

BACTERIOTHERAPY

A Stereopticon Lecture at the Sanitarium Parlor, Battle Creek, Mich., Thurs., July 18, 1912, at 8 P.

By

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I am going to talk to you about germs tonight. I am not going to try to tell the whole story, but a few practical things that I am sure will be of practical interest to you.

I will show you first here of the picture of the late Dr. Koch, who died recently, who, next to Pasteur of the Pasteur Institute of Paris, has done more than any other man to make this knowledge of germs, of bacteria of practical use in the saving of human life. Professor Koch discovered the tubercle bacillus, just thirty years ago. Within a year after he made this discovery, I made a visit to Germany for the purpose of studying his discovery, because it seemed to me to be of tremendous importance. At that time it was generally laughed at, the whole world over. Among the doctors, very few believed that there was anything in it at all, but it certainly seemed very like the truth and I went to Vienna to study this with Professor Kalisko (?) who was one of Professor Koch's first pupils. (Professor Koch made one mistake in his researches. He arrived at the conclusion that there was such a distinct difference between the tubercle bacillus of human beings and that of cows, or the so called bovine tubercle bacillus that bovine tuberculosis was not communicable to human beings, and he made this announcement at London at the great meeting of the International Association for suppressing tuberculosis some eight or nine years ago. This was a very great mistake, as was soon proven by the researches of many investigators, almost equally eminent with himself. It has been proven that bovine tuberculosis may be communicated from cows, pigs, calves, to human beings.

There was in my office this very evening a little girl suffering with enlarged glands about the neck who was undoubtedly, in my mind, suffering with tuberculosis, received from milk, probably.

Here we have some interesting looking outfits. This is a picture of some of the different forms of bacteria. They are so small they can be seen only with a microscope.

and many people think because they are so small they can't be very dangerous. I remember very well the first time I showed some bacteria to a lady, some time ago, now some 38 years ago. I showed a lady, through my microscope, some bacteria for the first time, she had ever seen them, and she exclaimed "How large are they?" "O," I said, "If there were twenty thousand of them arranged in a row, the row would be an inch long". "O", she said, "I am not afraid of those little fellows" but it is because they are small that they do harm. They creep into places where larger objects could not go and they have a marvelous power of multiplying. Some of these bacteria are able to multiply so rapidly that they double every 15 minutes.

Now, I want ^{you to make} a little estimate, some of you good mathematicians, and figure that up and see how many different bacteria we would have starting with one, how many bacteria would have developed at the end of 24 hours, that is, after 96 doublings. We will make it 25 hours and then we will have 100 doublings. After 100 doublings, tell us how many there will be. There will be something like a trillion, trillion, trillion. It is getting away up into high figures, so high you will have to get a professor of mathematics to tell you how to pronounce it, and the volume of the product of one bacteria, doubling every 15 minutes, in 25 hours, the volume will be a cubic mile, or more. More than a cubic mile. That seems beyond belief, doesn't it? It is beyond belief because it never happens. Bacteria must have food, they must have air. They must have room to grow and develop. Bacteria produce poisons which are poisonous to themselves just as you and I do. An animal produces poisons that will kill it. If a child is coughing, and it chokes, it strangles, gets black in the face. Why? Because it is poisoned, it is asphyxiated by the poisons. The carbonic acid gas which is being produced in its own body is accumulating. (Every persons body is a factory of poisons and the poisons must be eliminated as rapidly as they are produced or, if they accumulated in the body, we would die of poisoning. Every man that ever died, died of poisoning. Every animal that ever died, even every animal that was slaughtered, died of poisoning, that is, the final death.

To make that a little plainer, let me tell you a story. I was down at Key West some years ago and I happened to be in the turtle market one morning, but I didn't know it. I saw on the counter various cuts of meat, different sorts of chops,

steaks and things lying about and I observed the man behind the counter kept putting the chops and steaks back onto the counter, for they were creeping off. There they were all creeping off. There was a big heart beating on the counter. I confess my hair nearly stood on end. I felt creepy, I felt decidedly shocked. I rubbed my eyes and looked again, but there it was, sure enough, and this man was actually herding his steaks and chops, to keep them from running away from him. So I said to him "What does this mean, sir? What does this mean? I never was in such a place as this before." "Why", he said "This is the turtle market." He said "Look out that door" and I looked out the door and there were some tortugas lying on their backs and their heads and legs wriggling, and they were trying to escape, but of course they could not, when lying on their backs. One of them had been killed that morning. "Why", he said "They will keep on kicking and wriggling until they get into the pot. They actually won't die until they are cooked". If they were left a lone a day or two in the hot sun, they would not die, they would be still alive.)

Now, that is true of an animal that has had its throat cut, that has been knocked in the head. Its tissues are still alive, but they do not remain alive as long as they would in a cold blooded animal because the activity of the tissues is greater and the poisons produced by the tissues by and by bring about paralysis and death, and (the final death of an animal, whether its throat is cut or whether it is shot, or killed in another way, is the result of poisons accumulating in the individual cells and the germs produced by the cells. Then the germs swiftly grow.) One germ produces a very deadly poison. The germ that raises bread produced alcohol. It is not the same germ, but it belongs to the same family of organisms. A yeast cell produces alcohol. Now alcohol is an excretion. Alcohol is an excretion of a yeast cell. It is the waste matter of the yeast cell. Whenever you are tempted to drink beer, or alcohol in any other form, remember that it is the excreta of a yeast cell that you are drinking. This excretory matter is very poisonous to the yeast cell, more poisonous to the yeast cell than to the human cell. The yeast cell will be more quickly killed and show damage more quickly even than a human cells do, to alcohol, it is so very sensitive to it. When yeast cells are growing in a solution of water, for

example, in 24 hours the amount of alcohol produced is enough to slow it down to one one thousandth part, so it only grows with only one one thousandth part of the activity it had in the beginning. (All germs produce poisons, all of them. Every germs produces poisons, that is, I should say, which are poisonous to themselves. Now some germs produce substances which are not poisonous to human beings. They are non-poisonous germs. Some others produce poisons which are as deadly as the venoms of snakes, and will actually produce death in quantity even smaller than the venom of the rattle snake, they are so very very deadly. These germs are pathogenic germs, they are unfriendly germs) and they are the kind of germs you do not want to have much to do with, but we will say some more about them a little later on. Here are some of the various forms of these germs. These germs are very friendly, are frequently found and some germs similar to these produce typhoid fever.

There is a specimen of what you see in ordinary dust. Ordinary dust is made up of these germs. Those little specks are the germs or the spores of germs little particles that would develop into germs if they had a chance to grow. Here are some tubercular germs. These are the germs that get into the lungs and into the lungs and grow. These are the germs right here, and the growth of these germs produces a disease called tuberculosis. Now these germs produce a poison called tuberculin, and it is such a deadly poison that when there is any-amount of it in the blood, it will cause the temperature to go away up, produce fever, kill, and that is why a person suffering from tuberculosis suffers a rise of temperature, because of the effects of the poisons produced by the tubercle germs. The tubercle germs produce a number of poisons. Some of them are excreted and others are retained in its own body. They are two kinds of poisons, and this is true of most germs. T

Here are some other germs. These are diplococci. A single one would be a coccus, but two together are called diplococci, that is, a double coccus. These are the germs that produce pneumonia. There are several germs that will produce pneumonia, but these are those that produce the true pneumonia, the most common form of the disease. Sometimes they get into the little ducts you find in the tonsil. These tubercle germs get down into those little ducts and live there for a long time. I suppose, if every person in this room were examined for pneumonia germs, you would find

pneumonia in the throat, tonsils or mouth of, perhaps, half a dozen persons in this room.

If a person has had pneumonia, he carries these germs in his throat or sputum, maybe for weeks or months, after he gets over the pneumonia. Then he is liable to another attack or to communicate the disease to other people, so these germs are ~~being~~ dangerous germs and pneumonia is coming to be, especially in cities, one of the most fatal of all diseases. Pneumonia is increasing so rapidly it is getting to be the most fatal of all diseases. Old people and babies are the victims of pneumonia. People in youth and middle age are little subject to pneumonia. It is the enfeebled organisms, the worn out old man, whose heart is weak, or the feeble old lady, especially a person suffering from rheumatism whose body is deteriorated by dyspepsia, autointoxication, and other things. A dyspeptic person is likely to have pneumonia, and feeble babies under three years of age are more likely to have pneumonia.)

Here are some more of the tubercle bacilli. The leprosy bacillus looks so nearly like the tubercle bacillus, it is practically impossible to tell the difference between them. This is not a germ, but it is the malaria parasite, The parasite that makes malaria fever. If any of you have had malarial fever, it is because you had those bugs in your blood. They are carried by the mosquito. (If a ^{mosquito} person bites a person who has malarial fever, gets some of those bugs in the stomach, and they get in the salivary glands of the mosquito, then when the mosquito bites you, he expectorates into the wound. Wherever the mosquito runs his hyperdermic syringe down into the skin, the first thing he does is to expectorate or shoot out a little saliva into the wound, and the saliva is for a very inconvenient purpose. The purpose of doing this is to poison the tissues so that they will become congested. The blood vessels dilate and that enables him to get the blood that he wants. He is there for blood.) He is bleeding you, so he causes a congestion, you see, a hyperemia, to dilate the vessels.

The doctor does
Then he can get the blood more easily. He does the same thing when he is going to take a specimen of blood, he pinches your finger so as to make it full of blood. Then he puts in a pin or a minute needle he has for the purpose and gets the blood and the mosquito does the same thing, and that saliva he injects into the skin has some of these parasites in it. Then the parasites get into the blood and produce poisons, and the poison produced by these parasites produces the chill, and then the fever and then the

sweating and all the various symptoms of the disease.

Here is another specimen of makers of dust and germs scattered around in the dust. Dust generally contains masses of germs. Here is the malarial parasite again, in another size. It goes through several different stages of growth. Here the parasite is growing inside the cell, of a red cell. Here it is just starting. Here it is developing. Here is the parasite before it got into the cell. The parasites get into the cells and then they grow and grow, until they destroy the cell. Then they multiply and subdivide, you see, break up the cell. Here we have eight or ten parasites where we only had one to start with, and then each one of these gets into a cell and he does the same thing, so it keeps on repeating and multiplying in enormous numbers, and in a very few days, it may eat up half the blood. (That is ~~while~~ why one gets filled so rapidly with malarial fever, because the parasites are actually eating up the blood.) Then they get larger and larger and this is one has reached an advanced stage of development. (They pass through a number of different varieties stages. There are several periods of these parasites. Some of them will cause chill and fever every day and some every third day and some every fourth day, so there are different varieties of them.)

This shows some typhoid fever germs. Some of these germs produce poisons which corrode the tissues and the typhoid fever germs will cause an ulcer. This is an ulcer in the wall of the intestine, and the ulcer became gangrenous, made a sloughing, a hole right through the intestine and the patient died of perforation of the intestine. Many of these different kinds of germs have the power to make ulceration. For instance, here is a case of pericarditis. A calf had tuberculosis, had tubercular germs in its pericardium, the capsule of the heart, and this was covered completely with tubercles and here are tubercle masses causing ulceration of the mucous membrane of the intestine of a hog. Many hogs have tuberculosis. It is a very common disease in hogs and they get tuberculosis from eating the milk of tuberculous cows. That is the way they get diseased. Here is a portion of a liver of a hog, all full of tubercle abscesses.

Not long ago the United States Government sent out a circular to all its

inspectors connected with the packing houses, instructing them that they must not let any more fragmentary livers go abroad because ~~they were~~ was sent back from England a large consignment of pig livers, 30% of which were cut up in pieces. Now those English inspectors knew that when a hog's liver had been cut, it was for the purpose of cutting an abscess out of it, so 30% of all those livers had been cut, so the English Government passed a law that no animal could be received into England unless the viscera were sent along with it. They must send along the viscera, the liver, stomach, heart and the other organs so that they might know, by examining them, that the animal was healthy, you see, and they don't send livers over there any more without sending the whole beef along. What became of those livers, do you think? They all go into the American market. They are made into sausage, into ^{pate de foie gras} patebeffoiefgraf (?) and other dainties of various sorts. Now that is a piece of a pig's liver that is all full of tuberculosis, you see. Every spot there is a mass of tuberculosis. That kind of liver makes splendid sausage and you never know the difference in the sausage.

There is another liver with great tuberculous masses in it. Every one of those masses there is a mass of tubercles. The ordinary butcher doesn't know anything about that. The country butcher never dreams there is anything wrong about that. He doesn't see any reason why it should not be all right. He doesn't see why those little fellows do any harm.

Here you see another case. This is the way a liver looks without the microscope. Those little white specks you see in the liver are tubercle masses. You can see them with the naked eye. I presume some of you have seen them before. You thought it was simply a variegated liver, and did not know that it was a liver full of tubercle germs. Here are some enormous masses of enlarged glands, masses of glands enlarged with tuberculosis. Tuberculosis is getting to be exceedingly common in animals. It is calculated that in certain parts of the country more than 10% of all cattle are infected with tuberculosis.

Now, in New England, tuberculosis has become so exceedingly common that they do not kill the cows any more. They thought it was going to bankrupt the farmers to kill all the cows that had tuberculosis, so they turned them out into pastures by themselves and they have the open air treatment, and the cows are getting well and that

is splendid. That is better than killing them. The cows never would have tuberculosis if they were not shut up in stalls, but you see cattle are, like human beings, born wild. We are all born wild. Did you ever stop to think of that? It is taming ~~that~~ spoils us.) We are all born wild. Now, if we could run wild and grow up wild, there are a lot of diseases we would not have, we would not have tuberculosis and we would not have cancer. Those two things we would not have and we would not have pneumonia.

Pneumonia and tuberculosis are house diseases, due to the fact that we live in houses and come in contact with the conditions of life which prevail in houses, shut away from the sunlight and shut away from the fresh air, breathe a great amount of dust, and so we get this house disease, tuberculosis.

Cancer is a disease of civilization. As I was saying, we are born wild, and if we only grew up wild, we would not have these diseases. Now one purpose of this institution, my friends, is to show you how to get away from civilization, to get back to Nature. That is what we have this outdoor gymnasium for, so you can run wild for a little while and get the benefit of the wild life, the natural life, which is preventive of a great number of most horrible maladies which afflict our modern civilization. Now, this is a little speck of fecal matter from the bowel discharges, and this shows to you the germs. Every one of these is a germ. Some are long, some are short, some are little round bodies, and these little round bodies are cocci. They produce putrefaction. These long ones are, some of them, Welch's bacillus and some of them, in this particular case, most of them are Welch's bacillus. That is a bad flora. The plants which grow in a country are called its flora. These germs are plants and they grow. They belong to the vegetable kingdom and they are growing in our intestines, and they are called our intestinal flora. That is the way the bacteriologist speaks of them. He calls them flora. (So when a person has bad germs, he don't like to say germs, that doesn't sound very nice, so we say he has a bad flora. In other words, he has weeds in his garden, instead of flowers, and this garden is mostly weeds.

Here are some more germs. These are the kind of germs that produce intestinal dyspepsia. Babies that have that kind of germs have dyspepsia. Here are the germs that

cause dysentery. Here are the germs found present in colitis. Each one of these conditions has its characteristic flora. A particular kind of germs make a particular sort of trouble.

Now the important thing to civilized people is to know how to keep their flower gardens in a wholesome state, to get rid of the bad flora that is making the trouble, and help to cultivate a healthy flora. Unfortunately, many of the habits of our civilized life are such as to encourage the growth of bad flora, of bad germs, and this is particularly our habits which pertain to our eating custom. Now, down in South America there is a bird that lives on bananas, and that bird has such a fine flora growing in its intestine that the fecal discharges, the bowel discharges from that bird have the fragrance of a banana and are absolutely innocuous. There is nothing at all the least bit offensive about the droppings from that bird any more than there would be about the banana. They have the odor of bananas, are entirely free from germs and are entirely wholesome, so far as any toxic substance is concerned. It is entirely free from anything innocuous.

These germs you see are friendly germs. That bird lives on bananas. That is the reason why it has this wholesome flora, these friendly germs, and is entirely free from anything that is unpleasant or injurious.

Now, friends, here is an animal that lives entirely on meat. A lion, if you please, or a dog that is fed on meat. The flora of that animal is simply horrible, simply loathsome. The fecal discharges of a cat or a dog are horribly offensive. Now, in young dogs fed on bread and milk it isn't so. The young dog is fed on bread and milk and it has a sweet breath, but the old dog that has been eating beef steak and dining out of the garbage box and has been addicted to these unwholesome and loathsome articles of food, to this bad bill of fare for a number of years, has such an odor about him that his breath is simply disgusting. (Let a ten year old dog or a twelve year old dog walk through the house once and the smell of that dog has gone through the house.) You all know that. Now, it is just simply the difference in the diet. (If you feed that dog on the same diet that the puppy is fed on, his breath would be sweet and he would not carry that horrible bouquet around with him all the time. A little puppy you don't object to taking in your arms, and there is no offensive odor

left behind. His breath is sweet and his blood is clean and his tissues are clean. The same thing is true of the kitten. The old cat that has been eating meat has a bad breath and the bowel discharges of such a cat are simply horribly offensive, but if the cat's diet had been bread and milk instead, the cat is not offensive, and its tissues are not offensive.)

A hog fed on meat is several times as offensive as a hog that is not fed on meat. The flora of the hog fed on meat is much worse than the flora of a dog. Swine flesh, pork, in order to be sweet, and toothsome, and, all animals for that matter, must be fed on corn, clover, and wholesome foods, but you feed the animal on dead calves and dead hogs and let these animals grow up behind a slaughterhouse, as they sometimes do, and are fattened behind the slaughterhouse on the entrails of the animals and the offthrow of the slaughterhouse, the animal becomes so offensive, it can be distinguished by the odor. I know this from men in the business. A man told me 25 years ago "I never buy and never sell pork that has been fed on meat. I can always tell it by the smell of it so I never buy it and never sell it to my patrons."

The chief place where these germs grow in the body is in the colon. The foods pass very rapidly from the stomach down through the intestines into the colon. The food passes from the stomach to the colon, normally, in four hours, that whole 25 feet. Then there are five feet more here which require anywhere from 15 to 20 hours to a week or two, according to the individual condition. The food passes so rapidly from the stomach to the colon that there is no time for germs to grow. The germs that live in the intestines are not doubled every fifteen minutes, fortunately for us they don't grow so fast as that, and then another thing, the poisons which the germs themselves produce are so deadly to the germs that they prevent their rapid growth. That is the reason why they do not grow so rapidly that they become greater than we ourselves can deal with, even greater than we ourselves can volume. They get down here in the colon, and then stasis occurs. When they get down here, if the colon is not emptied promptly, as it should be three or four times a day, then they accumulate and produce gases, sometimes, and the colon becomes stretched, it becomes enlarged, and there is stasis. (Now the same thing happens to the food that happens to water when it stagnates. When the pure water comes down from the mountain brook, it is

clean, sweet, sparkling, but when it gets down into some valley and remains for a week or two, it gets stagnant, covered with green slime, and is foul smelling. When the food remains in the stomach an hour or two more than it ought to, it begins to smell bad. When it remains in the colon longer than it ought to, it simply rots, it becomes putrescent, exactly the same thing happens in the colon that happens to a dead rat in a closet.) Rotten beefsteak in the colon is just exactly as bad as though you had eaten a dead rat, and it was lying around there in the colon. It is just the same thing, there is no difference. The flesh in the tissues of a dead rat is just the same as the flesh in the tissues of any other animal, whether of a rat, squirrel, rabbit, pig or frog, or some other beast. The flesh is dead and decaying, and the flesh in a state of putrefaction is converted into a deadly poison. Now, that is what happens in our civilized conditions among civilized nations. (Almost every man and woman you find in a civilized land is suffering from auto-intoxication, because of this putrescent state of things in the colon. It is almost the universal condition. That is why life is being abbreviated so very fast. The old patriarchs lived a thousand years, according to the Good Book. Methuselah lived to be 969 years old and Noah lived to be almost as old, over 900 years. People thought a year, in those days, was only a season, 3 months, instead of a year. But suppose that to be true, 900 years, divided by 4 would be 225 and that is a pretty good life. We would be pretty well satisfied if we could live a couple of hundred years, wouldn't we? We have lost a large part of our life that belongs to us. The average length of life at the present time is only 42 years, think of it.) (Very few people live to be 100 years old. Only one in 25,000 in the United States is 100 years old at the present time, only one in 25,000, while, in the little country of Bulgaria, one in every thousand is 100 years old. Germany, the most civilized country in the world, has become so degenerate that there is only one centenarian in every 700,000 people, so there are only 74 centenarians in all Germany, and in that little country Bulgaria, which has a population about the same as that of Michigan, there are as many centenarians as there are in the whole United States, almost as many as we have in the United States in that little country of Bulgaria. It is because of the difference in diet. In Bulgaria they live on wheat and fresh vegetables and sour milk.) The Bulgarian buttermilk, or Yogurt, as they

call it, Yogurth they call it. But the Yogurt buttermilk you have on the table upstairs is made from Bulgarian germs which came from Bulgaria, sent to me by some friends of mine over there, and some of the germs came from Mt. Ararat. They are friendly germs. They were given me by a missionary. A missionary came along and tasted our Bulgarian buttermilk and he said "I have something better. I brought it with me from Mt. Ararat". He had been a missionary at the foot of Mt. Ararat for 40 years and he had become accustomed to this buttermilk and he brought me a specimen that his wife had tended and nursed all the way across the ocean and they got the germs here in a good, healthy, vigorous state, and we added those to our collection. We had some Bulgarian germs from the Pasteur Institute and from Sophia, Bulgaria, and we got some more from Mt. Ararat. We particularly prized those because somebody suggested they must have come over in the Ark because Noah lived to be almost a thousand years old and he must have had these longevity germs to help him along and if he had as good a thing as these germs, he never would have left them behind. So the argument is conclusive, isn't it? (We got some more Bulgarian germs from India. Over there they call it dhadvi. In Egypt, they call it leben, in Turkey they call it madzoon, in Bulgaria they call it Yogurth, but it is all the same thing, it is made from the same germ. We have gotten specimens from all these different countries and found the same germ in them all. So, to make sure we had all the benefit we could get from the whole world, of Bulgarian germs, we combined them all together and that is the Sanitarium buttermilk.) These germs produce acid, which are inimical to the growth of these putrefaction germs. These putrefaction germs produce alkalis and when they grow they produce ammonia. That is what makes the strong odor of the putrefying mass. It has a strong, offensive odor, and that strong odor is due to ammonia, and that is an alkaline substance. & it is possible to measure putrefaction by the alkalinity. Some of you have had a fecal examination made and under the head of Alkalinity, you have noted a certain number, perhaps it was 48 or 75 or 80 or 90 or 100, or 0. The higher it is, the worse the putrefaction is. I had a case the other day in which it was 118. That means that 75 c. c. of acid solution were required to neutralize the alkaline presence in 100 grams of dry fecal matter. Those

of you who are chemists will understand that. Some of the rest of you won't, so it will do no harm to tell you what it means. If you go to the laboratory, you can see the process over there. That is the measure of the amount of putrefaction, because if acids were present in sufficient quantity, the putrefaction would not take place and then we could not have the alkali present, either, but we should have a neutral or slightly acid condition here in the colon, but the average civilized man has an alkaline condition because there is a putrefactive state of the intestinal contents, but the alkalis produced are not the serious substances. The really serious matters are the poisons that are produced, that I was telling you about, that are allied to the venoms of snakes, are produced by this putrefactive process. Some of them are very subtle poisons, and they circulate through the blood vessels and cause hardening of the arteries and that is the reason why hardening of the arteries begins in this part of the body. (The hardening of the arteries begins in the arteries of the abdomen.) You find a person with high blood pressure and they have arteriosclerosis in the abdomen. They have got it there, sure, or they could not have the high blood pressure continuously. They might have high blood pressure a short time, and the temperature might go up high enough to raise the blood pressure, or exercise might raise it or you might smoke, and the will raise blood pressure, but if it is there all the time, that means hardening of the arteries of the intestines, any way, and there may be hardening of the arteries elsewhere, besides. It extends from these arteries to the kidneys and to the brain and produces apoplexy and Bright's disease in this way, and extends to the vessels of the liver and that is hardening of the liver, and sclerosis of the liver. This hardening of the arteries becomes this universal disease throughout the body. (One of the most important things to be done in case of chronic disease, is to free the intestines from these bad germs that make poisons. They are responsible for the great majority of chronic diseases.)

