(STEREOPTICAN LECTURE.)

H O W W E C U L T I V A T E D I S E A S E

A Lecture in the Sanitarium Parlor, Battle Creek, Mich.,
Thursday, November 3, 1904, at 8:00 P. M.
by
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I will begin my talk tonight with this beautiful picture. I presume none of you will recognize this as being a relative of ours; yet, these South American Indians are closely related to us, and they show many traits which are very closely akin to those seen in more civilized lands. You notice this peculiar fashion in relation to the ornamentation of the face. We think it very odd of these people to deform their faces by these tattoo marks; yet if we understood the facts about it, when we look upon it as so very absurd, we would not think so badly of it if we understood it; because this is the only way these people have of telling the members of their own tribe, that is, at a little distance. These tribes are hostile, and consequently it is very important that a man should know, when he sees another man in the woods, whether he is friend or foe. ~~If a man~~ By means of these tattoo marks, they know at once just the relationship which exists,--whether the man who is coming is a member of the same tribe, or of another, and if he is a member of the same tribe, whether he belongs to the same family; so they are informed at once. It [illegible] letter of introduction, you see; so there is really [illegible] see.

These fantastic head gears also have some use. But really, these are not so much more fantastic than those we sometimes see on the streets here at the present time. In face, you can readily see, here is a pattern which was borrowed. You see something similar to this quite frequently; some of those that are worn here are really not much in better taste, not much more or less picturesque than what you see here. You also see here the same tattoo marks. We have unquestionably inherited our taste for decoration; we have unquestionably inherited it from our ancestors, away back somewhere who used to make their faces and their head gears very much as these people do. Here is some very extensive tattooing, you see. This man's face is completely covered with the most artistically executed tattoo marks, and he has succeeded in extending his under lip to almost a proboscis, by means of this little wooden plug. First the under lip is pierced with a wooden or metal point, then a little wooden wedge is forced in, and it is gradually enlarged until by and by it incloses quite a large plug, as you see here. It is impossible to use this under lip at all. It makes, of course, a very peculiar mode of speech.

Here is a person whose hair has been ornamented. The lip of this person here has been stretched until it incloses a large plug of wood. It is just as sensible to do that as it is to do a great many other things that are done here in our civilized land. Here are some Malays. You see they have good strong figures. Here is a man and his two wives. The wives have just as good waists as he has. This woman wears a little skirt, but dresses in practically the same fashion as her husband, and is just as strong, just as enduring, and just as hardy as

the husband.

These are two princesses, two beautiful African girls, the daughters of the Congo king. This slide was made from a photograph sent to me by a friend there who saw the girls, and was acquainted with them. They are in full dress, as you see them, and are just as modest as any girls can be. They would not willingly be deprived of one of these little articles of dress for the world. They are extremely neat, and nice, and bright. Notice what healthy skins they have. They have a few tattoo marks which do not count; but they are strong, healthy figures. Notice the waists,--splendidly developed waists, and beautiful curves and outlines of body; all the lines of the body are beautiful and symmetrical. These girls are strong, well, hearty, and healthy; never suffer from sickness; [illegible] know nothing about disease; they are just as healthyas the squirrels, and the rabbits, and the wild animals, the antelope that live in the woods,--just as healthy,hardy, and enduring. Man was made unquestionably the most enduring, hardiest, animal on the face of the earth. I do not doubt that man is the tough-est animal that was made; the wisest and the toughest, the most enduring animal, and today, even in his civilized state, man shows a wonderful amount of endurance. A South American Monkey, or a North American Indian would die in six months under the donditions in which we see men and women living in our civi-lized country here in out tight houses in which we live, from which the air is excluded, over heated, [illegible] unhealthy garments that we wear, out generally unwholesome conditions of life, that would [illegible] exterminate us very soon if it were not for the fact

the fact that we are so wonderfully hardy and enduring. It is not wonderful that men are sick; the wonder is that we are alive; that we are not completely exterminated. There is no doubt that we have disease, that we produce disease by our own habits of life. Man has to work very hard to get really, downright sick, Ingersoll said. He said one time, "If I had been present when the world was made, I would have made a suggestion to the Almighty. The suggestion would have been that health should have been made contagious instead of disease." That showed how foolish he was. Health is contagious. Disease is contagious, but only under special conditions. But healthy is easily, widely, and properly contagious. In order to get sick, you have to work hard. For instance, to get a real splendid dyspepsia, one has to go to work, and work hard at the dinner table for years and years and years before he gets a real, splendidly developed dyspepsia. If a man wants to get insomnia, he works for it thirty, or forty years, perhaps, before he gets a splendid insomnia, before he gets to the point where he can not sleep a wink. If a man wants to get small-pox, he has to run up against a small-pox patient before he can get it at all. If a man wants to get typhoid fever, he must swallow it, a whole lot of it before he can possibly get it. A man who has a dilated stomach, a stretched-out stomach, that stomach has lost its power to digest; and he must work for years before he can get typhoid fever even after he has swallowed it; for a man with a healthy stomach digests typhoid fever, and it does not do him any harm. If a man wants health, all in the world he has to do is to go out and breathe it in. The air is

full of health. Sit down at the table, and eat natural, wholesome food; swallow health, life, energy and strength right along with it. That puts vigor into a man's muscles and stamina into his veins, endurance, and life into his blood; puts health and vitality into his body; so all we have to do is only to breathe it in, drink it in in our pure water, and eat it with pure food. Our bodies may be filled with light in that way. But instead of that we fill our bodies with disease when we eat the carcases of animals, when we swallow live scavengers like oysters; when we eat decaying, decomposing things like cheese, which ought to be left for the scavenger flies and maggots to destroy. When we bring ourselves down to the level of the animals that go upon all-fours, gnaw bones along with the dogs and hyenas, when we do things of that sort, fill our bodies with disease, we must expect disease; but when we stick to a natural life, live up high, if you please, on the natural plain, eat those things that were made for us to eat; when we follow the divine order of life, we are cultivating health, we are catching life, and we find health contagious in the air we breathe, and the water we drink, and the very food we eat; the exercise we take, and everything we do tends to build us up and make us strong and well; everything tends that way. It is only when we violate the laws of life, so-called; that is, when we go against nature; when we rebel against God, when we turn ourselves squarely against the divine order established for man's welfare; when we do that, we find ourselves by and by suffering from disease.

Here are two healthy looking specimens, you see, who live

live in a tropical climate. Here is another girl from a tropical climate, a Sandwich Island girl. When I got this slide also from a photograph sent to me by a friend. You see this young man of the Islands, and the young women and hermother in the native Island dress, in their natural costumes, as you see these young women dressed; and you see these people look simple, and they are strong, and healthy, and hearty. When Captain Cook discovered the Sandwich Islands, he said every man was an Apollo, and every woman was a Venus de Medici. They were such wonderfully beautiful people, had such wonderfully beautiful figures, and were so strong and healthy and numerous. Today they are almost decimated; there are only 40,000 left out of the thousands and thousands and thousands who existed in these islands at the time that Captain Cook visited them, when they were densely populated with healthy, normal people. Captain Cook introduced civilization. He introduced the perverted habits of eating and drinking of civilization. He and his followers introduced the diseases of civilization, and those people are being carried off rapidly, very rapidly carried off with constitutional maladies, with consumption, and with other diseases which they have contracted along with the habits of our civilized life.

The Island of Tasmania was in a similar condition when it was discovered. The people of Tasmania were so strong, so hearty, so well and hardy that they labored with their hands for support, without implements of any sort. The [redacted] women were so hardy that they would stand up on a cliff thirty or forty feet above the water, and wait for a fish to come along; when they would see a fish, like an otter they would

dive into the water and catch it before it could get away. They would dive and capture the fish with their hands, and swim ashore. These same women would climb the the huge gum trees two hundred feet up to the first limb, and catch the opossums in the top. These people lived outdoors, had the benefit of the sunlight, the fresh air, and the vigorous life which they lived made them strong, vigorous, healthy people. Now where are they? They are a vanished race. The last Tasmanian went, died less than twenty years ago. I saw an account of it in the newspaper, of the last Tasmanian native who died. He was the last member of his race. All these native people, as they adopted the habits of civilization, not having been hardened and toughened to these habits as we have during the centuries that lie back of us, have been introduced to our perverted life as it is today, not having been gradually accustomed to it through the generations before them, these poor souls quickly died. A missionary said to me some time ago, a missionary to the North American Indians up in Canada, he said, "I have been there twenty-five years, or thirty years, and I have observed this among the Indians; that as soon as they become civilized they rapidly die. Consumption comes among them and they rapidly perish." Years ago, about sixty years ago, this very spot where we are today, or seventy years ago, this very spot was the home of the Pottawattomie Indians. These Pottawattomie Indians, by and by, when this country was settled, was about to be settled,--there was a battle between these Indians and the first surveyors who came through here; a battle was waged on this creek, called Burnham's Brook, and on that little creek

a battle was fought, the surveyors on one side and the Indians on the other, and that hill was all covered over with flint arrowheads, and this country here was all covered over with flint arrowheads. I have picked them up many times, forty years ago; I remember picking them up almost anywhere walking along plowed ground. There was a battle, and the surveyors were drivenaway; but by and by the government troops came, and the Indians were subdued, and they lived all about here for many years. I remember when I was a boy seeing the Indians about here every years. Every spring they camped along the sides of the Kalamazoo River. It was lined with tents that these Pottawatomie Indians put up, the original owners of this country here, the natives of the soil. About thirty years ago, they were moved west to the westernterritories, taken out to Indian Territory. On the plains of Illinois, one family of these indians, numbering about twenty-five or thirty, escaped in the night, and they found their way on foot back here to their home, about fifteen miles South of here, and they came back. They were found here, but the United States government was kind enough to leave them there. They had homes before, had homes and property which belonged to them, and they were allowed to live there and make their own homes, and carry on farming. They picked huckleberries every summer; lived in tents during the summer for a time, but by degrees they have acquired the habits of civilization; consumption has come in among them, and I understand that less than half a dozen of them are left alive today. That is among the older ones; but they have almost all of them died of that terrible disease consumption,--the penalty

of living indoors, and adopting the habits of civilized life. It is not any wonder when we see these hardy people, the Indians dying off with consumption, when they are brought in contact with civilization,--it is no wonder that so large a number of us die of consumption; it is no wonder that half of all those who die are found to have had tubercular disease in their bodies somewhere. The same thing is happening to these New Zealanders, Australians, Tasmanians, and the natives of the Sandwich Islands,--they are all rapidly dying off because of the habits of civilization. The lower classes have not adopted these habits, so fully. Especially in England, you will find the lower classes of England still living in comparative simplicity, and they are still hardy and tough. It is said on good authority that there is not a single aristocratic family English family belonging to the aristocracy in England, living in London that has not been reinforced by good blood, new blood within three generations. It only takes an aristocratic family about two or three generations to run out in city life. In New York, you go up on Fifth Avenue, in New York City, and you will find scarcely a house, go by house after house, go whole blocks there without passing a house with a single child in it. Go down to Five Points, and you can hardly find room, find a room in a house that has not got half a dozen children in it. The poorer classes that are close to the soil, have yet got some original vigor in them; but these so-called higher classes which are really the most depraved after all, and the most degenerate after all, physically, at least,--we find them rapidly running out. Now here are a couple of healthy

specimens you see. Notice these hardy, vigorous old ladies,--English women. I met these people in a little alley in London, and I said to this woman who has got her can of beer,--you see they have just come from a saloon and have a can of beer, carrying it back home,--I said to this young woman here who looks to be about fifty years old, How old is this house--it was an old house, had something of the Shakespeare stile of architecture, and I said, "How old is this house?" She said, "I do not know; it stood there when I was little, and has been there ever since I was born; this old mother here is eighty years old." I said to her, "Do you know how old this house is?" "No," she said, "It was there when I was born." This women was still hardy, and tough, and strong. See their hands, how strong they are. Notice their large waists. Their waists are not crowded up. They have large, strong figures, and large, vigorous waists. These women dress simply, their habits are simple. They drink a little beer, but although it is not good for them, in spite of the little beer they drink, their habits of life, which are very simple, keep them strong, and hardy, healthy, and vigorous women.

I visited the black country some fifteen or sixteen years ago in England, in the Vicinity of Leigh, where they make the famous firebrick, which are shipped all over the world. I found there a great brick factory, and found that nearly all the work was done by women and girls, and a few boys. There was a woman forty years old. I said to her, "How long have you been working here in this factory?" "O, " She said, "I was born here, I was born here and have been here all my life. My mother was back here working again within seven days after I was born; so I have been here all my life."

days after I was born; so I have been here all my life." She led me over in to a corner where she was at work. Now this woman had grown up there, and she was as strong and sturdy a specimen as could be. I took a picture of her, and I am sorry I have not got it here to show to you tonight. She was a strong, vigerous, really fine looking woman, as fine looking a woman as I ever saw in my life. She had a fine head, fine face, splendid chest, great, strong arms, and I saw that woman working away modelling the clay. The clay is modeled with the hands, mixed with water, and kneaded with the hands just like dough. The women were working away there on these blocks, kneading that clay until they got it as supple as puty, and then they molded it into molds, and carried it off to the dry room. I saw women tossing this clay, great lumps of clay about as large as your head, on the block she was working on. These women were kneading this clay in these large pieces, and tossing up and down in the air on the ends of their fingers, rolling it, and kneading it. These women stood there every single day, working on in that way. I said to one of them, I think I will try that. It must be different from what we have in the United States. I asked her to let me take hold of it. I had to bend over it to lift it. There she was tossing it on the tips of her fingers. I found it weighed just sixty pounds. Now that women did not have any backache. I asked her, "Did you ever have backache? Did you ever suffer from backache?" "No, I do not know anything about it," she said. She was working there in the mud all the time. They were all doing that,-- working there in the mud from morning until night, and she was

working there that way every day, and every week, every working day in the month, working right straight along in just that way, and never suffered any inconvenience whatever. I had a doctor along, and I said, to him, "Doctor, do any of these people ever have anything the matter with them." "Well," he said, "they will have the measles once in a while, and there are lots of babies coming along, but that is about all the business I have." I asked the doctor to send out and gather all the women he knew together and get them in for I wanted to interview them. I showed them some pictures, measured their waists, and had a chat with them. I found they all had large waists. The average waists measure of those nine women that were there was pretty nearly half their height. The waist measure of some of them was more than half their height. That is just about that of the Venus de Medici. The Venus de Medici has a waist measurement of 47.6% of the height. That is the artistic model. A woman's waist should be almost half her height. I found those English women did have a waist measure equal to half their height. This woman's waist, I suppose, is about twenty-two inches, or less, perhaps nineteen. There is the Venus de Milo--the Venus de Medici, is practically the same, but here is the normal waist. That is the waist which the old Greek artists considered the normal form. The artistic form, the beautiful form is the form of the waist of the Venus de Milo. If a modern artist were going to make an undraped figure of woman, he certainly would not give it that kind of shape, would he? That is the shape he would give it, as nearly as he could; but he would have to hunt up a large number of women, and have to

hunt a long time before he would find that kind of a waist among civilised women. Among savages he would not have any trouble. That Sandwich Island girl had that kind of a waist; those two princesses from Africa had that kind of waist; so it is with all uncivilised women.

