takes and swallows in the form of pills, or drops; or takes out of a bottle, or water he gets from some mineral spring, or air he breathes in some particular climate; that is not the thing that cures the man. The thing that cures the man is the healing power within him, the living power within him. Here is a little boy who just weighs eight pounds, and by and by he will weigh 150 lbs, or 200 pounds--

atoxic diet

thirty times as much as he did at first--where does all this extra boy come from? There is a creating power in that boy; there is a power there that is building the boy, you see, building up his body, and making his bones, and muscles, and blood, nerves, tendons, and vessels. Now, that power that is building the boy stays with him. When he gets to be a man, this creative power does not leave him. That power that has been creating him, building him up, remains with him, lives with him, sleeps with him, sits down to the table with him, and when he eats an indigestible dinner, it wrestles with that indigestible material, and actually makes brains out of it. It is amazing what this wonderful power that is within us,--what miracles of transmutation it performs; what veritable transfiguration it produces--in this conversion of foodstuffs into living brains and bodies. I told this to the congressmen the other day,--why, what we eat today is walking around and talking tomorrow. And I was interested to see how some of them opened their eyes, with interest, and began to think what the things they had been eating that day would be likely to be saying in the next day. Now, it becomes a serious matter, don't you see,--the fact that we have a living power within the body that we ought to co-operate with. That is the power that heals us. It is a creative power; it is a divine power; it is the power that made us--the Power that made the world and that keeps the world and the universe in order,--That Power within us is working for us, and that is the power that heals; there isn't any other power that can heal. Now, all we can do is to get in line with it, to stop hindering it; and when we do that, it is marvelous what repairs, what wonderful recuperation is possible. As an illustration, I might just tell you of an experiment made by a German physiologist. He opened a rabbit's body and cut off half of its liver; and three months afterwards he opened that rabbit's body again, and that half

of its liver had been reproduced, and the rabbit had a liver just as big as ever. Half of its liver actually had been reproduced; the liver had the power to reproduce itself. Take a lobster that has six legs, and pull them all off one by one, and in six weeks he will have a new set of legs. The liver has the same power of reproduction. Then the physiologist took that rabbit, opened its body again, and took off the other half of its liver, and in three months he examined him again, opened his body again, and found that another half liver had grown on, so the rabbit had a whole new liver, you see. So the liver can be reconstructed because it has this power of recuperation to such a wonderful degree. But your finger has not got it. Cut your little finger off and it won't grow on again; but the liver has this reproductive power in marvelous degree; and it is this healing power, this power of reproducing structure, renewing structure, that we depend upon for healing. In order for a sick man to get well, he has to be made over new. As Paul says, put off the old man, and put on a new man, you see. You have to put off the old man of disease, and put on the new man of health. That is what the bathroom is for. We sweat off the old man, and thrash him off with massage; and we burn him up and sweat him out; and we have the Swedish movements down there where we shake him off; and all these different processes are for the purpose of getting rid of the old man, rolling him out, working him off, and getting rid of him. Then you go up to the dining room, up to the top--we live on the top shelf here; we live high. You must not forget that when you go home. You sit down there and you take in good, pure, sweet material out of which to build the new man, you see. Our bathroom is at one end, and the dining room at the other. One furnishes the material for the new house, while the other is tearing down the old house. That is the whole philosophy why here; and with your co-operation, some splendid things can be done. Once in a while we

have some unwise people who slip out. There was one who left the other day, just before I went away, and I am sorry I did not have time to catch him. He got just out to the edge of the premises, you know, and there he was putting a cigar into his mouth--the new man just putting tobacco in to that new man we were working so hard to build, and he was spoiling it, daubing all over with tobacco juice. That is an awful mistake.

Q. Are Epsom salts in any way harmful taken as a cathartic?

A. Sometimes a dose of epsom salts may be very useful. If you have got hookworm there isn't anything better than two or three big doses of Epsom salts to scare those worms off, and a dose of thymol afterwards to kill those that are left. But it is an awfully bad thing for a man to take every day. I remember an old gentleman from Grand Rapids who was here some years ago, who came down to see us, and we found his bowels were simply paralyzed. He said, "Doctor, there is nothing that will move my ~~bow~~ bowels. I can take half a pound of Epsom salts, and it does not do a bit of good." "I said, "I guess you must be a chronic case. I guess you have used laxatives a good many years haven't you?" "Oh, yes, Doctor," he said, "I will tell you how it was. When I was a boy, my mother thought we ought to have a housecleaning every Saturday for Sunday; that to get ready for Sunday, we ought to have a general housecleaning; so she gave us every Friday a dose of salts, the whole family, all around. She simply got us all into the habit of it, so I have all my life had to take salts, and more and more and more, and I have gotten where salts will do me no good at all." Now, that is the trouble with these saline cathartics; they all have that tendency. The body rapidly acquires a tolerance for them so the dose has to be increased. It is generally so with mineral waters. There are a few with which it is less so than with some others; but the continued use of these salts results in catarrh of the stomach, catarrh of the in-

testines, overwork of the kidneys, and general mischief.

Q. What do you recommend to be taken?

A. The thing should be regulated by diet, by developing the abdominal muscles, by massage of the colon--anything to get along without taking these violent drugs. We use here a great deal of what we call Colax. Colax is simply Agar-agar--a Japanese seaweed which is used a great deal in Japan as a food, but really is not a food, because it is not digestible at all, but it has powerful hygroscopic properties. One ounce of dried colax or agar-agar, of this seaweed, will absorb seven ounces of water--will absorb seven times its weight of water; and when you get it full of water, you can not get the water away from it again or dry it out without great difficulty; it hangs right onto it; so when one takes this along with his food, it prevents the food material from becoming dry; it hangs onto the moisture, and also because it furnishes bulk to the intestinal contents, so there is something for the bowel to act upon; so it is of very great value; but when the bowel has become inert so it is nothing more than a sack, as it is sometimes when this condition has existed for a long time, then it is necessary, in many cases, for a time to use something to stimulate the colon a little in order that this Colax or seaweed may be carried along. The colax gathers up the waste material from the bowel, and virulent bacteria and toxins, also; so it is a very serviceable remedy. After very many years of seeking, we find it is really the best thing of anything we have been able to get hold of. So we have colax and colaxin, which is allied to colax, goes along with it. The best way to take it is to take one of these cakes of colax at each meal. I take it every meal of my life, because I think because of the sedentary life we lead it is necessary to stimulate the peristaltic activity. Our sedentary life tends to inaction. So I take a cake of colax at every meal I eat; and if I do not get a chance to do anything else

else, to eat anything else, I eat a cake of colax any way. It is not very bad; one gets used to it after while and can eat it dry. It is very good exercise in fletcherizing. But if this is not sufficient, colaxin should be taken at night all in one dose just before going to bed with a glass or two of water, instead of taking it after each meal take it all at one dose at night, perhaps a tablespoonful, or even a teaspoonful is sufficient with some persons; or in doses of two or three or four or five tablespoonfuls it does no harm, because the amount of cascara which is used in it is very, very small. The laxative effect is due to the malt honey, figs, tamarinds of which it is chiefly composed. It is chiefly made up of those things.

Q. If meat preserved in buttermilk will keep indefinitely, in the open air, why will not the same be kept from putrefaction in ~~an active~~ the human stomach by drinking one or more glasses of buttermilk after eating meat?

A. That is exactly what Tissier, the colleague of Prof. Metchnikoff said. Tissier works in one room and Metchnikoff in another. Now, Prof. Tissier is really the man who has discovered these buttermilk germs. He discovered their effect upon intestinal putrefactions. Metchnikoff is the man who has published to the world these discoveries. He has perhaps made some discoveries himself, but the chief discoveries are due to the work of Tissier. I had a friend of mine call upon Tissier some two or three years ago in my behalf, and he asked him a lot of questions which I formulated for him to answer; and he reported about it; and six or eight weeks ago I had another friend whom I sent to interview Prof. Tissier, to get a report from him on certain things; and this is one of the remarks he made. He said, "I am not like Metchnikoff. Metchnikoff takes a pound of beefsteak and lets it rot in his colon; then he drinks a pint of sour milk to disinfect it. I am not such

a fool; I do not eat the beefsteak." You see, it is exactly like letting a rat die in your closet, or putting a dead rat in your closet and letting it rot; then putting chlorid of lime in there to sweeten it up. It is the same sort of thing. Well, now, a dead rat inside your body is just exactly as bad as a dead rat outside your body. There isn't any **doubty** about it. They don't get any sweeter when they rot inside. That illustration is not the least bit overdrawn.

Q. What causes the hands, arms, and bottoms of the feet also, to become numb and prickery?

A. It is probably disturbance of the circulation in the nerves which supply the part, and the remedy is to exercise, and to rub the parts. Hot and cold applications are good; the cold bath is good; getting a more vigorous circulation and getting rid of autointoxication is one of the best things, because these numb sensations are certain symptoms of autointoxication. The poisons absorbed from the intestines irritate the vasomotor centers, cause spasms of the blood-vessels and nerves.

Q. How does one's stomach like cheese sandwiches with mustard on?

A. Now, of course, stomachs might differ in relation to that. I am sure my stomach would not like it at all. But I remember very well a young lady we had here some years ago who said to me that our food was so insipid she could not eat it. She said, "I can not digest anything at all; the food won't go down; the muscles work the other way." I said, "What would you like." Well; she said, "I would like a piece of bread and butter, you know, with the bread very thin, and the butter very thick; then I would like some mustard on the butter; that is what I would like. Then I would like a piece of pork, real fat pork, fired very hard; then some mustard spread over it. That is what

I would like." "Well," I said, "we don't have such things here. Our folks up in the kitchen would be simply horrified if they had an order for anything of that sort; they would think we were going to poison somebody; they would not tolerate it for a minute." "Well," she said, "I think I will have to go home." "All right," I said, "I guess we can spare you then." But she was still here a couple of weeks later, and I went up to see her again, and she was still complaining that she could not eat, hadn't any appetite. "All right," I said, "I will put a mustard plaster on your stomach." I sent for the nurse, and I said to the nurse, "Now, make it extra strong; get the real mustard, you know, such as they use on the table, and spread it out real thick, and put it on a foot square over her stomach", and I watched the patient's face out of the corner of my eye and noticed the storm gathering; and when I said, "Make it a foot square," she burst out into a regular tirade. She said, "I won't stand it; you are cruel; I am going home. I can have mustard plasters at home, but I would not let my doctor put them on any more; that is why I came down here." I said, "I thought you were very fond of mustard; I thought you liked mustard." She said, "Well, I like to eat it, but I don't like it on the outside." I said, "Why, you have been having a whole mustard plaster for breakfast." Well, now, she succumbed, I am very glad to say, and she really became quite a diet reformer, really quite a stalwart reformer in diet after while.

Q. State fully in simple language, the evil effects of eating too much sugar.

A. Now, the effects observed by Prof. Mosso, an eminent investigator, Italian investigator, when he made a window in a dog's stomach so he could look in and see what happened, and he gave that dog cane sugar in ten per cent solution, it made that stomach become red, congested, irritated, blood-shot right away; and if he made the solution stronger than ten per cent--that is,

Diet
Eating of
Sugar

one part in ten,--the dog's stomach became inflamed, and the poor dog suffered so, gave such evidence of pain and distress, he had to stop the experiment; it was too cruel, and he could not go on with it. So you can see what happens when you eat cane sugar. And when you swallow a whole lot of Huyler's best for example, you can see what happens in the stomach; and it isn't any wonder the stomach feels sore; it isn't any wonder you do not have any appetite the next morning, because you have got catarrh of the stomach, and the stomach glands are all exhausted.

Q. When everything on earth has been tried to make the stomach work, but Christian Science and Osteopathy, which one of the two would you advise trying?

A. Well, now, of the two I should rather have osteopathy. I confess I am not a very great devotee of the doctrine, but I think I would rather have the osteopathy, because the osteopathy would incidentally introduce a little massage, which is good; but I would not expect any good from osteopathy if one had had massage, and massage is one of the other things on the face of the earth which has not yet been tried, which ought to have been tried, at any rate, before trying osteopathy. Osteopathy is only a modified sort of massage. It sometimes does people a little good. Christian Science sometimes does good too. If everything else has been tried and did not do any good, I would not hesitate to try Christian Science. Christian Science produces sometimes very good results. I am not an enemy of Christian Science, but I do not see any sense in the philosophy of Christian Science. It does a person good to say, "I am well, I am going to be better; I will not be sick; I have set my face against sickness; I will have nothing to do with it,"--that does a person good; there is no doubt about it. But for a person who had a dog biting him to say, "Now, then, there is no such thing as a dog, and there can not be such a thing

as a bite, so there is no dog biting me, because there is no such thing as a dog biting,"--why, I should say that was folly, and it would be just as great folly for a person who had cancer eating into his vitals to say, "There is no such thing as cancer; there can't be such a thing as cancer, because cancer is a disease, and there is no such thing as disease",--it is just as great folly. I have seen people go down into their graves because of their attempt to believe something that is not true. We must never surrender our commonsense, whatever else we do. We must hang onto our common sense; and one can not be a real, downright, thorough believer in Christian Science without surrendering and throwing his commonsense to the winds. And that is not a good thing to do.

Q. What kind of diet is best for one troubled with soreness in his stomach?

A. An atoxic diet such as you get upstairs here, is good.

Q. What can a man do to tone up a weak heart?

A. One of the best things to do for a weak heart is the cold morning bath, but not too much cold bath--just a little,--applying first cold water about the chest, then the forearms, then the rest of the body by degrees. Then lie down three times a day and put an ice-bag over the heart, or a compress wrung out of cold water is a very good thing. I remember some time ago we had a gentleman here who had a very weak heart, and sometimes it would so nearly stop that he was almost dead. He had been here a short time, had cold compresses on his heart, had several attacks which had laid him up for several weeks before, and got out of it in a few hours, and he was out one day, to take a walk, and he got about half way up Manchester Street, and one of these attacks came on. He stepped up upon the porch of a house there, and sat down on the steps, and the lady of the house came out and said, "Can I do something to help you." His face was very pale. He said, "Must give me a towel with one end of

end of it wet", and he got that wet towel, slipped it down his collar inside of his clothing over his heart, and in fifteen minutes he ~~wikk~~ was all right again; and when he got to the doctor's office, he was the most jubilant man you ever saw ~~in~~ your life. He said, "Oh, Doctor, it is the greatest discovery ~~ix~~ ever was." And he told his experience. "Why," he said, "I had one of these attacks come on before, and I sent for a doctor, and the doctor gave me some medicine, and I was sick abed three weeks before I got out", and I believe the medicine had as much to do with it as the sickness did. He was like the Irishman who said he did not like a certain doctor's medicine, because it took him so long to recover after he got well. But there isn't any drug that is known that can compare with cold water as a heart tonic. Everybody knows when a person faints away the thing to do is to throw some cold water into the face; that is the first thing isn't it? Now, when this cold application is made over the heart, it energizes the heart to a wonderful degree.

Q. How long after one has entirely stopped smoking does it take to eradicate wholly the nicotin from the system?

A. The nicotin ought to be gotten out within a few days, say within a week. I have known the nicotin to be hovering around for three or four days, sometimes, perhaps a little longer, when vigorous sweating procedures were applied; but it is not the nicotin itself that makes the mischief. It is what the nicotin has done. It may not take more than half an hour to put out a fire in a house; and it may not take more than a couple of hours more to drive the smoke out, but there are the charred timbers; there is the floor with a hole in it; there is the ceiling that has been burned off; there are the supports of the house that have been weakened until they are burned half through. That is the situation with the old smoker. It is not simply to get the nicotin out of the body; but it is those awful effects that are left behind--that liver

*Nicotine
Tobacco*

that has been forever crippled; those kidneys that have become almost completely used up, and those nerves and the heart that have been weakened. That is where the difficulty comes. A complete remedy is absolutely impossible. A man that has smoked for twenty years has done himself a damage that never can be repaired. All that we can do is to make the best of what is left. He is like the man that has squandered half his fortune; he has only got half of his fortune left; he must make the best of it by economy, but he may do wonderful things by economizing. I have known men that were apparently completely broken down that have recovered themselves to such a degree that they went on with their business and worked for the rest of their lives and enjoyed themselves the best, and lived the best part of their lives afterward.

Q. Why do we have communicating doors between the rooms, so that one in one room is disturbed by those in the next room?

A. It seems almost necessary to have communicating doors between rooms in a place like this so that different arrangements can be made respecting suites. Sometimes somebody will want three or four rooms; sometimes two. If anybody is troubled because of needing more quiet, you can have a double door put on. Call for an extra door, or ask to have your door fixed so no noise will get through.

Q. If one has had severe hemorrhage some three months ago, and now has retention and stasis of the contents of the stomach for ten hours after careful diet, as proved by the tube, does this indicate an operation needed?

A. It is a pretty strong suspicion. It looks as though there had been an ulcer that had closed up the pylorus, and the ulcer had formed a scar that had healed, and this scar is closing up the pylorus like a puckering string, a purse string, shutting it up. That is what it looks like. The case better be looked into. Fortunately, operation in such a case is a very simple

thing. There is not so much danger in an operation of that sort as to live without it for three weeks. It is more dangerous to live without it in such a case than it is to have the operation--a great deal more. I would not expect the mortality to be one case in one hundred in operations of that sort, and the relief that is usually given by such an operation makes it one of the most satisfactory of all operations I know of.

I have not yet got to the bottom of the box, but it is already after nine o'clock, I believe; so if you will excuse me, I will leave these tonight and finish up the questions the next time.

v-6-12-10--.

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QUESTION BOX LECTURE

At the Sanitarium Parlor, Battle Creek, Mich., Thursday, June 9, 1910, at

8:00 P. M., By,

J. H. Kellogg, M. D.

Question: What is the cause of swollen eyelids and is there any treatment for this trouble?

