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H O W C A N A S I C K M A N G E T W E L L ?

In the Sanitarium Parlor, Battle Creek, Mich., Thursday, April
20, 1905, at 8 O'Clock P. M.

By

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How can a sick man get well? It is so hard to keep well that everybody by and by falls down in his struggle and becomes sick. There is no exception; unless a man dies suddenly, he sooner or later gets sick. Hardly ever does anybody die of old age. Methuselah and a few men like him who lived to a very great age have perhaps died of old age, but an eminent French physician said, "Man does not die; he kills himself." Man kills himself; he does not die, or if he does die he dies as the result of his own misuse of himself. Now, when you see a man taking arsenic, strychnia, rough on rats, or some other poison,--carbolic acid, cyanide of potash, or something else,--swallowing it and dying pretty soon afterwards, we say that man has committed suicide. Now, it may be that the man who took this strychnia, or arsenic, perhaps he did not die the same day; may be he did not die before the next day. Now how about that man who smokes twenty cigars a day, or ten cigars, and dies, not the same day or the next day, but five years afterwards, or ten years afterward, or twenty years afterwards; but five, ten, twenty, thirty, or forty years,--sooner or later he will die. Hasn't he committed

suicide? Isn't he guilty of self-murder just as much as the other man? If a boy should sit down and smoke twenty cigars right off the first time he ever tried it, it would certainly kill him. I do not believe there is a young man alive that has not already become addicted to the use of tobacco who would not be killed by the nicotine inhaled from twenty cigars. If a man who is a cigar smoker would take a single cigar and separate the nicotine from it, no matter how much he has been addicted to smoking, no matter how well he is used to this baleful poison,--if a man should take a cigar, separate from it all the nicotine it contains, distill it out from it, then swallow it all at one dose, or allow it to be injected into his veins, that man would die almost instantaneously. There is enough nicotine in a single cigar to kill two men. There are two deadly doses of nicotine in every single cigar. So you see it is wholly a matter of getting used to the poison, and it is a slow suicide--smoking--whether it is the cigarette, the pipe, or the cigar,--it is all the same thing. Chewing, snuff dipping, snuff taking,--all the different forms in which tobacco is taken are simply slow forms of suicide.

The same is true of alcohol in any form. Alcohol is poison in all doses. There is no such thing as food in it; there is no such thing as a food dose of alcohol, a poisonous dose; a wholesome dose and a harmful dose. Alcohol is always poison in every dose. The decided opinion of science at the present time, of scientific men, the consensus of opinion is that alcohol is in no sense a food, but is in every sense a poison, and in all doses.

Now, what is true of alcohol and tobacco is just as true of mustard, pepper, peppersauce, ginger, horseradish, Chilis, and all that sort of thing,--just exactly as true. Somebody wrote to William Cullen Bryant something like twenty-five years ago and asked him to give an account of his mode of life. He gave a little story of how he was living. He said, "I get up in the morning, and I put myself through a whole lot of gymnastics for about an hour in my bed-room with as little clothing as possible, put myself through a vigorous course of exercise until I perspire freely. I exercise my arms with clubs, with swinging my arms, from swinging a chair around my head; I exercise my legs by rising up and down on my toes 500 times; then I take a bath, or in summer-time, I go out into my garden and work for half an hour, take a half hour's exercise, then have half an hour of work, then sit down to a very simple meal for my breakfast. It perhaps is a bit of bread, and an egg, a little fruit; and for my dinner it is a more substantial meal,--vegetables and fruits, and ~~sometimes~~ ~~meats~~ ~~or~~ ~~the~~ ~~simplest~~; tea and coffee I never take. They are poison. Mustard, pepper, peppersauce, so-called condiments I never touch." Now there was a man who lived in New York City, that smoky atmosphere of New York City almost all his life; and in his very late years, when he was seventy years of age, he used to walk three to five miles down to the office of his newspaper, and then he would walk up five flights of stairs to his editorial room. This he did habitually every day, and maintained alertness of mind and vigor of body up to ~~the~~ a very advanced age.

There was Ericson, the great engineer, the man who invented the "Monitor", and who stayed at Washington during the Civil War. Ericson, when he was eighty years of age, could be seen every single night, from nine o'clock until ten o'clock every single night, I was going to say rain or shine, but there wasn't any shine except moonshine or starshine at that time of day; but no matter whether it was stormy or fair weather, he could be seen out on the streets of New York City walking up and down those streets three to five miles, and from one to three hours, and every single day he took his regular systematic exercise, and in that way he kept himself erect, vigorous, and hearty, and healthy to a far advanced life.

Now, how many men are living up to what they know how to keep well? How many men are living up to what they are aware of. Everybody knows exercise is good. If a man had a fine horse, he would take care to have him exercised every day because his horse would deteriorate in value if he did not. He wants his horse to be hardy, wants the muscles of his legs to be tough and strong so that his horse will bring just as good a price when he is sold as when he bought him. But about his own leg muscles,--is it a matter of no consequence if his own leg muscles get soft, flabby, weak. If it was a horse that had such muscles as he has got, he would call it a good for nothing horse. How about his own legs? How about his teeth? Suppose a man brought you a horse, you examined his teeth and found half of them decayed; or perhaps he has lost a few of his teeth, and most of those he has left are decayed.

You would say that horse is worthless, and you would not want it at all, at any price--such a horse. How about your own teeth. Suppose I should inquire, if a man should bring me one hundred horses, and I should examine them and find all but ten of those horses, or all but five or ten of them had decayed, ruined teeth, some of them, perhaps, with store teeth, artificial teeth; why, I would say, or you would say that was a worthless lot of horses, a measley lot, and you would have nothing to do with them. A man could not sell a horse with such teeth as those. I wonder if I dare ask the question how many people in this room have thirty-two sound teeth. I doubt if there is a single person in this room who has thirty-two sound teeth unless some of them are artificial. It is the rarest thing in the world to meet a company of 200 people in which you can find an entire set of thirty-two sound teeth. If there is one here, put your hand up. Yes, here is one, and this man certainly has reason to congratualte himself. To lose a tooth is almost equivalent to losing an eye. You do not know what it means to lose a tooth. You lose two or three teeth, and pretty soon your jaw will get out of shape. If you lose one or two teeth even, it will spoil the shape of the jaw, and it will affect your speech, change the expression of your face if you lose a single tooth. If a tooth drops out of the arch, the rest of the teeth begin to draw together, and the jaw shortens, and the jaw gets out of shape; you find your teeth are getting worn askew because some of the teeth are gone, so there is not the proper coaptation of the teeth. But this is all a digression. What I am aiming at tonight

is to tell you why sick people get well.

In order to get well, we must reverse the thing, we must turn right square around. We might say, How would a man get up hill if he has rolled down hill, gotten down into a slough somewhere? How does he get out of the slough? He has to climb out of it, has to climb out of the mud, get his feet on terra firma, then slowly climb back again. Now health is ~~the man~~ on the mountain-top; disease is in the slough. To get healthy you must climb; to get the mountain air you must climb; to get the mountain sunshine you have to climb. On some mountain peaks they have a cogwheel railroad on which they carry people up; but there is no cogwheel railroad that rides up to the top of the mountain of health; but ~~if~~ you have to go on foot, to climb all the way. When I was in Italy some twenty-two years ago--Mrs. Kellogg was with me,--we climbed Vesuvius one afternoon; at least I climbed Vesuvius; Mrs. Kellogg did not. I did not wish her to make the attempt, so a couple of big, stout men carried her up. There were a number of other people being carried up at the same time. That was before the days of the cogwheel road, so they had a chair, and a couple of good stout men who would take hold, one on each side of the chair. There was a big fat man going up with us who weighed, I think, about 300 pounds, and he had four men, one for each leg of the chair, and it was a very hot, June day--in Italy it is pretty warm in June,--and Vesuvius is always warm at all seasons of the year, and climbing up through the scoria and the ashes, and the crumbling ~~and~~ slippery ashes is really the most arduous thing I ever did in my life, I am sure. I was

determined I would get to the top by my own exertion. There were a couple of sturdy little Italian fellows there, and one of them had a strap with a handle on one end of it, and he would be slipping it before me, throwing the strap over his shoulder, bringing the handle just in front of me,--a very strong invitation to take hold and be pulled. And another one would come behind and every little while when we came to a particularly hard place, he would give me a little friendly boost. I soon discovered these men were professional boosters, and I said, "That is me" to use a common expression; "that is exactly what I am; I am a professional booster" and the fat man who was along is the invalid that comes to me at Battle Creek to the Sanitarium, to be lifted, and carried, pulled along, boosted up into health. Well, that is what doctors and nurses are for. I did not allow any boosting; I got up to the top myself, and some invalids can get well in just the same way. I met a man the other day who, when I was away, wanted to be invited here to Battle Creek. I looked him over and said to him, "My friend, you do not need to come to Battle Creek at all; all you want is to go home, go on a farm, live outdoors, work in the soil, dig, root, and work. That is what you want to go; get on some kind of hard farm where you can not get a living very easily, but have to just root like a hog, work with all your might, dig every day to get a scanty living, and you will get well." He had lived in the lap of luxury, and had had too much coddling. I did not dare have him come here for fear he would enjoy the coddling so much he would stay; and I think he never could be cured by coddling. The

only cure for that man is to work, and thus to get the general waking up that comes from having to struggle with adversity. The majority of people who come here to the Battle Creek Sanitarium are men and women who have been boosted and helped, who have had all the help they can possibly get from the doctors' remedies of the ordinary sort, and come here as a sort of last resort, come here for the purpose of making one last effort; or perhaps, have become fully persuaded that this is the rational way, and do not want to waste time with things that are not effective.

Now, the question which I want to make clear to you, my friends, tonight here is the difference between the artificial method and the natural method of cure; how sick people do not get well, and how they do get well. As I have already suggested to you, a man gets sick by going down unto Jericho, if you please, or by sliding down hill. It is easy to go down unto Jericho; it is a downhill road all the way, and I think one could almost start, if there were snow on the ground, I think one could almost start on a sled at Jerusalem and slide all the way to Jericho. Now, it is just as easy to get sick as it is to go down to Jericho; it is going down to Jericho; it is just simply giving way to all your impulses, to all your propensities; if you see something good to eat, then eat it. If you have an appetite for candy you eat candy whenever you have that appetite. If you love coffee, or tea, or beer, you drink them just as much as you please. If you like cigars, you take cigars, all you want to, until you can not take any more. I saw a man throw away a cigar the other day. "Why did you

throw that away?" I said "Did you throw that away?" "O", he said, "I feel kind of sick, kind of giddy." That man had smoked until he positively could not smoke any more, until he was afraid he would fall over, tip over, or vomit, or do something else, so he simply had to stop. That is the way the old Romans used to eat. That is the way they used to burden themselves. When I was in Rome a few years ago I visited the various ruins there, and among other quaint old places I found the palace where Nero used to live; and they took me to the dining room where they used to have the great feasts, sit down and eat for three days running. They never would get up, but would eat and eat and eat; then they would take a nap, and eat and eat and eat, take another nap, and eat again until they could not eat any more. Then they had a device for making foam for more, and the guide led me around to a little door at one corner of the dining-room, and at the top of the door, engraved into the stone, was the word, "Vomitorium" in great bold letters. The guide said, "You can see what this is for", and he led me into this little dark room; and it seems out in this little room they had emetics of various sorts, and feathers for tickling the throat, and receptacles for the residue to be carried off. Then they would go back and eat again.

Now, my friends, that is just about exactly what you do. Thousands and thousands of people, many a poor dyspeptic, eats enormously, then goes away from the table, vomit, and then, as the Bible says, return to the vomit again, like a dog,-- go right back to the table again at the next meal and eat the very same things, repeat the same process, and so we go on;

that is one of the ways in which we abuse ourselves. I saw an account yesterday in a paper on the train as I was coming home I think; I ~~was~~ cut it out and put it in my pocket, of a woman who was found dead, and the doctors certified at the inquest that she killed herself with tight lacing. Her clothing was bound upon her so tight it positively, the doctors said, required great exertion to loosen it when they came to make the postmortem examination, to remove this tight clothing. It had been made so tight, the blood-vessels of the abdomen were compressed so the blood was crowded into the brain and a blood-vessel burst. She had actually burst a blood-vessel in her brain because she laced so tightly, and she died in consequence. My friends, it is our own wrong-doing that makes us sick, and the first thing, if we want to get well, is to turn right square about and climb up the hill. Now, we must turn away from all these evil things. I felt moved upon to speak of this tonight because so many of the patients are thinking while here, "I can stand this for a while; I will do works of supererogation; I will do penance; I can stand this for a while, but when I go home I am going to have some more of those square meals again; I know what I will do when I get home. I will have some mince pie, some of that pate dex fois gras, stewed lobster, deviled crabs;" and I presume that some of you here at our dining room table here, have visions of tabooed things constantly before your mind. I see some of you nodding assent to that. I hope before you leave here you will get over that. You hear me say some things here sometimes that may be a little unpleasant,--about pigs, for example. I just now remem-

ber a little incident which occurred in my life a good many years ago. It was more than thirty years ago. I was sitting in a hotel parlor in New York, and a quaint looking man with a great head and remarkable brain development came in, sat down, and began talking to a young lady who was there. And he said to her at first,--I think she was a lady friend of his, an acquaintance,--"Madam, I saw you eating a chicken at the table today." "Yes." "Now," he said, "I was amazed, I was amazed to think that a young woman of so much intelligence as you would sit down to the table and swallow a corpse." You ought to have seen the expression on that young woman's face. She had never before thought of a chicken as a corpse, and he proceeded to talk to her after that sort of fashion about fifteen minutes, and she vowed she would never taste another bit of flesh as long as she lived. I inquired who that man was, and I found he was George Francis Train. He is a very queer sort of man, but a genius. For about thirty-five years he abstained absolutely from flesh meats, from flesh foods of all sorts. I never counted him as one of the famous vegetarians because I am afraid it would not add any particular luster to our cause, but it happened to be the fact that he is a vegetarian. If he had not been a vegetarian, he might have been something worse than he is. He is a semi-lunatic, but he might have been a whole lunatic. This young lady, I dare say, never ate any more meat.

I was sitting at a table out in Salt Lake City some three or four years ago. I was passing through the city, and the president of the Mormons heard I was in the city, and

he invited me to speak in the great tabernacle there, and I had the pleasure of speaking to seven thousand mormons and other folks who came in, and it was really rather a remarkable occasion. I hardly knew how to choose a text for those people. I had never been among them, did not understand anything of them, but I had looked over the Book of Mormon when I was a boy, and I had run across some things that were somewhat akin to my own philosophy; so I looked up the book and found some very remarkable passages condemning the use of flesh meats. It seems the book of Mormon, the first book of Mormon by Joseph Smith I believe, who was supposed to have discovered it already written and who preserved it,--among other things there was this statement with reference to flesh meats: "Flesh meats should never be eaten except in winter when food is scarce, and in times of famine." So I read this. There were other descriptions of it--with reference to its evil effects in producing disease, and other things, and I read that text from the book of Mormon. I quoted that text, "as your own poets say", etc. Well, I think I caught wonderfully the ears of these Mormons, and after the dinner they gave me--a regular ~~skin~~ Sanitarium dinner, a great banquet with their bishops there--there was no meat upon the table. Since that time there has been quite a revival of this hygienic doctrine among them, and at the present time they have a health paper, and I think something like ten or fifteen thousand copies of some of our health books have been circulated among them in Utah. But the thing that interested me very much,--I was sitting at the table of a Methodist minister in the place next day, and he had invited a certain doctor in

invited in to take dinner with us a certain doctor whom I had never met before. They had mutton for dinner. He passed the doctor some mutton, and he said, "No, thank you." I said, "I am surprised to see you are, like myself, an abstainer from flesh foods." "Well," he said, "Doctor, I do not know that I can say that I really abstain from it, but I do not eat mutton; I can not eat mutton. Some two or three years ago I ran across an article which said something about the beauty of sheep's eyes, said they had a look that was so sweet, and mild, and meek, and intelligent;" and he said, "Whenever since then I have seen a piece of mutton I see sheep's eyes looking right at me, and I can not eat them." "That is simply tabooed. That is the reason--I read that article." So I say this to establish a taboo in the minds of the people here against mutton, against meat. I wish that man had made the same efforts with reference to everything that is evil, that is harmful,-- to somehow establish a taboo against it so it would become distasteful to us. I remember very well when I was a boy I was exceedingly fond of candy. I could never go an hour but I always had candy and nuts in my pockets, and I was munching them all the time, and I got to have a terrible acidity of the stomach, and I suffered wretchedly, and had not the slightest idea of the cause of it then, but it is perfectly plain to me now; and finally, when I was fourteen years old, I made up my mind candy was unwholesome. I had learned the fact. I did not know it before, but I learned candy was unwholesome, and I said I would eat no more, but I want to tell you I had a terrific battle with myself. I had really become a confectionery f

ery inebriate, so that whenever I passed a candy store I walked right into that candy store and bought some candy by force of habit. I did this I think at least a score of times before I got rid of the candy habit,--I walked into the store, bought a bagful of candy, walked out, and dropped it into the gutter. Perhaps as the first piece would be just approaching my lips I would recover myself and throw the whole thing in the gutter, and so by degrees I overcame that habit, and after some twenty years of battling with it, candy became so distasteful to me the very thought of it was nauseous, and I could not possibly eat it. And up to the present time, the candy sold in the stores where I used to buy candy, has the same idea in it,--that it is unwholesome, that it is nauseous, that I must not eat it, and I do not want it. It is repellant. I confess, however, that when I found it was possible to make wholesome confectionery from Malt Honey, something that was perfectly wholesome, that was really food, I welcomed it with a good deal of satisfaction, and so I often have a handful of malt honey chocolates or something of that sort for breakfast; don't have anything else to eat, and I find it very comfortable. So it has been part of my work, I might say, to endeavor to cast the devil out of the good things he has gotten into.

There is something in tea and coffee that is attractive; there is something attractive in tea and coffee, or people would not take it. Whengoing through Omaha recently, I had to stop a couple of hours in the depot, and I recalled an old friend, a former patient of ours, who is residing there,

and I called him up by telephone. He shortly sent down his automobile and took me up to his beautiful home. As I was about leaving, the lady said, "Now, we will serve you with some coffee. "Do not be afraid to take it," she said, "because we have not had a single grain of real coffee in the house since I returned from the Sanitarium last year. This is No-Coffee, so you need not be afraid of it." And so with our health cocoa. We have undertaken to cast the theobromin out of it, to cast the devil out of it, as I said, by taking out the theobromin which is the equivalent of uric acid, and the cocoa has most of the flavor in it, the natural, wholesome flavor of the cocoa without the tannic acid, and without the theobromin which are poisonous; and so with all our foods,--the bean, for example; there is uric acid in the skins of beans, just a little, not very much, but enough to make Dr. Haig think beans are bad, and so we have devised a plan for taking the hulls off the beans. The hulls are the indigestible part of the bean. People who suffer from gaseous disturbance of the stomach, fermentations and all those things, do so because they retain the indigestible portion of the bean which remains a long time in the stomach and undergoes fermentation. After removing the hulls, beans are rapidly digested, reduced to a liquid state, and will be quickly absorbed, or passed on from the stomach to the duodenum, from the duodenum into the intestine, and undergo all the digestive processes. So the reason why bread is so indigestible for a great many people is because the inner part of the bread is only half cooked, and is full of germs which have not been killed, and of yeast

spores which are still alive, and when taken into the stomach, particularly when fresh, warm bread is taken into the stomach, it is rolled up into little balls which ferment, decompose, and propagate, and the germs do not readily digest; so we have gotten over that difficulty by cutting the bread into slices, toasting these slices into what we call zwieback. That was the invention of a man named Shoemaker, away back a couple of hundred years ago. Zwieback has been used in Germany for all that time. Zwieback means twice baked; so it is zweiback, but zweiback is the old fashioned provincialism which was then applied to this article of food in the province where zwieback originated. Zwei is the word for two, but instead of using zwei, it is zwieback which means twice baked. In this article of food, the starch is converted into dextrin, and so is very close to the condition in which the starch is found in ~~bread~~ fruits and nuts. It is already in a state of partial digestion, and requires very little further activity on the part of the digestive organs. Every mother knows that toast-water is more digestible than ordinary hot foodstuffs, or gruel, or anything of that sort. So if a baby, or anybody, can not take any other thing, it can take a little nourishment in the form of toast water. So if we reduce all the bread we eat to the form of toast, we have the advantage of its increased digestibility. When toast is brought onto our table, it is expected to be toasted clear through until it is dry. Our cooks are instructed not to serve on the table any toast that is not toasted clear through the slice so that it is thoroughly dried while toasted, and when it is prepared in that way, it is

thoroughly wholesome. So with all these ~~so~~-called health foods. Every one represents an effort to overcome some defect. We have recently conquered the baking powder trouble, the baking powder problem. Our cooks have been saying to me a good many years, "If you would only let us have just a little baking powder, if once in a while we could have breakfast buns or something baked with baking powder, our patients would appreciate it very much", but I have said, "No." And I have never allowed the use of a teaspoonful of baking powder in this institution since I have had charge of it. But recently we have solved this problem so that now we have a food baking powder which is really food, which you can stir up in a tumbler of water and ~~it~~ eat it, and it is really food, just as much food as any other foodstuff, and the richest kind of foodstuff, at the same time it has raising properties so that when put into bread it acts exactly as baking powder does, has all the raising power of the very best baking powder, and there is not the least bit of the fault found in ordinary baking powder. From the use of this raising powder there can not possibly ~~be~~ be the injury that comes from the habitual use of these chemical preparations which leave behind residue which is nothing more nor less than Rochelle salts. There is a little residue left behind by this baking powder, but it is only a very little common salt, about half as much as is ordinarily used in seasoning bread. So if you want salt in bread, you have to add a little more, for the raising powder does not introduce enough.

So we have been trying to fight against these evils. We have in this way sought to make the way plain for the

invalid who was seeking health, to make the way easy for him, so when he turns about, finds himself down in the mire of disease, turns about to climb up the hill down which he has rolled, tumbled, fallen, slid, begins to work his way back again, to give him just as many helps as possible. We have nurses, and right foods to help boost him; doctors, nurses, and various things to help boost him; so this institution is a great boosting machine.