Here is a picture showing the waists of women of a great many different nations. When I visited Egypt, some years ago, I got proper police protection, and went down to study waists. I have measured the waists of women of a great many different nationalities. I had the opportunity to measure a great number of waists. I found women there, the Soudan women no, Zulu women from away up in interior Africa, and other nationalities of Northern Africa, I found they had the Venus de Milo model. I found one Ethiopian woman, as black as a stove pipe, but she had a most beautiful figure, exactly the same proportion as the Venus de Milo, absolutely the same proportions as the Venus de Milo, just exactly the same form as that women was,--strong, vigorous, healthy. She had been brought down from away up the upper Nile. Now you can see them in Egypt, great numbers of them going about the streets there in their little, loose garments,--the Arabic women, the Coptic women,--and they all have large waists. The same thing is true of the Chinese woman, and the Japanese woman. I measured one time thirty Chinese women in Chinatown, San Francisco. I found one with little feet, but none with small waists. I found a mother who was binding her daughters feet to make them small, because she wanted her daughter to be aristocratic. She had been working three years to get them small enough, to make her feet of the right proportions. The poor foot was being twisted around

so the toes were doubled clear under the sole, and projected out on the opposite side of the foot, like that. That is what had to be done to her to make her walk on the end of a big toe, so she would be a marriageable girl, so she would be in good style. The civilized mother does the very same thing to her daughter; only when the daughter gets to be about twelve years old, she takes her down to the artistic dressmaker, the modiste, in New York, or Philadelphia, or some other of our American cities, and the Modiste begins to model that little girl's figure. If the mother neglects it, the dressmaker says, to her, "Your daughter is getting along in years, so you ought to begin to model her figure," as though the Almighty did not know how to make the figure. That girl has to be put into a bony cage to grow up like a cucumber in a bottle in order that she may have the kind of figure that modern fashion demands; that is the sort of figure she gets. Here is the inside view, of these two figures, you see. There is the outside view; here is the inside view of the same figure. This is not an imaginary diagram; it is not a fancy sketch; this is an exact copy of Prof. Ziemssen's figure which he gives in his great work on anatomy, and is the result of the most careful study and measurement. It shows the normal positions of the internal parts, shows the natural relation of ther ibs to the internal organs. Here is the liver, you see, which lies entirely above the lower border of the ribs. Here is the stomach, which also lies, you see, entirely above the lower border of the ribs. Here is the colon that also lies just within the grasp of the ribs, just above the line connecting the lowermost ribs. Here is the

spleen; here is the kidney; here is the right kidney there; here you can see the outline of it. That is in the normal figure. All these large, heavy organs, you see behind the stomach,--the stomach, pancreas, the liver, the spleen, the kidneys,--all these heavy organs all lie above the lower border of the ribs. Here is the umbilicus; there is the colon two inches above; here is the stomach still above the colon, all inside the lower border of the ribs.

Take the inside view of the other figure. Here is the liver, the lower border of it, forced down. About two months ago I examined a patient, and I found the entire liver had escaped, and lay clear down here below the umbilicus, and as the result of tight skirt bands. I was able to make an opening in the back just beside this point, and pull that liver up into place, and pull a little corner of the liver outside and sew it into the wound in order to hold that liver up in place. That is what had to be done. Livers have often been cut nearly in two. In this case, the entire liver was loose, had escaped from its proper corner, and had dropped to the bottom of the abdomen. I wondered what it was that was rolling around down there; did not know it was the liver until I found it. I thought it was an enlarged kidney, but found it was the liver. The first case of that sort I ever saw, I will never forget. When I was a medical student in Bellevlew Hospital, over thirty years ago , I found --just thirty years ago ,-- I found there a poor woman,--Dr. Flint who was my private teacher,--I was a private pupil with him,--there were half a dozen of us altogether; he used to take us up into the hospital where

he had charge of several wards, and every noon at twelve o'clock, we met the doctor there, and he picked out a lot of the hard cases, and the interesting cases, and he had them arranged in a room about thirty feet square all around the room, arranged there in a row for him [illegible] us to examine them to find out what was the matter. It fell to my lot one day to examine a woman that had a large bunch down here in the abdomen; it was a curious thing, had a large notch in it; I could not make out just what it was; but finally it occurred to me that this might be the result of tight lacing. I felt rather abashed to ask her about her dress; but finally I mustered up courage to ask her if she ever wore her clothes rather tight. She said, "I should think I did. I tie my corset strings to the bed post every morning." I made up my mind then what was the matter. It was her poor liver nearly cut in two. I told the doctor her liver was nearly cut in two; that this lump was a piece of the liver cut off, and simply hanging on by a little point. Yes, he said, "It is tight lacing fissure of the liver. That is what is the matter." I have seen several instances in which this tight laced fissure has gotten so deep by tight lacing that the large portion of the liver has become cut off from the rest of the liver, so the nutrition has been cut off, and the blood supply has been interfered with, and the mass has died, and it has been necessary for the surgeon to open the abdominal cavity and remove a portion of that liver. That thing has been done more than once. Since that time, I have met two or three cases of tight laced fissure of the liver in very fashionable women; but such women rarely admit that they had worn their clothes tight. Such women are really of a very extraordinary character.

A woman who will actually admit that her clothing has at some time been too tight is a very extraordinary character.

Now notice the stomach where it is. Instead of lying entirely above the lower border of the ribs, here it is almost entirely below the lower border of the ribs. This is no fancy sketch. Here are the kidneys away down in the abdominal cavity; they ought to be entirely above the lower border of the ribs. I put my pointer across the view, and you will see in this figure, the normal figure, the liver, the stomach, the spleen, the pancreas, the colon, and the kidneys are all above this red; In the deformed figure here, you see these organs almost without exception, they are all below. The pancreas is down behind the stomach; the stomach is almost entirely below; the liver is half below; the kidneys are both below; the spleen and colon are both away down out of place. This is no fancy sketch, but is a truthful representation of what I actually found in the case of a woman who had worn her clothes tight, who had worn tight bands. Here is the shape of the fashionable corset, you see. The corset made to fit the woman is not to be found; for corsets are not made to fit women; but the woman is made to fit the corset. If she does not fit, it is so much worse for the woman; for she has to be made to fit. So she is squeezed, perhaps, until she does fit.

I found some years ago a woman who had a tumor here. She had a fibroid tumor; I thought it was a fibroid tumor. That is what it seemed like. The next time she came to see me, to my surprise, I found that tumor over here on the right side instead of in the middle of the belly. The next day, it was

over on the left side, away out in the upper left-hand corner of the abdominal cavity. I found that tumor was running around anywhere it had a mind to go. She said, "I ought to tell you something, perhaps,"--she was about sixty-five years old, but she said, "When I was a girl, about seventeen years old, I had fever and ague away down in Texas; I was born in Texas; by and by I got a tremendous, great lump down here. I said to one of my girl friends one day, 'What shall I do to get rid of this lump? I can not stand it?' 'Well,' she said, 'I had one like it, and I will tell you what I did. I just wore my corset nights, as well as days, and I took my corset up a notch every single night, and took it up tight, made it a little tighter every night, and every morning just a little bit tighter, and by and By I got over it; if you do that, you will get over it after while.' So," she said, "I did that; and I went on for about six weeks, and one day, I felt something pop in my waist, and it went down, and then I never had any trouble since except that I had this lump rolling around." It was evident that the spleen had gotten away from its moorings, and had been wandering about the abdominal cavity ever since. That, then is a state of things which exists in to a greater or lesser extent in almost every civilized woman that has worn the ordinary dress for five, ten, or twenty years. In almost every civilized woman over twenty-five years of age, in almost every one over ti twenty years of age, you will find something of that situation. It is the rarest thing to find a woman over twenty years of age that has not some displaced organ; in which you find the body in its normal position, all the organs in their proper place.

Now I want to show you the terrible results of that.

This is a representation of the sympathetic nerve. This fine line in the center is the sympathetic nerve. These nerves run out into the stomach, come from the back side, and run out into the bowels, and the stomach and the liver, and the spleen, the kidneys, and all the organs of the abdomen; these nerves starting in the back run out into all these organs/ You can follow it everywhere. You can readily see when an organ falls out of place, it stretches these delicate nerves that run into the back. If a certain organ for instance, falls down; here is an organ that ought to be here; here are nerves that come into it. Now suppose this organ falls away. It may fall lower than that; it may fall clear down into the pelvis here. In performing an operation the other day, I found the colon which belonged up there, I found it actually lying down there. It had doubled over upon itself, and was lying down here in the very bottom of the abdominal cavity. I had to pull it out, and tuck it away up in place. I have seen the stomach many times lying away down there. A poor woman I remember some time ago, was in such terrible distress, I had to open the abdomen to put the stomach in place so; and the other day I had to put a liver in place in the same way. You can see what happens. When these organs fall down, it brings a strain on these nerves. Hold your arm out straight for five minutes if you can. Try it fifteen minutes. I do not doubt that there is not a person in this room who can hold his arm out straight for fifteen minutes. My arm begins to ache already. The nerves begin to ache, and by and by the

pain becomes so acute, so perfectly terrible that you can not endure it, and down your arm will drop. So if the bowels fall down, they must do it at the expense of stretching these delicate nerves. They are stretched as you may stretch a piece of rubber. A nerve will stretch like a piece of rubber, but it gives it pain whenever it stretches. It does not hurt the rubber, but it hurts a live nerve to stretch it. Just as you take hold of a bit of skin and stretch it, it hurts. Why?-- because you pull the nerves. Whenever the stomach, or the bowels, or a kidney are floating around, out of place, or any other organ in the abdominal cavity here is out of place, the nerves which go out from the spine to run into that organ are stretched, and put under tension, and pain is the result. But, you say, I do not feel any pain; my stomach is out of place, it is true, but I do not feel any pain there. Certainly not; because the nerves of the stomach are not very sensitive. If they were, you would have some terrible complaints when you swallow mustard, pepper, peppersauce, ginger, capsicum, and all those things; there would be a terrible complaint going on in your stomach. Your stomach says nothing about it, because there are very few sensory nerves in your stomach. So a stomach may be out of place, and stretching these nerves to a great extent, and yet there be no pain ~~itself~~ locally; but the pain is somewhere else. The pain is in the top of the head, or the pain is in the back of the neck, or the pain is between the shoulders, or there is an ache across the back, in the small of the back; or you imagine you have some thing the matter with the kidneys. There is nothing the matter with the kidneys at all; it is sim-ply

the stomach out of place, and pulling upon the nerves, dragging the nerves; and the dragging feeling across the abdomen comes from this. I remember one man who felt a great amount of distress, so much so that he was obliged to give up his business.

Here is another picture of the same kind, you see,-- the stomach, and bowels, liver, spleen, and various organs are where they belong in this picture. In a prolapsed stomach, that stomach may be lying away down here. I found the other day a liver lying down here. I found a spleen here, one there, and another one over there. No, it was the same spleen, but on three successive days, it was in three different places. So with these organs. Here is another thing which some of you will wonder at. You say, "I wonder why it is I have bile in my stomach." You see bile comes from the gall bladder, and runs down to the duodenum, and then down to the small intestine. Suppose the stomach falls down. It brings the duodenum down with it. Thenwhen the bile comes in the stomach has fallen away down here, and it pulls the duodenum over down to this point, turns it over, and then, don't you see? the bile comes in; it will be down hill into the stomach from the duodenum, so the bile can run right down into it. When you bring the duodenum down here, it is down hill into the stomach, and the bile runs down into the stomach. You get up in the morning with bile on your stomach. It is because you have prolapsed stomach, and the bile has been running down into your stomach, and the stomach has to unload itself of that bile before it can begin digestion again.

There is a woman with a strong, vigorous, healthy abdomen. I got that at the World's Fair, from the Midway.

I went over to the Midway Plaisance, got acquainted with all the different kinds of people on the Midway Plaisance. I thought that was a good time to study. I was making a special study of figures at that time, and I got acquainted with all the people I could get acquainted with there,--people from the Sandwich Islands, and various other islands of the Pacific, and from Africa; I studied everybody but the Esquimaux. Among other people I found there, were those dancing girls. I took this photograph of this dancing girl with her costume, so that I might show her figure. Dancing girls, I knew, wore loose dresses, and had strong figures. I saw the manager, and got permission to take the photograph. You see the strong points are large, and this shows you a good, strong, supple figure. All dancing girls have this kind of figure to almost the same degree. All their figures show well developed muscles. That is the natural figure of the natural woman. She was an Egyptian woman that had lived in a natural way as far as her development was concerned, and she was strong, hardy, and vigorous. I looked about and found some natural people among civilized folks. About this same time, about ten years ago, two young women came here to the Sanitarium as patients. That is the outline of one of them, and this is the outline of the other. I had these outlines taken by our measuring machine, which I prepared and had made; for I took the outline of every single patient. This outline was made over a thin garment or sheet with a tracing pencil; made to follow the exact outline of the body. I made these outlines, or had them made of those two women. This is one of the women, and that is the other one. This young woman was evidently suffering from the deforming influence of dress.

Here is a picture showing a made-up person. This protrusion here means that the bowels, stomach, and other organs which belong up here have been crowded out of place, and the physical examination showed that the stomach was here, not where it ought to be; but here is where it was; and the colon was down here, when it ought to be up there. That was her condition. Eighteen months later, that was that young woman's figure. She was transformed from this form to that form. There was another young woman who was in a stateof misanthropy, as you can judge by her face. Here is that same woman one year later,--strong, healthy, and well. Both of these young women became physical culture teachers. They took so much interest in physical culture, in developing themselves when they learned of the deformities they had produced, learned the real foundation of their ill health was those deformities, resulting from their imperfect development, they took such an interest in it that they went right straight to work, and in to improve themselves, and the result you see right here. Here is the same representation. This the same young woman I showed you there. This is as she was when she came here, and began her work; and this is as she was a year later. You see the ugly deformity here. Here is the curve here.

Here is a young woman with a healthy waist. This young woman had a change to grow up healthy, with a normal, healthy waist, and a good figure. Here is a dancing girl again, in one of her poses. She has a strong, vigorous waist. That young woman is not likely to suffer from indigestion, or any sympathetic nervous disorders. Here is a group of people with

misshapen bodies. These show a few of the prevailing types of deformity resulting from mal-position, wrong position in sitting and standing, and wrong modes of dress. Here is a person who thinks she is standing very straight; you see she is carrying her hips forward instead of backward where they belong. The hips belong behind instead of in front where the chest belongs. Here is one of the least deformities you find in women who wear a tight dress. That is the stomach. Here is pretty nearly a natural figure. That is a deformed figure. Here is the position of these women there. Here is the kidney, here is the stomach, and there is where it belongs; here is where it was. This patch over the abdomen always means displacement of internal parts. Here is the stomach and bowels; they are away down here. This young woman's mother said she never wore anything tight in her life. But everything was all out of place.

Here is that woman I told you about who had a misplaced spleen, wandering about; and bowels and everything crowded out of place. She wore her corset tight, wore it all night and made it a little tighter every night, and every morning made it a little tighter yet; that is the kind of shape she produced. These are not artistic shapes at all. The mother said the daughter was sixteen years old, and she had never worn anything tight. I measured her waist outside of her clothing, and found it to be twenty-two inches; and the measurement of her waist inside of her clothing, was twenty-five inches. The measurement outside of her clothing was twenty-two inches, and inside of her clothes was twenty-five inches; so you can see just what the matter was; the kidneys were badly out of position.

Here are two interesting pictures. This woman was rather fleshy, the one who had worn tight clothing until about six months before. She had changed her mode of dress, and had developed quite a natural figure. This woman put on her corset again, and that is the outline of that woman with her corset on. Modern corsets would give somewhat different shape from that, as the style of corset has changed so of course the style of the woman must change. The woman's figure must change when the style of the corset changes. Here is the same thing again,--here without the corset, and here with a corset. Here is the normal masculine figure; and here is the normal feminine figure. The normal man has a convex line in front; it is the arc of a circle, you see. Any break in this convex line, which is the arc, entirely destroys the symmetry of the body. "Why," women say, "we have to wear tight clothes because we are so fat." That is just what it does,--the tighter you make the waist, the more it exaggerates the deformities. Here is this fleshy woman again; but she has learned to stand properly, and to wear the appropriate sort of gown; and you see her idiosyncrasies, and her deformities are entirely removed.