Answer: Well, there are various causes of swelling of the eyelids; one cause is defective vision so that the eyes as they are strained become congested, bring too much blood to the eyes, and the lids are swollen up. Another condition is a catarrhal condition of the eyes. The same conditions that cause catarrh of the nose, catarrh of the throat, catarrh of the stomach and other parts of the body, cause catarrh of the mucous membrane of the lids of the eyes,--namely, low vital resistance and lack of power to resist the attacks of bacteria which are all about us all the time. Our bodies are covered with bacteria constantly. We are swarming with germs; we are literally alive with germs. That is a fact that only modern investigations have shown. The skin is covered always layers deep with microbes which are capable of destroying our lives. That is the reason why when a boy cuts himself, it festers sometimes. That is the reason why when a boy gets a sliver in his skin, it festers,--because some of the germs that are on the skin are carried down beneath the skin, and there they find a favorable opportunity for growth and development. That is the reason why a man gets a boil on the back of his neck. I met a man a day or two ago, and he said he had had fourteen boils on the back of his neck, and he wondered what the trouble was. Well, his vital re-

sistance was low. It was simply the rubbing of his collar on the back of his neck--that is the reason the boils came there. The rubbing of the collar causes a little irritation of the skin, and that breaks down the resistance of the skin enough so that when the general vital resistance is low, germs are able to work their way in, and then they grow and develop and produce boils. In the interior of the body germs are growing in immense numbers. I was talking with a gentleman today in whose case the laboratory report showed that he was raising every single day of his life within his body, forty-two trillion germs. Now, 42 trillion is something, isn't it? That is 42 million million; and he was raising all of those germs in his body every day; and half of them at least were making poisons; and these poisons were being absorbed into his body. It wasn't any wonder he had a bad breath was it? Why, his breath smelled like a tan yard; it was something awful; and his tongue was covered over with a frightful slime; and he had two meals today, and those multitudes of germs that are growing in his mouth had been swept down into his stomach, and the examination of his stomach fluid showed 600 million germs in his stomach at one time,--600 million germs were taken out of his stomach after a test meal. Now, just think what the quantity would be in an ordinary meal. That was only about six ounces of food, and instead of being six ounces, if it had been two quarts, or three pints, it would have been eight times as many, or seven times as many, and that would have been 42 billions of germs growing in his stomach, making poisons. Why it isn't any wonder that man is ill; it isn't any wonder he is next door to Bright's disease, and because his kidneys got worn out trying to carry off such enormous quantities of toxins, such quantities of poisons that the kidneys are worn out in dealing with these poisons. That is the principal cause of Bright's disease.

Q. Is lemonade better than water for hypopepsia, and should it be taken between meals?

A. No, lemonade is not better than water unless one likes it better. It is a little more easily absorbed perhaps. One is likely to take too much sugar in taking lemonade. Water is really the only drink. There is no other drink except water. There is nothing that satisfies thirst but water. Sugar, acids and various things added to water do not satisfy thirst; it is only the water that does that.

Q. What is yogurt? Is yogurt beneficial in hypopepsia?

A. Well, yogurt is a fermented milk prepared from a particular germ that grows in the orient. Now, you know when milk stands in a warm place for a little while it sours; it is because there are certain germs floating about in the air all the time which when brought in contact with the milk produce acidity, cause souring of the milk and curdling of the milk. In Bulgaria and in all the Orient, they have a very powerful germ that makes the milk a little more sour than any other germ that is known; that is capable of making four or five times as much lactic acid as any other germ that is known. And it has another advantage; it is a large, strong, hardy, Bulgarian germ, a sort of mountaineer and hard to kill. Now, the question is asked, What is yogurt for, and is it good for hypopepsia? You know, when you have a beautiful flower garden, if you do not take care of it, the first thing you know, the weeds get in and they crowd out the flowers, and the flowers run out and die. The weeds grow easier, better, and faster than the flowers. Isn't that so? You have to take care of the flower garden. Mr. Dooley went to see the doctor once, so he says, and the doctor told Mr. Dooley, "The weeds are getting into your posey garden." "That is what is the matter with you"; and sure enough, that is what is the matter with most of you. The weeds have gotten into your flower garden--the alimentary canal, the stomach, intestine, duodenum, jejunum,

colon, and the whole alimentary canal, thirty feet long, is a posey garden, if you please, and flowers ought to grow there; and that is the situation when we are born. Now, a baby--when a baby is examined, it does not have any of these noxious germs growing. I went to Europe three years ago to find out what was the matter with a baby; that was really the thing that started me off. I was studying these alimentary germs, and I made some studies on a newborn baby, and when the baby was born, it did not have any germs at all--not a single germ could be found. Babies are all born that way; and if they could only keep that way, it would be greatly to their physical and their moral welfare as well. For germs are really the root of most of the troubles in this world, of all sorts. Well, when the baby was two weeks old, I was amazed to find that that baby had billions and billions of germs. We found billions and billions of germs in a quantity, in a minute quantity, the quarter of a teaspoonful of intestinal contents--it furnished billions of germs. I was so scared when I got the report from the laboratory that I called up the house by telephone immediately, and asked the baby's mother how the baby was getting along. I supposed the baby was just dying of cholera infantum, or something; but to my astonishment I found the baby was well and happy and in perfect health. I was very much worried to know what that could mean; and I went to Europe to find out. And I made inquiries all along the road from London to St. Petersburg; and I finally learned what the real situation was. Those were healthy germs; those were friendly germs; they were flowers, if you please, growing in the flower garden; they were all right; and they were growing there for the purpose of keeping the weeds out. Now, when the baby is born,--Prof. Escherich found out about that,--an eminent German bacteriologist,--when babies are born, there are no germs; but in six hours, in summer time, and in twenty hours in winter time,--germs do not flourish so fast in winter as in summer,--in six

or eight hours in ~~wint~~ summer and in twenty hours in winter time, that baby's
 alimentary canal is just swarming with bacteria, but they are the friendly
 kind; they are the lactic acid forming bacteria; they are known as the bacillus
 lacticus, and the bacillus bifidus; and this bacillus bifidus is called b ifidus
 because it is split at one end so it has two heads; and it is a very curious
 sort of germ; and it is a germ that has a very interesting property. Now, these
 two germs are like two watch dogs that are put to watch the premises--one to
 take care of the house, and the other to take care of the barn. The bacillus
 lactis takes care of the small intestine; it lives and thrives in the small
 intestine, you see--can not live in the large intestine. But the bacillus
 bifidus lives in the large intestine. The reason for this is that the bacillus
 lactis has to have oxygen to live, and the bacillus bifidus can live without
 oxygen. Now, the baby swallows a little oxygen with its food, so there is
 oxygen all the way down to the intestine until it comes to the colon, or lower
 part of the intestine, and by that time the oxygen is all used up, absorbed,
 so that in the colon there is no oxygen. So in the colon we have to have for
 a watch dog a germ that does not require any oxygen; that can live without
 air; and the bacillus bifidus is that kind of germ. See, my friends, what
 a marvelous evidence of divine beneficence this is--what a marvelous evidence
 of divine care this is--this little baby born into the world ~~xxxxxxx~~
~~wxxx~~ so full of germs,--if it had been born into heaven it would not have needed
 any provision of this sort; but born into the world that is swarming with germs,
 so that with every breath it takes in germs, with every mouthful of food it
 swallows multitudes of them. It can not pick up a thing off the floor without
 putting a lot of germs into its mouth; and this baby born into this dangerous
 situation, is at once supplied with a perfect protection in this bacillus bifidus

that grows in the colon--the most dangerous place,--and the bacillus lactis ^{acid} that grows in the small intestine.

Now, so long as these germs are growing there, that baby remains in good health; and as a rule, these germs remain dominant; they occupy the field so nothing else can grow there, just like a big field of clover all planted so thick with clover, and the clover growing so vigorously that no thistle or no weed of any other kind will grow there. You have seen such fields; and the good farmer knows how to get that kind of field; but when the seed is not sufficiently thick so that here and there are bare spots, the weeds grow up, and the whole field becomes contaminated; thistles will gradually work their way in sometimes. Some weeds are so tenacious of life, so persistent, grow with such vigor that they will work their way in gradually and run the clover out. Now, that is true of some of these disease-producing germs,--germs that produce poisons. Some of them are so very hardy and resistant that they are able gradually to work their way in; so if a baby is not fed on the right food for a little while, other unfriendly germs get in and take the place of these friendly ones. For instance, a mother is not able to nurse her baby. This situation is pretty common among mothers down in New England. They are incompetent mothers, and can not nurse their children. Pretty nearly half the mothers down in New England are that kind of mothers; and that sort of mothers is multiplying all over the land. That is one of the evidences of race degeneracy. That is why baby foods are being exploited so generally; that is why we have such enormous great industries built up in the manufacture of infant foods--foods for infants,--because the mothers have lost their ability to supply infants with food which is best for them and natural for them. The mother can not supply the food, so the cow has to be taken into partnership, and has come to be a sort of wet nurse for the family. And the cow's milk comes to that

baby's mouth laden with filth--filth from the barnyard and the stable and all kinds of filth. Some years ago I made a study of the germs of cows' milk; or, rather, I obtained from Prof. Kagn(?) of the agricultural experiment station, at Middletown, Conn., I obtained from him a collection of germs he had obtained from cow's milk,--some forty different germs, and I studied them. He isolated the germs, and I made a study of them here. We planted one of these germs into a little dish in which it could grow, and it was very interesting to study the germs. There was a green germ, a blue germ, a red germ, then there were yellow germs, and various sorts of germs, and germs that had various sorts of odors. One germ had the delicious odor of newmown hay; another smelled like a clover field; another smelled like a pigsty; and another smelled like the chicken coop, and that was pretty good evidence that those were the places from which those particular germs came, you see; they produced the same odors in the milk that they produced where they came from; and all these different germs were there growing in the milk. Now, the baby swallows this miscellaneous collection of germs that come from different farms; and as people from different parts of the country are encountered, they bring along different kinds of germs. By and by the mother feeds the baby bread, and bread brings a collection of germs. Here comes some bread made from wheat from South Dakota, and it brings some Dakota germs with it; here comes some bread made from wheat from Kansas, and it brings some Kansas germs with it; and bread made from wheat from Illinois, Indiana or some other place brings along another kind of germ. These germs are stirred up; they are dropped in the road by cattle first, or by horses going by, and they are dried up and ground up into dust which floats over the fields in clouds, and these germs settle in the dust on the wheat, and by and by the wheat is thrashed and carried to the mill to be ground, and the miller rubs off as much of the dust as he can, but a little bit of it goes in; so the flour is

rather a ditry article, and when the raised bread is made, it has multitudes of these germs living inside of it. In the crust they are dead. That is why zwieback is better than raised bread--one reason, because in zweiback the germs are all killed; they can not stand the rise of temperature; but on the interior of the loaf, the temperature does not rise high enough to kill them. Now, the baby swallows these germs from difference sources; and Prof. Roger, of Paris, has made a study of the matter and has found in the alimentary canal there are 161 different kinds, different species of germs; and nearly half of them are poison-making germs. Now, the purpose of yogurt is to make a person whose flower garden has gotten full of weeds--to supply him with a whole lot of vigorous growing flowers to take the place of those weeds, to crowd them out, in other words to supply him with these lactic acid forming germs in such abundance that the alimentary canal will be flooded with them, and these poison germs will not be able to grow. The poison-forming germs can not grow in an acid medium. I have downstairs in the cooking school a specimen that I must bring up and show to you the next time,--a beefsteak which was put into a panful of yogurt two years ago the seventh day of June; we celebrated its anniversary last year, but we overlooked it this year. We have had two anniversaries now. That beefsteak was put into a pan of yogurt buttermilk, and it is just as sweet this minute as when it was put in; in fact, it is a little sweeter, as it has not undergone any change at all. It is just as perfectly preserved, as fresh as when it came from the meat shop. It is a large beefsteak, and I am going to bring it up and show it to you next week. Now, why does it keep in this way? Why, because the germs which cause putrefaction cannot grow in the presence of these yogurt germs, these friendly, acid-forming germs; they can not grow; so we encourage people that have coated tongues, autointoxication, as almost every chronic invalid does have these conditions--we encourage these people to

take yogurt tablets or yogurt buttermilk, or both, so as to encourage the growth of these friendly germs, friendly organisms in the intestine, and crowd out these poison-forming germs. How do you know you have got poison-forming germs? If you have a bad breath you have billions of them; if you have a coated tongue you have trillions of them; if the stools are putrid, with a loathsome odor, and foul gases formed in the intestine, then there are trillions there growing, and producing poisons that are being absorbed into the blood. If you have a bilious attack, you may be certain that the intestine is swarming with these bacteria. There is nobody that is entirely rid of them. We have to fight them down forever, exactly like fighting mosquitoes. We can not kill off all the mosquitoes; but we can put up mosquito bars and keep them at bay. So, we can not kill off all these bacteria, but we can get rid of a large number of them; but then in a day or two we will be swarming with them again just as the baby is; so we have to keep up a perpetual fight. We have different sorts of yogurt. I brought from Europe a few years ago a supply of this Bulgarian bacillus from the Pasteur Institute laboratory, where it originated. I brought it home with me, and we cultivated it, made cultures from it in our bacteriological laboratory across the road and found it did a great deal of good; but about a year ago, just a year ago I had a letter from a Missionary, a Mr. Cole, a friend of mine, who had been ~~sxxx~~ thirty years in Mesopotamia, at the foot of Mt. Ararat, and he said, "Doctor, I was at the Sanitarium, and I tasted your yogurt, and I have got some yogurt that is better than yours that I brought from Mt. Ararat. It is the original yogurt." "Well," I said, "send me some"; so I had him send me up a jar of it, and since that time we have been cultivating the Mt. Ararat yogurt. Somebody suggested it must be it came over in the ark. Now, I don't know about that, but the suggestion is that Noah who lived to be nearly a thousand years old, must have had something to help him, and he must have had

the benefit of this longevity germ which Metchnikoff has taught us about; and if he had such a good thing as that, he certainly would not have left it behind but would have carried it along with him. Anyhow this comes from the region of Mt. Ararat, and is doubtless one of the original strains. It runs out in this country. That is the difficulty with it. This is not a very friendly country for it. It belongs in a very warm climate; it has to have a high temperature, and it very quickly runs out; so if you make a culture and put some germs in the milk and you then take some of that milk and put it into some other milk and let it grow, and so go on, after while you will not have any Bulgarian germs at all because they run out. So we have to keep renewing the stock with a great deal of care, and we make these pure cultures in our laboratory.

Q. Is yogurt beneficial in cases of intestinal inactivity?

A. In some cases it is,--not always.

Q. Is carbonated water injurious?

A. No.

Q. What do you think of suggestive therapeutics applied through hypnotism?

A. I think suggestive therapeutics is all right properly used, but hypnotism is quite unnecessary and likely to do a great deal of harm; and more than that, it is impossible to practice hypnotism without fraud. In fact, it is very difficult to practice suggestive therapeutics without committing fraud. One has to watch himself very carefully and be very tactful and very sharp-witted to get along without telling downright lies. I was talking with one of the Emmanuel movement people when I visited Boston some time ago, to investigate the matter. I went to headquarters and had an interview with one of the assistants. And I talked with him about various

things and asked him if he could cure insomnia by suggestion. "Oh, yes."
"Well, now, how will you do it? Suppose I can not sleep, and I come to you, and I say, 'cure me of insomnia by suggestion.' How do you do it?" He said, "I would say first, 'sit right down in this chair now. Now, then, I am going to put you to sleep; you are going to sleep. Now, close your eyes. Now compose your mind and try to be quiet; put all unpleasant thoughts out of your mind. There now, you are going to sleep; you are looking sleepy already; in just a few minutes you will be asleep; there, I can see sleep just creeping over your face. You are looking sleepy; you are breathing deeper; there, pretty soon you will be asleep; you are going off--going off--there you are--asleep; you are asleep now, keep right on sleeping.'" "But, now," I said, "suppose I should suddenly open my eyes just then, how about that?" "Well," he said, "Of course, we would not succeed that time; we would have to try it again." "But," I said, "You have been lying to me all that time. What about that? You have been telling me I was going to sleep when I was not; you have been telling me I was ~~was~~ looking sleepy when I did not look sleepy. It looks to me as though you have to reckon with your conscience a little in this thing." He said, "Oh, of course, of course, there is more or less uncertainty about all human affairs; we can not be absolutely certain; still we can tell pretty well whether we can put a person to sleep or not. If we do not feel pretty sure, we do not tell them so." So you see, first of all, in using suggestive therapeutics, and in employing hypnotism, it is necessary that the subject should be fooled; the operator, the hypnotist, or the man who employs suggestive therapeutics has to make the subject believe that he can do something which he can not do. He has to make him believe he is possessed of power which he does not possess at all. He has to make him think he has power to control him; that he has influence over him which he has not at all. It is simply the state of

the subject's own mind; it is not anything which the operator does to him; it is what he does to himself, and whether he does it or not depends upon how much faith he has in the operator. Now, I said, "Look here; suppose that insomnia was due to a general state of poisoning, due to an inactive state of the bowels, for example." I did not dare say auto-intoxication, because I did not want him to know that I was a doctor. "Oh, yes," he said, "if he has got auto-intoxication,--" he had heard that word before, I knew, and it would be dangerous for me to use it, but he said, "If he has got auto-intoxication, why then something must be done for the bowels." "Well, can you cure inactive bowels? Can you cure constipation by means of suggestive therapeutics?" "Oh, yes, oh, yes; why we have such cases all the time. Why," he said, "Dr. Worcester had a patient, a lady whose bowels had not moved for ten years,--imagine, imagine,--"and he suggested to her and her bowels got to going so bad she had to come back to have it stopped; and he suggested to her again and he stopped it." Well, now, I am only just telling you an actual experience of investigation of suggestive therapeutics. I think there is a whole lot of humbuggery about this thing. I know there is. I studied hypnotism with Charcot in Paris twenty-seven years ago, and I watched it, and studied it very carefully, and I practiced hypnotism a little, but I did not do it in a wicked way. There are two ways of putting patients in a hypnotic state. One is to tell them lies, and the other is to put the patient in a quiet position with a little brass ball suspended by a little support ~~xxix~~ just in front of the forehead, with instruction to look up in that way, and looking up at that ball with certain persons has the effect of putting them to sleep. That is the method I used for a time, but I became thoroughly satisfied there was nothing substantial or definite or of permanent value in it. Now, when a man has insomnia, there is some reason for it. The reason why he has insomnia in 99 cases out of 100,