Skin diseases are chiefly produced by these horrible colon germs. They get up into the gall bladder, that you were looking at a moment ago. They creep along the intestine and get into the gall bladder here. They come along up through the intestine, get up through that little duct there and get up into the gall bladder. There

they produce infection and mucus is formed and gall stones and inflammation of the gall bladder and these inflammations extend outside of the gall bladder and cause adhesions of the stomach to the gall bladder, and these adhesions are very common. Many persons think they are suffering from indigestion because they have pain two or three hours after eating. It is because the food stuffs passing through the stomach and a portion of the intestine, which are entangled with these adhesions produces pain, causes pain, and the adhesions of the gall bladder give rise to the same condition.

The other day, in performing an operation, I found the gall bladder all folded in completely, covered up, could not find any gall bladder, as a matter of fact. There was such a bad state of things all about this region. Sometimes we find the gall bladder adherent to this part, as we did a day or two ago. This patient suffered great pain after eating. We broke up the adhesions and I have no doubt the patient will be relieved. (Dr. Metchnikoff of the Pasteur Institute, who fled many years ago from St. Petersburg, because of persecution there, to Paris, took refuge in this French city, and he entered the Pasteur Institute and he has become world famous as a bacteriologist. He was one of the pupils of Pasteur, and under Pasteur he took up the study of this putrefaction, of the colon, and he has become satisfied by his extended study that these poisons growing in the colon are the chief cause of old age. They might be called old age germs. They cause disease that produces old age, cause hardening of the arteries, wear out the kidneys and the liver, and by and by result in apoplexy and paralysis in various forms. These diseases which afflict old age are due to poisons produced by these germs in the colon, so the most important thing of all is to get rid of these germs.)

How are we going to do it? That is a very interesting question. The germs must have food. I will give you a few fundamental principles and I am sure you will see the importance of attending to this matter of diet. Suppose you have here at the dinner table some roast beef, beefsteak, oysters, apples, bread and potatoes, six different things. You have some fruit jars here and you put the beefsteak in one fruit

jar put some oysters in another jar, and you put another kind of meat into another jar, and you now have three jars with different kinds of meat in them. Then in the other three jars, you will put in each one, an apple in one, bread in another, and potato in another. Now, one jar has a potato in it, another has an apple, another has bread, another oysters, another beefsteak and another has a bit of sausage, we will say. Now we put those jars all away in one place, a place just as warm as you are yourself, put them behind the stove, or in some warm place that is warm enough to raise bread and keep them at body temperature for a week, or three days, we will say. Then open up those six jars. Now you open up the apple jar and there won't be anything very bad in it. You will get a smell of apple, a very appetizing odor. You open up the bread jar, and there won't be anything bad, possibly a little flavor of mold, or a little bit sour. You open up the potato jar and it may be a little sour, too, but nothing very offensive. But now, open up the beefsteak jar and you would hold your nose, sure. Open up that bologna sausage jar, and that will be likely to smell rather stale, open up the oyster jar, and you will throw it out doors, there is no doubt about it. You will have to get away somewhere to get out of that stench.) Now, why? Why? (Because oysters and all animal substances meats of every sorts, harbor germs. Germs are always present in them and ready to begin growing and they grow if they have a good chance. That is why you have to keep live oysters on ice. Oysters on the half shell must be kept frozen and hard, or in a very short time they would become very offensive, and very poisonous, too. Oysters are about as deadly things as you can swallow. They have caused the loss of more than one persons life. The germs of putrefaction, such as you see here, are always present ready in meat and they-commence to grow if temperature is nearly that of the body, or even at a lower temperature. Some of them grow at a temperature, even below freezing, very slowly, but still they will grow. That is the reason why meat that has been in cold storage a long time goes bad very quickly when it is taken out. It is because germs have been growing there all those months., in such great numbersthat as soon as the temperature is raised, a little, the whole thing goes to pieces quickly. If you eat that cold storage meat, all that goes on in the lower part of the alimentary canal; the

part that has not been digested or absorbed promptly simply undergoes decay, so you see there are certain foodstuffs that encourage the growth of germs.) (Another reason is that these germs require the substances which are found in meat to promote their growth, whereas the substances that are found in vegetables, starch and sugar and things of that kind hinder their growth. That is the reason why vegetables do not rot readily, while animal flesh of all kinds does.)

Here you see these kind of germs. Those are the kind of germs one gets when he eats meat. These are the kinds of germs found in the bowel discharges of animals and people who eat meat. If you look on your report that came back from the laboratory, you will find positive cocci. When you see positive cocci, that means this: that is just what you see here and these are the germs of putrefaction. Every time you see positive cocci, think of dead rat, if you please, and you will have just the right impression. Those are dead rat germs, what you find in the dead rat in the putrefying mass anywhere and when you see positive cocci on your report, it means dead rat, it means there is something after you.

Now, you will see another thing, Welch's bacillus. Welch's bacillus is one of the worst germs that lives. (One of the worst germs known is this Welch's bacillus, which was discovered by Professor Welch of John Hopkins' University 15 or 20 years ago and was an exceedingly deadly germ. Welch's bacillus put underneath your skin will produce more quickly than almost any other germ. It produces very offensive gases. It is the Welch's bacillus that makes those horrible gases.) (I saw an account in a paper not very long ago of a man who went to a circus and touched a lion that he had been acquainted with ~~ten-or~~ years before, he put his hand through the bars and touched the lion and the lion was asleep, but he woke up, and seized the man's arm before the man was aware of what was happening, and simply crushed his arm completely before he could get the lion's jaws loosened. This man was taken to the hospital and in a few days he died in awful agony. His arm swelled up as though it had been inflated with gas. An examination showed that it was Welch's bacillus. The lion had eaten meat with the Welch's bacillus in it, as all meat has, and some were in his mouth, in his saliva and that innoculated the man with this Welch's bacillus.) (Now, when you are going

about with Welch's Bacillus in the colon, growing there, and producing the same poisons that killed that man, it is no wonder, you have a headache, it is no wonder you have got pains and neurasthenic symptoms and exhaustion and that you can not sleep well at night. The wonder to me is that you are half as well as you are, when we make these examinations and see the dangers and poisons to which you are exposed. So when you find, in your report, Welch's bacillus, you know what that means. It means there is a germ growing there that produces poisons and that these poisons are of a most deadly character, and that you are in a state of intoxication, you are drunk, food drunk, drunk with decomposed food, with the products of putrefaction.

I told a lady that a year or so ago. I examined her and I said "I see, madam, you are suffering from auto-intoxication." "You are entirely mistaken", she said, and she was very indignant "You are entirely mistaken. I have not had a drop since night before last." She said "You know, I do take a toddy at night to make me sleep, but I didn't have any last night". She was here and could not get it. "Well, I said, "This kind of intoxication that you have is a great deal worse than whiskey intoxication, a great deal worse than toddies. Why, toddies are nothing at all compared with this intoxication that you have got. A person can drink toddies a long time before he would get a leather colored skin. He might get a ruby nose, but he would not get a leather colored skin!" (A person could drink toddies a long long time before he would get those horrid brown spots on his hands, that a lot of you have got before he would get that awful taste in his mouth and that horrid dead rat breath that you have got. Yes, it is a dead rat breath. I have met any number of people who had breath that smelled just like dead rat, and for the same reason, because dead rat germs were growing inside and producing this horrible odor, carrying it off from the lungs.)

Now, my friends, you smile at some of these things, as though you really thought it a joke. Now, that is the greatest mistake in the world. There is no joke about it. Your breaths are so bad they nearly made me sick and there isn't any joke about that. I don't mean those who laughed, I mean the man I was examining the other day. I actually had to open the windows to let the fresh air in and hold my breath every

time I came near him. I was talking to him about eating beefsteak. "Why", he said "I can't get along without beefsteak. Meat has been for years my principal diet". "Well", I said, "I should think so". He said "You don't say I have got to give up beefsteak, do you?" "Well," I said, "I should think you would want to. If I had such a breath as you have got, I would." He said "Do you mean to say my breath is bad?" I said "Well, I should think it was. Do you know what your breath smells like?" "Why, does my breath smell bad?" he said. "Your breath smells like dead rat." "Well, I declare, I didn't know my breath smelled bad."

Now, my friends, this is no laughing matter. It is a practical thing, a serious thing, the most practical thing I can talk to you about. There is not a thing I can ~~te~~ say to you here in the few opportunities I have to meet you here, there is not a thing I can say to you of so much importance as this thing. It is the fundamental thing if you want to live long and live well and be free from headache, be efficient and be free from that tired feeling that the advertising columns of the newspapers talk so much about. If you want to get rid of that thing and feel yourself free and full of vim and vigor, amination and health, you have got to get clean, you have got to have your interior clean, as well as your exterior.

What does the Bible say about cleaning the outside of the platter when the inside is chiefly dead men's bones? Well, I suppose that means chicken bones, and things. It is all the same thing. Anything that rots and decays is offensive, it is poisonous and frequently deadly, (so if we want to be clean inside, we have got to be careful about what we take into our interiors. Suppose you had your pantry filled up with such things as raisins and prunes and Zweibach and wheat and rye and barley and oatmeal, and things of that kind, why you might go away from home and stay a year and come back and everything would be sweet in the pantry, but suppose you left in your pantry, when you went away, some beefsteak, from the butcher's and some codfish, mackerel, herring, and a whole lot of things of that kind. When you get back, it will smell like a slaughterhouse in there because there has been decay and putrefaction.

Tell me this, is there any reason in the world why the food that goes into the mouth should become so horribly offensive and **diggusting** when it passes out of the other

end of the alimentary canal? Here is a canal thirty feet long. We are very very careful about having things clean that go into it. Some people are not so careful. I have known some people to eat limburger cheese and such things, and I think they are not very particular about having things clean, but we generally want to have our plates clean and the knives and forks clean and a clean napkin and clean table cloth and everything sweet and clean, so we feel a little fastidious about what we eat, but now, my friends, why shouldn't this same material that goes into our interiors stay clean? We take the bread in the hands, but the bread does not become rotten and offensive because of contact with the hands. We take it in contact with the mouth and it does not become rotten, offensive, from contact with the mouth. Why should that food become decayed, rotten, putrescent in contact with any part of our bodies? Because we have become infected, polluted, in our interior and the most important thing we can do to promote health and longevity and efficiency and usefulness and comfort and be free from pain, the most important thing for us to do is to get clean, and the most important thing toward getting clean is to take care that we put nothing that is not thoroughly clean into our interiors. (Professor Metchnikoff has become so fastidious about this thing, that he has, upon his table, where he eats, a little alcohol lamp and a silver dish and every article of food he swallows is sterilized in that dish before it goes into his stomach.) That is the way he looks at this question. Here are some

Here are some friendly germs. These germs are the bacillus Bulgaricus, the germs of Yogurt buttermilk, and the bacillus bifidus, the native germ, the healthy germs that grow in the intestines to protect it against the encroachment of these unhealthy germs. These are entirely different. There are just a few of the cocci putrefactive germs, just a few, but the great majority here are these friendly bacilli which produce acid which prevents putrefaction and the transformation takes time. Those of you who can read French can read that little letter you see. That is a letter I received today from Professor Tissier, Dr. Tissier of the Pasteur Institute. He is consulting bacteriologist for this institution. I wrote to Dr. Tissier and asked him to tell me all about glucobacter. That is Prof. Metchnikoff's recently discovered

and you see what Dr. Tissier says. He says "I received your ~~new~~ letter~~s~~ in which you ask me for instruction about glucobacter. I told you about it in a letter I wrote you the other day and gave you an account of the theory of Prof. Metchnikoff in the researches and the results he has obtained in his experiments which I have controlled, (that is, observed them himself, he watched the experiment), having seen them made under my eyes." All that he can say of this is that there has been two or three experiments made upon a man in which he has been able to decrease the amount of indican in the urine, and that shows the putrefaction was diminished. There has been a few experiments made upon such people. He says "I have given it, the glucobacter, a single time in a case of diarrhea, with colic, caused by bad fermentations in the intestine, without appreciable results. It will be, as I have stated in my first letter, only an accessory in intestinal bacteriotherapy. It will not be able to replace the bacillus bifidus or the bacillus lactus or the acidocela, that is, the bacillus Bulgaricus, which is included in this class. It will be, in certain maladies in which the starch is badly digested, aid. If you want further instruction, I will be glad to give it." I thought you would like to see this autograph letter from Professor Tissier so as to know that we get up-to-date information about these matters, and we are right after it all the while, because it is, in my mind the most important thing we can do for you to show you how to get clean and keep clean, how to get rid of these offensive bacteria and to get inoculated with healthy bacteria and keep them growing. That is why our dietary is selected with such great care on our tables. That is why we take care, not only to furnish you food, which will not promote the growth of these unhealthy bacteria, but which will encourage the growth of healthy ones.

The glucobacter of Prof. Metchnikoff is of value because it produces sugar in the colon. The Bacillus Bulgaricus produces acid from sugar, but it can not produce sugar, so Prof. Metchnikoff has been hunting for a germ which will convert starch into sugar, and then the Bacillus Bulgaricus, the acid forming bacteria, will convert this sugar into acid, which will prevent the growth of putrefactive bacteria. This is a valuable accessory, as Prof. Tissier says. Prof. Tissier, for many years, was Prof. Metchnikoff's assistant, but he is now his colleague, having a laboratory beside Prof.

Metchnikoff in the Pasteur Institute. I am glad to be able to give you this up-to-date information, because I am getting inquiries all the while "What about this @glucobacter? Is it a valuable thing?" We expect some of these here very soon, but in the meantime we have the Bacillus Bulgaricus and I recommend to you the Yogurt buttermilk as a good thing to use at every meal. It has to be supplied every day, preferably at every meal, as these bacteria will not live ~~very~~ long in the intestine. They must be continually reinforced. This is not their native home, so they simply come along as your friendly aid in getting rid of these infectious germs, that have taken possession of our bodies.

The normal bacteria, which protect, the normal flora is the bacillus bifidus. This bacillus is very delicate and it is very hard to inoculate the body with it after they have once been discouraged in their growth. They are found in infancy, but disappear ~~after~~ as we adopt the meat diet. People who have eaten meat and cows' milk lose the bacillus bifidus, and it is very hard to get it re-established. Just like a flower garden that has been allowed to run out, and the flowers have nearly all died off, and it is hard to get them started again, and the only way is to supply proper soil. The food is the soil, from which they must grow. The food must be right and then we must keep supplying new materials.] If some of you can not take the Yogurt buttermilk then Yogurt tablets will be the next best thing to use. Sometimes, it is a good thing to encourage the use of both of these. (Then it is necessary that there should be always some sugar go along with these friendly germs, to help them grow, not cane sugar, because cane sugar is not good for the body and it is not the best sugar for the germs, but the Malt Sugar, which is the best of all sugars. /^{If} you want to encourage the growth of the friendly germs, you will use Malt Sugar instead of cane sugar, and use it freely. Use it as a cereal, rather than as a sugar. Use three or four times as much as of ordinary cane sugar because it is a cereal and not a sugar in the sense in which cane sugar is a sugar. Chemically, it is sugar, just as much as cane sugar is, but it is not sweetening in the same sense that cane sugar is. It is a friendly substitute for cane sugar, for fruits, for your berries, cereals, Scotch brose, or any other cereals that you eat at the table, for the flakes of various sorts, I most heartily recommend you to use the Malt Sugar instead of the cane sugar.) You will find you will very soon get

accustomed to the flavor and you will like it, or the Malt Honey or Meltose may be used as freely as Malt Sugar. (There is no difficulty in changing the flora. It can be done. We have proved it out in our laboratory. In a recent research I received a report of today, I found, within four or five days from the time the treatment was begun and the diet regulation was begun and the administration of the Yogurt tablets, within four or five days, the Yogurt bacillus began to make its appearance in the intestine and inside of a week the Welch's bacillus had entirely disappeared. It was gone and the putrefactive coccus, the positive gram coccus, which is the putrefactive organism that I showed you a little while ago/^{dis}appeared at the end of ten days and it continued out of sight and it did not appear again until the patient had a little relapse. There was a stasis and when there came a stasis, then these bacteria very rapidly developed again, and so the attack had to be renewed so we must fight them continually after one has become inoculated, he must fight them continually.)

(There is one thing more I must mention in the battle against these germs and that is to cause the intestine to move so rapidly there will not be time for putrefaction. There ought to be three or four bowel movements a day, but you say that is not necessary to health. I am not sure about that. I think the bowels should move after every meal. That is the normal way. The average man is quite satisfied if the bowels move once a day, but that gives abundant opportunity for the accumulation of these putrefactive organisms and for their growth. There should be a bowel movement after every meal, but one who has gotten into a state of advanced autointoxication whose intestine is thoroughly infected with these putrefactive organisms, needs to have bowel movement four or five times a day, for a time, at least, until the bacteria are expelled. If they are carried off rapidly, they do not have time to grow. Their foothold is broken and the body is relieved of them and there is an opportunity for the development of healthy organisms.)

But I must beg your pardon for keeping you so long. I thank you for your attention.

July 27, 1912,

(For Good Health)

YOGURT FERMENTS IN THE TREATMENT OF INTESTINAL DISORDERS
IN INFANTS.

Dr. Clock of New York City, physician to the Babies' Hospital and lecturer in the New York Post-Graduate Medical College, reports in a recent number of the Journal of the American Medical Association remarkable success in the use of the Bacillus Lactis Bulgaricus, the active organism of Yogurt ferment and Yogurt buttermilk, in severe cases of gastro-enteritis and colitis, that is, acute cases of intestinal infection. Although some of the cases were of the most severe type, in every case a decidedly effective and happy result followed. The disturbance of the stomach disappeared, as well as the symptoms of auto-intoxication, the stools lost their foul odor, and the mucus and blood disappeared. The stools became normal in color and appearance on the third or fourth day, and there was no return of the disorder.

The remedy employed was one tablet dissolved in a teaspoonful of water after every bottle feeding, and in some cases before each feeding. No change in diet was made, and hence improvement was clearly attributable solely to the use of the Bacillus Bulgaricus. According to Dr. Clock, this remedy is invaluable even in very young infants. The ages of his cases varied from five weeks to ten months; but of twenty-two cases treated, fifteen were very severe/^{and serious}cases. Duration of the disease had been from one day to two weeks in most cases. In two cases which had been ill with colitis for two and four weeks decided improvement followed the use of the ferment within twenty-four hours. The stools became normal

on the fourth day, and within a week there was a gain in flesh. "The results were complete and permanent in every case; there was not a single failure or relapse."

That the remedy is harmless was shown by the fact that in some instances infants from five to six weeks took as many as twenty tablets in twenty-four hours. The diet of the children differed. No change was made in any case. The various diets included condensed milk, diluted top milk, milk mixed with various infant foods, milk with barley water, whey and dextrinized barley gruel, peptonized milk, modified milk with milk sugar. In all cases the vomiting ceased on the second day, evidently the result of suppression of putrefaction in the intestine. The temperature quickly returned to normal.

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~~CONFIDENTIAL~~

A NON-FLESH DIET SAFE AND WHOLESOME.

This is the opinion expressed by the Journal of the American Medical Association, the greatest medical authority in the world, representing the fifty thousand doctors of the United States who are members of this great Association, the largest organized body of professional men the world has ever known. Says this great authority: "Today no one can deny the possibility of adequate nutrition and the prolonged maintenance of health and vigor on a vegetarian diet." This remark was made after a consideration of the objections which had been offered to a non-flesh dietary, which were summarized as follows: "(1) A tendency toward poorer utilization of the nutriment contained in the vegetarian diet; (2) the blandness of such a dietetic regimen and its lack of desirable stimulating qualities; (3) the necessity of consuming a larger volume of food to furnish the requisite nutriment, i. e., its bulky character."

In the above statements are summed up all the objections which, at the present time, scientific men attempt to offer against a non-flesh dietary. The comments of the Journal of the American Medical Association upon these objections are exceedingly interesting and important. Here are some of them:

"But none of these factors furnishes serious obstacles to nutritive success, and at times each presents certain advantages. Modern vegetarianism has recognized some of the more objectionable features and has met the situation by a diversity of improvements which represent a real advance in modern food preparation."

In view of the long and strenuous opposition waged against the non-flesh dietary in the name of science by Woods Hutchinson and scores of writers before him, it is indeed encouraging to note that so conservative a medical authority as the Journal of the great American Medical Association should be

willing to make this frank confession that there are no scientific grounds upon which opposition to a non-flesh dietary can be urged, and that the efforts of food reformers have actually resulted in a "real advance in modern food preparation." This very candid writer expresses the real views entertained by modern physiologists and up-to-date medical scientists. To avoid being classed as a partisan, however, he adds the remark: "To grant the safety of the vegetarian regimen, however, it is by no means necessary to admit its superiority." It is not necessary that any authority should admit the superiority of the non-flesh dietary. The superiority of this clean and wholesome dietary is at once established the moment it is admitted to be safe.

The basis of all objections to the vegetarian dietary is that it is unsafe and that flesh food is necessary for the maintenance of health, strength, endurance and race vigor. If flesh food is not necessary for reasons heretofore claimed, which is universally admitted by scientific men who have given this matter earnest study, there is no room left for further discussion of the subject.

Here are a few of the advantages that place a non-flesh dietary upon unassailable ground of superiority to a flesh dietary the moment it is admitted that the objections which have been heretofore urged against it by such pseudo-scientific partisans as Woods Hutchinson, Sir Crichton Browne, and others have no scientific foundation:

Foods of vegetable origin are safe while meats of all sorts are unsafe for the following, among other reasons, which need only to be named to be appreciated.¹ Vegetables are not subject to tuberculosis, typhoid fever, anthrax and other diseases to which animals in common with human beings are subject,

and hence the use of vegetables will not communicate these maladies, as the use of flesh may do.

2. Vegetable foods are not subject to infection with tapeworms, trichinae, and other parasites as are animal foods and hence can not communicate these parasites to human beings.

3. Vegetable foods are not subject to cancer, jaundice, fever, abscesses, blood-poisoning and other maladies which often render the tissues of animals loathsome and poisonous.