Here is a natural figure, and here is a deformed figure. Here is the outline of a natural feminine figure, of a well developed woman. I am showing you these pictures here because I want to make an impression. I want these men to be educated just as much as these women, because this is a terrible thing, my friends. The deformities resulting from dress, and the evils resulting from dress are more far-reaching than you can understand. It is one of the terrible evils of our civili-

sation that must be combated. Here is the fgmt Apollo Belvidere. You see this woman has just as large a waist as this man has. I will astonish you when I tell youthat woman has a larger waist naturally in proportion to her weight and height than man has. Woman has a larger stomach in proportion to her weight and height than man has, and she needs a larger waist. M Woman also has a larger liver. It is a curious thing that a woman has more liver and less heart than man has. A man has a heart, and a woman has a heart just the size of the fist. The fist andtthe heart are just the same size, because the heart has to back up the fist. So a little fist means a little heart behind it; and a big fist has a big heart behind it. So the liver is large in women, although the heart is small. A woman naturally only has half the strength of a man. The strength of the average woman is just half that of the average man; so her heart is naturally smaller; but the liver is larger in proportion to her size; so is the colon; so are the kidneys; so are the pancreas; and so mmm t is the spleen. All of these large vital organs are larger in women than in men, that is, than in men of the same size. You would naturally suppose that man has a mmmdim larger waist. But the woman must have a larger waist in proportion to her size and weight; and so it is a fact; for I found the average waist measurement in the Venus de Milo, and a large number of feminine figures in Greek statuary, the waist measurement of which I found to be 47.6% of the height,--that is the waist measurement of the Venus de Milo. In measuring ten of the famous Grecian statues recognized as representatives of the proper proportions of the human figure,

I found the measurement of the male waist of the ancient Greek artists was 46.% of the height. There is more than one per cent difference between 47.6% and 46%,--there is more than one and one-half per cent difference. That is, the feminine waist is larger than the masculine waist, and modern anatomy shows the reason why. The vital organs are larger in women than in men. Why?--Because the mother's stomach must sometimes digest for two, and the liver must do work for two, and all the vital organs must do work for two,--the mother and the child; so they are necessarily larger in women than in men. Well, now here is another model figure.

I want to call your attention to the fact that whether the artist is an ancient artist, or a modern artist, if he makes a nude figure, he makes a symmetrical waist, with the anterior line convex, with no concave breaks in it excepting these very slight ones. Compare this, with the figure of the figures of the Grecian dancing girl. Compare it with the Egyptian dancing girl. Think what that waist would be. Where is that poor girl's stomach? Where is it? It certainly is not where it belongs. Where is that poor girl's liver? These are very important vital organs.

Here are two outlines of the healthy, natural, symmetrical figure,--a civilized woman who never wore any tight garments, or had a chance to grow up in bony cages, but has always grown up in a healthful way and has developed naturally, and has had the benefits of physical culture, so that this girl has developed a natural figure. So you see these outlines I am giving you are not even savage people, are not even ancient

people, but a modern, human figure. It shows what nature will do, what a beautiful figure nature will make when it has a chance, and shows that the figure only becomes deformed when compelled to grow into a bone or steel form, and into a mold. A cucumber can be made to grow into the shape of a square bottle if it is put inside when it is small.

Here is a copy of every fashion plate. Here is a copy of the form of the woman who is wearing a healthful dress. Here is the woman who is trying to even up, don't you see? trying to balance up this deformity by making an artificial one, that is, trying to balance one deformity by making still another. The natural figure needs none of these artificial appendages, because the figure itself affords the proper model for the draping of clothes. Here are the two figures again. Here is a copy photographed from a fashion plate; here is a natural figure. Notice the difference. Where is the room for any of the internal organs in such a case as that? The fashion magazines have created a vicious standard, have perverted, vitiated the normal taste and instinct of women, until they have come to think that a small waist is an indication of beauty, is a mark of beauty; whereas, a small waist is simply a suggestion of weakness, and necessarily so. It is just as much a deformity as that big, projecting lip you saw a little while ago, with that peg of wood in it; or as that terribly deformed ear of that South American Indian woman. It is just as much a deformity as the misshapen foot of the Chinese women,--simply a deformity--nothing more; but it is more damaging than those deformities, because the deformities of these internal parts, which are the vital parts of the body, the vital organs

of the body,--deformities produced there are of much more consequence than deformities on the external parts of the body which might be cut off without disturbing the health. The lower lip could be cut off, and still the man might enjoy health; but that is not so with these internal parts. It is impossible that the stomach should be crowded out of place; or that the liver should be crowded out of place, or that the kidneys should lose their position, and the bowels should fall down, without serious consequences following; and half the people in this room, these women here, and these men, are suffering from deformities which have had their origin in just that way, in part at least.

Here is another copy from a fashion magazine. Where is that woman's stomach? Think of it!

Here is the same thing I showed you a moment ago. You see now where the old fashioned paniards came from, why it was necessary for women to have a bustle, to balance up this deformity,--you see. Why ~~you~~ x Here you see the fashion makers have some conception of the real natural figure. Here is natural symmetry with natural prominence to this part of the body; but when that prominence is lost, and there is a straight line behind, and we have just the opposite formation, a transfer from the front to the back, it is necessary to do something to hide it; so the fashion makers have invented this method of hiding the deformity which they themselves created. I am not making this a bit more ridiculous than it is. I am talking about it seriously; I am giving you the facts. This is not a bit more ridiculous than it is. We are just simply

looking at the mischief fashion has done. I am not picturing it to you half as bad as it really is. For the last twenty years I have given special study to this subject, and I want to tell you it is very rare indeed for me to find a woman, a civilized woman that has not some deformity resulting from fxxm the conventional dress, not from tight lacing, xx xxx not tight lacing, or from tight clothes--for women never recognize that their clothes are tight; but from conventional dress; from the dresses that women wear as they go about their work, their day dress that they wear in the day time, as they go around--not with the dress they wear inthe ballroom; because they do not know any better. The factory girl suffers just as much as the fashionable belle, because she does not know any better.

Here are pictures of three dancing girls. I want you to just notice these splendid waists. You see they are not fat. It is not simply an accumulation of fat, but splendidly developed muscles; splendid vital organs; splendid breathing capacity. Those girls could not possibly endure the arduous work they xxx go through for hours, and hours and hours with the most wonderful posturing, and the most laborious poses or their technicalx dancing, for it is anexceedingly laborious and tiresome thing, requiring constant exercise of these muscles of the trunk in every possible way; they could not possibly do it if it were not for the marvelous development of these muscles of the trunk. There is an advantage in that. You hear a great deal about the sufferings of maternity, the perils of maternity; but I want to tell you, my friends, nearlyall those perils grow out of lack of proper development of the waist,

Read at the meeting of the Ohio Valley Medical Association
Evansville, Ind., Nov. 15, 1904.

THE TREATMENT OF SO-CALLED INCURABLE CHRONIC DISORDERS BY THE PHYSIOLOGIC METHOD.

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In the last twenty-five years the medical profession has been making rapid strides out of the wilderness of blundering empiricism into the domain of science. Medicine is no longer merely an art, with methods based upon blind experience and ruled by changing fashions. The great discoveries of Liebig and Lehman and the science of Physiologic Chemistry which they created prepared the way for the epoch-making work of Bouchard on the auto-intoxications which has wrought a veritable revolution in medical theories and practices. Bouchard and his pupils, and others who have followed in the footsteps of this master have shown us that the body is a veritable factory of poisons; that in addition to the well known carbon dioxid, urea, uric acid, and other toxic substances, the body produces a multitude of far more subtle and infinitely more potent and mischievous poisonous bodies,-- the by-products and end-products of normal metabolism or the result of abnormal metabolic processes. The exhaustive researches of Bouchard, Roger, Charrin, and Boix, and in recent times a multitude of investigators, have traced to these poisons the origin of a very large number of the chronic nervous disorders, the diatheses, and the various degenerative processes. Modern physiology has made clear to us the fact that these tissue poisons are normally disposed of, not alone by elimination, but also and chiefly by destruction through the agency of certain organs which promote their oxidation and certain other organs which produce antidotal and antitoxic

substances. In fact, it has been clearly shown by Charrin that the poison-destroying activity of the liver and the development of antitoxic internal secretions by the thyroid gland in the suprarenal capsules and various other structures constitute one of the most important of the body's defenses against disease.

The knowledge which recent physiologic researches have given us respecting the methods by which the vital forces fight against invading microbes and other agents antagonistic to the body, together with the revelations of physiologic chemistry, have paved the way for a new therapeutics, the chief aim of which is the development of the natural disease-resisting resources of the system. The physiologic method is widely different from the therapeutics which have preceded it. Its procedures are simple, and based upon well established physiologic facts. In principle it recognizes that the physician is not a healer: that the remedies which he applies possess no healing power. But all healing power is in the body itself and it is the blood that heals. That, as the wise Dietl said long ago, the Power which creates and maintains must also be able to heal. Recognition of this principle greatly simplifies therapeutics. The physiologic therapeutist dealing with the patient seeks to find out what is wrong with his nutrition, where metabolism is at fault, what morbid condition lies back of functional disturbances or organic changes in vital parts. Then he seeks to so influence nutrition, metabolism, and functional disturbances as to aid the diseased body in the struggle it is always making to restore the equilibrium of health.

Fortunately for the therapeutist, the physiologic method supplies measures which are possessed of marvelous potency to in-

fluence life processes. The general movement of the blood and its distribution, muscular and nervous excitability, and especially those settled and intimate vital processes which concern blood formation, tissue building, and the various forms of metabolic activity can be more accurately and more certainly controlled in either direction by physiologic measures than by any other. It is only necessary to recall the wonderful influence of a general cold application, or even a brief cold application to the chest, upon the depth and rhythm of respiration and strength and energy of heart action. The familiar example of a dash of cold water upon the face of a fainting person affords sufficient proof of this. Cold applications afford one of the best known means of raising blood pressure quickly and safely. The effect is instantaneous. There is no waiting for the tardy results of absorption, and a response is always secured so long as the nerve centers are intact. Warm applications, on the other hand, afford a means whereby blood pressure when too high may be almost instantaneously lowered to any extent required. Exercises, both active and passive, friction, and various of the procedures of massage may be employed with like results. Cold compresses or ice-bags over the pericardium is a more effective measure of stimulating to normal activity a flagging heart than any drug known, and this procedure has the advantage that the effects obtained are immediate and may be reproduced as often as required. The heart responds the thousandth time the application is made just as readily as the first time. Physiologic therapeutics do not lose their effects through the development of tolerance on the part of the body. On the other hand, there is an increase of susceptibiliyy and of readiness in response as the re-

sult of improvement in the general vital condition.

The resources of the physiologic method are not meager. They are in fact almost infinite in variety. For example, we have about two hundred different hydriatic procedures, each of which is capable of producing effects widely different, in some instances directly opposite, by variations in temperature, duration, and combinations with other measures. Hydrotherapy may be credited with at least a thousand distinct therapeutic applications. Massage adds hundreds more. Medical gymnastics, as perfected by the Swedes, present several hundred more. Electricity has resources by the score which are little appreciated by those who are unfamiliar with the physiologic method. Phototherapy, radiotherapy, mechanotherapy in its various forms meets scores of therapeutic indications.

The value of the physiologic method has come to be well recognized in the treatment of acute maladies, particularly typhoid fever. Roger, in his great work on "Infectious Diseases," asserts that, "In combating it, preference should be given to those methods which favor the dissipation of heat, while those that hinder nutritive activity should be avoided. Cold baths offer the best method, since under their influence heat is rapidly dissipated at an increased rate, and nutrition is at the same time stimulated. This method may, therefore, be considered as a natural one; it is suggested by the procedure utilized by the organism itself." As Kast, Rovighi, and others have shown, it is not the elevation of temperature which is to be combated, but simply an exaggerated temperature elevation. Moderate fever is the method by which the body combats in-

fection, as it stimulates the activity of the leukocytes (as shown by Morel) and increases the germicidal power of the blood. Scientific researches have clearly shown the absurdity of dosing the fever patient with antipyrin, alcohol, quinin, or any other so-called antithermic or antipyretic drug. All of these drugs lower the vital activity and lessen the resisting power of the body.

What is true of the drugs mentioned is true of many others. In fact, Dr. Billings, President of the American medical Association, in his address last year at New Orleans made the assertion, almost without qualification, "drugs do not cure." Yet many thousands of medical men still ~~do~~ on the old beaten paths of ~~do~~ artificial therapeutics, dosing their patients with varied drugs and combinations of drugs, regardless of the rational character of such a course, and content that they have abundant authority and precedent for what they do.

but a new day is dawning,
it may almost be said to
have dawned. In Germany,
at least, under the leadership
of Von Leyden, Ewald, Ziemssen,
Brand, Liebermeister, and
other progressive men of
genius, physiologic medicine
has rapidly won its way to
popular favor. Eugene William
has revived the method by
the weight of his enormous
influence. King Edward, in
England, has installed in
his palaces, at Windsor and
Buckingham, and with the
approval of most Eminent
members of the profession, elaborate

appliances for the use of the physiologic ~~agent~~ method, by the employment, which he has cured himself of gout and chronic appendicitis.

In this country ~~also~~ Isadores is also being made. Thousands of physicians are discarding ~~from~~ more ~~from~~ and more the use of those pernicious hypnotics, the bromides, chloral, and ~~this~~ similar drugs. Unsolid and dry food and less used than formerly, and the oval for derivatives are

rapidly falling under sup-
pression & veiled more & more
for miseries than the conditions
which they are often given to
palliate.

Alcohol. which has held
its own as an almost fanatical
for centuries, is at last losing
prestige. If it is still recommended in connection
with the cold bath. It is
only because of its effects and
those of the cold bath are
not fully understood
or appreciated.

THERAPEUTIC SUBSTITUTES FOR ALCOHOL.

The question of the use of alcohol in connection with the cold bath is one which is deserving of more than mere passing mention. Most German and some American authorities who recommend the use of cold water insist that just before putting the patient into the cold bath, at least in febrile cases, alcohol should be administered. The idea upon which this practice is based is evidently the supposition that alcohol is a stimulant, at least that it in some way sustains the heart or the vital powers. But this theory was long ago rendered thoroughly untenable by a multitude of carefully conducted experiments upon healthy subjects, showing that alcohol is always and in all doses a narcotic, and not a stimulant; that it depresses, and does not excite the heart and other vital organs; that it lessens vital resistance to disease; and that it is a toxic agent which the body must cast out, and not a food to be assimilated, nor a source of energy or aid to any vital organ or function.

The relation of alcohol to the heart and the circulation is a matter of most profound importance in the class of cases in which the cold bath is most frequently employed. ~~In relation to this point the fact~~ should be ~~recalled~~ remembered that the heart is not the only force involved in the circulation of the blood. It is doubtless the great engine of the circulation, but it has been clearly shown by Schiff and numerous other physiologists that the movement of the blood is greatly aided by a rhythmic action of the small vessels, both arterioles and capillaries. These contractions are not simultaneous with those of the heart, hence do not enterfere with its action; but as the pressure in the veins is very much be-

low that of the arteries, these contractile movements serve most efficiently in pushing the blood along toward the veins. The heart keeps the large arteries pumped full of blood, while by means of the contractile movements of the peripheral vessels, the blood is, so to speak, milked out into the veins. We may say, in fact, that there are two hearts concerned in the systemic circulation, the work of the central organ being supplemented by the peripheral heart,-- the small vessels,-- working at the distal end of the vascular loop, where the resistance is greatest. . . .