is, if it is not a bad conscience that is troubling him,--if the man can not sleep, it is because of those forty-two trillion germs down there in his intestine that are making poisons that keep him awake. Now, you know if you take several cups of strong tea at night, you can not sleep, because there is poison in the tea; and that poison in the tea keeps you awake, won't let you sleep when you are tired. Now similar poisons are produced in the intestine, and these poisons are thrown into the blood, and irritate the brain, keep the brain going when you want it to stop and rest. Now, what is the use of suggesting to a man that he is going to sleep, putting him to sleep in spite of those poisons? The next time if you are not there, he won't go to sleep; the poisons are there keeping him awake. It might do a few times, you might fool the man effectively a few times so he would go to sleep, but it is absolutely impossible that there should be any radical cure of that man without removing the cause. Suggestive therapeutics reaches the cause only in a very few, very exceptional cases. Once in a great while, a man is sick because he worries, and suggestive therapeutics may help him to get rid of that worry. I remember a patient we had here some years ago who was brought by his father, with a lizard in his stomach. He knew he had a lizard in his stomach. He had felt it come up in his throat and tickle him, and he actually reached its head with the end of his finger one time, and tried to get it, but it got away and went back again. This poor fellow was thoroughly satisfied he had a lizard in his stomach, and he was nearly insane over it. Well, I had to take him up into the operating room, and give him just a small bit of chloroform, and make a scratch over his stomach with the tip end of a little knife to convince him that I had removed that lizard. Now, I only told him the lizard was gone. Of course, I referred to the imaginary lizard; I did not mean the real thing. But I told him the lizard was gone, and he would not have any more trouble

with it; and he didn't. So we know that the imagination does do things for people. Now, suggestive therapeutics is the right thing for that sort of man; but we do not see that kind of people here in this institution very often. About one person in a thousand who comes here is in that state--frightened, scared by the ghosts of maladies which they do not have; but such people are very rare here; that kind of folks do not like the regimen we have here; they do not like the restrictions of this place. They prefer to be sick in some place where they do not have to work so hard; where they can be more comfortably sick than they can here. So we do not have that sort of folks here very often. I think they have a good many of them in Boston. There are a good many people down there of that sort, perhaps. I really thought that Emmanuel movement was a very good thing in Boston. I am going to tell you exactly the conclusion I formed there. I went to investigate it, and I went to the church where they were gathered, and there were about two or three thousand people there, and they all wore bonnets. I didn't see hardly any men at all. I watched at the door to see as near as I could how many men there were in that audience. I found it was about one to thirty. Of course, men are rather scarce in New England any way, but I thought this proportion was extra large; and after the meeting I noticed the ladies were going upstairs--chiefly the ladies were going up; I didn't see any men going up; but ~~xxx~~ being a doctor, I thought I would join in the procession; and see what was going on upstairs. I got interested in seeing the people going upstairs. I got upstairs and found an upper chamber up there fitted up for refreshments and entertainment, and pretty soon people came around, some waiters, with little trays and coffee, and chocolate and sandwiches, and cake, and various things, and set them down, and the people stood around and seemed to be enjoying themselves; and pretty soon I

saw two gentleman come out and take their stand, each of them at about one third the distance from the two ends of the room; one was Dr. Worcester, and the other was his assistant. And the moment they made their appearance, these ladies,--the most of them were over forty, I should think, gathered about them and looked up into their faces like little birds, and began whispering their troubles, trials and tribulations, and these great gentlemen leaned down their ears and listened, then said some pleasant words, and moved on to the next one. There were some twenty people at a time gathered around them, and I saw that there was really a great need for this thing in Boston. I understood then what I had never understood before--the meaning of that text which refers to nursing fathers and mothers in Israel. I knew of nursing mothers before, but nursing fathers,--but there are evidently a large number of people in Boston that need coddling, and I think the Emmanuel movement is doing it. Now, I would not have said this several years ago, because I had great respect for that movement, and a great interest in it, and I went so far as to induce our board, to ask our board to authorize me to select a man and send him there to study that system, and introduce it as a department of the Battle Creek Sanitarium treatment here; I intended to do it, and had a man selected; and was just upon the point of sending him when I met a gentleman who had been there and studied the system and was undertaking to establish it in Chicago, and he was working in connection with a very good Methodist bishop who was promoting the movement of right living and suggestive therapeutics, and I was introduced to me by him; and I thought he was an authentic source of information; and I asked him to tell me all about it. He said he could introduce it here, so I asked him to introduce it to me to start with; and he told me about putting people to sleep. "Well, now," I said, "suppose you do not succeed in putting a man to

sleep; suppose he is sick, suffering pain, and you can not relieve him by suggestive therapeutics, what do you do then?" "Why, then," he said, "we try hypnotism." "Well," I said, "suppose hypnotism does not succeed, what then?" "Then", he said, "we fall back on prayer." "Well," I said, "why not pray in the first place, then, and save all that trouble and all that fibbing?" Well, I got my eyes somewhat opened, and afterwards I visited Boston, and looked into the matter, and I think it is a great humbug, to tell you the honest truth about it; I think it is a great humbug. It does not reach the root of the things at all. It simply makes a man feel he is better when he is not any better. A man who has got a coated tongue and a filthy condition of his alimentary canal, swarming with bacteria--what good is it going to do to suggest to that man that there are no bacteria there; that he hasn't any such thing? It simply puts him to sleep; it makes him think he is all right when he is not all right. Now, the thing we must do is to remove the causes of the difficulty, and when we remove the causes, we do not need any suggestion. When we remove the causes of these poisons that are making the man sick, why then there is no occasion for suggestion; the man is well, for the power that heals the man is in the man himself. The power that heals is within; it is not in the doctor, nor in the air, nor in the baths, nor in the medicine, for that matter. The power that heals is within. Isaiah said, "Cease to do evil and learn to do well"--or was it Jeremiah?--I am not certain this moment. But cease to do evil and learn to do well. Now, when we cease to do evil and learn to do well, then there is a great ~~diffaxxaxxax~~ divine healing Power within us that puts things right and restores us to our normal state.

Q. What is the cause of cankers in the mouth?

A. Cankers in the mouth are due to germs. Now, when I used to say

that twenty-five years ago, everybody in the room would laugh. They said, "Oh, Dr. Kellogg is a crank; he thinks everything is due to germs." Twenty-seven years ago I went to Vienna especially for the purpose of studying Prof. Koch's new discovery. He had discovered just a year before that the tubercle bacillus was the cause of tuberculosis, of consumption; and hardly anybody believed it; it was laughed at by doctors and everybody else. I went there to study this thing, and I saw the germs with my own eyes, and I made up my mind he was right; and from that time to the present, every year has generally some new development in bacteriology which proves to us more and more and more the almost universal influence of these terrible agencies of death in producing disease. Nearly all acute maladies are today known to be due to germs. And canker, I think, is due to the fact that the resistance of the body has become so low that these germs that exist in the mouth all the time are able to make headway in attacking and invading the body; and so they get a little colony formed upon the mucous membrane and ~~thaxracifxakikexmanxx~~ they grow, and that poison destroys the flesh and produces the ulceration, so a little sore is made.)

Q. Is there any truth in the statement that these ulcers of the mouth represent a similar condition of the mucous membrane of the stomach?

A. No, there isn't any truth in that. Nevertheless, it is true that it indicates a state of the whole body which exposes the entire body to the infection of germs on the skin, the intestine, or any other part. Such a person is liable to infection of disease-producing germs in any portion of the body.

Q. Do you agree with Horace Fletcher that by insalivating each morsel of food eaten, such a great proportion of it will be assimilated that only one action of the bowels a week will be necessary?

A. No, Mr. Fletcher is wrong about that, entirely wrong; and I took

issue with him just as soon as I learned that that was his view, and we have had many tussles over it until finally, on one occasion when he visited us here, I proved to him that he was entirely wrong, absolutely; and the last time I saw Mr. Fletcher and talked with him, last year, in talking with him about this matter, I found that he has graduated out of that abnormal state; that he was in, and is now in a normal condition, and he does not harbor these unfriendly germs a week at a time as formerly, but he is living in a normal way, and his functions are normal in every way.

Q. Is it harmful to eat apples or oranges just before retiring?

A. No, that is one means of stimulating intestinal activity.

By taking an apple or an orange before going to bed, many persons find their bowels move properly in the morning, because this stimulus sets up peristaltic activity which advances the procession of food and so prepares the bowels for the morning evacuation.

Q. Is it harmful to take aspirin for headaches?

A. Yes, indeed. The use of headache remedies is responsible for a large number of deaths every year. A gentleman reported not very long ago an incident that illustrates it. His wife was suffering from headache, and she had gotten into the habit of taking phenacetin for headache, and he begged her not to do it. The doctor gave her some pills, and he said she might take one once in ~~xxxxx~~ four hours, but her head got to aching so badly she doubled up the dose, and her husband found her in the night--he awakened, and he found that his wife was apparently dead. He lighted a light and found she was lying there very still, and he could distinguish almost no breathing; and he felt the pulse and found she was pulseless; so he stirred her up, and succeeded finally in getting her aroused sufficiently so she could talk a little, though incoherently. The moment he stopped talking, she fell back into this state of

collapse again, and the pulse ceased; so he sat by the bed the rest of the night, for four or five hours, sat by her bedside, keeping her awake, so that she would not go into a really deadly collapse. In another case a man went to bed at night, and his wife took a headache powder at night, and in the morning she was dead. The man told me the story of this case himself. Perhaps some of you know did not know that Mr. Tyndall, one of our greatest modern scientists, was killed by his own wife by giving him an extra dose of headache medicine. These headache medicines are all poisonous, every one of them; and the coal tar products, aspirin, phenacetin, acetanilid, and the whole list of these headache medicines are all of them deadly poisons. Bromo-seltzer contains these same poisons; contains these coal tar products, and the patent medicines which people are taking so very largely. I knew an eminent Chicago doctor, a lady doctor who was unquestionably killed by the use of this poison--it is not proper to call it a remedy. So these headache powders, and headache pills and medicines are extremely dangerous, and should be very carefully used indeed.

Q. When maltose is eaten at the same meal with other sugars, will the presence of the maltose assist in the conversion of these other sugars into maltose?

A. No, it will not assist. Each sugar must be digested by its own ferment. Maltose is digested by maltase; cane sugar is digested by sucrase; milk sugar requires lactase for its digestion.

Q. What do you think of Upton Sinclair's diet, consisting of nuts, dried and fresh fruits, all uncooked?

A. I am not aware that that is Upton Sinclair's diet. That is the monkey's diet. Upton Sinclair is simply imitating the monkey. He did not originate that idea. It originated away back in the ages. I imagine it was Adam's diet too. It is the natural diet of the human race,--a diet of fruits,

nuts and soft grains, and that is really all one needs to eat if he has an abundant supply, and if one should eat naturally and normally he would not require anything else. Mr. Upton Sinclair tried it and it worked very well with him, as I said, until he got to dissipating and eating all sorts of things when he found he was perfectly well, and then he had a relapse. But Upton Sinclair seems to be somewhat erratic in his opinions and his practices. The last utterance I saw from him was to the effect that he had given up all kinds of vegetable foods, and is living now on the Salisbury diet, which is practically raw meat, and he gets into a bilious state every little while and has to fast to get a clearing out. Upton Sinclair has some very remarkable powers of description, as a writer; but aside from that, I do not know that he has any particular claim upon the public confidence.

Q. Can auto-intoxication be cured? If so, what is the treatment, and how long does it take?

A. I think I have already intimated that it is a life-long fight. So far as auto-intoxication is concerned, it is like sin. The germs that produce auto-intoxication are always with us. As long as we are in this bad, evil, wicked world, we have got to fight for our lives, to keep these germs in subjection; and the best thing is to take an atoxic diet, or an antitoxic diet, such as you find here at the Sanitarium, and follow it at home,--a diet of fruits and grains, a moderate allowance of milk, an egg once in a while, perhaps, the yolks of the eggs are better than the whites,--but you can get along without them very well; and no meat, fish, flesh, fowl, lobsters, oysters, or anything of that sort. Discard those things altogether, because they are always swarming with germs when you swallow them. You can not inoculate yourself with putrefactive germs so well, so easily, so surely in any other way in the world than by swallowing a piece of ~~xxxx~~ prime beefsteak. The germs are never killed

by cooking. The cooking temperature is not high enough to kill the spores of germs. The germs ~~of~~ ~~the~~ themselves are killed,--those that are heated sufficiently, although in the midst of roast meat, the inside temperature may never rise above 85° or 90°, because meat is a very poor conductor of heat; and then in the case of steaks, the inside does not reach a temperature high enough to kill the germs; and the examinations made in our laboratory have shown that in some cases the number of bacteria actually increase during the cooking process; so there are more germs in the cooked meat than there are in the uncooked meat; and we found the number of germs to be anywhere from thirty millions to three hundred millions in every small ~~teaspoon~~ morsel of meat you eat. Every small morsel such as a person would cut off from a steak to place in the mouth to chew has anywhere from 30 millions to 300 millions of germs in it. They are always there. You can not find anything except in fresh meat of an animal just killed that does not contain these germs in enormous numbers.

Q. Can a person live to a ripe old age without suffering from any disease and without resorting to patent medicines or being obliged to call in a physician? Must he be obliged to make this Sanitarium his home in order to keep in good health?

A. Well, now I am willing to admit that the Sanitarium is a sort of Sanitary heaven in which it is pretty safe to live; but there are, nevertheless, safer places than this. There is no question but there are safer places than the Battle Creek Sanitarium. We live in town; we live in the midst of thickly settled country. If we could get up on top of a mountain 5000 feet above sea level, germs are almost unknown there; there are very, very few germs indeed. Germs abound in the air in such a locality as this, near sea level, say a thousand to one as compared with the air of a mountain top of eight or ten thousand feet altitude. The air of such altitudes is very pure indeed; so that is really

a healthier climate to live in so far as germs are concerned. One ought to live longer in such a climate than at a lower level. But it is not the climate after all so much as it is the habits of the individual. The germs themselves are not strong enough to do us any harm; they haven't any power to invade our bodies so long as we are living on a high level, so long as we have high resistance. It is very seldom indeed, that a person does die of old age. An eminent French physician said, "Man does not die; he kills himself", and that is really true. I don't know that I ever saw anybody that I thought was really dying of old age or likely to die of old age. Most people when they get to be fifty or sixty years of age have some really very distinct and evident malady preying upon them.

Q. Will fruit acids, such as lemonade without sugar, increased mucus in an empty stomach?

A. No, it is the large quantity of sugar added which makes the mischief.

Q. My report shows no hydrochloric acid, but starch digestion good. What does this indicate?

A. Starch digestion is always good when there is no hydrochloric acid. Myxak

Q. My physician prescribed acids and pepsin; still I have a great deal of gas in the stomach.

A. The gas in the stomach is not due to the fermentation of starch. It is due to the fact that the gas is formed in the intestine, and finds its way up into the stomach, and is not carried outward as it ought to be, that is, if it is odorless gas, if it is gas arising from the stomach; but if it is gas formed in the intestine, then it is due to the fact that the intestinal contents do not move along fast enough. If the foodstuffs remain in the intestine

so that there is stasis there, so they accumulate, stop at some point, then there is fermentation and decay; so it is important to keep the intestinal contents moving freely along. I think chronic invalids ought to have an evacuation of the bowels three or four times a day; and it is very important that that should occur. My observation is that patients get along very much faster. That is the reason why many people get such remarkable benefit for a short time. (It is the mineral springs that have laxative waters that have such great reputations, such great followings. Some people visit salt ^{licks} every spring, just as deer do, just as antelope used to, and the buffaloes; and I suppose for the very same purpose--they are there for the laxative effect of the waters; and in a few days they feel wonderfully better, get a good gain in flesh, the tongue clears off and gets right, and the bilious feelings; and clouds disappear from their brains, and they feel marvelously renovated. It is because the bowels have been made to move so rapidly that there is no opportunity for putrefaction, and the poisons ~~which~~ ~~with~~ which their bodies have been fairly swamped before have been carried off. But I must hasten on.

Q. Can a person who has once had tuberculosis ever fully recover?

A. Yes, there are many, many such cases. The outdoor life has proved to be a sovereign remedy for incipient cases of tuberculosis. It has come to be regarded as one of the most curable of serious diseases. If one has Bright's disease he can not recover; if one has pulmonary tuberculosis he can recover, because he can live with one lung. I know a gentleman in this town who came to me twenty-seven years ago, and I found he had but one lung. The other lung was completely useless, solid, plugged up, of no use at all. This man is a merchant down town, doing business, and looks as well as when I first saw him twenty-seven years ago. One can live with one lung. One can not

live so well with one kidney. As a matter of fact, when one's kidney becomes diseased, the other becomes diseased also, as in Bright's disease, and progresses.

Q. Do you advise the regular use of malt honey at meals where cream and butter are used moderately?

A. Yes, malt honey is an excellent form of sweet. Cane sugar produces a tendency to ricketts and softening of the bones. Why? Because we need lime in our food; and when we take our carbohydrates in the form of cereals, we take the lime right along with the cereals; but when we take cane sugar, we get the carbohydrate without the lime. The lime is all separated in the process of manufacture of the sugar. If we took the juice of the cane instead, there would not be any difficulty; if we took our sweet food in the form of raisins and sweet fruits, we would get all the lime along with it. In the malt honey, which is made from grain, the soluble salts are all brought right along with the sugar, ~~so~~ so we get it all together. And Malt Honey is an excellent substitute for sugar. It is a new sugar, and I think the time will come when these malt sugars will be very largely used in place of cane sugar. Cane sugar is productive of disease. Dr. Sherman, professor of physiology in Columbia University, New York, states that half the people of the United States are suffering from lime starvation as the result of using cane sugar and beefsteak. You see, when the hog eats corn, the corn has in it all the lime, the carbohydrates, and the protein, and the hog eats it. The protein goes to the muscles, the starch goes into fat and is used up by the pig in running around, and the lime goes into the bones. Now, when you come to eat the pig, you do not eat the bones, you see; you eat the lean parts and the fat parts, and leave the bones behind; so you lose the lime that was in the corn, and you don't get it unless you eat the whole hog; so you see it is a case of the whole hog or none, if you are going to eat hog; and what is true of the hog is true of the ox as well.