4. Vegetables are little, if at all, subject to those forms of fermentation or putrefaction which produce ptomaines and other deadly poisons. Fruit or vegetables may sour or spoil, and vegetables cooked or uncooked may become stale, mouldy, etc. When such changes occur, the fact is easily recognizable so that they are not likely to be eaten in the large quantity necessary to produce serious ill effects; whereas, meats readily undergo changes which produce ptomaines so deadly in character that even when existing in so small an amount that their presence can not be detected by the taste or smell violently poisonous and even fatal effects may be produced. The molds and yeasts which cause the decay of vegetables are destroyed by ordinary cooking; while this is not true of the micro-organisms which cause decay of flesh foods.

5. Flesh foods are purchased in the market and in what is universally regarded as perfectly wholesome condition are already in the first stages of putrefaction and swarming with putrefactive bacteria which are not destroyed by ordinary cooking or by gastric digestion and which find their way into the colon with undigested remnants of the food, so that the process of putrefaction is continued in the intestines and the putrefactive bacteria become established in this portion of the intestines, giving rise to constipation, colitis,

hemorrhoids, and preparing the way for ulcer, cancer, tumors and other maladies.

6. Meats are almost wholly lacking in two highly important food elements which are absolutely essential for the perfect development and nutrition of the body, namely, the carbohydrates, represented in the ordinary food as starch and sugar, and lime, which is found in abundance in cereals and many other foods, but which is practically absent in flesh foods. For example, a pound of meat contains one-half a grain of lime, whereas a pound of peas contains eight grains of this important element. Starch is the chief source of glycogen, the element which supplies the body with energy for all kinds of mental work. When the body's supply of glycogen becomes exhausted, the heart ceases to beat, the activities of the body fail and death occurs. Lime is essential not only for the proper development of the bones, but for the maintenance of the healthy activity of the brain and nerves. A certain amount is discharged from the body daily and this must be made good. The almost universal decay of the teeth among civilized people is attributed by Professor Sherman of Columbia University and Burge of Yale, and other physiologists to lack of lime, for which the flesh eating habit is chiefly responsible. Professor Sherman estimates that half the people of the United States are suffering from lime starvation.

7. A meat or mixed diet supplies an excess of protein, which over-taxes the eliminative organs and fills the tissues with toxins derived from the meat and from the putrefaction of undigested remnants of flesh in the colon. A properly assorted vegetable diet supplies the body with a balanced ration, whereas it is impossible to add meat to a diet of vegetables in any except the very smallest quantity without giving an excess of protein. Professor Chittenden of Yale has clearly demonstrated the great injuries which result from a high protein diet, and the advantage of reducing the amount of protein in the daily

ration to about one-tenth the total calorie value. According to Professor Chittenden, the average American eats two or three times as much protein as is required. This is the natural, almost necessary result of a mixed diet.

8. It is true that vegetable foods are more bland and less stimulating than flesh foods; but flesh foods are too stimulating. Pawlow has shown that meat produces a gastric juice which is much more acid as that produced by cereals. The result of this is excessive irritation of the gastric glands, gastric hyperacidity, and finally ulceration of the stomach and duodenum. The experience of the Mayo Brothers and other surgeons has shown that ulcer of the stomach is very likely to develop into cancer. Dr. Turck, of Chicago demonstrated several years ago that flesh-eating is a cause of gastric ulcer. The "blandness" of the non-flesh dietary, which has been mentioned as an objection to vegetable foods, is thus really a great advantage, as it prevents over-stimulation of the stomach and the hyperacidity, ulcer, gastric catarrh and cancer which are the ultimate result of this over stimulation.

9. A non-flesh dietary is in all particulars naturally adapted to the human alimentary canal, whereas a flesh dietary is not. One of the best illustrations of this is the fact that animal foods are too completely digestible leaving no residue, so that the bile and other excretory products form pasty masses and adhere to the intestinal walls, causing retention or constipation and hence putrefaction in the colon. With a non-flesh diet, some portion of undigested material is carried into the colon, where it encourages the development of protective bacteria, which produce acids by means of which putrefaction is prevented and normal activity of the intestine maintained. This property of vegetable foods, which has been urged as an objection, is really one of the greatest advantages of a non-flesh dietary.

The vigor and heartiness of the Scotchman is largely due to his diet of brose, half cooked oatmeal, which supplies the colon with an adequate amount of undigested material to furnish food for the acid forming bacteria which are the natural protection against intestinal auto-intoxication.

10. The human alimentary canal is adapted to a bulky diet, as is that of the chimpanzee, gorilla and other man-like apes. The human alimentary canal is ten times the length of man's body and requires a bulky diet to stimulate a normal degree of activity. A lion's intestine is only four times the length of his body. Bulk is furnished by vegetable food, which alone contains the cellulose necessary to maintain the normal intestinal rhythm. A flesh diet is possible in the Arctic regions because putrefactive bacteria do not exist in that region. This makes it possible for the native Eskimo to consume large quantities of fat, as they are not subject to intestinal auto-intoxication and thus normal bowel activity is secured even without vegetable food, although these unfortunate people are always glad enough to obtain a supply of vegetable food when it is possible. The writer was informed by Mr. George Kennan, that the natives of Siberia in the winter season when ordinary vegetable food is not obtainable, eat the half-digested reindeer moss which they obtain from the stomachs of their slaughtered reindeer and find it an important means of maintaining bowel activity. The bulk afforded by a non-flesh dietary, which has also been urged as an objection to a fleshless diet, is thus, in fact, one of its chief advantages. The human alimentary canal requires according to Hertz, not less than 300 calories of cellulose daily. Cellulose is not found in flesh foods of any sort and hence must be derived from vegetables.

Here are ten important advantages represented by a fleshless diet. On the other hand, not one real advantage is offered by a meat or mixed diet. Practically all of the advantages named are admitted even by the advocates of a flesh diet, although, heretofore, the argument has been that a non-flesh dietary was unsafe.

Now that this bugbear is finally demolished, we shall perhaps find less opposition to the fleshless fare. At any rate, everybody who wishes to enjoy the great advantages of a fleshless diet, - immunity from parasitic diseases, freedom from gout, and intestinal autointoxication with the headaches, neuralgias, gastric ulcer, cancer and other maladies which are the natural result of a flesh diet, may be permitted to do so without any apprehension that the exclusion of meat from the bill-of-fare is likely to entail any untoward consequences.

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THE SIMPLE LIFE IN PRACTICE

A Stereopticon Lecture at the Sanitarium Gymnasium, Battle Creek, Michigan, Thursday,
August 15, 1912, at 8 P.M.

by

J. H. Kellogg, M.D.

Now I am going to show you some pictures of men who, by living the simple life and by adopting some or all of the principles which are propagated here in this institution have achieved success, or have attained a great length of life, have been restored from a condition of disease, to an efficient state of health and vigor.

The first face you see here is that of Cornaro. When Cornaro was a man of forty, he found himself completely broken down by the dissipation of his early years. He was not expected to live but a short time. He was a very feeble and incapable man. He reformed. He adopted an extremely abstemious and simple dietary, almost wholly made up of vegetable foods, and lived to be more than one hundred years of age, and performed a great amount of most useful work. He was an architect, a man of letters, an artist, he was a man who was greatly admired and who greatly influenced his generation.

Here is another picture of him, obtained from a very old book. This was copied from a very old Italian work, and I recently obtained it from Bretano and esteem it very highly, indeed. It shows the picture of a nobleman. He belongs to a noble family and was a man of wonderful ability.

Here I am glad to be able to show you, at last, the face of old Parr. Old Parr was such a prodigy of strength and vigor that he has been regarded almost as a myth, but many of you who have visited Westminster Abbey in London, many of you at least, I am sure, have noticed, in walking down the aisle, the slab dedicated to "Old Parr", and it says, on this slab "Here lies the body of Thomas Parr, who died at the age of 152 years, and nine months." This is his picture which was painted by Peter Paul Ruben and is now in the possession of a Mr. ^{Bryce} Bright, of England. This was copied from the original portrait

of this wonderful man. When he was 120 years old, he was able to swim the swiftest river.

Here is a picture of his son, "Young Parr", who lived to the age of 110 years. (Longevity is something that runs in families to a very remarkable degree, just as vitality and vigor of every sort runs in families, and is transmitted by heredity just as ~~blackness~~ is transmitted by heredity. If a father has black eyes and a mother blue eyes, the children will all have brown eyes. If a brown eyed man marries a brown eyed woman, and they have four children, one will have black eyes, one will have blue eyes, and two will have brown eyes. That is the way heredity runs. Now, if the black eyed man was a strong, vigorous, long lived man, his black eyed son, or black eyed grandson or black eyed granddaughter will also be strong and vigorous and have long life, you see, other things being equal. On the other hand, if that blue eyed grandmother is consumptive, then the blue eyed granddaughter will also be a consumptive.) (Diseases and weaknesses which affect the entire body are transmitted by heredity and the black eyes or blue eyes are simply a sign representing what the whole body is, representing that particular constitution, that particular organism.

Now "Old Parr" and his son lived to advanced age because of their simple habits. They were peasants. They lived out of doors, worked hard every day, and their diet consisted almost entirely of ^{coarse} black bread, butter milk and potatoes. They lived almost wholly on these simple foods. "Old Parr" went up to visit the King. The King wanted to see him, he was such a remarkable man, and the King feasted him for three weeks. Then he got acute indigestion and died of acute indigestion. He didn't die of old age, at last. He might have lived several years more because Mr. James Harvey, who examined his body after death, William Harvey, rather, made a post mortem examination and declared he had not a single organ in his body that was actually old. He was still a well preserved man when he died of this acute sickness.

Here is a picture of a remarkable man who lived 100 years ago

and lived the simple life, whose diet was chiefly potatoes, coarse bread and buttermilk, also, a man that did not live to a very great age, but did a prodigious work, the originator of the water-cure method of hydrotherapy. We use in this institution today methods originated by this man. The wet sheet rub, the wet sheet pack, the wet gridle and other methods were not originated actually, by this man, but were perfected, systematized by him and first used in the systematic treatment of the sick by him. The first center for the use of these methods was erected by this man, a man of wonderful natural ability, but of no education and no medical education and yet he cured patients that had been pronounced incurable by the wise doctors all over the world, and doctors themselves made pilgrimages to his little mountain village in the hills of Gravenburg, in Austrian Galicia, long pilgrimages that took weeks and weeks by stagecoach to reach the place for the purpose of watching these methods and acquiring a knowledge of them, and by this work of Preissnitz, the water-cure was introduced into this country about 100 years ago. Dr. Benjamin Rush, of Philadelphia, perhaps the greatest American physician that ever lived, and who was one of the signers of the Declaration of Independence, a man who was very active, not only in his profession, but in politics and in everything that pertained to the welfare of man, he employed the simple methods of treatment which were introduced into this country by those who had become familiar with this work abroad.

I am sure you all recognize here the fact of that wonderful inventor, Hudson Maxim, and I am glad to show his face because he is a man who lived a simple and a temperate life. Tobacco and alcohol he has violently opposed, and he lived a simple, wholesome life.

Here is Mr. Edison, also a man who believes in the simple life. He is extremely abstemious in his habits. He eats but a very small amount of food and is able to work continuously for almost 20 hours out of the 24 day after day, every week in the year. I visited Mr. Edison's laboratory and spent an afternoon with him in his laboratory in Newark some 37 years ago. I found him hard at work one afternoon in his laboratory. He had worked the whole of the day before and the whole

night and that whole day until three o'clock in the afternoon when I called at his laboratory, along with my friend, Dr. George M. Beard, of New York, who kindly invited me to go with him to make this visit. Mr. Edison spent all of the rest of the afternoon in making some experiments for our entertainment. So you see what prodigious energy this man possesses. (No man, perhaps, has done so much in the way of inventions as has Mr. Edison. Mr. Edison knows he could not do this work that he is accustomed to do if he did not lead a temperate life. He is particularly temperate about eating. He declares that his colon was in the condition of the country he found once down in Tennessee. He said he was going through a certain region when he was a boy and he met a farmer, and he asked him "What do you raise in this country?" It didn't look as though it would raise very much of anything, it was rather a desolate looking region, and the farmer said "Law, chile, when de rabbits go through dis yar country, they have to take a lunch along." So Mr. Edison says he keeps his colon in that condition, so that if there is a germ gets in there, it would starve to death. That is one of the very best possible means of avoiding the formation of these terrible toxines.) (It is not simply what we eat, but it is the quantity we eat. Mr. Edison says he eats one-third as much as most men do and declares that most of our great public men, ~~and~~ great railroad presidents and such men are killed not by overwork but by the big dinners they eat, and I have no doubt he is right in this respect.

Work does not hurt people very much. Rest and sleep will cure all the harm that work does. It is overeating, overloading our vital organs, producing these conditions of putrefaction in our interiors that kill our vital organs with poisons. This is the thing that leads to early death, to cancer and other horrible diseases, and degeneration, rather than useful work.)

Here is a picture of Leonardo da Vinci. You know this man, the great Italian artist, one of the greatest, perhaps next to Michael Angelo, the very greatest artist who ever lived, a man of prodigious energy, vigor and versatility of talent. This man was as strict a vegetarian as I am. He was a man that was so thoroughly antagonistic to flesh food that he could scarcely endure to pass a butcher shop. He

insisted that his pupils should abstain from the use of flesh food while they were under his instruction and supervision. He attained a great age and far along in life he was so nimble he used some times to amuse his friends by springing suddenly up from the floor and touching the ceiling with his toe. He was a man of prodigious vigor and energy and was very fond of exhibiting it.

There is another familiar face, Horace Greely, a man certainly who was a genius. He established one of the greatest newspapers of the country, the New York Tribune, and he did it by the force of his own genius. He was a man of great thinking power, great originality and had great influence upon his country and his time. He made some great mistakes through the influence of Whitelaw Reid, his subordinate, who influenced him to leave his party and become a candidate for President of the Democratic ticket, which was an unfortunate thing for him to do. It is a bad thing for a man to turn coat. This led to Greely's death. He was so disappointed, he died in consequence, but without the advice of Whitelaw Reid, I am informed, he never would have made such a mistake as to have made such a sudden and complete change. This man, in his youth, while he was investigating, was identified with the Brook Farm experiment, near Boston, you know, where the Brook Farm colony was formed. (Horace Greely was one of the people interested in this colony. He became a vegetarian, abandoned it after some years because he didn't know how to practice it. If he had only known enough to put a little more butter on his bread, he would have been cured of sour stomach and would not have had to give up the vegetarian ideas. He gave it up because he got sour stomach and he thought it was because he did not eat meat, but that was not the cause. The real cause was not that he had fermentation in his stomach, but he had too much gastric juice and if he had taken a little more fat, the formation of gastric juice would have been interfered with, inhibited and he would not have suffered, as he did.

Here is another face that I suppose is familiar to the most of you, Mr. Horace Fletcher. (Horace Fletcher did not live the simple life until about a dozen years ago. He lived the very opposite sort of life, was abouvivang. He liked good things to eat and good things to drink, good cigars to smoke, if there are such

things as good cigars, which I doubt, and he lived a very luxurious life. He did not need to work. He had money enough to support him, fortunately, so he simply traveled about, enjoying life, and visited about a good deal. One day he applied for life insurance and could not get any. The life insurance people said "Why, we can't insure you. You are going to die pretty soon of Bright's disease." That stirred him up. He didn't want to die just yet. He had not seen enough of the world and he had not had enough good times. He wanted to live a while, so he set to work to find out what was the matter with himself. He tried various doctors and they didn't give him any encouragement or help, so he began to study himself. He said, "What can I do that will help myself?" He was very obese, for one thing. He weighed 25 or 30 pounds more than he ought to weigh. I think he was not as bad off as some people. We have a lady here now, I believe, that weighs 50% more than he ought to weigh, and we have a gentleman who weighs 150 pounds more than he ought to weigh, but I hope they are going to reform pretty soon, as Mr. Horace Fletcher did. He saw he had got to reduce his flesh, for one thing. He said, "Now I can control my nutrition while the food is in my mouth, so I will chew it, but after I get through chewing it, I can not do anything more to it." (So he began to chew and he found as he chewed, he began to improve, began to lose flesh, began to improve in vigor. He chewed more and more and finally, in experimenting, actually chewed each morsel 300 times. By and by he found himself wonderfully improved, so much so that his friends began to remark upon it, and after two or three years, he was so marvelously improved, that he seemed to be a reconstructed man, and had't any difficulty in getting all the life insurance he wanted.)

When he came to this country, he went to Yale University and was examined by the professors in charge of the gymnasium there, and subjected to such tests as men are subjected to who are in preparation for a rowing match or a football match and intercollegiate games of any sort. When he was subjected to those tests, he was able to do more work and better work and to do it easier and better than any of the athletes in the Yale gymnasium. This was a surprise, for he was a man almost 60 years of age, who was able to lift more, and had twice the endurance

of any athlete in the Yale gymnasium. This surprised them very much.) Mr. Fletcher came here and we tested him here, and have been in close touch with him ever since, and I have been watching his career with a great deal of interest, and I found him to be in thoroughly sound, perfect health, apparently, as any man could be, remarkably well. (Mr. Fletcher has continued improving. His eyesight improved so he was able to read, although he had used glasses for years I have seen him, myself, read without glasses at all, and he has shown very great endurance.

On his 60th birthday, he rode two hundred miles on a bicycle, which was certainly good exercises for one day. Mr. Fletcher has created a great deal of interest throughout the world by calling the attention to the importance of thorough masticating^{of} the food. Mr. Fletcher noted this thing, also, that when he chewed, he soon lost the appetite for liquor and he lost the appetite for cigars, he lost the appetite for beefsteak. The last time he stood upon this platform and spoke to a large audience, somebody asked him "What do you think of Meat?" and he said "Meat is rank poison." That is his view of meat at the present time, and he arrived at this conclusion entirely by his taking pains to chew his food. He found when he chewed the food thoroughly enough, the taste immediately became very disagreeable in his mouth, the taste of meat and of other objectionable articles of food, and he could not endure it.

(Here is the picture of a French judge, who, more than 100 years before Mr. Fletcher acquired the fine art of chewing, recognized the importance of thorough mastication of food and wrote a book on chewing and on the enjoyment of food. He showed that in order to enjoy food, and to relish food, to digest food properly, it is necessary to thoroughly masticate it. This is a very interesting and important fact because the doctors for 100 years had entirely ignored this matter of chewing. It is looked upon by most doctors as almost a superfluous process. Even in books on physiology, the saliva was said to be of no value except to moisten the food and to facilitate the swallowing of the food.) So we see Mr. Fletcher has done a very important work in reviving the knowledge of this important question.

Now, I am going to rapidly show you a few other interesting pictures.

Here is a picture of a young German who came to the Sanitarium 15 years ago. We found he had tuberculosis and he had it so bad, it seemed to be a hopeless case. A large part of one lung was involved in the disease, and it seemed utterly impossible for him to recover. I advised him to go to Colorado, where he had some friends, where he could live comfortably, and I never expected to see him again.

I happened to be in Colorado about a year and a half afterward. He heard I was there and came to see me and invited me to take a run up the mountain side with him. We started out, but I was soon left far behind. I found him as fleet as a deer. He could run right up the mountain side, he had such splendid wind. He lost almost every symptom of the disease, and finally made a complete recovery, and the last I heard from him, he was in Egypt. His parents lived near Berlin, and his brother, who was a prominent officer in the German army and he visited his old friends he had not seen for a good many years. I recently had a note from him in Cairo. He is traveling in Egypt. He is a man of culture and is now enjoying life immensely. He takes a run of nine or ten miles every day of his life. I have seen him run 25 miles without stopping, and without taking a drop of water to drink during the entire 5 mile run. He did it in a little over 3 hours.

(This is Dr. Ossig, and he has not the slightest trace of disease about him. I have known him to lie down upon his back and raise his leg to the perpendicular 1000 times without stopping, going through the movement once every three seconds regularly and continuously as the clock for 1000 times and without doing himself the slightest amount of injury. This man during this whole time, up to the present time, has never once tasted flesh food, broth or anything of that sort. He does not even eat eggs or milk. For the most part, he lives entirely upon fruits, and nuts and grains, and simple vegetable foods and lives the very simplest sort of life, as far as possible out of doors.) I am glad to tell you this experience which shows you that meat is not necessary, even in consumption, that it is not necessary for sick people.

while
For 46 years, here at the Sanitarium, this institution has been opposed to the use of meat, we had the absurd idea that there were some cases that

needed it, that had to have it, so we used to furnish it until about ten years ago, all our doctors became thoroughly convinced that no case was benefited by it, that every case that had it was more or less injured by it, and we could no longer tolerate it on our premises, so we ordered it off the premises and have not had it here since. A lady left some time ago because she could not get any meat to feed her dog and the dog must have some meat. We do not even supply meat for the dogs, because we found out that dogs are better off without meat than with it.

Away back about 60 years ago there was started an enterprise, something like this, in some respects, the Book Farm experiment near Boston. This shows you a bird's eye view of the Book Farm as it was at the time it was occupied. It was started by Mr. George Ripley, a Unitarian clergyman, and a very brilliant man, a man who was the editor of the first edition of the American encyclopaedia. He got together that great mass of information. This shows a little cottage that was occupied by Margaret Fuller, who was a pioneer in educational reform in America. She was the first to introduce the ideas of Gene Paul, Froebel, and others of the great reformers of the last century. She was the first to introduce them into this country, and this is one of the places where she trained teachers to go out into the world with the mission of a new gospel of education. This little cottage is still standing. I had the pleasure of visiting this cottage a year or two ago and found it a very interesting place, indeed.

Here is one of the original buildings. It is occupied as an orphanage and it has been considerably done over and enlarged. It is occupied as a German Lutheran orphanage home.

Here is Crowfoot Rock, where Elliot used to preach to the Indians, and the wild Indians of that region used to gather around him in great numbers and listen for hours, spellbound by his eloquence. This is a brook that runs along through this place, it is called the Brook Farm, because it wandered on this brook, you see.

Here is George Ripley, the founder of the colony. I am sure you will recognize the genial ~~face~~ of Wendell Phillips, the greatest American orator. Wendell Phillips gave us the honor to call upon us about 23 or 24 years ago. Perhaps it was 30 years ago when he called upon us. It was soon after we occupied our first large main building and I had a very delightful chat with him. He called to see me in the office and to look about the institution and in the course of the conversation, he said to me "Dr. Kellogg, I have not eaten meat in 50 years." He was a member of the Brook Farm colony, and was interested in the work there, at least, and discarded flesh food. He said "I have not eaten meat for 50 years. I have tasted fish occasionally when traveling through the West, when I got an insufficient dietary sometimes, so I have taken a little fish, but I don't believe in it," and up to the time of his death, he maintained his adherence to the non-flesh dietary. Wendell Phillips, was, as you know a man of very great intelligence, one of the most brilliant men of his time, and he thought it well worth while to adopt and to follow, as a life long custom, the disuse of flesh food.)

Here is the picture of another noted man, the founder of the New York Sun, Charles Dana. Dana was connected with the Brook Farm experiment. In the early days, he lived on the farm and was very greatly interested in the experiment. Not all the members of this colony were strict vegetarians, but they had what they called the Graham table, for Sylvester Graham was promoting the vegetarian idea at that time all through the west. He was traveling about as a lecturer and preaching the doctrine of the new dietary. He was the man who introduced Graham bread. There was no Graham bread made in this country until the mills were set to grinding it by Sylvester Graham and that is why this coarse, whole wheat bread is called Graham bread, because of the efforts of this man to introduce wholesome articles of food.