In passive congestion and all conditions of the circulation in which a cyanotic appearance is present, the usual condition is slowed circulation. The blood current is slow through cardiac weakness, or the lack of the active assistance of the peripheral heart; as a consequence, an insufficient amount of oxygen is introduced into the body, the blood is charged with CO_2 and other tissue poisons, and all the vital processes are depressed. To aid the heart and the circulation the thing needed is not simply an increased rate of activity of the heart, or an increased volume of the pulse, but an increased movement of the blood current throughout the entire system. . . .

In the application of any agent for the purpose of relieving conditions of this kind, the peripheral heart as well as the heart itself must be taken into consideration. In fact, the whole circulatory system must be regarded as one. The heart and the arteries are composed of essentially the same kind of tissue, and have practically the same functions. The arteries and the capillaries as well as the heart are capable of contracting. Both the heart and the arteries are controlled by excitory and inhibitory nerves.

These two classes of nerves controlling the heart and the vessels respectively are kindred in structure and origin, the vagus and the vasodilators being medullated and of spinal origin, while the accelerators of the heart and the vasoconstrictors of the arteries are non-medullated. . . .

The cold compress applied over the cardiac area of the chest may well replace alcohol, as a heart tonic. The thing necessary to encourage the heart's action is not mere relaxation of the peripheral vessels, but, as Winternitz has shown, increased acticity of the peripheral circulation in the skin, muscles, and elsewhere. Alcohol paralyzes the vasoconstrictors, and so dilates the small vessels and lessens the resistance to the heart action; at the same time it lessens the energy of the nerve centers which control the heart, diminishes the power of the heart muscles, and lessens that rhythmical activity of the small vessels whereby the circulation is so efficently aided at that portion of the blood circuit most remote from the heart. ¶ A cold application to that portion of the chest overlying the heart reflexly stimulates and energizes the heart through the cardiac nerves. This reflex action is not confined to the heart muscle; the stimulation of the activity of the cardiac vessels improves the circulation through the heart structure, refreshing and energizing it in the same manner in which a voluntary muscle is energized by a cold application, as is well shown by the ergograph.

It is well to remember that the vasoconstrictor nerves are one in kind with the excitors of the heart, while the vasodilators are in like manner associated with the vagus. With this in mind, it is easy to see that while alcohol paralyzes the vasocon-

strictors, it at the same time weakens the nerves and the ganglia which initiate and maintain the acticity of the heart. Cold, on the other hand, excites to acticity these nerves and centers, and thus produces the opposite effect.

The apparent increase of strength which follows the giving of alcohol in cases of cardiac weakness is delusive. There is increased volume of the pulse for the reason that the small arteries and capillaries are dilated, thus lessening resistance and cardiac work; but this apparent improvement is very xxxx evanescent, as naturally results from the fact that while the heart is relieved momentarily by the sudden dilatation of the peripheral vessels, the accumulation of blood in the venous system through the loss of the normal activity of the peripheral heart, gradually xxxxxx raises the resistance again by increasing the load of blood which has to be pushed along in the venous system. This loss of the action of the peripheral heart ~~thus~~ in the end more than counterbalances the temporary relief secured by the paralysis of the vasoconstrictors. This accumulation and sluggish movement of the blood in the venous system is shown by the purplish hue of the skin in a person under the influence of alcohol,-- a wide contrast to the ruddy glow presented by the skin in which the small vessels are actively engaged in pumping the blood out of the arteries into the veins, an action in which the whole body may be made to participate by a general cold douche or other suitable application of cold water to the surface. Cold applications, general and local, may be safely affirmed to be the true physiological heart tonic.

It is evident, then, that in the use of alcohol in connection with the cold bath, we are not enhancing its effects, but

are simply lessening its influence. If it is desired to mitigate the tonic or excitant effect of cold water upon the heart or vessels, this may be accomplished by employing water at a higher temperature, or, if it is desired simply to get the patient over the preliminary shock of the application, we may accomplish this much more efficiently by a preliminary heating of the skin, as by a fomentation to the spine, a hot-blanket pack, a hot enema, or even hot-water drinking.

Wheat has been said with reference to alcohol ~~other~~ in the treatment of fevers and with even greater propriety to the employment of this drug in chronic diseases. It damages the blood, lessens leucocytosis and fixing the hemoglobin in the red cells, besides lessening its alkalinity and lowering its germicidal power.

Few physicians now prescribe this drug in Tuberculosis of the lungs. A generation ago it was common to meet confirmed drunkards who had been made such by a doctor's prescription for pulmonary consumption or suspected tubercular disease.

The observations and discoveries made at Davos, Switzerland where the out-door and cold-air method of dealing with this malady has long been in use, such as well as, the experiences of many acute observers in this country, has shown the

superiority of this natural
method over all the artificial
~~and~~ means which have
heretofore been employed
to combat this great plague.
In dozens of test-cases the
curability of tuberculosis
surrounds is to-day being
demonstrated in a thousand
convincing ways.

What the ozone-of-doctor
life does for lung consumption
it can do for almost any
other chronic disease. It
cures by raising the resistance

of the organism. The whole body is inspired. The blood is made clearer, richer, more germicidal. Myriads of germ-fighting cells swarm out into the tissues to combat the invading microbes, under the ~~influence~~ stimulating influence of the sun-light, ozone air, and good food. The addition of hydriatic measures and medicated gymnastics, ~~and~~ completes the ~~decision~~ of physiologic method for this malady and ~~commonly~~ increases the chances for recovery.

what is true of the malady
named is equally true
of all other chronic diseases
Most chronic maladies are
penalties for an artificial life
and perverted habits. We
have departed too far from
~~our~~ natural conditions. We
~~have~~ are ignorant, in our
eating, drinking, ~~the~~ and
general conduct, great
biologic laws which ~~cannot~~
cannot be definite and set aside. The
duly-provided for the chronic invalid,
in most cases is to be
found in a return to

natural, and hence wholesome
modes of life.

The establishment of natural conditions & ~~in~~ surroundings natural functions. The ~~vitality~~ healing forces of the body ~~awaken~~ are encouraged ~~to~~ and aided in their ~~en~~-best in its defense.

The value of the physiologic method is abundantly attested by the thousands who benefit yearly by excursions to the sea shore, hunting trips and other outings. The cool water of the ocean, the exercise incident to bathing with the surf, the camping in the woods and exposure to the air in camping out and roughing it there are only crude, off but efficient applications of the physiologic

method, ~~The~~ which is in fact nothing more than a systematic carefully ~~some~~ directed application to the cure, of those forces of Nature ~~the~~ which are essential to the maintenance of life, and ~~may be~~ need only to be intensified in their application to become powerful aids to recovery from disease.

Frenkel has demonstrated that gymnastics, intelligently applied may restore to the ataxic patient who has become ~~all but~~ nearly helpless, the proper use of each muscular group. I have often seen these patients able to walk so well after a few weeks training that ~~their~~ it was all but impossible to discover any peculiarity of gait.

~~Exercise~~
diet, hydrotherapy, exercise,
light
~~baths~~ baths, and suitable electrical
applications, may be relied upon to
cure or to at least to make com-
fortable ~~every~~ almost every one
of the vast army of men and women
who are suffering from ~~functional~~ dyspepsia, constipation, and other
gastric disorders. Many of the
gastric and intestinal affections which
are now-a-days being turned over to
the surgeon yield readily to a
~~physiologic~~ rational application of
physiologic methods. A multitude
of ~~gastro-enterologies~~ now being
^
insomnia, which is only
aggravated by hypnotics, is
always curable by means of
proper hygiene combined with

the neutral bath and other hydri-
~~diet~~ atic and physiologic means.

Obesity, diabetes, ——— 4

Gout and chronic rheumatism
are well recognized as ~~disorders~~
nutritive disorders, and certainly
yield to dietetic and other means
which control metabolism, except
when structural changes and
degenerations have gone so far to
be ~~corrected~~ repaired.

The Cold air, cold water, almost
and ~~the~~ light baths, are as efficient
in curing internal tuberculosis as
is the Finsen method in conquering
~~of~~ the superficial manifestations
of this disease in lupus. Tuberculosis
is no longer to be regarded as an

incurable malady except when neglected.

Neurasthenia, a symptom, rather than a disease, is really curable only by the ~~correction~~ application, hygienically and therapeutically, of the principles of the physiologic method.

Cardiac dys disease, the various forms of Bright's disease, ~~Bright~~ atic sclerosis, and many other maladies of degeneration which are of course not curable in the proper sense of the term, are never-theless curable by the physiologic method to such a

degree as to check the advance of the destructive process, and enable the patient to live a comfortable useful life for many years.

It is not necessary to particularize, for practically all clinic rivalies are suffering from one and the same disease, namely, lowered resistance, diminished vitality, lessened alkalinity of the blood and of germicidal power, starved nutrition. The one thing that all need is an increase of vital energy, resistance, & metabolic activity. Except in those

cases in which the patient is already tottering into his grave this can be accomplished by a sufficiently earnest, persevering, ~~effort~~ and well directed effort. And the methods are not obscure or difficult inaccessible ~~or~~ nor difficult of application. The most essential measures are always close at hand. Air, water, light either sun or electric — are always at hand. Proper food and exercise are always attainable. It is only necessary to become

acquainted with the simple principles which underlie the application of these powerful agencies in the treatment of disease.

The work of treating chronic invalids must not be left for a few large sanitariums. Every city needs a physiologic institute, ~~to which~~ ~~connected~~ are institutes affording facilities for the application of all physiologic means, hydriatic, electrical, ~~plus~~ etc., together with a laboratory for the critical examination of secretions and excretions, microscopically, chemic-

and bacteriologically, to
and at the disposal of all
physicians who may desire
to make use of the same.

It is safe to say that
of the one million who
annually die in this
country alone, at least
half a million might be
saved alive for many years
by the application of the
Therapologic method made
readily accessible to all
in the manner suggested.
The writer hopes to live to see
~~the~~ mankind has reduced the mortality
of typhoid fever from 20 per
thousand to 5, a saving of

17 or six hundred per cent.
The mortality of pneumonia
has been reduced by Wright
and others in equal
proportion. The same methods
operate with equal success
in other infections diseases.
and also in Chronic diseases
Probably a thorough applica-
tion of the physiologic system
would save at least 70 000
or 80 000 thousand lives in
this county annually. and
in the world 20 times as
many. What a sacrifice.

But a better day is dawning.
The era of Physiologic
medicine has come, and
in the next few years
marvellous progress will
be made in the dissemin-
ation of ~~Koo~~ its principles.

Parlor early

THE TRAINING OF CHRONIC INVALIDS.

A Lecture at the Sanitarium Parlor, Battle Creek, Mich., Thursday, December 1, 1904.8 P.M.

J. H. Kellogg, M. D.

The training of the chronic invalid out of sickness into health,--that is my subject for tonight. I remember when I was a boy I saw something that perplexed me very much. A neighbor's boy who was a friend of mine brought me one day a three-cornered cucumber, and exhibited it as a new variety of cucumber; but I was very much perplexed to know how a cucumber could grow three-cornered. I discovered the secret later,--that this cucumber had been put into a three-cornered bottle when it was very small, and had grown into the shape of the bottle. Our habits--what we eat, what we drink, our modes of exercise, our manner of sitting, standing, and walking,--all of these things constitute a mold into which we grow. We are what we are because of our environment and because of our behavior toward out environment. A man who grows up with dyspepsia, with a dyspeptic stomach is a different man from what he would have been if he had had a sound stomach. I became satisfied years ago that the average chronic dyspeptic, the great majority of chronic dyspeptics are dyspeptics almost from their birth, from their very early childhood. Thousands and thousands of men and women are made dyspeptics before they are six months old. They have got their life-long dyspepsia mark;~~stamped~~ the stamp of dyspepsia has been put upon them, and they are bound to have it just as long as they live.

When a baby is born into the world, there is generally

some captious nurse about whose chief anxiety is that the child shall not get wind on the stomach. She has the idea that the child's stomach is a great aching void; that it must be filled with something, and if it is not filled with food, the wind will blow down into it and it will get filled with wind. So something must be put into that baby's stomach to keep it full; it must never be allowed to get empty for a minute lest the wind should get in. That is the way babies are treated. The baby has no food; the mother is not able to supply any food for the first twenty-four hours, so something must be done, something must be supplied; the nurse does not dare to give cows' milk, because that is not adapted to the very young infant's stomach, and the only thing the nurse can think about is sugar and water for the baby will take that. Babies like anything that is sweet. The appetite for sweet is as natural as to breathe, so the little one takes the sweetened water, now knowing that cane sugar is poison to the infant's stomach, having no ability to defend itself, it is deceived; thinks it is food, and takes it automatically. Pretty soon that cane sugar begins to ferment; it is converted into alcohol and carbonic acid gas, and that little baby's stomach as delicate as gossamer, almost like a cobweb, as delicate as a soap bubble,--this delicate stomach is rapidly distended by the accumulating gas, and the stomach is converted into a regular gas factory by the fermentation; the yeast, the ferment of the sugar, with no gastric juice, you see,--there is no gastric juice there to intercept it. There is yeast in the air, and the yeast very soon gets into the child's mouth, and into its stomach, and the yeast is swallowed along with the sugar, and there is no gastric juice

there to prevent the action of the yeast, to prevent fermentation, and the consequence is fermentation begins, and the accumulating gas swells out the stomach more and more until the ~~little~~ little one cries with the terrible pain. Its stomach is so distended with this carbonic acid gas that it cries with the pain. What does the nurse do? Simply gives the child more sugar and water, or gives it a lump of sugar in a rag for it to munch. And the gas accumulates still more and more until the poor little stomach is distended and blown up like a balloon, and its walls are over-stretched, and lose their natural muscular tenacity, and tone and power, and the little one is damaged for a life-time. There is no question in my mind that this is the thing that happens in numbers and numbers of cases. Sometimes the delicate walls of the stomach will part, and the delicate walls which cover this muscular coat, form a pouch which is like a rupture. Sometimes creates a breach in the abdominal wall, you know; the walls spread, and there is a breach there, a rupture. A breach is often created in the stomach in this same way; a pouch is formed in the stomach, and in the pouch food accumulates, rots, decays; and then the child will have bilious attacks and sick headaches. I have met many, many persons who suffered from sick headaches and had suffered from them from their earliest recollection. I have seen thousands of cases in which there was a dilated stomach, and the stomach had become so dilated in this early life. I do not doubt at allthat in a great number of cases, perhaps in half of all the cases of chronic indigestion, the foundation was laid in child-

hood.