I want to call your attention briefly to the various departments of this institution. Some people come here who do not really learn how many different places there are, and go away without having had the full advantages, perhaps, of the institution. Some say, "Now, Doctor, I don't want you to put me through too hard. I come here rather to rest, and I do not want to take too much treatment, and you must not give me too much to do"; so the doctors will be timid. I want to say to you my friends, the best thing every one of you can do is to get up every morning early, go right to work, keep right at it all day long. I do not mean to say you shall be working strenuously every moment; that would not do, of course; but be doing something, something that will count. There is no patient in this house but who will be benefited the first thing in the morning by an eye-opener. If you are sleepy and want to wake yourself up, the first thing you do will be to bathe your face with cold water. If some practical joker wanted to wake up your face very quickly, he would put some cold water down the back of your neck. You would be wide awake, perhaps so wide awake it would not be wholesome for the joker. Suppose

you make this cold application to the entire surface of the body. It wakes up not only the brain, and the chest, and the large muscles and voluntary functions of the body, but it will wake up those centers along the spinal cord that have charge of the various organs. Apply it over the lungs and it will wake up the lungs. If you apply it down the back, it will wake up all these centers of the spine that have charge of the various functions of the body. If you apply cold water over the liver, it will wake up the liver; if you apply it over the stomach, it will wake up the stomach; if you apply it over the lower portion of the abdomen, about the umbilicus, it wakes up the intestines, promotes intestinal activity; so by application of this cold water to the whole surface of the body every atom of the body is waked up, every cell is waked up, and the whole machine is set in motion in a good, vigorous way. Some of you wonder why you do not feel so well in the morning as you do at night. Some of you are so neurasthenic it takes you all day to get up steam. A cold bath in the morning gets up steam for you right away, sets the machine going right off. Those who are strong enough should get up every morning and jump into the swimming pool. Do not bother with the hot spray or the cold spray; those are rather exhausting to take, especially the hot spray is exhausting; first a hot one, then a cold one; then another hot one and another cold one,--it is playing upon your nerve-centers, and there isn't any good in it for the great majority of people. You want just one good cold dip in cold water, a swim around if you are able to swim for a minute or two, then out, dry yourself quickly, dress, and take a vigor-

ous walk. In that vigorous walk you will get more good than in any other way before breakfast, because it sets the heart going, and the heart pumps the blood through the liver, through the lungs, the heart, and the stomach,--through all the machinery, cleans ~~it~~ out all the little nooks and corners where debris has been accumulating, and gets you ready for breakfast. Just before breakfast come the breathing exercises which force the stagnating blood out of your liver. Every time the diaphragm goes down,--have your chest up, pull down the diaphragm to take a deep breath, if you put your hand upon your abdomen and take a deep breath you feel those abdominal muscles tightened up. The reason why they are tightened up is because the diaphragm comes down, squeezes the liver against the abdominal wall. Every time you ~~give~~ take a good deep breath, you give the liver a hearty squeeze. That squeezes the liver, ~~empresses~~ it, forces out of it the stagnating blood just as you squeeze a sponge. A good, hearty laugh does the same thing. A real good, old fashioned ha, ha, ha, ha, ha! away down deep gives your liver a good stirring up. Often a little ^{percussion} ~~knutknutknut~~ over the liver is a fine thing. In New York City a few years ago a man who had been a chronic invalid a long time, put himself under the care of a certain doctor for inactivity of the bowels. This man came to the doctor, said he was suffering and wanted to be cured. Well, this doctor, who was quite a quack doctor, said he had a good remedy, and he said to the man, "Now, then I have a secret remedy, and you must sign a pledge in which you will solemnly swear you will not divulge this secret to anybody." So the man signed the pledge; so he was blindfolded,

then led upstairs, downstairs, around corners, through rooms, away down into basements, up to the top, and finally he got so bewildered he did not know anything about where he was, and the bandage was taken off. He found himself shut up in a room, the curtains were down, and he could not tell anything about where he was. He was then instructed to beat his stomach and bowels with his fists for fifteen minutes every morning, when he would get up; then he was allowed to go, was let out, and he paid twenty-five dollars for the knowledge, but it cured him; so it was worth while, because it made his life miserable. He was cured of that simple thing, and he afterwards told the story. He thought it was quite a joke, and his pledge was not really binding upon him, so he told the story. He was cured by this very simple thing. It is by these simples the cures are effected. It is by these simple means that nature is helped in her work of cure; so the breathing exercises before breakfast are very important, and are of very great advantage, because they set all ~~these~~ this machinery to work, if you please, sets the machine of the body to going, gets the dining room ready, gets everything all in order and cleared out, so that the food can be assimilated, taken into the body and utilized. Then comes the morning prayer. Now, that is not altogether an unnecessary part of the day's program of treatment. My friends, if the sick man ever gets well, it is because God cures him. Doctors do not cure him; it is God who cures him. It is the same kind Father who made us that heals us. If we get well, it is not by any sort of hocus pocus, it is not by

any kind of magic, or any mechanical ingenuity, that we are cured; it is by the power that works in us, that makes our blood, digests the food for us, circulates the food, forms energy and furnishes energy to the heart and lungs. The Bible says, "He is thy life"; that is what Moses said to the Children of Israel; "He is thy life"; and that is the motto of this institution. That is the word you see over the door opposite the entrance to the palm garden, put up there in golden letters so the light can shine through it so everybody can read it. That is the first thing you will see as you come into the institution. That is the motto I chose for this institution, for I found out long ago I could not cure anybody. The best thing any man can do in the world--the sick man--is to be sure he puts himself in line with God's providence, puts himself in tune with the infinite, gets in harmony with the universe, if you please, puts himself so far as he can by mental effort, in harmony with the powers that are working for his good. God is beneficent. I was awfully afraid of God when I was a boy. I read in Sunday-School story books of how boys who were playing on Sunday got struck by lightning. I thought that was not fair. I said, "The boy made a mistake; it was not fair for God to strike him by lightning and kill him off before he had a good chance." That rather set me against God. Those books were an unhealthy sort of literature. It took me many years to get over what I read there. They represented all the good people as being homely. Every good woman had dyspepsia, wan cheeks, hollow eyes; every good girl had red hair and freckles; and every good boy was hump-backed. But the smart

people, and the handsome people, and the good-looking and really happy people had a good time, the people who had a good time, were all wicked. That is as I remember it; that is the impression I got. Probably of course, because of the particular trend of the books I happened to read. I was the librarian of the Sabbath-School library, and had all the new books which were new at that time, and I got into a good many books. That is the impression I got, and the whole thing is wrong. God is not against us, my friends; he is for us. He is not even against the sinner,--the man who does not recognize him; he is not against him; he is not against anybody. God is against sin, but he is not against men; he is against evil, but not against men; he is not against any of his children. He is doing everything for them that they let him do. You say, "I don't profess to be a Christian." It does not make any difference my friend, it does not make any difference; you need God just as much, and he is just as willing to help you as though you were a Christian,--perhaps more anxious to help you; he is calling to you, reaching after you. The thing for every man to do, as I said, the best thing in the world he can do is to put himself in harmony with this great power that rules this whole universe; that is the aim of the whole thing; the power that is behind, the Life, the Energy, the Force, if you please to call it, that is behind all things; that is the Power the Christian calls God; that is what the scientist calls the Unknowable, if you like; but the Christian knows something about this power that is working for righteousness and good in the

world, so knows enough to put himself in harmony with it, in line with it; so our morning prayer is to suggest that. I should love to see this parlor just as full as it is now every morning at prayers. Come down; there is a sweet influence here that helps you to put yourselves in harmony with the things that are good. When you go away from this place, you go back into the wicked world. This is a little sort of sanitary heaven, but you are going back into the wicked world where there is a sort of drawing down all the while, and you want to get yourselves established on your feet so firmly that when you go away you can stand.

I was talking with a very intelligent lady just a moment before I came in here this evening, and she said to me, "Well, it does seem to me the world is going down hill!" I look out and see how degeneracy is increasing, and crime,--ten thousand murders every year in this country, and not one in ten of the criminals is ever brought to justice. Idiocy is increasing, insanity, and almost every malady except consumption. Just now, consumption is not increasing; but pneumonia is increasing. Typhoid fever is not increasing just now, because we are getting better water to drink. But chronic disease is increasing; Bright's disease, that awful malady; diabetes, that incurable malady in the majority of cases; almost all chronic maladies,--epilepsy, nervous diseases are multiplying, increasing at a tremendously rapid rate, because we are going down hill, degenerating. This is because of bad habits everywhere. Men are making themselves sick, taking their own lives. My friends, as I said, we must be prepared

to stem the tide, stand up against it, establish in our own homes a normal regimen, a natural dietary, a natural course of life, get back to nature, get in harmony with God, ~~in his~~ and things that are sweet and good.

Then, after breakfast, there comes exercise again for a few minutes in the gymnasium. That is to draw the blood away from your congested stomach, and get it down into your legs; to set your breathing organs to going, and also your digestive organs; then after breakfast comes the Mechanical Swedish Movement, and perhaps about ten o'clock, the bath-room treatment, then a little office treatment, perhaps the electricity, manual Swedish movements, phototherapy, static electricity, the sinusoidal electric current; and in the afternoon more gymnastics and mechanical Swedish movements. Do not be afraid to drop in two or three times a day in there; it will do you good, and it is free for all. There is no extra charge for it. And then the outdoors,--don't forget that. We are going to have our outdoor gymnasium in operation pretty soon, and I hope we shall have it thoroughly utilized. It is the seashore brought into the country. We have there a sandy beach; there is not the briny deep, but there is something just as good,--good, pure water,--sweeter and cleaner than the briny deep. Then there are the morning walks, if you get up early enough,--the cross country walks. We have a little booklet which gives an itinerary of this whole thing, gives walks a quarter mile, half-mile, mile, and walks of several miles' length up to four or five miles. This walking exercise is the best of all exercises provided you do it right.

Most people do not do it right. You see a man walking along in this sort of way, carrying something in his mouth in that sort of way. Artemus Ward made a definition of a cigar. He said it was a roll of leaves with a bonfire at one end and a fool at the other. Now, certainly there is a fire at one end, and the creature at the other end, if not a fool is certainly a foolish person. No person could be otherwise than foolish who would be willing to spend his energy, his life in battling with a poison which he himself voluntarily introduced into his body. I consider the use of tobacco the most heinous of the things that have ever been grafted upon our civilization. I can not understand it. Columbus when he discovered America, said he saw savages twist huge leaves together and smoke like devils. He put that down in his log-book. He took along some of those naked savages to Europe, took along some leaves, and they smoked like devils; and pretty soon all Europe took to imitating the example of those savages, rolled up those same filthy leaves, made cigars, or rubbed them up into powder, put them into pipes and smoked them. And pretty soon after that a Spanish priest who landed in the South Carolinas said he saw the naked savages rub up in their hands dried leaves, snuff them up their nostrils, and this act was followed by a violent purging, by which he meant sneezing; then he said they behaved like lunatics. I think the whole process is a sort of lunatic operation. How strange that the civilized world should be following along in the example of these savages! Instead of setting an example for the savages we take them as our exam-

ple, and follow their filthy practices. It certainly is an amazing thing. I feel it is the duty of every intelligent man and woman to stand up and battle against this awful curse that has come down upon us. If you come here to this institution and find out the evil as you did not understand it before, I hope you will go away and be an enemy to this thing, and help to pass legislation against it in your states. Indiana has just passed a law against cigarettes, and I am glad to see that the men who have been keeping cigarettes have been making great bonfires and burning them up. Some of them have been throwing them away, disposing of them, as they are no longer salable. That is the thing that ought to happen in every state, and we ought to be far enough along so we can recognize the evil that tobacco does to boys and girls, to minors; and a little farther along we may get sense enough to ~~see what is in~~ see that what is bad for that boy is bad for his father; that if cigars are poisonous for boys seventeen years old, they must be equally poisonous for boys who are twenty years old, or twenty-five years old. A boy is always a boy, more or less. He does not change the nature of his body. His blood is the same kind of blood, and his muscles and nerves are the same as they will be when he is grown up, when he is forty years old. So you see it is purely an arbitrary distinction made between boy and man as regards the possible effect of tobacco. But the effect upon boys is so immediate, so distinct that you can see the terrible dangers in it to the boy; so the boy does not have a chance to be a man even for a little while. So it is decided that he shall not begin to kill himself, spoil himself

on tobacco until he has had at least three or four years of real manly life; then he can go to work and despoil himself if he wants to.

I am making these remarks simply at random; nevertheless, I am trying to get a number of points before your minds, but especially the point that you should labor while you are here, my friends, to make every minute and every dollar count, and not lose any time. We are anxious to get you off our hands and back home as soon as we can. We are not anxious to keep you here one minute longer than we can do you good; and if you have gotten to the point where you can finish up your work at home, we are perfectly willing to let you go, because if you go home this thing is contagious, and you begin to propagate it among your friends, and so for one we lose we get three or four more; so we are anxious to get you out into the great darkness about us, into this great dark, wicked world, no holding up each one your little torch light so the people with whom you come in contact may be enlightened with reference to the things we are trying to hold up here at Battle Creek.

We are trying to make this a university of health, and if you want to be well you can get well, but you must work for it. Put a little strenuosity in it. Ask your doctor each day, "Doctor, can't you give me something more today?" I wonder how many of you are making up your bills of fare, marking them off, counting up the number of calories you are eating. I want to tell you, my friends, that thing pays. I cound the Calories I eat. I know what I eat. I have my

secretary keep track of me, and I report to him what I eat. I have figured it up, and I find the average to be about 140 Calories of proteids a day. I find I get along very well with 140 Calories of proteids. Some of you are eating 300 or 400. At least 100 or 150 Calories have to be converted into uric acid and urea, and you are taxing your kidneys which already have enough to do. Don't eat more than 200 or 240 at most. Get hold of one of those little books, and then find out how tall you are. If you are five feet and four inches tall you ought to eat about 1800 Calories. I eat on an average about twelve hundred, but 1800 is the maximum. You do not want any more than that any way. With the strenuous life you live in the bathroom, you may require more, but I do not get a chance to do much of what I recommend you to do. If you are five feet ten, you ought to take somewhere about 2200 Calories. The tables in the little book will tell you just how much to eat. You do not want to try to figure that out at each meal, but when you have eaten the meal, get the doctor's assistance in the office to help you figure it out. You can find out how many Calories of each element you have eaten; then look at the table. If you are very far away from the table, you are likely to be damaged. You may take a little more fats, or proteid, perhaps, and take less carbohydrates. If you have 100 more Calories of fats than you ought to have, ~~and~~ you should have 100 less Calories of carbohydrates than the table calls for. If you do this, you can make your time count here twice as efficiently. As I said before, we want to get every man and woman in this institution cured up as quick as possible.

One thing more I must say, make up your minds to be happy. Dismiss worry. I found a poor woman tonight who is afraid she is going to lose her mind. There is no symptom of it, only she has queer sensations. Her tongue was covered with all sorts of germs, brown, yellow, and cream-colored, growing on her tongue, in her stomach, and in the whole twenty-five feet of small intestine, those germs are growing and making different kinds of poisons; these poisons are absorbed, and produce all these queer conjuries of symptoms; she had the regular panorama of sensations which continually pass over her nerves, and they all come from that. Suppose we should give you some indican; it would make you wild, wouldn't it? Or suppose we should give you some alcohol; it would make you delirious; opium would affect you in another way. Atropa belladonna would have the same effect. Those are all poisons. Each one of them a wild kind of nervous exhaustion. These poisons are produced by germs, and they all produce sensations. That is what I told her. "Well," she said, "Is that so? Is that what they come from? Well, I feel better right away."

So, don't be depressed, no matter how horrible the sensations may be. May be the more horrible they are, perhaps the less important they are. The gravest forms of disease do not manifest themselves by painful symptoms. A man may have Bright's disease five years and not know there is anything in the world the matter with him at all. A man may have a cirrhotic liver and not know anything about it. A man's heart gets weak, and he does not know anything about it until by and by he runs to catch a train and finds his breath is getting a

little short. So these symptoms you have that are distressing, painful, distracting, confusing, frightful, perhaps, are really all of very little account. They are of very little moment. Make up your minds you came here to get well, and you are going to get well. When I was out in Colorado, I remember the experience of a man who came away out there, spent several years there. He had had consumption, but he got well and went out there and stayed there. I told him he could not get well when he came here, where he spent a little time. I told him he did not have one chance in one hundred; but he said he would not go home. I could not get him off my hands. He stuck like a barnacle, would not be driven off, but came right into the office and said, "Now, look here, Doctor; I want you to stop this talk; I am not going home; I am going to stay right here; I am going to get well; you have just got to cure me, or at least tell me what to do to get well, and I will do it." So I told him how to breathe, what to eat, arranged baths for him, and he marched right straight along up. He used to write me once in a while. For years and years, he wrote me from away down in Pueblo, away down in Southern Colorado, twenty-nine years ago. I remember very well when this man went out there. He used to write me for years and years, and used to sign his name, George Thompkins, E. C. He added to the letter a foot note which explained that E. C. meant ex-consumptive. Now, my friends, it was grit cured that man. If he had followed my advice he probably would have been dead in three months; but he would not follow my advice. He said, "I will live." There are thousands of invalids who lie

right down when disease comes upon them, lie right down and allow disease to put its foot upon their neck; lie right down in the most supine way, and give up. I saw some people out in Colorado the other day sitting around in that way waiting for germs to eat them up. Life is a struggle, it is a war, and especially for the invalid, for the man who has gotten down to the foot of the ladder. He has got to climb up, and with all the boosts you have got about here--doctors, nurses, treatments of so many kinds,--I want to tell you, my friends, it is a rare case that is not going to get well, although a large share of ~~px~~ the patients who come here have been given up as hopeless cases at home, that is, as incurable cases, not that they are going to die right away, but that there is no help for them by any of the ordinary means; notwithstanding, it is very rare that a man comes here and goes away from here that is not better than when he came. It is very rare, indeed. You may look at a man today, and he does not seem to be any better than he was yesterday; but wait three weeks, and then look at him. I met a lady in the office today, and I hardly knew her. I got her name, and I said, "Is it possible? is it possible?" Forty pounds that lady has gained! She came here a most hopeless, despondent, and discouraged heartless invalid, and today she wears the countenance that means health, health, beaming in her eyes and face, rosy cheeks, plump, bright, splendid, and ruddy, and she will go home one of these days happy and well. Her case was absolutely hopeless when she came. I was perplexed for some little time, for several days, indeed, I wondered, hesitated whether I ought not to insist on her friends' coming and taking

her home; but now she is in perfect health. I could scarcely find the least little bit of a thing the matter, and one of these days she will go home in absolutely perfect health.

Now, I tell you, my friends, that is worth working for. She came six months ago, and the treatments she has had have made a new woman of her. Instead of being a poor, miserable, invalid all the rest of her life, she is going to be well, to enjoy strenuous, joyous health. There is no question that there is health for you, just waiting for you, and the good Lord is ready to help you to get it. Put yourself in line, lay hold of these helpful things, work for health, and by and by you will find yourself on the Pisgah's top, living in the sunshine and the glorious fresh air and sweetness of buoyant health again.

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HOW CAN A SICK MAN GET WELL QUICK?

A Lecture in the Sanitarium Parlor, Battle Creek, Mich.,

Thursday, May 11, 1905, at 8:15 P. M.

BY

J. H. Kellogg, M. D.

It is a good thing to have music in the air, and to feel musical. I do not know of anything more conducive to health than harmony. Discord will of itself produce disease; in fact, disease is discord, and harmony is extremely healthful,-- mental harmony, physical harmony.

How can a sick man get well quick? That thing ought to interest every person who is really interested in getting well. You know we find a great many people who do not really care whether they get well or not; they are just comfortably sick. I remember very well a lady who came here and asked me how long it would take her to get well. I told her she ought to be feeling better in three weeks. "O," she said, "I expect to stay at least a year." We can not cure such cases as that anyhow. I said to this woman, "If you do not feel better inside of three or four weeks, I am going to send you home." She said, "You won't help me in that time, I know; I have made up my mind you can not." But after about seven or eight weeks of listening to this woman's complaints of being no better, no better, no better, I finally wrote her husband that he better come and take her away. He came up

here, came in to the office, and he looked like a very much downtrodden man; he had a very depressed, sad appearance. The corners of his mouth hung down, and he looked really very melancholy like, and when I told him I thought I should have to ask him to take his wife away, he said, "Doctor, can't you help her?" "I am afraid not," I said, "I am afraid not." "Well, Doctor, what would you recommend me to do next?" I said, "I should recommend that you make a change of climate." I had to recommend something, and that is what a doctor always falls back upon when he does not know what else to do. "A change of climate might possibly help her." He said, "Well, Doctor, what climate would you recommend?" He began to get me into deep water. I began to see I had got to assume some responsibility. If he took her to Colorado it would be just the same; if he took her to California, it would be just the same, and the poor man would blame me because his wife was not better, and I had to recommend some climate because I had recommended a change of climate. For about ten seconds I was really in a very perturbed state of mind, but a bright idea occurred to me which let me out; and I looked straight in his face, and said, "I am afraid, sir, that there is no climate but heaven exactly suited to your wife's case." He dropped his head, and as he raised his head a moment later, the tears were running down his face. He put out his hand, seized my hand, and said, "Doctor, I believe you are right."

Now, that woman was not really anxious to get well, you know; she was just comfortably sick, enjoyed having a good

time, enjoyed keeping her husband and everybody else in the frying pan. Such a person can not get well quick; It is no use to try to hurry up the getting well of such a case as that; there is no getting well in the case at all. The patient cultivates sickness, and refuses to be healed. I had a letter just the other day from a lady who said she was coming here, and it fairly made me shiver, fairly made cold chills run up and down my spine. I remember very well this lady was here twenty years ago, and I have not forgotten her yet, and I do not think she has forgotten me either. I am sure she will never forget me. She complained about being so very weak, so very feeble, and had no appetite, yet she kept growing fatter and fatter and fatter. She said she was so weak she could not even get into her chair. She had to have a certain particular young man come up to lift her out of her chair. He complained, said, "That woman is getting so fat it breaks my back to lift her, and I think I shall have to be relieved of that burden"; but she insisted on having that very particular young man come. We finally sent another one along to help him. I had noticed something very peculiar in this case,--large, black scales around the lady's eyes, which gave her a most woebegone appearance. Whenever I went up to see her,--she sometimes insisted on my coming to see her at her room, she looked so hollow-eyed, so sad, and yet she was getting fatter all the time, and I could not understand it, and she said she had no appetite, but the tray-man who carried the trays declared he carried double trays, and they were so heavy he could hardly lift them; and he could not understand how this lady had no

appetite, and he could not see what became of all those victuals if she had no appetite. Well, I got a bright idea, one day, in this case. I happened to meet the lady in the hall, and thought I noticed something a little peculiar about those black stripes around the eyes; they seemed a little bit too realistic and just a trifle overdone, you know, and I invited her to come into my office, and she sat in the chair, and I suddenly discovered there was something in her eye. "By the way, I noticed something in your eye", I said, "just excuse me", and before she had time to protest or to do anything I dashed some water into her eye, and of course a towel had to come right after it, and the result was the blackness all disappeared. It was ink which had been carefully painted on, most artistically done, but was done in a hurry that morning, rather overdone; she had not put it on quite evenly enough, quite smooth enough, so that I discovered it. As she went out of the office directly, she was rubbing her handkerchief very vigorously into the other eye so as to have it match. Now, it was wonderfully interesting to see how those black scales gradually faded out in the next three weeks. In three weeks they had entirely disappeared. It was just beautiful to see the graduation, how gradually it was done. This woman now proposes to come back to the Sanitarium. I wrote her and recommended a change of climate for her, as before. I do not think we should care to have that sort of people here.

Now, if a person really wants to get well, and to get well quick, the first thing he will set about is to find the right way. Now there is a right way and a wrong way. The

old way of seeking health was to find something that would kill the disease. The idea was that when a man is sick, the disease is a sort of monster there, a real, tangible monster, or a metaphysical one, some kind of a creature that was attacking him. That is the old theory. That theory dates away back to the most ancient times, dates away back to the old Egyptian times; dates back to the old Roman and Greek times, when men believed that when a man was sick with disease, he was possessed of demons. I do not know that it would not be right to say possessed of the devil; but I think the ancient idea of demon was somewhat different from our modern idea of devil,--possessed of a ⁴demon--the demon had gotten inside of him, and was making disturbance, and something had to be done to make the conditions so insufferable for that demon that he would be glad to get out. That was done in several ways. Sometimes it was to apply some sort of ceremony, some kind of ceremony, to say cabalistic words over the man, to make him breathe odors from fragrant herbs, steam from fragrant herbs with the idea that the demons might be coaxed out, perhaps; or to flagellate the man, to beat him, to strike him with sticks, and to whip him unmercifully, flagellate him until the devils or demons would be forced out, until they would be driven out. The idea was that somehow or other this demon in the man must be gotten rid of by being made to leave the man, to get out of him, in some way; it was supposed he might be expelled through the nostrils, or removed through the mouth.

Now, out of this old theory grew what might be considered a somewhat more scientific theory--the idea of disease

as an entity, as some thing, something that had gotten into the man that had to be driven out of him, or let out of him, and it led to blood drawing, to purging, vomiting as remedies. Many years ago, a hundred years or more ago, it was the fashion to bleed every man who was sick, to apply leeches, blood-letting; and you can see still on some barber shops in Londong a sign out over the barber shops in certain parts of London almost every barber shop has the sign out,--"Blood-letting and leeching done here." The barbers did it. The barbers were the surgeons in those days, and the barbers let the blood out with the idea that by letting the blood out they would let out the disease. Lord Bacon, you know, had himself bled every spring. He said it was necessary because the blood got so foul in the course of the year one needed to have his blood let out; so in the spring-time, he would let out his blood so as to get a new supply.

There is something practical in that really; it is a good idea to get rid of that blood, but there is a better way to do it. The father of our country, George Washington, was unquestionably bled to death. He was bled, bled, bled, bled until he fainted on two or three occasions, and I think it is the general opinion of medical men at the present time that that great man was really bled to death. Nobody does that nowadays. I believe in bleeding. A lady asked me the other day, "Do you believe in bleeding?" I replied, "Certainly, certainly I do." "O, is that so?" "Yes, if a man has got too much blood in his head why should not I bleed him? Why should I not bleed his head?" "How do you do it?" "I put his feet in hot water

in hot water, and that takes the blood out of his head, don't you see? and he is not any poorer than he was before." I did some surgical work yesterday, did some very painful operations. I stepped into the rooms of those patients an hour or two later and found them comfortable, found them very comfortable two or three hours later. The wounds were being relieved because the patients were being bled, bled into their legs; they had packs on their legs. The legs were done up with wet cloths, almost steaming with heat, for drawing the blood down into the legs, so the distended blood-vessels in the vicinity of the wound were relieved, and the nerves were relieved, and so the pain was relieved.