Here is a picture of Pawlow who has done so much for promoting diet reform by showing us the fundamental principles upon which digestion rests and the

folly of the use of flesh foods, which are absolutely unnecessary. We use flesh foods only because we like them, because we have a hankering for them. We use them only because the old cannibal savage, from whom we are descended, still leaps and yells in our hearts. That is the reason why we like flesh. Pawlow has shown us that it is quite unnecessary, that its use stimulates the flow of gastric juice to such an excessive degree that it is productive of disease, because of this overstimulation of the stomach and becomes the source of ulcer of the stomach and ulcer of the duodenum and various other disorders.

Here is Professor Coch, who has done so much in the discovery of germs and who developed the science of bacteriology, which has brought to us the most striking and convincing demonstrations of the injuries received from a flesh dietary.

Here is Professor Metchnikoff, whose paper I was reading to you at the beginning. Professor Metchnikoff of the Pasteur Institute. He was a Russian, a political refugee from Russia. He took refuge in Paris and entered the Pasteur Institute when he was a young man and became the assistant of Pasteur and for years he has been the leading man in the institution. (Professor Metchnikoff began the study of old age many years ago. For the last 20 years, he has been making a special study of old age. He studied old age in plants, as well as old age in animals. He studied old age in clams, oysters, turtles and frogs, as well as in human beings, and all the different classes of the higher mammals and he found that in every single instance, in these lower animals, as well as the higher animals old age is accompanied by putrefaction in the intestine. He is convinced that old age is due to poisons produced by putrefactive changes in the intestine, by the putrefaction of the remnants of undigested ^{food} which lie about in the intestine, and which are retained there.) (He has shown that the animals that have the longest colons have the shortest lives, and he thinks that we would be much better off if we did not have any colon at all, and some French surgeons and an English surgeon have, for a number of years now, been removing colons every time they got a chance, because they believed the patient to be so much better off. Professor Metchnikoff

said "We have begun to remove the colon already by cutting off the appendix. Now by and by we will extend the operation and cut off the whole colon, and so get rid of this source of putrefaction." I thought there might be something in this idea, ~~although~~ until I visited London the last time and there I had the opportunity to watch the work of a leading London surgeon, who has removed more colons than any other person who lives. I think he has removed, perhaps, about 100 colons. He wouldn't tell me quite how many, and he has certainly seen some very remarkable results from the removal of the colon.)

Some of the patients who had this operation performed have improved so rapidly that it is almost like a miracle. Their restoration to health, getting rid of the horrible discoloration of the skin, the leather color of the skin and the terrible headaches and the general depreciation, depression of mind and spirit, they have been restored to sound health in the course of a very few weeks after the colon has been removed, but I saw one thing that discouraged me very much. ~~as~~ I have never been an advocate of this operation, because I have been thoroughly satisfied the difficulty can be met in other, more rational ways. (I saw a surgeon operate upon a patient, upon whom he had operated some three years before that time, upon a woman, because adhesions had formed, and an obstruction of the bowel had occurred and it was necessary to perform a second operation, and as I looked over his shoulder while he was performing the operation I saw that the small intestine, that had been joined to the remnant of colon that was left after the major portion had been removed, that had been joined to the rectum, that several feet of this small intestine had become dilated, had become converted into a colon. It was so large it was almost impossible for the professor himself to tell where the original seat of the operation was. For a long distance up, the small intestine had become dilated and it looked for all the world just like the colon and so Nature will have a colon, don't you see? If you take away the colon, Nature will protest, she will make another one and it isn't any use to perform this very mutilating operation, and of course, more or less ~~injurious~~ ^{dangerous} operation.) The proper

thing to do is to change the flora by cutting off the food upon which they feed. If we take into our stomachs nothing which is capable of rotting outside of the body, there will be nothing that can rot in the colon, because nothing can rot in the colon that won't rot outside the body, but if you put a piece of beefsteak in your pocket and carry it around a week, it will get into pretty bad shape. Carry it around 25 hours on a warm summer day and the beefsteak would get into an advanced state of decay. Now, if you put it inside of the body instead of carrying around outside the body, it will rot just the same, but if it were an apple or a pear or a piece of bread, it would not rot in your stomach or colon either. You see, the thing is to take food that will not decay. Then there is nothing to encourage the growth of these putrefactive organisms and there is nothing out of which to manufacture poisons. The nearer we come to that sort of antitoxic, nonputrescible dietary, the nearer we will come to the dietary which is most conducive to long, vigorous, efficient life.

Here is Professor Winternitz, of Kalten Leutzeben, near Vienna. Kalten Leutzeben is a real old fashioned German water cure, presided over by a man of great intelligence. Professor Winternitz has made the water cure, discovered by Priessnitz a real science. I have had the pleasure of meeting him a number of times, and frequently hear from him. He is a man now all of 75 years of age, and lively as a cricket, and as vigorous and active as most men of 50 or 55 years of age.

Chittenden

Here is the face of Professor VenNeerden. You have heard of Professor Chittenden VenNeerden. Something like ten years ago, by the suggestion of Mr. Horace Fletcher, Professor Crittenden entered into a series of experiments with a number of and others, government soldiers, for the purpose of determining, by actual experiment, the influence of the low-protein diet, that is the effect of cutting down the amount of meat in the diet, diminishing it to a very small amount. He had 14 soldiers, 6 athletes and four college professors and the effect was marvelous. He reduced the protein more and more and more, until he finally got down to the point where he was giving his men once or twice a day a piece of bacon about as big as your thumbnail. You see, there was no protein in that. The amount of protein he gave to his men was only

one-third that which is ordinarily used and he finally found, as the protein was reduced, the vigor and endurance improved. The athletes doubled in strength, the soldiers doubled in their vigor and their courage and strength, the college professors, one of whom had rheumatism, got well. Two others had nervous dyspepsia, and they got well, so the experiment, you see, was a wonderful success. For nine months this experiment was continued and at the end Professor Chittenden published a book in which he proclaimed to the world the fact that we were throwing away an enormous amount of protein we are eating. We are cultivating disease, instead of strength and vigor, as most people expect by the eating of juicy beefsteaks, mutton chops and large quantities of meat, which are supposed to be so necessary for strength. Professor Chittenden has thought it worth while to continue his experiments upon himself, not really as an experiment, ~~but as a regular~~, but as a regular, settled code of life. The last time I saw him, two or three years ago, when I met him at New Haven, he told me he was still following the low protein dietary and had still further reduced his protein, and he was taking only 31 drams a day, which is only about ~~the~~ sixth the amount that which Boit Pettenkoffer, Atwater and some other authorities claim to be very necessary.

Here is a picture of a forceful man. You see, as you look at his face that he is a man of vigor, a man able to command, a man capable of standing at the head of a great industry. This man is Mr. Simmons, the head of the Simmons Hardware Company at St. Louis. The Simmons Hardware Company is the greatest hardware company in the world, employing in their office 2000 clerks. I called at their office one day a couple of years ago, and found 2000 clerks busy in that office, simply doing the clerical work of the office, besides hundreds of salesmen on the road and several thousand men who were keeping their warehouse filled with manufactured goods, of which they sell, I think, more than 20,000 different articles. Well, Mr. Simmons came here to this institution about five years ago and he didn't look at all as he looks here. He was nervous, depressed, enervated, incapable of doing his work as he wanted to do it, and he found himself compelled to take a vacation from his business and he was really broken down. Mr. Simmons is a man that gets into things rapidly. Inside of five

weeks time, while he was here, he had just gotten into the whole philosophy of the institution here, as regards living. He got his wife and whole family up here, got them converted, got his head salesman up here, got him converted, and he adopted the Sanitarium ideas into his home, and he went home and established a Sanitarium dietary upon his own table, revolutionized his whole family, and his working force has been largely reconstructed, enormously increased in efficiency, and when I called to see him a few years ago, I found him working like a steam engine, up to the very highest pitch, brim full of vigor and animation. He didn't know what it was to be tired. He seemed to be capable of all the business he was doing at the present time and a great deal more, doing whatever he had a mind to undertake, and he knows he owes it to following Battle's ideas in diet. These ideas did not originate here. I don't want anybody to think they did. We have undertaken to gather together, to compile the best things from the experience of the most intelligent men and to weave them into a system.

Here is another man, a college friend, or rather a high school mate of Mr. Simmons. This is Professor Fisher, head of the Political Science Department of Yale University and one of the ablest Economists in the world. His books are highly complimented in England by the great economists over there. Men are sent from other nations ~~pe-mew~~ from all over the world to Yale to sit at the feet of Professor Fisher and learn of his wisdom in matters pertaining to political economy. Professor Fisher has reduced political economy to such a science that he is able to predict what is going to happen. He predicts we are going to have a financial crisis within three or four years, and we are waiting to see whether it comes true or not. He can give you a formula by which you can yourself figure out when there is going to be a financial crisis, and he has got the thing down about as fine, I guess, as it is possible to get it. It really seems foolish to talk of such a thing, but if you read his paper upon the subject, you will see he has actual data upon which to base his conclusions. Professor Fisher had tuberculosis. He got over it, but it left him with an incurable neurasthenia. He only worked a couple of hours a day and was a very much

broken down man. He was very much distressed because he was still a young man. He stayed here a week or two, got hold of a few ideas, went away, kept in correspondence with us, I wrote him volumes of letters, I think one or two letters I wrote him were thirty or forty pages each, I thought he was a man worth doing something for, and it was a pleasure to do anything I could to help him in his struggle for health, and at the end of a year he was doing double the work he had ever done before he adopted the low protein diet and lived it out. I have been at his home several times, and I did not find any meat on the table. He and his wife and whole family profited enormously by the adoption of the low protein idea and the natural principles of living. (Professor Fisher became an earnest advocate of these principles. He undertook various experiments to test out their value and among others were endurance tests. He came here to Battle Creek with ~~three or four young men~~, tested our young men, both men and nurses, had them hold out their arms until they dropped by their sides, then he went down to Yale and tested the Yale athletes, told them what our boys had done, and he said "Now, you must do better." He encouraged them to hold up the honor of old Yale, and to do their very best and the result of ~~that was that~~ test was that 15 of our men held their arms out on an average of over 90 minutes, without lowering. One man held his arms out three hours and 20 minutes, The best that anybody did at Yale was, I believe, a little less than 30 minutes and the average of the whole 15 of Yale athletes, the very best men they had, wrestlers, football players, horsemen, the average was a little less than 10 minutes. The average was about 11 minutes for the whole 15 men. Now you see there is a vast difference. Our 15 men held their arms out, on an average, nine times as long as the Yale athletes, yet there was not one of those Yale athletes but who could have taken any one of our men, thrown him across his shoulder and walked off with him. They had double the strength of our men, but did not have the endurance.)

Mr. Weston, who has just been talking to us here, showed me his arms and his limbs. He has not large muscles. His muscles, you would say, are flabby, soft, small muscles, not large at all. I expected to find a man with large, strong, hard

muscles, but it is not so at all. He hasn't as good muscles as I have, myself. I was very much surprised at this. He has endurance. When we examined him with the X-ray we found he had a tremendous big heart, and it was that big heart that took him through his long walks by endurance. He found out, by experience, that he got along a great deal better if he did not eat meat. He said to me "I never ~~ate~~ meat while I was walking and when I ~~ate~~ meat at all it was only a little chicken on Sunday," but he always rested on Sunday, did not walk, in obedience to a promise to his mother, so he found by his experience that meat made him tired, and I have been told that same thing by others.

Here is a picture I see we have here rather unexpectedly, this group. I wanted you to see here Colonel McClure, who came here four or five years ago completely broken down. He gave up the use of meat, discarded it absolutely, after two or three retrials, took it up again, discarded it, and finally, because he finds every time he returns ^{to} eating meat, the old depression, headache and neurasthenia certainly comes back. These conditions are due to poisons generated in the colon by these germs which are found in meat and which are cultivated and encouraged by meat.

Mr. McClure is now a very sturdy man, vigorous, strong, efficient as he was 25 years ago, but he thought he had reached the end of his career. The last time I saw him, he told me he was starting out on a new career and he expects to have another career before he dies. He has created one of the greatest magazines in the country, you know. He made the first really influential magazine and the magazines at the present time are all patterned after Mr. McClure's own style, that he started in McClure's magazine.

(Here is Sir Horace Plunkett, one of the greatest Irishmen that live at the present day. He is a power behind the throne. (He does not have much to do in politics.) He is a member of the King's ^{Privy} Council, a member of a noble family. His headquarters are Plunkett House, Dublin. He is a man who believes in the simple life. He did not believe in it so much until he came here, and he came along with Mr. Gifford Pinchot, whom you see also was here. Both of them were pretty well broken down, but they got on their feet, got strong again, by the adoption of the low protein diet, and they have kept climbing up. Mr. Pinchot said recently he had the finest

health he has had in 15 years. (Sir Horace Plunkett had headaches, was broken down, and could not do business any longer. He was simply used up. He could hardly speak a sentence, his brain was in such a condition, and he had such horrible vertigo and could not sleep. He had terrible attacks of distress, so that he was really quite completely broken down.) He was finally sent back here by his London doctor, one of the most eminent physicians in England. He stopped only a couple of weeks, went to Jamaica, was not quite converted at that time. He did not get so very much benefit, but he got enough benefit so, when he got to London, his London doctor tried to do the best he could for him for six months and then sent him back here for good. I found him here the middle of January. (He remained with us a couple of months and he went home so much improved that he telephoned me, called me up by telephone from Chicago, where he went to do some business before leaving, he called me up and said "Doctor, I didn't know I was so much better. I am splendidly better. I am so delighted, I can not tell you how happy I am to find myself almost well again." When he got to New York he wrote me and he said "Doctor, I did not know really that I was so well. I am simply wonderfully well;" and a letter received from him just the other day stated that he is doing splendidly hard work. He plunged into the political work which is very active in Ireland just now, and he is an advisor of all parties. They all trust him and rely upon him. He is a man who has revolutionized the rural life of Ireland and has made the Irish farmer prosperous where he was once a poor poverty stricken peasant, He has not^w become a prosperous farmer, Under the guidance of this wonderful man. I thought you would like to see some of these faces and to know what has been accomplished by some of these people.

The Sanitarium methods and principles are so different from those in common vogue, they simply are revolutionary, so revolutionary that many people naturally feel afraid to trust themselves upon these new ideas.

I want to show you that they are not new, untried, experimental ideas that are based upon the unequivocal findings of science. Science gives us great foundation facts that are known to the whole scientific world. The only difference is that here

we undertake to put those scientific facts into practical use. When a fact is discovered about bacteriology, we make application of it here. When a fact is discovered in therapeutics, we make immediate application of it and undertake to make practical use of every laboratory fact that comes to the front, although unfortunately most of these new discoveries are filed away in tomes, reports of scientific bodies, and never see daylight. I found the way into those secret places a good many years ago, and have been continually prying into them. When I get them at arm's length, I make a personal visit and go to any expense to get to the bottom, to get these new facts that have been evolved along these lines, and it is perfectly marvelous how these new discoveries confirm the old facts based upon following a natural Nature. (Nature is a true teacher. We will never be misled when we follow Nature. Of course, there is ill nature, perverted nature, as well as the original and genuine Nature, so it is important for us to keep that fact in mind. We may go astray by following perverted instincts, but if we follow Nature and take her as our teacher, we can not go very far astray.

Professor Fisher said to me one time, "Doctor, how did you get hold of great principles these-very-sensible-ideas so long before science had furnished you the foundation which you now have?" and I said to him "Professor Fisher, they smelled right. I smelled them out. They had the right flavor. I knew that it was safe to follow Nature and finding out what was natural, I said 'I will follow it'." So it is inevitable that, as Nature all comes from the same source of Wisdom, it is inevitable that Nature will always agree with herself. I have not the slightest suspicion that there will ever be any scientific discovery that will set aside any of the great foundation principles which have now become so thoroughly established.

I am endeavoring, my friends, to convert you. That is why I am talking so earnestly and so insistently and so long, sometimes, too long, I fear, upon these questions, because it won't do you much good to come here and get just the little glimpse we can give you while here, unless you carry these principles home with you, but if you carry them home with you and apply them in your own home, change your dietary, revolutionize your life, teach your children to walk in your footsteps, in the new way,

and if you do that you will find yourself day by day, week by week, and month by month, and year by year climbing higher and higher and higher in health and efficiency.

But I must let you go. I thank you for your attention.

jhk-v-s-8-25-12.

A Stereopticon Lecture in the Sanitarium Parlor, Battle Creek, Mich., / October 3, 1912, at 8 p.M.

by

J. H. Kellogg, M. D.

In the moving pictures that you have just seen you have been having a practical lesson on the necessity for looking after the purities of water. Many of our diseases come from impure water. One of the latest things we have learned is to look out for the purity of our drinking water. It is a very surprising thing too, because the natives of Central Africa, -poor, ignorant savages learned long ago that they must not drink water unless it was cooked and the savage makes great sport of the European, when he comes into this country and drinks water without cooking it. He regards that as an extremely foolish thing to do, and it is, but in this country pioneers forget to look after matters of that kind. In fact, they have not had the training in the forests so as to learn the thing the savage had learned about self-protection, so when a pioneer went out west, he dug two holes in the ground. One to put filth into, the other to take water out of, and what went out of one hole went into the other, don't you see, and a very great economy in the use of water was effected in that way, perhaps. Not in health and we are just very gradually getting out of that horrible way of doing things. If we ~~did~~ do not have a hole behind the house for getting water out of and another one within ten feet of it for putting dirty slops into, we only separate the holes a little ways. We have a sewer into which we pour the filth, let it go ~~down~~ down into some body of water, then we have another pipe running into that same body of water and pump water out of that to drink. That is the way they have been doing in Chicago ever since that city was founded, until a very short time. At the present time still, a part of the sewerage of the city of Chicago goes into the lake and all the drinking water comes out of the lake, so they are still more or less contaminated with their own filth. If we do not contaminate ourselves that way, we have another very ingenious way method of doing it. We turn the filth of the city into the river and let it run down to the sea; then we have great beds of oysters there to eat up that filth, then

we send out men to gather in the oysters and we eat the oysters. So we manage to contaminate ourselves with our own filth after all.

The oyster is a natural born scavenger. This is a picture I am sure our photographer has put up here to show you what he can do in taking pictures by lamp light or moon light in winter. That is a night picture. It certainly is

I announced some days ago that I would talk tonight about the new human race. Recognized students of human life are becoming more and more convinced that the human race is dying, as before the present race of men, there is no prospect but extinction. There is no question that the human race is going down so fast that it would be ~~direct~~ utterly impossible for it to exist unless something happens to it, for a few thousand years at the very longest. Indications are, that within four or five hundred years, the entire civilized portion of the human race will be idiotic or insane. At the present rate that the idiot, insane and imbeciles are increasing, only three or four hundred years if the increase continues at the same rate. We are dying! Disease is multiplying and chronic disease. While we are stopping the ravages of acute disease, the plague, all chronic maladies are increasing at a terribly rapid rate and that is one of the first facts I want to present before you.

A little while ago, the whole civilized world was horrified by the terrible catastrophe at sea,—the loss of the Titanic. 1635 lives were lost in one day, but every day in the United States 1780 lives are lost, more than 100 more. Nearly 150 more lives are lost every ^{single} day in the United States from ^{easily} diseases that can be ~~readily~~ prevented. A million and a half people die in the United States every year. A million and a half! just think of it. A whole ^{entirely} great city washed out every year and a large part of it is/preventable and of these 1780 lives that are lost every day, every one might be kept alive just as easily as the people who went down with the Titanic might have been kept alive by the employment of necessary and appropriate preventative measures.

Now the fact that these preventive measures might have been employed and that these lives might have been saved is thoroughly demonstrated by the readiness with which steamboat companies come forward and announce that they have now provided means by which every one of those lives might have been saved. They did not want to have ocean travel cease. They didn't want to have people starving so that they would not travel any more, and immediately when the investigation was demanded and the public demanded it, they at once provided the necessary means for preserving life.

Now the purpose of my talk to you tonight is to call your attention, my friends, to the fact that it is just as easy to save these lives that are going down,—a whole ship load every day, just as easy to save these lives as it is to provide means for preventing another Titanic disaster. It is only necessary to give attention to it, and the means by which it can be done are well known. It is only necessary to apply them. Every 50 seconds a life is lost from preventable disease. Just think of that! More than one a minute. Some one is dying from preventable disease every minute. It is our duty to do something to stop this great havoc of human life. It is the strangest thing that we are so utterly ~~careless~~ careless about it. 1635 lives are lost every week by violence in the United States alone; 1731 lives are lost every week. Another cause, tuberculosis carries off 2800 lives and every single one of them might have been prevented for tuberculosis is a germ disease. We know the germ that produces the disease. We know how to kill the germ. We know how to prevent the ravages of the germ. We know how to make the man so strong to resistance that this germ cannot do them any harm. Yet we are not doing ~~it~~ ^{simply} We are just/sitting about and seeing these lives go down. 2800 lives, almost 3,000 people dying every week in this country alone with that awful disease,—a torturing death. We are allowing that thing to happen when it could easily be prevented. Now it is time for us to begin to wake up and we are going to wake up. The United States is going to have a Department of Health. I suggested to you the other day that every one of you should write to your congressman and to your senators, your U. S.

senators and stir them up upon this question when congress opens again and to see that they vote for ~~it~~ a department of health to set in operation these preventative measures that these lives that are now being uselessly thrown away might be saved. At the present death rate from preventative causes is so great that over 6,000,000 American lives will be ^{needlessly} ~~unjustly~~ destroyed during the next ten years. Think of that my friends! six millions of our fellow countrymen, men and women, innocent of wrong doing so far as we are aware are going down to death and needlessly so just because they do not know how to live. Now that thing cannot be said of you. When you go away from here I hope all of you are going to be informed as to how to live so you need not die of these ^{creditable} ~~disagreeable~~ diseases. It is absolutely disgraceful to a man to allow germs to eat him up when he knows how to avoid such a catastrophe. There is a table that shows the increasing death rate in ~~Recheester, N. Y.~~ the registration area of the United States from certain specified diseases. There has been a decrease in some diseases and you see what they are,—old age and bronchitis. You see in seven years there was a decrease of 35% of deaths from old age, and bronchitis 32%; 11% from tuberculosis; 33% from pneumonia; 15% from typhoid fever; 43% from diphtheria; meningitis 35% and gastritis 30. You see we are making a splendid advance in the control of these acute diseases, but here is one disease that is not acute,—old age. The deaths from old age are decreasing. Isn't that splendid, not so many people dying from old age as formerly? It is an awful thing to die of old age isn't it? Now let us see why that is. As we go on a little farther we will see. In 1901 to 1905, the number of people that died in the United States was 40,000 from heart disease and in 1905 to 1909 only five years afterwards, 65,000 people dying from the same disease, an increase of more than 50%. Now the population did not increase at that rate in five years. Our population did not increase 50% in five years, yet the mortality from heart disease increased more than 50% in five years Angina pectoris, that is another terrible malady. In 1901 to 1905, 2,000 people died every year on an average

from this disease. See how it has increased in five years, every year a little more you see. A gain every year in the mortality from this disease until in 1909 3,481 persons died from this one disease, an increase of more than 50% in the mortality from angina pectoris,—a disease of degeneration, a disease that is an outgrowth of our wrong habits of life,—of the use of tobacco, tea, coffee, alcohol and other things. So we see how the death rate has been increasing in several chronic diseases. In Massachusetts the death rate from heart disease increased 105%. In more than doubled you see in 30 years. Appoplexy increased 135%. A good deal more than doubled. Disease of the kidneys in Chicago increased 167%. Chicago is a good place to go to if you want to die of kidney disease. Just think of an increase of 167% in kidney diseases in 30 years. What an enormous increase that it! That is where 100 persons died 30 years ago in a given population in Chicago of Bright's disease and in 1920, 30 years later, 287 people died instead of 100. You see it is going right along up and in a few years more it will be 3 times as many people dying as died 30 years ago and the whole United States in the entire registration area which covers more than half the United States, the increase ^{in kidney} ~~including~~ diseases and Bright's disease in 30 years has been 131% which means that 231 people die where only 100 died before. This does not mean the actual number of deaths. This is the death rate, not the actual number of deaths, because with the increased population there would be an increased number of deaths, but this is the increase in the rate of deaths per hundred thousand or per million, so it is a fair comparison.