Now here is a child born dyspeptic, that is almost born dyspeptic; at any rate, made dyspeptic, crippled, crippled by carelessness, or the ignorance or stupidity of the nurse, just as much as though that nurse had taken one of its little legs and twisted it out of joint and left it disjointed so that this child is crippled; but it is crippled worse by the injury done to its stomach than as though it had a leg disjointed, or an arm torn off. It might survive that injury to its leg and enjoy good health. But this crippled stomach will affect its whole life. Its whole life is crippled, the whole life is colored, and modified, and the very character is affected. The little one grows up, goes to school, and is nervous and irritable, perhaps a precocious child, but its precocious development is due to the constant irritation of its nervous system; has been brought about by this nervous irritation; and this has produced an abnormal mental state. It loves to study, but it does not have any strength in its limbs, and does not like to run. It does not have any strength; it gets quickly out of breath, and so does not enjoy active sports, but sits down indoors and reads and studies and goes to school, sufferes more or less from headaches and distress of various sorts, but has keen ambition to succeed, and struggles on. It is always pale, always emaciated, ready to take on every little disease that comes along. If there is sore throat, that child has got it; if there are enlarged tonsils, or nasal catarrh, that child will be sure to

have themAll the children's disease that come along, this child will be sure to have because its vital resistance is so low; t has no resistance. By and by there will appear on his neck a little enlarged gland; perhaps lumps formed about its neck. Why?- Because the resistance is so lowered it has no ability to defend itself against the constant assaults of tuberculosis, the tubercle germs which are always in the air; they are in every schoolerom, in every church; they are everywhere; they are in every street car, in every hall, in every lecture hall; these tubercle germs are abundant everywhere, and always on the street in every cloud of dust in summer, in cities and in the country. One of the worst cases of tuberculosis I ever met in my life was of that of a boy of fourteen who came from a West Dakota town where he had been born and brought up on a farm, fourteen miles from any town. That boy got tuberculosis on that farm. There is no place where these germs are not found, and the low resistance lllllll leads to their enterance to the body, and their gowth within the body until these glands become enlarged; and that is the beginning of tuberculosis.

The child who survives all this by and by gets through to manhood perhaps. For a few years, perhaps, the stimulus of the change, the physiologic change, and that period produces an appearance of vigor; but just as soon as this boy enters upon the real duties of life where he has to carry responsibilities, he breaks down ina year or two; he can not bear the strain, so he breaks down. That accounts for the failures of thousands and thousands of the young men who fail in business. Many a man has said to me in my office, earnest, ambitious, intellectual young man has said to me with despair written on

his face, "O, Doctor, if you can only build up my health for me, just give me a healthy start so that I can work a few years and get a competency, so I can attend to my business for a few years I can get ahead; but if I break down now just at the threshhold of my life it will ruin me." I said to one, "What have you done?" "Well, I have been to school." He had been doing business, been going to school and studying, but he was broken down, was a perfect nervous wreck, yet he had not done anything at all to break him down. The doctor told him it was over-work. But he had not done any more work than a healthy man ought to be able to do. I have met scores and scores of such cases. I said, "It is not over-work, Sir; you have got a weak constitution. I am working every day a great deal harder than you ever worked, and it does not break me down; and it is just simply because you have not any constitution. You can not be made well again in a few days. This is not simply a little symptom like a crick in the back, or a toothache, or something else of that kind which can be cured, quickly removed, or may be combated easily by applying fomentations to relieve the pain, or congestion; but this is a constitutional fault. " I saw a lady today in my office, found a similar case, but of another character. I said to this lady, "You are like the man the Bible tells about, you must be born again; you need to be made all over new. You are like the old sinner that had a great many faults, a great many weaknesses. Perhaps he drinks whiskey, perhaps he gets drunk, and is a chronic drunkard; uses tea and coffee; perhaps he is a pickpocket, a burglar, or a highway robber, and lies, swears, and is a generally, all-

round wicked man. Suppose that man would say to somebody, "I say, now, myfriends, I want to stop swearing; I wish you would find some way to cure me of swearing. I do not think it is very polite to swear, but I wish you would try to cure me of swearing." You would not succeed in curing him of such a thing as swearing,--such a man--unless you cured him of the whole lot of other things which he was in the habit of doing, besides. Lying, stealing, drinking, and all the rest of the bad things must be cured also, because if he drinks, he will certainly swear. If he gets drunk he will swear. I remember some years ago I was going to perform an operation on a clergyman, I did not know anything at all of his history except his medical history; but I found out some thing of it. When he got under the anesthetic, he began to swear like a trooper, such horrible oaths, almost scared us out of the operating room. He swore as though he was quite used to it, you know. He didn't stammer a bit in his swearing; and I made up my mind that that man sometime had done something besides preach; had been something besides a preacher, because he did swear most terribly. Now the swearing was in him, don't you see? It is in him; profanity was there inside of him. Sometime in his life he had been addicted to profanity, and his brain had been modified, changed, by that habit of swearing until he was like a man I brought up from Chicago a good many years ago,--old Uncle Joe. He had been a wicked men--he was seventy years old, and he had been going in a bad way all his life. He had been a drunkard for more than forty years. Yes, for sixty years, he had been a drunkard; used tobacco for sixty years. Well, he got into our little mission down there in Chicago, and very suddenly a

a change came over him. He came into the mission and he said he he was tired of this old, wicked life of his, and he would like to change his habits. He got down on his knees, and when he got up, from his knees, he was a changed man, and no mistake. He did not want to drink any more; did not want to smoke any more; did not want to steal any more; he had lost all appetite for tobacco and whiskey, and the th ertire change came over him in less than five minutes; and we took him into our mission, and he cooked the beans, the bean soups there about six months for our penny lunch counter; and finally I brought him up here. He was an expert carpenter, and I set him to work in the carpenter shop. M After he had been working for us a year or two in the carpenter shop--in three weeks af from the time that man had changed about in the mission, he could not endure the odor of tobacco smoke; it made him sick immediately. He lived on vegetarian food, stopped his beefsteak and all those other things too. But one day the foreman of the carpenter shop came to me and said, "Did you say Uncle Joe was a Christian?" "Of course he is. He has been thoroughly reformed. His change was permanent." His brother was a prominent judge in a southern city, and eminent,--an eminent judge in a southern city for many years. This man had had wealthy, influential friends, and they had all tried to help him; he had tried to help himself, but he could not until he was changed, completely transformed. "Well," the foreman said, "I do not believe Uncle Joe is a Christian." I said, "Why not?" "Does a Christian swear?" "No, not generallyp not habitually." Well he said, "Uncle Joe swears." I said, "O, is that possible; I have not heard any swearing for several years." "Yes, he swears." "The

other day he was working on a job, got it all done, was almost all finished, and just as he got it just about finished, a tool slipped and he spoiled the whole thing,--had worked upon it all day, and he swore awfully, swore an awful oath." Well I inquired for him. He came to see me, and I said, "Uncle Joe, how are you getting along?" "First rate, first rate! Doctor, just fine. I never was in such a place as this before. It is all so sweet and clean here. I got to prayer meeting and it does me so much good to hear the people talk and tell what the Lord has done for them. I tell you, Doctor, the Lord helps me every day. I read and study my Bible, and I enjoy life. Doctor, I feel as though I had really got to heaven." XX I said, "Uncle Joe, someone was telling me they heard you swear the other day." "Heard me swear? Why, Doctor, I have not done such a thing in two years, since I was converted. I have never sworn an oath, and I would chop off my hand before I would swear." I looked carefully into that matter, and I made up my mind that Uncle Joe did not swear. It swore itself, so to speak, just as the little boy said. It went off like a percussion cap; he did not really have very much to do with it.

I only mention this, and these other illustrations to show you how our bodies are transformed by habit, and how our brains are changed by habit. Just as I was coming in I met a man who said he was trying to get hold of me, and I said why did not you call me up by telephone? You can call me any time, night or day. I have a telephone right by my ear when I am in bed. I listen to it automatically. He said he guessed he would try that next time. That was all right.

I

I do not want anybody to think they can not get access to me.

Our bodies form habits. Did you ever think of it?-- Whenever you start off to walk you do not stop to think, "Now, I put the right foot forward; then I will put my left foot forward; then put my right foot forward again; then my left foot forward once more." That is what we tell the baby to do. When the baby is learning to walk, you have to teach tohim to do it in that way. When you learned to write, you remember how much pains, and labor and effort it took to write. You got hold of your pencil, and you remember you squeezed it very hard with the thumb and finger, set it going, and you had your whole body wriggling and twisting as you were trying to make the hs the ls the gs, the ss and so on. You wrote with your arm and your shoulders, and your head, almost clear down to your toes; it took the whole body to do that writing. By degrees the thing has got individualized, so the thing writes itself. If anybody askes you to write you name, you do not have to think, "There is the way to make it; there is the t, there is the h, and there is the o, and so on "until you have spelled Thomas; you do not have to do anything of the sort. You simply say, "I want to write my name," and your hand does it. The thing does itself, because it has become automatic. Walking is automatic. It is so with a large part of the processes of life. Nobody could every learn a trade if it was not for this power of automatic action. The carpenter could never become expert. The pianist could never become expert. The pianist would have to stop to think where the notes are located on the keyboard every time. How slow such a process would be. You could never learn

to play rapidly in that way. You never could become expert. The expert is the man who has been able to relegate to the basal centers of his brain and spinal cord a large part of the work. The carpenter does not have any trouble when he aims to hit the nail. He never strikes his thumb. The two hands work together with perfect unison and harmony. The pianist went along doing one thing, then another, then another thing, and the fingers fall naturally into the right places so as to make harmonious sounds; but the man who [illegible], it is a novice shows it right away by his bunglesomeness, his uncouth and bungling way of procedure. It is exactly so with the finer things of the life. This mind, thoughts, especially these finer intellectual operations,--that thing is true of these. A man's very character is modified by the things going on in his stomach. When his stomach is out of sorts, it may affect him in any one of a variety of ways. His abdominal muscles are weak. The blood runs into the abdomen here, so he is at a disadvantage you see, because he only has half as much as he needs in his brain. The consequence is he can not think. He can not make up his mind whether he wants to do a thing, or does not want to do it. He gets a business proposition, aand he can not make up his mind whether he wants to accept it or not, because he can not make his brain operate upon that proposition in such a way as to sum up and to present in an orderly form all the pros and cons in the case. He can only think of one thing at a time. He can not marshal all of his mind at the same time; all the data of the case in such a way as to balance it and to weigh it, and know exactly what

he wants to do, where the greatest weight of the argument is. Well now, that man,--it may be he suffers from insomnia,--can not sleep. Why?--Because this poor stomach of his makes poisons, and the poisons are absorbed into the blood, and the blood irritates the brain, so keeps that brain grinding all night when he ought to be asleep; keeps the mills of the mind going when he ought to be quiet, and resting; and but he is working under unfavorable conditions because the brain is made to work when it is not supplied with blood. The natural stimulus of the brain is the blood. But when the blood recedes in sleep, at the same time the brain is so irritated that the brain cells are wasted; when there is not a proper supply food supply, when there is not a proper energy supply, the brain is rapidly wasted, and that man wakes up in the morning feeling worse than when he went to bed. That is a characteristic of neurasthenics; and that, in my opinion, is the reason for the great distress which the neurasthenics feel in the morning.; because while the mental processes are inactive during sleep, the poisons absorbed from the intestine are left in the blood, are not properly eliminated, and these poisons irritate the brain, while the diminished blood supply does not properly nourish the brain. The oxygen which ought to be brought there is not brought there, because the blood supply is not sufficient; and the blood itself is deficient in oxygen; so the man wakes up in the morning with the brain more exhausted than when he went to sleep. He feels better at night than in the morning because his brain is highly better nourished at night than in the morning. Sleep does not refresh him.

How many times an invalid has said to me, "Yes, I

sleep, but somehow my sleep does not refresh me." Now these poor sufferers very often make the great mistake to eat just before they go to bed at night. I will never forget a man who lived in a neighboring town who came here for treatment, and I found in talking with him that he ate at midnight every night regularly, at midnight; he got up and ate a square meal. His wife had to get up and cook it for him. I asked him how many times a day he ate, and he said, "Four times a day." I said "How do you get that in; how do you manage to get in four meals a day?" His wife was present, and she spoke up and said, "I get up at midnight and serve it to him." This man said he could not sleep unless he had a square meal at midnight. He had gotten into such a state that his brain was so irritated he could not rest, could not sleep. When he would get up at midnight and eat, then the blood vessels of his abdomen here would be enormously dilated, distended with venous blood that would temporarily diminish the amount of blood in his brain, and he would get a little less irritation, a little less stimulation than before, and he would go to ~~sleep~~ bleep, but by and by this food would begin to ferment, poisons get into the blood and irritation of the brain would begin, and that last end of that man was worse than the first. That is the way it is with multitudes of these persons who suffer from insomnia, who eat just before going to bed. They do not know what to do. I met as I was coming in here, a man going into the bath room and he said, "I am going into the bath-room to take my neutral bath." The neutral bath quiets the nerves of the skin; draws the blood into the skin, so uses the skin as the reservoir to relieve

relieve the brain instead of the abdomen. That is a great deal better, a great deal safer. We have three reservoirs into which we can draw the blood from the brain.

There are three reservoirs in the body which will hold the blood withdrawn from the brain, and thus relieve the brain. One is the skin; another is the abdomen; anotther is the muscles. Those three--each one of these is capable of holding half or more than half of all the blood in the body. The skin willhold two-thirds of all the blod in the body; the muscles will hold half of the blood of the body; the abdomen here will hold all the blood in the body; so you see these three reservoirs can be drawn upon.

This man is a dyspeptic, and his whole life, as I said before, is colored by his indigestion, by his morbid, his pathological state; his brain, his mind, and his character are all more or less modified by this morbid condition of his stomach. Perhaps he has a great deal of acid formed in his stomach. That acid formed in his stomach will irritate his nerves; it will irritate the brain, and set up irritation and make the man very irritable and crabbid, and irrascible, so that his friends say, "That man is cross." I remember very well such a man I used to know. A friend of mine was speaking to me the other day, and he said, "That man has got a sting in him." There are many people who seem to hawe stings in them. Youdo not dare touch a wasp, or a hornet. You run off right away when they come near you, because it has a sting. That man was a kind of hornet. There are a lot of such people, who are simply a sort of hornet, because they have bad stomachs.

If we could get into the interior of such a person, and know the real state, we would be sorry for them, because their nerves are strung up to such a tension it makes them cross, and it seems as though something is going to snap; and when some unusual strain comes upon them, something does snap, and there is an explosion. When such a person as this loses his temper, he does some hasty thing which is like the explosion of a percussion cap; it is like dynamite going off. They are not so much to be blamed as their condition, or the condition under which they have lived.

Now I might mention another case. Here is a man who has been brought up, born with a good constitution, perhaps born without any indigestion; but his father is a lawyer, and he says, "We are going to make a lawyer of you, my boy; you must study; improve your time; you must know history; you must know literature; you must know as much as you can possibly know about everything; you must keep track of current events." A lawyer must know a little something of everything besides his own profession; he needs to know something of the medical profession, and of every other profession. He may get a doctor on the stand some time, and wants to be able to know just how to make it uncomfortable for that doctor, how to show him up his ignorance; so he must know a little of everything. The boys studies, and he is ambitious to be all that his father wants him to be. He studies in school and out of school, studies all the time, studies late at nights, and is all the time reading. His father takes a great deal of pride in showing him off--such a smart boy, such a brilliant boy. But at the

time he is twenty, perhaps, he begins to be neurasthenic. His father was raised on a farm, and did not get his education, perhaps until he was twenty. This boy has not had such a chance as his father; he has been raised in the library, and the schoolroom, and the college. He is a brain worker, but he is flat chested, has narrow shoulders and flat shoulders as well as narrow ones. His arms and legs are mere spindling things, poor sorts of extremities, and he has a weazened look about him. If you could see his tongue, you would find it coated. If you should inquire about his digestion you would find that he does not have very much appetite;;very likely he is coaxing his appetite up with mustard, pepper, peppersauce, cayenne, vinegar, horse radish, and everything of that sort to stimulate his appetite, and to give him something that seems like an appetite--a false appetite, something that is not really an appetite, but seems like one, to make his stomach smart, and sting, and tingle, and ~~make~~ deceive him into thinking he has an appetite. These things warm up his stomach. I knew a man who used to take a glass of peppersauce, a wine-glassful of peppersauce to warm up his stomach every day. He said his stomachfelt kind of cold. He thought it would wake things up in his stomach and his liver, and everywhere else. Such things keep right on twisting and smarting, and irritating all the way through. Well, now, that boy is destined to premature death. There is no hope for him unless he simply abandons everything and goes to work to cultivate health.