Now, as I said, the idea, the somewhat more scientific idea, that disease is an entity which can be disposed of by fighting it, that followed the more ancient theory of disease as a demon, led to a great many practices that are still common. I think the idea is still very deeply seated in the mind of the public that disease must be combated, that disease must be killed in some way; that it must be destroyed; and when a man is sick the thing that is to be done for him, the thing that needs to be done for him, is to go after his disease, destroy that, and then the man will be all right. Now, as a matter of fact, disease is usually friendly. What we call disease is a friendly effort; it is an effort on the part of nature, on the part of the body--I prefer to say, on the part of the Power which rules the body, which dwells in it, the creative Power which is inherent within the body, the live tissues of the body,--

there is an effort on the part of that Power to save the man from something worse. Now, there are things worse than being sick. If a man eats something he ought not to eat,--perhaps it is an old fashioned New England dinner, eats too much of it, and he is sick at his stomach, has a bilious attack, is sick at his stomach, vomits it, it is a great deal better for that man to be sick at his stomach and vomit than to have all the horrid mass of decomposing foodstuffs remain in his stomach, and in his body. After one has had a sick headache, emptied his stomach, seen what is down there,--who would want to have it back. Just think of having it back there! How thankful he ought to be to be rid of it. The same thing is true when one has what is called summer complaint, for example, bowel trouble; there is something that needs to be gotten rid of,--perhaps germs which are producing poisons, and in order that those poisons may be cast out of the system, nature pours out large quantities of serum into the intestines, and this serum helps to kill the germs, acts as a detergent to wash the germs away; so that is a curative process, you see. Now, the very same thing is true when you get infection. Suppose you have a boil, what is to be done? Suppose we should purposely go to work now to infect a man, take a hypodermic syringe, a little bit of a drop of pus, with some germs in it, and inject it under the skin, what will it do? What happens? The first thing that happens, we shall see it get red, and begin to swell. Why is that? Because nature has dilated the blood-vessels so as to bring more blood there, and bring white cells there--

those wonderful white cells, wonderful defenders of the body, the leucocytes which combat disease,--to bring them there in larger number so that they may fight off these germs. And the tissues begin to swell. Why is that? Because the serum is being poured out into the tissues. That serum is to dilute the poisons produced by those germs, and the serum carries along with it antidotes for the poisons. After that come the leucocytes, an exudate is poured out there, a quantity of exudate poured out into the tissues, ~~fx~~ fibrin begins to be used. The swelling may be of a diseased joint. What is the exudate for?--To furnish bridges, little filaments, a network of little threads on which these leucocytes follow out, follow along to the very points where they are needed; and the serum, the fibrin is to feed the leucocytes,--just exactly as the commissary department, if you please,--when the Russian government sends an army over to meet the Japs they have to send along food for the army, and ~~xx~~ ~~px~~ supplies; so when this body sends out this army of leucocytes into the tissues to combat the germs, it sends along food to support them; that is why we have fibrin there. So that the whole process,--swelling, exudate, the whole thing, we call local inflammation, infection,--that is a curative process for the purpose of fighting off those germs. By and by there is pus in it. What is that? Pus is simply leucocytes that have run out there and been killed, that have fallen in battle; they are corpses left on the battlefield, and they are accumulating there in such quantities that they ~~isak~~ make a little opening under the skin to

get out. The idea that this pus is simply impurities of the blood is a great mistake. Many people suppose it is impurity of the skin. There is no impurity in pus at all; it is simply lumps composed of leucocytes that have been out making a defense of the body. We might trace this all the way through. Every diseased process you can think of, every acute disease, every acute disease, and I might say almost every chronic disease too,--some few morbid conditions in which it does not seem to be so clear; but in general what we call disease is the effort of the body to make things tight, to keep things right, to restore the body. That is what the disease process is; it is an effort of the body to defend itself. Now the reason why one feels uncomfortable, ~~whit~~ why one's various feelings are disturbed, for instance, why one coughs, or why one gets short of breath under some conditions, why one has a dropsical appearance, swelling of the feet and hands under certain conditions,--the reason for this is that the body is trying to do its work under unfavorable conditions. There is no difference between disease and health except that in disease the body is working under unfavorable conditions. The first thing to do, then, when a man is sick, is to make his conditions more favorable, isn't it? That is one of the very first things to do--make the conditions more favorable. So, when a man comes to the Sanitarium here, the very first thing we say to that man is, "What are your habits?" Why do we ask that? We do not have to ask that thing to the man who has fallen and broken his leg; we don't have to ask that of the man who has been run over by a streetcar, and got injured in some way,--we don't

ask him what his habits have been; but that is not the state of the man who is sick with chronic disease. When a man has chronic disease, he does not understand what has happened to him. Such a man is the one who has chronic rheumatism. I met today two or three people who had rheumatic gout. Rheumatic gout is not accidental; men do not get that by accident. Here is a man who has a stone in his kidney; he did not get that by accident. These things do not come by accident; they come by cultivation. We make ourselves sick. As an eminent French physician said, "Man does not die, he kills himself." Man does not die; he kills himself. Man kills himself. The average man commits suicide, slowly, by wrong habits of life. People get sick by cultivating sickness. Robert Ingersoll said one time that if he had been present when the world was made, he would have made a suggestion to the Almighty. It was a very irreverent remark for him to make, but he thought he had a very smart idea. He said he would have suggested to the Almighty to make health contagious instead of making disease contagious,--just as though the Almighty had made disease contagious. The Almighty did not make disease contagious; man made disease contagious, while the Almighty made health contagious. Health is catching; disease becomes catching only when we bring ourselves down to the level of disease. There is a certain mountain in Scotland,--some of you have doubtless seen it and climbed it,--and on the top of this mountain, nobody ever has catarrh; nobody ever has a cold up there. If anybody goes up there with a cold, he gets over it in a little while; but when people have been up there entirely free from cold, come

come down into the valley below, they are very likely to get cold right away very soon; but on top of this mountain no one ever has cold. The air is so pure up there, the conditions are so healthful, no one ever has cold up there. Now the reason for this has not been so very clear until recently. But we will not go into that now, for it would carry us a little off our theme. The important thing I want to call your attention to is the fact that on the mountain top there is room; there is room on the mountain top, there is health there; so on the top of Mt. Ben Nevis, no one ever gets cold, because he is above the cloud; but down in the valley, they are subject to colds; so no one gets disease unless he gets down into the valley. I am willing to grant that we are all of us more or less down in the valley, so we are all more or less likely to catch small-pox or some diseases of that sort; but no one gets typhoid fever until he gets something else first. Bouchard showed a good many years ago that when a man has typhoid fever; at any rate, the average man who has typhoid fever has a dilated stomach. Typhoid fever is due to the growth of certain vegetable organisms, a sort of parasite which is related somewhat remotely, but still, nevertheless, related to the molds and yeasts that grow on the wall and in the bread causes bread to ferment. They are parasitic, vegetable organisms that grow in the intestines. If these organisms were killed in the stomach as they might be, they could not possibly develop in the body. So, as long as a man has in his stomach gastric juice enough to kill germs, he need not be afraid of typhoid fever. A good many years ago, when Prof. Koch first discovered the bacilli of cholera, he discovered the cholera

bacillus, an eminent colleague of his, something, perhaps, of a rival in Germany, laughed at the discussion; said it was absurd to consider the cholera bacillus was so dangerous. So he planted cholera bacilli in beeftea, drank a pint of concentrated cholera, and it did not do him any harm at all, and he laughed at Prof. Koch. He said, "Here, your cholera germs don't do any harm at all"; but one of the students in his laboratory got hold of just a few of those cholera germs, and nearly died of it. So he found it was simply because he happened to be proof against cholera germs at that particular time. In other words, his stomach had gastric juice enough to digest those cholera germs. Cholera germs are just as digestible as foods are, just as digestible as potatoes are. A man who is able to digest fried mushrooms need not be afraid of cholera germs.

Mrs. Rorer who was here the other day, spoke to me of her son; said that one of her boys went to a fraternity dinner, and she had raised him very carefully. She saw him the next day after the dinner--he was a freshman at Yale, and she went up to New Haven to visit him,--and he said to her, "Mamma, I had an awful fright last night; I went to the fraternity dinner, and there were awful things there," and told what had been offered him, and he said, "I only just tasted them, but I expected I should die before morning, and I was really very uncomfortable; but, strange to say, I went to sleep and slept sound all night." She said to him, "I should be very ashamed of you, my son, if after living healthfully for twenty-six years, you could not stand one hard dinner." But

the man who lives healthfully, who lives in harmony with nature, ~~is~~ lives near to nature, lives the simple life--the real thing,--that man need never be afraid of germs. Why, I see a great many people who are scared half to death for fear they will get consumption. There is only one protection from consumption, and that protection is a good one, a thorough-going one, that is, to live above it. You can not dodge meeting the germs, for they are everywhere, but you can live above it; you can get on the mountain-top and stay there, live there, and you need not be afraid of consumption or anything else. You might catch small-pox, but I do not believe you would die of it. I do not believe there is a germ that will kill any man. I don't believe cholera germs or any other germs need scare anybody if he is only living as healthfully as he ought to be. I do not say I am living so healthfully, that I have lived during my life so healthfully that I would want to risk my life to infection; I would not; I keep just as far away from it as I can; but I am perfectly frank to tell you that I haven't any faith in anything as a protection against infectious disease except living above the power of disease; living so close to nature that the powers of your body are capable of combating all these maladies. I do not believe God ever made man subject to germs. Man was made king, king, king over the beasts of the field, and the germs of the field too. And he need not be afraid, if he lives properly, but when we are sick, it is because we have been cultivating disease; we have been cultivating maladies. We have been bringing ourselves down little

by little, little by little, until by and by we have gotten down into the marshes and the morrasses of disease, if you please, gotten down into the valley where the fogs and the mires of disease dominate; so if we are sick it is not because we have happened to encounter disease; but it is because we have come down to the level where we have become subject to disease. You know how it was with Sampson. Sampson had such strength that he was master of all his enemies; they could not gather men enough to combat him, to hold him, or to bind him; could not find chains or ropes strong enough to bind him with so long as he was living properly; but he was by and by, by wrong doing, shorn of his strength. That story has a wonderful lesson in it. When he did wrong, he was shorn of his strength, then his power was gone. That is where we lose our power to resist disease,--by wrong-doing, by wandering away from the path of physical rectitude. The man who does wrong; for instance, the man who sits down to the table simply to have a good time with his palate, sits down to have fun with his gustatory nerve, if you please, illegitimate pleasure, that is,--the man who does that, using his stomach simply as a receptacle for cast-off things that he has tickled his palate with, using his stomach simply as a receptacle for things cast off from his mouth,--if a man should tickle his palate, then reject those things into the cuspidor, it would not be so bad; but when he does the other thing, he is simply preparing for disease. I remember we had a man with us one time who did that way. He was a man who had a reputation of being something of a

a gourmand came here. I think he lived not far from Boston. It was a number of years ago. This man had an awful stomach. He came here and told me a terrible story of his wretchedness, and of what he suffered with his stomach. After he had been here about a week, the lady in charge of the dining room said to me,--she hoped I would excuse her for speaking of it, but she was rather of the opinion that this man needed a little looking after. She said, "I understood that man was rather a bad dyspeptic, and that he was put on a special dietary, but he sends orders for trays to come to his room, and he orders everything on the bill of fare, orders enormous quantities, wants two or three pieces of pie, wants everything that is going on the bill of fare", and she says, "I can not think he is making improvement very fast if he is eating all those things." I said, "Perhaps he does not eat anything,--only has those things to look at." She said, "Yes he does; his tray always comes away empty." I said, "I guess I will have to look after him," and I sent for him to come down to the office. He came into the office, took a chair, and I said to him, "How are you getting along?" "O, just first rate." "How is your stomach?" "I think it is improving, Doctor." "How about my prescription? Do you find it rather hard to follow?" "No trouble at all, Doctor, it is all right." "Well," I said, "I did not know but what you found it rather difficult to follow so circumscribed a diet." I had prescribed for him nothing but gluten gruel. "Well," I said, "How do you like the gluten gruel." "All right, all right; well, to tell you the truth, Doctor, I don't relish it particularly, but I get along with it all right." I

was really perplexed to know what to say next. I finally made up my mind to be bold, to come right out and tell him the truth. I thought he was lying to me prodigiously, so I did not know any other way but to meet it square. I said, "There may be some mistake about it possibly, but the matron of the dining-room remarked to me that they were sending up to your room rather heavy trays." "O," he said, "Doctor, I ought to explain that. The fact about it is just this. You know that gluten gruel you prescribed for me I do not like a bit; in fact, it is rather distasteful to me, and I am not very fond of it; now I will tell you what I do. I order pretty much everything on the bill of fare. I like to eat, and it comes to my room, and I just sit down and eat it, and I take great care to measure every bit of it so I know just how much there is of it, and I have got a stomach tube in my room, and I pass the stomach tube, and I take the contents of my stomach and measure it all back again, so I am sure I get the whole ~~amt~~ of it out, you know; then I eat my gluten gruel. So I have a good time, and follow your prescription exactly." Well, now he got the start of me for once. Now, this man went to a good deal of trouble.

I remember a lady who, I think, was very much in the same state of mind. She had been here some little time, had been following my prescriptions rather closely, and really she was improving, and getting ready to go home. "Now," she says, "Doctor, before I go home, I want you to show me how to use the stomach tube." I said, "You do not want to use the stomach tube; you do not need such a thing as that." "Yes, but I want to know how to use it." I said, "I don't think you ought to

know how to use it." I said, "If you should swallow poison of some kind and want a stomach tube, go to a doctor and have him use it." "Well," she says, "But I must know; I am going to get some one to teach me, anyhow if you do not teach me, I will get some of the nurses; I am not going away from here without a stomach tube, and I am going to know how to use it." So she left my office. I sent for her to come in next day. I was very much disturbed about it. I did not want her to get the habit of using the stomach tube; I did not know but she had gotten some wrong impression from what I had said. "I want to understand about this stomach tube," I said. "You must know it is a very serious thing to get in the habit of using the stomach tube. A lady came here a little while ago who said she had used it for three years, and declared she could not get along without it at all. I had the greatest trouble to get her rid of that stomach tube." She said, "Doctor I don't intend to do that. I will tell you just how it was. You know I often take ice cream and cake, and things of that kind that are not good for me. I have to go out to fine parties you know, and I was thinking it would be so nice if I could just eat the ice cream and cake etc., along with the rest of the folks, and when I got home I would have the stomach tube there so I would not have to suffer any of the bad consequences." Some people are so given to pleasures of the palate that they are willing to put themselves through such punishment as that. I think some people have gotten pretty nearly to the level of old Nero who kept a little room outside, just adjacent to his dining room for that very purpose, don't you

know? When he sat down for a feast of two or three days, he frequently retired, came back, and repeated the process of tickling his palate.

I met that sort of a man on the cars a few years ago, a doctor who rather ridiculed me because he found me eating my dinner which consisted of zwieback, breakfast toast, nuts, and apples. That was all I wanted, was having a real good time, and he thought that was a very dry dinner. I said to him, "But you don't know how sweet this toast is." He said, "It is sweet is it?" and he broke off a piece and tried it. He chewed it a while, and said, "I can not taste anything at all." "Well," I said, "You have been up there in the dining car swallowing mustard, pepper, peppersauce, ginger, jellies, and all that sort of thing, and of course your tongue is blistered, and you can not taste anything but blisters." "Well," he says, "How did you know I had been doing that?" I said, "I knew it by the looks of your nose." "O," he said, "but it is a fact; that is just what I have been eating. I can not see how any one can live on such a flat diet as that; it looks rather insipid to me. I like things that give my palate a twist." There are thousands of people that are really doing that two or three times a day, sometimes four or five times a day, going through such seances, twisting their palates, not knowing, or not thinking, at any rate, that this twisting keeps going down, and does not stop with the palate. A thing that will twist the palate will twist your liver too, and twist your nerves, and keeps right on twisting all the way through, and there is no end to it until it is cast out through the

kidneys. That does not pay. No doubt the man who has been living that way for the amusement of his palate is absolutely certain to pay the penalty of it. Bright's disease, cancer, cirrhosis of the liver, or some other thing of that sort is just as certain to carry that man off if he does not die by accident, if he lives long enough to get ~~at~~ to that point, he certainly will come to it sooner or later. There is certain to be a reckoning day; it must be so. Doctors used to be somewhat theoretical, but in recent times, these facts have been brought out by scientific investigation that enables us to say this with absolutely positive assurance, without any fear of contradiction. A few years ago a certain very eminent physician made a series of exhaustive researches upon rabbits and other animals with reference to the effects of these various condiments--alcohol and other things,--and he found pepper had six times the power of alcohol, six times the power of alcohol to produce gin liver. If a man has an enlarged liver, or a cirrhotic liver, we are likely to say it is gin liver, due to gin, but I found out years ago that many people had gin liver who had never taken any gin at all. I remember a poor man who had an enormous liver who came here from some place in Dakota, some years ago. He died the next day after he got here, and the postmortem examination showed the liver weighed twenty-eight and one-half pounds. It was so enormous no one would believe it; but I have ~~had~~ it in my museum and can show it to people. It took a washtub to hold it; it was an enormous liver. Now this man had never taken whiskey in his life; had never taken alcohol in any form, but had this enormous liver.

Prof. Voix has written a book entitled, "The Liver of Dyspeptics." He has called attention to the fact of great numbers of people who have never taken alcohol & or gin, or taken tea only in moderate quantities, comparatively, who have this enormous liver, have gin livers, that prove fatal after while; and he found in his experiments when he gave pepper to rabbits the rabbits got gin livers from eating pepper along with their food. He fed them mustard, and found the same thing to be true--the rabbits got gin livers when they were fed mustard along with their food; and when they were fed vinegar with their food, they got gin livers just the same. He found vinegar had twice the power of alcohol to produce gin liver,-- think of it! Just think of all the pickles, and salads, and all the foodstuffs in which you have used vinegar, perhaps freely. Sir. Wm. Roberts, an eminent English physician, showed a number of years ago that half a teaspoonful of vinegar was sufficient to destroy all starch digestion entirely of the whole meal; sufficient to interfere entirely, absolutely annihilate the action of the saliva upon the starch and of the gastric juice. Sir Wm. Roberts showed that more than fifteen years ago. Now, Voix has shown that vinegar not only does mischief in the stomach, but when absorbed into the blood and carried to the liver, sets up diseased processes in the liver which produce exactly the same effects as those produced by alcohol. In fact, he expressed it as his opinion that alcohol produces gin liver by producing dyspepsia; that it is through its damage to the stomach that gin liver is produced.

Chittenden lately has recently developed some interesting facts which seem to confirm these observations of Sir Wm. Roberts. Dr. ~~Beebe~~ Beebe working under him in the laboratory of the Sheffield Scientific School--I know this from the fact that we have one of our doctors in school there at the present time, working under Prof. Chittenden, and in a letter I received a day or two ago, I received this information in a little reprint from Prof. Chittenden which he kindly let me have, in which he describes the experiment, and the result of it, and one of the interesting things about it is that he has found that when a dog or any other animal is being fed ordinary food, and that animal is given at the same time, with its ordinary food--meats,--being fed meats and is given alcohol at the same time, there is an enormous increase of uric acid. The amount of uric acid is greatly increased while the animal may be starving; but the alcohol does not produce the uric acid. There is no increase in uric acid when the animal is starving, not being fed; but in connection with meat, the animal produces a great amount of uric acid; but when given bread, it does not. On a diet of bread and milk no uric acid was produced; but when the dog ate meat, there was a large amount of uric acid. And he found another curious thing, and that is, that the dog produced more uric acid when fed on whiskey. That is, the alcohol taken in the form of wine was very much more powerful in producing uric acid than alcohol in other forms. In these lighter alcoholic drinks there are some substances besides alcohol which have the effect to greatly in-

crease the amount of uric acid. So it is very easy to see how it is that the beef eater who drinks champagne, wines of various sorts, how he gets gout and other uric acid disorders, ~~and~~ chronic rheumatism, stones in the kidney and bladder, and other disorders due to uric acid--degeneration of the blood-vessels etc. It is very easy to see that; and we see how that his experiments seem to show that this is due to the fact that the alcohol somehow interferes with the work of the liver in destroying poisons. That is part of the work of the liver, as Bouchard showed, and Roget, the eminent pupil of Bouchard showed it is the duty of the liver to destroy poisons. If a hypodermic injection of morphia, in a dose of an eighth of a grain--if it is taken by mouth a quarter of a grain, because if it is taken by mouth it must be passed through the liver before it gets into the general circulation, and the liver destroys half of it. So if an animal is given nicotin, that very deadly substance--nicotin,--some of you are more or less familiar with it, I fear,--if an animal is given nicotin by mouth, it takes twice as large a dose to kill the animal as if it is injected beneath the skin. If it is injected beneath the skin, it goes direct to the general circulation; but taken into the mouth, it goes to the liver first, and the liver destroys half of it. Dr. Beebe, working under Dr. Chittenden's direction, in the Sheffield Scientific School, of Yale, has shown that alcohol destroys to a large degree this poison--destroying power of the liver, so the liver has not the power to burn up the uric acid, to oxidize it and other poisons which are present in the blood, or which are taken in through

the food, and which result from the work of our own bodies, the activities of our bodies themselves,--uric acid accumulates in the blood. Now, that has a great deal of significance, because Dr. Voix, this eminent French physician, showed that uric acid is one of the most powerful agents in producing gin liver, that when the animal was given uric acid that animal got gin liver, that uric acid will produce gin liver, so you can readily see that ~~if~~ alcohol will produce gin liver by producing ~~also~~ uric acid. If a person who eats large quantities of uric acid--he can just as well have gin liver without alcohol as with alcohol. A man who takes sweetbreads, for instance, says, I do not believe in coarse meats; I use light foods. A man told me the other day, "I do not eat heavy meats--beefsteak, I do not eat coarse beef; I eat light meats like sweetbreads, for example", and this poor man did not know that in sweetbreads he was ^{eating} ~~making~~ something just about five times as bad as beefsteak, because beefsteak only has fourteen grains of uric acid to the pound, and that is enough; fourteen grains to the pound--that is enough, that is considerable; the body only throws off five or six grains a day; that is the whole work of the kidneys. A day's work for the kidneys, twenty-four hours' duty for the kidneys is to eliminate six grains of uric acid, but a pound of beefsteak contains fourteen grains of uric acid. Many a man eats more than a pound of beef a day. It does not take such a great piece of beefsteak before it is cooked to make a pound. Many a man will eat a pound of beefsteak to a meal. There are fourteen grains to the pound of

beefsteak. In a pound of sweetbreads, there are to be found, according to Dr. Hal, Assistant Professor of Physiologic Chemistry, for Owens' College, Manchester, England,--according to him there are seventy grains of uric acid in a pound of sweetbreads, or five times as much as in a pound of beefsteak. Then a man who eats all the time, things you know, like sweetbreads, you see just what he is doing; he is simply storing up five times as much uric acid as though he ate uric acid of beefsteak. Now, think of it,--liver and kidneys and all these glandular structures of the body have a large amount of uric acid. The liver contains nineteen grains of uric acid to the pound. The kidneys have a great quantity of uric acid. So you see the people may be doing themselves a prodigious lot of harm without being conscious of it, thinking they are doing their very best, possibly, doing the best possible thing when ~~their~~ they are really doing the very worst possible thing.

Now, I only mention these few facts to show you what an important bearing upon our health our daily habits have. What we eat--nutrition,--is the foundation of everything. It is the foundation of everything in relation to health. If we get chronic disease, it is because there has been something wrong with our nutrition, something radically wrong with our tissue building processes. If we have uric acid disease of any sort, it is because our eating has been wrong, it is just as certain, when you find a man suffering from uric acid disease--just as certain that that man's eating has not been right, but has been wrong, as it is that the man is sick. A man can not possibly get a uric acid disease unless he eats

wrongly. The majority of people who get uric acid disorders get them from eating uric acid. If you do not eat uric acid, you are not very likely to have an accumulation of it in your body. But you might get a uric acid disorder by eating an excess of proteid. There is no question but in this country as Mrs. Rorer was saying the other ~~wa~~ day, we have gone proteid mad. Farmers have been feeding their swine too much proteid; they have been feeding their cattle too much proteid, and giving too much proteid to their oxen and horses, too much proteid to all their animals, making them sick, and have been eating too much proteid themselves. It is the popular idea you know, that beef, beef, beef, and meat, meat meat, is the one thing to give strength. That idea is a very great mistake. I had a letter from Jacob Riis today. He was here the other day. He said that when he first came here he thought we were anemie looking, but he found out it was a clean look instead. He said he observed the people about here have a clean look. A gentleman came into my office today that arrived here just a month ago, the ninth day of April, and he was sallow as a piece of sole leather, looked like saffron. He came into my office looking so pale I was scared at first. He was nearly bleached out. He had been getting rid of a whole lot of poisons that had been stored ~~p~~ in his body. When a person has a sallow skin, we should remember that it is the dirt in his skin that makes it sallow. The skin is naturally transparent. If it were not for the blood, you could see right through the skin. You take a piece of skin, dry it good, get all the blood out of it

out of it, and you can see through it. It is at least semi-transparent. When the skin becomes dark, it is because of the accumulation of dirt in the skin, an accumulation of organic dirt in it, and it is dirt that is more than skin deep, my friends, more than skin deep. That same dirt is in his muscles; that same dirt is in his nerves; that same dirt is in his brain. ~~It is~~ Is it any wonder he can not think clearly, that he sees through a glass darkly, that his brain is murky, his thoughts muddy? It is not any wonder it is a hard thing for him to concentrate his mind and form conclusions about business things his brain is poisoned; it is dirty, and his whole body is contaminated. When you see the skin looking clean, when you see the skin looking clear, the man with that kind of skin has a whole body that is clear; it means his muscles are good and clean; it means his brain is clear and clean; it means his nerves are clean, and the whole body is in the same condition; so the condition of the skin is a thing of primary importance to the doctor. The doctor always notices what the skin looks like, because he knows that is a sample of the man. The clear skin is a sign hung out on the outside of the man, because it says and shows what he is inside. If there is dirt outside, it means dirt inside too. The doctor then prescribes so much water drinking, so much sweating, and the application of cold water, hot water, electric light baths, and all those things in order to clean out and renovate the body. If a man sweats a good deal, he has to drink a good deal. If he drinks a good deal of water, and sweats a good deal, you see it will wash him out.

The majority of chronic invalids would do well to drink three or four or five or six pints of water daily, so that this washing out process may be facilitated. All our people work hard to get rid of blood, to get rid of flesh,-- all such people should drink a great deal. I find this to be true,--that people who are drinking a good deal are working hard to break down the fat, to burn up the fat, and this fat can be carried out and ~~it must be~~ they must have water to carry out the worn-out, broken down material, and the water is good for that purpose. When a man is thin, emaciated, he also must drink freely. The great share of the weight of the body is water; so this man needs to take water to build up new tissues; it is one of the materials out of which the body is built, and the only way by which a new body can be built is by removing the old body, ~~striking it~~ building up a new body in its place. So it is not only to carry up material for a new body, but he needs water also to wash out the tissues, carry away the old, worn out, broken down, diseased body. Now, the whole philosophy of getting well, my friends, is rebuilding, rebuilding. You get your body rebuilt exactly as you would rebuild your house. You would take away one brick at a time, and put another in its place. You have got to live in the house; you can not move out of it; and so you do not take all the old rotten material out at once, but take out a rotten timber and put another in its place. If you could move out of your house, you could tear it down, but you can not move out of it, so you have got to pull off one shingle at a time,

put another in its place. You have got to follow that process through the whole house. This house we live in must be renewed in just that way. We must have that other house, so we must repair it atom by atom. We must cast off the old man and put on the new man; and the whole Sanitarium method is simply a process of getting rid of the old man and putting on the new. I made a remark of this sort some time ago, and a lady came into the office next day and said, "Doctor, how long do you think it would take me to get rid of this old man of mine? I want to get to be a new woman just as quick as possible." The new woman is popular nowadays, ~~the~~ and Sanitarium methods are helping the thing along. I believe in the new woman and the new man too. It is a reconstruction. You know years ago, after the Civil War, we had a very painful process in this country of reconstruction, felt most ~~acutely~~ acutely in the southern part of the country, but felt more or less throughout the whole Union. While that reconstruction was going on, there was a great deal of confusion and disorder, tearing up and changing, and it was a very painful process. Now, it is exactly so with the body. The reconstructing process is sometimes more or less painful. Pains wake up in new places. A man said to me the other day, "Doctor, I am getting scared. Pains are breaking out in new spots. I had a pain in the lower part of my back when I came here, but now I find it in the top of my back." He was really very much alarmed. He afterwards had it in the front part of it. I was glad to tell him the pain was on the move, and there is no doubt it will move off.