Q. What do you think of a strictly milk diet for a person of middle age?

A. Well, the milk diet is not the natural diet. One can not take enough milk to nourish his body unless he takes at least four quarts a day. About four quarts of milk are required for a day's rations; and that is such a large amount that it imposes upon the kidneys an enormous extra amount of work that is not good for them. It introduces into the body a large amount of lime, more than is needed, because milk is intended for a growing animal; it is intended for an animal that grows rapidly. It only takes the calf about four or five years to reach full maturity, while it takes a man twenty years; and the consequence is milk contains enough lime to make bones rapidly, three or four times as much lime as mother's milk contains. Now, an adult person who is already grown does not need that lime; so when you live upon a milk diet, you are taking into the system an enormous quantity of lime that the body does not need and that must be carried off through the kidneys, and the kidneys are seriously overworked, so there is danger in this milk diet. Then there is another thing in reference to the milk diet. Milk contains practically no iron. Why? You say a baby needs iron and a calf needs iron, then why does milk contain no iron? Because the infant has stored up in its liver during foetal life, before it is born, iron enough to last it while it is dependent upon milk. An enormous quantity of iron is stored up in the liver of the child; and the same thing is true of the liver of the calf--there is an enormous extra quantity of iron stored up in the liver of the calf, so that it does not need to take iron in its food for several months; so milk does not contain iron; and that accounts for the fact that when a person is fed upon a milk diet for entirely for several months, they come to suffer seriously from anemia, become

very anemia; and at the present time, there is no intelligent scientific physician who is up to date on the subject of nutrition would think of putting a person on an exclusive milk diet for more than a few days at a time. There is no question but what serious injury comes from each one of the different sources of danger which I have pointed out in the use of an exclusive milk diet.

Q. Is it possible to eat protein enough without eating nuts, or eggs or meat?

A. Yes, because we require only ten per cent of protein--only ten per cent of protein; and bread contains more than that. Bread contains more than ten per cent of protein; and this is true of oatmeal, and of corn,--really of all the cereals; they all, every cereal that grows contains protein enough, all that is required, so we do not absolutely need even quite ten per cent. Even the potato has protein enough so that one does not need to be worried on this question of protein at all. Nuts contain protein in great abundance, but one can get along even without nuts. Peas and beans contain more protein than meat does. Certainly there can never be any necessity for the use of meat so long as we can find in a pound of peas as much protein as there is in a pound and a half of beefsteak.) "Oh, but," you say, "how can that be?" Because the beefsteak is three quarters water to start with. That is the reason--it is three quarters water. Peas contain from 26% or 28% to 34% of protein; whereas protein contains only 19% of protein; so you see there is a great preponderance of protein in the peas and beans and lentils, in fact in all legumes.

Q. What is the cause of a young man otherwise in good health, sleeping too long, say eighteen hours at a time?

A. Well, he may be constitutionally tired; or it may be he is neurasthenic. He ought to go and take a course of treatment under Dr. Kaddi Edison.

Mr. Edison says he has trained his wife so she only sleeps six hours a night. He himself thinks four or five hours is enough, and that six hours is a great plenty. He thinks we sleep altogether too much. Six hours I think is not enough. I think Mr. Edison is in error about that, but eighteen hours is certainly too much.

Q. What is the cause of a very sore tongue and mouth which causes them to burn very much when eating dry food?

A. Now, you should ask your doctor to give you a little lotion for your mouth. He will give you a lotion that will relieve you. The trouble is the epithelium is gone from the tongue, and the nerves are sticking right outdoors so to speak, and they need to be protected. Your doctor will give you a lotion to help you.

Q. When there are so many patients anxious to sit on the lawn, why are there no more reclining chairs?

A. The reclining chairs are coming.

Q. Why haven't the men any place to sleep on the roof?

A. Well, we will give the men a chance; we will look into that.

Q. What causes a severe burning sensation between the shoulderblades?

A. It is a sore stomach. The trouble is not in the back side of the back. If you will investigate it, you will find the real trouble is in the front side of the back. Right up under the lower end of the sternum here, at the solar plexus, you will find a very sort, sensitive spot, which is the cause of the burning. It is a reflex pain, in other words.

Q. I have not eaten a bit of meat for eighteen years, live on cereals and fruits, and I have numerous brown spots. Can you explain the cause?

A. Now, you do not say whether these brown spots are eighteen years old or not, but I suspect they may have got started before the flesh abstaining

began. However, it is quite possible that the brown spots may come from eggs. Casein is an animal protein; so is the albumin of eggs animal protein; and these brown spots, produced by the Brenz catechin e were talking about the other day, may be derived from that cause. The real cause of auto-intoxication in such a case, and in most cases, in fact, is this stasis; that is, a delay in the discharge of the food residue and of the intestinal secretions,--a delay in their discharge from the body. The bile is a powerful poison, six times as poisonous as the urine; the bile is six times as poisonous as the urine, and the bile is produced in considerable quantity, poured into the intestine; so it is just as necessary that this excretion should be promptly discharged from the body as it is that the urinary secretion should be promptly discharged from the body; and when it is retained, it undergoes putrefactions, and is reabsorbed and gives rise to most powerful poisons.

Q. What are the symptoms of migraine?

A. It would be very hard to describe all the symptoms of migraine. Anybody who has had it is very well acquainted with the symptoms. It is a very, very unpleasant headache, nearly always accompanied by vomiting, and nearly always due to intestinal auto-intoxication. It is possible that it sometimes may be provoked or incited by a diseased condition of the eye, & refractive troubles of the eye. Such cases are relieved by glasses, if you get the proper pair of glasses fitted; but if you have the glasses and the headache is not relieved, you may be pretty sure it is due to auto-intoxication. These patients suffering from migraine always have inactive bowels.

Q. I have a prolapsed stomach. I have been told that with fasting and treatment by an Osteopath the stomach can be replaced. Do you believe it?

A. Yes, I do. The stomach will be replaced. But when you get on your feet, it will come down again. You will have to employ osteopathy as a sort of bandage to hold the stomach up, to put it up all the time. The abdomi-

nal supporter may be used for the purpose. There is no trouble with a prolapsed stomach when you are lying down, but only when you are on your feet traveling about. I remember a traveling man some time ago who had become incapacitated so he could not carry his bag because he had pain in his side. He had been in hospitals, but had not got any relief; he had consulted a number of distinguished physicians, and he thought he had appendicitis, and he was so sure of it, and described the pain so positively that I performed the operation upon him, but found the appendix perfectly sound; there was not a thing the matter with it; still he had the pain. Finally I noticed him standing one day--I hadn't made the examination before--this was some years ago before I recognized the importance of this symptom--fifteen or twenty years ago,--and I found quite a protrusion of the abdomen at the lower part, and I immediately placed a bandage ~~up~~ around him, and as soon as he saw it put on, he said, as soon as it was on, "Why Doctor, I am all right; I am all right; that pain is gone", and he started out for a walk and walked three miles right away and hadn't the least bit of difficulty; didn't have any more trouble afterwards. He came to see me again, and he said, "Doctor, what a fool I am; here I have been going around thirty years with my hand in my pocket, holding my stomach up, and I did not think of that myself. If you had told me that before, I should have supplied myself with a bandage sooner.") But he said he had been going around with his hand in his pocket for three years, holding his stomach up, and he thought he ought to have invented a bandage for himself.

Q. Are brown sugar and granulated sugar cane sugar?

A. Yes, brown sugar, granulated sugar, and molasses are all cane sugar. The syrups sold in the market that are made from corn--however, I think corn syrups are now labeled corn syrups--but they are cane sugar too.

Q. What is the difference between cane sugar and beet sugar?

A. The difference is that beet sugar is cane sugar which grows in the ground; and cane sugar is sugar which grows above ground. One grows under ground, and the other over ground; but they are otherwise just alike.

Q. What do you think of a milk diet for a week or ten days? I was talking with a friend and he had been trying a milk diet and he said he had gained seven pounds in six days.

A. Yes, I heard of one case reported in which a woman gained ten pounds in one day, but she had to drink seven quarts of milk to do it. Part of that milk still remained in the body; that is all there was about that. There is no way in the world in which a person can be made to gain weight so rapidly as with a milk diet; and sometimes it may be justifiable and useful. If a person has become attenuated, and the lime has been stolen away, and the patient has become greatly reduced, a milk diet may be adopted for a few days, perhaps with advantage. A person taking a milk diet may take a glassful every hour or every forty minutes, and the result will be pretty soon a decided looseness of the bowels, because a large part of the milk will pass off undigested; that is the protein; but the sugar of milk will be absorbed, and the salts will be absorbed, and as the salts are absorbed, water must be absorbed with the salts in order to hold the salts in solution; so the absorption of this large amount of salts and the absorption of so much water and of the milk sugar has the effect to make a decided gain in flesh; but such a person has no strength. Flesh gained in that way has very little value. It disappears like the dew on the grass when the morning sun comes up; and it is doubtful whether it is of any very considerable advantage. But if you are going to take a milk diet at all, it should not be for more than a week or two any way. There is no particular harm in it for that length of time.

Q. Is fruit preserved by smoking with sulphur as wholesome as canned fruit?

A. No, not quite so wholesome.

Q. If not, to what extent, such as apples or pears?

A. Well, the flavor is considerably destroyed; that is one thing. But I am not sure there is any serious detriment other than that.

Q. According to fletcherism, all indigestible substances such as vegetable cellulose, fibrous matter, etc., should not be swallowed. Do you agree with this view?

A. No. That is a mistake. If you followed that rule you would never eat any lettuce or anything of that sort. Mr. Fletcher himself does not follow that rule. It is not a wise one.

Q. What is your opinion about osteopathy?

A. I don't think much about osteopathy. I do not know as I have exactly formulated an opinion about it. It depends really upon the osteopath. A man who has studied osteopathy and has studied long enough to learn the facts about it may use it in an intelligent way, and very much good may be accomplished by it. The intelligent use of osteopathy, however, amounts to nothing more than what we call manual Swedish movements and massage. Those two things put together are all there is about it. An osteopath got hold of me once and said, "Now, look here, I want to show you what I can do here. Why, you have got one of your vertebra out of place a little here. I must put it into place." So he took hold of my head and made it crack, and said, "There, it has gone back." "Well," I said, "I can do that all the time"; so I showed him that I could crack my head as often as I wanted to; and he left me with the impression that my head was going wrong all the time. The fact is that most joints can be cracked, and the cracking is simply a slipping of the cartilage on the bone.

Many people can snap their fingers by simply making a tension upon them; the most of you can; and when one snaps the fingers in that way, the bone has not gotten out of place; there is no subluxation or dislocation or anything that is doing any harm. It is a great mistake to attribute all these troubles with the stomach, liver, nerves, brain etc. to some slight displacement of a vertebra or any other bone. That is the fallacy of the whole thing. Nevertheless, it is true that the manipulations and the rubbing of the back will often give patients very great relief and comfort. The drawing of the blood into the skin and the muscles will sometimes relieve internal congestions. Aristotle tells a story about massage. He says, "Did you ever observe that if you take a dog and rub his back, then lift him up by the tail, and then let him go, how he enjoys it?" Is there anybody who is not benefited by rubbing the back? I guess there isn't anybody who does not like to have his back rubbed, nor any kind of animal. How the cat does enjoy having his back rubbed! So I think the stronghold of osteopathy is in ~~maxing~~ rubbing the back. The back is a part of the body we can not reach so very well. The bears in the woods you know have a rubbing tree they rub their backs against and take osteopathy by themselves; and that is the real secret of the success of osteopathy,--is that it makes the average man or woman feel so good to have his back rubbed that they enjoy it. And there is some good in it. There is no doubt about that. But when the osteopath claims to be able to do everything by rubbing the back or by cracking the neck, that is all moonshine. I was talking with an osteopath one time, and I thought he was a very intelligent man. He told me he didn't take any stock in many of the vagaries of his colleagues, his fellow-osteopaths; and I told him I was very glad to hear it; and in my talk with him, I said, "I have heard that osteopaths sometimes claim they can cure diphtheria, for example, by rubbing the back of the neck." He said, "Oh, yes, we can do that; we can do that. Why,

I cured my neighbor's child last year of a very severe case of diphtheria, by rubbing the back of the neck." Think of killing germs by rubbing the back of the neck! I don't know anything worse than that but Christian Science, that claims to kill germs by thinking about them; and that is a little worse yet.

Q. What is your opinion as to the food value and digestibility of bread made from cotton seed?

I am investigating that. I don't know a thing about it. I should be a little afraid of it. I am having some correspondence now with a chemist down east upon that very question; and I shall have some cottonseed meal pretty soon, and if any of you want to experiment upon it, we will try it on you. I will try it myself first.

Q. What should a person eat who has too much hydrochloric acid?

A. He should ask his doctor to give him a list of foods that are good for hyperacidity and confine himself to that list, and eat nothing else but foods contained in the list. He ought to avoid particularly eating acid fruits, for he has a sore stomach; and he ought to avoid swallowing his food until it has been very thoroughly masticated. And he ought to avoid meats because meats always increase the acidity of the gastric juice; but the things he can eat with advantage are well toasted bread, and toasted flakes of all sorts, a considerable amount of butter, gluten gruel and gluten biscuit, and the gluten breads are of special value. He should avoid potatoes as a rule, because potatoes stimulate the stomach and induce the flow of gastric juice.

Q. I understand flies and mosquitoes are carriers of germs. If so, why don't you have screens on the windows?

A. Well, the screens ought to be up. They are usually put up when storm windows are taken down. They will soon be up.

Q. Is there any natural cure for catarrh?

A. Yes, there isn't any other kind of cure than natural cure. That is the only real cure. The only cure is to build your body up so strong and well that those catarrh germs can not do you any harm.

Q. Do you advise two or three meals per day? If two, which two?

A. If it takes a long time for your food to digest, two meals is all you can get in safely. If you eat food that digests in an hour or two, like rice, for example, and eat a moderate quantity, then three meals may be proper.

Q. It is said that one and a half million children are born in the United States every year, and of this number more than 200,000 die before reaching the age of one year. Why this high mortality?

A. I will take that up next time and tell you some of the reasons. I did not get to the bottom of this box. There are several questions left; but I believe it is after nine o'clock already. The clock is out of sight so I can not see it, but I have an impression that way; so I will let you go now, and finish up the box next time. I thank you for your attention.

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QUESTION BOX LECTURE

At the Sanitarium Parlor, Battle Creek, Mich., Thursday, June 16, 1910,

At 8:00 P. M., By,

J. H. Kellogg, M. D.

Question: For a place where they preach water externally, internally and eternally, where, oh, where, are the bubble fountains?

Answer: The bubble fountains are promised every day. We have been after them for more than six months, and our purchasing agent told me the other day they would certainly be here in a day or two. I am very glad to see that you are ready for them.

Q. Is seashore air and beach bathing good for nervousness?

A. The air of the seashore is all right, and the bathing is all right when the water is not too cold; but the associations of the seashore are not at all to be recommended for nervousness. There are a lot of things at the seashore besides air. Some of you have been there, and you know that. The seashore is a place to go to have a good time; and the sea bathing and the surf bathing--really, I looked around at the people that were surf bathing the last time I was at the seashore, and I didn't think many of them were there for nervousness. I thought some of them were there to show their good figures. I thought some of them were there simply, to pass away the time, simply to have a good time. I doubt if there were more than a very few people there who were taking the sea bathing for therapeutic purposes. I must say I have never been able to see how there could be any particular therapeutic advantage or properties in the
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small bit of decomposing seaweed. That is the characteristic odor of the seashore, is the decaying seaweed, and the decaying oysters and clams and crabs, and lobsters, and other decaying things along the shore. That is what gives the sea air its peculiar odor. It is not the ozone in it by any means. There is less ozone in the ocean air, a great deal, than on the land. The air is saturated with moisture, consequently there is almost no ozone at all in sea air. There is ozone in mountain air, but not in sea air. There is a little bit of salt in sea air. There are little drops of water thrown up by the waves in the spray, and that leaves a little salt in the air; but I doubt if the salt taken in in a whole season at the seashore through the air as much as equals what the ordinary man takes in at an ordinary meal. The amount of salt you put upon your potato, for instance, is more than you would breathe in in sea air in a month. It is in such infinitesimal quantities. And there are no particular physical properties in it. The great value of the sea air is that it is cool, and it is pure when it comes from the sea, but half the time the air blows the other way, and then you have the land air, that is, in most places. The air blows in a different direction in day time from what it does in night time, of course. But I believe in sea air nevertheless, for people that have been shut up indoors to go to the seashore to get the sea air,--it is a blessed good thing for them, because it gets them outdoors, and they have the benefit of the sunshine. The best thing you get at the seashore after all, is the sun,--the coldness of the water, and the sun, and the outdoor life are the things that are good, and they are always good for nervousness and for everything else a person can have.

Q. A patient that has a sore stomach same as myself told me that his doctor advised him to put a hot bag on his abdomen for fifteen to twenty minutes after eating. I would like to have your opinion on this subject.

