

GYMNASIUM LECTURE, Jan. 10, 1901.

Chronic Intestinal Indigestion. (Pt. 1.)

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LADIES and Gentlemen : I have for my subject to-night a very plain and practical subject, Slow Stomachs. A French writer has recently spoken of the dilated stomach as being a "slow stomach," comparing it to the inactivity of the bowels in which there is an abnormal slowness; and, in doing this, he has accomplished something that had not been done before: he has forcibly called attention to the fact that the conditions of the bowels and stomach are practically the same,-- that when there is a slow state of the stomach there is also a slow state of the bowels.

I am going to try to make it clear to you to-night why the newspapers are filled with advertisements of laxative medicines and mineral springs. The great majority of people who visit mineral springs go there because of the supposed laxative properties of the water,-- because there is a sulphate of magnesia or some other laxative element in the water. There is probably no class of medicine which has such an enormous sale as laxative medicines, such as "after-dinner pills," "liver-tonics," Pierce's Pleasant Purgative Pellets" ("Perpendicular Purging Powder" some one says the three P's stand for), castor oil, Castoria, and all sorts of preparations and drugs that are supposed to be capable of moving the bowels or exciting intestinal activity. But these drugs, as everybody knows, do not cure intestinal inactivity or a slow stomach, for there is nobody who has suffered from this trouble who has not tried a great many different drug-remedies and have gone through the whole category from scammony or gamboge to Castoria or Cascara Sagrada.

Now there is a reason why these remedies do not cure. We will take this illustration: Here is a horse who is pulling a load,--he gets tired and don't go; you get out your whip and lay on the lash, and your horse goes, and you think, "What a beautiful thing that whip is!" You are glad you have it ready. You simply touch the horse with the whip and it seems to put new life into him every time you touch him. See how he prances round! He acts as though he had had a whole night's rest or been out in the meadow for a while. But after you apply the whip regularly for a week or two, the horse don't pay much attention to it,--he seems rather to enjoy it and to long for the titillation of the whiplash on his back somewhere --he seems to feel not quite at home without it. I remember having an experience of that kind about thirty-five years ago: I was going to take a trip up into the North-woods for my health, and a friend was going with me. So we borrowed a horse and wagon to take a hundred mile trip up into the North-woods. We started out, expecting to have a fine time. We thought we would let our horse go slow at first, as we had heard that that was the better way while on a long journey. But after a while we wanted to go faster, and we suggested to our horse that it would be agreeable to us if he would hasten his speed, but he didn't take the hint,--he didn't move any faster. We didn't have any whip on board, but we soon made one out of a long sapling which we cut by the side of the road, but we found that that didn't do any good. This horse was evidently accustomed to whipping and rather enjoyed the sapling, and he could not be induced to go off a walk. We were finally compelled to resort to a cruel device, in order to reach our destination in season: We cut a stout stick and put a pin in the end of it, and that was the only thing that did our horse any good. He was a fat, plump, lazy horse, and he had evidently found out how to save his strength and energy,--

but we reached our appointment in time .

That horse represents very well the condition of many people's stomachs: they have been stimulated and stimulated and whipped. Some time ago a man from Grand Rapids who came here for treatment; he said to me, "Now doctor, I have come down here for just one thing: my bowels are absolutely inactive, and I have not taken anything that has had any effect upon me at all. You will think I am telling you a big story, but I took a half a pound of salts one day last week, but it had no more effect upon me than if I had swallowed so much potatoes; and now I will tell you how I got into this fix: I am now seventy years old, and have been accustomed to taking salts since I was quite young: when I was a boy, my mother used to range all the family in a row on each Friday and make each of us take a dose of salts. On Saturday we took our bath; so we were thus thoroughly cleansed outside and inside and ready for Sunday morning." So this gentleman had been put through that course until he had gotten into the habit of taking salts, and when he was a young man and left home, he found that he was inextricably entangled by this habit of taking salts,--he could not get away from it, and he couldn't get along without it. He then had to take salts three times a week; one dose a week wasn't enough; as soon as he recovered from one dose he had to take another, constantly increasing the doses. And so he went through life taking salts and increasing the doses. He was compelled to subsist largely upon salts until he got to a point where salts didn't affect him, and finally he took other drugs in addition to salts.

The human body becomes accustomed itself to ~~irritating~~ irritants in a most remarkable way. A gentleman came here some time ago

with a chronic inflammation of the knee, and I noticed while examining the knee that there were brown spots an inch in diameter, about the knee. Said I, "You have been blistered?" "I should think I had," he said: "every kind of blister has been used: the doctor used mustard blisters, then he gave me fly blisters, then croton oil modified, and finally they bathed my knee with pure croton oil; and the last time they tried it, it didn't affect me any more than pouring on water would have done." I have had half a dozen cases of that kind. The system responds and produces a blister; if it did not respond, there would be no blister. That is one way to find out whether a man is dead or not--put on a mustard plaster, and if you can't raise a blister, the man is dead. This is found to be rather a valuable method in certain cases.

Now the same thing is true outside of the body that is true of the outside: The application of irritants or narcotics inside of the body gradually establishes a tolerance for them,--for instance, a person cannot sleep: he takes a grain of morphia, and he sleeps. At the end of a week he takes a quarter of a grain more than before, and so on until he can take several grains--sometimes even as high as a hundred grains,--I heard of one case in which a lady swallowed an ounce-bottle of morphia in a day; this lady took a half an ounce of morphia in the morning and a half an ounce in the evening, of pure morphia--and that produced slight stupidity, and without any, other apparent bad effects, as I was told by a reliable person, who saw her take the dose--half the contents of a bottle of morphia which she had obtained from the drug-store. She had become so accustomed to morphia that it took an enormous dose to produce the effects ~~pre~~ originally produced by a small dose. The same thing is true of nicotine. At first a boy tries to smoke,--he can smoke but little before being nauseated; then he can smoke more; then he can smoke half a cigar, and by-and-by he can

smoke an old black pipe all day long. In like manner he can learn to chew tobacco until he can roll the quid in his cheek from morning till night. I have known men to go to sleep with tobacco in their mouth; and I have known men to put a cigar into their mouth on retiring, and in the morning it was gone; they had not smoked the cigar out in the night, but they had eaten it up; they had kept chewing it until they had gradually eaten it up; that is perhaps the worst way of all to eat tobacco.

Now the system gradually acquires this tolerance. Over in Styria they have the strange habit of taking arsenic,--and it is a deadly poison; it will kill rats and human beings; a few grains of arsenic makes a deadly dose to one who is not accustomed to it. But these people in Styria who work in the arsenic mines there, become accustomed to it by increasing their doses until they can take fifteen to twenty or thirty grains of arsenic a day,--enough to kill ten or a dozen persons. The people who take arsenic in Styria, which is a mountainous country, claim that it increases their wind; they imagine that arsenic gives them power to climb their mountains, giving them power of endurance. But that is a delusion, and just as much a delusion as it is for people to suppose alcohol will give them power of endurance, those who take it, imagining that they feel stronger when they swallow it; but they are mistaken,--they are deceived.

It is precisely so in reference to laxatives and bowel stimulants and drugs, and temporary relief is experienced, but the final result is, that the bowels are rendered wholly incapable of doing their duty.

In order to understand the philosophy of this difficulty,--the inactivity of the bowels, I will have to explain the physiology of the

digestive process in reference to what is called "peristalsis." When food is taken into the mouth, mastication is voluntary, --we chew voluntarily; we can chew our food a short or long time, as we please, we may swallow it in chunks, or we may masticate it until it is thoroughly ground up, as it ought to be. But when the food is carried to the back part of the mouth, it gets beyond our control, when under normal conditions. When the food gets to the soft palate it comes to a little curtain hanging at the back of the throat, and when the food passes that, the muscles of the fauces seize the food, --it has gone beyond voluntary control, goes into the esophagus and by muscular movement is pushed and pulled down into the stomach; it does not drop into the stomach through this tube, --the tube is a flat, collapsing tube, the walls of the esophagus lying together; the food is seized at the upper end of this tube by the muscles which take hold of it and squeeze it and push it, and at the same time the longitudinal muscles grasp it and pull it down while the other set of muscles relax; these muscles then contract and take hold of the food again and squeeze it along a little and relax, and then the muscles running lengthwise grasp the food and pull it down a little further ~~into~~ ~~down~~, and in this manner the food is taken down into the stomach. Now that process continues all the way through the thirty feet of intestines. ¶ That involuntary or peristaltic movement is one of the most wonderful things in physiology. How did do these muscles know that they should seize the food? This is a remarkable intelligence, and is an evidence of the divine presence in man, -- showing that there is a divine power that is carrying on these functions. Here is a function which requires a certain movement to be continually executed -- or rather a succession of movements all in harmonious play with the so-called reflex activities by which these move-

ments are continually carried on.

In this manner the food gets into the stomach and is moved along into the lower portion of the stomach, and then it goes on down and then it is churned round and round until it is reduced to a soft-pultaceous mass of the consistency of paste, and then it is forced and squeezed out through the pylorus and sent on down through the small intestines, and it travels through the twenty-five feet of small intestines in the same manner as before--by continuous peristaltic waves, similar to the movements made by an earthworm/--you have sometimes noticed a constriction of the earthworm travelling from one end of the worm to the other. That is exactly what may be seen in the intestines. The structure of the intestines is almost exactly like that of the earth-worm,--the earthworm has an arrangement in its walls similar to that of the walls of the intestines; it is made up in a similar way to what the intestine is. When the intestine is exposed to view, you can see just that kind of movement taking place,--the wave of constriction travelling along the intestine and forcing the food before it; the constriction is not absolutely tight, but tight enough so that the movement is continually maintained. The food is moved through the stomach when in a normal condition, in about three and a half hours; it should not remain in the stomach over five hours; if it takes more than five hours to remove food from the stomach, putrefaction will take place, even in a healthy stomach,--and it takes a "slow stomach" from eight to ten hours to rid itself of food. This evening a gentleman up stairs had a vomiting spell, and he vomited some grapes which he ate two weeks ago; so you can see how slow the stomach may be. I remember a case which we had some years ago, in which a very gluttonous man who was a bad dyspeptic and had a dilated stomach,--he behaved so

badly in his eating that it became necessary for his wife to come here and watch him and tell him what to eat and how to eat, and see that he didn't eat things that he ought not to eat. But one time he got away from his chaperon, went down town and went to a peanut stand. He then bought a quantity of peanuts, some of which he ate and put the rest in his pocket, and just then he saw his wife coming after him and hastily swallowed the peanuts he had in his mouth,--but she caught him and confiscated his peanuts and saw that he didn't eat any more. Three weeks "Tommie" vomited those peanuts. That shows how long such things may remain in a slow stomach. A few years ago there was a man in Berlin who died in a hospital, and there was found in his stomach some fifteen hundred cherry-pits,--and he died some ten months after the cherry season, so that he had no opportunity to eat cherries during that time, so these fifteen hundred cherry-pits formed an enormous load in this man's stomach for ten months,--and his stomach was enormously dilated during all that time,--and there was another slow stomach. I have heard of many cases of this sort, and I might tell you of others: Some men go about the country swallowing buttons, bits of iron, glass, etc.; but they come to grief after a while, for they have to lie in a hospital and have the cargo removed through an incision in the abdomen; they sooner or later come to that condition. Some time ago there was a case in a hospital where a man had swallowed pieces of tumblers, rings, etc., and there was a handful of these things taken out through the abdomen, after they had been lying in his stomach for a year or two more.

Three and a half hours is the normal time for the food to get out of the stomach, but it is not often that the food gets out of the stomach in that time, in this benighted land, because the food is not of a character that will admit of it. Fat pork, according to the observations of Dr. Beaumont upon Alexis St. Martin, requires five and a

half hours ,in the stomach of Alexis St. Martin even.--a vigorous man. The lumberman is fond of fat pork because, as he says, "it sticks by the rib--" and it does--it sticks up under the rib and don't digest; he don't like such food as rice, which digests in an hour. Roast pork requires five and a half hours; ordinary beefsteak requires three and a half hours; fried eggs, three or four hours; fried oysters, three or four hours--even in a strong, healthy stomach; but in an unhealthy stomach there is no telling how long it does take to digest such foods as griddle-cakes, stewed lobsters and all that sort of thing to digest.

After food leaves the stomach, it requires about ten hours for it to get through the colon; and then there are about twenty-five feet or a rod and a half of intestines for the food to travel through; and it takes the food about ten hours to travel that rod and a half, the distance from the stomach to the colon, so that it requires about fourteen hours for the food to reach the colon from the time when it is taken into the stomach. This has been determined in the case of persons who have had a fistula opening into the intestinal canal where the food enters it. Some time ago a man in Germany received a gunshot wound just at the spot where the food enters into the colon, and by observation through this wound, it was found that it required fourteen hours for food to get there after it had been taken into the stomach; so that fact is known. Now it requires ten hours more for the food to pass through the colon,--and sometimes it takes longer than that, before it is finally expelled. The time the food remains in the colon is somewhat indefinite, so that it may be twenty-four hours--and it may be forty-eight hours from the food was taken into the stomach until it is finally ejected from the colon. So you see that by this rhythmical movement or peristaltic movement about twenty-four hours are

required for the food to pass from the mouth through the body,--
about four hours from the mouth through the stomach to the ^{intestines} ~~colon~~; about
tenths pass through the intestines and reach the colon, and the balance
of the twenty-four hours (or even forty-eight hours in some cases), be-
fore the remains of the food are expelled from the body.

The rhythm of the intestinal movement is maintained in a very
interesting way. In the first place, I may say that the stomach and
intestines are always in motion, whether food is present or not. That is
the reason you feel uncomfortable when you are hungry,--the stomach is
empty and the walls of the stomach are rubbing against each other,
and there is a friction which makes you feel uncomfortable. When food,
for example, is taken in the morning, it sets up a peristaltic movement
in the stomach and intestines: If I should take hold of a rope by one
end and give it a twitch, a wave of movement would be produced, and
that wave would travel a little distance down the rope; and then
if I keep twitching the rope farther and farther down, a succession of
waves of motion would travel down the rope. That is just the condi-
tion of the stomach when food is taken into it,--a peristaltic movement
is set up, and this rhythmical movement travels all the way along down
the intestines. While the food remains in the stomach it becomes more
and more acid through the formation of hydrochloric acid which is pour-
ed out for the digestion of the food, and as the acidity of the stomach
increases, this rhythmical movement increases in vigor until the contents
of the stomach enter the intestines, and then intestinal digestion
digestion takes place.