Pains that are settled down somewhere are the kind that is hard to deal with. Dr. Haig pointed out some time ago--my observation shows he is right, my experience at any rate,--that people who suffer from sick headache, for example, are very likely to suffer more the first week or two after beginning treatment. People suffering from sciatica due to uric acid saturation are very likely to have more sciatica during the first two or three weeks of treatment. It is so with a good many other chronic maladies which are painful. Every one is likely to be aggravated by the first two or three weeks of treatment; and the reason is the uric acid is being worked out, pain is produced by the uric acid in circulating in the blood; and when we are getting the uric acid out by baths,--hot baths or cold baths, or the anti-uric acid diet, make the blood more alkaline so it can absorb more uric acid, take it up from the blood, it gets into the circulation, and at that ~~th~~ time there is an increase of the pain. The same thing happens in cases of bladder and nervous diseases, and hysteria and other forms of nervous disturbance; nervous depression sometimes comes on as a result of the vigorous treatment. If there is a suspension of the treatment, the patient feels better, and thinks that treatment did it, and the patient says, "I feel so much better I want to stop taking treatment." You might just as well say it does not pay to plant corn because it costs money; you have to pay money out for seed and labor. But it pays a great deal better at harvest. You would not have any harvest of corn if you did not spend money for planting the corn. We have to sow the seed before we can reap the harvest.

So the first thing necessary for a man to do in order to get well quick is to remove all the causes; to cease doing the things that made him sick. I want to put just one more picture in your mind. You have come here to the Sanitarium; you have been sick a long time; you are a chronic invalid; you have become so chronic your doctor at home has gotten tired of you, and he has advised you to come here, to make a change of climate, as I did my patient, because he wanted to get rid of you, but because he had got to live with you, and he wants you to come home well and happy, be well and cheer him up instead of putting so many hard questions to him to answer. He wants He wants to have the pleasure of hearing you say, "I feel first rate; I haven't a thing the matter of me; haven't any use for you at the present time." Doctors like to see people get well once in a while, generally, in fact. Now, you come here to the Sanitarium; this is your situation: you have a heavily laden barge. You come here, to hitch onto the tugboat to see if we can not pull you up the river. You are going down stream you know it; you find yourself drifting down; you know there are some big rapids down below, and a big fall ahead of you,-- Niagara, perhaps, and if you get over far enough, you will pitch over it; so you want some good, stout tug to pull you up stream. You come here; you have some friend who told you he got better out here; told you he got his barge pulled up here, and landed at safe quarters, and you want to have the same thing done to you; so you come here, and we get the ~~gin~~ thing going, get up steam, throw out a hawser, get you in tow, and

after you have been here about a month, you say, "I am feeling so much better I think I can go home and get along just as well",- you are going to cut the hawser, don't you see? and the current will take you down again. You think you are doing so well, you wonder why you can't go right along. It is about the same thing as though you were being pulled up a steep bank, and some one was helping you along the way they boost people up old Mount Vesuvius. That is a very steep mountain, and they have a guide in front and one behind, the one in front pulling you up with a rope, and one or two behind pushing you up, and sometimes they have to carry you up in their arms, or in a chair. You do not stop to think that your momentum is due to the power that is pulling you. I am not going to say there is any curative power in the Sanitarium; there isn't any. The real curative power is in yourself. The first thing we do with the heavily laden barge is to throw off a whole lot of dead weight, if you please, that is of no account; we find it has got a whole lot of ballast aboard that is not needed. Suppose a captain out at sea found his ship sinking and should say, "Now, then, I am sinking; I have got to do something,"- throws off a whole lot of his cargo, the ship rights up, sails off, but there is a leak in there, and he forgets to stop that leak, how long will it be before the ship is sinking again? His ship begins to fill with water, and goes right on filling with water, and by and by gets down so the water is washing over the gunwale again, and the ship is taking water at every lurch, what is he going to do next time? The cargo is over-

board, the ballast is overboard, all he dares to spare. What is he going to do next? A man comes here to the Sanitarium, gets started first, then throws off a bad habit, takes exercise, gets to eating properly, stops smoking, gets to going pretty well, and he comes to me and says, "I think I will go home now but if I don't feel well I will come back." Then after while he comes back worse than he was before. What are we going to do with him this time? I was very forcibly struck by an argument made to me some time ago. A good friend who came here as a broken down invalid was doing well, had been doing splendid work here. He said, "Look here, Doctor, I think you are working too hard. I want to give you a lot of work, but then suppose you get sick,--what are you going to do? When I came here, I was an old sinner; you put me straight, made me stop smoking, made me eat properly; I got better right away. When I go away, I backslide more or less, but when I come back here I always get better ~~more~~ ~~at~~ ~~once~~ right away; but what are you going to do? where are you going to come to? You are living right up to the line all the while in order to get the most possible work out of yourself; and when you go down, I want to tell you you won't come up so easy. You have got to keep right up, because you have nothing to reform on; you ~~can't~~ can't stop smoking; you can not stop drinking, or eating pork and things, don't you know? so the only chance for you is to keep yourself straight. Sleep enough; get outdoors a little more." I am telling you the good advice he gave me; I am passing it on to you. When you get into line with right habit, and you get down again, what are we going to do for you? The next time

you come back we can not do for you what we have done for you this time. We can not throw off such a lot of useless cargo, don't you see? so the chance of helping you the second time is not a tenth part as good as it is this time. The thing to do is to carry the work far enough so as to stop the leak, so as to get your ship afloat, and get it furnished with a new set of sails, if you please, so it can go alone, and keep itself abreast of the waves. This is a very important principle, and I want you to think about it. I am speaking here just a word about it because we find ourselves continually laboring under this disadvantage. Business at home is so attractive there are so many things at home--commencement coming, schools closing, sons coming from college, and all sorts of little things--spring fashions coming in, summer dresses have to be made, and all sorts of frivolous things, ridiculous things,--corn planting time has come, and something or other comes along that takes at least nineteen twentieths of our patients away just as they begin to get a harvest. It is like a man discovering a gold mine going off on a vacation just as he begins to get gold out of that mine. If a man gets a gold mine, if he strikes it rich, he works over it until he gets all he can out of it. We do not want you to stay only just long enough to get on solid ground, to get out of the water; but of course you feel better as soon as you get your nose out of water; and the man who just gets his nose out thinks, "I am all right now; I do not need any more help or any more assistance", and you let go of him, down he goes in the water again.

That is just the state of the chronic invalid. We say of a man who is a chronic invalid, his house is on fire. It is not a fire in the house, but a fire of the house. It is not simply a fire in a room--a little alcohol stove tipped over, got aflame, will go out in a little while,--but it is a fire in the walls, and a fire burning, perhaps, out of sight, but there it is nevertheless. The scientific tests show the kidneys are floating, and the liver is failing to do its work, the heart has become weakened; that the general tissue building processes of the body are interfered with, so it has come to be a serious matter. Now, as I said before, my friends, make up your mind you want to get well, and the next thing get hold of the right way to get well, get hold of the true philosophy. Disease is not necessarily unfriendly, but a manifestation of symptoms which arise from the body working under bad conditions. The body is working just the same as it always does, but not under favorable conditions. So we must get near to nature, adopt a simple mode of life, and all these various treatments we have--bathroom treatment, electrical treatment, gymnastics, and all these other things are for the purpose of helping you to get the vital forces of the body in operation, and to make the most of your opportunities. Now the next thing is to keep at it long enough and earnestly enough so that you will accomplish some tangible, visible results. Don't eat too much proteid. If you are a chronic ~~invalid~~ invalid, cut your proteids down, and your fat foods to half the normal ration, to half of what is really called for in the tables of the little booklet.

Every one of you ought to get a copy of the little yellow booklet down at the desk, and see how much you ought to eat, see how much your ~~size~~ ~~is~~ height is. Then the table will tell you there, and you can learn how much proteid, how much carbohydrates, and how much fat you ought to eat; then when you go to the table, mark the things you have, the things you are going to eat, add it all up, see whether it is about the proper proportion for a meal. If you are eating three meals a day, you should eat about half of it for dinner, a quarter of it for breakfast, and a quarter at night. If you are eating two meals a day, eat about three-fifths for dinner, and two-fifths for breakfast. A good many of you get along without luncheon. It pays to chew. Take pains to chew, to chew, to chew, to chew. I got a letter from a lady, today, who said she chewed every morsel ninety times. I do not advise that you should chew quite so much as that, because perhaps it would take too much time, or exhaust you; but take pains to chew every morsel until it becomes liquid before you swallow it. Then, above all things, cultivate good cheer. Do not allow anybody to spoil your peace. If anybody comes around saying, "How do you feel this morning? I feel worse. Don't you think this treatment is weakening you?" You say, "Get behind me, Satan"; don't have anything at all to do with making the acquaintance of such people; don't talk to anybody about your case; don't let anybody talk to you about their cases. There is nothing so absurd as to go around telling people how you suffer. That means, "Look at my striped garments I am wearing;

I am a jail bird, a prisoner, because I am a sinner." Some years ago when I had been saying something of that sort, a poor dyspeptic got up and said, "You are too hard on us poor fellows. I have got dyspepsia, I have had dyspepsia all my life, and I am not a bit to blame for it; I inherited my dyspepsia; you are too hard on us." I said, "You say you inherited dyspepsia?" "Yes." "You say your father had it before you?" "Yes." "Then you have an invalid stomach, and you ought to be ashamed of it just the same."

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H O W D O E S T H E S I C K M A N G E T W E L L ?

A Lecture at the
Sanitarium Parlor, Battle Creek, Mich., May 25, 1905, Thursday.
At 8 P. M.

By

J. H. Kellogg, M. D.

How does the sick man get well? Certainly, the most wonderful thing in the world, I believe, is the recovery from sickness. One gets accustomed to seeing things grow normally; the growing grass ceases to be wonderful; the planting of the corn, the growing of the corn, and the appearing of the ear, and all that, gets to be commonplace to us because we see it so often. But how a diseased body, how tissue that has become perverted, abnormally diseased, can be restored again,-- that never ceases to be a marvel. The first few years of my practice, I used to try to see every new invalid that came; I used to dread to see a new invalid come. Every new man who came was a terror to me, every new patient, for I was afraid I should find something that could not be cured. When I would see a poor dyspeptic coming in, it used to make the chills come upon me, run up and down my spine almost, when he began to tell me his tale of peristaltic woe. I would say to myself, "How on earth can this man ever get well? Just listen to this story of these awful symptoms he has had, that he has suffered from so long. How can he ever get well?"

Just as I was coming along the hall tonight, a lady

thrust into my hand a little memorandum here, and it is an account of how much she has improved; and it shows that within the last four weeks she has gained 300% in strength. You see that is almost incredible. The dynamometer shows an improvement, an increase of 300%; she had figured it out. She is three times as strong as she was four or five weeks ago. How is that? How does it come to be? Somehow there is a curative Power in the world which is one and the same thing with that marvelous power of growth that we see. Plant an acorn, it becomes an oak; how, nobody can explain on chemical grounds or on physical grounds. Here is a man who is sick, poor, miserable, a leathery skinned dyspeptic, emaciated, hollow eyed, distressed, melancholy, suffering. By and by we see that man with rosy cheeks, bright eyes that were before sunken with great black rings around them when he dragged himself along as though he expected to be hanged next day. But now we see that man standing erect, with rosy cheeks, plump, round figure, and sparkling eyes. I tell you, my friends, he is a fine specimen, as fine looking a man as I ever saw in my life, I think. He has come to be such by a process exactly the same as that which we see in the growth of the corn, and the growth of the grass,--exactly the same process. Go down to the sea-shore and you see some very curious, uncanny looking creatures--some people eat them,--called crabs, and lobsters, scrabbling things, that people nibble sometimes. I remember the first time I ever saw a man nibbling the claw of a crab. I said, "For pity's sake, this poor man must be terribly hungry to be reduced to such an extremity as that!" These lobsters and

crabs have a curious habit. They get out sometimes in the water and two or three crabs will get to scrabbling after the same morsel of decaying fish or something else which has dropped down into the sea,--for these creatures are scavengers,--you know crabs live on things of that sort; that is what they are for--to eat up the dead fish and fragments that the whales do not eat. What the lobsters and crabs do not eat, the oysters come along and finish up. You see the oysters also are scavengers. I simply mention those things incidentally~~as~~ we pass along. Now, a couple of those crabs, perhaps, will go after the same morsel of fish with haut gout, and they enter into combat, and they are perfectly reckless the way they go after one another. They tear off legs and claws in the most reckless kind of way. You see they are desperately reckless. One crab will get hold of another crab's leg. The crab that has got his leg in a trap that way won't let go, of course, so he simply twists around, twists his leg off, leaves it behind, and goes away. He does not mind it. Sometimes a crab will get terribly frightened, you know, at some things, or will meet with some accident, and it will get so frightened it will have a thoroughly good shaking, and will shake off three or four legs. I heard a man say that he had an ague chill once and shook so hard he shook a tooth out. I was hardly ready to believe that; but a crab actually gets frightened so he shakes off a leg. It may be a cannonade, or mines exploding, but anything of that sort will cause crabs or lobsters to lose their legs. Lobsters seem to be very reckless respecting their legs. A missionary out in the South Sea Islands tells a funny

story of seeing a land crab there chewing off all his legs. The land crabs are very neat and tidy in their habits. If they happen to get a leg dirty, not knowing the use of water and towels, being dry land crabs, they do not know any other way to get rid of that dirt except to nibble the leg off; so that is what they do. A land crab was going down to the sea for breakfast one morning, and he fell into a pool of muddy water, and the poor fellow scrabbled out, looked at himself, saw he was covered with mud all over. He hesitated for a moment, then deliberately went to work and pulled off every leg he had. He had nothing left but his nippers, and with them he slowly dragged himself home to his hole in the rock. He went into that hole, and came out again at the end of six weeks with a brand new set of legs. He knew those legs were coming, so he knew he could dispense with the old ones all right, and that it would only lay him up for a short time. A lobster's leg is like your fingernail, or like the hair. You pull out a hair and do not mind it at all; a new one grows in in its place. If you trim off your fingernails, more will grow. If you lose your fingernail, in six months you will have another one. So a crab in six weeks gets a brand new set of legs. Every time he moults he gets a complete new set of legs. Legs grow out from the leg buds under the shell of the crab. It is the same thing as getting a second set of teeth. Little folks do not mind the first teeth coming out because they know other teeth are coming in. Once in a while there is a man who is so rich in vigor and vitality above his fellows that he has a third set of teeth buds down in his jaw, so when he is

seventy-five or eighty years old and all his teeth have been gone for forty years, all of a sudden he will begin to get teeth again in his second childhood, and will have a third set of teeth. Now it is exactly so with the lobster and the crab. If one loses a leg, it gets another one when it moults.

Some years ago, in Germany, a surgeon made a very curious experiment. He took a rabbit, cut his body open, exposed the liver, dragged the liver out, cut off half of it. He put back the fragment, sewed up the rabbit, the rabbit got well in a few days and had as good an appetite as ever for cabbage and grass, and in six months the surgeon repeated the operation, laid the rabbit's body open again, and saw that the rabbit had a liver just as big as ever. The half of the liver that had been cut off had grown on again. So then he cut off the other half. At the end of another period of six months, he made a new observation and found that the rabbit had grown on the other half of the liver. So you see that rabbit had a brand new liver. That is just the thing that some of you are looking for--a brand new liver.

Now this illustrates, my friends, the reparative power, the curative power there is in the world. Go out in the woods, pull a branch off a tree, one of these in our grove out here; come back in a year or two and you will find a branch grown out in place of it. I was out in our greenhouse the other day, and the greenhouse man said, "I have just been planting some slips, just a week ago; wouldn't you like to see how fast they grow?" So he pulled out a little slip that he had put in, and there were a lot of little white ridges

that ran out on all sides, growing right out of the bark where you could see nothing at all before; there was no bud there, but those little ridges were running out from the bark so as to give those little plants roots. Now the little plant had been taken away from its roots, you see; it had been cut off so it was no longer connected with the current, with the roots, and it would certainly starve to death; so the reparative power that was in that plant was growing out a new set of roots for it. As I looked at that, I thought to myself that they looked for all the world exactly like nerves. The spinal cord has roots, and the nerves have roots, and here this little plant has roots which look very much like nerves. Take one and examine it under the microscope, and you will find in it little living cells that look for all the world very like these cells that grow in your brain, like the cells that grow in the spinal cord, like the cells that grow in the liver, and stomach and other organs of our own bodies. The same Power is there in those roots. That is the healing Power in the world, in the universe, in nature,--the great healing Power that is abroad, that is taking care of every living thing. I came across our lawn here a few years ago, and I learned a very interesting lesson. I came across the lawn, and when I looked back, I felt no little regret as I saw each place where I had stepped upon that grass the grass was trampled down, and I felt a sort of pang of sorrow and remorse in my soul because I had trampled down the grass, that beautiful grass that had been holding up its blades in the sunshine, and I had crushed hundreds of them,

trampled them under my feet. The next morning I came down, and as I came by the same place I looked across with a pensive thought in my mind, really feeling sad again as I thought of what I had done to the grass; and I looked down across the lawn, but could not see a single footstep that I had made; every grass-blade had been lifted up again, and I really felt as though I would like to shout, I felt so glad that those little grass-blades I had trampled upon were all standing erect again. "Now," I said to myself, "there it is; that is the same power that is lifting up men, and lifting up women here in the Sanitarium; it is working there for those little blades of grass; and that same thing will help me. It will help our sick folks--that same Power."

That, my friends, is the philosophy, it is the explanation of getting well. There is a great healing Power in the universe; it is a Power that heals physically, and mentally, and morally, and every other way. I was just glancing over here at my left a moment ago, and I discovered an old friend of mine, and he is an example of this healing power. I remember him some years ago when he had a red nose, a great, big, red nose, as rosy a nose as you ever saw; and I noticed as I looked at him a moment ago, that his complexion has changed since a dozen years ago; there is a healing Power that has been at work, and it has changed his face, changed his nose. I met a lady the other day with a red nose. She had been eating too much beefsteak; and I expect, before she has been here six weeks, that red nose will become pale, when the

uric acid is gotten rid of, and all the unwholesome things that were contained in that beefsteak which she had eaten. Now, my friends, the whole philosophy of getting well, getting well quick, is to get in line with this Healing Power, to get into sympathy with it, to get in harmony with it, to come in touch with it. That is the only thing that can help you; that is the thing to do. Now, if there were a great doctor somewhere, away off five hundred miles, and you had a disease which everybody told you was incurable and there was no help for you, nothing could be done for you, and you heard of that doctor, and you heard that he had cured somebody who was as bad off as you are, and you had good reason to believe he could cure you, you would get just as close to him as you could, wouldn't you? You would find out where he lived, get his address, and take the first train, and get close to him; you would find his house, go to the house, knock on the door, get inside, get into his office, and you would live close enough to that doctor so he could look into your case thoroughly, inspect it, and see exactly what is the matter with you. You would tell him all your troubles, tell him exactly how you feel; you would put your case in his hands, then you would say to him, "Now, Doctor, what shall I do?" He would tell you, and you would obey. You would do just what he told you. you know I think the meekest people, I think the most submissive, and the most docile, and the most meek people on the face of the earth are the people who live in the Battle Creek Sanitarium. I don't know,--I met a man not long ago who said to me, "Now, Doctor, I have got an awfully bad stomach; you just tell me what

what to eat and I will eat it if it is sawdust; I will eat sawdust or anything you say. I have got about three months, and I want to get well in that three months; and I will eat exactly what you give me." I said, "What are you going to do when the three months is up?" He said, "Of course, I do not expect to eat sawdust forever. When I go home I expect to do as I did before. I want to do things other folks do, enjoy myself, eat things I like; but for the present I am willing to do anything; I am prepared for anything." I suppose he thought he must be if he came to the Battle Creek Sanitarium. Now, my friends, I want to say that every man in this room, every woman in this room, everybody in this institution could get well, I believe; and there are very few here who can not live comfortably at home, but who desire to remain here. We do not urge them to stay here. So if you find yourself here, that is pretty good evidence that your case is a curable case. In thirty years we have found out pretty well who can get well and who can not. So if one patient says to me, "Doctor, did you ever have a case like mine?" I want to say, my friends, it is very rarely that people come here whose cases have not been duplicated a great many times. The average case is a very commonplace kind of case. Her husband wanted to know what we called her disease. I began thinking it over. She had pain in her head, headaches, pain in the stomach, spinal pains, had neuralgic pains, paresthesias, bad liver, had a bad stomach, had a bad heart, bad lungs that were a little disturbed; she coughed some. "Well," she said, "Doctor, give me a name." I said, "What shall I call it?" She said, "Now,

Doctor, what do you call my disease, what shall I tell my husband it is?" I said, "Tell your husband it is total depravity." So it was, from a physical standpoint. That was about the only word which would cover the whole thing. That is the thing most of you have. You say, "Doctor, I don't care very much about most of my troubles, but if you will just relieve this pain in my head, just relieve this pain in my head, that is all I care for." A dose of morphia would relieve that man; there are lots of medicines that would do it; but there are a whole lot of other things. How about that coated tongue? "O," you say, "I do not care anything about that. There is a bad taste in my mouth, but I do not mind that; I have got used to it so I do not mind it." "Well how about this little dropsy that you have in your feet occasionally?" "O, I don't mind that; my feet do not swell very bad; I can get my shoes on, and I don't mind that." "Well, you are a little short of breath; what about that?" "Well, that does not trouble me very much, you know; I don't have to run very fast, and I take it rather easy, so I do not mind that." Now, you see there was a little pain in the head, but that was of the least consequence, really of all; here are some other symptoms which indicate that the very pillars of his living temple are falling. The very foundations are undermined, and his heart is ready to collapse any minute. The congested lungs were likely to fail up any hour. This dropsy of his feet meant that he was getting right close down to the edge of his burying place. He was just going right down fast, but he did not care anything very much about that if he could just get rid of

that pain in his head. My friends, that is the great trouble with invalids. They are likely to take a superficial view of the case, and not realize that the symptoms which give no pain at all are of far greater consequence. I do not know of any symptom that is of any greater consequence than a coated tongue. A coated tongue is a positive and certain indication of a chronic autointoxication, chronic disease of the blood, a deteriorated state of the blood which will certainly lead toward other serious conditions, especially degenerations of various kinds. Let me tell you some of them. Apoplexy. Apoplexy does not come on all of a sudden. This is a disease which begins in the stomach; so it has its beginning at the dinner-table; you eat apoplexy. Beefsteak is apoplexy; tea and coffee are apoplexy, and all of these things. A dozen years ago I met a doctor in Chicago, and the doctor said to me--a lady doctor,--"Now, I have such terrible headaches; can you suggest something?" "Do you take tea and coffee?" "Yes, I could not get along without my strong cup of tea. I have to have a very strong cup of coffee every morning, and several more during the day; I could not get along at all without it; I should have such dreadful headaches if I did not. That is the thing that cures my headache." "The very thing that causes it," says I. "Do you think so?" I said, "I know it. I have persuaded people to give up their tea and coffee, and they have done so and gotten rid of their headaches." She said, "I can not get along without it." "I will tell you what will come by and by. You will get arteriosclerosis, because coffee has uric acid in it, the very same thing that beefsteak has in it--

the equivalent of uric acid; thein and caffeine are practically the same thing as uric acid. Then by and by you will get apoplexy." "But I don't believe I shall ever have apoplexy." "It is coming, sure." "Well," she said, "I do not believe I can get along without my coffee." About three years ago this lady came here to the Sanitarium, and as I felt her arteries, she remarked, "I am just taking a little vacation and thought I would drop in a few days here." I felt her pulse, and discovered she had arteriosclerosis already; it had come; so I said to her, "It has come--the arteriosclerosis, the hardening of your arteries which I predicted nine years ago is here; you have it now, and now you certainly must stop your tea and coffee." "But, Doctor, I can't get along without my cup of coffee." "Well," I said, "the next thing is apoplexy, coming sure." She says, "O, I can't get along without my coffee." She stopped with us a few days and went away. The next thing I heard, a year and a half after that, I saw a notice in the newspaper in a Chicago paper, saying that Dr. So-and-so was found upon the street insensible; had been picked up by an ambulance and carried off to a hospital, and there at the hospital it was discovered who she was. Now, my friends, that was a very prominent lady doctor of Chicago. A few months afterwards she came here. I did not say anything to her about that tea and coffee, because I knew she knew it now; but she does not drink tea or coffee any more. I just mention this because it is such a perfect illustration of the whole story that apoplexy is the end; it is not the beginning of disease; it is the end. It is a degeneration of blood-vessels that has been going on

for months, for years, and has finally reached the point where the blood-vessels have become so brittle they can not hold the blood in any longer. It is just like a corroded lead pipe that by and by breaks and lets the water out; the pressure inside forces the water out through the veins in the pipe, and the corrosion on the inside. Everybody that drinks tea or coffee is doing that very thing. Everybody who eats beef-steak is doing that very thing,--getting ready for apoplexy. If such a person lives long enough, does not do something else or die of something else before, he is certain to die of apoplexy. You may say that is quite a safe proposition; but that is the way you will die. Apoplexy is the thing you are going toward. It is a degeneration of the arteries; and the rupture may occur in the brain, the lungs, then you would have hemorrhage; it may occur in the liver, then you would have an abscess; or it might occur in the kidneys, when you would have Bright's disease; so all of these other things go right along with this deteriorating process.