Ingersol said if he had been present when the world was made, he would have made a suggestion to the Almighty.

His suggestion would have been that health should be made contagious instead of disease. He thought he said something very smart, wonderfully smart, when he said that. But he was not so smart as he thought he was when he was talking about Moses and the good Book; he was very superficial in his reasoning. That seemed like a smart thing, but he did not know what he was talking about. Disease is the thing that you have to cultivate. Health is the real thing that is catching. Health is spontaneous. We canget health for nothing; but we have to pay for disease. My, how hard a man has to work to get a real, good, monumental dyspepsia. The man who wants to get a splendid torpid liver has to work for that thing for twenty years very often, if he did not have the bad luck to have a nurse who gave it to him when he was a baby. He must eat hundreds of turkey dinners, and roast goose, and cranberry sauce, must drink gallons and gallons of whiskey, and must use hogsheads of tobacco, and enormous quantities of things of that sort that it takes to break down a man's constitution, and get him on a good footing of disease. Health you can have for the asking. It comes as freshair; it comes with the water; comes to us through the air we breathe, the water we drink, and comes to us with the food we eat; while disease comes by hard work, by seeking after it. If we say a man wants to get small-pox, he has to go and hunt up somebody else who has got small-pox and rub up against him. He can not get it unless he comes in contact with somebody who already has it. He does not get it going along the street. He does not get it under ordinary conditions; he must go after it. Sometimes somebody brings it to us; but we really have to come

in contact with it. On the other hand, we are in contact with health all the time. We are only subject to disease when we violate the laws of nature, when we come down into the valleys of habit about us, if you please,--there is where we get disease. But the chronic invalid has become a chronic invalid by the long process of training. He has gradually come down from that state of high health, and vigor, and ability to resist disease, has gradually come down from that state until he has gotten down to th the level where disease can prey upon him.

But it takes a man years and years to train himself into that condition where he will be as yellow as saffron, where he will be a skeleton in brains, where he will have a liver two or three times as big as it ought to be; a stomach twice as large as it ought to be, perhaps fallen six inches out of place; his nerves irritated, his whole body in a state of disorder. It is by a long process of tedious training of years and years that the body has gotten into that condition. Under the influence of this dyspeptic stomach, these poisons absorbed into the blood are sifted through and absorbed by every fiber, every cell of the body, so that every cell is a complete wringer. That is the reason why the skin is so unhealthy. That is why the skin of the poor dyspeptic is generally dry, and it is wrinkled very often, and its suppleness has disappeared. It is tough, and tawny, dingy, generally diseased; and very likely he may be subject to eczema or something else.

When that man is brought back to a state of health again, the skin is clear; the skin is supple, and it is elastic. A dyspeptic horse is hide bound, you know. When a farmer goes to buy a horse, he knows whether it is healthy or not; he observes whether the skin is loose or not. If it is loose so he can move it freely

that is a sign of health. But if he finds the horse is hidebound, that is an evidence of disease.

I have met thousands and thousands and thousands of men who were hide-bound in the same sort of way. ~~We know~~ A bald-headed man is hide bound. The bald place upon his scalp is hide-bound at any rate. That is the only reason why he is bald, because of the unhealthy state of his scalp,--it is poor, cold, rheumatic, and he is very likely to have a hide-bound skin. The skin is unhealthy, or he would not be getting rheumatism. Rheumatism would not trouble him if his skin was as healthy as it ought to be. The man who has a dingy skin, the whites of whose eyes are dingy--a dingy sclerotic, as doctors call it,--that man has a dingy brain, a dingy liver; he has a dingy stomach, a dingy spleen. That dirty skin which is so apparent, penetrates through the whole interior of his body. You have sometimes happened along the street passing a meat market, and you have noticed a yellowish looking ox,--that is, I mean the corpse of an ox,--hanging up there, the corpse of an ox, some fragments of him, and you will notice it will look yellow, a great big quarter of the ox, with such a yellow, dingy look. What does that mean?--Jaundice. It means the ox had gallstones, or infectious jaundice, because the whole body is tainted by this bile. When the ox has jaundice the muscles are jaundiced; the brain was jaundiced; the stomach was jaundiced; the kidneys are jaundiced, and the whole animal is ~~[illegible]~~ in that state of jaundice. I have sometimes performed surgical operations on people who had jaundice, and I find those people are just as yellow inside as outside. The membranes are yellow as well as the skin. The entire body is in

a state of poison. So when the body is permeated in this way with these poisons, the effect is to move the influence all th through the body; so the change of the tissues taking place is influenced by it; the growth of the bones is influenced by it; the muscles are influenced by it; every tissue is influenced by those poisons which are circulating in the blood. So the man who grows up with dyspepsia is not the man he ought to be, either physically, mentally, or morally. That man is a different sort of man from what he ought to be. He can not possibly be as good a man as he ought to be. He can not be as clear headed, as straight headed as he ought to be in moral matters any better than he can in physical matters. A man whose head is so stupid and thick that he can not solve a business problem is not prepared to settle a moral problem. That is the reason why you find men sometimes lapsing so suddenly and terribly from the standards they have all their lives maintained, suddenly going down. It is physical decadence--going down until by and by it has got to the point where will no longer is capable of restraining the impulses breaking out within the body, that are clamoring continuously. Their resistance has been kept up for years and years and years, but by and by the impulse becomes so strong it becomes what the experts in mental diseases call "imperative impulse." This is the thing that leads the bank cashier to embezzle now and then; leads the Sunday-school superintendent to do some horrible thing that startles the community,--because of the weakening of the will. When the muscle tone and the nerve tone comes down, by and by the moral tone and the mental tone come down; then you do not

we now have I think the most perfect system of Manual Swedish movements anywhere. We have very expert people, who are thoroughly trained, in charge of the department. Mr. MacFarland has been asked to take charge of the manual Swedish movements for the men, and Miss Larson has charge of the same department for women. They have competent assistantes. These movements consist of a series of so-called "Days' Orders." A day's Order" consists of ten proper movements, and ten breathing movements all separate and different,--20 movements in all. It takes about one minute to execute each one of these movements. The patient is assisted about some of them; some of them he executed himself; he is under observation while going through all these exercises with special reference to the development of the muscles of the abdomen and trunk. In addition to this, there are special manipulations for the abdomen and back.

Our Osteopathic friends have acquired quite a reputation by their manipulations, and people everywhere are submitting themselves to the osteopathic movements, and there is good in it. The objection to it is that it is not as scientific as it ought to be. It consists almost entirely of rubbing the back. The principal part of the manipulation is rubbing of the back, some manipulations of the joints which helps the circulation. It is beneficial, but it is not specifically beneficial to the degree it is claimed to be. It does not correct diphtheria, consumption, and a great number of things that they claim to be able to cure. They are injuring themselves by making excessive claims; but there is good in it; but the manual Swedish movements, however, is a far superior method of manipulation. The osteopaths have gotten hold of some

of the principles and ideas of this System and utilize them, doing some good with their system, could do a great deal, and as a very great number of people have been convinced of the value of natural methods over the old methods of drug medication which are rapidly passing into oblivion. Now we can get all the good that can possibly be gotten from osteopathy in this manual Swedish, and a great deal more. I want you all to get the benefit of this. Here is a person suffering from some digestive disorder which is really due to weak abdominal muscles. Fomentations, radiant heat, sinusoidal electricity, baths of various kinds will relieve that, will give very great relief, but these are mere palliatives, some of them, unless the primary condition which is wrong is corrected; unless these abdominal muscles are strengthened the patient will still remain weak; so the proper thing is for these muscles to be strengthened. You might be here three to six months and be comfortable all the while and when you go home this condition come back again, unless this condition is corrected. These exercises are made aimed specially at the correction of these weaknesses which are almost universal among men who patronize us, and are practically universal among the women. Almost every single patient would be greatly benefited by the manual movements.

I want to tell you about it. There is a little extra charge made for it, but it is a very small charge for the amount of good it is capable of doing. It will amount to fifty cents each day; that will be three dollars a week. Suppose you came here expecting to stay ten weeks. Instead of having to stay ten weeks, if you would take the manual Swedish movements and get through in eight weeks, we would be better pleased, and you

will be the gainer of two weeks' time. You can get in eight weeks with the manual Swedish movements, double the benefit you can get without it, and more. We want to make a more thorough cure. If it were possible for us to give you any more than we are giving you for the money, we should be very glad to do it. This institution has hadd work to keep its head above water from the first day of October to the first of May. During that time this institution has a hard struggle. If we can barely pay expenses, we think we are doing well; generally we do not quite pay expenses from October until June. But we ought to; with the number of people we have here we ought to pay expenses. We could not possibly keep going at all if it was not for the fact that our doctors are satisfied with the salaries of common laborers; and our nurses work for less than that. The nurses receive five dollars a week; the doctors get ten to fifteen dollars a week; one or two get as high as eighteen dollars a week, and they have to board themselves at that; so you can see our institution is carried on in an extremely economical way.

I met a lady in the hall this morning, and she said, "Why, we only pay ordinary hotel rates here, and we get all this good treatment and medical attention thrown in." It certainly costs as much to carry on this institution as it does any hotel which is equipped in an equal way. I hope you will avail yourselves of these manual Swedish movements. I am speaking of it in a public way because the doctors have said there is a little complaint about the extra charge. This little extra charge will be more than returned to you in the time that your stay is shortened. It will cut the expenses off at the other end

because of the benefit you get from it is something which will be permanent. You can go away from here with strong abdominal muscles, and good breathing that will do more for you than anything else that can be accomplished. Here is the proof of that. Here is a business man who has got dyspepsia awfully; he can not digest a thing. That man gets out of his office, away from his office, camps down by the lake somewhere; he takes along a gun, some ammunition and other things, gets into a boat and rows two or three hours a day in that boat chasing ducks, and trying to kill them, to get a chance to shoot them. he goes out duck hunting, and goes rowing, and the rowing strengehens these abdominal muscles, and he comes back again in the course of a month, and says, "I can just digest anything now;" and he can, because of the strengthening of these abdominal muscles which has so restored the vigor of the muscles that he can digest his meals.

I examined a patient today in my office, and found the liver an inch thicker than it ought to be. I gave one of these manual movements for a few moments, and then at the end of five minutes I found that the liver had diminished one-half inch in thickness. These movements are just like wringing the liver, squeezing it, squeezing all the stagnating blood out of it. It is worth your while to take these movements.

Another thing is the fresh, cold air. Don't forget that. I am going to take that up a little more thoroughly in a variety of ways. Last night I put my head out of doors and slept. I have a big bag about so large around made of cloth, one end stuck in the open window, and the other end comes to my

bed. I stuck my head through the hole in the bag, when I went to bed, pulled down the flap, and I was out of doors, and had a nice breeze blowing around my head all the night long. I got out once to answer the telephone, and I got so sleepy I dropped my head back upon the pillow, and forgot to put my head out of doors again. But pretty soon I woke up feeling oppressed somewhat; I reached around and found the bottom of my bag, ~~xi~~ found the slit in it, tucked my head into the slit, and I was out of doors again breathing that fresh, ambrosial air. We are going to arrange that for just as many people as will undertake to try that thing. I want to say to you you wont find any hardship in it at all. It will be delightfully refreshing. You have not got to stick your head out of the window; you bring the window to your head instead. You bring the out-of-doors right into your bed so you can have cold, fresh air to breathe all night long, and at the same time you are warm and comfortable. It gathers right up tight at your neck so the rest of the bed is entirely protected. It keeps your head cool, keeps the blood away from your head, keeps your head cool and refreshed, and keeps your feet and body warm, and there is a gentle, cooling, refreshing breeze around your face all night long.

GYMNASTICS.

Talk by Dr. J. H. Kellogg to doctors assembled at School of Health Convention. Sanitarium Solarium, December 29, 1904, 12:30 M.

Just a word in general about gymnastics. It is one thing to teach gymnastics to a class of vigorous young men who have all their physical powers in good command and have a reasonably good symmetrical development; it is another thing to teach gymnastics to young ladies whose physical development has been neglected; and it is quite another thing to teach gymnastics to adult people who have entirely neglected physical training, and who have acquired numerous deformities and defects, whose muscles are disproportionately developed, who have invariably weak trunks, and perhaps almost immovable chests. It is also one thing to teach gymnastics to a class that you can have under your supervision and training for anywhere from three months to six months or a year, or for years; and it is a very different thing to teach gymnastics to a class that you can have under your training or supervision for a single week, or may be only for a single day.

The Chautauqua lecturer, the school of health teacher must deal with adults, and must do what they have to do, must fulfill their issue in a very short time, a very few hours of instruction; consequently the method must be entirely different, and the exercises must be different, and the whole plan of teaching must be adapted for [illegible] to the particular class you have to deal with. In the first place, you have the most difficult subjects possible. Almost every one has some serious deformity. And in the second place, your opportunity

for teaching them is no emblem comparison with what you have to do that you must first confine your efforts to something which is effective.

The Swedish system of gymnastics is admirably adapted to the symmetrical development of the body. The body is used as the weight and furnishes the power; and so that it is admirably adapted for universal use. It is the most scientific of all systems, without doubt the most complete, the most elaborately worked out, and is applicable to all possible conditions because the body which does the work furnishes the weight and all the needed apparatus/ Very light gymnastics, calisthenics, dumbbells, wands, Indian clubs, free hand exercises, marchings, drills etc., are admirably adapted to young people, to school children, to boys and girls, to those who have average good development. The German gymnastics, which consist almost entirely of over-head work--the greater part of it--is adapted to young men who have a surplus of energy, and who want to develop their physical powers to the highest degree.

But none of these methods are adapted exactly to the use of the Chautauqua teacher, the school of health teacher who wishes to make gymnastics physical training, because we have not time to teach any of these exercises which require a certain amount of skill and dexterity. Vigorous young people have great aptitude in learning physical movements, exercises of various sorts, while old people have very little aptitude. You can teach children to dance certain easy steps in a very few minutes. Children ten years old will learn the polka or schottish steps in a few minutes, while an older person may have to practice for hours to get such a thing as the change-step movement. It is often amusing to see elderly people in our

gymnasium trying to change step. It is a very funny spectacle to see people trying to get in step together. It is simply the lack of aptitude in the control of the muscles, and ability to learn new movements.

Now these facts which I have very briefly presented have been very much in my way in the application of exercise as a curative measure as I want to do it. I found it difficult to get people who knew how to do it, and who would do it correctly. We have sent every year some people to Chautauqua to take the Chautauqua course, and they came back brimful of Chautauqua and classical gymnastics; but when you try to apply classical gymnastics to sick folks, the thing does not work. Those who need it most get discouraged and wont do it; they wont try. The movements are too difficult for them. You find very few old people who will try to take the Indian club exercises. You see the Indian club classes are made up of the younger people. Elderly people are not there, yet those old people are the very ones who need the exercise more than anybody else. Boys and girls, young people, do not need exercise so very much comparatively, but the old man and the old woman is dependent upon exercise of some sort to check the growing-old process. People who are working for longevity--by the way I met an aged person the other day, and asked him how he accounted for his longevity. "Longevity?" says he. "I never had any that I know of; I do not think I ever suffered from that complaint." There are people who do not know why they are getting old; they have more or less longevity, less generally, but they do not know why they are getting old. I should like to tellthem how to keep old age off, how to catch longevity, if you please; they

would be glad enough to do it. There is no question but exercise is the most effective means of delaying old age. Why?--because it stimulates the heart. What does that do?--The heart fills the blood vessels with blood. What does that do? That stretches the contracting arteries, and fills out those little twigs that are withering, becoming obliterated; so they are filled out, flushed with blood once more, and the parts that are getting ready to decay, losing their resistance, are vitalized by being filled with warm, healthy, oxidized blood.