A. Somebody has been comparing notes, you see. That is supposed to be the crime of crimes in the Sanitarium--for people to compare notes. Some time ago we had a couple of people who actually got into a ~~quarrel~~ real quarrel, had an actual spat in the institution because one claimed his symptoms were worse than the other; and the other claimed his symptoms were worse. They compared notes, ~~summed~~ ^{one} summed up the cases, and ~~were~~ trying to make a worse case than the other. Well, comparing notes is very bad business. Sometimes it is considered a capital offence. I have actually known people to be turned out of the institution, actually set free, bundled out, baggage and all, because they had been around telling about their cases, comparing notes, and asking other people what was the matter with them, etc. Of course this does not apply to this particular case I am talking about. I had in mind a case that was here some time ago. The application of a hot water bag for fifteen or twenty minutes after a meal to such a person's stomach is a capital thing to do if the stomach is sore. Heat is always good for sore stomach. Any internal organ that is sore or painful is helped by the application of heat over it. Now the reason for that is that each organ, every internal organ is represented in the skin. It is a very curious fact indeed, that we are so curiously constructed that we have in the skin and in nerve distribution a representation of every internal organ. The brain is represented in the face. That is, the interior part of the brain particularly is represented in the face--that part of the brain in which the consciousness resides--the portion of the brain upon which the development of character depends,--that part of the brain is represented especially in the face. Now, you can form some kind of a judgment of a person by looking at him. Even a baby or a dog can tell whether a man can be trusted. You see sometimes a dog fly in terror when he looks at a man. I had an illustration of that the other day up on the third floor. I saw a dog come trot-

ting down the hall toward me, looking up at me, smiling and wagging his tail, and was going to give me a very joyful greeting. Now, I said, I will just see what physiognomy will do. So I looked at that dog as fiercely as I could. I don't know how fierce I did look; I would not dare try it again, for fear it might get settled on my face; but that dog stopped instantly, looked up at me, looked into my face, and then he hung his tail between his legs and ran off yelping and howling. I didn't do a thing or make a motion. I simply looked at him, and it was the most amusing thing to me that dog go down the hall yelping and howling as though he had been whipped or hurt; but I didn't do a thing but look at him. I suppose I hurt his feelings. Now, it is because the character is represented in the human face. The skin of the face has muscles underlying it. When we remove the skin we see a complete covering of muscles. These muscles are attached at one end to the bones of the face, and the other end to the skin, and some are attached to the skin entirely. For instance, here is a little muscle that runs around the mouth,--the orbicularis oris; and this muscle is a whistling muscle. When you pucker up your lips to whistle, you simply contract the puckering string around the mouth. In some people, this does not seem to contract often enough. It seems to be a little relaxed, a little loose, and sometimes there is another muscle here around the eyes that contracts when one squints, for example. And here is another muscle attached to the upper lip, and when you contract that muscle it pulls the lip up; and another one pulls it down. There is another little muscle attached to the edge of the nose, and to the corner of the mouth here, and when a person turns up his nose, it is because he contracts his levator labii superioris alaeque ~~nasixnasix~~ nasi. That is turning up the nose. That is the physiologic name for turning the nose up--the levator labii superioris alaeque nasi muscle. I ought not to speak such words I suppose here in public. I hope none of you will repeat them.

face

Well, now, this is because the ~~voice~~ is associated with the brain, you see. Now, when one's brain gets tired, what does he do? What do you do to rest your brain when it gets tired? You bathe your face, because the face is connected with the brain, so you can refresh your brain by bathing your face. You ~~ng~~ go in on a real hot day when you are just really worn out, tired, exhausted, and you bathe your face, and you feel like another person right away. Just let me give you a hint about that. When you are bathing your face, bathe especially the eyes and ears, because there are more nerves to the eyes and the ears than to the face. This part of the skin is connected with the brain. All the skin is connected with the brain, but this part is directly connected with that part of the brain in which sensation, consciousness resides. Now, every internal organ has a face in the same way. The nerves that are connected with the heart reflexly connect the heart with the skin over the heart,-- this part of the chest. When a person has fainted away, if you can just open the clothing and make a cold application over the heart, that will revive a person quicker than anything else. That we know. Percussion over the heart, or a cold application over the heart will revive a person who has fainted. We had a man with us some time ago that used to have fainting spells, and he nearly died several times. When he had a bad spell, he would send for the doctor, and the doctor would come and give him some medicine, and he would be a week or two getting over it. I met him one day, and he said, "Doctor, I have made the greatest discovery. Why, it paid me for coming here if I didn't get another thing. I made the greatest discovery it seems to me I ever heard of. Why, you know, I found that a little wet rag does me more good than any medicine I ever took. The doctor told me that when I found a spell coming on, to put a cold rag over my heart here; and I did it, and in a few minutes I was all right. And you know, I was out walking up Manchester Street here, and

I had one of my spells coming on, and I hurried up to the porch, sat down on the steps and bent over with my head on my hands, and a lady came out and said, 'Are you ill, sir? Can I do something for you?' I said, 'Just get me a towel with one end of the towel wet in cold water,' and when she brought that out I unfastened my collar and slipped that end of the towel down under my shirt over my heart, held it up there, and in ten minutes I was all right, and came walking right home. And at home I always had to go to bed and stay two or three weeks whenever I had such an attack; but that towel just brought me right out."

I am telling you this story not simply by way of illustration, but to give you a hint of what to do if you have a spell like that yourself some time. The lower part of the chest on the right side here is the liver face. The liver lies entirely above the lower border of the ribs. I met a doctor some time ago who declared that he examined a patient's liver, and he put his hand down here on the stomach somewhere, and said his liver was all right. His liver was not within a foot of where the doctor was exploring. He was a very old fashioned doctor, and considerably out of date, and I suppose had not seen the human anatomy and the internal arrangements of things for a great many years, and had forgotten the location of the liver; and I remember a lady who had a terrible pain in her liver on the left side--which is not impossible, because once in a while there is a person who has things transposed. We had a girl here some years ago who had her heart in the wrong place. It was over on the right side, and the liver was on the left side, and things were all mixed up. Now, the stomach has a face also. When there is pain, when there is too much heat in a part, we apply cold, and that contracts the vessels of the part to which it is applied, also of the internal part of which it is the face. That is a very interesting thing isn't it? When your brain is too

hot, when it has too much blood in it, you put cold water on your face and that contracts not only the vessels of the face but of the brain also; but when you have got pain in your head, a sick headache, as a lady told me last night she had in the morning, and she said, the physician prescribed a fomentation for her head and it stopped the headache right away. And she had been feeling very bad, but she was feeling so happy. Now, pain requires heat, and heat and congestion requires cold. If a part is congested, cold is the thing that is applied over the part. If there is pain in an internal part, then it is heat over that part,--very hot, and it must be a good large application too. If you have got a pain as big as the end of your thumb, for example, you want a fomentation a foot square. The hot application has to be a great deal bigger than the pain. If you have a pain in the whole abdomen, a towel wrung out of hot water and laid on the pit of the stomach would not relieve it. That person would want to be put into a hot bath. If it was a pain in the side, a little application of heat over the thigh would not be sufficient, but that patient ought to be put into a tub, sitting up in the tub of hot water, and more hot water put in, and more and more and more added until he is fairly scared for fear he is going to be parboiled; and you want to make that skin as red as a boiled lobster; then the pain will disappear. But simply to put the patient in and let him paddle around in warm water a little while will make him feel worse than before. It must be made just as hot as it is possible to bear. I remember one of the most grateful patients I ever had in the world, who goes all over the country telling everybody what a great doctor Dr. Kellogg is, and the thing I did for him was the simplest thing in the world; a thing that anybody could do, and any good Battle Creek Sanitarium trained nurse would have done the same thing; so I did not deserve any credit

credit at all but it did him a lot of good. He had a terrible pain, a terrible pain in the upper part of the thigh, in the crural nerve, and he had suffered very very severely a long time, for several months, and I happened to meet him in Portland, and I got him into a tub of hot water, and I had some more hot water handy, and I kept putting in a little more, slowly dipped in a little more hot water, and by and by he said, "isn't this how enough?" "Yes, this is about hot enough, I think, about hot enough?" "Now," I said, "I guess perhaps I will put in just a little more." And I got in a good big dipper full. And he said, "I can't stand that; that is too hot." "Well, all right," I said, "just wait a moment; we will take care that you do not burn. We are not going to boil you;" and after a moment he said, "Don't you think you better put in a little cold water here? This is hotter than I can stand it. I am sure I can't stand it." "Well," I said, "we will see about it," and I came on with another dipperful of hot water, and ~~ix~~ I put it in, and he declared he was nearly cooked. But now when he got out of that bath he was as red as though he had been painted with a brush and red paint, and the pain was gone, and it never came back. Now, you see, we have got to do things thoroughly. If you are going to accomplish anything with hydrotherapy or with anything else, we have got to be thorough about it. A patient this morning I was making a prescription for said, "Doctor, it does seem to me you are too radical." I thought she was very kind to say radical. I thought she was going to say I was cruel, but she only said radical; so I simply smiled. Now, every part of the body has this relation; every part of the surface of the body with some internal part; and if we understand this geography of the skin then we are able to accomplish things that look to be almost miraculous.

Now, a friend of mine was down in an island in the Pacific Ocean some years ago--a doctor,--he landed on a little island where ships very seldom touched, and the natives saw the ship coming ashore, and they came out in boats to meet it. They said, "Have you got a doctor aboard?" "Yes, we have a doctor." "Well, he must come to see the chief's wife for she is very, very sick." So he was taken away off down the shore ten or twelve miles, then up a river eight or ten miles more, and there he found a very fat woman lying upon the ground and rolling about in terrible agony. She had been sick for three days and they thought she certainly was going to die, and this was the last hope. A little hot water saved that woman. Just an application of hot water resulted in the complete relief of the awful pain and the woman exclaimed, as soon as she recovered her self-control, "This doctor has mighty powerful medicine." She supposed there was some medicine put into the water, you know, and there was nothing in the world but a little hot water that saved the woman's life and gave her wonderful relief; and he has the reputation of being a great doctor among the natives of that island. Now, you can go home and every one of you can relieve nearly all of these acute troubles that come into your home, by the simple use of water. We will have a lesson here for you in the simple use of water, by one of our accomplished nurses who teaches the other nurses,--we will have her come out and give you some instruction. How many of you would like to attend a class in the use of simple remedies? Hands up. I see a great many hands, so I know there is a lively interest in this. And we will have it demonstrated to you so you will see how to do it. I thank you very much. I am glad to see there is such an interest. I will ask Dr. Geisel to take that in charge and see that Miss Dancey gives a lesson soon. So if you have got a pain, or a heavy weight, or discomfort of any sort in your stomach, a hot fomentation or a hot bag is always helpful. I do not know of any contraindica-

tion at all except in case of inflammation we would not keep the bag on continuously.

Q. Does that apply to headache as well as to pains in other parts of the body?

A. It applies to headache, but it must be very hot and very short when applied to the head. You may have to have a cold application on one side of the head when you have a hot one on the other.

Q. Would you prescribe fasting for an acid stomach? How long should one fast in a chronic case of this malady?

A. Fasting does not cure a sore stomach, or a sour stomach. Sometimes the stomach secretes acid continuously. In very bad cases of sour stomach the secretion of acid goes on all the time, day and night, continuously, and never ceases; so fasting would not do that stomach any good. In fact, a person feels better when he takes a little food into the stomach. One feels better because the acid is neutralized by the food and the stomach is protected by the food; so fasting is not a cure for sour stomach. As a matter of fact, all cases of acid stomach are generally due to inactivity of the ~~maxx~~ bowels. Poisons absorbed from the intestines are excreted into the stomach and irritate the stomach, and that is the real cause of acidity; so the first thing to be done to a person with acid stomach is to see that the bowels move three or four times a day. You say, "How are we going to accomplish that?" I think one of the best remedies for this purpose is colax. Colax is made, prepared from agar-agar; it is not a secret remedy; it is not medicine; it is simply Japanese seaweed known as agar-agar, and this agar-agar comes from Japan in long strings done up in great bales. It comes from the sea, and has to be fumigated and disinfected and thoroughly washed and prepared, and then chopped up into short lengths, and then is formed into cakes of the right size for a dose. It is

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most ungainly stuff to deal with. It comes in lengths about two yards long, in strings, and all wound up in a snarl. Now, this material has the property of absorbing water to a wonderful degree. One part of colax or agar-agar will absorb seven times its weight of water. Simply put it into water and it will soak up seven times its weight of water. When it is boiled, one ounce of it will make a whole gallon of jelly, jelly that is thick enough to stand alone. One ounce will make a gallon of jelly. It has four times the strength of the best gelatine you ever saw in its jellyfying power. This absorbs water to such a remarkable extent. When this is taken into the stomach and intestine, it absorbs water and keeps the contents of the intestine from becoming dry. It also gives bulk. In consequence of absorbing water, it swells up and gives bulk in the intestine, which is a matter of a great deal of consequence. The great trouble with it has been in eating it. But we have at last made a discovery which I hope may be a source of great satisfaction. We have found out how to prepare the colax so it is as crisp and brittle as the most delicate, and the shortest sort of pastry you ever saw in your life,--more so. You never tasted anything so good. You can crush it all to pieces in fact, into a powder, with your fingers; so it has lost all its obnoxious properties entirely. Some of you who have got discouraged in wrestling with the old kind probably will find great satisfaction in using it in its new form. I take colax at every meal. If I don't eat anything else, I take a cake of colax. It is important to keep up the procession of alimentary material, because the bile is poured out below the stomach, and the bile is an excretion, and it is necessary that this bile should be gotten rid of, utilised, carried along; and when one is living a sedentary life and is not eating regularly as he ought to eat, it is highly important that he should stimulate the alimentary canal to carry off these excretory products. Now, while Indians, living in the forest, do not

need to take a bath so often as we do, because the wild Indian is scoured, sandpapered by the bushes as he rushes along, and he is disinfected by the sunshine and the natural process of exfoliation of the skin carries off the waste material; and the very same thing is true of the native who lives in the forest as regards the intestine. But the man who wears clothes must take baths because his clothes prevent the natural detergent processes of the air and the sun by which the skin is kept clean, by which it is kept groomed. The wearing of clothes, in fact, is a very dirty habit, but we have got into the habit and we do not seem to be able to get out of it; and I doubt if we ever will. It is conventional to wear clothes, and it seems to be a necessary thing in civilized society, for purposes of modesty as well as for purposes of protection. But this wearing of clothes retains the excretions, the poisonous excretions in contact with the skin; so we have to take baths frequently as a work of supererogation that we should not naturally have to do. We have to take baths in order to keep the skin comparatively free from these poisonous matters. I think it is better for a person to have a bath every single day. One needs some kind of grooming of the skin every day, an air bath at least, and the rubbing of the skin to ~~rub~~ rub off and remove the exfoliated material. And the very same thing is true of the intestinal canal of the civilized man. He has got to take particular pains to keep up the normal intestinal activity which means normally a movement of the intestine, the bowels, after every meal. I am thoroughly satisfied that is essential; and people who have gotten into a bad state of physical insufficiency, chronic disease, will find themselves greatly benefited by making the bowels move four or five times a day for a series of weeks, or even a month or two, until the intestine has got thoroughly purged of the pernicious bacteria that are developing there and are making poisons which contaminate the whole body, and are making mischiefs ~~and~~ of various sorts. Colax

I consider one of the most valuable discoveries that has ever been made. We did not discover it here; we do not deserve any credit here for having discovered it at all. It was discovered in the chemical ~~laboratory~~ laboratory of Yale University. A Japanese student was the subject of experiments. One of the professors there was experimenting upon this student as regards the digestibility of various kinds of seaweeds, and among other seaweeds the use of this Japanese seaweed, and the student reported to him that he found it was laxative; and on making some further experiments he found, sure enough, it was a very excellent and a very positive laxative, and not a violent laxative; it was a natural stimulus to the intestine; and he directly wrote me about it as he knew I would have abundant opportunity to experiment with it; and upon making experiments with it I found, sure enough, it was all it was claimed to be and even more; and so we are making large use of it here in the institution and I think we ought to make a good deal more use of it than we do, for it is a thing of so much value. The only difficulty about it is it is very expensive. It is sometimes difficult to get any. Last year we had to search the whole world over to find any. The whole crop was exhausted from Japan; there was not a particle to be obtained in this country; there was not a bit to be obtained in England or France. We finally succeeded in getting one big bale in Germany by searching the whole world over, and that helped us out. This year we spent a week and considerable money in telegraphing back and forth with Japan to get hold of a sufficient portion of the annual crop to be able to take care of our needs. It is difficult to get. I hope sometime the amount of this material furnished will be larger, and then the price may possibly be cheaper, but it is one of the most expensive things we get.

Q. Can excessive acidity of the stomach be permanently overcome?

A. Certainly it can. It is to relieve the bowels so that the bowels

do not send in poisons to irritate the stomach. That is what does it. That is the first thing. And the next thing is to chew well, because if you do not chew the food very well, it has to lie in the stomach too long and excites the stomach for too long a time, and that creates irritation of the glands and makes hyperacidity. Another thing is to eat just the right kind of food. Avoid all kinds of food that stimulate and irritate the stomach. The most important thing to avoid is meats of all kinds. Why? Because meats produce a highly acid gastric juice. Pawlow showed that with his dogs. Then all kinds of meats must be discarded--bouillon, beeftea, and meat extracts of every sort must be discarded. Then we must avoid carefully all sorts of stimulating things like mustard, pepper, peppersauce, vinegar, and things of that sort. Then we must avoid sometimes the very acid fruits and fruit-juices so long as the stomach is sore and sensitive--it may be necessary to avoid those. Cane sugar must be avoided. Meltose or maltose can generally be eaten, but sometimes must be taken in moderate quantity. Now, the next thing is the starches must be dextrinized; that is they must be baked brown in the form of granola, or toasted wheat flakes, toasted rice flakes, browned rice, or zwieback, or some other form of toasted cereal. And the next thing is that a considerable amount of fat must be taken. This is one of the most important points of all--that a considerable amount of fat must be taken, because fat prevents the formation of acid. Fat hinders the development of too much acid, so it is a very important thing that fats be eaten as freely as can be tolerated. The best form of fat is cream. There are sometimes people who can not take cream. Another thing that should be said is that we must avoid taking much liquid at meals; we must avoid drinking at meals; take the food dry and in moderate quantity, for the larger the amount of food taken into the stomach, the more will be the secretion of acid. Avoid taking hot drinks also, or cold drinks, for

that matter. Cream cluten gruel is a very wholesome food for cases of this sort.