This rhythmical movement is greatest during the hours when we
are awake, and they are the least vigorous during sleep; the more
wide awake we are, the more vigorous these peristaltic movements are.

When one rides on horseback, or takes gymnastic exercises, or any other form of bodily activity, the same thing will produce intestinal activity. Some of you know from experience that exercise promotes intestinal activity; that is the reason why digestion is aided by exercise.

After about fourteen hours the food reaches the colon,--and that is the place where the greater part of absorption takes place. The fluid enters the colon in a fluid state. Let this figure represent the colon, etc. (Illustrating by diagram.) As the food comes into this end, it is in a fluid state, and here the caecum at the lower portion of the colon holds back the food in a fluid state while absorption is taking place; and while this process is going on the material acquires a greater and greater consistency, becoming more and more solid, and while this is taking place the food is being moved along past the S-shaped or sigmoid flexure--there is a sort of sphincter muscle here that holds back the food in a fluid state, and here is another little sphincter muscle by which the lower end of the colon is closed. This process continues until the whole rectum is filled with solid material, while the other portion will be fluid. Now, at dinner time new food is taken into the stomach, and this sets up a peristaltic wave by which more of the contents of the intestines and colon are moved along. In the morning, breakfast is taken and a new set of peristaltic movements is set up by which more of this material is forced into the colon and this forces ~~down~~ more solid material down into the rectum, and this process continues until the lower portion of the colon gets so full that the fecal matters reach the lower end of the rectum setting up a provocation of the nerves and muscles to evacuation, and there is a reflex action set up by the nerves connected with the abdominal muscles which thus reenforce the rectal muscles, and the contents of the lower portion of the colon, or rectum, are expelled. In this

wonderful manner the process of nutrition and absorption is carried on, while the body is being freed from its waste ~~material~~ food-material.

You can now see that it is very necessary that the bowels should remain in a normal state of activity, and that there should be a natural and regular emptying of the waste matters of the bowels every day. Suppose, for instance, there is a desire to evacuate the bowels, a sensation which is produced by the approach of the solid contents of the lower portion of the colon to the ~~rectum~~ anus-- suppose a person says at those times, "I am busy now, and I will put this matter off a while." What is the result? Nature draws those contents of the rectum back again, and after they have been withdrawn into the other portion of the colon absorption begins again, and then the fecal contents become too solid and too dry; being retained too long, they become too solid and too dry. I have removed fecal masses from the bowels as hard and dry as wood; they had been retained in the colon so long that the fluid had all been absorbed, and the material was so dry and hard that it could be broken with a hammer or cut with a knife. So there is danger of too long retention of fecal matters in the colon; they become so solid that they cannot be easily moved along, and they will not mould to the channels through which they have to pass., and the consequence is, we have inactivity of the bowels, or one form of intestinal inactivity which is due to excessive dryness of these waste materials.

Now this call for evacuation usually comes about half an hour after breakfast, or the first thing after getting up in the morning. Why? Because, in the morning, when we awake, the brain is awakened and the exercise of getting out of bed has the effect to create a peristaltic movement by which the contents of the lower portion of the colon are moved farther down, and the provocation to evacuation is set up.

And after breakfast, new food being taken into the stomach, a peristaltic wave is set up which moves the contents of the colon still further along .

There is another evil which occurs when the contents of the colon have been forced down into the rectum and the desire to evacuate the bowels is resisted,-- the result of this delay to evacuate the bowels is, that these substances become packed into the rectum and the nerves of this part lose their sensibility, and become accustomed to the contact of these solid materials which naturally never remain in the rectum; the rectum is normally entirely empty; these matters belong above the rectum, and the nerves of this part, by long contact with these matters, lose their sensibility, so that they will after a while tolerate the presence of these matters which do not belong there , and then there is no longer any desire for evacuation of the bowels because the natural prompting of the nerves is lost, and hence a person may go for a long time without knowing that there is occasion for evacuation of the bowels--except by the presence of gas in the bowels--this is always an indication of retained fecal matters in the bowels. The real cause of gas in the stomach is due to the presence of these solid substances which have been retained too long in the colon,--gas in the stomach or bowels is caused by the presence of fecal matters which have been retained too long in the colon, hence they should be regularly and promptly removed. I know of a case in New York that Dr. Austin Flint spoke of in a public lecture,--a man who abused himself in that way--so much so that there was no evacuation, except once in three months. This man would have an attack of looseness of the bowels which would continue several days; and once in three months there would be an accumulation of solid fecal matters in the rectum, and an evacuation, but the colon was enormously distended .

Another evil growing out too long a retention of the fecal matters in the colon, is, that it becomes enormously distended, and permanently so, instead of retaining its normal size--it becomes greatly distended by fecal matters and gases; and that condition may continue for several years. We have an illustrious example of this kind of colon,--in the case of a man who calls himself "Doctor, but who is not a doctor--V.V.Hall, of New York City. You have all heard of "Hall's Secret;" it is simply an explanation of a method of using the ordinary syringe in giving enemas. His price for the little book containing this information, a book which cost him about two cents, called "Hall's Secret," ^{was \$4} ~~and the secret was~~, and the secret was to show that it was possible for one to introduce a ^{gallon} ~~quart~~ of water into the colon by the use of an ordinary syringe, and that that was the way in which he evacuated his bowels regularly once or twice a week, and that all people should adopt the same method, and that it was necessary that the colon should be regularly washed out clean, the same as we wash our faces and the skin of our bodies regularly. This was a most disastrous doctrine, for it set hundreds of people all over the country, who were in health and did not require such an internal bath,--it set them to using this artificial method of treating the bowels, and the result was the production of many evils. There are a great many people who are helped by the enema, because many are laboring from constant poisoning of the alimentary canal by long retention of these fecal matters, and the use of the enema is useful in such cases; but there has been an enormous amount of mischief done by the over-distention of the colon by the frequent introduction of large quantities of warm water into the colon, and by this means many have gotten themselves into the same condition as did Dr. Hall, so that the bowels cannot be evacuated except by rinsing.

Several years ago, the famous Sir Edward Clarke called attention to this important fact which I will illustrate in this way : (Diagram)

This is the portion of the colon which is always occupied by the digested food-substances from which the nutritive parts of the food-elements have not yet been extracted, and which is not emptied, or should not be, - it is only the lower portion of the colon that should be emptied, because this (the upper portion) portion of the colon contains ^{nutrient} food-substances which have just come in from the small intestines, and which need to be absorbed, the colon being the great reservoir in which absorption takes place. So the person who empties the entire colon robs himself of the nutrient materials contained in his breakfast, and which should be absorbed in the colon. This is an arrangement for holding back the food in this part of the colon until the nutrient materials have been absorbed, and the balance, or the hardened materials are sent on into the lower portion of the colon to be discharged. So that - after a man eats his breakfast, the normal rhythm or peristaltic wave which is set up, upon the entrance of food into the stomach, causes a discharge of the ^{solid} contents of the lower portion of the colon, the fluid contents remaining in the upper part of the colon another day for absorption to be completed. So that, by the use of the enema, -- that is, by the use of Hall's method -- to avoid doing damage to the system by robbing it of necessary nutriment. And yet I have known people who were thin and emaciated, to use this method, thinking the entire colon must be washed, every day, as thoroughly as we wash our face and hands, thus robbing themselves of half the nutritive value of their food - and lodging substance, after having had the labor of digestion, paid the board, of the nutrient materials and being entitled to their presence and assistance; but they were stolen away from them by this deluging process. It is important that this fact should be known, so that this sort of

thing may be stopped. When the enema is used, it should not be in large quantity except under special conditions; it should be administered in small quantity, the temperature not being over 30° , so that the lower portion of the colon will be stimulated and the upper part left alone; it is only when the upper part of the colon has become thoroughly diseased, that it is necessary that the entire colon should be washed out.

is a habit which leads to

Another evil ~~that grows out of~~ the retention of fecal matters in the colon or neglect to evacuate the bowels regularly every day, and that is, the neglect to eat food at proper intervals and at proper times.

We are dependent upon the taking of food at proper times for the stimulation of the bowels to the rhythmical movement by which the food is to be carried into the colon, the food at the lower portion of the colon being pushed further down to make room for other food which has just been taken in. Suppose a man goes without his breakfast: the result will be that there will be no peristaltic movement set up, there will be no disposition to evacuate the bowels, and the normal rhythm will be broken up, the food substance will remain in the colon too long a time and will become hard and dry, and that will be the beginning of intestinal inactivity,--and that is the result of the neglect to take meals at the regular and proper hour. So, if a person neglects his dinner, or misses his dinner,--the consequence is, that the next morning he has no occasion for evacuation, because there was no peristaltic movement set up, and there was no solid material moved down to the proper point for exciting the ~~muscles~~ rectal and abdominal muscles (for these work together) for the purpose of evacuation.

Another serious evil which grows out of the retention, for too long a time, of the fecal matters in the colon, is the absorption into

of poisonous substances into the system. There is always present in the colon a peculiar germ known as "the colon bacillus" a very deadly microbe, which is capable of producing a disease closely resembling typhoid fever; this is the barn-yard germ, which we were talking about the other night, and which is found in milk; this germ is found in the colon of all warm-blooded animals,--such as cows, dogs, horses and men--the colons of all animals belonging to the class of mammals, contain this germ. This is a very mischief-making germ; it is always ready to do harm and mischief; it gets into milk and makes trouble later; it gets ^{upper part of the} into the alimentary canal in the stomachs of babies and sets up gastrointestinal catarrh. That is the cause of babies' getting summer diarrhoea, and that is the cause of cholera morbus and cholera infantum. These diseases are due to the barn-yard germ,--or, as some one has called it, "the manure germ," the germ that is found in the fecal matters of mammals. Now the colon after a while acquires a tolerance for this germ, so that it does not resist it. When it does resist it it cannot get through the walls of the colon and get in; if it did, it would do mischief, and we should suffer immediate injury from it, because the colon bacillus is capable of producing suppuration in the colon if it gets into it. A person may have a discharging ear, and it may be a simple matter, because the trouble may come from a pus-forming germ found on the skin, and this may be easy to kill,--and it may be caused by a pneumonia germ; we once had a case where a man had pneumonia and he had a discharging ear, and when he got over it, this pus proved to be an absolutely pure culture of the pneumonia germ. There is sometimes another kind of germ which causes this trouble, and then it is said to be incurable--it is certainly difficult to cure. Sometimes ^{creeps into the} this germ ~~grows into the~~ small intestines and then gets into the liver, and then it produces jaundice or liver catarrh. Sometimes it

chronic

gets into the stomach and produces ^Agastric catarrh . Sometimes it becomes very active in the small intestines, and then there is intestinal catarrh. Sometimes this germ becomes unusually virulent in the colon and then we have a peculiar catarrhal disease there .

These diseases are all due, in a majority of cases, to the increased virulence of this colon germ which is always in the colon, and to lowered resistance of the body. When an animal dies, these germs invade the body at once, spreading throughout the animal. You see a rabbit hanging up in the meat market, and that was killed last week: it is now all sorts of colors, green, yellow, etc--that is because these germs have spread throughout its body. That is the cause of the animal's gamey flavor; the ~~barnyard~~ germ has diffused itself throughout its tissues. A man in Ohio passed a meat market where some ~~rabbits~~ ^{ducks} had been hanging up with rabbits and other game , and there was a man taking down one to carry home. A farmer came along and saw him, and after looking at him a moment, he said, "Well, if I ever get low down enough to eat that sort of thing, I will shave my head and paint it red, like a turkey buzzard." That man had a right conception of the fitness of things . There are laws in some states prohibiting the exposure for sale of meat in the shape of animals that have not been drawn. I am told that ~~such~~ animals in that condition cannot be sold in the ~~st~~ State of New York, although it is permitted in this State, because of the "high flavor" of the animals .

colon

These ^Agerms are capable of producing peritonitis, and diseases in the liver and kidneys and other parts of the body . So there is only the thin wall of the colon between us and death,--there is only the thin intestinal wall that stands between us and death all the time . When fecal matters are retained in the colon for a long time, these these colon germs become very virulent ; so it is necessary that the

intestinal fluids and other contents of the intestines should be regularly and daily carried down the intestinal tract as far as possible, so that the development of these germs and the accumulation of poisons shall be controlled as much as possible .

Now, as I said, a little while ago, it is not necessary to wash out the entire colon with water, because nature has provided for the cleansing and protection of the colon. All along the inside of the colon is a secretion of a slime or mucus which is deadly to germs. The mucus that is formed in the mouth and nose and all along the intestinal tract has power to destroy germs; and the mucous membrane also has power to destroy germs: as the intestinal contents come into the intestines and colon, this mucus falls right upon it, covering these masses of filth and surround them so that when they are carried off, the intestines and colon are left ~~clean~~ absolutely clean. This mucus lies between these filthy contents and the healthy mucous membrane .

There is a curious little arrangement at the lower end of the caecum ~~there is a~~ which some people are getting afraid of nowadays; it is ^{the} little appendix vermiformis, which comes down like a finger at the lower end of the caecum, and in former times physiologists and anatomists did not know the use of it , so they said it was put there to remind us that we were descended from some ancestral beast that had a third ~~stomach~~ stomach down here . You know the beaver has an extra stomach at this point, and the muskrat also has an extra stomach just at this point, and the Darwinists insist that there was a time when man had a big stomach here in place of this appendix vermiformis, and they claim that this appendix vermiformis is the vestige of the stomach that man had when he lived in the treetops in the forest and brushed the flies off his nose with his ear. I don't take any stock in that kind of theory.