So exercise is absolutely essential to prolong life. People who have lived to great age have all been men who worked. Thomas Parr when he was 130 years old could swim across the swiftest rivers. There was an Indian in this country who lived in the vicinity of Los Angeles who was alive a few years ago, whose age was investigated by the Smithsonian Institution of Washington, and found to be 141 years old; this was proved by records made and kept in the Catholic Church. Many old men knew this man when they were young boys, when they were children, and he was an old man then. That Indian was a hard working man. He went down to the seashore when he was past 140 years old, would take long trips down to the seashore, thirteen or fourteen miles, and pick up great masses of drift wood and carry them home on his shoulder,--a load almost big enough for a mule. Every fall he would go away off into the woods forty or fifty miles away and gather pine nuts for his winter food, for he lived very largely on pine nuts. This man was a laboring man, lived out of doors, and always used his muscles. This is true of all who attain great age. The old man needs a good deal of work, but not very active, violent

work. This consideration has led me to study carefully the subject of exercise to see if I could devise some simple, effective exercises which require no skill, require no great tax upon the memory to remember the details, which require no apparatus except those simple things which are always at hand, and which would strike at the root of the difficulties and deformities from which most adult people are suffering, and from which all sedentary people are more or less suffering.

Now let us see what these deformities are. The most common thing is flat chest. Flat chest means a posterior curvature of the spine. The difficulty is not with the chest; that is purely secondary. The real trouble is with the spine, with the vertebra. This is the most common of all curvatures of the spine. In works on spinal curvature it is not mentioned. I have never found it mentioned in any of these books,--postural posterior curvature of the spine due to muscular weakness. We have angular curvature of the spine due to disease of the vertebrae, but so far as I know there is not a single work on spinal curvature which describes posterior curvature of the spine which comes from the wrong habit of sitting. We have a great deal of attention given to lateral curvature of the spine which comes from wrong positions of sitting. We have scoliosis, single scoliosis and double scoliosis. These lateral curvatures are of far less significance and importance than posterior curvature of the spine, because they produce very much less vital disturbance. We have an enormous amount of attention given to curing curvature of the spine which makes one shoulder higher than the other. A boy or a girl who has that kind of curvature will be made to wear braces, put in plaster casts, put through

put through gymnastic exercises, and a surgeon will be employed to get the low shoulder up. A young woman who has that kind of curvature, deviation of the spine to one side or the other, will go to large expense to get rid of it, when it gets bad enough so the dressmaker can not hide it. When it gets so bad the dressmaker can not hide it any longer, it requires so much padding that she begins to show the deformities seriously in spite of anything she can do, then she will go to great expense and trouble to have it cured. That is a thrust against the young ladies, you see. You have got to say something to make people ashamed of their deformities, or else they must ~~must~~ will not pay any attention to it, and will not remember it.

Now this posterior curvature of the spine that I am speaking about, which is overlooked and neglected by every writer on that subject, is of far greater importance than these lateral curvatures. I have noted three species of this posterior spinal curvature. I have numbered them 1, 2, and 3. The first form is simple curvature of the upper part of the spine. The effect of that is simply to cause the head to drop forward in this way. It is mostly in the neck, so that the head drops forward in this manner. There is a double curve, a slight convexity in the upper part, then a strong forward curve in the central portion, then another curve at the bottom. The greater part of the dorsal curve is concave in the back. In some very sturdy people, the spine is straight in the cervical and upper dorsal region, then slightly curves forward; but in general there is convexity of the upper part, and concavity of the central portion, then another convexity of the lower portion;--two posterior convexities, and a central

posterior concavity. Of course the anterior curve is just the opposite of this. In the first form of spinal curvature, we have increased convexity of the upper part of the spine. That increased convexity produces flattened chest of course. You can not make ex people appreciate that until you show it to them; and you have to exaggerate it in demonstrating it. I generally tell them the story of a young woman who came to me who thought she was going to have consumption because she did not have any chest. I made her straighten up and found she had a splendid chest. I told her she was carrying her chest behind instead of in front where it belongs. On the whole the spine is convex forward in this way. There is a slight curve at the bottom. How is this anterior convexity maintained?-- By the muscles. It is like the string of a bow. When the muscles are tight it throws the chest forward, but when these muscles become relaxed, it naturally goes back the other way, you see.

First there is a slight curvature at the top, and the first part is somewhat increased so the curve is accentuated. In the second form the whole back is curved backward. The lumbar curve, concavity, is lost entirely. You will find such patients have a lotk of brown spots along the center of the back, and a little row of corns between them, I tell them corns because that is offensive, and scares them. One young lady I could not make straighten up at all, had her back in that way all the while. When I talked to her about it she paid no attention to it. She said, "O, I am all right." I could not get her to think of it at all, could not get her to pay any attention to it. I talked to her about the spine being all

out of shape, and it did not have any effect upon her at all. She said, "O, the dressmaker will fix that all right." So I finally made a careful examination, and I found three brown spots right along this region. She simply wore her spinous processes down rubbing the skin against a chair until it had callousedbecome thickened. I said to her doctor; Why look here; this young lady has got corns on her back." Just the moment I told her she had got corns on her back she streightened up right away. She could feel the callous there herrself. She straightened right up and kept straight after that. When she found out that she had got corns on her back from rubbing the back against the chair, she straightened right up. That is the simple form.

Another form is an increase of the sacral curve. I do not know but you might almost say a straightening of the sacral curve. Of course the whole spine is curved, that is is the upper part is curved, also the lower part, but the hips are carried forward. The extreme curvature of the upper part of the spine makes the head drop forward so; that is simply round shoulders and flat chest. When the central part is involved, it is acquired by sitting in this position, with the chest and hips both forward. But when the curvature is confined to the lower part, the hips are forward. Such people think they are very straight. They have the peculiarity that they can walk on their heels. When the heels strike first, it is because the hips are forward. But when the hips are forward that brings the heel down first necessarily. Just the moment you get the chest forward, the whole problem of walking is solved. These different positions are really due to the

curve in the spine. That is the reason why a person walks with the hips forward--he has spinal curvature. The reason why the hips are carried forward, and the chest back in this way, is because there is an abnormal posterior curvature of the lower part of the spine. When a person walks with hips and chest both forward, which is not at all uncommon; you see a great many people going around that way; they have a pusillanimous look about them. You can not help but feel sorry for them. That is the attitude of the sneak thief. He can not help but assume that attitude. There is a natural posterior curvature at the top and bottom of the spine. What I am speaking about is simply an exaggeration of the natural curve. The straightening comes from the straightening of the central part of the spine, you see. The obliteration of the concavity of the spine throws the end of the spine further forward. That is what brings the hips forward. The lower end of the spine is thrown farther forward, but the curve seems to be straightened, as you see, due to the obliteration of the concavity of the lumbar region; but the lower end of the spine is thrown farther forward. The curve itself may be straightened, but the posterior convexity is increased when you take into consideration it is swallowed up, neutralized by the concavity of the lumbar region, so it does not appear on a line. The one neutralizes the other. It is like two sounds making a silence. Increased posterior curvature of the sacral region is neutralized, obliterated in appearance by the lessening of the concavity of the lumbar region. Here is the sacral curvature down here. If the hips went forward in this way you see, the curvature would

be increased wouldn't it? You see the curvature would be increased don't you? Here is the lumbar region; here is the sacral region. That is the normal sacral curve. If the hips go forward that increases that curve; but if the lumbar region comes forward at the same time, the apparent convexity may be diminished, although there is actually an increase of the posterior curve. When the posterior curvature increases in the upper part of the spine, then the head simply drops forward. When the concavity of the posterior curvature is in the central part of the spine it may be only a lessening of the lumbar curve and not an actual convexity, but it is a backward movement of the central part of the spine; then the hips and chest are both carried forward.

It is not so necessary to differentiate these because the treatment is just the same. It is not necessary only in relation to the correction of the person's attitude in sitting and standing. These people who have the central curvature have this kind, as I said, and they got it from sitting this way in a chair. They are very often business men, men who have acquired the habit of sitting in this way. I was talking to a man who was sitting this way, and he says, "O, yes; I understand now; you mean I am sitting on myself." So he straightened up when he got into his head the idea that he had been sitting on himself; he did not propose to be sat down on by anybody, not even by himself; so he straightened up.

These posterior spinal curvatures are of tremendous importance because, in the first place, they compress the chest in this sort of attitude--spinal curvature of the first degree. It compresses the chest, the shoulders drop forward and interfere with the normal movements of the chest. They

not only interfere, but make it practically impossible to breathe. I wish you would all take this position, sit back in the chair, let the chest drop forward. Now, while your arms are hanging in this way, try to take a deep breath and raise the chest high. You see you can not possibly do it. Consequently any one who has the habit of sitting in this position every little while, you will see a boy in school or a business man bends back in this way; takes a deep breath; it is involuntary, automatic; he is half asphyxiated, and he can not help it; he does it without any thought; nature does it; it does itself. This is an indication of the evil that comes from this kind of spinal curvature.

I might mention right here that I find it important to present this subject from the standpoint of the spine, of spinal curvature for two reasons: First, because it is a new standpoint, and people have heard a great deal about weak chests, flat chests, and as long as they think about that it is an old story; but when you talk about crooks in their back, they become more interested. You have got curvature of the spine. People generally have a horror of spinal curvature. They think of hump-backs and all kinds of deformities, so they are anxious to get rid of that curvature of the spine. If a person thinks of the spine when they undertake to correct it, then the mind is fixed upon the muscles which can correct it; but so long as their thought is about the chest, their mind is in the wrong place. The fault is really behind. The reason why the chest is concave is because the spine is bent back. If the muscles of the spine should be contracted, then the convexity is restored, the chest is forced forward by the muscles of the back,

ag the spine is the thing to talk about; not the chest at all. But I speak of it here incidentally.

The consequence of this first degree of spinal curvature is a flat thorax, and a drooping chin. That spoils a person's looks. See how pusillanimous I look now. I want you to forget it; please do not carry it in mind. I do not want you to carry around with you any such idea of me as that. Now the chest is confined in such a way it can not expand, the person can not possibly take a deep breath if he wants to; if you want to take a deep breath, the first thing you have to do is to raise the shoulders. Ask a lady to take a deep breath, and the first thing she does is to try to get a breath by pulling the shoulders off the chest. The only way you can really get a deep breath is by pulling the shoulders back. You see that interferes with respiration; that is an important thing, and especially interferes with the respiration, with the apices of the lungs. An eminent physiologist has shown that no part of the lung moves unless the wall adjacent to that part of the lung moves. In order that the whole lung should be expanded, the whole chest wall should move. That point we have come to ~~xxxxxx~~ question. But you can move the upper part of the chest wall so that the upper part of the lungs is filled, and the air cells of that part of the lungs become filled with carbonic acid gas; the oxygen is all extracted, and the cells of that part of the chest are asphyxiated and becoming asphyxiated they have lost their power of resistance, and the bacteria which are finding their way in through the bronchial glands--most people who are affected with tuberculosis get it not through the dust which they inhale, but from the germs which they swallow. Von Behring has shown that very conclu-

sively; it is the germs you swallow. You swallow them with your sputum, and some of them get into the glands. There is very poor chance for germs to get down into the lungs. The lungs are lined with phagocytes which eat the germs up, and the epithelium eats the germs up all the while; but the germs that are swallowed with the sputum get into the glands, move from one place to another, and finally get into the bronchial glands and from there work out into the lungs. If you have pleurisy, some of the cells have been weakened, become constricted by adhesions, become compressed, and there is where the tubercular process will be developed. If you had pneumonia, the same thing will happen there. If you have had a bad cold, which perhaps left the lungs in a congested condition, the tubercles will develop in that part. If there is some part of the lung that is not used, that is the place where tubercular germs will be carried and allowed to develop; so these flat chested people sitting quietly, not using every part of their lungs, have tuberculosis almost invariably in the apices. The cure for that is expansion of every part of the lung. So much emphasis has been put on abdominal breathing that many people have got the idea that we do not use the upper part of the lungs at all. That is entirely a mistake. Abdominal breathing is a pure misnomer. We must have the whole of the lungs move; so we must see that the weight of the shoulders is off the chest in such a way that the chest can expand.

The greatest of all evils, because it is acting all the time, is the influence of this position, this spinal curvature which lowers the chest upon the portal circulation. When the chest is lowered in this way the effect is to lessen

the distance between the lower end of the sternum and the pubes, between the thorax and the pelvis. The consequence is that the muscles which connect the thorax,--the things I am telling you are what I am telling my patients every single day. I have to teach every patient because I have not anybody else who will teach them; so I have to teach every patient in to effice this thing. I know these things are of paramount importance. I have had to teach patients; they wont get well unless I do. We must get these two things clearly fixed in our minds,--the bad effect of this position upon the respiration, and the bad effect upon the portal circulation--what affects one affects the other. When the chest is approximated to the pelvis the effect is to relax the abdominal muscles, all these abdominal muscles. The abdominal muscles become relaxed, and what happens then? The intraabdominal pressure is taken off. Yesterday in the operating room when the abdomen was opened we saw at once great veins filling up with blood; they were distended with blood, looked like varicose veins. They were completely relaxed. Why?--Because the pressure was gone. The intra-abdominal pressure was gone. There is pressure maintained within the abdomen constantly. How? The abdominal muscles have a certain tone or tension. The intestines fill up with gas until these muscles are strained out to such a point that their tone or tention is just sufficient to balance the pressure within. The abdomen fills up with gas until the abdomen is filled or until there is a balance of tension between the abdominal muscles and the gas in the intestines, and the vessels are compressed between the two you see. Here are the abdominal muscles on one side, and the gas in the

intestines on the other side, and the vessels are compressed between the two you see. When we open the abdomen we found very soon the intestines begin to fill up with gas; and sometimes before I get through with such an operation there is so much gas in the intestines it is very difficult to deal with the gas.

One of the first cases of hernia I operated upon there was quite a little of the intestine cut--it was strangulated hernia,--and there were several feet of the intestine cut, and when I opened the sack the intestine began to work out more and more; I tried to put it back in my manipulations, but it kept coming out until ten or twelve feet of the intestine came out. That ten or twelve feet of intestine filled up with gas so enormously that in a little while it was bigger than the man was before the operation began. It was simply enormous. I had a terrible time getting that intestine back. I had to work it back inch by inch, hold it, make compression upon the mass greater than the compression upon the abdomen to allow it to be anorbed, and it took me about an hour to force that gas back into the blood. I might have punctured the intestine and let the gas out, but I was afraid to. We did not know much about intestinal surgery at that time. I will never forget how rapidly the gas developed when the pressure was taken off.

Yesterday I opened the abdomen and removed a large tumor. Today in the examination of that patient, I will find the abdomen is almost as distended as before the tumor was removed. We have to put on a very tight bandage and compress to take the place of the tumor. Doctors found out many years ago that when they tapped patients with dropsy, when they

drew off the fluid of dropsy, they must put on a binder to follow up the bandage, not to force the water out, but to fill up the pressure. Another reason is to keep the patient from fainting away; and they must not take it all out the first time. If they took it all out at once, blood would run into the abdomen in such enormous quantity that the patient would collapse. It is dangerous to draw too large a quantity of fluid from the abdomen at one time because thepatient may collapse; but you know when it is;--simply the blood running into the portal circulation which is capable of holding all the blood in the body; so when you take off all the intra-abdominal pressure there is nothing to hinder those vessels from becoming distended, and all the blood in the body from running in.