Q. Is salt injurious to the kidneys?

A. Yes, salt taken in too large quantity unquestionably helps to wear out the kidneys. Prof. Ewald, of Paris, Prof. Combe, Mosse, and various other investigators have shown that the food which we ordinarily take contains all the salt that is required naturally. That is, the wheat, or corn or oats, the potatoes and various other things that we eat--all these things contain all the salts the body can use. If we add salt it is simply a matter of luxury; it is simply a matter of a gratification of taste; it is not a matter of physiologic necessity. That is the verdict of science at the present time. We require only one or two grams of salt--that is about a quarter to half of a dram of salt; but the food which we ordinarily take contains more than that. It contains three quarters of a dram of salt; so there is more salt than we actually need. Now, when we take an excess of salt, by and by the kidneys get to the point where they can not eliminate it; then salt accumulates in the body and we get dropsy because the body will not allow more than one per cent solution of salt. In fact, it does not allow it quite so strong as that. Seven to nine parts to 1000 is as strong a solution of salt as the body will tolerate. And when the kidneys are worn out, this one per cent of salt that is taken into the body will stay there, because the kidneys ordinarily eliminate it, and it requires 100 parts of water to stay with it. So you see for every ounce of salt there are 100 ounces of water; and that is where dropsy comes. We cure up patients with dropsy here by simply taking out the salt. When we take away the salt, the water simply pours out of the body. One man one time actually lost twenty pounds in one week. He was bloated up enormously when he came, and could hardly breathe or lie down at all; and his legs were simply no use. In

two weeks' time this man had returned to his normal proportions, and the principal thing that was done for him was to suppress the salt. I saw such a patient this evening, and the only thing I suggested was that salt should be taken out of his diet at once, every bit of it. I believe he will be better. It is a very important thing. That is not a discovery of mine; I should have been proud if I had made the discovery, but it is the discovery of an eminent French physician; and in France at the present time all physicians practice in that way; they cut the salt out at once. When a patient is found to have dropsy or other disease of the kidneys there,--disease of the kidneys from any other cause, all the salt is cut out of the diet. And what is true of dropsy and chronic diseases is true of some acute diseases. In typhoid fever the body has lost its power to a large degree to eliminate salt, so salt should be suppressed. That explains why Dr. Hippocrates, nearly 2500 years ago, prescribed for his patients water gruel without salt. I remember very well when I was a boy, I had a fever, and my good mother, who was my nurse, would not allow me to take a bit of salt. She gave me water gruel ~~ix~~ made without salt, not a bit of salt in it. I didn't know why, but she knew that that was the proper thing to do; and for centuries, water gruel made without salt has been the remedy for fevers. Now, the same thing is true in pneumonia. In pneumonia there is an accumulation of salt in the lungs, and that is one reason for the filling up of the lungs. The salt accumulates in the body and is thrown out in exudate from the lungs. These pneumonia patients are so wonderfully benefited by sweating; and dropsical patients are benefited by sweating, because sweating carries off the salt. We had here night before last a patient who was thought to be dying from uremic ~~paralysis~~ coma; and the first thing I inquired for is, "How much salt in the kidney secretion?" And I found a very little bit, just a very little; so my prescription was sweating baths. I found the doctors were al-

ready giving sweating baths, for they knew just what to do; but I suggested more sweating; so the patient had vigorous applications of sweating baths, and by morning the patient's life was saved. It was a desperate call indeed; it was a very close call; but if it had not been for the knowledge of that one thing, with other things allied to it, the patient would have been dead. It is important to know these physiologic truths that are so fundamental.

Q. Is hot or cold water in the morning best for an inactive state of the bowels?

A. Well, cold water is usually best. That is, a glass of cold water, not too cold. When water at ordinary temperature is taken in the morning it is beneficial because it stimulates peristalsis. Now, it is a good thing to take a glass of water at night; and it is a good thing to take another on rising in the morning. It is very good to do this habitually. Why? Because, when taking it at night before going to bed, it causes the stomach to start up a little, and starts peristaltic waves that push the intestinal contents along; and in the morning when you get up, take another glass of water, and that gives another push, so to speak, to the intestinal contents, so they are moved along a step further; and when breakfast time comes, that is another hint to intestinal activity and peristaltic activity is set up, and that is the reason why the taking of an apple at night, or an orange, or of eating an orange before breakfast is helpful, if you take it half an hour before breakfast; then your breakfast comes, and there are two lifts, don't you see, to the intestine. Peristaltic activity is stimulated. Every time new foodstuff is taken into the stomach, the stomach is stimulated to activity; so in some cases infrequent meals become a cause of inactivity of the bowels. A person who lives on one meal a day is very likely to have inactive bowels because there is not sufficient stimulation of the intestine. Food is the natural laxative. That is

the thing not to be forgotten,--that food is the natural laxative; that eating is the natural stimulus to intestinal activity. That is why the bowels naturally move after meals.

Q. Why are the employeas not allowed to receive tips?

A. Now, I would like to know how many people there are here who are very anxious to give tips. Raise your hands, and I will have a hat passed around right away. I see a gentleman back there who is so well pleased with what is being done for him that he wants to pay a little more for it; and if he speaks to the cashier, I think he can accommodate him with a higher priced room. Now, the reason why we do not believe in tips--a great many hotels, a great many institutions at the present time, are ruling them out--won't allow them,--there are several reasons for it; but one reason is that it encourages partiality. There are many people who do not believe in tips. There are people who believe that when they have paid their bills they are entitled to all that is coming to them, and that they should not be expected to pay again for the service that they have once paid for. Now, it is a matter of principle with many people; and people who hold that principle are likely to adhere to it, and when they go to an institution where tips are recognized, and where it is the custom to tip, they won't get as good service as people who do pay tips. Another reason, is the temptation to employes to do things that are not right at all. An employe who is working for tips makes little neglects, he does little things just on purpose so as to let the man know he wants a tip. They get very adroit about it after while, so that they know just how to suggest that a tip is due, is wanted. Any of you who have spent some little time in traveling all about the world, visiting hotels, etc., know all about it. Now, I will give you another reason. This institution has received a great benefaction for the very reason that it did not have tips. Something like

ten years ago a gentleman arrived here, a wealthy New Yorker, a resident of Washington at the time, but doing business in New York and in twenty or thirty other cities--one of the largest real estate dealers in the world--the largest in fact. I saw him at his room, found a man about my own size, a small man, and a very pleasant man, and he got up to see me, and he said, "Dr. Kellogg, I am glad to see you, glad to see you, Doctor; this is the most wonderful place I ever struck in my life. Why, I have been here three days and I haven't had my leg pulled yet." I began to look down to the floor; I didn't know what he meant. I knew he had been down to the bathroom, and thought certainly he must have got his leg pulled there, very likely, but I didn't understand what he meant exactly; so I didn't quite know what to say, and I smiled and said I was glad to know he was getting along allright. He said, "I don't understand it. I was at Hot Springs, Va., and I hadn't been there fifteen minutes before I got my leg pulled twice; and I have been here three days and haven't had my leg pulled a single time. Why, the man who brought up my trunk--I offered him half a dollar, and he would not take it. The boy brought me up some ice water pretty soon, and I offered him a quarter and he would not take it. I went down and got a bath in the bathroom, and offered the bath man half a dollar, and he said, 'No, thank you; I am paid for my work,' and would not take it. I never saw such a place before in my life." After a couple of weeks he said, "Doctor, why don't you have an institution just like this down at Atlantic City? That is exactly what we need down there, and if you will have an institution like this at Atlantic City, I will raise five hundred thousand dollars, if you will agree to take charge of it." I said I really could not do it because it would be a commercial enterprise, and I am not in commercial business. He said, "Well, I wish you would think it over." He

spoke to me several times about it, but I said, "No, I could not think of it. You want to start that thing as a money making concern, a money making business, and carry it on in that way, and I could not think of it." He went away. A year or two later he came back again; whenever he was ill he came back, and he often wrote me about his health. Two years ago last January somebody sent me a clipping of a paper saying that Mr. C. E. Wood, of Washington, had died, and left the Battle Creek Sanitarium the bulk of his property to build a sanitarium at Atlantic City. And I didn't pay much attention to it; but pretty soon I got a notification of it; I had some lawyers writing to me who wanted to look after things, and real estate people and architects began writing to me--people who had been down to Washington and looked into the matter, found it was true, and wanted to sell me some land at Atlantic City. Finally I went to Washington with my lawyer and found sure enough it was true. The papers that were filed with the judge of probate gave an inventory, I think, of about a million and a quarter dollars worth of property. He left some property to different ones in small amounts, and left several hundred thousand dollars of entailed property--that is, gave a life interest in it to another party, that was to go to the enterprise after this party's death. So, you see, it pays; it pays to hold up a principle. That gentleman was ready to do that thing just because he found an institution here that he thought had principles, and was standing for its principles, and especially an institution in which the employes had principles. That is the thing that impressed me very much. So we do not encourage tips, never did believe in them, and we don't believe in them now--believe in them now less than ever. If any of you find yourselves solicited for tips, we shall be very glad if you will report it to the office. Now, on the other hand, when a person is going away and feel that they have had

specially good service and feel that there is a special reason why they should in some small way remember somebody for something, if they make the fact known in the office the management never interferes with anything of that sort; that is purely a personal matter, and one has a perfect right to do it; but to tip a person day by day in order to get a little more service than one is entitled to; or for an employe to be bidding all the while for you to do something for him, that really is out of the regular order; or to pretend to be giving more service than they ought to give and charging for it, that really is out of place and out of character. We could not encourage that.

Q. What is the relation between acidity of the stomach and muscular rheumatism?

A. There isn't any except this--that both are due to autointoxication.

Q. If the hemoglobin of the blood is very deficient, what is the best method of curing it?

A. Eat more good food, and get outdoors. The outdoor life is the cure.

Q. Why do you not have running water in all the rooms?

A. The reason is that when we have running water in the rooms, we have to have sewer pipes in the rooms also. When there is a sewer pipe coming into a room, sooner or later there is certain to be contamination. We can not escape it. And after trying every sort of device known, we made up our minds in this building we would not have running water in the individual rooms. We have running water in the bathrooms. The bathrooms can be shut up and the outside window opened, and this gives a chance for proper ventilation.

I want especially to ask the patients to get the benefit of all the good Michigan air you can while here. When you go to bed at night, open up your windows wide open, and open up the transom so it is wide open. The

fresh air is forced up into the halls continually, so that there is no admixture of air from other rooms; so open up the windows and the transoms and let the fresh air into your rooms so that you will get all the air you can. Really, at this time of year, there is no great necessity for sleeping out of doors, if one has the windows wide open.

Q. Does gas on the stomach cause nervousness?

A. Yes.

Q. Isn't there danger of the stomach becoming weakened by the free use of dextrinized food like toasted rice and corn flakes?

A. No, because the natural diet of man is dextrinized. Fruits and nuts contain no starch. The natural diet of man does not contain starch; and the reason why we are able to eat the potato and grains is because we are able to cook them, and convert them into dextrin, for the natural food of man does not contain starch, or at least very little.

Q. Would you advise salt water as a nose and throat wash?

A. No, it is not necessary, yet it doesn't do any harm to just gargle the throat with salt water; but to wash the nose out with salt water is not a wise plan. There is danger of drawing the water up into the frontal sinus, getting it up into the sinus in the malar bone, or the sphenoidal cells, in the Eustachian tube, and doing harm.

Q. What would be the effect on the digestive system of taking two and three sour lemonades per day?

A. There is no harm at all if it passes out of the stomach.

Q. If rice passes out of the stomach in one hour, does the use of butter cause it to remain too long?

A. Yes, it does cause it to remain longer. The length of time would depend on the amount of butter taken.

Q. What is the cause of nervous headache, and what is a quick remedy?

A. The cause is toxemia due to poisons absorbed into the body. So you see it is all-important to avoid the production of these toxins. You say, "Oh, it is not that that caused my headache. It was nervousness, or worry that caused my headache." Yes, but the poisons in your blood bring your nerves to such a state that they only need just some little straw to break the camel's back you know--just a little more to precipitate the headache. The real cause is poisons.

Q. What is the cause of rheumatoid arthritis?

A. Autointoxication.

Q. Is Bright's disease curable?

A. No, Bright's disease, when recognized by the doctor, is a flame bursting out through the roof after having burned all the way ~~through~~ from the basement up through the house--the house is gutted, it cannot be cured; but it is of the highest importance that something should be done. For the patient who has Bright's disease can generally be kept alive for a long, long time, a few years perhaps, by living with great care. Such a person must adopt a low protein diet, must leave salt out of his food, and must take a great deal of water and have a great deal of sunshine; must be very careful not to get chilled, must be careful not to get very much fatigued, must not get exhausted, should take a great deal of sleep, should take moderate exercise, and should live outdoors.

Q. Is it preferable to use colaxin or a small cold enema for purpose of securing daily bowel movement?

A. Yes, it is preferable to use colaxin.

Q. Is corn syrup more digestible than cane syrup?

A. No, it is not fit to eat, in my opinion.

Q. Is electrically manufactured ozone beneficial?

A. I am not certain. It is an irritant, and I think it is not beneficial.

Q. What is pellagra?

A. It is an unknown disease. Nobody knows yet what pellagra is. We are trying to find out. I hope in six months we will know. It may be due to mouldy corn or it may be due to something else.

Q. Can a person drink too much water?

A. Yes, one should avoid drinking too much water especially at meal-time. A few sips does not do any harm, but several glasses will do mischief.

Q. Can a person who has catarrh of the stomach eat any malt honey without harm?

A. Yes, a little malt honey is beneficial, but if the malt honey makes your stomach smart or sore, or any other bad effect, avoid it. It is better to eat carbohydrates in the form of rice flakes or biscuit or in some other form of starch.

Q. Is malt honey a proper food for infants?

A. It is one of the very best foods for infants. It is slightly laxative, and especially good for infants who are poor, emaciated, have green stools and inactive bowels.

Q. Is gas on the bowels an evidence of indigestion in the bowels?

A. No; it is evidence of the accumulation of fermentable foodstuffs in the bowels,--undigested and fermentative.

Q. Is the cold compress on the stomach of as much benefit as a hot compress? Does the hot compress warm up the blood too much in hot weather?

A. When hot water is applied to the stomach in very hot weather, if

it makes a person perspire, it should be avoided. In such cases the cold compress is sometimes just as good or better.

Q. What is the best time to have a child's adenoids removed?

A. As soon as they are discovered.

Q. What is the proper treatment for so-called torpid liver?

A. There is no such thing as torpid liver. The liver is sometimes worn out, overworked, congested, and the real cause is inactivity of the bowels, intestinal autointoxication--that is the real cause; and the thing to do is to suppress the poisons and the liver gets well of itself.

Q. Is there any help for a child whose mental growth is slower than its physical growth?

A. Yes, education is the help for that child.

Q. What are the symptoms of Bright's disease?

A. Frequent headache, especially frontal headache is one symptom; another is sudden nausea coming without any apparent cause; another symptom is high blood-pressure which is a very important symptom. Another symptom is the fingers turning white, sometimes the ends of the fingers turning white. If a person has a badly coated tongue and foul, loathsome stools, and has black, dark circles around the eyes, a dingy skin, and has been having them for many years, he may know he has got beginning Bright's disease. If he hasn't any other symptoms at all than those he has been in a state of chronic poisoning so long his kidneys are more than half worn out, and he is going to have Bright's disease if he has not got it already. He has probably got the beginning of it.

Q. Why are the treatments here beneficial to some and not to others having the same illness?

A. Some of the treatment, of course, does not apply to all persons;

but some persons have more recuperative power, get well faster than other people, just as some people work faster than other folks; just as some people talk faster than others; just as some think faster than others, and some sleep faster than others, and some people get well faster than other people. It is a matter of personality. Sometimes people are farther down the road and have got farther to travel up to get back on to the Pisgah's top of health again.

Q. What causes severe headaches?

A. Intestinal autointoxication.

Q. President Hadley, of Yale University, has said that if people generally knew the nature of alcohol they would drive every saloon from the land. Is it not of the nature of uric acid--a waste product of the yeast plant, as Dr. Hodges, of Clark University says,--that is, the liquid excrement of a microbe?

A. Alcohol is an excrementitious substance. It is the excreta of the yeast cell. That is one reason why it is harmful. All excretory substances, all waste substances are poisonous substances--all of them. All substances that are the wastes of living organisms are poisons; and that is why alcohol is a poison.

Q. Is there any cure for cancer?

A. Well, some kinds of cancer, if removed early, do not return; but this is to be remembered, that when a person has had cancer, that fact shows that he is susceptible to cancer, and he may get another one. When a person has cancer,--the reason why you and I don't have cancer is because we are not yet susceptible, and ~~the~~ ~~we~~ but we may be going down, you see, and getting down to the cancer level; so when we get there, by and by we may get it. I am surprised every little while to learn that somebody is stricken with cancer, and when I trace it back, I can see the truth of Dr. Williams's assertion that cancer is a

disease of high protein feeders. People who eat too much meat, people who eat too much protein, and persons who eat meat always eat too much protein--such persons are the people who have cancer. It is a disease of high feeders. People who live in a half starved condition all the time never have cancer, or very rarely. Monkeys do not have cancer; herbivorous animals rarely do. Carnivorous animals are as susceptible to cancer, almost as common among them as among human beings.

Q. What causes hardening of the arteries?

A. Poisons in the blood.

Q. Why does the Sanitarium use the public drinking cup?

A. We are getting out of it as fast as we can.

Q. Do what do you ascribe the habit of sleeping 18 hours at a stretch by a young man of 25, who is apparently normal in general health? Is there a remedy for it?

A. He is exhausted, and tired out, and needs some more building up.

Q. A healthy horse eats nine times its weight in food in a year, a healthy sheep six times. How much will a healthy man eat?

A. The average man eats twelve times his own weight in a year--more than the horse or the sheep. A Chicago congressman said he had eaten 46 wagonloads more than he ought to in the course of his life, perhaps more. The weight a person should eat should depend upon the concentration of the food. One must take more or less according as the food is concentrated. Sometimes foods which are very concentrated have very little water, very little waste matters, so are highly nourishing, have to be taken in small amount.

Q. Why haven't the men got a place to sleep on the roof?

A. I guess we will have to speak to the housekeeper about that?

Q. Is bicycle riding healthful exercise?

A. Yes.

I told you we were going to celebrate the second anniversary of our yogurt beefsteak. Here is a beefsteak more than two years old, and it is still sweet. It has not undergone any decomposition because it has been taking yogurt all this time. Now, of course, it is well smeared over with the yogurt buttermilk, but you can see the beefsteak is firm and tough just as it was when it was bought. It is just as tough as it was when it was bought--just as it was when it was purchased. It has not a particle of taint about it; it has simply been in the yogurt buttermilk which has been changed from time to time since two years ago the 7th day of June. It is perfectly preserved. That is why yogurt is recommended--because it prevents the growth of putrefactive organisms. This meat had a taint to it; it was decaying when it was put into the yogurt buttermilk, but the friendly germs have killed off the unfriendly germs so they will not grow. You can come up and look at it if you want to, and you will see it has the appearance of a perfectly healthy steak,--firm, and tough as it originally was; it has made no change at all.