This little appendix vermiformis has been supposed to have been put there for the purpose of making business for the doctors. One surgeon has claimed that it is a man's duty to have his appendix removed, as a part of his education. When I was in Paris last year, I heard that the American surgeons required that every man who rode the bicycle should have his appendix removed so that he should not get appendicitis. Now it has been found that this little appendix is there for a different purpose: it is an active organ, and has an active function to perform,--and this is the function that it performs: It is a hollow gland which secretes a large amount of most tenacious mucus which is different from mucus formed anywhere else in the body. Here is where the contents of the intestines pour into the colon. Right at this point this little appendix or duct or gland pours out a quantity of tenacious mucus for the purpose of smearing over this alimentary bolus, thus facilitating its entrance, and at the same time covering and protecting the intestines from it as it moves along. So the man who has no appendix is to be pitied. I advise you to stick to your appendix as long as you can. Down here at the lower end of the colon there is an arrangement similar to the one at the upper end. Here are some little ducts or glands to lubricate the bolus that comes down for expulsion. The so-called "orificial surgeons" supposed they had made a discovery when they discovered these little pockets, but Dr. Horner, of the University of Pennsylvania described them more than fifty years ago, in his little work on Anatomy, a copy of which I have in my library. They have been named after Dr. Horner, and are known as the "Folliculi Horneri," and these follicles of Horner, or little "pockets," as the orificial surgeons call them, have glands in their bottoms which pour out a quantity of tenacious mucus to lubricate the alimentary bolus

and facilitating its exit. These orificial surgeons have thought it their duty to remove these pockets. One of these doctors in Chicago dissects them all off,--he scalps the lower end of the intestine removing all these "vicious pockets." He has published alarming statements as to the ptomaines and germs which accumulate in these pockets. They don't stop to think about the great cavity which is left where they were. I have had occasion to treat some people who have had these pockets so thoroughly removed that the whole end of the rectum was outside of the body, and I had to invent some kind of a scheme for getting it back again. There is nothing but injury which results from that kind of practice, and it should not be done, unless there is something beside the pocket there. Then there are these little "papillae" as well as "pockets"; these little projections have nerve-ends, and these nerves have a telegraphic connection with the abdominal muscles, so that when the contents of the bowels come in contact with these papillae which form a little fringe inside of the anal muscle there is a telegraphic despatch sent by these nerves to the abdominal muscles telling them to contract immediately, and they contract and by this reinforcement of the abdominal muscles a complete emptying of the ^{bowels or} rectum is secured.

Now we know enough about the physiology of the colon so that we are prepared, next time, to take up the study the methods of dealing with diseases of the colon; and I think it will be profitable next week to study the different methods of treating inactivity of the colon.

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Causes and Cure of Chronic Intestinal Inactivity. (Pt. II.)

J. H. Kellogg, M.D.

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We were talking the other evening about the causes of intestinal inactivity, which is so characteristic of civilization. We do not find this condition existing to any great extent among other than civilized people. It is one of the penalties of civilization. I have talked with a good many physicians and others who have been out among Indian tribes, and I find that people living in savage conditions have very little trouble of this kind and do not depend upon laxatives, "after-dinner pills," and the like. Disease is not entirely unknown to these primitive people, but there is nothing like the amount of disease among them that there is among civilized people. The same thing is true among the laboring classes. This difficulty does not exist among the laboring classes to anything like the extent to which it is found among people who live in cities and lead sedentary lives; for the penalty of sedentary habits is intestinal inactivity, and intestinal inactivity is the mother of a myriad of woes and ills.

We might pause a moment here and point out some of the things growing out of this condition. One of the things growing out of inactivity of the bowels is auto-intoxication. This is the absorption of poisonous matters which should be discharged from the body,--the absorption of these poisons back into the blood, and the circulation of these poisons throughout the body bathing the brain-cells and other structures with these poisonous fluids. We all live under water. All the work of our bodies is done under water. The effect of this vicious nu-

trition is very injurious. Dr. Dana, of New York, says that locomotor ataxia and other diseases resulting from degeneration of the spinal chord, result from the absorption of these poisonous matters into the blood and from their injurious effects upon the nerve-cells. When the bowels become inactive, the effect of this is manifested right away in stupidity of the brain, headache, dulness, confusion of thought, and inability to concentrate the mind. What is the cause of this? Poisons. And a simple enema producing an emptying of the bowels, or a dose of salts or a dose of calomel or a dose of "black draft" or "gray powder" or some other old-fashioned remedies, a single dose of which being considered by many to be sufficient to transport a man from Hades to Paradise. I have known people to be so depressed by inactivity of the bowels that life did not seem to be worth living, and after a thorough evacuation of the bowels the patient was completely relieved, and in a couple of hours' time.

How can such a transformation take place in such a short time? That is easily explained: Here is a great mass of fetid decomposing poisonous matters, full of ptomaines and toxins that are being continually being absorbed into the blood and the kidneys and liver are laboring to carry away these waste materials,--and if it were not doing this, the man would die right way. But this work is so great that the liver and kidneys get behind, and this poisonous material accumulates in the blood, for the faster they are taken out, the faster they are taken in. But as soon as the bowels are evacuated these poisons are cut off, and, being no longer introduced, and the supply being cut off, the blood is no longer overwhelmed with these poisons., and in the course of half an hour's time the poisons are removed to such a degree that the patient is relieved. The same thing happens after the evacuation of the bowels after a long term of constipation of the stomach. When food is

lodged in the stomach and remains there and is undergoing poisonous putrefactive processes, this is indicated by eructations of gas, heaviness in the stomach, vomiting, bilious attacks and nervous headaches. These symptoms are all due to an inactive state of the stomach, in which food remains there. The stomach and colon are two portions of the alimentary canal where stasis or inactivity occurs,--it never occurs in the intestines--the small intestines connect the stomach with the colon. The colon is the place where the more solid material is taken, while the fluid portion, which represents the digested food, is being absorbed in the stomach. What is commonly called "constipation" always relates to the colon,--but we have the same thing also at the other end of the alimentary canal. Here is a man with his stomach in this abnormal condition,--he feels deathly sick; he can't stand upright; he is pale as death; he is giddy, nauseated and vomiting; he feels as though he were going to die,--and he would rather die than live in that condition--it is like the case of a man who is sea-sick--when, under proper treatment, the crisis is reached and the abdominal muscles contract with tremendous vigor, and the stomach is compressed, the colon is emptied of ~~it~~ its poisonous material. Some of you know by experience what horribly loathsome, foul-smelling and foul-tasting matter comes up from the stomach sometimes (don't think of it any longer); the stomach is relieved instantaneously when the stomach is cleansed of these poisonous materials. Why should such a person feel relieved so quickly? Because the poisons that have been passing into the blood in such quantities that the kidneys cannot remove them are cut off and they no longer enter the blood; the kidneys then quickly purify the blood and as the formation of poison ceases, auto-intoxication ceases.

This fact is now leading to the extensive use of the enema as a mechanical means of evacuating the bowels in these cases, and also for the

relief of some of the troubles which grow out of this condition. Epilepsy is due to this condition,--gastro-epilepsy is generally reported in the clinical history of cases in which patients had been suffering from a very inactive state of the stomach and bowels. Children sometimes have convulsions in consequence of inactivity of the bowels. A great share of the headaches which are so common, is due to this condition. Patients suffer from bilious attacks, not because the bowels are inactive, but because of the retention of poisonous matters in the system.

Now I will briefly mention some of the causes of this condition, because in this, as in every other disease, in order to apply radical treatment, we must know the cause of the disease. In order to treat disease in a rational manner, the doctor first determines what the indications are, and what he ought to do. In doing this, he first looks for the cause of the disease; second, he looks at the pathology of the disease, that is, the existing conditions; and third, he looks at the clinical symptoms or history of the disease. The patient generally has some very interesting symptoms, some of the causes of which he furnishes, and others he is not so willing to furnish,--for instance, it may have been a Christmas dinner or something of that kind which he prefers to say ^{but little} ~~nothing~~ about. It may be that it is the use of tea, coffee, tight-lacing or something of that kind, and the patient does not care to talk about it at all; he does not care to have these causes cured,--he would rather hug them to himself--he would rather not dispense with them. The pathological conditions, the patient generally knows nothing about, because these require an inside view, which the physician alone is able to take. The patient is often more interested in the symptoms than in the causes of disease, and is anxious to have them out off; but this is like plucking off leaves from a tree,--the tree will soon grow out millions more of the same kind of leaves; or, it is like cutting off the tops of Canada thistles, the roots of which soon

send up an abundant crop of the same kind of fruit.

In regard to the etiology or causes of disease,--one of the most important of these, we mentioned the other day--or rather, the pathological conditions which we were talking about-- was dilatation of the stomach. Now the cause of this dilatation is the fermentation which results from the use of food that undergoes fermentative changes in the alimentary canal. When food is retained for too long a time in the stomach, and in the alimentary canal, through inattention to proper evacuation of the bowels, irregular meals, etc., food accumulates and decomposes in the alimentary canal, and this results in dilatation. This dilatation is a pathological state, and the improper food which caused the fermentation and decomposition, and the wrong habits of life which gave rise to this condition, are the causes.

There are some other causes of this condition: Concentrated food is another very important cause of disease in these cases. Until the invention of our modern milling processes, this trouble was comparatively unknown: the removal of the woody portions of grain, leaving only the very fine flour--the very innermost portion, or Heart of the grain--has been productive of an enormous deal of mischief. In illustration of this principle, I might relate an incident which I read in a work which is entirely authentic: A sea-captain once started from Portland, Me., with a cargo of horses and mules for the West Indies. When they had been out a few days, a hurricane carried overboard their supply of hay. A few days later, the horses began to sicken and die, so that they had to throw overboard a number of horses daily. After consultation and investigation into the matter they were surprised to find that while the horses were dying, the mules were thriving. They had no hay and were obliged to feed their horses and mules entirely upon corn, and while they had plenty of this food, the horses were dying and

the mules were thriving. They then began to look into the matter a little more closely, and found that while the horses ate nothing but corn, the mules ate the corn and took a bite off some portion of the ship besides, -- they were gnawing their stalls. The captain took a hint from that, and set the ship's carpenter to making shavings out of the partitions of the stalls, and the mules ate some of these shavings with their corn; but some of the horses would not eat the shavings which they found mixed with their corn, while others did. The horses that did not eat shavings with their corn, all died and were thrown overboard and became food for fishes, -- and to be made food for men afterwards. But some one has suggested that it is not desirable that I should talk about meat to-night, -- that meat is my "fad." Meat is not my fad; it is a disagreeable subject and I dislike to say anything about it, but for the sake of other people, I have to speak a word or two about it occasionally. I have a fad, however, and I mean to talk about it some day. Now these mules all reached their destination sound and in good health because they ate wood with their food. What did the food do? It simply furnished bulk, so that the food could be digested in the normal way. The alimentary canal is adapted to the food taken. There are some animals which have a perfectly straight alimentary canal; others are exceedingly crooked. Here is a sheep and a man, both weighing about the same: the man has an alimentary canal thirty feet long, or about five times as long as he is -- ten times as long as he is when measured properly, because, when you make a zoological examination of an animal you must measure from the end of his nose to the end of his backbone, measuring a man as you would a sheep. But the sheep's alimentary canal is more than thirty times as long as the sheep is. I have measured the alimentary canal of a sheep: many years ago I dissected a sheep on purpose to measure the length of the

alimentary canal of a sheep, and I found it to be thirty-five times as long as he was. Why does the sheep have such a long alimentary canal? Because the food of the sheep is made up of coarse material, and it requires a long and complicated process to extract the nutrient material, and digest the refractory substances which are found in grass, thistles, weeds, twigs and other coarse materials upon which the sheep feeds. You know sheep will thrive where cows will starve to death, and the goat will get fat on pasture that a sheep has left. The sheep has four stomachs, whereas man has but one stomach, and his alimentary canal is only one-third as long as that of the sheep,--and in proportion to his size. Now in carnivorous animals the alimentary canal is almost straight, and from one to six times as long as the body, while man's alimentary canal is ten times as long as his body, and that of the sheep more than thirty times as long as his body. So man comes intermediate between the ~~lion or the~~ dog and the sheep, or the lion and the ox. Why? Because his food is coarser,--it is not so concentrated as that of the dog or the lion, ^{or the squirrel,} and he requires a more concentrated diet than the ox or the sheep. His alimentary canal is not adapted to such a concentrated diet as is that of the lion or the dog, not because these animals are naturally meat-eaters, but because they are naturally nut-eaters. Nuts are a very concentrated food. Man's diet is naturally nuts and fruits. Baron Cuvier, the great ~~German~~ comparative anatomist many years ago stated that fact. Baron Liebig, Sir Evesard Holmes, Humboldt and a number of other anatomists whom I might mention, clearly recognize the fact that man is, by nature and because of his structure a frugivorous animal--an eater of fruits and nuts. Now fruits are very bulky, only four to six per cent. being nutrient material, whereas nuts are extremely concentrated,--they are absolute-

ly nutrient, with the exception of three or four per cent.--there is about 96% nutriment in nuts, while in fruits, 95% to 96% is water--just the opposite of nuts; they form bulk to the diet; so man has naturally a very bulky diet.

Now, if a man neglects to observe this fact, and undertakes to live on the diet of the dog or the lion, he very soon finds that his food is too concentrated, and he suffers from constipation. And if he undertakes to live upon the very inside and heart of the grain, leaving out the more woody substance, he suffers in the same way; he needs the stimulus of bulk in order that the digestive machinery may work properly. What does this bulky material do? It mechanically irritates the ^{muscles} contents of the intestines to contract upon the contents of the intestines so that the food is moved along the intestines at a proper rate.

The use of large quantities of sugar is another cause of an inactive condition of the bowels, and the reason is, that it interferes with the action of the liver. The liver has a varied work to do, but we will not stop to consider all these different kinds of work,--there are five or six different kinds of work that the liver does, and one of these is, to make bile. When sugar is eaten in large quantities the liver stores it up, until it is clogged with it, and that interferes with the bile-making work. When people take a great deal of sugar, they recognize the fact that it interferes with and disturbs the liver,--such people say, "I can't eat sweet things, because they clog my liver"--a great many people say that,--and that is what is actually done by the excessive use of sugar: the liver stores up the sweet in itself and doles it out to the body as needed, little by little, just

as an automatic stoker feeding a furnace,--doing in the coal at a regular rate; the liver stores up the sugar and doles it out to the body little by little, to be used as fuel; it wouldn't do to throw the sugar all into the body at once, because that would create too much heat, and what actually happens is, that an excessive use of sugar overwhelms the kidneys, and they allow it to escape into the circulation and thus cause diabetes.