Now, there is a healing power that can go so far even as to help one to take some backward steps, even when they have gotten this arteriosclerosis, this terrible disease when the arteries have begun to harden, if they have not actually become chalky; if one will even then reform, turn over a new leaf, if he will get back to nature, will lay hold of those things that are wholesome and good, if one will do that thing he can still make a very great improvement. He may not be, he can not be what he might have been, and he can not live as long as he would have lived, but he need not die of apoplexy

so soon; he can stave off that evil day a long time. Bright's disease, sclerosis of the liver are getting to be very, very common maladies, and increasingly so. Diabetes is another disease, obesity another one that comes from this degenerative process. So, my friends, the thing to do is to take back steps. If you have been going down hill, climb up. If you have been getting a long ways away from nature, get back to nature again, which means to get back to the right course, the right way. So many people have an idea that when they come to the Sanitarium they will do penance for a ~~while~~ while; they look upon it as a sort of a penitentiary where people are shut up and punished for their physical sins, and when they have expiated their crimes they are let out again to begin over, to go back to all their old sinning. It is the wrong way, my friends, to look upon the Sanitarium as a school of reform for a time, and then go away and go back to the old habits. Look upon the Sanitarium as a school, a university, a place where you come to learn how to live, not for a week, for a month, for a season; but to live the balance of the time you have a chance to live. I had a letter not very long ago, from a prominent railroad official, one of the best known railroad men in the United States. He said, "I have been sick abed for three weeks; I am feeling pretty bad; just as soon as I get able to get on my feet, I am coming up to Battle Creek to learn how to live the rest of my life." This man is very much addicted to great dinners. He is a great diner out, and he smokes, drinks very strong tea and coffee, drinks considerable champagne, dines out very very

often, lives very high. I wrote him and told him we would be very glad to see him at any time, but he has not come yet. He wrote that he would come a little while later, he thought he could stand it a little while longer. By and by he will come down with a stroke of apoplexy, and he will say, "I guess I will go to the Battle Creek Sanitarium now." By that time, I think he will be ready to turn over a new leaf, perhaps. The thing, my friends, as I said before, is to learn the right road. This right road is not right just simply because it is good for sick folks; that is not the reason why it is the right road for you. It is the right road because it is the good, old way. Why is all the world sick? Why has every other man got some pills in his pocket? Why has every house a medicine chest or a medicine closet? Why is it the newspapers advertise more patent medicines than anything else? Why is it that the quacks and the nostrum venders are getting ~~right~~ rich so very very fast? The newspapers are at the present time ablaze with a new nostrum, Liquozone, one of the most ridiculous things ever advertised in the world. It is nothing but a weak solution of bleaching fluid, a weak bleaching fluid. You know when the milliner bleaches hats,--when I was a boy milliners used to have a little~~x~~ bleaching box in which they bleached hats. Hats were put into this bleaching box, and the milliner burned a little sulphur with a little steam, and the smoke from the burning sulphur combined with the water in the steam made sulphurous acid, and that bleached the straw. Now, then, this Liquozone is simply that--nothing else but

water with sulphurous acid in it; sulphurous acid gas and some dirt in it, and a little sulphuric acid; that is all it is. It is only about a half of one per cent solution; and there is so very little of it it does not cost more than two cents a barrel to make it. The bottle, of course, costs something, and the advertising costs a whole lot; but it will cost the man that manufactures it a good deal more than what he pays out for advertising. It looks to me as though it would cost the man his soul, for he tells such enormous lies, and is such a prodigious imposter, I think he must be a tare; I think he must be what the Bible calls tares. I can not imagine that man can be anything but a pirate very deep dyed, to prey upon society, upon men, upon suffering men as those people are doing,-- put out this miserable solution of sulphurous acid gas, simply a weak fluid solution, which will take paint spots out of the carpet, good to kill flies and bed bugs with, and such things as that,--and cockroaches--it is first rate for this purpose; but I think it would take something a little stronger than that for a Chicago cockroach; but it is perfectly innocuous so far as the body is concerned; there is no serious harm in the quantity taken. The quantity is so very small it could not do anybody any harm; but it is an outrage, and a swindle; but it is selling so very fast that the men who are doing that thing are getting rich now very rapidly. A newspaper man told me the other day that it is the best selling medicine on the market. How many thousands of people are led to pour money into the pockets of that man who deliberately lies to

them about the alleged virtues of this Liquozone. Liquozone is a good name for it. Liquozone contains liquid, and it is supposed to have ozone--it hasn't any, but it has oxygen in it. He advertises that it is chiefly composed of oxygen. That is perfectly true, for water is H₂O--~~two~~^{eight} parts of oxygen to one part of hydrogen, you see. So it is essentially composed of oxygen, as he said. But from your own pump you can get all of that kind of oxygen you want. You can get the fire department to come and let it into your house. And the ~~oxygen~~ *air* about us, that we breathe is one-half oxygen. When you take one good breath, you take into your lungs as much oxygen as you can absorb from a whole hogshead full of Liquozone, because the oxygen in Liquozone is in the shape ~~of~~ that you can not get it; it is tied up to the hydrogen; you can not get it; it is sealed up, so to speak; it is of no value to you. Take one good, deep breath outdoors and you get more oxygen than you can get from a whole hogshead full of Liquozone. It has been exposed again and again, but the more it is exposed, the better it sells. Chemists have examined it, published it in the newspapers; and the state boards of health all over the country have published it; but these folks fatten on it, because the more they are exposed, the more people are talking about it, you see, like a man I saw the other day. I said, "It is nonsense, nothing but a weak solution of bleaching powder--that is all it is." "Well," he said, "I can not help it; I took it and I felt better, and I have a friend who was feeling very bad, and he took a bottle, and it made a new man of him."

There, you see, is a mind cure coming again. If he had taken a run outdoors, a good deep breath outdoors, and a good drink of cool spring water, and had had the same faith in it, it would have done him more good, because it would have been purer, sweeter, and cleaner. I just bring this up as an illustration of how ready people are to give their confidence to the charlatans; how ready they are to do anything a charlatan tells them to do, if it is just a short cut. These get rich quick concerns always thrive and prosper for a while. Just let a man put an advertisement in the newspaper that he will guarantee a man fifty per cent on his money in twenty days, and you will just get all the money you want. Go along with a gold brick, and you will be sure to find somebody to buy it, though it is getting to be rather of a stale joke at the present time, it has been tried so many times; and I suppose by and by Liquozone will be so universally exposed everywhere, people will find they have been fooled, and it will go to the wall along with Warner's Safe Liver and Kidney cure, and other things like it which have run out. The truth is, as I said before, that people are more ready to believe a lie than they are to believe the truth, provided the lie is sugar coated and made to be pleasing, and it has a pleasant flavor to it so you can swallow it, swallow a few teaspoonfuls, or bottles of something and antidote the effects of all your life-time of wrong doing.

I met a man sometime ago who was getting intoxicated, getting into the liquor habit, and I warned him of it, of the curse of inebriety, and I labored with him very earnestly,

besought him that he would not go down that terrible road where his father had gone, but he said, "When I find I have really gotten to where I can not control myself, I am going to take the Keeley Cure, and I will be all right." He finally got to that place, went to Dwight, took the Keeley Cure, and it did not do him any good. The Keeley Cure does not do anybody any good unless he has faith in it. So long as he has faith in it, believes in it, it helps him, but if he happens to be shrewd enough to see through it, the thing won't do him any good. I have met a number of people who were cured once and went back to be cured again, but in the meantime had discovered the secret of the thing, and it did not do them any good any more. The doctor says to the man who wants whiskey, "Take all you want", but just before he takes it, the doctor injects into his skin some morphia. So the man takes a drink of whiskey. The doctor injects something every day, but he takes the medicine, so he injects the blue morphia, the man takes the whiskey, goes off, and in about ten minutes he begins to vomit that whiskey, and he says, "O, that whiskey has made me sick; it has turned against me, and I never can drink it any more." So long as he has the impression that the whiskey will nauseate him, so long he has no whiskey appetite. The patent medicines do seem to cure a great many people by a sort of a mind cure.

But to come back to my inquiry,--why is it that we find the whole world sick? Why is it that there are in this state alone, this one little state of Michigan, 20,000 consumptives? Why is it that there are 150,000 people who die of

consumption in this country every year? Why is it that half of all the people between twenty and thirty who die, half of all the people who die between the ages of twenty and thirty years, die of consumption? One out of every eight people who die in this world, taking the whole world over, one person in every eight who die dies of that one disease. Think of it! Here is cancer, an awful malady, increasing, rapidly increasing; here is Bright's disease, doubling every ten years nearly. In fifty years from now, Bright's disease will be five times as frequent as it is now at any rate. Diabetes in fifty years from now, at the present rate, will be nineteen times as frequent as it is now, if it increases as rapidly as it has during the last ten years. One reason for its increase is the increase in the use of cane sugar. The sugar tooth is increasing, growing, getting to be the dominant tooth, if you please, at the present time. Well, this indicates positively that this great multitude of people who are marching down to death, this increasing multitude, my friends, shows that there is something wrong with our habits, something terribly wrong with our habits of life. We are on the wrong track, going straight away from the right path all the while, in a wrong road that leads down to death. Now the only hope for any of us, if we want to live long in the land which the Lord has given us, the thing to be done is to turn square about, get back into the right road again, stay there when we find the road. The province of this institution is to help point out the road, to show the way to the better life, physical, mental, and moral, too.

There is one great healing Power in the universe-- only one. The Power that heals the plant that had a leaf torn off, or a twig, and a new one has grown on, grown out in its place, that is the healing Power that heals you. The power that grows on new skin for you when you have lost a little bit of skin, or a big piece, the power that grows it on, covers it over, heals it, is the same Power that heals your liver, takes away your old liver and builds a new one. You get a new liver, not in exactly the same way that the rabbit did, but really in the same way after all. The liver is not cut off by the surgeon's knife; it is taken off by and by, and bit by bit, and carried away bit by bit by the repair of the cells, by the repair cells of the body, the traveling tinkers that go along in the blood. It is the blood that heals, and these little traveling tinkers tear down that old liver, and build a new one in its place. It is just so with a diseased kidney; it is so with a diseased brain; it is so with diseased nerves. You only get well by being reconstructed. The Apostle tells us the heart of the sinner is made over new. So the body of the sick man is made over new, putting off the old sick man, putting on the new man. It is the same with the physical man; it is the same Power that does it. What would you think of a man who turned over a new leaf, who was going to be a good man, who said he was toing to be a straight, upright man, if you should find that man swearing, stealing, carousing just as he did before,--you would say he had not been converted. You would say there was no chance of that man becoming a good man. I

met a lady the other day who said she wanted to see me. I said, "I will see you this evening." She said, "I can not be in at six o'clock; I am going out." I said, "That is a very dangerous hour to be out. That is about the fashionable dinner-time, and I think it will be rather dangerous for you to be out at that time; there are square meals around, and three-cornered meals, and meals of all kinds." She said, "I see you know what I am about. I had an appointment with a friend down at the Post Tavern tonight." I said, "I shall expect to have trouble tomorrow if you do." So she went, and sure enough I did; for the doctor told me this lady was not getting along very well; she had been complaining she was not improving very well, she had such a terribly coated tongue, and felt bilious. She said she did not think the treatment agreed with her. I said, "I happen to know something about that myself," so I let out the secret. Now, how is it possible for that woman to get well? She can never get well like that; for she does not want to get well. She has not repented, yet, don't you see? A man may say, "I have been a thief, been a generally bad man; I want to turn over a new leaf." We should judge of his real repentance ~~and~~ of his real desire by the way he behaves himself. He must bring forth works meet for repentance; he must behave himself consistently with that state of mind. My friends, that means you too. If a man is going to turn over a new leaf physically, he has to do that thing. If a man wants to return to an upright life, he must return to right habits of living, get away from the old by-paths, and get back into the right road, and do what he ought to be doing. A man says, "How

can I do it? How can I do it when I go home? My wife lives high." So do I. A man noticed me taking a lunch out of my pocket when I was away the other day. He said, "Why don't you go over to the dining-room and get something to eat?" He said, "We have got a dining car." He seemed to think it was really funny; and the man in charge of the dining-car came down through the car, looked at me to see what I was eating. He shouted out at the top of his voice so that everybody in the sleeper could hear, as he stood there looking at me while I was eating my lunch, he shouted "Last call for breakfast in the dining car!" and stood right there looking at me so everybody would think I was so penurious, or impecunious I could not afford to go to the dining car for my dinner. I said, "Look here; I don't want anything to do with your dining car. I have got something better here. I live so high you can not prepare anything that is suitable for me." Well, that is one of the trials of the man who wants to do right. A man said to me the other day, "How on earth can I get along at home? My wife does not believe in this thing at all; she says it is all nonsense; she likes to have good things to eat, rich things to eat, and I don't; so how can I get along? What can I do? I want you to tell me what I can do, how I can take care of myself at home so I want have to give so much attention to diet." That is a good deal like a man asking a clergyman how he can steal without having cumpunctions of conscience, or swear a little without feeling conscience smitten about it. When you eat what you ought not to eat, and have a disturbance in your stomach, that is your physical conscience smiting you, the

physical monitor telling you you have done wrong. If you have a coated tongue, if you have pains in your spinal column, have a headache, and all kinds of creeping and crawling sensations running hither and thither over your epidermis, that means you have been wandering away from the right path, you are out of the road, and the thorns and briars are pricking you, and the nettles are stinging you, and you are out where vipers and mosquitoes are biting you, where you ought not to be. Come back home where you ought to be, on the hill-tops of health where the fresh air blows, where the sun shines, where you are in contact with natural forces that are curative and healing and recuperative, and life-sustaining; get back there and you will be all right.

Now, I know perfectly ~~that~~ well that none of you need to stay here very long if you only learn the right way and do it. If the great majority of you would just simply learn the right road, and get enough fortitude to follow it that road, you could get well at home. We have not got any healing power here that there is not at home. You have got every thing that we have; you have got the same thing in your dooryard that we have here,--the very same thing right at your own home. You have got water just as cold, just as pure and good as our water; and you can find food just as good as ~~we~~ anything we can feed you here. We haven't any monopoly of healingpower. It is operating throughout the whole universe everywhere, and the important thing is to get in line with it; get in line. I said a little while ago that if you heard of a great doctor, and he had healing power somewhere, you would get yourselves

just as near to him as you could. I want to say to you, my friends, God is the great Healer. There is just one great Healer, and that is the same being that made you that created you, and that sustains you, keeps your heart beating while you are asleep, does all the thousands and millions of things that need to be done every second of our lives to keep us going. Think of it!--Eight millions of blood-cells being created every second of our lives. At every tick of the clock, eight millions of living cells are brought into existence, born anew, that did not exist before; sprang right up into existence just as Adam sprang up in the very first place--eight millions every second; and it is necessary it should be done to keep us alive. Here is your heart beating. That heart has to have a command, and an order, and a regulation of all its work and all its beating. Every time it beats, it must have an impulse sent to it; it must be commanded to beat, and it must be regulated in its expenditure of energy, and force. So, my friends, we are dependent on that great Power that made us, that made every man. If you get well, it is because God heals you; we have not any power to heal you. This institution seeks to lead you back toward God. Nature is simply a name that people use to hide away from us the fact that the great beneficent Power that created us is sustaining us, and creating us now, and re-creating us while we rest and sleep tonight.

So the first thing for the sick man to do is to put himself in harmony with this great healing power, and to do that thoroughly,--one may put himself in harmony physically, may do the right, may eat the right things, may try to put his

body in harmony with right influences so far as he knows; yet may be wrong mentally. I met a man the other day who seemed to be doing everything he could. He said, "Why am I not any better? I am just as bad as I was when I came here; and, Doctor, I am so dissatisfied, dissatisfied with the world; I am so dissatisfied with life. Why," he says, "it does not seem to me very important whether I live or do not live; In fact, I would just as soon die; I don't care about living; life isn't worth anything to me." Now, in such a state of mind as that, how does that man expect to get well? How can he with his mind in such a state as that. How could you expect, going into business of some sort to make money, if you did not care whether you made money or not,--how could you expect to make money? That would be just exactly like this man I am telling you about. You would never get up vim, and snap, and energy enough to do the thing right; could not possibly, with such a state of mind. Now, I met another man the other day, yesterday, had a talk with him, and I found that man was in a bad state morally. I found that man was here seeking health, but when he got his health, he did not expect to make any good use of it at all; expected to make a bad use of it. He expected to spend his life, his health, his energy in self-serving just as he had been doing, and I said to him, "You do not belong here in this place. This place is to help people who want to make a good use of life. You do not belong here, and it won't do you any good if you stay. You will get a little bit better, but you will never get well in the world. You have got to put yourself on right ground before you can expect to get better." I

am working here in this institution to help men get into the right road and keep it; and I knew this man was not in the right road and he did not intend to get into the right road; he is not doing the right thing now, and he might just as well go away, and I said to him, "If I were you I would take the first train," and I think he did, "and go home, for this is not the right place for you unless you have made up your mind to turn over a new leaf, be a new man, a better man; there is no use to stay here." It is not more than once in ten years that I have to say that to anybody, but I do have to once in a while. That man is not the kind of man to stay here, or to be here. He is like a case of small-pox; he had a contagion about him that was not good. I mean a moral contagion, not a physical contagion. He had a moral contagion that was not good, was not a good thing to keep in this house or in any other.

Now, my friends, I feel this thing deeply in my heart, deeper than I can possibly express to you, ---that the thing for every man and every woman, every one who is sick, to do is to put himself in harmony--I don't say with any man's creed; I don't say put yourself in harmony with my conception of the deity,--but put yourself in harmony with the Great Power that makes for good in this universe; the Power that makes for good is the Power that makes for righteousness; it is the same Power that makes for healing, that makes for health, and that is the whole thing,--health, physical, mental, and moral. Do that thing; do that thing. "But," you say, "I am not a Christian; I don't pretend to pray, don't know what it is to

pray." If you sincerely in your heart desire to do the right thing, that is prayer. The more forcible you make that prayer, the more intense you make it, the more purposeful you make it, why, the more good it will do you. Prayer does not bring God down to us; it lifts up up to him. I believe there is great curative power in prayer. I certainly think every sick man ought to pour out his soul to the Great Being that made him, and he ought to seek to get near to Him as the Great Physician, and he ought to seek to pour out his whole case to him; he can tell the case to the Great Physician as he can tell it to no man, no human physician, because the Great Physician can understand it and he knows he can understand it. The All-wise-One can understand the whole thing; and there is a great deal you cannot tell to any living soul because they would not understand; you do not know how to make them understand, but God knows, He understands the whole thing; and then, put yourself in a state of willingness to do the right thing in everything, physical, mental, and moral, and I know, my friend, as well as I know I am standing here, I know from experiment and observation, from clinical observation a doctor would say, I know that if a man will do that thing his chances for getting well are increased enormously; he has ten times as good a chance, - in fact it is the only chance he has to get thoroughly well, to get fully well.

I am glad to see we have my friend, Tom Mackey, here tonight. I referred to him a little while ago as the man who used to have a red nose. I knew he would not feel bad about that because he has lost his reputation any how so it

does not amount to anything. I met him down in Chicago not very long ago and he told me he has lost his reputation. He had the reputation sometime ago of being the sharpest, most expert gambler in the United States, and he said, "I have lost it, I have lost it." He had gone out of the gambling business and so had completely lost his reputation, and now he is a good, honest, straightforward, christian man, and is no longer engaged in the gambling business. My friend Mackey has lost his reputation, and he will be glad to talk to you one of these days and tell you something of his experience, tell you something of the way he was helped and how to get in line, to get in harmony with this great power that is working for all men.

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v-7-31-05

THE HEART

A Lecture in the Sanitarium Parlor, Battle Creek, Mich.,

May 29, 1905, at 8 p. m.

BY

A. J. Read, M. D.

I think we shall consider that good old Bible admonition, "Keep thy heart with all diligence, for out of it are the issues of life." The heart is somewhat different from what we have popularly been taught to consider it. Most of us think of the heart as this organ placed in the body which pumps blood to the various blood-vessels of the body, and to the various tissues. As a matter of fact, we have two hearts. We have the central heart, or that which we have commonly been taught to consider as the heart; and we have the peripheral heart. The arteries which make up the circulatory system on one-side, that is one-half of the circulation, you might say, the other half being the venous circulation,--the arteries themselves form the peripheral heart, just as the central heart pulsates and pumps blood to every portion of the body, just in that same way do the arteries themselves ~~throughout~~ throughout the body contract and relax, pulsating, and sending on the blood current, the blood stream to enliven and build up, and strengthen the tissues of the body at their remotest bounds. When the sacred writer told us to keep the heart with all diligence for out of it are the issues of life, we must consider

that he had certainly a very broad subject; that the scope of his subject extends to every portion of the body, the heart itself being aided in its work and accompanied by the work which the arteries themselves also do. It seems somewhat strange that when the heart and the blood have so much to do with our health and well being, that so little is actually known about the heart and the blood. It was only a very few years ago that we learned to recognize the ~~musical~~ musical sounds of the heart. I do not know whether all present have considered that fact,--that the heart is a musical instrument, that it gives off musical sounds. In life, those sounds are recognized, noticed; the sounds given off by the heart are quite analogous to the sounds given off by a piano that is out of tune, in disease of the body, and those sounds are recognized by the physician. I once met a very enthusiastic philosopher and lecturer who made the claim that there was music in everything in the world. He claimed that even the trees gave off music; that just as the babbling brook, rolling over the gravel and winding in and out through the meadow gives off musical sounds, so every stream, even the stream of sap that flows through the veins of the trees ^{of} ~~the~~ life ~~of~~ or the tiniest plant give off musical sounds. Whether this is true in regard to plants and trees or not, it is certainly true in regard to the circulation of the human body, for not only does the heart itself give off musical sounds, but our blood-vessels, our arteries do give forth musical sounds which can be recognized. Those sounds, by delicate instruments placed

over the larger arteries can be clearly recognized, and are used in diagnosis, in recognizing conditions of health and of disease. So the heart itself does constantly carry with it a note that may be in tune with the great universe of health, and may say to the investigator, "I am doing my work right." It was only a very few years ago that we learned to recognize these musical sounds of the heart. The time has not yet come when we have learned to recognize to any very great extent the chemistry of the blood. Chemistry, as studied in glass tubes and in laboratories, is a very different thing from chemistry as it is manifest in the human body. These laboratories of our bodies have such a faculty of elaborating such insurmountable chemical compounds, of elaborating such combinations and chemical compounds that they defy the most astute investigator. It is impossible for us to follow the human body in all its ventures in chemistry and in the substances which it will build up or the compounds which it will build up. We have learned just a few things, possibly the A B C of human chemistry.

The blood as yet, we could almost say, is an unknown quantity, but during the past few years, more has been learned about the blood than had been learned for many, many years before. When you and I went to school, we were taught to recognize that there was a blood fluid or serum, and that we had red blood-cells and white blood-cells; and that was about the sum total of our physiologic knowledge. In later days, however, physicians have recognized that the blood means something more than blood, serum, red-cells, and white cells. Due to the investigations of Metchnikoff, who has been one of the most

learned and one of the most persevering investigators, of the blood, we have learned that the blood contains something more than just simply what we may call the white blood-cells and the red cells, and the blood serum. We have learned something of alexin bodies of the blood,--certain chemical substances developed in the blood to combat disease, which have occupied the attention and study of some of our most learned investigators for a number of years. It was one of the results of the work of Pasteur in bringing out the subject of bacteriology that men came to give much attention to these alexin bodies, the intricate chemical compounds elaborated in the blood to counteract or to antidote ~~th~~ disease poisons which may be developed in the body.