Now, I am going to show you some pictures. I want just to give you a little hint of the beauties and the glories you are missing if you are staying indoors all the time. We will throw just three or four pictures upon the screen here. Here is a view of the outdoor gymnasium. These young men are chopping wood. The outdoor gymnasium, I understand, is just about ready to be opened, and I trust it will be ready tomorrow, or, if not then, the very first of the week; and when it is open, I hope we will see everybody getting all the advantages they can from it. The great advantage in it is to get as near into a natural state as possible,--to return to savagery for a little while. This is a group of nurses in the sand bath of white pulverized quartz sand such as glass is made from--white as the snow, and thoroughly clean. Here is a merry-go-round. Here are various games,--playing ball and various other things. Here

is the running track, and the swimming pool which our nurses enjoy as much as the patients do. We have a nice, large swimming pool--I think it is about 40 x 70 feet, and the water is kept fresh and clean. Here are some folks getting the benefit of the sun. Sometimes our patients get so thoroughly ^{look} tanned they ~~are~~ almost as though they belonged to another race of people. I remember a man as black as an Indian, a little darker than an Indian, who was as pale as a sheet when he came; and with the improved condition of his skin he had improved vitality throughout his body; the increased skin activity was shown in the general uplift of his whole body.

Here is a chance for fresh air on the roof for everybody. Here is a little scene down the River--a very pretty river--beautiful scenes all the way down for several miles; and here are the flowers growing outside about the house in our flower beds and down ~~at~~ the river, and at the Lake; and pretty roads out into the country in various directions, and pretty soon you will see the fruit ripening. This is a view of our well house in which is our artesian well from which we get our water--a well about 160 feet deep in which the water comes from the sandstone rock so pure it is impossible to find a germ of any variety in it. But I must let you go now, so I will say Good night.

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HEALTH AND EFFICIENCY RALLY

At the Sanitarium, Parlor, Battle Creek, Mich., Monday, June 20, 1910, at 8 p.m.

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Dr. J. H. Kellogg: I see we have these questions here, but we are going to put them aside, and are going to see if we can not get you to talk a little tonight. We are going to have tonight a sort of old fashioned Methodist class meeting along the subject of the low protein question. Dr. Chittenden, of Yale, some five or six years ago--eight years ago now, began a series of experiments to find out whether men needed so much beefsteak as they were accustomed to eat. The popular idea of the civilized world is that a man can not be strong unless he eats meat; that in order to be strong, one must eat a strong animal. The wonder is that elephant steaks are not popular; or whale's spare ribs. It is astonishing that we should be content with an ox. Somebody has suggested that since Roosevelt has visited Africa maybe hippopotamus will be introduced, so that we shall have hippopotami steaks.

Well, this idea that we must have meat in order to be strong, in order to have endurance and efficiency is beginning to disappear. It has had some very hard knocks in the last few years. I have a letter from Karl Mann who made the longest walk in the shortest time that has ever been made. From Dresden to Berlin he walked 124 miles in 23 hours. That is certainly very, very good time. And it was not done in an irregular way, but it was done under government supervision. There was a race of thirty or forty people, and every one going as fast as he could. He walked or ran or trotted, did as he liked, any way at all to get there, and the man that got there first was the winner; and Karl Mann was the first man. I have a letter from him today, and he said he had just been up to Graafenburg, a little mountain town away off in Austrian

Silesia, in the Austrian border close by the Russian line. And you can stand on the tops of those mountains and look over thirty or forty miles into Russia. I have been there myself; and he had just made a pilgrimage to Graafenburg, the home of Priessnitz, the man who discovered hydrotherapy; and he not only discovered hydrotherapy, but he discovered other things as well. Almost every principle of modern diet reform, medical reform, and therapeutics--almost all these principles were really in operation in Graafenburg a hundred years ago. It takes the world a long time to get hold of a new idea. When a new idea is launched into the world it has to struggle for its life. And you know, I think there isn't anything more worth while to do than to get ~~an~~ ~~an~~ aboard such an idea when you see it is launched, and going to go on,--than getting on board and getting somewhere along with it.

Some time ago we had our dedication of our new building here, and one of our fellow citizens here made a very eulogistic speech for Dr. Kellogg; and I felt very much ashamed and abashed that he should attribute so much to me; and I confessed in reply that I had not a thing to do with the success of this institution, which was perfectly true. The only thing I needed to be congratulated about was that when I was a boy of fourteen I got aboard of a good idea and I had stuck to it; and the idea had been growing and developing and expanding and succeeding in the world; and if I have any success, it is simply because I am attached to that idea.

Now, this low protein idea, as I say, was born more than a moment, more than a few years ago,--more than one hundred years ago; and it has been making progress all along the century; and within the last ten years there have been some remarkable experiments made. Karl Mann, a low protein man, eating Bromose along the road--for that is what he lived on during this walk--he had just a few cakes of Bromose in his pocket, and that is what he ate on that long trip, and he nibbled this as he went along the road. He won his race on a low

protein diet; and six others came out ahead of the first man who was subsisting upon a high protein diet.

Now, Prof. Chittenden, eight years ago, undertook by Mr. Fletcher's suggestion, a series of critical experiments to determine with accuracy, with certainty whether a low protein diet is really better or worse for a man as regards strength, vigor, endurance and efficiency; and the result of his experiments upon 16 soldiers, six athletes, and four professors was to demonstrate beyond any possibility of question that strength and endurance and courage and grit are tremendously improved by a low protein diet. He showed this very clearly. He himself got rid of a miserable rheumatism he had had before that he had been suffering from, and headaches; and he had had a miserable rheumatic gout that had given him a great amount of distress so that he was really an invalid. The other professors were invalids also, and they got well also; and the six athletes doubled in strength; and the sixteen soldiers more than doubled in strength, increased not only in strength, but in courage also. They hadn't much courage when they started out. They were soldiers, but were in the offices rather than on the firing line--mostly clerks in the war department; and as the result of these experiments, they were able to perform feats that they did not dare to tackle when they first began; and they were all improved in every way, and doubled in strength.

A great many people were awakened by these experiments which were published in Chittenden's book, "The ~~Nutrition~~ Nutrition of Man", and by magazine articles, and Mr. Fletcher's lectures and in various ways, the world came to know of these wonderful results; so a great many people have been making experiments along the same line. We had with us last year an eminent New York lawyer, a corporation lawyer who has charge of some of the very largest corporations there in New York, Mr. Goodwin Brown; and he told of his experience;

he told of the wonderful improvement he made by reducing his protein; and after his visit here he reduced it still more--cut out meats entirely; and when I was in New Haven the other day, and met Prof. Fisher, he said that Mr. Goodwin Brown had been up to see him, and he was wonderfully improved. I have had repeated letters from him, and he tells the same story--that he was wonderfully improved, and he attributes it to cutting out meat. One of the leading citizens of this town called upon me today upon another matter,--one of our leading bankers, the vice president of a prominent bank of the city, and was talking over the business that we had to speak about, and he said, "Doctor, I want to tell you something. You know I was up here to see you last December, and you took my blood pressure, and you found it was a little high. Now, I stopped smoking right then and there, and I have not touched beefsteak since, and I confess I am a great deal better." Well, I was very much surprised when I met the gentleman to see him looking so well. He looked ill when I met him last December, and I was really very much pleased to find him looking so fresh and young; he looked ten years younger.

Now, what he had accomplished in this time, by this simple means, by dropping out beefsteak and dropping out other harmful things--tea, coffee, and tobacco, every man in the same condition may accomplish. It is an awful thing when you look out over the world and over the United States and see the millions of men that are working for their own destruction, that are every day plotting their own destruction, that are planning their own death, so to speak--actually committing suicide by what they are doing ignorantly; and I feel when I think about it as though I wish I could get up and go up and down the land throughout the whole United States, up and down every street and shout as though I had a voice like a trumpet, shout out to the men and women to flee from the wrath to come. It is coming sure; it is coming.

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A gentleman arrived here today who said he came to be treated for arteriosclerosis. "Why," I said, "my friend, we can not cure arteriosclerosis. You might as well ask us to cure a house that had had a fire burning all the way up from the basement clear up to the roof, and the flames bursting out into the open air from the roof, and then ask us to cure that house by simply putting out the fire. We can put out the fire, perhaps, but there is the ruined house." The man that has got arteriosclerosis--we may stop the process, but we can not cure him; we can not change those hardened arteries; we can not get the chalk out of that brain where it has been deposited; the mischief has been done, and it is irreparable. Fortunately we found this gentleman did not have arteriosclerosis--didn't have it; and he said, "Well, now, I guess I will go home next week." "Now," I said, "that is just what I expected. Because your house has not been entirely burned through, and the flames have not quite reached the roof yet but have only got up to the second story, you propose to go home and let it burn the rest away!" I think we better put out this fire before it has consumed the house entirely. The best time to put out the fire is before it starts.

That is the principle we work on here. If we have a patient up in the surgical ward who is going to have an anesthetic, we know that anesthetic is going to put him in danger of his life, as every anesthetic does--it is going to put him in danger of his life, because the anesthetic is a poison that stops his thinking, slows down his heart, has a tendency to stop his heart action, and it slows brain action, stops the liver action; and we know the action of every organ of the body is more or less paralyzed by that anesthetic. That is why it is possible to do the operation, because the man's nerves are paralyzed; his muscles are paralyzed; the man is paralyzed completely by the poison. To anesthetize a man is to poison him, to bring him right down to the

door of death; just a little ways further and he would be dead; and the art is to stop before we get him down so far as that.

Now, when we are going to give an anesthetic to a man, instead of waiting until the man is in a state of collapse, till his heart stops beating before we begin to do something for him, the minute that we begin the anesthetic, we begin treating him for collapse; we begin treating him for ether poisoning. Just the minute we start the anesthetic we begin right off. If we find that man in a state of collapse from the anesthetic, from the ether, lying unconscious, we apply cold water to his heart right away. We rub his chest in that way with cold water, in just the same way that we would to revive him. We treat him just as though he had fainted away and was in danger of dying, and we begin that way right the first thing, as soon as we begin giving the anesthetic; and the consequence is we never have any trouble from our anesthetics. Our patients all come through all right, because we begin work right off at the very start.

Now, then, there is another thing comes from the anesthetic. When a man takes an anesthetic, he is likely to have pneumonia afterwards, because his lungs are congested; the moment the patient comes from the operation, we take him down to the surgical ward and begin treating him for pneumonia; we just apply compresses and fomentations to his chest as though he had pneumonia; we go right to work for that man as though we were struggling as to save his life from pneumonia. So he never has anything of the kind. Of course, if we did not treat our patients in this way, out of one hundred we probably would have two or three people who would have pneumonia, and one or two of them might die of pneumonia; but we save that one or two persons, you see, by treating every one; we catch them all.

Now, sometimes after operations patients have peritonitis, after

abdominal operations; so when we do an abdominal operation, it has been my practice for many years, when I have operated upon a patient, upon the abdomen, as soon as that patient gets back into the ward, to begin treating that patient for peritonitis. At a surgical meeting not very long ago, a doctor said to me, "Doctor, what do you do for peritonitis after surgical operations?" I said, "I never have peritonitis." "Never had peritonitis?" I said, "I never had a case of peritonitis in my ward, never." He said, "I don't understand it; I should think you would have one once in a while. How many cases have you had?" "Well, I have had a few thousand." "Well," He said, "I don't understand that." "Well," I said, "it is plain enough; for the minute I do an operation that puts a man in jeopardy to peritonitis, I begin treating him for peritonitis right away so he does not have it." If fomentations, hot applications and cold applications and other treatment will cure a man of peritonitis after he has got it, don't you see, it will prevent it? If water will put out a fire, it will prevent a fire. If you knew somebody was going to put a torch to your house, if you knew he was coming there and that torch was going to be applied and you could not help this, you would call out the fire department in advance, wouldn't you, and have the house flooded with water, and have the fire department there and the streams of water playing on it all the time; and you would not have any fire, then, or conflagration; you could not have. If you knew a prairie fire was coming and going to surround your house, and it would be gutted with flame, you would wet all the ground in advance to put on the antidote before the fire got there.

Now, my friends, that is the way to cure disease of the kidneys; that is the way to cure Bright's disease; that is the way to cure tuberculosis; that is the way to cure apoplexy, and arteriosclerosis, and all these horrible chronic diseases that are carrying off half the people that die every year;

half of them die of chronic disease; seven chronic diseases kill half of all the people that die. More than 750,000 people are killed by seven chronic diseases every year, and all of them preventable if we begin early enough.

Well, now, I am satisfied, and Prof. Chittenden seems to be satisfied by what he says, that this eating of too much protein, furnishing the body material out of which poisons are made, which are saturating the body and contaminating it with toxins,--that this is the real cause of this great number of chronic diseases. I am satisfied that is the truth about it. We had a visit not so very long ago from a distinguished medical gentleman who has stood very high in authority in the United States; and he told me he had become thoroughly satisfied that this autointoxication, arising from too much protein and from the decay of protein substances in the body was the real cause of most chronic maladies.

But now I don't want to do all the talking here tonight. I am making these few remarks so you will see why we think it worth while now and then to have a test of the low protein theory of Prof. Chittenden, and why it would be better if this were generally practiced. Dr. Woods Hutchinson says it is all humbug; that great harm has been done by the publications of these notions of Prof. Chittenden to the world, because meat is the chief and most important article of diet; that butchers' meat is the all-important thing to maintain nutrition; and in frequent magazine articles he dwells upon this supposition with a great deal of emphasis--that we must eat meat; if we don't eat anything else we must eat meat; that if we could only give people enough meat to eat, they would not have tuberculosis; they would not die of anything I judge by what he says. And Dr. Woodruff declares that at the present time the greatest danger to the whole world is nitrogen starvation and nitrogen contamination. Meat has got to be so high priced we can not eat enough of it.

I have been hoping for years that meat would get up to a dollar a pound; then there might be some chance for the average man to get through without so much auto-intoxication; and one of the health commissioners of Chicago a few years ago declared that if all the diseased meat were actually discarded and destroyed that the cost of meat in Chicago would be a dollar a pound--the cost of healthy meat, if the diseased meat were all taken out. So you can see about what proportion of the meat that is eaten is really wholesome and healthy.

Now, I am just going to give you a little item of my own experience; then I want to hear from a number of other people, tonight, who have been trying this low protein idea and have had some practical results from it. I adopted the low protein notion when I was fourteen years of age. That was just 45 years ago now--no, $44\frac{1}{2}$ years ago. I don't want to make myself out any older than I am. Well, a little more than 44 years ago, I got hold of this idea and adopted it, because I was satisfied it was good. Now, quite early in my life I became interested in teaching. I made up my mind when I was about twelve years old that I was to be a teacher; that was to be my business; so I began to interest myself in everything pertaining to teaching; and I got hold of some of Froebel's ideas when I was about thirteen. Margaret Fuller had introduced Froebel's notions into this country. She was one of the first educational reformers, you know, one of the pioneers, and started a kindergarten in Boston, and that was the beginning of educational reform in the United States, and I got hold of some of these ideas of Froebel,--that there was a natural way in education; that there was a natural way to live; and I read some of the statements by Cuvier, and other naturalists, to the effect that a non-flesh diet is the natural diet of man; that the natural diet of man is the same as that of the monkey, the ape, the gorilla, the chimpanzee and the orang-outang; so I said I will try it. I said, "Now, I am not of much account; I am just one person, and I

will try the experiment during my life-time--doing without meat; and I will see what it will do to me." And I tried it as an experiment for the first twenty-five years. For 25 years I may say it was an experiment; but for the last twenty years the evidence has been so strong that I have been thoroughly rooted and grounded and established in my faith that the non-flesh diet is absolutely the best; that flesh was never intended to be used as human food. I have serious doubts whether it was ever intended to be used for food for any creature. Now, I must tell you a little of what it has done for me.

I was such a puny boy I was hardly thought worth raising. My father told me on his bed, his dying bed, a few weeks before he died,--he told me almost those very words. He said, "John, if I had supposed you was ever going to amount to anything, I would have taken more pains with you." The amount of it was I was given an opportunity to work my own way through the world after I was ten years old. I had no assistance from anybody except moral support and friendliness and kindness, which are worth everything to a boy; but so far as pecuniary assistance was concerned, I didn't have any after I was ten years old. My father had sent my older brothers to college, and he thought it didn't pay. So he thought that as far as I was concerned, that it was not a good thing to send a boy to school and let him study too much; that it might break down his health; and my health was so poor, I was so puny that he gave me orders that I must not go to school until I was twenty-one years of age. I was not allowed to learn to read until I was nine; then I went to school for three weeks, and I never saw the inside of a schoolhouse again for several years; but simply worked my way along a little. But when I got to school again, I managed to make up a little of lost time by studying nights. When I was twelve years old, I had such a desire to study that I went to work systematically from ten o'clock until one or two o'clock every night; I simply stole the opportunity. My father

simply forbade me to study; but I went into rebellion, and after he was gone to bed, I got up about ten o'clock and put in three or four hours every night into study; and I was entitled to larger stature, but I didn't grow any after I was thirteen years of age, and I suppose it is because I didn't sleep enough; because we grow only when we sleep. So when I was twenty I was a pale, thin, coughing lad, and nobody thought I would live a year. In fact, I was expected to die of consumption when I was sixteen, and when I was twenty, I was really a very puny boy. Nobody thought I had any length of time to live at all; I myself did not expect to live ten years, and when I found myself thirty, I was amazed to think I had lived so long; and I thought certainly I would not live until I was forty; but here I find myself in my 59th year, and feel as though I had a better chance for living, a great deal, than I had twenty-five or thirty years ago, or forty years ago, even. I did not know what it was to be free from pain a minute from my earliest recollection; I suffered every day of my life, every minute of my life from terrible headaches. My mother had headaches before me, and I seemed to have inherited her headaches; and I had terrible neuralgic pains, terrible pains in my side, pains in my arm, particularly in my left arm and often had to carry it by my side for months at a time it was so extremely painful to move it. I didn't know anything about robust health. As a matter of fact, I have better health this minute than I ever had in my life before, notwithstanding hard work, and I have had to work hard from my very boyhood; I have always had more to do than I could possibly get through, and I never had a week's vacation in my entire life-time; I have worked as hard as I knew how to every day, and gotten out of myself every day just as much work as I could possibly get out of myself; I would not surrender and go to sleep until after I had fallen asleep at my work three or four times. That has always been my custom. I have rarely been asleep before one or two o'clock

and I have never had a full night's sleep--what people ordinarily would call a full night's sleep,--seven or eight hours' sleep,--until within the last two or three years of my life,--I would not have it once a year, and sometimes would work a whole week on sixteen or seventeen hours' sleep. I had to do two or three times as much work as ever ought to be required of anybody--seemed to. Now, in spite of it all, I am still alive, although I was such a puny boy, as I said, that I was not considered worth raising; I am still alive, and I am sure the fact that I am here today and am still able to work some is entirely due to the fact that I got hold of these principles of diet reform away back forty-five years ago before we had all the scientific evidence we have now.