The chronic diseases are increasing as rapidly as the present time as acute diseases are diminishing,—that is the death rate per thousand above the age of 40. Below the age of 40 the death rate is decreasing because we are saving the babies alive, though we still kill 300,000 babies in the U. S. every year by bad treatment,—our ignorance and our modern civilization of Herod's slaughter of the innocent. 300,000 babies thrown away. The best

crop of the country is absolutely thrown away. What are those 300,000 babies worth. They are simply passed off inattention to the common sense things that we ought to do for these babies to keep them alive. I am not making this statement at random, my friends, This statement I have just made was made down at the Congress on hygiene at Washington,—the International Congress to which I went as a delegate to represent the state of Michigan last week. I heard that same statement made there. It was not disputed either. Everybody knows it is true that the babies are being slaughtered, but it is not so bad at is was twenty years ago or thirty years ago. Why! thirty years ago ~~200~~ in 1880, the death rate was much higher than it is at the present time. Instead of 300,00 babies being killed off every year, it was something like 500,000 babies in the same population. Now you see we are saving some of those babies alive. In 1880 the death rate of persons below 14 years of age was 13 and 14 in a thousand and at the present time or in 1910 the death ~~rathe~~ was 11 1/10 per thousand, so there is a gain of 2.3 % but on the other hand since 1880 there has been a steady increase in the mortality ^{is} of these persons whose age ~~was~~ over 40 and that would include a large proportion of the people in this room, so people over 40 years of age have not as good a chance to live as they had 30 years ago, mortality has increased taking all people above 40 together, the death rate has increased 26.8%; below 40 the death rate has decreased 13.2%. So you see people over forty have considerable less chance to live than 30 years ago.

Now take tuberculosis for example, we have been writing how to control this disease and this line represents the steady decrease from 1840 to 1910. On the other hand degenerative disorders, diseases of the heart, kidneys and other maladies have been steadily counting up. So you see this is a matter that affords us food for serious thought. What is the cause of this awful increase in human mortality? There are other evidences that the race is dying out and one of the most certain of these evidences is the decrease in the birth rate.

Now the vigor of the race is indicated perhaps more than in any other way by the birth rate by the power of the race to perpetuate itself, and we see how the birth rate is decreasing right along in almost every country in the world. The birth rate in Chicago has decreased 25% in the last twenty years. That is a new fact that has recently been brought out. In New South Wales there has been a decrease of 30% between 1880 and 1892. In New Zealand the increase was 24%; In the United States 20% in twelve years. That is the birth rate decreased 20% or 1/5 in twelve years. Just think what it will be in another century going down at such a rate as that. There are many other evidence of degeneracy. We are loosing our chief. We are going to be a troopless race by and by. We are creating new defective varieties of the human race all the time. We have a deaf and dumb variety of the human race. Deaf mutes inter marry and their children have ten times as good a chance to be deaf and dumb as though their parents were not deafdeaf mutes. These congenital defects are very likely to be transmitted by heredity. Those who are blind are likely to transmit that peculiarity to the children. That is not quite so liable to occur as in case of deaf mutism, but a much more serious matter than that is developping. We are creating consumptive varieties of the human race,—people who are born with weak lungs with a tendence to consupction. Consumption runs in families. Everybody knows that. We are also getting a weak minded variety of the human race. I am going to tell you about that in a few moments a little further on to show you how heredity is increasing the insane, epileptic and feeble minded at a terrific rate. So we are getting people with weak kidneys and races of people with weak livers who are likely to gall bladder disease and to gall stones, liable to Bright's disease. That is one reason why these maladies are increasing so ~~terri~~ rapidly. Its because we are creating varieties or strains of human beings which are specially subject to ~~these~~ particular maladies and among the other classes we are creating a ~~troopless~~ variety of the human race. Notice the human teeth here. There should

be 32 teeth in the jaw. Here is a girl that has just the same number of teeth and the same kind of teeth. I have heard something about the canine teeth that prove that we ought to eat meat. These are the canine teeth right here. There are three large molars, two small molars and a cuspid or canine teeth and you see ~~there~~ they are not any longer than the other teeth, but here is the gorilla that has the same number of teeth we have, exactly, the very same teeth that man has, but there is a difference. The so-called canine teeth are longer in the gorilla than the other teeth. They look more like the canine teeth of ^a the dog but they have not the purpose of the canine teeth of the dog. I am not so sure of that either. They are not for tearing flesh because the gorilla never eats flesh. They are for tearing the husks off of nuts and the skins off of roots and the husks off of roasting ears of corn and for such purposes. They are to help the animal in obtaining its food and we may suppose these canine teeth might have had the same uses in the dog and the other carnivorous animals. The gorilla never eats flesh of any kind. It has all its teeth in the jaws. When you find a gorilla in the forest, the teeth are all there.

Suppose we should take a census of the teeth here in this audience tonight, how many people could hold up their hands if I should ask for a show of hands by people who have 32 sound teeth in their mouth? How many people here that have 32 sound teeth in their mouth? Here is a lady who has 32 sound teeth. Are they store teeth? We will have to have a committee to investigate that matter to find out whether these teeth were raised on the premises or whether they were purchased or imported. There is one lady here who thinks she has 32 sound teeth. We will want to send her to the dentist to have those teeth looked over pretty carefully before we will be absolutely sure. This is a find/record isn't it? a find meeting of men and women. There is only one in the whole lot that has good sound teeth. Suppose you were going into the country to buy a flock of sheep and you notice the front teeth are lacking in one of

the sheep and you begin to make an examination and find in the next one the back teeth are lacking and find another one with the upper teeth gone and another one without any lower teeth, and you look that flock of sheep over and find that there is only one sheep in the whole flock that has sound teeth. What would you say about that flock of sheep? You would say they were a "measly" lot of sheep wouldn't you? You wouldn't have a thing to do with them. Suppose a man brought you a horse and you examined it and found half the teeth had been filled and perhaps the horse was wearing some false teeth as- in the upper jaw. You would not want to have a thing to do with such a horse. You would naturally reject the animal as being worthless because unsoundness of the teeth means constitutinal feebleness. It means something besides ~~decayed~~ defective teeth. It means a weak body, a defective organism. It means a body that is on the way to disintergration and decay,--that is dying. The teeth are dying. The teeth are a very important part of the organism. Now you look the whole country over and you find the teeth are getting to be very scarce. There is no class of people in this country that is thriving more than the dentist. Dentists are multiplying at a tremendously rapid rate and somebody has ~~to~~ predicted that the gold mines of the future will be found in the cemeteries rather than in the mountains. Some of you have invested in considerable gold in your teeth and you know it costs a great deal to repair those teeth or to get substitutes for teeth that have decayed and degenerated. The time was if a man had a toothache, he went to the dentist and had the tooth pulled. A miss friend of mine who was a missionary in the South Sea Islands told me he visited an island once ~~that~~ and a man came to him with an aching tooth and he pulled it out, than another came and pretty soon there were 15 or 20 people around there and they all wanted to get their teeth pulled. A man came and asked him to pull another tooth. He said, "Why does this tooth ache?" He said, "Oh no, my teeth don't ache now, but I am afraid they will ache pretty soon and you won't be here to pull them." Well we don't throw away teeth like that now days. I remember when false teeth first came around that

and argue, and a set of people, I have to see a plan to solve what the world needs
 when it is when you see a chance and look at the feet and see how they are
 feet are not. When a set is talking to me with look at the people. See how
 the world with the feet. Look into the world of a set and see what is going
 on. Here is the place with the feet. Here is the
 place where communication first comes off and the world is a place
 of good things. The world is in the world, we can see
 the world is where we are to go. We are naturally
 good. The world is not only a set of people in the world
 but of men is and we can see the world, many other things
 we can see the world to go to the world to see information as to what the world
 is from the world of people. We have been so far in the world first
 professor on the face of the earth know, because we have money so far
 you will learn more about the world in a couple of days than the world
 of the world of people, then it is down to the feet and what you see and
 to go if you want to learn what to see, it is to the world and find some way
 to the world of people of the world of people, but the place
 what to see, the place to go is not to college or university or a school or
 school on anything, a school can teach and school on. If you want to learn
 men. What a school can see a man can see. A man can see and teach and
 what is good for the world, what is really for the world is really for
 to learn people, but people as they are to school and in the world to men
 feet. The world in the world is on the world of people and people
 so the world of people. Now the world is not a set of people, but the
 world is a set of people, because the world is in other feet
 all the feet of the feet are the world, all the feet are. The world
 to go and expense and people to see a set of people, because when you go a set
 now. An up-to-date world will tell you to see every set you can. To
 feet that are so much better than the world of people, but we know better
 than the world of people, so that we can see a set of people, but
 it is a set of people of the world of people in the world, the world of people

Just think of having such a dirty mouth that you have to scrub it with sand paper to disinfect it several times a day in order to keep clean because of our filthy diet, because of our wrong habits, because of the degeneration and the abuse of our bodies. These creatures live nearer to nature. They do not have to take such pains to keep themselves from getting into an absolutely filthy state, because their bodies will not permit the germs that make this filth to grow. They will not permit germs to grow on the premises. They destroy them. Now look at those teeth. They are the splendid teeth found in a skull from the first Egyptian tomb that is known. 4,600 years before Christ. That person is supposed to have lived. This is a wisdom tooth. If you ever had one, it is probably disappeared. Perhaps some of you didn't have any wisdom teeth at all because your grandparents did not use the jaws enough to use the teeth, so the jaws did not develop and there was not room for the wisdom teeth. The verticle or decending ramus of the jaw press in upon this space to such a degree that there was not room for that tooth to grow. That is why the wisdom tooth makes so much trouble. That is why you have to have it pulled out. That is why the dentist, perhaps, had to bore a hole in there and cut out a piece of your jaw to get it out. It was buried under the encroaching ^{of the} ascending ramus/jaw. So we find our wisdom teeth and frequently some of the other teeth are found missing. The farther we go back the more splendid teeth we find and if we go back far enough, we find teeth as good as those of the chimpanzee, orangoutang or gorilla at the present time. Now about eight hundred miles from Heidelberg there is a sand pit from which are obtained what are known as mauer sands. Here are seventy-five feet of stratified earth. Over lying this sand pit from which which these sands are obtained, just at that spot was found a human lower jaw, lower jaw which is believed to be the oldest relic of the human being that has every been found on this earth. That jaw is supposed to belong to a man who lives 200,000 years ago. Think what a splendid structure that must have been. What splendid teeth those must have been to have resisted the ravages of decay during all these 200,000 years. Every tooth is perfect.

I have a model of that jaw in my office. This is a copy of the original photograph made of that jaw when it was first taken out of the sand. You see what a splendid jaw that was. A modern jaw has no advantages over this jaw. The principal difference is, it has a chin and this has no chin you see to speak of. All those ancient men were lacking in chin. Here is another view of that same jaw. The widdom tooth you see is just as big as the others and they are all fine teeth. This edge is where they have been broken off where the pebbles were attached to them. The tooth themselves were perfectly wound. The jaw is large enough so there is room for more. Here is another skull of the man who lived several thousand years ago, perhaps. This skull was found sometime ago and you see what splendid teeth there are here. You find here the same teeth you saw in the other jaw. Here is a comparison of that ancient jaw., the Heidelberg jaw, with the jaw of a mound builder indian. I have the skull from which this jaw was obtained in my office. This fellow was found on an island in San Francisco Bay, and the teeth are all there, thirty-two splendid teeth. Here are the teeth of the modern man. You see in this old jaw there is no chin, or at least very little prominence of the chin. But in the modern jaw here, is a development of the chin. We have more chin and less teeth than infants have. We are loosing our sense of smell. That is another degeneration that is going on. This degeneration is the result of the premature destructive deterioration and degeneration of the great vital organ. The liver has the first duty to destroy poisons to prepare food for elaboration of the building of the body. Now, the liver becomes degenerated by overwork. Poisons from the colon; tea, coffee, tobacco, alcohol,--all of these poisons are retained in the body through inactivity of the skin. The poisons that we breath in from the stmosphere from our own ventilated homes. All of these poisons worry out the liver and destroy it.

As a consequence, the degeneration takes place in these large vessels. These vessels are the so-called splanchnic vessels. These are the abdominal vessels. Vessels within the abdomen ~~where~~ where they make this first of all because poisons absorbed from the colon taken into the stomach and circulated in these large vessels cause a hardening of the vessels so that they become astringent and will become contracted and that produces high blood pressure /

I met today a lady 36 years old with a blood pressure of 286; think of that. She ought not to have that blood pressure until she is 150 years old. Old Thomas Tarr, when his arteriers were examined after his death, there was not a hard artery in his body, although he was 152 years old when he died. He didn't die of old age. We have not considered that yet while we find that the death from old age or the death rate is decreasing. Why is it? The answer is very easy. It is because there are not enough people who live to be old enough to die of old age. They die before they are old enough to die of old age. A man may die at 25 years of age of the same malady of which an old man dies and they die of the very conditions which we call old age, but we would not say he died of old age because he is not old. This lady I told you about is not going to live very long. Probably in a year or two she will be dead, or two or three years at the longest, but she won't be old enough to have died of old age, yet she will have died of the conditions which produce this from old age exactly the same. And these conditions begin down here in these vessels because these are most all exposed to the poisons which cause hardening of the arteries. The arteries contact with the delicate lining membrane of arteries so producing gas. Now, they carry the blood to the liver and the liver suffers next, because the liver is the organ to which all the blood in the body is carried for purification first before it is distributed to the rest of the body. Now some of you examine the re-

ports that come back from the laboratory, the Urinary report, and you find donw plus or double plus urobilinogen. Now when you find a mark under the urobilinogen, that means that your liver is damaged. That means the same thing about your liver that albumin and casts mean about your kidneys. You have not yet Bright's Disease, but you have got a condition that leads to Bright's Disease because the liver suffers first in many cases even before the Kidneys. Here you see some destroyed livers--Cancer of the liver, and this shows a kidney in the process of destruction. The kidney is exposed to these poisons until its tissues become deteriorated, then the scavenger-cells of the body effect the kidney and destroy it and that is Bright's Disease. That is the disease that leads to degeneration of the vessels of the body.

Here are the cysts we sometimes hear about. These are Hyaline cysts. These are found in the urine and they are the results of the tearing to pieces or breaking down of the kidney under the influence of these accumulated body of poisons found in the blood and these same poisons circulating through the heart and produce heart failure. Hardening of the arteries of the heart, angina pectoria and other diseases of the heart. By and by hardening of the arteries at this point and the arteries begin to dilate and that is aneurism. There are germs that go in the colon and produce these poisons which circulate through the body and cause this terrible havoc. Now when you get the reports that come in, look them over, over and over. If you find indolacetic acid, if you find indican, if you find urobilinogen that means that your blood is loaded with poisons which are producing these destructive changes in your tissues and a body is in a condition of a house on fire. The fire is burning and destroying structures every single day so long as those poisons are there. It is these poisons which cause hardening of the arteries

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friendly

Another thing you can do is to swallow ~~some~~ germs in abundance. These friendly germs you find in buttermilk. Sometimes the curd of buttermilk is not good and the whey is better than the buttermilk. Sometimes you cannot get these buttermilk germs and they are not the best because they are not the most hardy. The Bacillus Bulgaricus is a sour milk germ which is coming to be used all over the world and is steadily gaining ground in the confidence of those who make a careful study of its value, but the bacillus Bulgaricus has one inconvenience, it starves to death in the colon where we need it most. It must have sugar. It needs sugar to support its life and it cannot get sugar in the colon because the sugar is all absorbed in the small intestine before the sugar reaches the colon. Wanting to fight its battle against the putrefactive bacilli, but it cannot because it is starved to death. Metchnikoff has been working for some years to find out how to remedy that difficulty and he has at last found the germ that makes sugar in the colon here ~~while~~ with which the bacillus Bulgaricus could be fed so we have now succeeded in getting hold of this germ. I told you sometime ago I was expecting a supply and a few days ago it arrived and we now have a fine crop growing and today sent out our first installment of Glucobacter. We hope now to be able to fight these germs more successfully because we are combining together the glucobacter,--this new sugar forming germ with the bacillus Bulgaricus. The bacillus Bulgaricus is able to help in the colon and the glucobacter lives in the colon ~~next to~~ makes sugar on the spot and feeds the bacillus Bulgaricus, so this germ can thrive where it otherwise would starve to death. That is one of the devices by which we fight off germs that are doing the mischief. "Whatsoever a man soweth, that shall he also reap". This is an old proverb and it is simply more than a proverb, it is a divine dictum. ³⁰ ~~XXXXXXXXXXXXXXXXXXXX~~ We may say, "Whatsoever a man soweth, that shall he also reap". How often we see that in

our daily observation with the experience of men.

"Lost one perfectly good pair of kidneys somewhere between Comfort Street and Affluence Boulevard, stations on the road to Wealth. Would gladly pay all my millions for their return. (Signed) Mr. I. M. Sorry Now, 13 Experience Place."

I found that in a newspaper the other day, somebody clipped it out and sent it to me and I thought it was worth showing. That man is simply ~~making~~ reaping what he has sown. He has been destroying his kidneys. The every day bill-of-fare that you have been accustomed to eat at home that you thought was perfectly wholesome all right, that daily bill of fare, that the old-fashioned biled dinner that was supposed to be a most wholesome thing possible, that splendid juicy beefsteak supposed to be so strengthening and the mustard pot and the pepper box and the horseradish pot and the pepper sauce bottle and all those other things supposed to be so valuable for giving a pilt to the appetite for helping along digestion, those are the things, my friends, that destroy kidneys. They are the things that destroy livers, that are making this awful havoc--I maintain it is the things we are doing every day and every hour of the day that we ought not to do. Our unnatural habits, our unnatural practices, and the tobacco we smoke and chew and snuff and the alcohol we imbog and the tea and the coffee we trifle with, all of these poisons mashed together make a poison dose the human constitution is not able to stand. Our best ⁱ statistics not very long ago from the United States Government about the amount of alcohol consumed in the United States and the account of tobacco consumed and the amount of tea and coffee that is consumed. I got this statistics right straight from the bureau of statistics. I happened to have a friend there right in the bureau who had charge of a department there and he very kindly got the very latest and most authentic facts for me and I put it altogether and it gave the total amount consumed in the United States by the number of people in the United States and I found that the poor

poison dose of the average man, taking men, women and children altogether of the average human being in the United States, the poison dose is 368 grains a year. Think of it! A daily dose of caffeine is 6 grains, enough to kill a cat. A daily nicotine is 6 grains, enough to kill a dozen men if they took it all at once and so on until it amounts to an average of 368 grains. Why, my friends, that is something terrible! The daily dose of poison including alcohol is 368 grains for every human being in the United States. Well the human constitution won't stand such abuse. That is why we are degenerating/ that it why we are getting hardening of the arteries, getting angina pectoris, going off with heart disease at such a rapid rate. That is not the end of the story either. Not only these poisons are destroying us but they are producing conditions of the human body that are transmitted, that can be carried down by heredity. The fathers eat sour grapes and the children's teeth are set on edge, visiting the iniquities of the fathers upon the children unto the third and fourth generations. Why not the fifth and sixth generations. Because they are not there. They died off. They run out with the fourth generation. They cannot stand the damage which is inflicted by these erroneous habits. So we are going down.

Now let us look here and see how we are going down by heredity. When a man loses his hand or his arm or his leg, his boy is not born lacking a hand or a leg. The leg comes. It is only a part of his body that is destroyed, but if that man destroys his liver or his kidneys and damages every cell of his body ~~without~~ with alcohol or with tobacco, produces general deterioration of his whole organism, than that condition of deterioration he communicates to his boy. We can see here how this law of heredity operates. This is to illustrate Mendal's law of heredity. Mendal was a German monk and he experimented during his whole life time with ~~flax~~ flowers for the purpose of trying to find the law of heredity and he discovered the law of heredity and it is a wonderfully interesting thing. Simply stated, it is this: A black eyed man marries a blue

eyed woman and they have four children or six children, no matter how many they have they will all have brown eyes. There won't be any black eyes or blue eyes among those children. They will all have brown eyes. Now if one of those brown eyed children, a brown eyed boy marries a brown eyed girl and they have four children, they don't have brown eyes all of them. Half of them have brown eyes, but one will have black eyes and one will have blue eyes and this black eyed boy will have just as black eyes as his grandfather had and the blue eyed girl will have just as blue eyes as her grandmother had. Now suppose this was a holstein bull and a jersey cow, then we have got animals that are a cross. These animals are half holstein and half jersey. The ~~six~~ calves will all be half holstein and half jersey, but now two of these crosses are bred and we have four calves from such a union. There will be one holstein, ~~two~~ pure bred, true blood and one jersey, pure blood. Just as pure as the originals were and only two hybrids among them. Now that is Mendel's law, that is the principle on which ~~on~~ the scientific bridges of the country are working and they find that they can get just as pure a strain from hybrids as from crosses, just as pure strains as the originals were. This proves just as true with animals. It has been worked out with chickens and various other animals and proves just as true as with ~~many~~ flowers as proven by the German monk, Mendel. Now see how this works in relation to disease. Here is a defective family. Here say a defective man married a sound woman, and they had a number of children three children all defective, every one of them. This woman was feeble minded and she died and the man married another feeble minded woman. He must have been a silly man to marry that feeble minded woman. They had four children all feeble minded every one of them. Now one of these feeble minded children married a sound person and they had four feeble minded children. Here is the same thing happend again, two more feeble minded children. In this case one of these feeble minded children married a sound person. In ~~this~~ case they were all sound. In the other case there were three feeble minded children. So you see how they get here from that one feeble minded person, see how many there are

here. In sixteen, just two generations we get sixteen idiots, all feeble minded. Now that is the way the feeble mindedness and idiocy and insanity is increasing. Here is an imbecile family. An imbecile man married an insane woman. Nobody but an imbecile man would do such a thing as that of course and they had here five children. One was insane four were imbecile. Then this insane woman married another imbecile man and they had here eight children and all of them were imbecile. Now just think of that. Isn't it a crime to permit such a thing to go on in a country of intelligent people. Isn't it a crime for us to allow to be growing up here, right among us insane and insane and imbecile population for us to support. Why, we are spending several hundred millions dollars a year at the present time in the support of the defective population of the country and it is multiplying faster and faster, faster than the normal ~~we~~ population. Down in New Jersey for example the defective part of the population has doubled its proportion in thirty years. At the present time one out of every hundred persons in the United States is either a lunatic, idiot, feeble minded person or epileptic. One out of every hundred in the whole United States. I tell you, my friends, we are going down very fast, but it is not simply this imbecility, there are other things as well. Rheumatism married pneumonia and you see what happened and that is uremic poison, and here rheumatism married rheumatism and you see what there was up there and the result ~~was~~ would rheumatism.