After the work of Pasteur, it was found that certain germs produced certain diseases, and the whole subject of bacteriology was developed. In connection with that it was found that certain germ diseases were self-limiting. That led to still further investigation which brought about this discovery that these germ diseases must be self-limiting, because the blood itself, through some mysterious and unknown power, was able to produce within itself a chemical antidote to these poisons. The next thing was to prove that theory; so the investigators set about it. By very careful work, they were able to separate the germs and the elements that were in the blood from the chemical substances that were produced, and then finally to inject these chemical substances into a dog that had a certain disease, and they found that these chemical

substances were perfect antidotes for the disease. One of the first and earliest of the diseases that were thus studied was the disease diphtheria, and from the study of that disease there was developed what is now known as the diphtheria antitoxin, the diphtheria antitoxin being at the present time, grown inside of the blood-vessels, in the blood current of young horses, colts that are selected and are used for that purpose. The latest achievements of science have made it possible to collect this chemical antitoxin in a very humane way and make it available to the human race. Undoubtedly hundreds of infants every year are saved by using this chemical antidote to certain germs through this means. This is perhaps one of the most wonderful miracles of modern medicine, that has been brought about, and been performed, because it was accurately predicted before it ever was discovered, that that would be the case, that such a chemical substance was actually elaborated in the blood. This led us to recognize a fact which has done away with a whole lot of superstition in connection with the treatment of disease. In the olden times, it was supposed that nearly all disease was due to some mysterious power. Natives in the Pacific Islands, and in various half-civilized countries, had mysterious ideas about disease,--that in some way the gods were angry, or that possibly there was some mysterious spirit that had come down and had some kind of grudge against the unfortunate persons, and that that spirit must be exorcised; so all sorts of incantations were indulged in to get rid of the disease. But when it was found through these in-

vestigations that there was actually in the blood itself the power to lift up a standard against the enemy when he came in upon the body like a flood, when that was really discovered, men began to be a little more sensible about disease, and to reason about it. They said, "Why, of course, it is the most natural thing in the world that the power should be vested in the blood to create an antidote to disease, and to overcome it; and so we have been led to recognize in a number of other diseases, since the days when the diphtheria antitoxin was discovered, that the blood itself has the power to produce an antidote to disease, and to overcome many of the germ diseases which cause such havoc in the human family. This discovery has led people to realize that if the blood is able to combat disease in such a wonderful way by creating these chemical antidotes, that the sensible thing for human beings to do is to take very good care of the blood. And that leads to the inquiry, what makes good blood?

Now, we had all sorts of ideas about getting plenty of iron in the blood, because it was found in people who suffered from certain kinds of diseases; they became very pallid and pale, and as iron is what gives the color, the red color to fruits, and the red color to the blood, it is compounds of iron, perhaps greatly elaborated; then it was thought, perhaps, the best thing to do when people were very anemic, was to give them a little more iron; but there has been a great question as to whether or not that iron can be appropriated by the human body; and there are two schools in our medical practice, two

schools; we might say there is a schism among the physicians. Some claim that inorganic iron, or compounds of mineral iron, can be appropriated by the body, and therefore the taking of iron is one of the things, that it is the only way iron can be appropriated by the body,--is in the form of organic compounds of iron, as we find it in fruits, grains, etc. Whatever may be the difference between those two schools of medicine, after all, modern science has come to recognize the fact that the power to nourish and build up the blood is after all found in the food. One can not be helped much by paying a dollar a bottle for medicine, and swallow^{ing} it in tablespoonful doses. One must recognize the fact that after all the Creator has just as much good, common sense as we have, and he has placed around us in the ordinary channels by which we receive nutrition to build up these bodies,--he has placed in these very same channels the power to put our blood in such a condition that it can create all the antidotes necessary to combat disease; and it is found by actual experience, and experiment, and test that, give the blood half a chance, and it will do that very thing; that it will elaborate out of the green vegetables, and out of the yellow fruits, and the cereals of a variety of colors, and all the variety of colored foods which we take in, the blood and digestive organs, the wonderful organism of the body, has ~~such~~^{the} power to elaborate the beautiful red blood with all its possibilities of chemical compounds that are away beyond our ken. While these alexins that have been discovered in connection with diphtheria are established chemical

facts, yet it opens before us a whole field of chemical physiology in the blood that has not yet been exploited or investigated, and only just simply suggested to us the possibilities that there are in that wonderful fluid, the blood. So there is opening before us today, a field of science that is inviting, and at the same time, while we have not exhausted that field of science, we have learned enough about it to encourage us to use those sensible measures which the Creator has given, those natural methods of building up the body, encouraging nutrition, and supplying the elements necessary to make good blood, and depending upon the Creator, and the body which he has given us, to elaborate out of simple foods, well taken, under favorable conditions, such blood power to combat disease as we shall need. So the admonition given by the inspired writer of old, to keep thy heart with all diligence, for out of it are the issues of life, was not very far amiss, even when considered from a chemical standpoint. It seems to me if individuals in those ancient days had heeded that warning in this sense, that a whole lot of superstition and foolishness in regard to disease might have been avoided, and then, perhaps, this generation might have been on a much higher physical plane rather than deteriorating as we find the race at the present time.

The blood is important not only because of the alexins and chemical bodies which it is able to elaborate; but it is also important because of certain cells that float in the blood. We have been so very very crude, we could not appreciate these simple and fundamental facts. It is passing

strange that even today there are some countries where a rise of temperature is recognized simply as a disease called a fever. There is no distinction between typhoid fever and an attack of indigestion, or an attack of pneumonia, or any other of a variety of diseases accompanied by a rise of temperature; but it is all called by that one name, fever. I have been in such a country as that, where just that dense ignorance exists, and all rises of temperature are treated on about the same scale. I remember very well one country in which I was privileged to stop for a time, that the natives of that country had the habit of coming out, when anybody had a fever, and picking a lot of leaves off this tree, and a lot off another tree, and a few roots from another plant, until they had gathered a half-bushel of roots and herbs, and putting them all into a great kettle boiling them up, making tea, and compelling the patient to drink the whole mess of tea they made from that half-bushel of herbs, and drink that in a few hours if possible. The result was very often people recovered, and probably from the large amount of liquid which they drank rather than from any special virtue in the herbs, for the results were anything but uniform. However, when a person did recover from disease, the ignorant people of that country would always attribute it to the special combination they had happened to get from the roots and herbs they had gathered from the ground. I sometimes think that civilized people who go scouring over the earth for some new chemical compound, are, after all, not so far in advance of these people, as far as the philosophical reason for it was concerned,--in connection with curing disease.

How much more rational it would be for us to make a careful investigation to find out what the disease really was, find out intelligently what organs were involved in this disease, and what way the functions were interfered with, and then set ourselves about it in a good, rational, sensible way to restore the normal functions of that body as far as possible, and see how quickly nature would do the rest. After all, the easiest part of it is the part for us to do; and because we want to go a little beyond the simple things, and try to do some of those elaborate things that are beyond us, we so often meet with failure. I think perhaps the simple life in healing disease brings us nearer to the fountain of perpetual youth than anything else possibly could.

There are, among the blood-cells, classes of blood-cells that have not been recognized at all until recent years. Dr. Metchnikoff, to whom I referred a few minutes ago, found that there were not only the ordinary white cells, as we were taught in our school physiologies, but there is a special class of white cells whose office, whose business it is to swallow up intruders upon the body. He found that when those germs described by Pasteur, Koch, and other scientists invaded the tissues of the body, that certain class of white cells would come out, meet those germs, swallow them up, and destroy them; so he named those cells the swallow-cells of the body; but the term he used was phagocytes. Phagocytes simply means the swallowing cells, the cells whose business it is to swallow up the enemy. Some writer, with something of a turn of mirth in his style, described in one of our magazines recently the

swallowing cells as cannibals, and illustrated his article with a picture of a cannibal group gathered around the big caldron cooking their victims; but the victim happened to be just a little germ that had been captured by these cells. These swallowing cells or phagocytes are at work continually in protecting the body against disease. It would not be possible, tonight, in the range of our talk, to describe these more minutely than to call attention to their existence. Metchnikoff also describes two or three other classes of cells that exist among the white cells. These are named the macrophags, the microphags, and the chromophags, so if you want to dub them for short, you might dub them mack, mike, and chrome. They are swallowing cells. Phago is the Greek word for swallow. The macrophags are a special class of cells among the white cells, whose business it is to swallow up the drones of the hive, if you please. For example, if any cell of our body becomes lazy and sluggish, and is not doing its work properly, then these macrophags go after that cell very quickly, swallow it up, tak it out of the organism. That looks like a wonderful provision to keep us free from a lot of drones in a hive. The macrophags do this work very nicely; but suppose you neglect your nutrition, and the macrophags find some cells of your kidneys or of your brain that are not as active as they should be, they say, "Here are some cells that are useless to the organism", and they swallow them up and carry them off. The result is perhaps Bright's disease of the kidneys develops very early because the macrophags have carried off so many

many cells faster than the kidney would reproduce those cells, and in place of the cells has been placed some cartilaginous tissue which is inactive as far as the functions of the body are concerned; so we say that individual has developed Bright's disease.

When a person reaches old age, reaches that stage of old age where the nutrition of the tissues begins to fail, then the macrophags and microphags begin to attack the brain cells, the memory fails, especially with reference to things of recent occurrence; but some of the older, more adult cells, which have been cultivated from childhood retain the memory of things which occurred away back in childhood; but the more recently developed cells become sluggish and are carried away by the macrophags, their function is lost, so memory for recent circumstances is lost. I saw a very beautiful illustration of this in Battle Creek some eight years ago. An old lady whom I had been privileged to know for a number of years had reached the grand old age of 98 years, which is not the extreme old age according to the latest physiologic investigations, according to which one hundred and twenty-five years is considered prime old age and a proper limit, but very few of us reach that limit. This old lady had reached 98. She had lost her memory for recent things. If I went into the room and told her anything about occurrences of the day before or the present day, she would perhaps ask me two or three times over about the very same thing; yet she would repeat to me by the hour Bible verses that she had learned. She would repeat hymns which she had committed to memory when

she was a girl, beautiful poems which she had memorised when she was a girl, for she was a woman of considerable literary power, and it was really a treat to sit down by that dear old lady and hear her repeat over some gems of poetry from authors back twenty-five or thirty or forty years ago. Her memory was perfect in regard to that. When her friends called, she would very often ask the privilege of having a season of prayer with them. Now in her conversation, it was impossible for this old lady to carry on a connected conversation with you, a really very intelligent conversation; her mind was somewhat flighty and wondering, but when she would start to talk about a custom of hers from childhood she would talk from the beginning to the end with the utmost intelligence, and appreciation. She would make her wants known to God just as well as she ever could. These brain cells had been so thoroughly cultivated in her earlier years that she could talk with God just as well as ever she could. This to me was a beautiful illustration of how some brain cells can be so strengthened in their character that they are able to retain their characteristic even away down into old age. If this is true, in regard to religious devotion, it must be true in regard to many other things.

The other class of cells were the chromophags. Now it was found by Metchnikoff that the chromophags were given to us as a sort of ^mmunition, a sort of danger signal. When in middle and early adult life the individual begins to find gray hairs creeping on, it is an evidence to him that the circulation is not kept up to the extremities as it should be,

especially in adult life; that the chromophags have begun to divert the coloring matter of the skin and of the hair, and these gray hairs coming on early in life are a danger signal, so that one will be warned that he needs to pay a little more attention to keeping up the circulation to the very best possible standard and thus hold off the advances of old age. These various classes of cells were described by Metchnikoff and have been found to be very useful in protecting the life in that way. That is why the sacred writer says for us to keep the heart with all diligence, for out of it are the issues of life.

Now there is something else in regard to keeping the heart with all diligence that I want to call your attention to tonight. While the heart pumps this wonderful fluid to all parts of the body, yet I think most of us are not only hindered in keeping up the proper degree of good health well along into adult life and what we might term advanced years, we are hindered in that fully as much by the fact that we do not encourage the natural circulation of the blood. In other words nearly every one of us have within our bodies great stagnant pools of blood that ought never to be there, that however well that blood may be nourished by good food, however well we may supply the elements out of which the blood fluid may be created, the blood current cannot avail for the building up of the body and maintaining it in perfect health unless the circulation of that blood is kept up to the very best possible degree, and here I think is where most of us

fail. Our modern civilized ways have brought about such a condition that, though our hearts may pump as well as they please, the obstacles they have to meet are so great that they are unable to prevent stagnation, unable to prevent the stagnant pools of blood in this great abdominal aorta. I think the most of you can see this chart; if not, I believe you can see this other one. The abdominal aorta shown here in the side view, is one great blood-vessel which, with its mesenteric branch and other branches, is more apt to contain stagnating ~~XXXXX~~ blood than any other one of the blood-vessels of the body. These charts illustrate the point so well I borrowed them from the artist and brought them in while they are still in an incomplete condition. This large blood-vessel gives off branches to the abdominal viscera. In these viscera occurs stagnation of the circulation even in very young children. Now, how is that brought about. In school life the child is put to sit in a seat that is too high, the feet come off the floor, so the child doubles up in this way over the desk trying to reach the floor with its tiny feet, the muscles of the abdomen are cramped, and the circulation of the blood interfered with, and in a little while that child has developed dyspepsia, what has been commonly known for a number of years among practitioners in college towns as students' dyspepsia, dyspepsia brought about simply and solely by this stagnation of the abdominal circulation.

My lecture will not be complete without telling you how to avoid that stagnation, but I want to call your attention to one or two more ways in which that occurs. As we go on

into later life, some of us suffer from clothing that interferes with the muscular activity of the abdominal muscles. These muscles become weak, and ~~that~~ we also get a stagnation of this circulation because of the weakness of the abdominal muscles. These large muscles that lie over the abdomen are made for the support of the abdominal viscera, an elastic support which holds the viscera up in place. In breathing and in exercise, the movements of these muscles act as a sort of brake, increasing and decreasing the abdominal tension which causes suction in and out of the blood in these blood-vessels, just as though you had the end of a blood-vessel attached to a squirt-gun and were able to pull the piston rod in and out and force the blood stream back and forth through that large vessel. The activity of these abdominal muscles is absolutely necessary to good circulation in these important abdominal muscles. Therefore it is doubly important that we should keep the heart with all diligence, for out of it are the issues of life.

These muscles can be developed. Many of us, if we suffer from hernia, or if we suffer from appendicitis, or from any disease which gives us pain on the contraction of these abdominal muscles, are apt to forget them until they become so weak that we get into a chronic way very fast; we go to bed with the abdominal muscles hanging down, the shoulders drooping over, and the whole support of the abdominal viscera gone, and the circulation stagnating in these important vessels. Did you ever get up from the table, and in half an hour or so find your food rise on your stomach, and begin to taste the food, and realize that you are going to have one of those horrible attacks

of indigestion? Now what does it mean? It means practically nothing more nor less than that that abdominal circulation is stagnant. Is there any way we can correct it? It is just as easy as turning over your hand. It is the simplest thing possible, by simply placing your hands on top of the head. Place your hands on top of your head, sitting well back in the chair, draw in a deep breath, lifting the stomach and abdomen at the same time. Now, while the breath is drawn in, pull with your hands as tight as you can without letting go, and slowly let out the breath, and pull in on the stomach. You will actually feel the suction upon the abdominal circulation when you do that, and feel the blood begin to move, and you know the blood is being pumped out into the external circulation. You can feel the blood tingling into the ends of your fingers and your toes, you can feel your face flush and burn, because you are pumping out this stagnant blood. Now, if there is any clergyman in the audience, I would advise him, if he ever gets a sleepy congregation, just stop in the midst of his sermon and have the whole congregation go through that exercise. It would wake every one of them up, and the sermon would be doubly interesting after that. That simple exercise is sufficient to break up in ninety-nine cases out of one hundred, the worst attack of indigestion you can have of that kind. It is simply marvelous what that simple exercise will do. People who are sitting at a desk cramped up over their books often suffer from indigestion. People of sedentary habits can correct that indigestion and bring about a normal circulation in these internal viscera by that simple exercise.

Now, why is that important? It is important because, strangely enough, there is grouped around this large, internal pond, if we call it that way, there is clustered around the shores of this internal pond the most important nerves of the whole body as far as our physical functions are concerned. ~~The~~ Those are the solar plexus, the lumbar ganglia--those important functions that have to do with the feelings of the body. If they become poisoned by stagnating blood from these internal parts, they become so poisoned the whole system gets so enervated,--that is why you have these awfully nervous days, and get so disagreeable nobody can live ~~any~~ a with you, and you can not live with yourself, even. It is because these nerves have all become irritated by the poisoned blood from this stagnating pond. Just simply keep the blood in that pond moving by that simple exercise, and it is wonderful how you sweeten up your disposition, how you will lose your cares, and will get an improvement of your general good health. It is so important. It means much to us to keep a pure, clean, sweet blood current pumping around those nerves all the time. That is another reason, I suppose, why the sacred writer said, "Keep your heart with all diligence, for out of it are the issues of life." So it looks almost reasonable to suppose that death might result if the blood is not kept in the right condition. That is precisely the condition, when people neglect themselves, of the circulation of the whole interior of the body. I know of no simpler key to health in life, healthwise, than that simple little suggestion. If I could mention one thing that would be of benefit to you, and I only had the privilege of mentioning

one thing, I don't know of anything better that I could tell you tonight than that. It is so simple you can sit in your office talking with your friends, then throw your hands over your head and take that exercise, and they will not think there is anything out of the way. You might even do that in church, and nobody would know what you were doing. The minister who is somewhat out of sorts, before starting off in his sermon, could take that breathing exercise, and he would get a wonderful physical inspiration from that that might help the spiritual inspiration; and the invalid who is subject to attacks of indigestion, and stagnant circulation, can actually, just as often as he wishes, pump out the stagnating circulation, and pump in fresh, pure blood, and thus take care of that circulation and keep his body in good condition. After all, the prevention of disease is more than the cure of disease, and I trust that in carrying out this simple practice you may find that you will derive considerable benefit from it. I thank you for your attention.

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Stereoptican Lecture

HOW TO MAKE BATTLE CREEK THE HEALTHIEST CITY IN ALL THE WORLD

A Lecture at the Independent Congregational Church,

Battle Creek, Mich., Tuesday, June 27,

1905, at 8:00 P. M.

BY

J. H. Kellogg M. D.

The purpose of this evening's presentation is to interest the people of the City a little more than they have yet become interested in fighting this awful plague, tuberculosis. Of course, the people here in the room probably feel themselves pretty safe. The average healthy man in a state of health thinks to himself, "Now, I am well; what have I to be afraid of? I am never going to get tuberculosis. Look at my lungs; see how deeply I can breathe"; and that man, at that very moment, may have in his lungs, in the lymphatic glands of his chest, he may have lurking there the germs of this awful disease. Prof. von C has shown that these germs may live in the body from infancy to old age before they become active; that they may be taken into the body with cows' milk in early childhood, in infancy, and that such germs may grow and develop, be lurking there in the body during all the years of a person's active life until they begin to decline a little in health, get typhoid fever, perhaps; then in the depletion of the body which comes as a result of this disease, the germs

will become active, and they may, in the body, do destructive work in the intestines, in the stomach, in various parts of the body. The idea that tuberculosis is confined to the lungs is a very great mistake.

A little baby was brought to me a few days ago, with a large lump under its jaw here. That was tuberculosis; tubercular germs had gotten into this child's blood, gotten into its lymphatics, gotten into the circulation, got to the lymphatic gland, destroyed the gland; and a process of suppuration or matteration had taken place, and there had grown out large masses as big as an egg. The little child was not more than three or four months old, but there was an enormous swelling under the jaw; that is tuberculosis. What was formerly called scrofula is well known now to be tuberculosis. You don't hear the word "scrofula" any more, because it has been discovered that the disease formerly known as scrofula, or called scrofula, was nothing more nor less than tuberculosis. These terrible germs are swarming about in every civilized community and every foot-fall across a carpet such as this, raises a multitude of these germs into the air. The dust of this room is swarming with tubercle germs. Everybody who comes to this church is inhaling tubercle germs; and that is not peculiar to the Congregational Church, but that is a condition which prevails in every church, in every room, in every assembly room where there is found dust--and that means in every one--these germs are present; in every sleeping car they are present. They are more widely dispersed than any other pathogenic germ,

or any other germ which produces disease.

Now, the manifestations of this disease are very numerous. We have many forms of the disease. In some cases it affects the skin very generally. In Copenhagen some years ago, on certain streets of Copenhagen, you met every few steps, people with awfully ugly sores upon the face or hand, sometimes upon the nose, sometimes the nose was gone; sometimes an eye had disappeared, and in some instances one whole side of the face was nearly gone; and in one or two places I met persons who had their faces covered up. I afterwards saw them with their faces uncovered, and found there was nothing left but a bit of skin. The nose was gone, the lips were gone, the bones were in some places uncovered--a most awful spectacle--the result of this disease entirely,--tuberculosis of the skin. You see a little boy sometimes who has hip joint disease; that is another form of tuberculosis--tuberculosis of the bone; and when it gets into the hip joint here, the bone is destroyed and the leg is shortened. There are in this City dozens of men who have one limb shorter than the other because when they were boys they had ~~a~~ tuberculosis of the hip joint. What is called white swelling of the knee,--a not uncommon disease; that is quite a common malady,--is another form of tuberculosis of the bone. And these maladies are increasing constantly. Then we have tuberculosis of the large internal organs, tuberculosis of the spine, tuberculosis of the liver, tuberculosis of the stomach, tubercular ulcer of the stomach, tuberculosis of the intestines. I shall show you upon the screen shortly

a view of tuberculosis of the peritoneum; that is, the lining of the abdominal wall, of the abdominal cavity. This is not an uncommon disease at all. I have met a great many cases of it. It generally comes from tuberculosis of the appendix. You have all heard of the appendix--the curious little appendix of the colon that sometimes is removed, quite often. I can hardly say sometimes; I should almost say all the time, but very often I must say, very often it is removed nowadays by the surgeon. Tuberculosis begins there and sets up a dropsy. This dropsy--an enormous swelling of the abdomen sometimes results--is the result of the effort of the body to defend itself against the poisons of this disease. The serum of the blood that fights against the germs is poured out to kill the germs, and it does kill them, and it will keep going on in such quantities that more serum must be poured out in increasing quantities until by and by there is enormous dropsy produced. Dropsy of the joints is sometimes produced in the same way, and dropsy of other parts of the body. So there are many manifestations of this malady; and at the present time it is proven by post-mortem examination in hospitals, in dead houses in the large cities, postmortem examinations show that almost every single adult living, almost every single adult person has either this disease, or the germs of this disease in his body. When he dies, there are scar-marks, evidences that he has had the disease in some form or another. And the recent statistics which have been collected in Germany show that in that country one ~~three~~ half of all the people who die

between the ages of fifteen and thirty-five years of age die of this one disease, tuberculosis. In this country, it is not quite so bad as that yet, because we do not keep our cattle shut up in close, hot, sweltering stalls the entire year around as they do in Germany. That is the reason why they have the disease so much more frequently than they do in this country even,--because the milk is nearly all affected. Nearly all their milk cows have tuberculosis. When I was in Germany some three years ago last, I visited a dairy where a lot of cows had been shut up in a stall, and they had not once seen daylight for three years. They were shut up in a stall, in a pen, without a single window in it. There was no place where fresh air or light could get into that place, that cow-pen, no place at all except a little hole in the door; and there were fifteen or twenty cows shut up in there. I said to the proprietor, "Why in the world don't you let these cows out? They certainly have tuberculosis, half of them, and they will all get it if they have not gotten it already." He said, "It would not do to let them out. Three years ago I wanted to make some repairs on the barn, and took them out; and you would have thought they were insane; they nearly stood on their heads, some of them; they really acted as though they were crazy, and I could hardly get them back into the barn again." Isn't it surprising! They were insane with joy to get some fresh air; they were insane with joy. He said, "Besides, they have been there so long when they are brought out into the sunlight they can not see; they are blind, and I think the sun

would hurt their eyes; and besides, their hoofs have grown so long they can not stand up outdoors, on the ground." You can imagine why their hoofs are so long--living there in that soft filth in which they had been confined three or four years. Their hoofs had grown immensely long, three or four times as long as they ought to be. That is the situation in Germany; and it is no wonder that the people of Germany are suffering to a terrible extent from this awful malady. In this country statistics show that one-third of the people between fifteen and thirty-five years of age, one third of all adults die of tuberculosis. Perhaps there are one hundred people here. Thirty-three people of this room, are certain to die of this disease. Here are three people on this seat; one of them will die of tuberculosis, if they do not live above it. I think by the looks of them, they are going to try to live above it. I think I know it. Here are six people on the seat behind there, and nine people behind them. Of those nine people, three are going to die of tuberculosis. Look at your neighbor, then at your neighbor on the other side; one of them, or you yourself, will die of this disease. There is no hypothesis about this; it is not theory; it is a fact, a fact that is gathered from the records of funeral directors, from the records of the collectors of mortuary statistics; these statistics all show that this is the fact. There is no getting away from it. We ought to face this thing, and we ought to set ourselves at work to fight it. If Spain should attack our eastern shore, or our western shore, or if they should come down and

make a new attack on Cuba, we should all be off in arms, send a new army down there at once to fight off Spain; but I want to tell you, my friends, there is not an enemy on the face of the earth so absolutely deadly in its effects as this disease, tuberculosis. There is no human foe, and there is no germ foe that carries off every year so many victims as does this one disease. One-fifth to one-seventh of all the people who die die of this one malady, including accidents--one-fifth to one-seventh of all who die die of this one disease; and between the ages of fifteen and thirty-five, one-third of all the people in this country die with this one disease.

Here is a memorandum on tuberculosis compiled at Berlin. Be careful not to make any dust, ladies, when you take your hats off, for dust is dangerous, and in passing through the streets of this city, you are sure to collect a lot of dust on your hats. What I am showing you now, these paragraphs upon the screen, are official statements made by the German government, by the authorities appointed by the German government, to collect facts, and to inform the public how to fight this disease. What are the sources of infection? what is the nature of the disease? etc; and these are the statements made by this great body.

A. What is tuberculosis? Tuberculosis is the most destructive of all infectious diseases.

I have had these photographs made so I can show them to you from this authentic source, so you will not take it on my authority, but will know it is the authority of the greatest

scientists in the world; it has behind it the authority of the greatest scientist in the world. These statements have the authority of Prof. Koch who discovered the tubercular germ, and the German officials who have given special study to the subject.

"It attacks various parts of the body, chiefly, however, the lungs. It spares no nation, no age, no vocation, no class of people. More than 100,000 persons die each year in Germany from the effects of it."

Germany is a country of forty millions. This country has eighty millions, and in this country 150,000 people die every year from this malady.