Another cause of intestinal inactivity is sedentary habits. The intestines contain muscles, and they depend for the performance of their functions upon the contraction of those muscles which are in their walls. Now muscular activity depends upon exercise. When a man habitually sits quietly in his chair in his office day after day, his muscles become soft and flabby, weak and relaxed; the man who does that must expect that he will suffer from intestinal inactivity for the reason that his bowels, intestines and kidneys get into the same condition with his weak, relaxed muscles that have not been exercised,--his intestines get into the same condition as his arm which is not exercised--without vim or energy. If you know that the muscles of your limbs have no strength or resistance, you may know that the alimentary canal is in the same state; such a man has a slow stomach, and he will have inactivity of the bowels. Muscular inactivity produces intestinal inactivity. That is the reason that horseback-riding, bicycle-riding, skating and walking are useful, because they combat this tendency by exercising the muscles. Many people would be much benefited by taking a good walk before breakfast, and by walking more, instead of riding on streetcars to and from their offices and homes, and sitting still all the time,--the bowels of such people become exceedingly troublesome from inactivity--many people recognize that fact. If you have ever been on board an ocean steamer, you have noticed the people walking up and down the deck in the morning; they find it absolutely

necessary to take that exercise in order that the tendency to intestinal activity may be combated. The reason of this is, that muscular movement in any part of the body in general stimulates muscular movement of the stomach and intestines: ~~the~~ activity of the voluntary muscles increases the activity of the internal muscles as well, and so combats the tendency to intestinal inactivity.

Now the person who is habitually sedentary in his habits is generally a person who takes drugs. You will find that a large proportion of sedentary people, business men and people who reside in the city are taking drugs all the time ^{to help} ~~and~~ inactivity of the bowels, -- or, if they are not taking drugs, they are taking mineral waters which are supposed to have laxative properties. Such people would not think of going a single day without using some of these mineral waters. But the dose has to be increased and increased and increased, and it does harm,--and that is the next thing I was going to speak of--as being one of the prevalent causes of intestinal inactivity,--the use of these artificial, abnormal stimulants. Mineral waters contain salts. Mineral water contains such primitive drugs as sulphate of magnesia or sulphate of soda; the sulphate of magnesia is bitter water. Sulphate of soda and sulphate of magnesia are the principal ingredients of so-called laxative waters. These waters, whether they come straight from the ground, from pumps, or from rivers, or distilled water with the addition of chemical substances, are all the same thing,--the proportion of salts is the same. It is not the water that acts; it is no occult principle which comes from the soil that acts upon the bowels --it is simply the salts in the water, and you may as well go to the drug-store and get a small dose of glauber's salts or epsom salts, and mix it with a little ordinary water and swallow it, as to drink mineral water,--it is all the same thing. People do not generally under-

stand that; they imagine, from reading the advertisements of mineral springs that there is some spiritual essence in the water that chemical science cannot discover, which is lost if it goes very far, and which you cannot get unless it is bottled up and labeled. But these advertisements are simply commercial lies; the deceit is so palpable, and the covering is so flimsy that I should think any one with ordinary intelligence would see through it; but they don't; they travel many miles to get the supposed benefits of the mineral springs. But you can manufacture any of these mineral waters by the use of ordinary water putting into it certain chemical ingredients,--but the mischief done by these waters is the same, whether obtained at the drug-store, from the earth or the soda fountain.

And what is the mischief that they do? These alkaline substances are whips to the intestines. If I should open the abdomen of an animal and expose the intestines to view, and should put some potash salts or soda salts upon the intestines, you would see that they would contract; these alkaline substances or alkaline salts stimulate the intestines. "Then," you ask, ^{why} are they not useful? Because they are not normal stimulants; they are not natural stimulants. To-day, a dose produces a certain degree of activity; to-morrow you must increase the dose to produce the same result, and so you must continue to increase the dose--and the same is true of any known laxative, whether vegetable, chemical or mineral,--they are all the same.

A very singular remedy, ~~however~~ ^{for intestinal inactivity}, has recently been discovered,-- a German physician has found something that is certainly unique: He has conceived the idea that the colon germ has a purpose,--that the colon germ or barn-yard germ that I was speaking to you about the other evening, and which is found in all mammals--this doctor imagines that this germ must have a purpose; the fact that it is found in the colon

and the intestine leads him to believe that it must be useful there, in some way, to disturb or irritate the colon, and thus produce intestinal activity. He has therefore conceived the brilliant idea of feeding these germs to patients in capsules. He has found that when he puts some of these germs in capsules and makes patients swallow them, that three of these capsules are able to produce a laxative effect upon the bowels. It seems not to have occurred to this doctor that people are generally taking a sufficiently large quantity of these germs in the milk and cheese which they eat, and also germs from the dust of the streets of our great cities,--Chicago dust, for instance, is largely composed of colon germs. Of course this is not the case in the country where they have comparatively decent dirt; but in the city the dust which covers the pavements is largely composed of colon germs. So if you live in the city, you won't have to take any of this kind of capsules,--you can get plenty of them in the ordinary way.

The medicine habit produces one of the most incurable forms of intestinal inactivity. There is, however, only one or two forms of intestinal inactivity that is absolutely incurable,--one in which there is a cancerous condition, in which the colon is closed up by a cancer or some other organic change, also that form of intestinal inactivity which is due to enormous dilatation.

There is another way in which sedentary habits result in intestinal inactivity --two ways, I should say: the weakening of the abdominal muscles is one way. The evacuation of the bowels is induced by the contraction of the abdominal muscles. The muscles of the intestines contract, but at the same time they must be reenforced by the contraction of the abdominal muscles. Now the intestines are included within a cavity,--suppose this represents the cavity (diagram.) Here is the dia-

phragm above ; here is the abdominal cavity, and here are the intestines. The intestines fill up the entire cavity,--there are no spaces lying around,--there is no place for anything to lie around loose; the intestines absolutely fit into every little corner, so the abdominal cavity is absolutely full. Here are the muscles in the abdominal wall. I operated upon a case yesterday of which I might give you a brief description, as an illustration. (Illustrating by diagram.) Suppose this represents the normal figure. Now in this case, these muscles had been so wasted and separated that the poor woman was in this shape (diagram): the muscles had become so dilated and stretched and separated that the intestines had gotten out between them, and there was nothing but the skin to cover them, and here was a great bag hanging out, and it was found necessary to make a dissection from the top of the abdomen and bring the muscles together and put things inside where they belong. In this case this condition was wholly the result of the dilation and stretching of these abdominal muscles. When in Mexico I had a similar case,--the surgeon had difficulty in bringing the muscles together; they had waited till the patient was in this condition. But I never saw such a bad case as this was; the woman was poor and had to have something done for her at once. Now the person with sedentary habits gets into this condition--the abdominal muscles are so weak that they cannot make the proper pressure upon the intestines, and the consequence is there is not the necessary reinforcement of these muscles for evacuation. When a patient says they ~~have~~ are suffering from inactivity of the bowels, I ask them "What is the matter? Why can't your bowels be evacuated?" I ask that question,--not because I suppose the patient can tell me, but I want to know the patient's idea of it; and the patient often says, "I feel that there is no muscu-

lar power or strength to evacuate the bowels; there is a desire for evacuation of the bowels, but there is no power to expel the contents of the bowels." Now the abdominal muscles are the engine--the vis a tergo, so to speak, by which the contents of the bowels are evacuated simply by the seizing and squeezing of the intestines and colon by these muscles; the contents of the intestines are powerfully compressed, so that by intra-abdominal tension, as I should put it in teaching a medical class, as that is the real force employed, the bowels are thoroughly evacuated.

Now when a person sits a great deal, these muscles are relaxed; they are not active, even in holding the body erect. The great majority of people sit in a very unhealthy fashion. I will call your attention for a moment to some wrong methods of sitting which are very common. (Illustrating by various positions. I was once explaining to a gentleman the difference between proper and improper sitting, and that a person should sit with his hips and shoulders against the back of his chair, and so on, when he said, "I understand: you mean that I have been sitting upon myself." I told him that was what I meant,--that he was really sitting upon his back. If a person sits upon his back instead of his thighs, the result is a relaxing of the abdominal muscles,--and the abdominal muscles should be taut and tense. But when one is in the habit of sitting in a relaxed position, his muscles become relaxed and soft, so that when you feel of them it is like putting your finger against a curtain instead of a board wall, as the sensation should be. When the abdominal walls are relaxed and the shoulders are drooping and the person is doubled over, there is nothing to compress the bowels and prevent their swelling out and twisting and so the food gets lodged and delayed in its passage, gas forms, impaction of food occurs, food accumulates in the colon, and masses are formed in

the lower end of the colon as hard as wooden balls, and many times they have to be removed by surgical assistance .

Here is another thing that happens as the result of sedentary habits in producing intestinal inactivity. (Illustrating by diagram.) Suppose here are the ribs and here is the end of the sternum; and here is the pelvis, and here is the colon; passing down here we have the sigmoid flexure; this represents the colon; here is the stomach lying just above the colon. Now as the result of habits of life which cause prolapse of the organs, this sort of change in the contour of the abdomen takes place as the result of such habits: the colon becomes prolapsed, and the central portion of the colon drops down here,--and it may drop down as you see in this figure--instead of being up where it ought to be, the colon is in that shape--and it may drop down further. I have performed laparotomies ~~and~~ taking out tumors in cases where it was necessary to open the abdomen, and in such cases I have ~~found~~ sometimes found the colon away down here, the most of it,--away down below the bladder,--and it should be away up here, instead of being at the bottom of the abdominal cavity. As the result of these wrong habits the colon gets completely prolapsed (like this) , and then there will be an accumulation of fecal matters here , because it cannot pass down through this pseudo-stricture, and the patient thinks he has got a stricture; he will notice a bulging here and an accumulation of gas, and he will think he has a stricture, when there is only a sort of pseudo-stricture. I was operating upon a case not long ago, in which the patient said, "Doctor, I thought I had trouble in the lower part of the rectum, but I saw another doctor, and he said the trouble was higher up. In that case I made an examination higher up when the patient was under an anæsthetic,--I introduced a speculum so that I

could look up into the alimentary canal as far as this, and there was not the slightest sign of disease there; it was this prolapsed colon and the pseudo-stricture. All that was necessary to do in that case was to straighten the colon up; in such a case nothing could be done by abdominal massage, --and that is what abdominal massage is good for. Now that is the result of this sort of position; this position causes enteroptosis--the colon which should be up here, lies away down here--everything gets out of place. (Pointing out location of different organs on diagram.)

This condition may be the result of bad positions or of wearing the wrong kind of dress or belts or bands. Even a man may get himself into this condition by wearing a belt to hold his pantaloons in place. I once met a blacksmith who came into that condition by throwing his suspenders off his shoulders in order to have his arms free in shoeing horses, and then tying the strings of his leather apron tightly round his body to hold up his pantaloons. He had the same condition of abdominal viscera as those who wear corsets. Occasionally men do wear corsets. In Europe you will often see a German or French patrol or soldier walking up and down the streets. These men, especially the officers, all have the same fine figures,--full chests, strong curve in the back, and so on, and you would think they were very fine fellows ~~these are~~; but when you investigate the matter, you find that they all wear corsets,--the German and French officers all wear corsets, especially when on parade; and it is so in this country. A well known colonel was here for treatment some time ago, and I found he had a floating kidney and prolapsed bowels, the result of wearing a heavy sword suspended by a belt worn very tightly constricted, the sword being a present from his friends. His duty was to train men soldiers in military tactics and he spent much time at it. I once complained to

a lady about wearing tight clothes, and she said, "My clothes aren't tight,--just look at that,--" pulling them out--"you could put your fingers under my belt; they are loose." Then I asked her what kept them from slipping off, and she saw the point. The body of a woman is wedge-shaped, and the clothing may be loose at the waist, but as they slip down they become tighter and tighter and seize the bowels and pull them down. But it is worse for a woman to wear bands than it is to wear a corset, because by the corset the pressure is equally distributed, while the pressure of the band is brought to a single point where they ~~drag~~ seize and drag the bowels down; so bands are worse than corsets, but both are altogether evil. It is better to support the clothing from the shoulders by suspenders by which the abdominal organs will not be interfered with.

Another cause of very obstinate inactivity of the bowels is catarrh of the bowels. When there is a very profuse catarrh in the intestinal canal, the effect of it is, that the alimentary bolus, as it is termed, is smeared over with a slimy mucus, and when the muscles seize it they do not get a grip upon it; they cannot act upon this slimy covering.

Then a deficiency of fluid food ~~which~~ is promotive of this condition: when one does not take enough fluid food, the contents of the intestines become dry. This excessive dryness of materials in the colon may be due to excessive absorption in the alimentary canal. Under what circumstances do we meet this condition? In dry, hot weather, we are likely to sweat a great deal, and are likely to have inactive bowels, because the movements of the fluids towards the skin is so great that there is not enough fluid poured into the alimentary canal and the intestines, and so the alimentary contents become dry. The same thing may be said of hot baths. When patients come to the Sanitarium to have

their weight reduced, they must be sweat, and we have various forms of baths for this purpose ; and we find that the bowels of patients become inactive when they take sweating -baths , and do not drink enough water to compensate for that which is carried off through the skin.

Having stated something of the etiology or causes of this condition, and something of its pathology, we might speak of hemorrhoids and fissure, which become a cause of inactivity of the bowels by causing a reverse movement--a spasm of the colon travelling upward. In performing operations upon the rectum for hemorrhoids they are burned off by the cautery, and there is , as a result of the burning, a little smoke produced, and a few minutes after the operation we see this smoke issuing from the alimentary canal, the smoke having been drawn far up the alimentary canal and coming back afterwards. This shows that there is, in such cases, a reverse peristaltic movement,--a reverse peristalsis is set up by the irritation at the lower end of the colon, so that the fecal matters are carried up instead of down, not having been brought down to the proper point for exit.