This is not a diagram gotten up just for illustration but it is a record of three generations of a family that was carefully studied by an expert, an expert employed and paid by the Carnegie Institution made these studies and they were kindly furnished to me, these results by Professor Davenport who is the Secretary of the Eugenics Section of the American Leaders Association. Here again Cousins May. One of these cousins, this young woman had a brother who was insane. She was not insane herself but she had a brother who was insane. See what happened here, seven children, one paralytic another eccentric, another suicide, insane, demented, seclusive, almost insane and this paralytic here

married a neurotic person and just see the result of it here, demented, dementia praecox, that means dementia developing in youth, maniac, weakminded. Ten others died in infancy. How fortunate it was they died wasn't it? They would have been maniacs and idiots if they had not. Now that is the way we are going down. Now I told you I was going to say something about the new race. I haven't time to talk about that fully tonight but I just want you to look at that splendid specimen of a man. Why are not all men as well developed, as splendidly formed, as vigorous, as vital in appearance as this man is. ~~By~~ Why not? Why are we weazened, wretched, flat chested, round shouldered, so misshapened and distorted, why? It is just simply because we do not cultivate health. It is because we cultivate everything else but health. We cultivate all sorts of accomplishments reach out for all sorts of attainments and we improve. ~~Man~~ Man improves everything he touches except himself and himself he simply sets to work to destroy just as fast as he can. The average man treats his body as a musician treats a piano. The musician sits down at the piano and he get all the music he can out of that piano, gets all the pleasure he can out of it, plays the piano and so the average man plays upon his palate. It is not for the sake of nourishing his body, but to tickle his palate. Then after he has tickled his palate with morsels of indigestibles and dumps it all down into his stomach at once, his stomach is simply a garbage box to get rid of the refuse that does not tickle his palate any longer, never stopping to think that this material that is going into his stomach is going to influence his whole body. While it affects his palate ~~for~~ but a few seconds it remains in his body hours, perhaps days. May be in some cases, months or years. Now we have got to cultivate men and women as we have cultivated other things. This splendid looking man is the result of culture. This statue that presents the idea of the ancient Greek, but if an artist who wants to make such a figure as that now a days, he cannot find a model to pose for him. So he finds one model that is able to give him an arm and another that has a beautiful leg, another one that has splendid shoulders, another one that has a fine head, but he can't

find a model anywhere that can present the splendid proportions of the ancient Greek model. Women have degenerated as well as men. Women are perhaps, degenerating even more than men and because we find the modern woman is a poor inferior to man in physical vigor in every way. Now we have been working to improve our mens and just see what we have accomplished. Here is a little pen of hens that were sold for \$7, 500.00 and the five chickens brought \$1500.00 apiece. They are the results of culture. Here is a \$10,000 hen. The man who produced that hen is a patron of the Battle Creek Sanitarium. He is trying to apply the same principles that he applies to his hens to himself, but the average man is much more interested in hens than he is in himself. Not so very long ago a man down in New York noted that a friend of his was feeding his dogs himself but had a tuitor to take care of his boys and he asked him why he did not feed his boys himself instead of giving his personal attention to his dogs. "Oh", he said, "My dogs have a pedigree". He is trying to keep up the strain dont you see, but he had no interest in the boys' pedigree. He had no thought at all of what kind of a line he was sending down into the world, what sort of quality, what sort of constitution he was developing in those boys. Now there are some people getting interested in this matter. I am glad to show you here the face of our genial friend, Mr. Patterson, the man who has built up the great National Cash Register Industry in Dayton, Ohio. Mr. Patterson came here a dozen years ago and in a very bad state of health. He had given his attention to business and developed a splendid business, but he had not given thought to himself, had not thought anything about it until he found himself broken down just ready to top over into the grave. Then he began to think something ought to be done, so he came up here to learn how to live, studied the subject well, learned every lesson about it and put it into practice. He went after this question of health building in exactly the same way he had been at work building up his great business and he had been just as successful about it when he came here a couple of weeks ago. When we looked him over we could hardly find any fault with him, though I believe he is 67 or 68 years of age. He is in splendid

health and splendid vigor, in finer condition than he has known himself for many years, just as a result of following the simple principles we are teaching here in this institution. He sticks right to it. He doesn't take a particle of meat of any sort or broth or any other of these things that contain the elements of death, but he has been giving the closest attention to diet and exercise and he is anxious that his people should profit by the things that have profited him. Here is a picture of the buildings in which his great industry is carried on. 6,000 people work in those buildings, 6,000 people filing in there and out every day. Mr. Patterson is doing his best to inoculate all these people with healthful ideas, with proper ideas of right living. For instance, he circulates among those people 5,000 copies of "The Battle Creek Idea" for one year. He sees that they go where they will do the most good among his people. 500 copies of Good Health are circulated among his employees. He subscribed for that number and sent them out to them. He has two of our trained workers down there, three of them a young man and two young women who are devoting their entire time to helping these employees of that great establishment to know how to live right. Two physical culture teachers and a trained nurse and these people visit around from house to house and tell them how to establish Battle Creek ideas right in their own homes. He has fitted up a department where he has the mechanical Swedish movements, Swedish movement machinery and electric light baths, in fact, I suspect he is getting up a kind of rival Sanitarium down there for the benefit of his little community, because he sees what it has done for him, so he is helping to propagate the ideas of healthful living that this institution stands for.

That old man was self taught. He did not have to come the Sanitarium. That is the face of old Parr. He was 152 years and 9 months old when he died and because he had lived a simple life. He was a hard working man all his life and when he was 120 years old he could swim the swiftest rivers in England without any difficulty and his sight was good and his digestion was good, although he

died of a fit of indigestion because of the rich feasting of the King of England gave him when he brought him up to his court in order to show his respect for his venerable age. This is an institution, my friends, you know something about. We call it "the university of health". The principal object of this institution is to point the way to a better way of life which will lead to the development of a better life. The average man, the ordinary man living at the present time is going to run out. Point out to man who is a drinking man or a smoking man and I can assure you that man will have no successors in his line six or eight generations from now. Tobacco users and whiskey drinkers and the and the beef eaters are all going to die off. They are running out. These are the things that produce degeneracy. Coffee drinkers all of these poison using people who indulge in poisons are going to run out. The great majority of the ~~civilized~~ civilized portion of the human race will run out, but there is going to be a new race of men and women. There is going to be a new race here and there all over the world, in civilized parts of the world. Men and women who are getting hold of this idea. They are getting this conception of right living, returning to nature, return to the simple life as the only means of securing any permanency for the human race. We have gotten so far away from nature, so ~~from~~ far away from our natural conditions of life without providing proper compensations for our departures from these natural modes. We have gotten so far away that the human constitution cannot stand it and we must go back to nature and what better thing can we do? What wiser thing can we do than to go back to that wisest of all teachers, Nature? Who is nature? What is nature? Why, my friends, what we call nature is simply the great phenomenon, the great panorama of living things about us, just the result of the work of the great Creator and the power that is in nature that is behind nature is the power that made us. The creative force which gave birth to the human race and to all existing things. Now to go back to nature is simply in other words to get in harmony with God, to get in tune with the universe and that is what we must do. We must expect that these great forces of nature are

going to crush us because if we sow for disease we will suffer death. If we sow for health we will receive life instead of death and if we hope to be represented, if anybody hopes to be represented in generations to come, there is no other way than to conform to nature. Out of this great Chaos and the great catechism that is coming in which the human race is going down to destruction there will arise a new race and aristocracy of health. You can see the beginning of it already in eugenics, ^{and eugenics} these will get to be predominant study of these people and will come sooner or later to be recognized in our universities as the most essential of all studies that man can ~~know~~ engage in and by this means we will have produced ~~in~~ a new race that has the vitality and the vigor which our ancestors had and from generation to generation this will arise and a rise and rise until by and by perhaps the great longevity of our primitive ancestors who lived a thousand years, perhaps, will be restored and the earth itself will be free from disease, from tuberculosis ^{and} ~~free~~ all these terrible plagues will be blemished because they have nothing upon which they can feed. The human constitution will become so strong, vigorous and man's tissues so vital so resistant that disease can have ~~not~~ no power over him. God never ~~made~~ made man to be subject to these miserable germs. God never made man to be such a helpless creature that when a ~~host~~ host of germs come along he must simply lie down and let these horrid maladies put their feet upon his neck and trample him down to death. God made man master of all the world, end of all creation, his own masterpiece and the time will come again, my friends, will man will rise to his normal place and will not be subject to all these death dealing agencies. Then we shall have the world populated by a new happy race. I thank you for your attention.

The End.

and premature old age, and the thing necessary first of all, is to get rid of these poisons. If you have got those poisons present in the urine, it means they are in the blood, in the tissues. They are in contact with your brain, muscles, gland cells and every structure of the body. They are at work destroying those structures so long as they are there. The kidneys simply take those poisons out of the blood and when you find them in the urine, it is proof that the whole body is contaminated, exposed to the actions of these poisons. The first things, my friends, when you find such a thing as that present, the first bud in your life ought to be to get rid of them because so long as they are there, you are hurrying on rapidly to the end of your career and they must be suppressed. Now if you have got a bad breath, that is an indication of the presence of these poisons in your blood. That is what makes bad breath. These poisons are due to putrefaction.

Here are the germs, that, growing in the colon, produce these poisons, so if we want to suppress the poisons, we must suppress the germs that make the poison and that means we must eat right. We must take the right diet,—a diet that will not decay, that will not feed these germs, that will not support them. It means next, we must see that the food we eat is carried through the body so rapidly it won't have time to putrefy—that means the bowels ought to move three or four times a day, and if you have not got a quantity of these poisons in your blood, your bowels ought to move four or five times a day for a while until you get yourself thoroughly cleared out and the poison thoroughly eliminated so the germs will not have time to take root and grow and develop.

But it was not the thought or the hard thinking, the hard studying that made that pale cast at all. It was the deprivation of sunlight, of fresh air, the being shut up within four walls and all these great life giving forces of nature were shut away from him.) (Now the savage in the forest when he finds things getting dirty around his camp he moves on. His house costs him so little it is cheaper to build a new house than it is to clean up his back yard, so he moves on to another place and builds another house in an afternoon so he escapes the evils of filthy accumulation but the civilized man builds a city and an expensive house and he cannot afford to move on. He builds a house that takes a year to construct it and it costs a fortune to pay for it and he cannot afford to move on so he simply has to live there and run all the risk and dangers of filth accumulation that necessarily comes from living in a house.) (For instance an old New England house two hundred years ago, a portion of it was torn down recently for repairs and they found between the studding and the lath the space was entirely filled with a degree of rats and mice that had been left behind, entirely filled. Hundreds of generations perhaps thousands of generations of mice had been born and cared for in those hidden places until the accumulation of filth had actually filled the spaces up solid. Now just think of living in such a house as that. We don't stop to think of what is out of sight in some of our houses and the cellar often becomes a source of contamination as the air of the entire house.) I need not go on with this now but will take it up at another time perhaps, but it is astonishing in how many ways we are cultivating death all the time and unnecessary ways.) First of all we must be absolutely clean in our surroundings in what we eat, in what we drink and in our own interior. (We must be absolutely clean if we hope for a long and healthy life.) I must say another word about prescribing the same treatment for everybody. When you come to analyze each individual case, if you look at the particulars of it you find there are no two people in this house getting just the same prescriptions. You are all getting

an application of the same principles. You are all getting cold water, but not in the same doses. One man has a prescription of a cold spray first thing in the morning, another has a prescription for a cold wet hand rub, another for a cold wet sheet rub, another has a wet towel rub or mitten friction. Now those are all different degrees of applying cold and water is the most versatile of all the remedies in the world. (Although we prescribe water for a man the effects that are secured by these applications are as varied as the people can possibly be and if I had to make one hundred prescriptions of water for one hundred different people I could make different prescriptions for every one and all of these prescriptions would be working on the same plan and will accomplish the same thing for the man because every single man needs the same thing done for him and that thing is re-enforcement of his vital energies. (The thing that cures a man, my friends, the thing that cures a man is not the thing that is done to him, it is what the man himself does that cures him. The bath does not cure a man whether a light bath, a water bath, a radium bath or any other sort of bath. It is not the bath that cures the man. The bath has the opposite effect. The bath does something to tear the man down. The thing that cures the man is what happens on the inside of him. It is the thing that is done to him by his own vital power or ^{the} resources of his own body.) His *vis medicatrix naturae*, that is the thing that cures him. People who get well fast are people who have plenty of *vis*. If they get well slowly they do not have much. If you have an abundance of this healing power in the body, you get well quickly. Now here is a boy who only weighs ten pounds. Twenty years from now he will weigh 150 Pounds, fifteen ^{times} ~~times~~ as much boy as there was twenty years before. He has increased 1500% in size. Now I ought to have made that boy grow and develop in that way. There is developing power within him, energy within him that has been creating that boy. Now the healing power is identically the same ~~thing~~ thing. This same power when a man is sick turn about and endeavors to restore that man to his normal condition again. / A German physiologist took a rabbit, cut off half his liver and three

months afterwards he examined the rabbit and found that the half of the liver that he had cut off had grown on again. The rabbit had created half a liver to take the place of the half that had been removed. Then he cut off the other half and ~~then~~ three months later he made another examination and that half had grown on again. So that rabbit had a brand new liver. That is just what some of you need. If you every get well of your chronic liver troubles it will be just because that thing has happened to you; because your body has been by ~~by~~ *had* influences brought to bear upon it stimulated to work to tear down and remove the old diseased liver and put a healthy liver in its place. Unfortunately this cannot be done to the very extreme degree for us. Our bodies cannot be restored as perfectly as the bodies of some of these lower animals.) Take for instance an earth worm, cut him in to in the middle. One end will go on ahead and the other end will go on a tail and you have go two worms instead of one. Take a crab, cut off all his legs and in six weeks he will have a brand new crop of legs just as good as the others were. He has got a whole lot of new buds under his skin up there and when he moves they will all fall off. If a crab gets scared he will tear off some of his legs.) (A missionary tells the story of a land crab in the South Sea Islands that has very nice habits and he nips his leg off with his nippers as he gets it soiled. He does not know how to use soap, a pail of water and a towel so in order to get rid of that dirty leg he simply nips it off and he knows that in six weeks he will have a brand new leg in place of it so that it will be spink and span and clean. A missionary saw one of these land crabs going down to the shore one morning and he fell into a mud puddle and got dirty all over. Then he deliberately nipped off all his legs and dragged himself home to his hole in a sand bank where he lived by his nippers. In six weeks he came out with a brand new set of legs.) (Now we have that same power working within us, healing us when we are sick, keeping us well when we are not sick. The treatment that is given to the sick man should be aimed to stimulate, arouse and direct this healing power in the body and that is all that treatment is good for.) Now don't you see that the sick man ~~if~~ he has got enough of this zis madicatrix maturaee working

for him, he is going to get well. If has not enough of it, he never can get well and the general purpose of the treatment is to arouse this healing power in the body and what will do that for one man will in a general way do it for another man. (The greatest of all rousers that nature has furnished us with is cold water and cold air. Now the reason why we are so particular about diet is because diet is one of the things that gets us away. A wrong diet is a thing that creates a necessity for healing action on the part of the body, but the cold water is the great lever we possess in helping the sick man to get well.) So I suggest that you all the time beg your doctor to give you more cold water. Ask the doctor if he is giving you all the cold water you can stand.

Hot water is very comfortable. It is very enjoyable to get into a nice hot bath but that hot bath is debilitating, weakening, depressing. If you have a hot bath of any kind you want to be sure to get something cold after it. to antidote it because no matter what that hot bath ~~is~~ does for you, no matter how much it comforts you, it weakens you a little bit, but a little cold application will bring you right up to power again because it is not an exhausting kind of heat which as would come from starving or something of that kind but only a depression of nerve energy which comes right bach again the moment the cold water is applied so you need not be worried about that.

Q. I have been paralyzed on my left side for three years. I can move my left foot but the left arm is completely paralyzed. The doctors in Chicago said it was apoplexy caused by hemorrhage in the brain. I am fifty years old. Is there any hope for me to get better?

A. Yes indeed! yes indeed! There are two hopes for you. One is to get better and the other is to keep better. I may say three and the third is that you do not get worse. Now a person who has had one stroke of apoplexy is going to have another one. That first stroke is a mild one and it is only an intimation of worse things to come. If you were living in a place and there was an earth quake there, you would expect pretty soon there would be another earth quake. If a person has had one stroke of apoplexy he is going to have another one if he doesn't die before it comes because the cause that made the first one is

working on him all the while. Apoplexy comes by injury of the blood vessels of the body. Arteriosclerosis and arteriosclerosis is like a fire in a house that keeps on burning until it burns the whole house and that is exactly what arteriosclerosis does. It goes steadily marching on all the time until it destroys the body, so the first thing for a person who has apoplexy is to stop the advance of that process. It is simply the old age process, that is all.

Q. Do you consider alcoholic liquors in the forms commonly used as beverages to be ~~fit~~ fit for food or drink?

A. No. There is nobody who takes alcohol for food or drink. Nobody would think of doing it. (When they go up to the north pole where they have to take food in such form that they can get the most food in the smallest space and the safest and most nourishing food upon which men can stand the most hard work and have the greatest endurance, they leave the alcohol behind. Nobody thinks of putting alcohol into the rations of a man who is making a dash for the pole. Everybody knows that now, although everybody did not know it twenty-five years ago. Experiments which have been made clearly show that alcohol is not a food in ~~any~~ sense whatever. It is burned in the body just as food is burned in the body but that is true of all organic poisons. Strychnia is burned in the body. Morphia is burned in the body and all these other poisons are burned in the body, but no one would claim that they were food.)

Q. Why not beer which usually contains such a small percentage of alcohol ^{may} be allowed as a fit food drink?

A. Liebig the great German chemist said, "There is less food in a hogshead of beer than there is in a small loaf of bread". So if one was going to take beer for food, you see about how much he would have to take. If he would require a loaf of bread for his daily ration he would have to take a hogshead of beer for his daily ration to take the place of the bread. The only food in the beer is the little sugar in it that has not yet been fermented and that is so very small in amount that it is not worth bothering with. A teaspoonful

of sugar would give one more food value than a whole quart of beer.

Q. Was the chemical knowledge of food possessed sufficient reason for the fact that Jesus Christ did not endorse the use of alcoholic wine?

A. The opinion that has been expressed by those who have been closest students of this subject is that the wine which was recommended was simply unfermented juice of the grapes. At the present time in that country the grape juice during the vintage season of the year is expressed from the grapes spread out in shallow pans and allowed to evaporate in the very hot sun until it becomes the thickness of syrup. I think we have in our collection in our little museum here, a small amount of this sweet grape juice that is prepared in that way. This has been prepared in this way from the very oldest times. It is afterwards diluted with a little water and becomes a most delicious drink. There is plenty of evidence in the bible that strong drink is condemned. Wine is a mocker, strong drink is raging. Look not upon the wine when it is red, when it stirreth itself, when it is effervescing and fermentation is taking place. There are plenty of bible texts that condemn the use of wine.

Q. When bran foods seem irritating to the intestinal tract, which kind of laxative diet should be used?

A. Bran is not irritating. When it is dry bran may be irritating, but when it is softened it is not irritating. It has been a common practice for ages when a very bad sore of some kind, a bad ulcer or a bad boil occurs to put on a bran poltice and there is nothing more soothing and emollient than a bran poltice.

Q. Is the milk and cream of this institution sterilized.

A. Yes except the milk that is served upon the table. In its ordinary state in glasses upon the table, this milk and cream is not sterilized but is obtained from dairies in which the milk is produced under the rules of certified milk. Cows are milked and cleaned by the vacuum process. The stable floor is of cement and the dust is suppressed and the animals are always washed clean before milking so all the precautions taken in producing so-called

certified milk are followed. I had a report the other day that while the number of bacteria found in ordinary commercial milk which is allowed by law to be a million in a teaspoonful, The law permits a million germs in a teaspoonful of ordinary commercial milk. In that quantity the number of germs found in the milk was almost unappreciable thousands of times less.

Q. Are canned eggs wholesome?

A. They are wholesome but not so wholesome, of course, as the fresh eggs. Eggs canned in glass are better than those canned in tin because the eggs and even vegetables will dissolve a little of the tin.

Q. From what does the bacillus Bulgaricus originate?

A. Well I don't think I can answer that question. The bacillus Bulgaricus originated in the same place that oak trees did and palm trees and the rest of the members of the vegetable kingdom. They are vegetable organisms obtained from the land where they grow naturally but they do not grow so well in this country.

Q. When a person have hyperacidity of the stomach does the use of ~~extra~~ bicarbonate of soda do any harm?

A. It is sometimes good for temporary relief but more or less harm is continually used.

Q. What causes the heart to beat hard and wake one up. sometimes intermitting so that one is unable to sleep?

A. This is a nervous disturbance of the heart often the result of indigestion. The heart and the stomach are controlled by the same nerve so when things are going wrong in the stomach the heart is very likely to be disturbed because of the intimate association.

Q. After ones system has been invaded and filled with disease breeding germs and these germs have been overcome by the friendly germs what becomes of the carcasses of the former germs and what effect do they have on the system.

A. I see somebody is thinking very deeply into this question and this really is a very serious question because the carcasses of these diseased germs contain very deadly poisons, poisons that are even more deadly which are produced by them when they are alive. There are always two kinds of poisons produced by germs, poisons which are excreted and poisons which are retained. The poisons which are retained are of a defiant character but they are deadly poisons. These poisons are absorbed from these dead germs and the (experiments Strassberger showed that there are produced in the body something like three hundred trillion germs every twenty-four hours. That is, the body of a person who eats a mixed diet, eats meat, produces three hundred trillion of these germs in twenty-four hours.) Now that is a lot. A trillion is ^a million million don't you see so that is three hundred ^{million million} germs produced in the human body every twenty-four hours. (Ninety nine out of every one hundred of these germs die in the body. They are short lived and they die. Their dead carcasses in the body are digested, dissolved very largely and the poisons are taken up and thrown into the system and this becomes a source of very serious poison.)

Q. What is the cause of a person losing his voice when he is tired?

A. That is natural. The voice is produced and is controlled by muscles. When a person loses his ability to run, to jump or work, to play the piano or do anything else of that sort, it is because his muscles are tired and in the same way he loses his voice when he is tired.

Q. What are Good Health Biscuits made from?

A. They are made from a combination of cereals, sweet corn and other cereals.

Q. What should the temperature of the swimming pool be?

A. About 76 to 78 degrees.

Q. Where one has freckles on his shoulders and arms after a few days of surf bathing where they have never been before does it show auto-intoxication?

A. No indeed. There is no auto-intoxication about that.

Q. What is the temperature of the neutral bath?

A. Just a little below the temperature of the body, about 42 to 95 degrees.

Q. Can rheumatoid arthritis be cured? If so, how?

A. Well rheumatoid arthritis can be stopped. It can be arrested, but the damage which has been done to the joints can not always be entirely cured.

Q. What is the cause of depressed feeling?

A. Somebody feels down in the mouth because there is something down in his liver, I guess. (The old ancients used to say when a man was depressed he had hypochondria which means down under the ribs and the ancients had it right you know. You feel depressed because there is something wrong down under the ribs and that thing is generally a congested liver and an infected colon, a colon that is filled with putrefaction. Get rid of the poison and the depression will disappear as the mist before the rising sun.