When a patient lets the chest down in this way by letting the head hang over, it relaxes the abdominal muscles, the intra-abdominal pressure is removed, and the blood runs into the abdomen so the patient's brain is starved, his heart is weakened, his nerve centers are starved, he gets cold feet and hands and empty head, and he can not work. After he has been working away a while in that way, he just throws his arms up, stretches as far as he possibly can. He takes a great deep breath, contracts these abdominal muscles forcibly, drives the blood back into his head, and then he can resume work again. Twenty years ago I knew a school teacher who told me he got so he could not think of anything in class, but he had to leave the room, go in to another room and lie down on the floor a little while; then his head was clear as a bell, and he could think again all right.

I mention these simple things because these are things we find in everybody's experience, and people recognize them as things that are in their experience, and they have a demonstration in their own experience of the truth of what we are telling them. Let a man ask the average doctor what makes him stretch. He does not know. A doctor can not tell why he stretches. This is the only explanation there is of it. It is not simply to expand the lungs. The doctor says, "You take a deep breath." That is not the reason. The man feels better because he feels repaired. He simply drives the blood back into his head where he can use it. You can not run a water wheel without water; and the blood is the stream the water that runs the human mill. You can see the wheels going. Now the blood is down here in this bog, in this stagnant pool, the portal circulation, and it can not be utilized for the brain. You must let people see that it pays, that there is something in it to sit up straight; that it is worth fortunes to them to be able to keep this blood out of the abdomen and in their head where it will be doing good. If the average business man knew that the reason why he could not concentrate his mind on the letter, that the reason why he can not decide a business proposition, can not settle in his mind what he wants to do, why he can not settle his mind or decide whether he wants to do this thing or the other thing,--the real psychological reason is that he is not able to [illegible] common things in his mind all at one time, all the data pertaining to a case. He can not array all the arguments and see them all at once. He can only see one side at a time. He looks at this side, looks at that

side, but can not hold one up beside the other and see which is the longer or shorter. His brain is in such a weak state he can not retain the pictures in his mind long enough to get it all together, to get a complete picture in his mind all at once so he can size it up. It is necessary to have more intensive mental effort. That intensive effort of the mind can be made if he can only get enough fresh blood in his head. So long as the blood is stagnating down here in the portal circulation, doing it no good, it is doing his stomach and liver harm, it is asphyxiating everything it comes in contact with because it is filled with carbonic acid gas. That is the injury of a posterior curvature of the upper part of the spine.

What does curvature of the central portion of the spine do? It does just the same thing. Curvature of the lower part of the spine does exactly the same thing, only the trouble is simply increased. So you see all these forms of spinal curvature produce the same sort of mischief; they are really different phases of the same malady, and what is the malady?--The malady is weakness of the spinal muscles. When the spinal muscles are weak, that results in weakness of the abdominal muscles, because they are so relaxed they can not be used. They are not of any use. When one is sitting breathing in that way he is not using the abdominal muscles at all; they are thrown out of the way. When an arm is put in a sling you are not using it, so when your abdominal muscles are not in use, the muscles waste away, the abdominal muscles waste away until they get to be have by and by a flaccid, limp feeling like a piece of cloth. If your arm is carried in a sling you get sclerosis, rigidity, and you are liable to get

ankylosis so when you have been carrying it in a sling for three or four weeks, you can not straighten it out. [illegible] keep What happens to the elbow happens to the vertebrae of the lumbar region. Suppose you ask an old man to touch the floor with his fingers, and he can not do it. What is the trouble?--He has ankylosis of his lumbar vertebrae. That is what has happened to that man. He has got ankylosis from sitting in this position. A stiff back always means weak abdominal muscles, always means weak abdominal muscles. Why?--Why, because the back being stiff is held erect by the stiffness of the spine, and it does not require activity of the muscles at all, so these muscles are in a sling. This position relaxes the muscles, causes rigidity of the back, the spinal vertebrae become firmly fixed together, the ligaments lose their elasticity so they can not be stretched, and the muscles lose the power to bend the spine, so we see most old people have this stiff condition of the spine, and they can not bend over.

Somebody asked a famous French general once how it was that he had such an erect carriage. He replied that it was because he bent over and touched the floor with his fingers thirty times every day. A man does not need to be bent over with age. We had an old gentleman here at the Sanitarium a couple of weeks ago, eighty-three years old, just as straight as an arrow. He got up a set of exercises of his own. We are going to have his photograph taken when he comes back. He has got a system of his own; he has invented a system of gymnastics which brings every one of his muscles into play, and he goes through that system every morning of his life, and has

done so since he was sixty-three years old. Since that time he has taken a cold bath every morning of his life, and taken these gymnastics. Now this French general who had such an erect carriage at the advanced age of seventy years, said, "Every morning of my life I bend over and pick up a pin from the floor without bending my knees." That is the way he did itt. If he had gotten this rigidity of the spine so he could not do that, what else would he have had with it?--Weak abdominal muscles. What would that have done for them? What would that have done for the man? This portal congestion would result; And what would be the result of this portal congestion?--It would have interfered with his liver action, with his stomach digestion. The poison-destroying power of the liver would have been lessened, the toxins would have increased in his body, the digestive power of the stomach would have been diminished, he would have had auto-intoxication, arterio-sclerosis and old age would come on at a much earlier day you see; but by keeping his spine flexible, keeping the abdominal muscles strong, taut, he kept the portal circulation empty, and the blood moving through freely, so held off old age, captured longevity; he had longevity. It is a good disease to capture. We might go on talking about this for a long time because there is an immense deal in it, but so much for posterior deformities of the spine.

Now the lateral curvatures which are really of very small consequence. It makes very little difference really to the health whether one shoulder or the another is up half an inch. It is purely a matter of aesthetics; but it is a far more serious matter from an aesthetic standpoint to have the

chin hanging down, hanging out from the fuse in this way than it is to have one shoulder higher than the other. Just think of the amount of money and genius that has been spent in trying to get up devices to correct lateral curvature of the spine, and almost nothing at all given to this posterior curvature of the spine which is of so much greater importance. It is not chest development, it is back development. These lateral curvatures,--you may have a curvature to the right, or to the left, or in the dorsal region, or in the lumbar region, or it may be curvatures of the right dorsal region, or to the left lumbar region, or vice versa, and people are more or less tortured to get over these curvatures. It is a good thing to be able to know how to make these examples. It is a good thing when you are going to lecture on this subject, to get people to come up and be examined to see if they have spinal curvature, and organize a class of spinal gymnastics. Half the audience, you will find, have crooks in their back. I remember very well a mother came to me fifteen years ago at the first school of health I ever taught at Chautauqua, and I told her just what I am telling you here, and I have added a few ideas since that time; I had them come up to be examined; had them stand up in a line, and I examined them all right on the platform; have them face the wall and you can just pick them out, and you can stop them right off quick, and make them come up to see you afterwards. I remember a mother and daughter who came up at Petoskey; the daughter had a terribly flat chest. The mother said, "Doctor, you see just how we are; we are both flat chested; my daughter has inherited it from me, you see; so I

do not know whether you can do anything for us or not." I straightened the young lady up in a short time. Then the mother said she would be glad to have me straighten her up. This daughter did not inherit this trait; she imitated it; did not inherit it at all any more than a man who came here twenty-seven or twenty-eight years ago with consumption. He had a bronchial trouble, and not consumption at all. He said, "Doctor, I know I have got consumption. My wife died of it, and I am sure I have inherited consumption from my wife." This was a case of heredity of a different sort. I demonstrated the matter.

I remember another case in which a young lady medical student from Chicago; her mother brought her here; she was very tall. She was afraid she was going to have consumption. Her mother said, "Doctor, I know it is not a bit of use; she was always that way ever since she was a little girl; but I kept right on and by and by I said, "Stand up." You ought to have seen that mother open her eyes. "Why, Doctor," she said, "I did not know my daughter was such a fine looking woman." She did not know how tall she was. She did not know what a stately figure she had. I like to tell that story because it makes people up and they begin to think about their boys and girls, and how much better looking they are. They recognize that you look like another person altogether. We have got to make this thing real so that they will see that there is something in it. Nobody can sit up straight unless he takes pains to do it. He has got to think about it. But we will talk about that later.

Now, here are several deformities that we have spoken about. Posterior curvature of the spine and lateral

curvature of the spine. Posterior curvature we found to be of the greatest importance, and more serious, and because it entails weakness of the muscles of the waist and trunk, and out of that grew other troubles that are exceedingly serious. I think we should aim at these things in our teaching of gymnastics or physical culture at Chautauquas.

First, CORRECTIVE EXERCISES. That is the most important thing, because you can accomplish more in a short time by means of corrective exercises than you can by anything else. You have not time to teach the people the art of dancing, or gymnastics in the gymnasium, or clubs, or dumbbells; but you can teach them a few important things. First is corrective exercises. Second, exercises for expanding the chest so as to increase breathing power. That is really curative too. ~~THEN~~ A word further about corrective exercises. Tell in what way correct sitting, correct standing, correct walking--we will teach them how to run, and we will correct their deformities, posterior deformities and lateral deformities of the spine. Correct sitting; that is all important. Correct standing; correct walking, how to run. It is interesting to tell them that,--how to run easily, how to run long distances without getting out of breath. That is a good thing to learn, to know how to do that. We must teach them correct attitudes about their work, all the different attitudes about housework, and show them how to do it, not simply tell them how to do it, but show them how to sweep gymnastically, how to knead bread gymnastically, how to wash so as to get splendid gymnastic exercises, how to pick up things around the house, and to scrub

walls and windows and do it so it will be gymnastics and play instead of work, and tedium, and drudgery. Teach a farmer how to chop, to saw, to use his plane, to hammer, how to use his ax and his scythe, and his spade; how to use all those things gymnastically. When the farmer boy learns that there is a foundation for it, for the use of these tools, and goes at it right, he finds there is fun in it, and all the time he is using his ax he will be developing his vigor. All the time he is using his spade or scythe, or cradle, or pitchfork, he will be developing a splendid, manly vigor.

The whole of this work ~~at~~ ought to be looking toward improvement. Corrective exercises, them,--chest expanding exercises, ~~waist expanding exercises~~, waist-developing exercises; resistive or work exercises, Under the head of work exercises we might have a variety of resistive and stretching exercises, walking, riding, rowing, picycle riding, and various sorts of exercises which involve work, muscular work. We will study those different kinds of exercises; and I think that all that needs to be accomplished can be accomplished in a very few exercises, and very simple ones.

We will begin with corrective exercises in any course of gymnastics so that your subjects will have correct positions in all exercises which they take up,for correct position is fundamental. We must have a correct position to start with; otherwise all your exercises will be educating you and molding your body into a wrong shape. I might say I have three series of simple exercises largely for corrective purposes, but for chest expansion and waist development:--lying, in which you use the floor; sitting in a chair, and the wall, you can say.

Why do we need apparatus? The only need for apparatus in gymnastics is to serve as assistants in exercise, but in the use of apparatus, you require a trainer. You have to have a teacher in the use of the Swedish gymnastics. I have sought to find something by which we can use the floor as a teacher, the chair as a trainer, and the wall as a trainer. I began at this about sixteen or seventeen years ago, and I have got some few points which seem to me to be practical and simple and good, and I have got the thing down in tim a nutshell. So there are a few things which I think are of really practicalk value.

We will begin with the chair. The first thing to do is to get a correct position in sitting. We will suppose we are all out of shape, and we want to get ourselves in to position. Hips firm. Or hands upon hips. People do not understand these gymnastic names, so it is better to use simple names. Hands upon hips, thumbs back, forearms straight. Bring your shoulders up. Carry thumbs back as far as you can. Look up at the ceiling. Keep looking up until you look straight up; further back, carry your head still farther back, until you look right straight at the ceiling; press very hard with your thumbs, just as hard as you can, and keep holding hard with your thumbs, draw down your chin, and there you are. You have got the chest out; that is the whole thing that you want to do--to get the chest out. You can not help getting the chest out in that way. Starting from a good position we can accomplish more next time. Put emphasis on the last movement so as to get back as far as possible. Hold the thumbs hard all the time, draw the chin down xxkx real well. That pushes the chest up.

When you say "Rest" to your audience, you set them a good example, and pretty soon they will get ashamed of themselves and for letting their chests go down first thing. Perhaps you might incidentally remark you wish they might see how they look. Say how weak and ridiculous it is; and more, it rather hurts your spine when you settle down that way because you are used to sitting straight. That is the first exercise, and the purpose is to get the chest out.

2. Hands upon hips, carry thumbs wellback. Look up to ceiling. Keep looking up at ceiling while bending forward at hips. It is necessary to say that for if you do not they will have their heads down. Press hard with the thumbs, slowly rise, keep the head looking at ceiling all the time. Now you are looking right straight at the ceiling. Draw the chin in, pressing hard with the thumbs, and draw the chin in hard. There you are. That brings you up in splendid position. You must be able to do that at once without spending weeks and weeks, or hours and hours drilling. This will do it at once. I did not find that thing a complete success. I used to stand behind the patient to push on the back while they came up. They would come up with the hump still there. The thing is to get rid of the hump by putting the patient in an attitude where he will be right. The weight of the head gets back farther, and that contracts the muscles. All the muscles of the spine are set, and the chest comes out instantly. You are talking about a movement. That pm forces the patient to come in the right position without saying anything at all about the chest. When you get them up in position, say, "Why, what splendid chests you have."

3. A third exercise which is very excellent for getting into correct position--what you want to do is to get the chest wellout is to,--I think we will take it last in this case. Get your chair close up to the wall with face against the wall, hands on hips. Now the idea is to bend back until you touch the chair, thencome forward. Bend back until you touch the chair with your head, press hard with the thumbs, pull down your chin, come up to proper position. Sit forward on the front edge of the chair. With your toes against the wall you can not fall. Count four as you go backward, and four when coming forward.

4. Turn your chairs around. There is one more exercise in this series of four. Sit well forward in the chair with feet square on the floor, grasp the seat of the chair lightly, head backward best. Look up at ceiling, grasp chair firmly, push chest forward just as far as you can while holding on to the chair. Spread the feet a little, take hold of the back of the chair, throw the head back, push the chest forward as far as you possibly can hanging on to the chair with the hands. This is holding, chest lifting. That pulls the chest and shoulders back, you see. The order in which you will take this series will be with hands holding front of chair holding chest forward, look up at ceiling, push chest out, draw down the chin. You have got to do something to mechanically force patient to right position. A very good plan is to tell the patient to hold on to the chair and try to slide forward while holding himself down or back. You see that brings you right up at once. Try to sit forward while holding yourself here. In this way you can force the chest right out in a person

who is really flat chested. Hands right there; draw chin in hard, now put your hands upon hips. Now you have got it right. Now take a deep breath. Now you are ready for the second movement which is, head backward, look up at ceiling, head backward bending, press hard with thumbs, bring chin down.

Holding this position, with the feet separated, head backward bending, forward bend at hips keeping looking up backward, raise eyes to ceiling, press hard with thumbs, draw chin down.

The best way to do this is simply to have half the audience reversetheir chairs and have those in opposite chairs put their feet together. Put the toes together to keep the feet from slipping. The longer you are the more room you want. Sit just on the edge of the chair. Now, hands on hips, look up at ceiling, bend backward, touch chair with head, raise eyes to ceiling, press hard with thumbs, draw down chin. That is good exercise. The idea is to force that posterior curvature forward. At the end of the class say, "Hold your positions, hold your thumbs hard, and rise. Keep your chest up and out, and arms by the side. What splendid looking folks you are."

V-1-8-5--7.