I might now mention some of the principal things to be done in cases of intestinal inactivity: In the first place, take exercise , because exercise is the thing that stimulates the intestines; exercise develops the abdominal muscles, giving strength to these muscles until there is surprising power in the intestines, also developing the muscles

so as to hold the viscera in place when the proper position is taken.

with inactive bowels

I remember one man who used to go all doubled over in this way (illustrating) carrying his hips forward and his chest behind, and having a most pusillanimous expression. I got him straightened up and put an abdominal supporter on him, and got him to standing straight, and in three weeks he was well.. This man lived lived in Boston when at home; he had travelled all over the United States and other countries

seeking relief. He had been here several years before he came here the last time, and we helped him a little, although we didn't cure him. When he came here the last time, I said to him, "I believe your trouble is due to the bad positions which you assume,--straighten up, carry your chest up and your chin in and your shoulders and hips back, and then you will contract your abdominal muscles and be relieved." He followed directions, and in three weeks he went home wonderfully improved; I saw him three years after that and he was then well.

Another remedy for this condition is right diet,--coarse, bulky food and a ~~plenty~~ ~~of~~ great deal of it,--whole grain preparations. I don't mean, by this, oatmeal mush, cracked wheat nor anything of that kind, nor mushes nor slops, for these are prolific of dyspepsia. I am sure as much mischief has been done by oatmeal mush and the usual concomitants, sugar and cream, as has been done by griddle-cakes, doughnuts, mince-pies and fried potatoes,--of the two classes of things--mushes and fried foods, yankoe pies, ^V I think they are just about alike.

How then shall we eat our whole grain preparations? In the form of breads well cooked,--well baked--put in the oven and browned clear through. "But," you say, "is not toast constipating?" only in the form of ordinary ~~wheat~~ white toast; when that is taken, it is not promptly digested; but when browned thoroughly, it is completely digestible, leaving no residue behind.

Granose is almost a panacea for inactivity of the bowels. One business man said to me at one time, "I had not had a natural movement of the bowels for twenty years, but I have been eating granose a week and now I have no trouble, and feel like another man." That was three or four years ago. I saw him the other day, and I said to him, "How are your bowels?" He said, "I have not had a speck of trouble with them for four years,--not since I commenced eating granose; I eat it

every day, and like it." But a tablespoonfull of granose is not enough; one must eat freely of it,--we must eat lots of bread in the form of granose, which is the whole wheat; it is furnished in two forms--toasted wheat-flakes, and granose cakes. Toasted wheat-flakes is a breakfast food, and the only breakfast-food that I know of that is fit to eat in that form; this is the wheat thoroughly cooked, and the whole wheat is there, and is made by the same process as is ordinary granose, only the flakes are smaller and thicker; it is only necessary to put them through a colander or sieve, and then pour a dipper full of boiling water over the preparation, and then it is ready for the table; so it takes less than half a minute to cook it,--it is already cooked, and only needs to be moistened with a hot shower-bath and put away to steam for a few minutes and then it is all ready for the table. And it may be taken with fruit-juice, almond cream, or just as it is, also a little stewed fruit. But do not add milk, because it is probable that milk is one of the causes of the inactivity of the bowels,--the casein especially seems to have the effect to render the bowels inactive with many people. Sugar is another thing that has a tendency of this kind, because it checks the action of the liver in making bile, which is the laxative element. (Diagram.) Let this represent the intestines,--the bile is poured in here, the food being passed from the stomach to the intestines; and every little gush of the bile into the intestine gives it a stimulus and the intestines contract, and so the wave of compression travels all the way down, just as the wave of motion travels along the rope by continuous twitching; every little gush of bile stimulates the food and carries it down. In inactivity of the bowels the intestines lack this natural stimulus. When the liver becomes obstructed by gallstones or its action checked from any other cause, inactivity of the bowels is almost certain to result follow.

Another thing which it is necessary to observe in this condition is proper regimen and clothing. Excessive clothing, being productive of excessive heat, has the effect to produce an inactive state of the bowels,--there can be no question about that, because there is a consequent relaxation of the skin and of the muscles of the intestines which are in sympathy with the skin. On the other hand, the application of cold to the skin has the opposite effect. The frequent application of hot baths produces inactivity of the bowels. Punctions also, or a succession of various kinds of hot baths, when prolonged, have that effect; but cold applications have the very opposite effect, unless prolonged. The influence of cold, in these cases is very clearly shown in a variety of ways,--for instance, in the application of cold to the hands or feet; and when cold is applied to the surface of the body over the bladder ^{it} will cause the bladder to act almost involuntarily. Sometimes even an exposure of the hands or feet to cold will produce a tonic effect. "Some time ago a patient from whose bladder I removed nine stones, told me, before removing those stones "I couldn't ^{wet} wipe my hands without emptying the bladder immediately, although that had been done fifteen minutes before; but I do this if I even put my hands in cold water." The stones irritated the bladder and thus promoted this tendency. Now that tendency exists in a healthy bladder and a healthy stomach, and the application of cold to the hands and feet, and especially to the whole body, particularly to the part over the stomach and bowels has a tonic influence upon the muscles of these organs. So, if a patient has inactivity of the bowels, cold should be applied because it brings power to the muscles of the bowels to contract. On applying the cold douche and the abdominal bandage, cover with flannel only, and sufficiently to render the part comfortably warm,

but not sufficiently to make a poultice about one; it must not be covered with oil-cloth or a mackintosh, as that would produce the very opposite to the desired effect, so it is important that that should not be done. We want to keep it just as cool as it would be kept by natural evaporation, and this can be done with the flannel covering alone. A cold douche to the feet, and the morning cold spray over the whole surface of the body are serviceable in these cases. So the bath will often cure intestinal inactivity as the result of the stimulating effect of cold water upon the skin, the water being always cool.

Another important remedy in these cases is massage. When the colon is dilated and has not the proper muscular activity, massage stimulates vital activity of the muscles, and mechanically helps the colon -- both these things are effected by massage. Slapping and hacking movements also stimulate muscular movement, and the pinching of the skin and the kneading movement set up the reflexes which excite intestinal activity by stimulating the muscles. A kneading movement along the colon has the effect to empty it mechanically. These are some of the different ways by which massage stimulates intestinal activity. Manual Swedish movements are also of great value. One of the most useful things in manual Swedish movements is the breathing movement -- the chest-lifting, the arm-raising, and the deep expansion. See what happens whenever the chest is raised. (Illustrating by diagram.) Here is the diaphragm, here are the intestines, and here are the muscles outside; here is the closed cavity; here is the diaphragm above and here are the muscles. When a person takes a deep breath the diaphragm comes down and makes this cavity smaller. Suppose a person takes a deep breath, -- and that of course occurs involuntarily in the natural evacuation of the bowels --

there is a deep breath and a compression of the abdominal muscles; the diaphragm comes down and that compresses this cavity and the abdominal muscles contract and that compresses in front, and so the cavity is smaller, thus aiding the movement of the bowels. Such exercises also are of assistance, as lying upon the back and contracting the abdominal muscles by deep breathing, raising one leg, then the other, then both together; then raising the head, and so on,--these movements are extremely valuable, and this is the case with any movements which have for their purpose and effect the strengthening of the abdominal muscles, because they are thus enabled to contract with more vigor upon the stomach, intestines and colon.

Now, what about medicine in these cases? There are useful medicines,--for instance, suppose a patient says, as they sometimes do: "I feel no desire for evacuation of the bowels; I feel heavy, my brain is clouded, and I feel wretched, but there is no disposition for evacuation of the bowels." What is to be done? There is a loss of sensibility in the lower part of the rectum, a treatment must be directed there. It may be that there is a fissure there, or a hemorrhoid, which cause a movement upwards, so that the contents of the colon never get down into the rectum to the point of evacuation, so there is not set up the natural reflex movements by which the contents of the bowels are expelled. Or it may be due to the very opposite condition, in which there is a lack of sensibility,--and that condition is present in a great number of cases in which the difficulty is due to a habit of neglect to empty the rectum. In these cases there are several things which may be done, and one of these things is the application of electricity,--and this is a good thing for the strengthening of the abdominal muscles, also the ^{inside} bath, and then the up-spray. Another good thing is the application of cold water inside--half a pint of cold water. Another good

thing is alternate irrigation,--hot and cold water allowed alternately to run in and out (this is the hydrotherapy of these cases.)

Another good thing is the hot and cold sitzbath: the patient sits down in a little hot water for a moment; and then the sitzbath is continued four or five minutes in very cold water with vigorous rubbing of the limbs. These are all exceedingly useful measures. We may also introduce some stimulants, as glycerine or capsicum, ^{or boracic acid} into the rectum. I once had a patient with very obstinate inactivity of the bowels, and at night I introduced into the rectum a little capsule containing equal parts of glycerine and boracic acid, and he told me that within three hours after that, he was obliged to rise, and that he had a very thorough evacuation of the bowels, and without any ill effects. Sometimes ~~XXXXXXXXXX~~ very good results follow the use of some of these very simple remedies.. Sometimes four or five ounces of linseed oil with a little water at night produces a natural stimulus.

One useful remedy in these cases was furnished me by a quack: a lady once told me she found a good deal of relief from magnetized cotton; that a certain doctor in Chicago magnetized cotton and wet it with oil and introduced it into the rectum, and it had a magical effect; that she introduced it at night and had an evacuation in the morning; that was a combination of the cotton with the oil; it was necessary to introduce something into the rectum to stimulate the natural reflexes by which the bowels could be emptied.. This quack had found that out in some way, so he used cotton and a little oil, ^{with good results,} as I found, and I gave this lady treatment with ordinary cotton and a little sweet oil with equally good results.

Now a word in regard to diet: The absence of fats is very essential to secure natural activity of the intestines, but there must be a substitution for fats in other foods. I have found a great many

people who had abandoned a flesh diet, but have suffered because of lack of fat in their food, producing an inactive state of the bowels. My attention was called to this fact by a gentleman who had adopted a vegetarian regimen, and his bowels had become inactive, and he said he was cured by taking a table-spoonfull of vasoline every morning before breakfast. But I didn't feel very sanguine about that remedy, for I didn't think my patients would be willing to take it; but it was simply a stimulation of the alimentary canal set up by the presence of fat. A great many people find that the use of olive oil and salads will stimulate the bowels, the oil and salad as well as the bulk of the food, being beneficial in such cases. Some people find themselves benefited by the use of such articles as greens, ~~and~~ spinach, cabbage, and lettuce; but you can dispense with these things if you will use the whole grain preparations; but fat must also be used. It is not necessary to use any kind of grease; you can get all the fat you require from nuts. Nuts are valuable as a means of stimulating inactivity of the bowels. Malted nuts also stimulate intestinal activity. Malt honey is also useful for babes, because the malt overcomes the constipating tendency of the milk.

This condition is, as you see, a complicated one.--There is another thing that I should mention,--and that is, in reference to this condition when an operation is necessary for the removal of hemorrhoids, or stretching the anal muscle to overcome the spasm. We have almost a hopeless condition in these cases of inactivity of the bowels when the muscle closes up the lower portion of the rectum. In these cases relief is found by making an opening into the groin, bringing the intestine up to the groin and making it fast to the opening, so that a sort of artificial anus is produced at that point. In doing this operation the muscle is split longitudinally, so that the intestine is brought up bet-

seen the folds of the muscle, and this longitudinal muscle shuts together and acts as a valve, closing up the bowel so that there is not a continuous fecal discharge, but the bowels are closed and act in a regular rhythmical and nearly normal manner.

I might make a little further plea for the fresh-air bath. Some of you are taking a free ride every day. We have made this arrangement, not for the sake of an advertisement, but for the purpose of inducing those of you who can do so to go out and take a ride, if you can't walk.--it is better for you to do this than to stay indoors all the time. Many people are afraid of going out doors. A gentleman once told me once that he was afraid to go out doors; that there was such a sense of vastness in the spread of the country before him and of space above and around him that he was afraid the sky would fall on him. He said he never felt so terrified as he had when upon the great plains of the West.--the immensity was so vast that he was afraid that he should die. Some people are afraid of taking cold out doors; it is not out doors that we take cold, it is indoors. We are having constructed arrangements up-stairs where persons can take baths with the advantages of outdoor baths; we are going to have electric fans up there, so that we can make winds, and we will expose our patients to them so that they will not take colds when out in the wind. We have a new-fashioned air bath, and we have used it for a number of years, and now we are going to take it up systematically for the benefit of those who do not care to go out doors.

I might remind these gentlemen that we have a woodpile down here where you can be useful; we will have some axes furnished, and it will be a useful thing for you to use them for fifteen or twenty minutes a day. The Lord told Adam he must earn his bread by the sweat of his brow, and we must do the same; and if we don't sweat we don't

get the benefit of our bread; we can't afford to stagnate. The majority of patients don't give enough attention to the matter of exercise; the majority of patients don't do enough in the way of exercise, and do not expand the lungs sufficiently. The benefit of exercise is not simply to build up your muscles and make you strong like a prize-fighter,--the object of exercise isto make you breathe. Suppose you set yourselves to breathing a little while . When you ordinarily take breath, you only breathe about two-thirds of a pint of air, and the lungs will hold more than a gallon--they will hold about 300 cubic inches for the average man. When one takes a very deep breath and breathes out, he^d can breathe out a gallon--the average man or woman can breathe a gallon, but ordinarily breathes only about two-thirds of a pint.

Now the sick man wants to rebuild his body rapidly, and he can get rid off the old body in part by breathing,--you can breathe out twelve cubic inches of carbon a day . The only way you can get well is to get rid of the old fellow, and get a new man in his place; this old sick man must be unloaded gradually and the new man must be put on little by little . It is like taking an old house down piece by piece and gradually building up a new house while still living in the old one .; so the old house,--the house we live in--cannot be easily dispensed with; we have got to stay in it while ^{new} rebuilding the ~~old~~ house, and breathing^d is one of the most effective ways of shaking off the old man. Now if you double the amount of your breathing and breathe a quart at each breath, the process of rebuilding will go on twice as fast. This is not a theory but a fact. It has been shown by experiment that when a person runs he breathes seven times as fast much as when sitting or lying still. So the purpose of exercise is to give you breath-

ing capacity:— it will strengthen your muscles and thus increase your capacity for breathing, and the process will go on while you sleep as well as in the daytime,--not quite to the same degree, but to a considerable degree. Claude Bernard, by testing the students of the Joinville Academy, that the students breathed twice as much when asleep after exercise, as before they had taken the exercise. This is a matter of the greatest consequence. The purpose of exercise, then, is to awaken and quicken all the living activities, and by increasing the movement of blood through the body, assist in rendering effective the other things which are used in your behalf. Now walk out and ride out every day,--and if you don't, we'll take you up stairs and give you a sponge-bath.