Q. What diet would you suggest for a senator who expects to go on a camping trip where food is scarce and facilities for cooking are difficult.

A. If I were going under such circumstances I would recommend the person take his food along with him. He would have to have it already cooked, already prepared. It is not a difficulty thing. One could take along potatoes just as well uncooked as cooked. Take along a few canned vegetables. Beans are a very excellent thing for a camping expedition. The little pink beans are what the California explorer or prospector carries. Men who took the great overland route in the great rush to Alaska some years ago, those who reached the Klondike by the overland route were supplied with pink beans and those lived entirely upon

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pink beans succeeded in making better time, succeeded more often than those who tried to live on meat. Of course, one can have an abundance of dried bread, biscuits and one can take food along, some food that is raw and do a little plain cooking without any difficulty.) It doesn't require anything very elaborate to cook with. Sometime ago we used to give our nurses instruction in emergency cookery and one of the problems I studied for them was to make a loaf of bread with a soap box and a kerosene lamp. Of course some flour and water besides, and they succeeded in doing it. One of the nurses made some splendid bread with a soap box and kerosene lamp. It is only necessary to invert the soap box over the lamp. There is heat enough produced by the ordinary kerosene lamp to bake seven loaves of bread. The only thing of importance is to keep the heat from getting away. That is usually accomplished by inverting the box over the lamp. The whole dinner in an ordinary flour barrel. The whole meal was cooked in that flour barrel with a good sized kerosene lamp and the barrel turned upside down over the lamp. It was necessary to suspend the articles from the bottom of the barrel and the barrel was covered all over with brown paper and some thick wrappings, some rugs and etc. so the air could not escape. One can easily improvise a cooking apparatus if he understands the principle of cooking.

- Q. When I take deep breathing exercises it seems to ~~my~~ stomach and head feel worse. What is the trouble?
- A. Perhaps you breathe too little or too deep. Don't breathe quite so deeply next time. It is too sudden you see for your head and your stomach. They have not been used to such good treatment and they have to be gradually accustomed to it.

Q. Is cancer infectious or contagious?

A. No not in the ordinary sense. That is, probably not. Down at the Rockefeller Institute when I was there the other day Professor Ross showed to me a very interesting experiment he had been making. He found a chicken that had cancer and he took this cancer chicken and ground it all up fine, filtered it through a ---~~pastuer-?~~---filter and took the clear solution that flowed out through that pastuer filter and injected it into another chicken and the chicken got cancer just like the first one and he propagated a whole series of cancers in that way so it is entirely possible that cancers may be infectious. It is certainly a good thing to keep just as far away from as you can.

Q. What is diathermy and in what way does it benefit one?

A. Diathermy is the electrical current which produces wireless electricity. It is the electrical current used in the wireless electricity. That same current has been harnessed and made to work in helping people to get well. Now when you want to send a message straight through the air you can do it with wireless electricity with the high frequency or ^{current}tesla/as it is called. I had the pleasure of knowing Prof. Tesla and have seen some interesting experiments in his laboratory before the current was employed as it is now used. Suppose for instance a man has something wrong in the middle of his pancreas, has got a pain there and we want to help him. We put a fomentation on and it is all right ~~for~~ the outside but it does not reach the inside but now with diathermy we can telegraph a fomentation down to the middle of that man's spleen or pancreas, to the center of his liver or the middle of his brain or any other part of the body. The heat in other words can be applied to any portion of the interior of the body just as we have before to apply heat to the surface of the body by fomentations and the Photophore ~~and~~ various other means. That really is what diathermy is, the means of applying heat through the

use of wireless electricity and we can apply it in this way.

Q. Why are you so positive and emphatic in stating your theories to be facts when you must know medicine to be an uncertain -----.

A. I am not talking about medicine. If I were talking about medicine I would be uncertain about it but I am talking about great physiologic and scientific facts. I do not undertake to prevent any theory my friends as a fact. Anybody who has ordinary intelligence will certainly be able to distinguish between a theory and a fact. A fact is a thing upon which a sound theory must stand. It is the basis for the theory but a theory is a thing which might be a wrong interpretation of facts. The things which we are talking to you about here are not things we have been trying since yesterday but they are the winnowed truth of almost half a century of experience. For 46 years this institution has been trying and testing things that pertain to human life and human physical welfare and we have found out a few things. We have learned most of these things from people who have come to us and told us their experience. One hundred thousand people have come here and poured into our ears their experiences. They have told us what they had done and what they did not do and what the result was and we have endeavored to summarize, to epitomize all this experience and this great fund of information that has been brought in and to give the last comer the benefit of it.

Q. Is it always necessary to have operations for ~~operation~~ ulcer of the stomach or for gallstones?

A. No. Nature can heal up sores on the interior of the body just as well as she can heal sore on the outside of the body. If you have got a sore finger you don't have it cut off right away. You give it a chance to get well so if you have got a sore in the stomach it may get well if it has a chance. Such things should not be operated upon unless they have been thoroughly treated with other reasonable means and every opportunity has been given for recovery without operation but when that has been done and the patient is still sick something more must be done. A sore in the stomach differs from a sore elsewhere in this regards.

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When your finger is sore you lay it away and let it rest until it gets well. You retire it from business so the finger can recover so the stomach would recover from almost anything that it suffers if we let it rest long enough. The trouble is while the stomach is ~~resting~~ resting we are starving you see. We are dependent upon this very useful servant for our daily lives so it is necessary to keep it ^{and} going ~~we~~ we cannot let it take a vacation long enough so it will get ^{thoroughly} well.

Q. Is it always a disease that makes blood pressure or is blood pressure a disease of itself.

A. We need a certain amount of blood pressure to keep the blood circulating. High blood pressure is always ~~an~~ abnormal thing. It is due to a diseased condition of the body. It is not a disease in itself. It the provision ^{nature} ~~which~~ makes for carrying on the life of the body under adverse circumstances. High blood pressure is really never higher than it needs to be.

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Q. I live in a warm climate in southern Texas where we sweat most of the time. Would it be any advantage to take an electric light bath home with me?

A. Well, now when one is perspiring freely in the day time he certainly does not need to perspire by any artificial means. In the summer time however, we find the electric light bath very useful even in very hot weather but we certainly do not use it so much as we do in the winter time. One of the great advantages of the electric light bath is to produce a sweat ----- .
The Lord told Adam that he must earn his bread by the sweat of his brow but we are all dodging the sweating as much as we can. We don't like to earn our bread by the sweat of our brows but we like to get someone else to do the sweating for us and we dodge so much sweating that we have to suffer a great deal in consequence. Rheumatism is one of the consequences of neglecting to sweat) but if one is sweating freely in warm weather he certainly does not need any sweating by any electric light bath. However, I mention ^{there are} very few places in the United States where there are not spells of cold weather and there are some people who do not sweat very much even in warm weather. and the skin needs to be stimulated by some artificial means.

Q.

Question Box Lecture at the Sanitarium Parlor, B. C., Mich., Mon., Dec., 9, 1912

at 8 p. m.

by

J. H. Kellogg, M. D.

Q. What is good for cold feet?

A. That depends upon what kind of cold feet you have. In some kinds of cold feet the heart has to be treated but you know the principal cause of cold feet is tight shoes or leather shoes of autointoxication. It is usually one of those three things. I like to keep my feet warm. I used to have cold feet. I wore leather shoes and two pairs of stockings and gaiters and could not keep my feet warm then. When I abandoned leather shoes and wore cloth shoes. The cloth shoes you see me wearing now are the shoes I wear all winter. I run along through the snow without ~~wearing~~ rubbers or overshoes and I never think of having cold feet and my feet are always warm. They used to be always cold. I think cloth shoes are much better than leather shoes because they ventilate your feet. One reason why the feet get cold is because they get moist and the perspiration is retained. The situation is just the same as though you went out with a mackintosh on, exercised and got to perspiring with the mackintosh ~~on~~ on and then sat down without much exercise, of course you would very soon begin to feel chilly because the mackintosh has retained the perspiration and got the skin and the clothing in a moist condition. The feet perspire and make the stockings moist and the feet get moist. They may get cold because moist stockings are a good conductor, don't you see and dry stockings are a poor conductor. But moist stockings are a good conductor and the feet are chilled and get cold. Last winter I was in Europe and I had to wear black clother or brown clothes of some sort of colored clothes and leather shoes and I had cold feet continually the entire winter. Europe is not a very cold climate. They have very little snow over there but when I got home in the middle of January I immediately put on the same clothing I have on now and I was immediately warm and my feet were warm and I have been warm every since.

I had a great deal of trouble with cold feet when I was in Europe. Auto-intoxication is a very common cause of cold hands and feet. You meet a person with cold hands and ~~wet~~ feet and moist palms and you may know for certain that that person is suffering from chronic toxemia, chronic auto-intoxication. I met a young man in my office this afternoon and the moment I took hold of his hand I knew what was the matter with him. I knew what he was going to tell me. He told me all about the headaches he had, all about his despondency, all about how awfully afraid he was, how he got up in the morning feeling so nervous and depressed, how he did not sleep and I knew the cause of it all. It was not necessary to have him tell me much of the details of it because it is the same old story I have heard a thousand times, infact, several thousand times. It is the same story. "Now doctor did you ever meet a case like mine before". "Why I have at least met ten thousand of such cases. Now I said to this young man the thing to do is to see that the bowels move three or four times a day and then get into the bathtub tonight and stay there until you go to sleep. If he does that I am sure he will sleep the rest of the night and he can sleep in the bathtub if he wants to and need not be a bit afraid. I told him to stay in the tub until he got sleepy. You haven't any idea what a neutral bath will do for a sleepless person. Nobody who has insomnia needs to suffer another night. You can be cured right away as sure as the sun is shining. (It is only necessary to get rid of the toxins. Drink a lot of water ~~or~~, wash out the bowels, get the bowels thoroughly empty, keep them empty, get into a neutral bath and stay there and you will surely get to sleep by and by. That neutral bath does two things. The body absorbs water from the tub and that dilutes the blood and carries off toxins. The neutral bath is a powerful ~~diuretic~~ ^{diuretic} and that is the only active property it has. It quiets everything, lessens the activity of everything save the kidneys. The skin absorbs water. Water is carried out by the kidneys and the poisons are eliminated in that way. and the brain is relieved. Another thing it does is to soak the skin nerves which are exposed to the influences of the outer air and the environment and are excited and ~~are~~ ^{at} sending in a million little impulses that are ~~wrapping up~~ ^{wrapping up} the brain all the time.)

just rapping at the chamber door continually (when you want to go to sleep. These impulses are all shut off.) (There ~~ix~~ are no bed clothes like a tubful of water. It is just the softest kind of ^wrapping you ever came in contact with. Down is nowhere compared with it. Water, neutral water, you absolutely feel nothing. No contact, you see. Then the nerves are soaked full of water and a water soaked nerve is not sensitive. A dry nerve is extremely sensitive. You know how miserable your throat feels when the air gets too dry and how your skin feels when in contact with dry air.) A good many people suffer ^{a good deal} from tingling and burning of the skin in winter time because the skin gets so dry it cracks. It is all full of minute little cracks. If you look at it through a microscope it is all full of little ^{fissures} fishers, cracks and the nerves are exposed and that is what makes the trouble, especially when you take soap baths and wash the oil all off the skin, the skin becomes harsh, dry, inelastic and it breaks very easily so there are millions and millions of these little breaks all over the skin and they are exposed. That is why there is such a tingling sensation and you rub it and scratch it to relieve it and this causes a little eruption, then you get eczema and real poisoning of the skin so the thing goes on from bad to worse. (Not the neutral ^{is} ^{bath} the cure for those things. It soaks the skin full of water and destroys the sensibility of the sensitive nerves. Then you go off to sleep after awhile. Why you can sleep twice as fast in a bath tub as in bed, just twice as fast!) Whenever I go home at two or three o'clock in the morning and have a chance to get only two or three hours sleep, I get into a bath-tub and sleep ~~through~~ there. I have ^a tub made short because I am short and in a long tub I would be likely to drown and I have my self braced up so that I know I won't drown, then I have a book of some sort in my hand. I read medical journals, read proffs, read manuscripts and finally I get the newspaper and read about politics then I go off to sleep.

Q When do the reflex centers get out of order?

Q—Is it advisable to force the appetite in order to approach the number of calories advised or in order to eat with regularity?

A—Yes, but now I must tell you how to force it. You don't want to sit down at the table and say, "Now then my bill of fare says that I must so much potato I don't like that potato, but I have just got to get it down some way", then proceed to swallow it by force. That is not the way to do it, but I will tell you how to force the appetite. When you go to bed at night open your windows wide and let all the cold fresh air in you can. Get plenty of bed clothing bundle up as though you were going out for a sleigh ride and let the winds of heaven roar about your ears all night long. Keep your ears well covered up however, for it is only your nose that wants the fresh air. You want to breath all the fresh air you can and the colder the air is the better. Breath that cold pure air all night long and when you get up in the morning you are bound to have an appetite and a spontaneous appetite and when you get dressed and get breakfast go out doors and get some more fresh air. Stay out in the fresh air every minute every time you possibly can. Get a cold bath in the morning or a cold water rub or a cold air rub, get in contact with the cold.) (Did you ever hear of a the man that had been up to the north pole suffering from loss of appetite up there? Did you ever notice any remarks of that sort in the accounts of Peary and others who have been in the arctic regions. Even Dr. Cook did not tell anything about losing his appetite up there. Those men are hungry as bears up there.) Not there isn't any reason why you should not have an appetite only if there is something wrong, get the obstacle out of the way. The most common thing is that the whole body is loaded with poisons. You have got a coated tongue and that coated tongue attributes all sorts of flavors to your food that it does not have. (Dr. Benedict who was here from Boston the other day has been having a man fasting in the Carnegie Nutrition Laboratory. They man fasted for thirty-one days and he said he had a great deal of trouble with him because they would not let him have ordinary water but gave him distilled water

and they were studying most minutely all his excretions and they did not want a thing but what they gave him and they were not giving him anything but water for those thirty-one days. He didn't like the water and he began to tell the different flavors he could taste in the water. He said he could taste turpentine in it and he could taste tar in it and all sorts of poisons. He knew the water was being poisoned, and he could taste the different things they were putting into the water. Now those things were on his tongue. He was simply tasting himself. All those thirty-one day with not one single bowel movement and of, course the poisons accumulated in his body. He fasted a regulation fast and the poisons accumulated, the bowel accumulated and all the excretions accumulated in the body and the running and decomposing of these retained excretions were absorbed into the blood and excreted by the mucous membrane of the mouth and the mucous membrane of the stomach as well and of all these internal excretory organs they were all dealing with those poisons and trying to get rid of them and he tasted more or less of it in his mouth you see, so you want to get rid of that coat on your tongue. (You want to get rid of the poisonous coat the excretions, ^{on the tongue} get them all removed from the body, then you will have an appetite. Force the appetite by earning one. The bible says ~~that~~ "He that will not work shall not eat." That is practically what it says. "He that will not work neither shall he eat". Now nature says the very same thing. The Lord told Adam he must earn his bread by the sweat of his brow. How many of you when you are home earn your bread by the sweat of your brow. The most of us earn our bread by making somebody sweat. The majority of people are anxious to do that. Very few people like sweating. The average man dodges sweating in every way he possibly can and that is the reason why he does not have an appetite because he does not sweat.) Way up in the northern regions in cold weather they sort of go into hibernation in winter time as the bears do. In order to keep themselves alive to keep themselves from becoming seriously diseased they have sweat houses and once a week they go into these sweat houses, heat a lot of stones very hot and put

some water on the stones and this is converted into steam and fills the room with hot steam and they perspire very freely. Their skin becomes as red as a stewed lobster. Then they rush out and roll in the snow they go back into the sweat house again then out into the snow again and that is the hot and cold of the Laplanders, and in that way they compensate for the sweating they do not get by exercises. (The electric light bath is a splendid means of compensating for sweating that you do not get by natural means. I think every business man every sedentary man ought to have some means of making himself sweat and perspire. I think it is one of the most effective means of combating old age. You see these people going around with palmy skins, brown spots on their hands and faces and black circles around their eyes. They don't sweat enough. You never see those signs in persons who habitually every day of their lives sweat or find a man who works hard every day, earns his bread by the sweat of his brow the sweat laboring man and he does not show any of those disfigurements until he gets so old that he retires and sits down at home and smokes his pipe, then they come on very rapidly.) I was showing some of those spots to a man about fifty years old the other day and he said, "I inherited those. My father had them just the same". I said, "Yes, but your father did not have them at your age, did he now? How old was he?" He said, "He was eighty years old! But he didn't have them until he got old and set down and became a sedentary person and ceased to sweat, so (if you want to get rid of those black and brown spots all that dirty ugly looking skin, take care to see that you sweat three times a week. The best way to get that sweat is by exercise by work. You ought to get into a vigorous perspiration every single day by exercise for half an hour and the skin will become clean and white. (These athletes, men who are training for a prize fight or a wrestling match or a pugilistic encounter, these men whenever they get ready for a prize fight have the finest skins you ever saw. In England they say when a prize fighter is ready to meet his antagonist they examine him and they say, ~~xxx~~ "His skin is as white as a woman". That means that that man's body is in the very finest kind of condition, you see.

~~+~~ brown and dirty looking

And when your skin is getting ~~it~~ is because toxins are accumulating and stagnating.) Your situation is that of a ^{stream} stagnant pool of water that goes babbling down the mountain side, leaping from the rocks, springing out into air and sparkling into the sunshine clean and pure as crystal.

Stream

Water

Flow

That water gets down into a hollow at the foot of a mountain, stagnates there in a little lake and it soon all covered over with green slims and frogs croak in it. That is what is the matter. That is what makes you feel so blue, so despondent. The frogs are croaking don't you see. That is what makes you feel so irritable, so miserable, cross and ugly. The frogs are croaking. (Get out and exercise, perspire, set the streams of life moving and stirring and see how the oxygen will come sweeping and burn up those pessimistic feelings and carry off all the ^{old} cobwebs from your brain.)

Q. When one walks quickly and gets out of breath soon afterwards, what is the cause?

A. Why he has got one or two or three things the matter with him. This man who gets out of breath has too little lung power or too little heart power or too much fat to carry around. That is one of the things. It is one of those two things. He may have arteriosclerosis, then his heart is not able to pump the blood around through the arteries. As long as the heart is strong enough to pump the blood through the small arteries he won't feel the shortness of breath, but when a man is getting along in years and begins to find himself short of breath, that means his heart is getting weak generally. If a person is very fat or becomes edematous the weakness may be in the lungs or if he has tuberculosis, he is likely to be short of breath because his lungs are partly filled up with tubercles, but a great many people are short of breath because they are too fat. See what happens to a man who is too fat. I saw a lady the other day who weighed two hundred and forty pounds, a lady who according to her height ought to weight 115 pounds. Her actual weight was 240 and the proper weight for a woman of her height was 115 pounds. This poor woman you see was going around with another woman of her own size on her shoulders and was carrying another woman around on her shoulders all the time. Just think of that. What a burden that is. Try to

pick up a person of your own size and trot off with him, just going lively around running up and down stairs, etc. with a person of your own size clinging to your shoulders or carrying him in your arms. You see what a tast it is. This obese person has a tremendous amount/^{surplus} of unnecessary, useless work to do and it wears them out. It wears out such a persons heart. I met a lady some little time ago who calls my attention to the fact that her feet were not fat at all and her arms, her hands and the lower part of her arms were not especially fat, but was very strong and her arms were not fat at all. She had very good arms. "How is it," she says, "that I have such an enormous amount of fat around my body, around the hips but my lower limbs are all right and my arms are all right?" I said, "Look here there is a good reason for that. Your legs have a lot of hard work to do in carrying you around you see. You are so large and so heavy and your legs have so much to do in carrying you around that they use up the fat and your hands, they have a whole lot of work to do, don't you see. They work so hard that there is no chance for an accumulation of fat." Well she took the hint right away. She said, "Doctor, you know I think I inherited that. I have just made a practice ever since I was a baby of eating just all I possibly could and I feel I inherited it." She gave me some reason for things that were true. (Then when one is too fat, the fat accumulates about the heart and within the chest and diminishes the size of the lungs and tends to compress the heart, so the over-fat person is crippled. He has such an enormous of extra work to do. Then the fat is accumulated on the inside of his chest. The chest is a bony cage so when the fat accumulates on the inside it compresses the lungs and when it accumulates around the heart it burdens the heart. I have seen a layer of fat an inch thick on the inside of the chest and to that extent the lungs were diminished. In this case they would diminish two inches in diameter all around the chest and so there was a very small lung capacity left. The space was largely occupied with fat, so obesity you see is a very serious matter. If you find yourself getting too fat, by all means

reduce it just as quick as possible. Dr. Rogers the medical director of the New York Life Insurance Company told me that they have discovered that people who are 10% under weight are better ^{off} than people who are up to weight. You had better be a little under weight than to be ~~able~~ above weight. Say ten percent under weight is a great deal better than ten percent above weight. (They found that people who are ten percent under weight out lived people who had standard weight. He won't do to be too poor, too thin, still ~~this~~ ^{it} is a far greater disadvantage to be too fat. You better take off a little if you are too fat.

Q. Here is a newspaper clipping about a human incubator who believed that lizzards hatched in his stomach and grow there three to six inches in length.

A. That is exactly such an experience as I had sometime ago. A man came up here from Kalamazoo who had drunk some water from a spring and said he had a lizzard in his stomach. He knew it. He felt it creeping all about and biting him every little while and he wanted something done about it. I labored with him some time to convince him that a lizzard could not live in his stomach, that the gastric juice would digest the lizzard just as well as it could digest a live oyster so that if an oyster could not live in his stomach a lizzard could not live there. I didn't seem to make any headway so I finally had to consent to preform an operation and I took him up to the operating room put a drop of chloroform on a napkin, had it placed over his nose, told the doctor to keep putting on more chloroform, more chloroform which he did not do then I kept tell him to put on more chloroform and to be sure to get the patient sound to sleep and by and by I made a little scratch over his stomach then I told the doctor he might let him out, so he let him come out and the man came out of the operating room relieved of his lizzard and he never had any more trouble with it. I hurried out as fast as possible so he wouldn't ask me to show him the lizzard. I ~~threwed~~ ^{carried} it away immediately and the lizzard disappeared.) Now it is very astonishing how real these things sometimes become.

A doctor came once and brought his wife, a very intelligent woman and she wanted me to remove ^a her fishbone from her throat. The doctor told me he didn't believe there was any fishbone here. His wife had tried to swallow a fish bone some three or four months before and it stuck in her throat and she said it had been there every since. I examined the throat and didn't see any fish bone. It had simply scratched the throat and the irritation remained for a while and her throat got sore and remained sore ever since, and the lady thought that the fishbone was there and there was no fish bone there, but I found it impossible to remove that fish bone from the lady's mind until I had her open her mouth very wide and insisted on opening it wider and wider and wider till her mouth was open so wide that it shut her eyes, then I proceeded to introduce a pin and a pair of forceps into her throat and scratched her throat and then drew it out and threw it away into the waste basket very quickly and the lady was at once relieved and never had any more trouble with that fish bone. She knew a fish bone had been removed. It had to be removed from her mind you see.) There are some people who are sick because they are possessed of morbid ideas, hobgoblins of dyspepsia or a ghost of a torpid liver, gall stones or something else as a possession and they can't get away from it. Think they always have it and those are people who are cured by various sorts of psychologic treatment. The people who come here have rural maladies but (there are a great many people who do not have real diseases or only have these imaginary maladies and they are cured quickly and easily by Christian Science or by the Immanual Church methods or by something of that sort which does not deal with causes but only deals with effects. These methods do not deal with causes. They do not deal with germs. For instance, do not deal with broken bones, dislocated shoulders and that sort of thing. They only deal with effects. If the effect^s are of a psychological origin, then they are removed by psychological remedies.