"The number of persons afflicted by it being estimated as ten times as numerous as the people who die."

In other words, one million persons are suffering from this disease constantly in Germany, and one million five hundred thousand sick with tuberculosis in this country all the time.

"Every third person who dies between the ages of fifteen and sixty years of age succumbs to tuberculosis."

Now, my friends, there are some awful facts for us to face, and they ought to stir us to action; we ought to be awake and defending ourselves and our neighbors and our friends. You who are parents and have children, you look upon those children, and you know one-third of them are going to die before they are forty years of age, and ~~that~~ of that one disease; and it is preventable as we shall see.

"Tuberculosis is caused by the tubercle-bacillus

discovered by Robert Koch. This is a minute creature of the lowest scale, visible only when very highly magnified. It thrives best at blood temperature (about 98 degrees Fahrenheit) and multiplies in the interior of the body. It reaches the outer world chiefly in the sputum of sick persons and in the milk of diseased animals.."

Dust from the dried sputum of persons suffering from this disease, and the milk of cows suffering from this disease are the two great sources.

Here is the germ. This is made from a microphotograph enlarged from the actual germs themselves made from sputum. Here are little cells, fragments that come up from the lung, that are scattered over the slide when the photograph was taken. Here you see these little red spots--spores forming for the production of new germs. Each one of these white spots will be separated, become another germ; and they may multiply in this way with very great rapidity.

Here is a healthy lung. Here are large bronchial tubes, air tubes; these sub-divide into very small branches, on the end of each of these branches is an air cell, a little bladder-like body called an air cell; and it is in these the exchanges ~~take place~~ of gases take place. The oxygen from the air goes into the blood, and the carbonic acid gas passes out into the tubes to be carried away. This represents the lung as it appears on the outside. Notice the space between these lungs, and notice these large tubes. Now these tubes, lymphatic glands, are found all along these tubes, and in this space

between the lungs, large numbers of healthy glands are found, and the purpose of these glands is to fight off the germs. ~~Wa~~ When you find the glands enlarged, it is because germs have gotten in and the gland is fighting.

Here is a pair of diseased lungs. Here is the trachea, the bronchial tubes of the left lung, and the right lung; and here are the glands enlarged so that they fill the space between the lungs. Tubercle germs have gotten into these glands, and they have become enormously large in their battle against the germs, and by and by ~~xxxx~~ they begin to break down; then abscesses form; the disease from these glands extends along the passages of the air tubes into the lung. That is the way the lung becomes involved. These glands become infected in various ways; sometimes it may be a decayed tooth. Germs find their way into the tooth from the mouth; they work down into the lymphatics, so get into the large glands beside the neck; then creep down by the collar bone, then along down under the collar bone, and down into the space between the lungs, in the chest cavity. I have known of this history many times. Dentists have recently called attention to the fact that the tooth-brush is a means by which these germs find their way in. When the gums are cut and bleeding by the tooth-brush, germs work into the gums. Sometimes they get in through an inflamed tonsil or sore about the nose, or get in through a cut or bruise anywhere upon the body. Sometimes a butcher becomes infected by cutting the flesh of a tuberculous animal. That is not an uncommon thing; so the disease gets into the finger,, travels

along up into the lymphatics of the arm, gets under the arm, and the disease begins in that way.

This is a cross section of those lungs split in two, and cut across so you can see where the lymphatics are following down the tubes, penetrating the interior of the lung. Now from this the lung becomes involved, pneumonia cavities are formed. Here is a portion of the peritoneum. See these yellow places, and these white places here--sores, ulcers upon the lining of the peritoneal cavity, and of the abdominal cavity. Here are masses of germs which have accumulated, grown, but which have not yet broken down. Now read--

"Every person is exposed to the danger of taking up the germs of tuberculosis into his own system, and many harbor them a long time without knowing it. Every one must therefore be prepared for battle with this enemy."

We are all exposed. There is no escaping this danger.

Here, for instance, is a little diagram of a ground plan of a lung block in New York City. The shaded sections are courts and air shafts. Each letter represents one case of consumption reported to the health department since 1894. So you can see just what sort of situation there is in that block in New York City. That is a single block, and these letters represent the cases of consumption that have gone from that one block since 1894 until about the present time, about ten years, and just look at it. I think the highest number here is 164. My friends, it is something terrible to see such havoc in one single block. What is going on in that single block in New York City which is so densely populated, and in

which the ventilation is so bad is going on in some quarters in this City. We have not anything so bad as in New York, but we have the same germs and the same evils are ever present with us.

This shows what happens to people of various occupations. The industrial experience of 1897-1899--two years. Hatters, stone workers, cigar makers, editors, and printers, at different ages. Ages fifteen to twenty-four, you see what a large percentage--twenty-five to thirty-four, a still larger percentage. Thirty-five to ~~th~~ forty-four,--after that it begins to diminish somewhat except with sedentary workers, and they still have a very high percentage. Here is 64%, 57%, 44%, 27%. These are occupations which are pretty bad. We have men following these same occupations in this City. These men particularly are exposed to the danger of dying from this terrible malady.

"B. How does the infection take place?" Hereditary tuberculosis is rare."

It is very rarely that anybody inherits tuberculosis. I know a very healthy woman today, about forty-three or forty-four years of age, I think she is pretty nearly forty-five,--I have known her since she was a girl of fourteen, and I knew the circumstances of her birth. Her mother was suffering from tuberculosis of the lungs when she was born, and the mother died a few weeks after. But the girl grew up, and is still today a healthy, vigorous woman, has led an exceedingly active

vigorous life, and has no trace of the disease about her. The disease is not inherited very often. It is extremely rare that it is inherited; but the tubercle-bacilli are taken in.

"Tubercle-bacilli are taken up:

1. By inhaling with the air: germs either from the dried sputum of tuberculous persons in the dust, or whirled by winds and draughts while sweeping out, or carried on clothing or shoe-soles; or from the minute moist drops which invalids by coughing or talking diffuse in their immediate vicinity."

Sometimes we do not appreciate that--how much we throw out from our mouths when talking. During speech, there is continually a fine spray of saliva issuing from our mouths. It has been found out that surgeons often inoculate their patients in that way--by talking too much when they are doing surgical operations. We have become so convinced of that, that the leading surgeons at the present time, all that I know, and I have seen a number of them quite recently in their operating rooms,--and every one follows the same custom we follow at our operating room, of having the mouths of those who come close to the patients covered so that when they are compelled to speak they can not eject saliva into the wound which is made. A Spanish physician some time ago made a study. He held up before ~~him~~ the mouth of a surgeon ~~he~~ who was talking-- in the first place, he found this surgeon spoke 200 words while doing his operation; and in speaking those 200 words, he found he threw out from his mouth many millions of germs; he ejected some hundreds of little droplets of saliva, and in each little

droplet there were some thousands of germs. So you see a person suffering from tuberculosis, by merely talking may throw out the disease. A person who has tuberculosis may be speaking close to you, may be whispering something to you in your ear. He may be coughing in your presence, and you may inhale some of the germs which they are expelling from their mouths in speaking certain words, for instance, s, in uttering the letter s, speaking that sound of s, there is a hissing sound, the teeth are closed, and the air is forced through between the teeth, and a little saliva is ejected at the same time with it; and in various other sounds, sounds in which the air is exhaled suddenly and with force during speaking, ~~you~~ ~~will~~ saliva may be ejected; so this is quite an important fact. This is the official statement as to how these germs may be diffused.

Now this represents a collection of dust on a plate. The doctor I was just telling you about collected saliva drops from his mouth, the minute droplets of saliva. He had a piece of glass on which was spread out a thin film of gelatin which adhered to the glass. These germs will grow on gelatin kept moist and prepared in a special way. This represents a plate of gelatin which has been exposed in air. Dust has been allowed to settle on it. It is then put away in a warm, moist place, about the temperature of the body, and those little particles of dust have been allowed to grow, for a speck of dust will grow as well as a grain of corn will. Dust is made up in some parts of fragments of solid bodies of various

kinds of bodies,--cotton, particles of wood, sand, organic and inorganic substances; but dust in the city or in the house is very largely made up of germs. These little motes that dance in the sunbeam that the poet sings about are deadly agents of disease. These are some of them. When they fall upon gelatin prepared as I have mentioned here, they will rapidly grow; and this represents how some of these little specks have grown until they have formed colonies. This is not a single grain of dust, but that little grain of dust has multiplied so that instead of being one it has become perhaps ten or fifteen millions in that little colony. Here is a ring around the colony where the colony has grown. Each little germ is eating the gelatin, consuming it, so there is a little army issuing to the war it has made. It has made a little pocket for itself in which the colony lies. Several other pockets have been formed in the same way.

Disease is dispersed in various ways. I saw some-time ago a man sitting on the steps of a building who had consumption, and he was coughing. He was sitting on the steps of his home, and he was coughing, and expectorating down on the steps, and there was quite a pile of expectorated matter; and it was black with flies. Those flies were soiling their feet with the sputum, eating it, taking it into their stomachs; then these flies were going away perhaps, and some of them would alight upon a bit of bread which may be some of you were going to eat, if you were neighbors to that man; and some of those flies visited your home about dinner-time, alighted upon

a bit of white bread you were about to eat, and left upon it a little black speck. That little speck put under the microscope would show these tubercle germs in it, and wherever that fly prowled around, it would make tracks. These are fly specks you see here. Those are fly tracks. They are some gelatin plates that were prepared, and ordinary house flies were allowed to alight upon that gelatin and travel upon it, and you see where this fly traveled. You can see the marks of its feet. It came over here, stopped a little while, traveled along over here, stopped, turned around, then came back to this corner, traveled around, inspected the gelatin for a while; and that is why there are so many of these specks. All of these marks represent excursions of flies. Each one of these represents a little speck of dust which was dropped by that fly as he walked along over the gelatin. These experiments were made in our own laboratory, so I know it to be absolutely authentic, and the experiment, you see, is being made in your own house every summer day. You watch the flies soar around in the air as I used to watch them, and it seemed to me they were leading a very aimless life. That fly is not loafing when he is soaring about in the air that way. I used to wonder what the fly was about when he alighted on the window pane. You would see him brush down his wings with his hind legs, brush the wings down, rub his two hind legs together, pretty soon rub one hind leg and one middle leg on one side; then that middle leg and a forward leg, then the two front legs would be rubbed together, then it would lift up the front legs over

over its head. I could not understand what the fly was about until I dissected a fly, studied it under a microscope, and I found the fly's wings were covered all over with little specks, spines, and bristles. The fly is covered with feathers, very minute little feathers, and the fly is fond of soaring around with his wings spread out in the air, and he is collecting fragments, collecting his breakfast; and when he sits down on the window-sill, rubs his wings with his feet, he is pruning himself, combing his hair, as I supposed; he is not loafing, but is simply scraping off his breakfast that he has accumulated on his wings; he rolls these specks up in a little wad, and tucks them down his throat. Among those germs collected in that way are tubercle germs, multitudes of them, such as you see, some of them perhaps growing here upon this test.

Now where does this dust come from? What is the source of this dust? It comes from the street. Every passing vehicle stirs up a cloud of dust. The wind carries it through your front door and window, and it settles down upon your carpets, and upon your rugs, and the tapestry about the windows, and the lace curtains, on the ledge of the window-sill, and the window-bar,--everywhere in the house where there is an opportunity for that dust to be caught, that dust settles. By and by the chamber-maid sweeps the carpet and raises the dust again. The old cat behind the stove has good sense enough to get up and go out. Perhaps you are reading a newspaper and do not want to stir, so you stay there and inhale that dust. The housekeeper has to inhale it anyway, because she is sweeping, unless she has the good sense to put a hand-

kerchief or some sort of strainer over her nose and takes pains to breathe through her nose; or, still better, if she conducts a house without carpets, picks up the rugs, carries them outdoors, beats them with a stick, or sends them to the carpet renovators to be cleaned, dusted in such a way that the wind carries all the dust away. I found a man beating rugs out back of the Sanitarium some time ago, and the dust was being swept right over him. I hurried to inform him that he was running the risk of his life. I advised him to apply for another job. He was a young man of twenty-two, and I said to that young man, "You are risking your life; I should advise you to drop this job at once and apply for another job." That was in the morning. Along about night this young man approached me and asked me if I would not make a medical student of him. On inquiry I found he had a fine education, and was perfectly competent to take up studies in the Medical College, and was simply beating carpets because he did not have anything else to do just then; and I should not wonder if he would make a pretty good doctor if he had a chance. Certainly, if he goes to Medical School, we shall teach him better than to beat carpets against the wind.

Well, the dust comes from the street. I said to that young man, "If any one is going to beat carpets for us, we want an old man. He is tough. He has inhaled so many tubercle germs he has got hardened to them, and he is not so likely to catch the disease; and if he gets the disease and

dies off it is not so much of a matter, because he is old, and at any rate it is a dangerous thing for young, susceptible persons to be exposed to dust; and it is a somewhat hazardous thing for anybody to be exposed to dust. I showed you a little while ago those diagrams illustrating the danger to the stone cutter, and the printer, and others who are engaged in dusty and sedentary occupations, who lived among the dust.

This represents something gathered from our own streets. I was asked some time ago by one of our estimable citizens who lives down here in the city, does business in a store over here on this street, to say a word somehow, to somebody, that would correct, ~~this~~ if possible, the state of things which exists here in this city at the present time, with reference to cleaning streets. He said, "Whenever the street is cleaned, there comes a great cloud of dust into my store, and it requires hours to get that dust out again, and it is a dangerous thing for us to have there. It is unclean, it is filthy, it injures our goods, it is a damage to us, a maney damage besides the unhealthiness of it". That could be remedied by having the streets cleaned by flushing, by pouring water on the streets and allowing it to run away. Of course, the streets are sprinkled before sweeping, but the water is dried up before the sweeper gets around, so the dust flies in the air continually, and the streets are as bad as though they had not been sprinkled. It is claimed by some that sweeping, as carried on in this City, is perfectly safe; that the dust is wet down quite heavily so it can not fly; it is perfectly safe; so I asked our good friend and fellow-citizen, Mr. Wheelock,

whom you all know, and whom you all recognize as an honest man, asked him if he would not take one of those gelatin plates and bring it down the street here, and follow along behind the street-sweeper a little ways, and hold that plate up in the air, and see what would happen to it. He did that, and we put the plate into our incubator--you have all seen baby incubators; we have incubators almost exactly like them for germs, where a uniform temperature, about that of the body is maintained and where the air is excluded, and the germs are put in there just as babies are, and allowed to grow just as babies grow. They grow better than babies sometimes do. Here is the result of it. This is dust gathered right on this ~~side~~ street right out here on this gelatin plate, and it grew to these proportions you see here. This is a very small part of dust. This was a microscopic slide, a picture taken with a microscope, and shows a little space on that large slide, not more than perhaps,--I think the photograph is here. Who can tell me how large a space was filled?--About one-thirty-second of an inch in diameter. This scale you see magnified here represents a space on the plate held up some distance behind the street-sweeper, of one-thirty-second of an inch in diameter only; so you can see what an enormous amount of dust there was there. You can hardly count these flakes of dust. There are some large ones, and a great number of little ones. These colonies are growing rapidly, and they are developing to large proportions in a very short time. Among those germs

there were hundreds of tubercle germs. The germs are always to be found. So this is one of the things we need to combat; and I have brought it before you in this graphic way so you can see this is a real thing, an actual evil, and not merely a theoretical one. Something ought to be done to cure this one.

Q. Why are they different colors.

A. These different colors are put on by the artist in order to differentiate them, differentiate the different varieties so you can see them a little more distinctly. The germs themselves don't have the color. It is by the staining process by which the germs are differentiated. By applying different stains, some take one color and some take another. By applying different colors, we can differentiate different kinds of germs. One germ will take a certain blue; another germ may not take that blue at all. One germ will take blue, and if acid is applied, the blue will be turned red; if it is another germ, the blue will be washed out entirely. So it is by the different behavior of germs to colors that the different kinds of germs are differentiated. That is the way they are picked out. They look so nearly alike, that is the only way it could be done.

I show you here a group of germs. You can see the different germs here. This photograph was made and colored since two o'clock this afternoon, the whole thing. You can see here, for instance, tubercle germs, and typhoid fever germs, and germs of tetanus, and different kinds of germs

which are displayed here, and are all to be found in street dust. Here are the germs of lockjaw. We had a boy down on Brook Street a few years ago who died of lockjaw. How did he get it. He stepped on a dirty nail. The dirt on that nail was the same sort of material that forms the street dust, and he got lockjaw and died of it. Here are some more germs, and different kinds, different forms. These germs are found often in these little groups. Here is a group of Diplococcus; here are germs of malignant carbuncle, fistula; here are germs of anthrax; and here are the germs of tuberculosis, typhoid fever, tetanus, etc. These germs are all to be found in the common dust of the street, which is really one of the most prolific sources of disease in any city. There is no question about that. The people who live in the country have greater longevity, have a longevity about twice that of people of the city. The death rate in the country is about half that of the city; and the reason why, one large element in the greater risk and danger of the city is unquestionably the city dust; for city dust is chiefly made up of germs. The dust of the City of Chicago is simply the excreta of animals, which is almost entirely germs. There is scarcely any other source for dust; so in our own city, the dust along these main streets is chiefly composed of the dried excreta of animals, as you know; and the excreta of animals consists chiefly of germs. Here is another source of infection.

"2. With the Food; first through unboiled milk, also, in case of unsatisfactory inspection of meat through the

flesh of tuberculous animals, which, admitted in trade, was not afterwards thoroughly cooked before being eaten."

My friends, it is simply terrific, the danger there is from diseased flesh, the use of diseased flesh. Hogs are known to be largely diseased. The kidneys of hogs are being used nowadays sometimes for certain forms of kidney disease. Decoctions are made of the kidney, ~~a mixture~~ and the patient is made to drink it. The kidney is pounded up, pulverized, then a decoction made from this pulverized, crushed kidney, and the patient made to drink it. It is being used quite extensively, and many of these kidneys are tuberculous. That is a fact not to be thoroughly detected with the eye without the microscopic examination. The hog is an animal that becomes easily infected.

"3. Through injured or diseased places in the mucous membrane or in the skin."

These germs are continually seeking, so to speak, to work their way into the body. The human beings are their prey, easy prey, so they are continually working in there behind the skin.

"Especially by means of unclean hands: e. g. in the case of children crawling on the floor, seizing soiled objects (clothing, handkerchiefs, and the like) and immediately afterwards putting the fingers into the mouth (sucking fingers, biting nails, licking fingers when turning over leaves), picking the nose, and similar bad habits."

All these are sources of infection, and they are

common sources. When I am looking over the leaves of a book or paper in a library, I never think of touching fingers to my mouth in turning over the leaves of the book. I assure you, my friends, my knowledge of this subject has made me very careful. When I have been handling an old book, I go straight away and wash my hands. A man some time ago made the discovery that whenever he took a certain old book down from the attic where it was stored, to read it,--an old heirloom--he got it out for a special purpose once in a while,--whenever he did he had an acute cold in his head every time he did it. There were germs in that book and he was infected with that every time he brought it down. Here is another statement that is made on the authority of the ~~SECRET~~ German government, a translation made from a statement made by the highest authority in the world.

"4. With regard to the tuberculosis of animals it will suffice to say that in cattle it usually affects the lungs, in pigs usually the glands of the neck or the intestines; in the former, therefore, through inhalation, in the latter through the food, chiefly through the unboiled slops and refuse milk of dairies. Proper means of extirpation are: gradual sorting out of tuberculous cattle, chiefly those that betray visible signs of the disease (tubercular knots on the udder, coughing with emaciation and rough hair, and the like); removal of all animals feverish from the injection of tuberculin from special dairies for children's milk and establishments for breeding; separation of calves from tuberculous mothers; fre-

quent exercise of the calves and young cattle, if possible of the older animals also, in the open air should be encouraged, the use of only boiled milk and dairy residue for the feeding of pigs; exclusion of tuberculous persons, particularly of those with sputum, from attending the cattle; keeping the stalls clean."

Well, now, those directions are just as applicable to this country as they are to Germany. If the necessity is not quite so imperative here as it is in Germany, it is still a very serious matter. You can hardly inspect a very large number of cattle anywhere without finding some tubercular ones among them.

One of the things that most certainly ought to be done for this City is to get our dairy inspectors thoroughly interested, and to see that every single dairy that supplies milk to this city is inspected, and all tuberculous animals killed. If a man has twenty cows and one of them is tuberculous, and puts the milk from that tuberculous cow in together with the milk of the other cows, all the milk is infected. It has been shown that it is not necessary for a cow to have tuberculosis of the udder, not necessary that there should be disease of the teats or udder; the germs may be excreted in the milk from the blood; they may come from the lungs of the cow; the cow, having tuberculosis, coughing, expectorating, and the dairyman in the process of milking, may let in some of those dry germs into the milk pail, and in that way infection may take place.

"C. How Does One Protect Oneself Against Tuberculosis?"

"In the case of no common disease is it so much in the power of each person, of eventhe weakest and poorest, to help himself as in that of tuberculosis, if he only combines insight with self-control."

Now, my friends, see how far that statement is from the general supposition. The idea is that this disease is a hopeless disease if one once gets it his case is hopeless. It is an awful malady, and in order to protect ourselves from this plague that has come to stay,--the popular ~~is~~ idea is that we can not deliver ourselves, and we have nothing to do but to bear it night and day and wait until our time comes. Let me ask you: if there was outside of this city somewhere a den of bears, grizzly bears we will say, and one of those bears came down here every night and carried off one of our number, would you say, "Well, we have got to submit to it; those bears are there, they are going to stay, and we must simply wait quietly and be resigned"? We would perhaps send an invitation to the President to come down here for a hunt and kill our bears for us; and if he did not do it, we would easily find somebody who would be willing to do it. Now it is easier to kill tubercular germs than to kill bears; it is easier to protect yourselves from tubercular germs than it is to protect yourself from bears. The poorest person can do it; the weakest one can do it; every one can do it if he simply has grit enough, spunk enough, ambition enough he need not take tuberculosis. If I ever die of that disease, I shall be ashamed of myself. It will be simply because I have neglected and

abused myself, and not because I had to. A great part of my life I expected I would die of it, because some of my near relatives did. I was counted as a kind of weakling, it was expected I would die, but I made up my mind I would not. I am now fifty-four years old, I have lived that long, and I have made up my mind I am not going to die of that disease. I should be ashamed to. I shall die of some other disease. If I find myself sick of that disease and likely to die of it, I will make a public confession that I am ashamed of myself for being sick that way.

Here is a little illustration of how the body fights this disease. were you see a diagram of a white blood-cell that is quiet, resting. Here is one taking a little journey, has put out a little projection, what we call a foot. It fixes the tip of that foot here, and pulls the rest of itself up to it. Here is one that has put out a bigger foot, has really become excited about something, about these germs here. Here is a cell that has swallowed one of those germs; it has opened its mouth and swallowed another one. It puts out a great projection, makes a lip, puts out another projection, makes another lip; so although it has no mouth, it makes a mouth for the occasion wherever it happens to need one, and takes in whatever it happens to come across. These little cells, white blood corpuscles, live in the blood. There are 6000 or 7000 of them in every little drop of blood big enough to hang on the point of a pin. There are 6000 or 7000 of them on every little drop of your blood and my blood that can hang

on the point of a pin. These little white cells are fighting germs all the while. Here is a diagram, a representation of loose tissue that lies under the skin and binds the different parts of the body together. This connective tissue has little spaces in it. In these spaces are found white blood-cells. They also have power to fight off these germs, to swallow them, to eat them up, to destroy them. The white blood-cell can eat a tubercular germ just as you can eat a mushroom; can digest it just as well as you can digest the mushroom. If you eat too many mushrooms, you know you can not sleep well at night; you may have indigestion. So these white blood-cells, if they get too many germs, the germs kill them, and form pus, perhaps. That is what helps to form the sputum that comes out through the lungs when coughing. It is the white blood-cells which have become filled with tubercular germs, and have died, sacrificed their lives to save yours. This thing is going on in the body all the while. These cells in order that they should be able to resist tubercular germs, etc., destroy great numbers of them, must be healthy. People must be healthy, must have the proper number of these cells. Sometime ago a poor, weak, feeble woman arrived at the Sanitarium. We examined her blood, examined a little drop of her blood as we do with every person who comes there. If a person is healthy, we find five millions of red cells, and six thousand five hundred white cells in every little drop of blood such as I have described, big enough to hang on the point of a pin. This woman whom we examined the other day, found she only had three

thousand white-cells instead of six thousand five hundred. I knew right away that we had a feeble woman to deal with, and when we came to study into her case a little more, we found this poor woman had tuberculosis of the lungs already started at the top of one of her lungs, and so she did not have enough white cells to fight them off; that is the reason she had it. You can have white cells as many as you need, if you only live right. Exercise outdoors, go out into the sunshine, take cold baths every morning, build yourselves up, keep yourselves strong, and you will have all the white cells you need; and the liver, the spleen, particularly the lymphatic glands of the body, and the bones, and other parts of the body, are making white cells all the time; and if we only have proper food, good digestion, good, strong, healthy blood, you will have white cells, and if you have white cells enough, you can fight this disease off; white cells are one of the defenses of the body.

"2. Let the strictest cleanliness prevail in the preparation and preserving (guard against flies) as well as the eating of food, especially of that which is eaten raw. Milk should be boiled, and meat cooked thoroughly before being eaten; the boiled milk should be covered and kept as cool as possible."

Look out for ham sandwiches, for sausage, for meat juice, and for rare steaks, and rare roasts, and all those raw meats. They are really dangerous; they may have tubercular germs in them. The milk that is used, should also be cooled off as quickly as possible. This is not my advice except as I

endorse it, for I could not give you anything better.