Miss

SANITARIUM PARLOR LECTURE, Jan. 24, 1901.

How to be Strong. (P. I.)

J. H. Kellogg, M. D.

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LADIES and Gentlemen: I thought I would talk to you a little while to-night about How to be Strong,--what to do in order to acquire strength--how to acquire strength, and what kind of strength is the best. In the first place, What to do for Strength? Some one will say I am going right onto my pad again, but I am not.

The thing to do for strength is the thing that will make muscle--the food that will make muscle and be the most readily digested. Muscles are made of proteids; they are made of those substances which contain nitrogenous elements; these elements are found most abundantly in meats and nuts; they are found in considerable proportion also in some grains, particularly in wheat, rice, corn and oatmeal. Oatmeal contains a larger amount of nitrogenous substance than any other cereal,--about 14 to 16 per cent. There are a few varieties of wheat which contain almost 20 per cent. of proteids, but ordinarily, wheat contains from 12 to 14 per cent.. Michigan white wheat contains about 11 per cent. proteids, and corn contains about 10 to 12 per cent. proteids or muscle-forming elements, while beefsteak contains about 19 per cent. Nuts ordinarily contain from 25 to 30 per cent, and some nuts contain a higher per cent. of proteids; peas, beans and lentils contain as high as 34 per cent.--in other words, there is found as much proteids or muscle-forming elements in one pound of peas, beans or lentils, as is found in two and one-half pounds of wheat, or in a pound and a half of beefsteak--there is a pound and a half of beefsteak in a pound of peas or beans,--and about the same amount is found in nuts. This is a fact

that it is very important to know, for some persons sometimes undertake to live on a non-flesh diet, and find their muscles getting weak, simply because there is not sufficient material in their food for making strong muscles, viz., nitrogenous elements, or proteins.

Muscles must not only be furnished with food for building them but they must also be furnished with fuel to supply them with muscular energy; muscular energy requires the consumption of fuel as really as does the locomotive require the consumption of fuel for its energy: The engine has a tender attached to it which carries fuel in the shape of coal, and if we neglect to put coal into the furnace we cease to get energy from the engine, because its energy comes from coal. The same principle applies to the muscles. Coal is carbon which once existed in the form of vegetable matter, and it must be supplied to the engine in order that it may produce energy. The same thing is true of the muscles; they must have carbon. One cannot run his muscles without coal,--they must have carbon, just the same as the engine. When you burn a piece of bread in the oven, it is coal. You can burn that again and make steam out of it. Now if that piece of bread had been taken into the body, it would have been burned in the body, and the muscles are the portions of the body in which the consumption of this material takes place.

Starch, sugar and fat are the elements out of which energy in the body is made; and these substances, when taken into the body, are transformed into energy by essentially the same process as that by which energy is developed from these substances in the steam-boiler. The carbon is oxidized by combination with oxygen, and thus the energy of the carbon is set free. This may be illustrated in this way: If a number of stones are piled up into a tower, and that tower is allowed to fall over, the same amount of energy will be used ~~free~~ as was stored

in piling up the tower. When a stone falls from the top of a steeple, the same amount of energy is developed when it strikes the ground as was stored up in the stone in carrying it up to the top of the steeple. If you should shoot a bullet straight up into the air, when it came back and struck the ground it would have the same velocity as when it left the gun, making allowance for the friction of air. Now, when starch fat and sugar are taken into the body energy is organized. (Diagram.) Here is the carbon piled up in the muscles; every one of these little atoms of carbon combines with an atom of oxygen; by this combination the carbon falls down and the energy stored in it is set free in the muscles. This takes place through the influence of the nervous system,--impulses sent from the brain to the spinal chord.

This ~~nervo-muscular apparatus of the~~ ~~animal~~ ~~body~~ animal body is the most wonderful machine in the world; there was no machine ever constructed for the use of energy which compares with the animal body. The muscular power of lower creatures is, however, much greater in proportion, than that of man: There is a little beetle growing in South America has the power to seize a mass weighing forty times as much as itself, and hold it up and carry it off in its ponderous jaws. Suppose a man could lift forty times his own weight, how much would that be? Suppose a man weighs two hundred pounds, and can carry off forty times his own weight,--that would be 8000 pounds, or four tons. Here is a little creature that has great jumping capacity,--some of you have heard of them. I saw an account of a span of them pulling a little cart in the Crystal Palace in London a good many years ago: it is said that a gentleman in exhibiting these little creatures lost one of them while a lady was watching the exhibition. He begged her to retire into an adjoining room and examine her clothing, as one of the ^{little horses} had disap-

peared . She returned, after finding one of the little creatures, but the man did not recognize his old friend, and he said, "I am very sorry madam, but this is a stranger." These little "strangers" have a mighty jumping power. If an elephant could jump as far as a flea, in proportion to his size, he could go over the Atlantic Ocean at one jump. The humming-bee can move its wings so rapidly that you cannot keep up with their movements with the eye; you see the humming-bird passing over and around a flower, but you cannot see any wings. While riding on the rail-cars you will sometimes see a dragon-fly darting by at the rate of eighty feet a second, and sometimes much faster. Sometimes you will see a bird keeping up with the train without any apparent effort. Now what tremendous power it must require in the muscles to execute movements with such velocity. Some of you have at some time been kept awake with a disagreeable and annoying sort of song,--it is the song of the mosquito. Now the mosquito does not sing with his bill but with his wings; think what rapid movements he must make with his wings to make that high-pitched sound. Some of these little creatures must execute at the rate of from several hundred to two or three thousand movements a second.. It seems to be beyond belief that these movements could possibly be so rapid.

Now this exhibition of power in the muscular movements comes precisely in the same way in the body as in the locomotive,--it all comes from the food or fuel; the fuel is burned in the body, as it is in the locomotive . Now there are two kinds of food required for the muscles,--first, the material out of which to build the muscle, and those are the proteid elements; and second, materials out of which to supply the muscles with fuel for working capacity. After a man has got his muscles developed, he does not require as large an amount of proteid material as before. This proteid or nitrogenous matter is represented

by the gluten of wheat, the albumen of egg, the fibrin of meat, the casein of milk, etc., and a large amount of this substance is not required after the muscles are developed; it only requires about three ounces a day. A larger amount of the carbonaceous element, starch, fat and sugar for fuel. The average man should take about a pound of starch, three ounces of proteids, and 1.2 ounces of fat.

"How do you know that?" I will tell you how I know it: Some years ago I took 350 members of our family who were regular at their meals, and for an entire month I had their food weighed carefully, -- and they had placed before them what they wanted, and as much of it as they wanted, and they ate all they wished; and at the end of the month I figured it all up and got the averages of the different kinds of food eaten, and had them analyzed so as to find the elements they contained, and I found that the result, for the daily ration of each one was as follows: Sixteen ounces of starch, three ounces of proteids, and one and two tenths ounces of fats, making in all, twenty and two tenths ounces for the average daily daily ration of each of the 350 persons. The men ate a little over twenty-one ounces, and the women a trifle less than twenty ounces; a man, on the average ate an ounce more than a woman, on the average, but the men were larger than the women and weighed more and had harder work to do, so they required a little more food.

Now how much of the different food elements would a person require to eat in order to get the 16 ounces of starch? Grain contains about 80 per cent. starch, or about that, -- we will say it is two-thirds starch -- say wheat ^{is} contains two-thirds starch, -- we would have to have (dividing 16 by two and multiplying by 3) a pound and a half of wheat, and two and a fourth pounds of wheat bread would give a person the

proper amount of starch. Now suppose this pound and a half of wheat contains 14 per cent. or one seventh its weight in albumen. In a pound and a half there are 24 ounces, and one seventh of that is three and three sevenths ounces,--just about the proper proportion of albumen. We see how beautifully wheat is adapted to furnish proper food for the muscles. I suppose that is the reason the ancient Romans, by their experiments, found wheat to be the best ration for their soldiers. But, in modern times it is imagined that meat is the best food for soldiers,--and, if one may judge by the conduct of meat-eating soldiers in China, and if that kind of soldiers were required, I should say it would be true, when we consider all the atrocities of which they have been guilty there. I had an idea that civilized soldiers were a little different, but when we read accounts of what French, German and Russian soldiers are doing there, it makes one shudder,--it makes one think he is reading the deeds of savages. The Japanese soldiers are ashamed of what the Russians are doing there; the atrocities in which they were treating their captives--in fact it seems they are taking no captives--every one they capture is killed. We have heard of no hospitals over there for sick and wounded Chinese soldiers,--they are all killed. Then the ~~straw~~ way in which women and children have been treated is something horrible to think of. The example now being set in China by professed Christian nations through their armies in China, and the lesson that is being taught them by these "civilized" people is one that cannot be counteracted by Christianity for years and years to come; the example set these heathen people by these nominal Christians ~~cannot be~~ is such that its evil influence cannot be blotted out for fifty years to come,--it looks to me as if missionary work in China had gone backward a whole century by the manner in which these soldiers who eat meat and claim to be civilized, have conducted them-

selves. On reading the history of the wars of the ancient Romans, one is astonished at the magnanimity which they showed toward the nations which they had conquered; they treated them in such a way as to make them their friends, and thus they spread Roman civilization. The restraint and the control manifested in the conduct of the Roman armies of two thousand years ago, is something wonderful; as they were going forth and conquering the nations about them, they civilized and improved the condition of the people; they established colonies, they constructed ~~public~~ public baths and did everything they could to improve the nations they had conquered. And I believe that this fact was due, partially at least, to the wheat diet upon which they subsisted. It is said that the soldiers at one time complained to the Emperor that their general had compelled them to eat the flesh of animals, and were not supplied with wheat as they once were, but, instead, were compelled to eat the dead bodies of beasts. We have not heard such complaints as that from our modern soldiers, but they would be much better off if they did make such complaints. There is much more endurance in wheat than in meat, because it is a natural food, while meat is not; meat contains no starch.

Wheat is lacking in only one food-element, and that is fat. We have a pound and a half of wheat for a daily ration of starch. Now there is, in a pound and a half of wheat 10,500 grains, and there is two per cent. of fat in wheat; that would be 210 grains, and as there are sixty grains in a dram, there would be three and a half drams or about half an ounce of fats in a pound and a half of wheat; but we need almost another ounce of fat, so there is an excuse here for the use of butter. Bread and butter, then makes a perfect food, so far as the elements or combinations are concerned. This shows us why bread

and milk is such a favorite diet, and that is the reason children thrive on a diet of good rich milk and bread,--because he gets in that bread and milk everything necessary to furnish brains bones and muscles. From a physiological standpoint, bread and milk is a perfect diet, and a man can work as well on that as on any other diet. "But," you say, "a man cannot work hard on a diet of bread and milk." Yes he can,--he can work as hard on that as on any diet you can give him. "But there is not staying power in bread and milk." True, he would get hungry and he would have to eat oftener, because by taking his fat in the form of milk he could not get enough to last him from one meal until it was time for another meal, and he would have to eat four meals a day. It is like feeding a stove with pine,--the heat does not last long; it does not endure as when you feed the stove with hickory; you have to feed the stove oftener with pine than you do with hickory to get the same amount of heat. On a diet of bread and milk, one would have to eat about four times a day to get the proper amount of food elements.

Now suppose you take a meat diet,--beefsteak for instance: Beefsteak contains nineteen percent. proteids. The meat contains perhaps ten per cent. of fat,--it depends upon how closely the meat was trimmed off, hence it might be quite lean or quite fat, and there might be from ten to twenty per cent. of fat, but we will say nineteen per cent.,--we will say, one-fourth. Now beefsteak contains nineteen per cent. proteids and no starch at all. So it has in it material for building muscle, but it contains almost no material for the support of muscles while they are at work. Now an engine is made of iron, as the muscle is made out of proteids or albumen; but you could not run an engine with iron; it would simply be a heavy load for the ^{tender} ~~car~~ but it would not support the energy of the engine; it requires coal, which can be readily oxidized, and which is not the case with iron. So it is with

the body: beefsteak contains material for making muscles, but does not contain material for supporting the work of the muscles; and as coal is needed for combustion in the engine to support its work, so coal or carbon is needed to support the work of the muscles in the body, and to undertake to support the body with beefsteak is the same as loading down the tender with pig-iron which could not be used for the supply of energy to the engine. The body must have starch, because starch is converted into glycogen, which is stored in the liver, and there it is converted into sugar, and the sugar is carried to the muscles in the blood, and converted into glycogen again in the muscle, and there it is organized, --piled up into a tower, if you please--and then, under the influence of impressions received from the brain and spinal chord, this pile is tipped over and then the oxygen can mix with the carbon, every atom of carbon ~~mixing~~ combining with two of oxygen (CO_2), that is carbon dioxide, and thus we have oxidation taking place and force liberated, in the same manner that heat and force are liberated in the engine. Supposing you have been running to catch a train, --when you were seated, you pulled off your overcoat and opened a window because you were so hot; your temperature was two or three degrees above normal. Your muscles have been burning up fuel in the body by which energy was produced.

Now see how much beefsteak we would have to eat in order to get the right amount of carbon for a day's ration: you might eat a whole ox and not get the proper amount of starch, because there is no starch in the ox. So you get but very little muscle-food out of the ox, --you get material out of which to build the muscles out of beefsteak, but you get nothing out of which to support the work of the muscles. That is the reason a man wants potatoes with his beefsteak, --the potatoes are nearly all starch; so you can live very well on beef

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and potatoes. The potatoes have but little albumen and no gluten, while the beefsteak contains a surplus, so one could get along very well on this diet.