Prof. Fisher, of Yale, was talking to me one day, and he said to me, "Doctor, how did you get hold of these principles so far back, when you didn't have all the scientific evidence you have now,--how did you come to get hold of them? What was it that persuaded you that they were good?" I said, "I liked the flavor of it. We know a good thing by the taste of it, and this thing had the right taste. That is the reason. I said to myself that the thing that was natural must be the right thing, because I had an idea, a belief that there was a great, omniscient, all-wise, omnipotent, all-knowing power, Intelligence, that is above everything, above us all,--an Influence at work intelligently governing the whole universe, and that knows what is best for us; and that the Power that made us certainly knew what was best for us, and if we could find out what was the original intention in relation to our welfare, that was the thing that would be the very best for us in every particular. So, as I said, that was the idea I started out on--if I could find out what was natural, that would be the safe thing to do. Now, I find it pays. I met a gentleman at the door just as I was coming in, and he said, "Doctor, I am pleased to see you looking so well." And I said, "It pays to be good." I don't mean to say that I am

exuberantly good; I don't say that as a parody; but I mean every good, right thing we do, every right principle we adhere to,--we are absolutely certain to reap a harvest of good results from it. "Whatsoever a man soweth, that shall he also reap", and if we sow for health, we will get health; if we sow for disease, we will get disease; and so far as I am concerned, my harvest of health is so great it seems to me it will be a great deal bigger than the sowing will in any way account for; for while I have been sowing a good many good seeds, in many respects, I have also sown a good many tares--sitting up late nights, depriving myself of the proper rest; and I certainly feel that this matter of diet is in my own case at any rate, demonstrated to be a dominant factor in health. If one can eat right; if one can build his body out of right material, and keep his body free from poisons and impurities, he can do almost any other thing. I meet a great many people who say, "Doctor, I am broken down; I have had to come here, because I have worked so hard I am all broken down." "Now, what have you been doing?" And a man has often sat down to tell me what he had to do. When he got through it seemed to me he had been having a play spell. It is my honest opinion that there are very, very few people that break down from overwork. It is wrong eating, it is a misuse of our physical powers in some way, and not the really useful employment of them, that is the thing that breaks people down. But I am talking too long. I want to hear from some others here who have had a good experience. I see my old friend, Mr. Bishop, from New York, who came here some years ago in a somewhat dilapidated condition, but he does not look that way now; and I wish he would stand up so you can all look at him and see what the low protein idea did for him.

Mr. J. M. Bishop: Dr. Kellogg, would you like to know thy I broke down and came here?

Dr. Kellogg: I suppose you would say it is because you worked too

hard for Uncle Sam.

Mr. Bishop: The reason was I was ignorant of a good many things that ought to have been taught me when I was in school. I lived a sedentary life, ate three square meals a day, without a sufficient amount of exercise, and with an insufficient amount of fresh air; and the result was that, violating all these laws of health, we have discovered here, the breakdown came, and I came to the Sanitarium expecting to die, and I should have died, I believe, if Providence had not in some mysterious way steered me to this institution. Since getting all this benefit, I have become an enthusiast for the Sanitarium, and it occurs to me tonight that it is a good thing to say that ignorance is the greatest scourge of the world. A case in point to illustrate the thing I am driving at is that the farmer who leaves his potatoes to rot in the cellar, to develop miasma that lodges in the furniture and in the carpets and curtains, and eventually the child gets sick and dies, and the bereaved mother, to console herself, feels that perhaps it is an act of Providence she did not understand, when, as a matter of fact, Providence had nothing whatever to do with it; it was merely rotting potatoes and ignorance on the part of the man who did not take proper precautions.

Dr. Kellogg: Mr. Bishop came here from Washington; and there was a friend of his down there who told me he did not expect to see him come back again. When he went back to the government office of which he had charge, his friends were so surprised, I think they gave him quite a reception; and there was so much enthusiasm that some little time afterwards, when I was going down that way, I found myself in the midst of a reception at a vegetarian banquet at one of the large hotels in the city, and one of the guests at that banquet was Minister Wu, of China, who became, as the result of it, a vegetarian, a low protein disciple, and he has been propagating the doctrine over there in

China, and has been practicing it and propagating it in this country since. And Mrs. Mary Henderson was another convert to the idea that came through Mr. Bishop's efforts.

Mr. Bishop: Wu Ting Fang is writing a book in Chinese on this subject about vegetarianism for his own people.

Dr. Kellogg: Yes, he was very enthusiastic about it. He was a confirmed invalid, but cutting out beefsteaks and other unwholesome things made a new man of him. He said on this floor a couple of years ago when he was here, that he expects to live 200 years, and is coming back to make us a visit then, and will tell us more of his experience. I expected Dr. Riley here to tell us something of his experience tonight. It is not every doctor that takes his own medicine, but that is one thing a Sanitarium doctor can say; and I think to his credit, that what he recommends to his patients to take, he takes himself; what he recommends his patient to do, he does himself. When a doctor says to you, "Don't eat beefsteak," he doesn't eat any himself. If you found a doctor smoking a cigar, and he should say to you, "Don't smoke cigars; they are not good for you", you would have serious doubts whether he was in earnest or not. You would have some idea that perhaps he wanted all the good things himself, and didn't want you to have them, to have your share; but when Dr. Riley says to his patients, "Don't eat beefsteak," he says it from a personal knowledge of twenty-five or more years' experience, that it is not good for a man to eat beefsteak. Our Dr. Mortensen also could tell you of his experience of at least twenty years. Some of you are acquainted with Dr. Mortensen, and know he is the picture of health, a manly figure; and to my knowledge he has been following these principles for a score of years, and has had an opportunity to test them. They have all been called away to see people who are very sick. I met Dr. Colver just going off to see a patient, as I was just coming in. I also

have a friend, a Mr. Israel, who has traveled about the world a good deal, and is recently from South Africa, and has had an opportunity to test various diets in different parts of the world. He is one of our recent comers, but he has had a chance to try this low protein diet for a series of years, and he has experienced most excellent results. Mr. Belden, I remember, some years ago came to the Sanitarium here from Chicago where he was living at that time. He has been having an interesting experience. He went over and made a visit to the slaughter houses and did not like the looks of things there. That was before the story about the Jungle was written; but he had a story that was just about as gruesome; and Mr. Belden has quite a different appearance today from what he had at that time. He is here and perhaps he will say a word to us.

Mr. F. E. Belden: It is always a pleasure to speak in favor of that which is good and which we have found has benefited us. I am like the man who could tell something about horned cattle, because he had hold of the horns of one of those Texas steers one time, and performed all the mathematical gyrations possible as the result. Well, what I had hold of, or what had hold of me was not a Texas steer, but it was catarrh, by inheritance and by improper living. And I tried different methods of dealing with that thing, by sprays of all sorts, and other performances, till finally I saw an advertisement of one hundred dollars' reward for any case of catarrh that could not be cured; and I said to my wife, "I believe I will have to tackle that;" but fortunately I met a friend connected with the Sanitarium who was wise in regard to the causes of catarrh, and he told me what to do; and I have been adopting that. And within half an hour after I have taken a meal, I can realize the effects of that meal either for good or bad, according to what I had taken. And I have been obliged, for the sake of my health, to be free from that infernal

catarrh, to cut out all animal products, and I feel a great deal better. I think I can outjump any man or woman in this room tonight; my head is clear; and another funny thing, I just paid four dollars a little while ago for a pair of special nose glasses; and since I have cut out that diet which produced the catarrh, I have not had to use the glasses; my eye sight has returned to me all right; has become young again. They are in my hip pocket now; I do not know that I shall ever need them; I haven't used them for a long time. Now, I decided that on an emergency case in Chicago about two years ago when I was forced to, but I admit that I did not stick to it after that. I was getting out a music book, and was under contract to have it finished by a certain time for an evangelist who was to begin his work at a certain date; and we had to have that book. That is, I had agreed to furnish it to him, and had printers working on it in Cincinnati and Chicago and in Philadelphia; and I had to read the proof and prepare the copy and get that thing out; and I was about sick with the hotel and restaurant diet of Chicago; and the only way I could pull through was to get a package of these cream sticks; and I took about half the contents of one of those little packages and distributed them in my pockets, and I said to my stomach, "Whenever you begin to howl for that plain food enough to want those sticks, I will give you half a dozen of them to start with, and you won't have a single thing but that; and I won't stop work, but will keep right on." So I began, and it was over a day before I began to be hungry; and when I got hungry, I ate three of those, and I said, "I will see how long that will last you. You won't get any restaurant grub at all until you begin to yell for something plain and good." And in about half a day I was hungry again, and ate half a dozen. I followed that process for several days, and I did more work and with a clearer head, and less strain than I ever did before. But, as I say, I was prone to relapse; I didn't keep

that up. But every once in a while when on a strain I have done that. A little while ago I had to work until about four o'clock in the morning, ~~and~~ on some special matter; and I ate about half a box of rice flakes as a test; and I was not sleepy or tired when I got through at four o'clock in the morning. I was feeling fine. I was actually surprised at the result. And those experiences opened my eyes, together with the examination of the meat question. I spent three days in the stockyards in Chicago investigating, and I had a cow and a calf to sell when I came from Battle Creek to Chicago, so I had on my old clothes, and was going around the stockyards endeavoring to sell the cow and calf, and making inquiries, and finding out all I could. I discovered a good many things which made me somewhat sick of meat; but still, every once in a while, I admit, when a turkey put in its appearance, with the drumsticks pointed at an angle of about 45°, and brown gravy, and one thing and another looking just about the way it used to, when I was a young man, I would relapse; but as I said when I began, lately I have found that if I want a clear head, want to be able to feel well and be free from that catarrh which I inherited, and which is aggravated continually by all animal products, that I have cut that thing all out entirely, and I feel so much better when I do it, that that is the evidence to me; and there is no amount of argument that can change a man's habits in relation to eating,--no amount of argument that compares with one's own experience; but people won't listen. It is just like the boy. The old gentleman can tell him what he ought to do, but he pays very little attention to it, and goes ahead and makes the same mistakes the old gentleman did; then he knows something. That is about the way with all of us. But we are very fortunate in having some friends who found out these things and adhered to right principles, so that we have had a good sample, and have been educated by those who have stuck to the right principle. Now, I am quite grateful for that;

That is worth considerable. And I believe in and continue this method of diet which is benefiting me so much, and has helped me so much in my intellectual work, and makes me feel so much better; for I feel as if I could jump over a house that wasn't too high; in fact, I feel better than when I was twenty-one; and there is no reason why I should not live to be 100 years old, and still feel quite well at that time.

Dr. Kellogg: Mr. Belden gives us the experience of a backslider, but he acknowledges that he always gets better when he reforms; and we will have to get after him and see if we can not get him reformed so he will stay reformed. That is what we want to do for every one of you while you are here-- to get you so thoroughly established in these right principles, that when you go home, you will continue to reap an increasing reward. A gentleman said to me today, "How long does it take, after you make a change from the wrong diet to the right one, to begin to feel the effects of it?" I said, "You ought to feel the effects of it right away. In two weeks, you will feel considerable effect; in two months you will feel a great deal more; but the thing is cumulative, cumulative; it is just like wealth of any sort--health is cumulative--builds up and each year you find you have got a little more than you had the year before. I can assure you of that, from the experiences of a great many whom I have had an opportunity to follow. Now, is there some one else has a word to say? Perhaps somebody has a voluntary word to say.

Mr. J. D. Knapp (from Texas): I would like to add my testimony. I am standing before you a little abashed, because I aint used to speaking in public, but I thought, like the old fellow that was drunk, who came into a church once where we were holding a little prayer meeting, and after getting ther the speaker, after getting through with the prayer meeting, spoke to those that weremax members and told us that there was to be a meeting of the chil

children at a certain place, and they were to have a very nice time, and wanted them all to come, and they expected to have a very nice time. Just at that time, along pretty well toward the front, was an old fellow who had stumbled in there by mistake perhaps, and he had his dinner bucket in his hand, and he was a blacksmith; and he said, "Well, if there is any good time about here, I would like to have a little part in it." So that is the way with me in this-- I want to have a part in this good time. I want to give my testimony in a full, heartfelt way, that I have lived nearly forty years a vegetarian; and if I have not gotten good results out of it, then no one has got good results out of going along a peaceful, good road.

I was fortunate when a boy. I was raised in the North. My mother died when I was four years of age, and I can just look back in the most quiet way often and just see as they laid her out; I have a faint recollection of it; of my mother's death--at four years of age; and Father had a family of ~~at~~ eight children, and I was next to the youngest child; and unfortunately for Father and the children, he was not worth anything at getting along in this world. He was a good man, had some education, and all that; but he had no knack of getting along in the world. We were living in Kentucky then. I was born up in Worcester, Wayne County. My father moved from there when I was a child three years of age, to Kentucky, and lived there--let me see,--I want you to know just about what age I was. We moved there in 1847; that left me about four years of age; so Father had these children on his hands; Mother was dead--his wife was dead; and as I said he had no knack of getting along in this world. And there lived in a county or two beyond us a very peculiar people called the Shakers. You know something of the shakers from reading, but perhaps some here have never heard or read anything of them,--the Shaker community; and he had been told that they took in all kinds of orphans, no matter whether they had

anything in the way of worldly goods or not--just so they were needing a home they took them in; so he bundled us up into a wagon and all our worldly goods--it didn't take but one wagon to hold them,--and he took us to the Shakers in the Shaker village in Kentucky, not far from Lexington; and there I was admitted into that community, a four year old child; and I grew up there. Now, as to their peculiar life, I won't have time, because I would not traspas upon your patients to tell you much about their peculiar life, but I will just say this for them: they are grand, good people, noble people. I have known along through my boyhood days and in my young manhood days, dear old sisters and brothers as well, that their everyday walk was quite close to that that we supposed would be an angel's--pretty close to it. I can say that for them. They raised me up well. They discarded tobacco,--would not allow it on the place. They did not allow a hog on the place; and in many ways they curtailed the eating of meat, and for us children especially; so I grew up that way; but another fortune in that came to my hand about the time I was fifteen or sixteen years of age. It was literature from Dansville, New York, from James C. Jackson. He had established a sanitarium at Dansville, N. Y., in Livingston County; but now his literature fell into my hands and, strange to say, boy as I was, at that age, that I should read such literature; but there was one point that of course made it more so--that is the probability of my reading such literature--a boy of that age,--there wasn't much there to read; we didn't have much; they didn't make much to read; there wasn't any newspaper brought in, and there were few books. I read the life of General Francis Marion, and I read the life of Napoleon the Great; and every book that came into my hands; and I read this literature from Jackson; and I always remember the motto at the head of his paper, called the Laws of Life,--"Nature as a mistress is both gentle and holy. To obey her is to live." I thought it beautiful, even boy as I was. And I

went on reading. Then the Civil War came on and it scattered many of the people, boys and young men, that lived in the Shaker community; and I with others and my younger brother and older--one was killed in the federal service,--we went with the Union; and you know we were very much divided there; but we went with the Union; and an older brother died a few years ago at Industry, Ohio, at the Soldiers' Home, this last year. Well, but about the diet. Then I went on, after the war. I drifted out to Missouri and left the Shakers, and I fell in with a stage company, and I did hard work there, and all this time, mind you, I was eating very little meat--very little indeed; and we came up to the time when I fell in with the stage company, and the stage business ran out, and I ran out with it; and I got down into Texas about thirty-five years ago, nearly thirty-six years ago, and from that time I had pretty hard labor, because I had no money, and I had a wife and two children by that time; and I then adopted the two meal system and the non-flesh diet strictly, and I have adhered to it ever since; and as I say, if it has not been to me a God send, nothing in this life can be--nothing, and I say this through my own experience; that it not only helps us physically, but it helps us mentally; and it not only helps us mentally and physically, but it helps us spiritually. (Voices, Amen.) I know I have been helped spiritually by it. I never pass an indigent child in my town now, Waco, who in winter time is bare footed, that I do not take and put shoes on its feet; and I never have one come to my house that I do not feed--that is, indigent children and women. I have done everything I could in that line. I don't boast of this; I don't want it to appear so--that I boast of it; I feel that I am doing none other than my duty to say it; so I have lived; and I have had that inclination more and more every year, that comes to myself, to my life every year--living close to Nature, and thereby living close to God. (Applause).

Some time ago there was a commission appointed down in New York to

investigate the health officers of that state. Some of the doctors had been complaining that they were not very competent, and Prof. White, of Cornell University, was the head of the commission. Prof. White told the story about it afterwards. He said one of the men came in, and he said to him, "What diseases have been prevalent in your community this last year?" "Well," he said, "we had several cases of small-pox." "Well, how did they get along?" "Well," he said, "they all died but ont, and that case was in the case of a family of hygienics, out on the border of the community." "Well, did you go to see the case?" "No, I didn't go." "Well, why not?" "Well, for the same reason that you wouldn't go--I was afraid I would catch it myself." The next man he asked several questions, and he said, "Have you any hygienics in your neighborhood?" "Yes," he said, "we had two cases of it, but they both got well." The next man he asked a number of questions, and he said, "Will you please define 'hygienics'?" "Yes," he said, "hygienics--hygienics is a bad smell arising from dirty water."

Now, a certain number of years ago, at the time this gentleman was telling about, there wasn't very much known about hygiene; but we have learned a lot of things since then. We have even found out what animal food meant. A doctor told a lady she must eat animal food for a couple of weeks. He came back after a week or two and asked her how she got along. "Well," she said, "doctor, I got along pretty well with the corn and the oats, but the hay was something awful." Now, perhaps some one else has a word to say. People have something of an idea, like that of the hygienic life, of the non-flesh diet--that it is ~~whiskers~~ mostly hay, oats and corn and something awful; but those of you who have been dining upstairs, I am sure, you will have a different opinion.

Voice: (Young man from Seattle). About six months ago, after four years of hard work in Seattle, trying to establish a million dollar foundation