"3. The hands including the nails, the teeth and mouth should be cleansed frequently and thoroughly. Putting the fingers into the mouth or nose, and also scratching the face should be discontinued. Every sore should be protected against impurities by suitable bandages."

That does not mean once or twice a week, but means when you get up in the morning, after you get up, before you eat breakfast, and after breakfast before dinner, and after dinner, before supper; and so keep your mouth clean. If you leave some fragments of food in your mouth, germs will grow in that food. Ordinary germs which are always found there may grow and give you a bad breath, and encourage the development of germs in your stomach, or make the teeth decay.

Never do such a thing as to irritate a sore, scratch it. You may infect that sore, tearing off the scab of the sore. The sore should be protected, and the little scab is formed for the purpose of protection. Now you can treat the sore in a much more cleanly manner by giving it a protection, by putting on protection over it so that it does not need to form that ugly scab which is made up of germs and blood-serum, dried pus, as well as white cells, etc.

Strengthening the body is the whole thing. The thing is to make the body impervious to germs, proof against them, so strong that the germs can not do it any harm.

"II. Measures for Strengthening the Body.

"It is impossible to extirpate all tubercle-bacilli,

therefore it is indispensable so to strengthen and harden the body that the absorbed germs can not take hold upon it. The principal means are,

"Plain and wholesome food, which by judicious selection need not be expensive. Dainties and intoxicating drinks should be avoided."

They all lessen the resisting power of the body. Doctors today know well enough, and recognize well enough the alcoholic consumption. It was formerly supposed that alcohol was a cure for consumption. A doctor in this City, dead some years ago, told me that one time a young man came to him suffering with consumption, and he said to him, "Now, my friend, the best thing I know for you to do is to take two or three good drinks of whiskey every day." The doctor himself, I believe, took a little occasionally. He said to me, "That young man did it; he got well of his consumption; but I followed him to a drunkards grave a few years ago, and I have often thought it might have been better to have let him die of consumption." That man was a drunkard for twenty years. The alcohol did not cure him; it was a mistake. We did not have as accurate means of diagnosis in those early days as we have now, and some maladies were mistaken for consumption which were not consumption. If a man had a cough, expectorated, he was thought to have consumption generally. This man only had bronchitis, or something of that sort,--did not have consumption at all; for it is now perfectly well known that alcohol conduces to consumption by lessening the resistance of the body.

This is well known, and the fact that the body must be strengthened has come to government knowledge so that the great governments of the earth are taking pains to save their soldiers' lives by leading the soldier to adopt those means which will strengthen his body, and so enable him to resist and throw off disease.

This is a great consumptive hospital on the west end of the Isle of Wight--Ventnor. We see here hundreds of consumptives, tuberculous soldiers, in the fresh air and sunshine getting well, and I was told a large proportion of them that come there, if they do not come too late, get well by simply, natural feeding, the outdoor life, and ~~feeding~~^{living} in the sunshine.

This represents some Kaffirs of South Africa. This woman is grinding mealies for her family, and the little folks are sitting about waiting for the mealies to be ground. The corn ground on this rough stone will some day be cooked up with a little water, and it constitutes almost their sole food. There are probably no tougher, hardier people in the world than those Kaffirs of South Africa. They live outdoors, have brown skins, and consumption is practically unknown among them except when they become infected sometimes by contact with the whites, and in their shut-up houses.

Now this shows what the sun does for the skin. What you see here represents a person who has had sunlight applied to the abdomen, the abdominal surface here, until the skin has become pigmented as you see. It stimulates the activity of the skin by increasing the activity of the skin. The pig-

ment is gathered together there, deposited, so the skin is made healthy. When the colored man has lived for many generations in a hot country, until his skin has become permanently pigmented, it becomes hereditary; so you can make the skin almost as black as that of the negro by exposure to the bright sun if it is done habitually. I remember some time ago a man came to the Battle Creek Sanitarium very white. He had a creamy white skin. I saw that man some months afterward, and he was so dark I should certainly have said he was a mulatto. Many parts of his body were darker than the skin of a mulatto. He looked as though he was about three-quarters negro. If it were not for the fact that his face was distinctly Caucasian I should have said by the man's complexion that he was three-quarters negro. He stayed out in the sun until his skin became so pigmented he would easily be taken for a person of another race.

Gymnastic exercises which strengthen and develop the lungs have wonderful effect in fighting off this disease. This young man with this fine well developed chest, once had a chest like that. We asked him to pick out a man with a chest such as he used to have. He was a poor, weazened cigarette fiend, sick, miserable, and wretched. He was a ~~man~~ victim of the cigarette habit, but he gave up the cigarettes, went out of doors, adopted healthful food, vigorous exercises, and built himself up until he ~~is~~ has this splendid physique at the present time.

Here we have a little view of the Sanitarium Gym-

nasium where our nurses take systematic, regular exercises to develop them, to give them fine chests, good breathing power to strengthen them so that they may be able to resist this disease, for they sometimes must come in contact with it in following their profession. It may interest you to know that in the large asylums, institutions for the treatment of tuberculosis, it is very rare indeed that there has ever occurred such a thing as that a nurse has contracted the disease. The nurses are required to go outdoors with the patients, to take exercise; and in so doing, they build themselves up to that degree that ~~they~~ though they are constantly in contact with people suffering from the disease, they do not contract it. And it is almost safe to throw down a challenge to the world to bring in a case in which a nurse has caught this disease in a hospital. Those persons who have recovered from the disease do not hesitate to associate with others in the hospitals. In Philadelphia, the Phipps Institute receives several ~~thugh~~ thousand persons a year suffering from this disease, and they are cared for entirely by young women who have been themselves the subjects of disease, and have recovered. They are not afraid to remain right there in contact with them. Of course, they are more susceptible than ordinary healthy persons, but they remain there, and remain well.

This illustration shows how, if you have a flat chest, you can train yourself, by the aid of the wall, to have a good full chest, a good standing position. Here is a woman with a miserable standing position, with round chest and flat shoul-

ders. Here is a better position. Here she has her heels, hips, shoulders, and head against the wall. The heels and hips are against the wall, and the head is drawn back to bring the chest forward here. Here is a correct standing position. Here is the same person walking away maintaining the correct standing position. This shows the difference between the right and the wrong positions in ordinary occupations. This man is bending over compressing his chest. He will soon get out of breath, and will by and by acquire the habit of stooping. He will have a hump on his back. This man is maintaining a correct attitude during his sawing,--keeping his chest up so the exercise is continually making his chest stronger, develops his vigor, and it becomes really gymnastic exercise for him. One of the most eminent gymnasts in this country was asked how he acquired a good figure. He said, "I will tell you. When I first got the idea of developing myself, I was working on a farm, and I said to myself, 'now then, I am going to pitch the hay in such a way as to develop my figure'" so every forkfull of hay he pitched was helping him to become strong, and to give him a splendid physique; so after two or three years' work of that sort on the farm, in his mowing, spading, hoeing, or in wood-chopping, he maintained a correct position, and developed a most magnificent physique. That is the way he prepared himself to become physical director of one of the greatest gymnasiums in the world, in one of the greatest colleges of the country. He got his training by hard farm work,--the principal part of it.

Here is a man planing in a fashion which you very often see. Here is a man working, planing, doing the same work in a natural way, in a hygienic, gymnastic way; and he can do more work than the other man, can work more hours with less fatigue.

The outdoor gymnasium is an idea I have not given up. Here is a picture of our young men chopping wood in our outdoor gymnasium at the Sanitarium, and sporting in the sand-pile. Here are our men nurses having their ~~xxx~~ hour in the outdoor gymnasium at the swimming pool. They are having a good time. This is a snap shot taken on a bright day which shows the thing actually in operation. Here are some boys in the sand pile here getting the benefit of the sunshine, getting sunburned. They lead an indoor life, and we insist that they must all get outdoors into the bright sunshine, and get the benefit of the outdoors to antagonize the depressing and deteriorating influence of their indoor life. These are patients instead of help-ers of the institution; and they are having a hearty good time. Some of these patients came to the Sanitarium almost on their beds, scarcely able to walk; now they are swimming and having a good time.

Now the city of Newport found itself sometime ago with a high death-rate from tuberculosis, and the city of Newport, R. I. has set to work to obliterate that disease, to wipe it off their mortuary tables, and they are going at it in good earnest. One thing they have done is to publish this little tract and to send it out all over the city. They put

this little tract into every house in the city. The principal things we have been talking about tonight are summed up in this little tract. We hope to have a little tract similar to that to put into every house in this town. That is one object of the organization, of the society which has been formed here, the Society for the Study and Prevention of Tuberculosis,-- such a society was formed some weeks ago by request of a large audience of people in this room, and with the co-operation of the health committee of the city. They have taken hold of the matter, and a society has been formed and are already beginning business; and that is why I am here tonight. I was invited by the Society to come here and talk to you upon this subject; and this tract which has been prepared to circulate in Newport is equally appropriate for our city.

Here is another tract which is being circulated in Newport, put into every single house, prepared in an attractive form so as to call attention of every man and woman of that city or any other city where it is circulated, to the most important points in relation to the combat with this dreadful malady.

My friends, I understand that there is to be, after this gets through, right away now,--there is to be a meeting of this Society. It is not late, and I will bring my remarks to a close if the janitor will kindly turn on the light, and the chairman of the Society will kindly come forward and take charge of the meeting; and I hope you will all want to stay and become members of the society. We have monthly lectures on

health subjects of various sorts. We shall have cooking schools which the members can attend. The Battle Creek Sanitarium has decided to open ~~thru~~ its outdoor gymnasium during the summer-time once a week, and its indoor gymnasium during the winter-time once a week, for the benefit of the members of this Society. The membership fee is fifty cents, and the purpose of the fifty cents is simply to enlist your interest to pay for a little literature; and it is necessary to provide for a few expenses of the society--nothing very great--we don't propose to undertake to do any very great things; but we all want to take hold together to help to obliterate this evil. If it was any other thing--a thing that affected property, how quickly we would all take hold together to attack it. It is a thing which affects something which property can not buy, affects our health, our very lives; and I earnestly appeal to you, my friends, to take hold with the Society, and let us see if we can not suppress this malady in this town. If we can not blot it out altogether, we can certainly save some scores of lives every year. The health officer told me a little while ago that he had had a little survey made in the town, and he had discovered the disease was present in something like two hundred different places in the City of Battle Creek; and I think that is entirely probable, because there are more than twenty people dying in this city every year. German statistics have shown that where one person dies ten people are suffering from the disease. So twenty multiplied by ten is two hundred; so you can readily see there must be that number suffering from

that malady in this city at the present time. Many can be cured if they are properly instructed; and those who are now suffering from the disease may not communicate it to others if they can be properly instructed how to cease to contaminate others, how to protect others about them from the contagion of this malady so it may cease to extend; and we may, in a short time, find our death-rate from that source is diminishing, and we may possibly blot it out almost altogether, and it certainly is well worth the effort.

At the close of the meeting a brief business meeting of the Society was held, in which Rev. Maveety was chosen Chairman pro tem. A committee on nominations for permanent officers was appointed, consisting of the following persons:

C. H. Wheelock, Dr. J. F. Morse, Hon. F. W. Clapp, Mr. Frank W. Dunning, and Mr. A. C. Kingman.

On motion the meeting adjourned.

For The Ram's Horn

July 27, 190

HOW CHRISTIANS SHOULD EAT

See pp. 11 + 12
Race deterioration

J. H. Kellogg, M. D.

Said the Apostle, "Whether therefore ye eat, or drink, or whatsoever ye do, do all to the glory of God." (1 Cor. 10: 31). This dictum of the learned disciple of Gamaliel is in absolute accord with the latest word of science. The human body is a workshop, a laboratory, in which the divine Architect, the Master Artist, who constructed as his crowning work that marvelous edifice which we call the body, continues to work, manifesting his creative skill and energy, his infinite wisdom and intelligence, in countless mysterious and intricate processes and operations which we commonly attribute to so-called natural forces, but which science today confesses its inability to explain by so-called natural laws. The most eminent physiologists and scientists recognize that the same Power which set in operation the so-called life processes still presides over the vital activities of every living thing. In all the universe of living creatures, not a lung can breathe, not a heart can beat, not a stomach can digest, not a brain can think without the immediate help of him in whom "we live, and move, and have our being".

Paul, the first and the greatest of Christian philosophers, standing before a noble audience at the world's center of ancient learning, with the open sky above him while all about him rose the magnificent temples devoted to idol

worship, pointed his hearers upward to the true Source of human life and light, intelligence and energy. ¶ The body is an instrument upon which two wills are operating,--the human will and the divine will. The so-called voluntary functions of the body are under the control of the human will. Muscular movement, thought,--all the voluntary activities are regulated during our waking hours in accordance with the decisions of our will. They may be prompted by fancy, caprice, or impulse; or they may be exercised in the carrying out of carefully considered and wisely formed plans and purposes. By far the great majority of the bodily activities, however, are independent of the will, and are carried on continuously, whether we sleep or whether we wake, and can only be indirectly modified by voluntary exercise of the will. Such are the processes of respiration, circulation, digestion, growth and repair of tissue, the formation of ~~the~~ all secretions, the renewal of the blood and other tissues. These functions, for their maintenance, require the exercise of the same creative Power which made the first man.

The creation, every second of our lives, of eight million blood-cells, the contents of a single small droplet of red blood, is a display of the same infinite Power and Intelligence which created the first drop of blood. No one can explain the process of digestion on chemical or physical principles. The stomach digests everything digestible placed in it, even though it may be a living animal as an oyster, or any other small animal; yet it does not digest itself. The

wisest man living can not explain how, in the presence of this powerful digestive activity, the stomach is itself preserved. The heart is a muscle. Every beat is in obedience to a command, an intelligent impulse communicated to it, just as is every movement of the hand or foot, but its movements are not controlled by the human will. All those processes upon which our lives immediately depend, the great basic, vital functions of the body, are carried on quite independently of the human will; but a wonderful arrangement exists whereby the cooperation of the human will is solicited. For example, the lungs continue their rhythmic movement unceasingly, whether we sleep, or whether we wake, but for their efficient action it is necessary that pure air should be supplied in abundance. When the supply is insufficient, we are notified of the fact by a strong craving which takes possession of us, a thirst for air, an instinct which we share in like with all the higher animals. Even a child does not have to be taught the meaning of this appeal. A young child, or a young animal, deprived of air, struggles for breath. Thirst for air is a divine voice appealing to the intelligence that the human will may be put in operation to cooperate with the divine in securing to the body what is needful for its welfare.

Hunger is another divine voice which speaks to us for the same purpose. The body is made of what we eat. The food we swallow at the table today, if properly digested and assimilated, is walking around and talking tomorrow. Eating, digestion, and assimilation are processes whereby the crude,

insensate material which lies upon our plates is promoted into living, sentient, thinking human substance,--a veritable transfiguration. Eating, like some other of our bodily functions, has, through perversion, become degraded. When God made man and made him as a witness to walk the earth as a king, to be God-like in his attributes, he prepared for his support stores of life and energy in certain substances which he presented to man to be his food. (See Gen. 1:29; and 3:18.) This is ample reason for believing that, during the first centuries of human life, he adhered to his Edenic bill of fare. (See Gen. 6:19-21.)

As the centuries have passed, the human race has departed farther and farther from the divine order, until in these modern days of wealth and luxury, we find men and women eating, not to the glory of God, not for the purpose of gathering divine life and energy for the support of their God-given activities; but, rather, as a means of sensual gratification. Too many people eat when they like, and what they like, without reference to the body needs. Certainly a Christian should eat in such a way as will best supply his bodily necessities. God has given us richly all things to enjoy, but there is no real enjoyment outside of strict obedience to the laws which govern our well being. The use of foods not adapted to our bodily needs, and quantity greater than is wholesome for us, sooner or later must result in distress and suffering. Many a man, through force of habit, enjoys the tickling of his palate with savory but unhealthy viands for fifteen or twenty minutes, at the expense of many hours of

after suffering.

Wholesome, simple food, ~~taken~~ eaten in moderation, produces for one whose tastes have been properly trained and whose appetites are hence natural the most satisfaction during eating as well as subsequently. The Christian, of all men, needs a clear head, keen insight, the ability to weigh and decide nice questions of ethics and propriety with precision and celerity. Food which creates indigestion results in irritability and dullness of mind. The man whose brain is abnormally irritated or stupefied by toxic substances generated in his stomach or intestines, and absorbed into his blood, is not in condition to exercise that self-control, that degree of judgment, which is necessary for the best regulation of one's conduct in relation to himself and to others.

An old German proverb runs, "As a man eateth, so is he." This ancient saying, though expressing a profound biological fact, may possibly be a parody upon a proverb of a still older date,--"as a man thinketh, so is he." Accepting the self-evident truth of both these wise sayings, we find ourselves in possession of a new proverb, the logical outcome of these two,--"As a man eateth, so he thinketh",--and this is the writer's text.

The older orthodoxy regarded man as in a state of total depravity,--prone to evil, and the soul the seat of every vice, the source of all sin. The theological teachers who were responsible for this doctrine had evidently overlooked the fact that that wisest of Christian philosophers, Saint Paul, clearly enunciated the opposite thought. Said Paul, "Howbeit that was not first which is spiritual, but that which is

natural, and afterward that which was spiritual." (1Cor. 15:46.) Paul distinctly puts the body first,--not in importance, but in time. Physiology clearly teaches the precedence of the body in the development of a human being. The palpitating, growing body exists long before there is the first beginning of mental or moral activity. The new born child is simply a breathing, eating, sleeping bundle of living cells, but incapable of intelligent action of any sort. Its movements are altogether automatic, or governed by an intelligence higher than its own.

Mind and character are the products of an after development in which the body plays a fundamental part. Men, long ago, learned that muscles are made out of food, and that there is a most intimate relation between food and strength, between eating and capacity for muscular work. From the times of the ancient Greeks, when men were trained for public games and other contests, down to the present day, men in training for a special effort of any sort requiring an unusual exhibition of muscular power have been required to submit to a rigorous restriction of their dietary to such foods as experience has shown to be best adapted to support the highest degree of muscular activity and endurance. The most ignorant and unobservant peasant recognizes the intimate relation between the quality and quantity of the food supplied to his horse or his ox and the work which the animal can do.

When we recognize the fact that mental activity expends energy, and as definitely, and perhaps even more rapidly

than pure muscular effort, and that brain and nervous energy must be replenished by food, and in precisely the same manner as the loss of muscular energy is made good, it is strange indeed that so little attention has been given to eating in its relation to mental activity. The majority of men who are not compelled to depend upon manual labor for a livelihood, or who do not actively engage in muscular pursuits, give little or no attention to their eating except to secure a sufficient amount of food possessing the right sort of palate-tickling flavors to satisfy their sense of hunger, without considering what quality or quantity of food stuffs will best support the brain and nerve activities in which they may be engaged. The brain receives one-fifth of all the blood in the body, and when intensely active in mental operations, the consumption of energy is much greater in proportion to its weight than occurs in any other tissue. It is for this reason that this large supply of blood is provided. A starved brain must be a weak brain, and incapable of the highest degree of activity. Nevertheless, in a starving man, the brain remains active when the muscles have lost their power, by reason of the fact that, recognizing the paramount importance of cerebral activities, nature robs the rest of the body to feed the brain. The brain of the overfed man, on the other hand, may be even more crippled through the clogging influence of the imperfectly oxidized waste substances which paralyze the brain cells and cloud the intellect.

The body is like a furnace: The food substances

taken into it are burned or oxidized in the body just as is coal in a stove or a furnace. The products of combustion escape from the furnace through a smoke pipe or chimney. So the products of vital combustion or oxidation escape from the body through the lungs, skin, and other excretory organs. When too large an amount of food is taken, the situation of the body is the same as that of a stove or furnace which is overcrowded with fuel; the combustion is incomplete, volumes of smoke are produced which choke the fire, and may extinguish it. An excess of food fills the body with organic smoke or imperfectly oxidized waste substances, of which uric acid is the best known representative, and of which rheumatism, neurasthenia or nervous prostration, neuralgia, nervous headache, bilious attacks, apoplexy, paralysis and various other disorders are the natural results.

Many years ago, an eminent French physiologist, in writing a work on "American Fishes", made the striking remark, "All life is under water." This is literally true. Our stomachs, livers, and other glands, the heart, the nerves and muscles, even the brain, perform their work under water,--in truth we think and move, and live in a fluid medium.

The body is a factory of poisons. If these poisons which are constantly being produced in large quantities in the body are imperfectly removed, or are produced in too great quantity, as the result of over-feeding, the fluids which surround the brain cells and all the living tissues are contaminated with poisonous substances which asphyxiate and paralyze the cells and so interfere with their activity. This

fact explains, in part at least, the stupidity which is a common after-dinner experience with many persons, and, with some people who are habitually gross eaters, is a confirmed, ever-present state.

This is as true of the brain as of every other organ. The brain which receives impoverished blood is hampered in its activities. A brain surcharged with blood is, on the other hand, over-excited. The result may be sleeplessness and irritability, even frenzy, mania or insanity. If the blood is charged with irritating substances the organs through which it circulated will be naturally exposed to abnormal irritation, excitation and disturbance of function; a brain receiving too large a supply of blood must suffer first, and most, in this regard. Whatever is taken into the stomach and absorbed enters the blood and circulates through the body. The odor of nicotine which hangs upon the breath of the smoker, the alcoholic odors which emanate from the body of the inebriate for many hours after he has ceased drinking, are evidences of this.

The writer once heard a good Methodist bishop declare that some people thought they had been converted when they had only had a bilious attack. There are, perhaps, many more who have really been converted, but have doubts of the genuineness of their religious experience because of the miserable state of their stomachs which produces depression, misanthropy, irascibility, and sometimes total depravity. The writer once met a poor woman who, after describing her miserable mental state, confessing that she was extremely irritable, and

scolded her husband, and children, and neighbors, often without any good reasons for so doing, exclaimed with tears, "Doctor, do tell me, am I sick or am I wicked?" The physical investigation of the case which I had made enabled me to say to this good woman that her difficulty was not total depravity, but total indigestion. Put upon a rational diet from which condiments of all sorts, tea, coffee, flesh meats, and other stimulating foods were wholly eliminated, she made, in a few weeks, a most excellent recovery, and returned to her family affairs, to do her duty as a Christian wife and mother, as amiable and good natured as any woman need be.

The total depravity which we often hear talked about is, half the time at least, nothing more or less than total indigestion. So good a man as Calvin signed the paper which sent Servetus to the stake for ~~his~~^{her} heresy. I never could comprehend so inconsistent an action until we learned that just afterward the great and good theologian wrote in his diary that he had for several weeks been tormented by a dyspeptic stomach. }

Wrong eating unquestionably tends to intemperance and to impurity; hence right eating is a question to which Christians ought to give most careful attention. Purity of mind is a condition quite incompatible with gluttonous habits in eating. The pages of history are crowded with facts which clearly show that the successive degeneracy of each of the nations which ruled the world began with luxuriousness in diet. Dante, in his picture of the infernal region, puts the glutton and the sensualist in the same circle. Plato insisted that all books which pictured gratification in eating and drinking should

be banished.

The sacred Scriptures inculcate the same principle. Simplicity in habits of life and purity of character are everywhere associated. While leading the simple life of a shepherd lad, David developed those elements of character which fitted him to become the greatest among all the kings of Israel. John the Baptist found in the natural products of the wilderness a bill of fare the simplicity of which comported perfectly with the purity of his divine mission; and by his forty days' fast in the wilderness, our Lord taught us a most important lesson respecting the necessity for bringing the appetite under full subjection.

A failure to control the appetite is one of the first steps in the direction of sensuality. The appetite must be trained to be the subject and not the master. Self-control is the keynote to purity of conduct. Said Paul, "I keep my body under". He who will govern his appetite in accordance with nature's laws, will thereby gain a powerful advantage in the control of other animal instincts.

Simplicity in habits of eating, and the avoidance of all stimulating foods are, with the exception of religion, the most powerful of all aids to purity of life, and in addition, are most potent correctives of impure tendencies when they are once developed. Talmage remarked that "many a man is trying to do by prayer what can only be done by correct diet".

↗ The race deterioration, so evident at the present time, must be in no small part attributed to the neglect to

properly study this question of diet. We can not hope that race deterioration will cease, or that race extinction shall be averted, unless we so awaken to the truth of the Apostle Paul's declaration, "Ye are the temples of the Holy Ghost", that we shall write over our sanctuaries of worship and of learning that noble motto which the ancients carved over the portals of their temples, "Mens sana in corpore sano," ~~XXXXXXXX~~
~~XXXXXX~~ ~~XXXXXX~~

We must recognize as a solemn reality that religion includes the body, and that the laws which govern the healthful performance of the bodily functions are as much the laws of God as ^{are} those of the Decalogue. So long as man regards his body as a harp of pleasure to be played upon as long as its strings can be ~~made~~ to vibrate, so long will he continue to travel down the hill of physical decadence and degeneration in spite of ~~governing~~ quarantine laws and the most minute sanitary regulations. But when he recognizes his divine origin and obligations, and himself as the crowning masterpiece of creation, his body a precious thing, to be sacredly preserved, developed, expanded, and purified for service for humanity in this world, and a never-ending opportunity for development and joyous existence in the world to come,--then only will he begin to climb toward the heights from which he has fallen, where he may once more stand forth as the crowning glory of creation, the masterpiece of God, "the beauty of the world, the paragon of animals." A careful study of statistics shows that the human race is deteriorating at a tremendously rapid rate. In the last fifty years enormous progress has been made down the hill of race decay.