Here is an interesting point that I want to call your attention to: beefsteak contains about one-fifth its weight in albumen or proteids, the element that goes to build up the muscles. Let us see how much we would get in a pound, or 7000 grains; one -fifth of ~~se~~ 7000 grains is 1400 grains,--we would have about three ounces for building the muscles, but we lack material for the support of the wear and tear of the muscles, and this we must supply. There are shops along a line of railway for the repair of engines which has lost belts, nuts, etc. That is what the proteids are for, ^{in the body.} In the work of the muscles there is a little tearing down of the muscles themselves. Carbon in the form of starch supports the muscle-work, but we must have a little proteids for supplying the wear and tear of the muscles. Now in a pound of beefsteak we have three ounces which are made up of proteids. Now we require about twenty-one ounces of food material for a day's rations--about twenty-one ounces of solid or dry food-material. A pound of beefsteak contains about 28 per cent. nutrient material, so in order to get twenty one ounces of nutrient material we would have to eat about five pounds of beefsteak. Now in one pound of beefsteak we have three ounces of proteids, which is all we need; and in five pounds of beefsteak we would get fifteen ounces of proteids, or twelve ounces more than we require. What becomes of that twelve ounces of proteids? I have been repeatedly told by those who were living on a diet of beef-pulp, that they ate the pulp of five pounds of beef in a day; and one doctor told me that he ate nine pounds of beefsteak at a meal, ^{in a contest.} I have been told that Mayor VanWyck of New York once ate eleven pounds of beefsteak at a meal, ^{in a contest}--he was the champion beefeater.

Now I will tell you what becomes of the twelve ounces of surplus proteids, where a man eats five pounds of beefsteak in a day: ^{we} had a man here who ^{the experiment of} ~~made~~ eating four or five pounds of meat a day: we examined his urinary secretions, and found that they contained twenty-four grams of urea. Urea is the residue of the proteids or nitrogenous stances; these are carried off through the kidneys, while the carbonaceous waste substances are carried off through the lungs,--that is, most of it is carried off through the lungs, a little of it being carried off through the liver and skin; it goes off in the form of water and carbonic acid gas. Well, as I said, there were found twenty-four grams of urea in the secretions of this man who ate four or five pounds of meat daily. At the end of the second day of eating meat at this rate we found forty eight grams, and at the end of the fourth day, ninety-six grams. There was a large amount of uric acid, or whitish or brick-dust sediment, which signifies an excess of uric acid; most of these sediments are composed of an excess of this element uric acid combined with urates of soda. This excess of urea means that there is an excess of nitrogenous material in the food. Most of this extra twelve ounces is mostly converted into this excrementitious matter. Suppose a man should eat starch enough to get a surplus: no particular harm would be done; he would be a little more plump,--in other words, it would be stored up as residual tissue; it would be stored up for a rainy day--or rather for a hungry day, when he could not get bread enough to eat. But suppose he eats so much beefsteak or other meat as to have a large surplus of proteids,--there is no place to store it, except in the joints, and it is stored there in the form of uric acid, and by-and by there is such an accumulation of uric acid that it breaks out in the form of rheumatism, sciatica, or some allied disease --neuralgia, or degeneration of the arteries, etc. Uric acid is a poison.

This proteid food substance that you take into the stomach is harmless and innocent when in such quantity that it can be properly used, but when it cannot be used, it cannot be stored except as uric acid. It cannot be stored as muscle, because you cannot make any more muscle than you need; a man may eat any amount of beefsteak, but he cannot pile up ~~muscle~~ muscle; he cannot get stronger in that way; it is by exercise that he gets strong, and not by eating beefsteak. You cannot deposit any more proteid in your muscles than there has been room made for it by muscle-work. In the muscles, there is a tearing down, little by little, and this you must supply by proteid material, the same as bolts and nuts are supplied to the locomotive in place of those which have been lost. You can store up starch in the form of ~~fat~~ glycogen, but you can't store up proteids in that way; nature has made no such provision, so this surplus is eliminated so far as possible through the liver and kidneys. Now this man who ate the five pounds of beefsteak in a day for five days and was thus taking in twelve ounces of surplus proteids only turned out of his body two ounces of that surplus, so there was still ten ounces of the surplus left in the body which the liver and kidneys could not eliminate, and there was no place to store it except in his joints, and the result was that he became so depressed and melancholy ^{in two months} that he went and --got married! He was rather in the condition of the old maiden lady who was one day taking in the woods, and she heard an owl hooting, "To who, to who /" and she said, "Oh Lord, anybody!" This young man did not get over his trouble for some time, and he made up his mind not to try that experiment again.

Now here is a man who is put on a meat diet; he is required to eat meat day after day, and nothing but meat. Now I say that any man

who has any knowledge of physiology or of Physiological chemistry cannot treat a man in that way conscientiously and honestly. Nobody but an unscientific physician can conscientiously and honestly put a man on a meat diet and give him enough of this kind of food to sustain his body. If he does that, and if he is a scientific man, he knows that he is filling that man's body up with poisons for which some day he will have to account. For this ten ounces of poisons which are daily accumulating in the body must come at some time and in some way,--and it depends upon the man's capacity to store up uric acid: the nerves and muscles and then the joints get filled up, and then he has joint-rheumatism; uric acid begins to accumulate in his joints and he begins to suffer, and does not know what is the matter; he does not know the relation of his diet to this condition.

The doctors have only just found this out; ten years ago they didn't understand it . . . But Dr. Haig, of England, a most scientific man, went to the trouble of making a daily examination of his food and his secretions. At the end of ten years he published a report, and in that report he showed exactly what a meat diet does, and just what beans bread, chickens, milk and every other article of food will do, and he has published a wonderful account of this in his work on Uric Acid as the Causation of Disease, and he has proven, so conclusively that no intelligent man can possibly dispute it after reading his book, that meat-eating is the cause of chronic rheumatism, and that neuralgic and similar troubles are due to the causes which I have explained to you, and which we have proven right in the Laboratory here,--that the meat-eater has uric acid formed in his body, and that it takes a long time to get it out.

Now let us see how long it would take to get this ten ounces of surplus material out of the body: three hundred grams are stored up

every day. Now we will suppose we can eliminate ten grams of that in a day; at that rate it would take thirty days to get out of the body what is stored in it in a day; that is, when one is eating meat exclusively, he is taking into his body in one day as much uric acid as he can get out in thirty days, in order to recover from the effects of the gormandizing of meat in one day. I was telling you about a doctor who ate nine pounds of beefsteak in a contest, in one meal. He said he knew how he would feel after it; that when he got up from the table his shoulder was so stiff that he could not use it, and the next day it pained him in a frightful manner, and the third day he was laid up. Now if a man proposes to make a tomb of himself, he may do it, but I won't. I know of men who will smoke, just for the sake of the tickle of the nicotine, when they know it is going to shorten their lives. One man said to me, "I smoke, and I am going to smoke, although it cuts ten years off my life." If he knew he would die to-morrow in consequence of smoking to-day, he wouldn't smoke, but because he thinks the effects of smoking are put so far away, he does not have the proper appreciation of the sin that he is committing, and the awfulness of the punishment that is coming upon him,--and the same principle applies to the beefsteak eater.

Now suppose a man is eating bread and beef: I have already shown you that when a man eats a pound and a half of bread he gets about the right proportion of starch ^{and proteids} ~~and nitrogen~~. Now suppose a man eats a pound and a half of bread and a half a pound of beefsteak in a day: In that half pound of beefsteak he would get one and a half ounces of proteids. Now in this two and a quarter pounds of wheat made into bread, he has got all the proteids that he needs, and when he eats a half a pound of beefsteak he gets an ounce and a half more of proteids than he requires,--and what is going to become of that? I have already told you. He cannot possibly combine bread and beefsteak

in any sort of proportions in which he won't get an excess of proteids, because the bread has the right proportion of proteids; he can eat beefsteak proteids, but when he comes to eating bread along with the beefsteak, he is getting an excess of proteids all the while.

Now, with reference to strength: What bearing has all this on the question of strength, endurance and muscular ability? Just this: Uric acid is a muscle-poison. I made an experiment a good many years ago which was very interesting: I took a live frog's muscle and suspended it by one end, and put a weight on the other end, like this (diagram.). I applied an electrical current to this muscle and kept it lifting until it was tired out, and then I washed it and applied the current again, and the muscle worked as hard as before until it was tired, and then I washed it again, and in a minute it was ready for business, and so on. That experiment has been repeated hundreds of times in the laboratory. Now what did I do when I washed the muscle? I washed out the poison,--that is what is known as fatigue poison--the product of muscle-work, the result of burning fuel in the stomach. Suppose we have a stove in a room, and no pipe for the stove! we build a fire in the stove, and the room is soon filled with poisonous gases. What would we do? We would all go out,--and if there were some candles lighted in the room, they would go out also. We would go out because the gases would extinguish us, just as they would extinguish the candles. And if the room was absolutely air-tight the fire itself would go out --it would put itself out. When there is a burning building, what do the firemen do? They shut the doors and windows tight. Why? Because the gases produced by the fire are themselves the most effective means of putting out the fire; the carbonic

acid gas generated by the fire, if confined, will put it out. The same thing is true in the body. The muscle makes a poison capable of paralyzing the muscle. That is why the muscle gets tired. When the brain works, it makes a poison, the effect of which is to paralyze the brain; that is why a person gets tired of thinking,--that is why he gets sleepy and cannot think any more. And so it is with every other organ of the body: so it is with the salivary glands, and so it is through all the parts of the body,--every part of the body, when it works, makes poison. The same thing is true of all the living cells, whether of animals or plants,--the plant must take a rest; it works nights and rests in the day time. It does different kinds of work, taking in material, and working and using it in the night. And that is what we do also: we gather in food material for the body in the day-time and use it and grow in the night. Children grow in the night; that is the reason it is necessary for boys and girls to take plenty of sleep. They gather in material in the day-time and use it in the growth of the body at night; so they must have plenty of time to sleep. (I didn't get much sleep when I was a boy.) After exercise or hard work there is a soreness ^{and lameness} in the muscles. Is that due to poisons? No; it is due to the fact that the ~~muscles have~~ bloodvessels have been dilated for the sake of receiving more nutriment and making more muscle, and the soreness and lameness is the promise to you that you will have better and stronger muscle. This is known as secondary fatigue. The muscles are dilated and the nerves are pressed upon by the muscles when at work, there is an extra amount of blood brought in, and that builds up the muscle and makes it stronger; so when you feel lame and sore after exercise be glad, for in a couple of days you will have a better muscle, and you will not be lame and sore then, because nature has prepared the muscle for the emergency,--nature has discovered the weak spot in the

muscle and repaired it and made the muscle stronger and better .

The effect of poisons is to fatigue and to paralyze,--and that is precisely the effect of the beefsteak that you eat ,when you eat an excess of it--when you eat fifteen ounces of beefsteak when you only need three, or fifteen ounces of proteids when you only need three -- when you do this, you have taken into the body, as I have said, twelve extra ounces of proteids, while the kidneys are only able to eliminate two ounces, so you have ten ounces of proteids too much in the body, and you have generated that amount of poison also in your body by work and so you are fatigued afterward; that is the reason the cat or the dog lies down in a stupid condition after he has eaten. That is the reason the anaconda, after he has ^{swallowed} ~~eaten~~ a sheep lies down in a torpid condition. That is the reason that a man after eating a great dinner, including a great quantity of meats of various kinds, they feel sleepy and torpid, and feel that they must have some whiskey or cigars to wake them up. Probably the reason that people drink tea and coffee when living upon such diet, is, that they may antagonize this condition. Perhaps that is the reason that a man who has eaten beefsteak wants a stimulant. A poor man who had come to the Workmen's Home in Chicago once told the man in charge that he was lonesome and ~~was~~ going off to have a spree. Our manager there told him that he would give him some treatment and try and help him get over his desire for liquor. "No," he said, "I am lonesome and I am going to have a ~~little~~ spree for a little change, for I am tired of this dull routine life. But the first thing I am going to do is to get me a great big juicy ^{and eat it} beefsteak ^{to} give me a whiskey appetite." That is what a poor ignorant man from the slums knew about the influence of beefsteak. He never saw me in the world, and never heard me give a talk on dietetics, and he never knew anything about my "crankiness" or "fads" that some of you talk

about. He had never read a book on physiology in his life; he had discovered for himself that if he wanted to get a whiskey appetite that beefsteak was the thing to eat, so that was the thing he was going to do, as a preparation for his spree. I could tell you many such cases; this fact is demonstrated in hundreds of cases that I might tell you about. Beefsteak does create a desire for stimulation. Why? Because it fills the body up with these poisons which stupefy and benumb and paralyze a man's faculties and make him feel that he must have something that will get him out of that condition and awaken him. When I was coming through Des Moines on my way from the West, I stopped off there and called upon a friend of mine who had started a vegetarian restaurant in the interest of food-reform. I asked him what sort of customers he had. He said he had some of the finest people of the city. Said he, "One of my best customers is one of the Judges of the Supreme Court. He tells me that he couldn't get along without this restaurant, because when he takes an ordinary dinner at the hotel, he cannot do legal business for about three hours after eating, "but," said he, "when I take dinner here, I can go right to work, for my brain is clear; but when I take an ordinary dinner at the hotel it takes me about three hours to get over it."

But a man says, "When I eat beefsteak it makes me feel better and stronger." That is the first effect of the uric acid,--it has a stimulating effect at first. Haig has shown that it increases the blood-pressure; it is a stimulant and excites the heart. That is the reason soldiers on the march are given Liebig's Extract of beef. That is the reason the doctor prescribes animal broth for a fever patient,--because it is stimulating. The doctor in charge of one of our largest insane asylums told me that he had discovered that beef tea was just as good a stimulant as brandy,--that it was better than brandy, because it did

not have the bad after effects of brandy. The British army in Africa has had beef-tea served to them instead of whiskey, because it has been found that it is a better stimulant; alcohol makes people sleep, but the beef-tea does not make one sleep so soon as alcohol,--that effect comes later.

Now the reason why a man who wants good wind and endurance should avoid the use of meat: If a man wants endurance and wind, or has hunting-dogs and he wishes them to have good wind and endurance, beefsteak must be left wholly out of the question; their diet must be made out of grains. Why? Because the carbon of grains is the fuel that is necessary to support the muscular work of the body, whereas meat contains the material for building up the muscles; but when it is taken in excess it becomes an impediment, or a brake on the wheels of the vital machinery.--

Ques. How should one take his starch?