2. Is the buttermilk we get from ordinary dairies as good as the Yogurt buttermilk.

A. No the Yogurt buttermilk is a special thing. It is prepared from Yogurt germs. You can prepare the buttermilk at home without any difficulty and it is worth while to take the trouble to have the real thing. Yogurt buttermilk is prepared from a ferment which is brought from the orient. Over in the orient, there are twenty or thirty different kinds of germs that will produce sour milk. Some of these germs are harmful because they produce poisons along with the lactic acid. Some of them produce alcohol. Yeast will produce sour milk. *Wnyas* is sour milk prepared by yeast, but it has about as much alcohol in it as beer has so it is not to be recommended. Kefir is another form of sour milk that is prepared from another kind of yeast, or a ferment which sours the milk and it has alcohol in it. There are twenty-five or thirty different ferments that will sour milk, but as I said the most of the ferments produce other things besides acidity so they are not to be recommended. (The bacillus *Bulgaricus* was found by the study of Griegeross of Geneva some years ago to be the cause of the souring of milk of Bulgaria. If any of you read the Iliad or any English translations of the Iliad, you perhaps remember something about the milk drinking. *Humer* speaks about the milk ~~drinking~~ drinkers who lived in the region which is now occupied by the Bulgarians. This territory has been occupied for many centuries by the people who live there today and the people of that country have been noted as milk drinkers from away back in the time of *Homer* and in recent times this practice has been studied and the milk has been studied. (It was found that these people were the longest lived people in the world.) In a population of three million it is found they have three thousand centi-million. (One person in every thousand is one hundred years old or more, while in Germany only one person in seven hundred thousand is a centi-million and in this country only one in twenty-five thousand so you see there is a very great difference and (the knowledge of this fact led to the study of sour milk which is the universal food in that country. I have seen porters in Constantinople or hucksters going about the streets with a yoke across their shoulders and half a dozen great earthen pots fastened

to this yoke and they were filled with "madzoon" as they call it over there. These pans or pots were suspended from the yoke by a rope and they carried this madzoon around from house to house and sold it. This Bulgarian bacillus has the power to live in the body better than the ordinary sour milk germ. The ordinary sour milk germs die off in a very short time after they are eaten and they do not get down into the colon. They do not get far enough down in to the intestine to do very much good. The Bacillus Bulgarian is better. It goes farther down, sometimes lives for a time in the small intestine and in the colon. Recently Prof. Metchnikoff and his assistant Prof. Colman have discovered a new germ, the Glucobacter which enables the bacillus Bulgarian to live a long time in the colon to become acclimated and to live there easily. The bacillus Bulgarian does not live in the colon very long because it would die of starvation. It requires a special kind of food. It has to have sugar. It cannot live on starch or protein but must have sugar, but the sugar is already absorbed in the small intestine so when the Bacillus Bulgarian gets down into the colon it dies because there isn't any sugar there, but Prof. Metchnikoff discovered a germ that makes sugar in the colon. There is starch in the colon but no sugar and the glucobacter has the power to make sugar from the starch that is found in the colon so is able to provide food for the bacillus Bulgarian and by putting these two together it is possible to make a very successful assault upon the pernicious germs which dwell in the colon.) We have been making very extensive observations on these germs recently. I received a supply of glucobacter from the Pasteur Institute and got full instructions for the cultivation of these germs and we are growing them in our laboratories and along with the Yogurt tablets which you get down at the booth you get the bacillus Bulgarian and the glucobacter.

We take them regularly at our house. They are part of our rations up there. We supply them at the Haskel Home where they have a lot of little children and we want them to live just as long as possible so we supply them with these germs so they will have a good start. I thoroughly believe in this it because we have somehow got possessed of these unhealthy germs. They have taken possession of us and they are shortening our lives. It is a cause of this tinting of the skin; of this bad breath and coated tongue. They are the causes of the premature ~~heart~~ hardening of the arteries and old age and so the most important thing we can do is to change the flora of the intestine, get rid of these unhealthy germs and there are three things to be done. First of all, to starve them out by supplying them nothing that is favorable to their growth,— that is cut out meats of all kinds, eat a low protein diet. *or my self I eat neither meat, milk nor eggs. I find myself far better off by discarding all of these things. When a person is young, he can eat almost anything he likes with impunity and does not notice the difference, but when you get along in years and your reserve gets low, you begin to feel that it does make a great difference. If I eat a glass of milk, I know it the next day. My head is dull, I cannot work quite so rapidly, I cannot concentrate my mind so intensely as I want to do. I cannot keep up my work so many hours in succession as I want to do. I have not quite got the same zimb and intensity for work that I have ordinarily. If I find the same thing is true with egg. I have noticed also that you can detect the fact in the breath of many people when they eat eggs. Those eggs are irritating to them. They are rotting down there in the colon. If the eggs rots after you eat it, it is just as bad as if it rots before you eat it. The effect upon the body is just the same as it is a rotten egg no matter where it after or before. The effects are precisely the same so it is better to get rid of all these things that decay. Unquestionably they are departures from our normal mode of life. The natural simple dietary of our primitive forefathers in the forest where they lived upon nuts, fruits and soft grains and fresh fruit. That simple

of nuts, fruits - and grains

natural dietary is what makes the gorilla to day the real monarch of the forest. There are no lions found in the part of Africa where the gorilla lives. There is a large section of the Congo region where the gorilla is found and where the gorilla is found there is not a lion to be found. The gorilla will not tolerate the lion in his pasture you see. Hunters and missionaries who have lived in that region and who have traveled through it many times, a number of different persons have assured me that this is the fact. The gorilla is a match for the lion. He will sometimes spring out of a tree top, and to an elephant passing by, with a club in his hands and beat him to death when the elephant has disturbed his home and if he feels that the elephant is a disturber of his home, he simply reaps his vengeance upon him. Why ten men would not be a match for a gorilla without a gun and without a weapon of that kind. A gorilla will seize the hunters rifle in his hands and snap it as though it were a twig. He has such mighty power in his arms. He is a regular Hercules and that great creature lives upon the simple products of the earth, fruits, nuts and tender shoots and soft grains. He would kill a hunter but he would not eat him. He would not degrade himself to eat the flesh of a man. Well it is because of our departure from these natural ways that we suffer. We have got to change if we are going to be better. (If we are going to get out of disease into health, we have got to make a radical change. Got to change our habits and there is no change can influence us so well that or do us so much good as a radical change in diet. You need not say that you are going to lose strength because you do not eat meat. (We are not strong because we eat strong animals. I think many people imaging that we must eat beefsteak because the ox is strong and we eat the flesh of the strong ox and we are going to be strong. If that was the idea we ought to eat an elephant you see or a or something of that kind. That is an idea born of cannibalism. The cannibal eats the man who he slays so he may get his strength, his valor and his property. IF he eats his body he has a clear title to all his property. That is the reason why he eats him and not because he likes him particularly.

Q. Are people every born with an incompetent ileocecal valve.

A. Now this is the first time I ever got a question about the ileocecal valve. There are new questions coming in to existence here all the time. If not, why should a person have one when they have never been meat eaters? A. Now we are all born with incompetent ileocecal valves. We are all born differently. All babies are different. The first week of a baby's life, it cannot hear a thing. The reason why it cannot hear anything is because the inner ear is sort of filled with dried mucous, but after a week or ten days or two weeks this is absorbed disappears and the baby begins to hear. If you will notice too when the baby is first born it looks right straight at the sun with its eyes wide open and you cannot do it. Its eyes are not sensitive to light yet. They have not become accustomed to it. It is not a good thing to have the baby do that but the baby will gaze right at the sun without blinking if you give it an opportunity and you couldn't possibly do it. The baby is practically blind ~~sick~~ when it is born so we have a lot of deficiencies when we are born. We do not know much. A young monkey or a young puppy knows a great deal more than the human baby when it is born. The human baby is very much like the young opossum or kangaroo. They are still in a state of very deficient development and ~~sometimes~~ some time passes before the little one becomes intelligent enough to take care of itself. We are born with an incompetent ileocecal valve,--that is the ileocecal valve will not prevent the backward movement of material from the colon in to the small intestine. It is not necessary in the young infant and the reason why is, because the food is of such a character that it fills the whole alimentary canal with friendly germs. Friendly germs are supplied with the food. They little one obtains from its mother's breast the bacillus bifidus, a protective organism discovered by T. C. A. ^{Prof. and} This protects the whole alimentary canal against the unfriendly germs so there is no harm if there is a backing up from the colon into the small intestine. No harm comes because the bacteria are friendly and not unfriendly. Then besides the child is fed very often and the child being

fed so frequently there is constant movement downward. Now there isn't any trouble in your sink that is connected with the sewer so long as there is a stream of water running down all the time. Even if you didn't have any trap in it there would be no trouble if there is a stream of water going steadily, but if you haven't any water running down and the sewer get stopped up, if you don't have a good trap in your drain pipe, the sewage would pretty soon come flowing up into the sink and the whole kitchen would be flooded with sewage. That is what happens when the ileocecal valve get incompetent with a grown person. ~~That~~ has to come infected.

Q. What is a cure for seasickness?

A. Stay in bed, keep your eyes shut. Make your diet of very simple things, fruit and toasted bread. Keep your bowels active. Have your bowels active before you go on shipboard and keep them active continuously ^{and} by keeping quiet for a day or two you will soon get accustomed to the ship and won't suffer anything from seasickness. Now you say that is theory. No, it is not. I have tried it. I am ashamed to tell you the first voyage I took across the ocean I was very ~~sink~~ seasick. When I was a small boy I was one time made very sick with a swing, twisting all around and whirling about and I became very sick and after that time I found I was very easily made giddy by any rocking or irregular motion. I frequently got seasick on the cars, but on my last trip abroad we had a hard storm and I passed over on a large German ship and came back on the Olympic and we had the worst storm. The poor captain who went down with the Titanic said it was the worst storm he had ever experienced in his life on the Atlantic and the people were all seasick. Very often when I went to breakfast there weren't a dozen people there. I did not miss any meals and I didn't have a qualm either going over or coming back, although at least nine-tenths of all the passengers on board were quite seasick, some of them very sick. So I tried the prescription given to you and I find it works fine. I didn't have to place an icebag at the back of my neck which is a very good thing to do, however. An icebag at the back of the neck lying in your berth with your eyes closed, eating very simple foods

taking care to keep the bowels active, that will usually prevent seasickness.

Q. What food should a delicate woman take to gain in flesh?

A. She should stay in bed and eat all the carbohydrates and fats she can. Olive oil is good, but it upsets digestion if you take too much of it because it hinders the production of hydrochloric acid. A very important thing is to keep the bowels very active because that creates an appetite and increases the vigor of digestion. If you are quite thin and want to gain flesh rapidly, it is a good plan to fast for twenty-four hours to start with to get a good keen appetite. Be sure to drink plenty of water. Malt Sugar is a very good thing to take. Thin people can often take ^{to} great advantage intermediate meals of Malt Sugar and fruit juices. Malt Sugar and fruit juices require no digestion. The same is true of Malt Honey. Malt Honey, Malt Sugar and fruit sugar require no digestion. They can be taken two or three hours after meals without disturbing anything at all because they pass out into the intestines with the digestion of food and are absorbed and utilized. If you eat half a pound of malt honey it will be absorbed every bit of it and will be absorbed and utilized.

Q. What percentage of patients ~~what~~ come to the Sanitarium are sick and what percentage only think they are sick?

A. Well I should say that the people who come here to this institution are at least 999 out of a thousand of them sick. The man who thinks he is sick is really sick. If he were not sick he would not think he were sick. The fact that he thinks he is sick is evidence that he is sick. It may be psychological sickness, but generally it is physical sickness which produces that unhappy state of mind.

Q. What degree of heat will the bacillus Bulgaricus stand without being killed?

A. It will stand a temperature of about 140 degrees, but it is better not to expose it to a temperature higher than 110 to 120 degrees. If you have any trouble making Yogurt buttermilk, try a thermos bottle. Boil the milk, cool it to 110 or 115 degrees, put the starter in it or the tablets in it—~~and~~ dissolved in

a little warm water, a couple of tablets in a quart of milk then put it into a thermos bottle and the germs will do the rest. Put it away and the next morning you will have nice buttermilk, but if it is not ready the next morning, it will be ready at the end of twenty-four hours. We find twelve hours quite sufficient to make very good buttermilk, although it becomes a little more acid when it gets a little older. A thermos bottle is the best means in the world of making buttermilk.

Q. What home treatment would you recommend for one with catarrh of the stomach who cannot come to the Sanitarium?

A. First give the stomach a rest for a week. Give it a chance to get well. Obtain nutrition by a nutritive enema, then the next thing is to wash the stomach out every day if necessary so long as there is mucous in the stomach. Wash the stomach two or three times a week. First every day then as the mucus is lessened, every other day then twice a week, then once a week. This washing out should be done once a day and a good time to do it is at night. The next thing is to avoid meats of every kind, and mustard, pepper, condiments of every description. Make the dietary chiefly of cereals. Fats must be taken very sparingly. Vegetable fats are better than animal fats. Fats in a state of emulsion are better than non-emulsified fats. A moderate degree of acids may be taken but very strong acid must in some cases be avoided. If the gastric juice is lacking in acid, then it is well for a person to take acid gluten or acidone at each meal to supply the place of the gastric juice which is necessary for digestion. A diet of Yogurt buttermilk is very useful in these cases, making that the principal part of the diet. Cereals of some sort along with the Yogurt buttermilk will make a sufficient diet and is very efficient in curing up the diseased stomach.

Q. What causes adenoids and can they be cured without surgery?

A. They can be cured by means of the galvanic cautery, but surgery is the quickest way to dispose of them.

Q. What does a coated tongue indicate?

A. It indicates something rotten somewhere. That is what it means, something rotten and needs to be eliminated. The coating on the tongue will disappear when the body is thoroughly cleaned inside and outside.

Q. What cholera is raging, what would prescribe as a preventive?

A. Boil water and keep the flies away.

Q. Is there any merit in osteopathy?

A. Yes. It is splendid for people who have ~~imaginary~~ disorders and splendid for people who need stirring up. Some people let their backs get stiff by lack of exercise and the osteopath gets hold and twists and pulls and wrenches that back, exercises every joint in it and works the muscles to and the exercise does a lot of good. Once in a great while there is a real case in which the joints are slipped out of place particularly in the lower part of the back at sacro-iliac synchondrosis, the place where the sacrum joins the hip bone, it gets a little out of place sometimes. It is astonishing how many people get troubled with this joint from lying on their back sleeping. If a patient goes to bed and lies on the back perfectly quiet for a number of weeks, when they get up this bone is a little dislocated and there is a little strain on the ligaments ~~of the sacrum and hip bone~~ and muscles and bone. Osteopathy gets hold of such a person and twists them around then the patient feels something snap and cracks and he is cured right off. The best remedy is if you have got to lie on ~~the~~ your back, some of the time put a pillow under your back and it will relieve the strain and will do as much good as osteopathy perhaps.

Q. What about these hardy men who live at the North Pole and live on meat?

A. They are awfully glad to get back and have something besides meat to eat, and those Eskimos up there, I heard a doctor who had been up there or a professor rather state that an Eskimo would travel twenty-five or thirty miles to get one little gundrop. They are so fond of cereals and things that are not fat, that are not meat. The pemmican you hear about they are living on up there is not entirely composed of meat but contains fruits and cereals as well as meat,

and that is why they find pemmican so important. The dogs must have pemmican as well as meat, so the men do not live on a strictly meat diet. They get scurvy and get sick if they do. They are short lived, those people up there. They ought to move south. It is not a healthy climate to live in. It is possible to live on meat up there much better than in this climate for the reason that there are no germs there.) (Dr. Levin went up to Spitzbergen some little time ago, made a careful study of the animals up there and found fifty-three percent of all the animals had no bacteria at all in their intestines and that is the reason why the Eskimo can eat meat because there are no bacteria there. It is what happens to the meat after it is eaten that does the harm, not what is in the meat at first.)

Q. It colitis a cause of neurasthenia and dizziness?

A. Yes indeed. It is a cause of autointoxication. The colitis injures the mucous membrane which becomes raw and the poisons are then taken in very rapidly. You know if a rattle snake bits you and gets the poison down under the skin you might die of it but you can suck that poison wound and suck that venom out into your mouth and it won't do you any harm unless you have a sore in your mouth. If the venom gets into the hand on the skin it can do you no harm because the skin will not allow the venom to pass through the mucous membrane. If it is healthy it will not allow the venom to pass through. The poisons produced in the intestine are equally poisonous as these poisons of snakes and are allied to them. They have effects very similar to the venoms of snakes. These poisons cannot be absorbed by healthy mucous membrane, but when a mucous membrane becomes diseased when a person has colitis then they flood right in and are absorbed with great rapidity. It is like putting the virus of the rattle snake on a raw surface and the poisoning takes place very rapidly. That is why a person suffering from colitis suffers so terribly from nervous symptoms of various sorts.

Q. How many times does a patient have to go to the X-ray room to have the pictures made?

A. It depends upon ~~the~~ how complicated the case may be. Sometimes

the Roentgenologist makes fifteen or twenty of the largest sized pictures. Sometimes fifteen or twenty of these pictures are made in a single case. It is the duty of the Roentgenologist to ferret the case to the very end to find out the very last thing that can be ascertained by means of the X-ray in the examination of a case no matter what it costs. Sometimes the plates used cost several times what the patient pays for the examination, but it is the duty of the Roentgenologist to get to the bottom of the case. When the Roentgenologist begins the examination of a case, he puts the X-ray behind the patient and the screen in front. Upon this screen he can see the various organs of the body but he cannot see them very sharply. There is something of a haziness and he has to look with very sharp eyes and with trained eyes to see all the things that are to be seen and he has to watch continually because changes are taking place and he has to make little pressures here and there and move things about. It is a very interesting thing. It is like going into a big old chest in an attic where things have been stored away a long time and hunting about to find different things that are there. You have to move them about here and there, over and over and round and round and that is just what the Roentgenologist has to do to get to the very bottom of a case and sometimes he has to take a great deal of pains. There is not so much to be seen in the pictures as in the fluroscopic examination. What the Roentgenologist sees upon the screen when he is watching the stomach and intestines and making these little pressures with the hands in investigation, that is the most important part of the observation. The ~~xxx~~ pictures sometimes really show almost nothing at all, but the fluroscopic examination gives the most important information. Yesterday I spent two or three hours at the operating table and one of the cases I had was a very interesting case that came in a few days ago had been vomiting a long time. The examination by the X-ray showed this poor man had obstruction at the lower opening of the stomach. When we began the operation we knew where the trouble was, so when we made our examination we found the intestine was contracted down so small it was scarcely half as large as my little finger and it was a wonder the man was alive at all, and it was necessary

to make a new opening into the stomach. I am glad to say the poor man got through the operation in good shape and is getting along all right.

Q. What causes rheumatism? Why does a warm climate help it more?

A. That is very wisely said, because it does not cure it. Chronic rheumatism is a toxemia due to germs, poisons absorbed from the intestine. This is becoming more and more thoroughly settled every day that this is the real truth in relation to rheumatism. A warm climate makes the patient more comfortable because cold intensifies the pain of the rheumatism, but the rheumatic need not be cool because he is in a cool climate. He can keep warm but must protect himself from getting and avoid himself from getting cold. As a matter of fact, the warm climate encourages the disease because the germs are more numerous in a warm climate ~~it~~ and the effect of the climate is rather depressing upon the body, so the patient does not really get any particular good from a warm climate except that he is more comfortable, but the disease itself is not in any way combated by the warm climate.

Q. Why do so many people connected with the Sanitarium have bad breath.

A. I am not aware that that is the fact. A good many people come here to have their breath sweetened up. I suppose that might be one explanation of it, but it is not my observation that the nurses and attendants are particularly ~~subjected~~ to bad breath.

Q. Can sterilized bran be substituted for Colax with good results?

A. In some cases it may. Sometime bran alone is sufficient. Sometimes bran mush is sufficient.

Q. If you want to give the liver a rest, what food should enter most largely into the daily diet?

A. Avoid protein as much as possible. Cut out milk, eggs and meat. Take a great deal of fruit. Don't eat too much fat.

Q. Explain why patients are not allowed to use the gymnasium oftener?

A. Well I will look into that matter and see what is the obstacle if there is any. I was in the gymnasium this morning and I thought the patients were using the gymnasium very freely when I was in there. They seemed to be having a lovely good time.

Q. What is the cure ^{for} goitre?

A. Remove the cause ~~in~~ which in most cases is poisons absorbed from the intestine. That is the great cause. In certain regions there is poison in the wells. In Switzerland in certain parts, goitre is very abundant and there has been found there are certain goitre wells in that part of the country. The goitre is produced from people who take water from those wells and fishes kept in this water get goitre. It is found that the water in these wells comes from old sea bottoms. The water in the wells that came from Quartz rock or sandstone rock or lime rock did not produce goitre, but water that came from old sea bottoms, a sort of fossil beef tea or oyster broth produced goitre.

Q. Is gastric ^{disease} important if one has no special symptoms of stomach trouble?

A. If there are no symptoms of stomach trouble there is no occasion for gastric disease that I can see.

Q. Do you consider moderate farm work too much exercise for a person with a weak heart action?

A. No. Moderate farm work is the healthiest occupation in the world.

Q. Would you recommend a cold bath for ^{a patient} ~~persons~~ suffering from neurasthenia?

A. Yes, but you must train the body to it by degrees. It is one of the finest remedies known for neurasthenia.

Q. What is your opinion of the theory advocated by some that acid and cereals should not be eaten at the same meal?

A. It depends upon the acid. The acids of fruits are not so injurious

to salivary digestion that they interfere to any considerable degree with the digestion of starch. Hydrochloric acid does interfere very considerably.

Q. When Col. Roosevelt was shot, his physician said his excellent physical condition favored recovery without complications. As he has been a meat eater all his life, ~~what~~ ^{how} do you think he avoided auto-intoxication.

A. Well there are some questions there is only one way to answer. I think Sam Jones had it right. Sometime ago Sam Jones was giving a lecture out in Kansas City and there was an old ~~lady~~ gentleman about eighty-six years old who had been attending his lectures and taken great interest in them. Finally Mr. Jones gave a lecture against alcohol and tobacco, then the old man didn't like it so well. When Sam Jones got through, he got up at once from his seat and said, "Mr. Jones I like your preaching pretty well and have liked all your lectures until tonight, but I don't take a bit of stock in what you have said about alcohol and tobacco, for I have been smoking ever since I was twelve years old and drinking whiskey since I was fourteen and I am a pretty hearty man yet." How do you account for that." Mr. Jones says, "All that means is that you are uncommon tough and if you had not smoked and drank then it would have been necessary to kill you with an ax on judgment day." I must say ~~that~~ I think Mr. Roosevelt had a remarkably robust constitution to be able to stand beefsteak and bullets too, but I thank you for your attention.

The End.