Ans. Well digested,--for instance, browned rice zwieback and toasted granose cakes--foods which are dextrinized for this purpose. Or he may take foods that are partially digested,--such as granut. Some of you eat Sanitas porridge, in which about three fourths of the starch is completely digested; in Sanitas gruel, about 60 per cent. of the material is soluble at once. In the form of malt honey the starch is completely digested so that it is ready to be taken into the body and is ready for immediate absorption. The experiments that have been made with these foods are very interesting. Mosso found that if a man worked the muscles of his hand till they tired out, that if he gave that man cane sugar, in a few minutes he showed the greatest energy; that when there was no time for the digestion of starch, ~~was~~ cane sugar taken alone furnished the same amount of energy as if starch had been taken and digested. But cane sugar is a poor food because it ferments and

makes mischief,--and there are other objections to it . Now if, instead of the cane sugar, one would take maltose, or better, a ^{ripe} ~~baked~~ sweet apple he would find the sugar already digested in the form of levulose, which is one step beyond maltose, and the last step in the process of digestion, having passed through amyloextrin,, erythroextrin, achrooextrin, and maltose or malt honey or any ~~of~~ the malt products, only malt honey is furnished so that you can get the same thing without the butter taste, and at a price so low that every one can use it as a food.. Levulose comes last, in the order of digestion. The levulose or the form in which sugar is circulated in the blood ,is found in ripe fruit, so when you eat a ripe sweet apple, it is ready to be digested right off. The same is true of grapes; that is why grapes are so refreshing, and why a person can eat a cluster of grapes and feel stronger immediately. That is the reason sweet cherries are so refreshing,--such fruits contain a large ~~amount~~ proportion of levulose. All sweet fruits contain levulose, which is the most perfect of all muscle foods,--it is the muscle-food par excellence.

A VOICE : Sometimes persons have trouble with dextrinized grains.

DR. KELLOGG: There are people whose stomachs disagree with any kind of food, and those stomachs have to be subdued and educated .. Some stomachs are completely worn out , and they must be cured. They may be in a state of chronic inflammation. It may be hyperpepsia, which is the worst kind of case to deal with, so far as the digestion of cereals is concerned, and in that case we will have to take the grains perfectly digested . Sometimes we have to adopt various means to secure complete digestion; once in a while we find a case in which the acid of the gastric juice must be kept neutralized while the starch

is being digested, and we have to give the patient a half a teaspoonful of soda to act until the starch has had time to digest; we have to accommodate the condition of the man's stomach to the work to be done, by a little soda, Seidlitz powder, or Seltzer, in order that a man may be able to digest his dinner, and this must be kept up until you can cure the stomach trouble---

Ques. What causes uric acid in the stomach of a man who is not a meat-eater?

Ans. That person used to be a meat-eater, and he ate so much and so long and got so much uric acid poison into his system in consequence, that he got behind,--for, as I showed you the other day, it takes such a person a whole month to get rid of the uric acid that is accumulated in one day. One Christmas dinner will lay up misery in store for a man for weeks and weeks to come, for uric acid is very insoluble and consequently very difficult to eliminate, and it sometimes takes a long time for this to be done. Here is a man who has been a meat-eater for twenty years, and there has been such an accumulation of uric acid, --he has got so far behind--that it will take him two or three years to eliminate this poison after he has stopped eating meat. Haig has called attention to the fact that in such cases it takes from six months to a year to eliminate this surplus, accumulated, ^{poisonous} material--

Ques. How would you account for rheumatism in the joints and muscles in one who has rarely ever eaten meat?

Ans. There are some foods besides meat which will accumulate uric acid. When a person eats three ounces of proteids, and this is sufficient to support his muscles while at work, he should not eat more than three ounces. Suppose he does not do more than half as

muscle-
much work,--he does not need more than an ounce and a half of proteids--
and I don't think I eat that much: for the last six or eight weeks I have
not eaten much proteids ; I don't eat anything but fruit and bread;
my diet is very sparing: for my breakfast this morning I ate one granose
cake and four apples--that was my breakfast. For dinner I ate two gran-
ose cakes, half a dozen almonds, and three or four apples. Some of you
think you couldn't live on that sort of diet; but remember it is not
what one eats but what he digests that benefits him. I am doing very
hard mental work, and I get but little sleep. For some days back I
have been overwhelmed with matters which have kept me hard at work
and I have worked nearly all night some nights, and so I am living
very sparingly. But I don't intend to keep up that diet indefinitely;
but at present I eat but little proteids, for ~~when~~ ^{if} I take a sur-
plus my head will not be as clear as it should be. I am now about
fifty, and at that age one must be careful in this respect, although,
when one is thirty or forty, he may go on digressing from this rule for
a long time without apparent injury. I have a hereditary rheumatic
tendency, and have ^{had} a rheumatic nodule growing on my left hand,--but
I never told any one about it until I got rid of it .

Ques (a lady.) Was that caused by the use of milk?

Ans. Yes. I used to take a great deal of milk; I used to
think milk was the best thing in the world, and we used to consume
several barrels of it here every day; it took about 250 cows to supply
this Institution with milk; the amount of milk we used to consume would
astonish you; patients would sometimes use two or three quarts of milk
a day. When I switched off from the use of beefsteak I supposed that
milk was the thing to take its place, and so I ate of it very freely,
and I had a constant headache, and had a tremendous battle to keep

my wits going. About ten years ago I found that little rheumatic nodule growing, and I was ashamed of it,--my father was rheumatic, and I had a hereditary tendency in that direction. Besides, my life has always been sedentary; I have always been engaged in some sedentary occupation all my life, having commenced work in a printing office at ten, taught school at sixteen, and graduated in medicine at twenty-one, so I have not had anything like a fair chance for physical development. The only way in which I could get an education was by systematically depriving myself of sleep; I had to make my way through college in that way, and after I was ten years old I had a chance to paddle my own canoe, so I had to put in every minute, and worked when I should have been asleep, and the result was that at the age of seventeen I was broken down, and my friends all said I was going to die,--and I did have a battle for my life; but I have not been well till the last ten years; since that time I have enjoyed a great deal better health than I ever enjoyed before. I met an old gentleman this afternoon whom I used to know, and he said he was surprised to find me looking as well as I did ten years ago. But when I was eating milk, I was taking an excess of proteids, and they simply accumulated, and so I got rheumatism in consequence. Milk contains five or six per cent. casein. Now suppose a person takes two quarts or eight pints of milk for his daily ration,--he would get nearly six ounces, or twice the nitrogenous element that he needs. I suffered in consequence of taking an excess of proteids in the form of milk, as I have said, and I learned the cause of my trouble and stopped taking milk. But one can take an excess of proteids in the form of other foods,--for instance, he can eat an excess of nuts, and I have seen people eat too much nuttolene and other concentrated foods which contain a large proportion of nitrogen, and suffer from uric acid accumulations as the result.

But in eating meat, one is more likely to go to an extreme than he is in eating these natural foods. A child can live on milk, because it contains the element which builds up the muscles, and also for the work of the muscles; the child needs not only food which will supply the wear and tear of the muscles, but he needs material out of which to make muscles, but in the adult the muscles are already developed; so while food is the natural food for the child, it is not the natural food for the adult, and the adult who undertakes to live on it is certain to die sooner or later from excess of proteids.--

Ques. Does meat and potatoes make a well balanced ration for an active person? Can a person work hard on it?

Ans. I have published a little book called "Balance Bills of Fare," in which this question is fully discussed.. One would have to take a large quantity of potatoes if he were to substitute it for meat. An Irishman eats four or five quarts of buttermilk with a pound of potatoes and thrives on it. The German woodchopper eats his Schwartzbrod and sour milk and thrives on it. But the addition of meat throws the diet out of balance: if one lives on a meat diet he gets such an excess of proteids that he is bound to suffer from uric acid poisoning sooner or later. You can find it taught in our standard works on Physiology that a man cannot live on a meat diet without becoming diseased; that is a physiological fact that I can give you any amount of authority for. There is not a single specimen of the human race that lives largely upon a meat diet that ~~does~~ ^{and die} ~~not~~ ^{prematurely} ~~diseased~~,--and this is especially true of the Esquimaux, Finns, Kamtschatdales and other inhabitants of the Arctic regions who live largely upon fats or meat. The same is true of meat-eating animals: the dog is old at fourteen, while the donkey may live and be thriving and healthy at forty or fifty. The horse, if properly treated, may live till he is twenty five or thirty.--

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Ques. Would you recommend grapes in a diabetic case ?

Ans. Yes, grapes are good. Raisins are not so good as the ordinary grapes, but apples are better still.

Ques. Can rheumatic warts or nodules on the fingers be cured ?

Ans. I cured mine; and it was a serious matter to me, for I could scarcely touch it while engaged in my surgical work which requires a great strain upon my fingers,--the trouble with these two fingers was so great from this cause that I feared that I must be retired from surgical work. When I discovered this, I began looking carefully into my case closely to see what was the matter. When I found that milk was the cause of my trouble, I stopped the use of it. I found, when using milk that I had a very bad coat on my tongue,--and I had had it for twenty years and did not dare to tell my patients about it. But now I am perfectly willing to show my tongue at any time, and I am going to let you see it, because I am not the least bit ashamed of it, for it is as clean as a calf's tongue. I used to look at my dog's tongue, and I thought I would be glad to have as clean a tongue as he had; but it took me three or four years to get rid of the uric acid that had accumulated as the result of the use of milk, and it was about four years before the nodules disappeared. But the nodules have disappeared, and my tongue is clean, as you see, and I can work harder than ever I could in my life, and I am sure it is because of the disappearance of the uric acid that I stored up by the use of milk. If you are going to use milk, take just the cream. I believe that cows' milk is a most pernicious article of diet for man. It is good diet for calves, because they have four stomachs, while man has but one.

SANITARIUM PARLOR LECTURE, Jan. 31, 1901.

How to be Strong. (Pt. II.)

J. H. Kellogg, M.D.

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LADIES and Gentlemen: To-night I want to talk to you especially about what kind of strength is most worth having. There are many different kinds of strength. There is pure brute muscular force, for instance in the arm; the blacksmith has that. He gets his right arm very strong by constantly pounding with his right arm, and at the same time he gets curvature of the spine and makes his right side stronger than his left. The spine, when contracted by the muscles, is like a bow when contracted by the string. By the contraction of the blacksmith's muscles on the right side, his right shoulder is lower than the left.

People do not notice the deforming influence of some kinds of exercise as much as they should. A man's exercise or work may be of such a nature as to give him almost any shape. This is also true of the lower animals. We see the difference between the cart-horse and the racer. You know the cart-horse as soon as you see him, and you know the racer as soon as you see him: one kind of exercise has made one animal strong, but stiff and clumsy, while a different kind of exercise has made the other animal slender, graceful, and very fleet. We see that most artisans are more or less deformed. When you see a man elbowing his way along the street like this (illustrating), you know he is a cabinet-maker or a carpenter, because his arms are drawn up; he has used his flexor muscles more than his extensors, and his flexors are so much the stronger that he cannot straighten his arms without an effort. He has wrinkles in his arms, as people have wrinkles in their faces. We see people carrying all sorts of wrinkles in their

faces. These wrinkles are said to be indications of habits of thought, just as wrinkles in other parts of the body are indications of habits of sitting. I saw a man in a bad position the other day, and I said to him, "Do you know that your stomach is scowling,--it has wrinkles." "No," he said he didn't know that. "I said, "I suppose your stomach has good reason for scowling at the manner in which you have imposed upon it." Said he, "What do you mean?" Said I, "Do you see these wrinkles running crosswise-- that shows your habits of sitting." Then I showed him how he was in the habit of sitting at his desk, and I said, "You usually sit in this position at your desk, don't you?" "Yes, but how did you know that?" "Because, when you sit in that position you make these cross-wrinkles, and you have kept in that position so long that these wrinkles have remained there ." That reminds me of a lady's coming into my office one day and asking me what was good for wrinkles--like this (scowling.) I have had many people consult me about this kind of wrinkles, but they have never asked me for a cure for wrinkles running the other way--longitudinal wrinkles--unpleasant wrinkles. People have these unpleasant wrinkles because they have an unpleasant state of mind . You know there is a relation between the muscles of the face and the brain; the muscles which are connected with the brain are also attached to the skin. Here, for instance, is a muscle which goes round the mouth, and when a boy wants to whistle, he tightens this muscle , or "puckering -string," in order to make a small opening with his lips so that he can force the air out with a vibration which will produce a note. So, when a person shuts his eyes he contracts the orbicularis palpebrarum. Other muscles produce different expressions of the face,--one set of muscles pulls the corners of the mouth down, and another set pulls them up, expressing different states of the mind . All the difference between a happy man and a melancholy man is expressed

Wrinkles

by the different directions of the corners of the mouth. If the corners of a man's mouth are up, he is happy; when they are down, he is melancholy. When a man is "down in the mouth", the muscles pull the corners of his mouth down; when he is cheerful and hopeful, they pull them up. There is a question among philosophers as to whether we are happy because we smile, or whether we smile because we are happy, but at any rate there is something in a smile which strikes in and tends to make a person happy, and there is something in a happy state of mind which strikes out into a smile. There are certain telegraphic impressions sent from the brain to the muscles of the face to give expression to the mental condition of the man. A man cannot feel happy within, without looking happy; and let a man feel happy, his heart bubbling over with joy, and let him look sour if he can,--it is absolutely impossible. One can manufacture an expression of rage, of anger, or of sorrow, but we know it is made. Watch the expressions on the face of an actor on the stage,--you know the difference between them and the expressions on the face of a man who is really experiencing the state of mind which corresponds with them. There is only once in a while a man who can imitate nature in this respect--and then he does not really imitate nature; he simply has the power to put himself into the state of mind which corresponds with the expressions on his face.

We are all actors, showing on our faces the state of mind which exists within. Our faces are mirrors of what is taking place in the brain, and the wrinkles on our faces indicate our habitual state of mind. When one has this sort of wrinkles (illustrating), they indicate that he is jealous or envious. If his face has this appearance (illustrating), the indication of these wrinkles is, that he is scornful,--he has only to turn up his nose by the contraction of the levator labii superioris alaeque nasi muscle. When one uses one muscle or set of more than others, they become too strong for the rest of the

muscles of the face, and the expression becomes permanent,--just as the flexors of the artisan become too strong for the extensors and the arms are drawn up, so the nose is pulled up by the little levator labii superioris alaeque nasi muscle, the constant use of which keeps the nose and face out of shape. A lady once wanted me to fix her nose,--she wanted a better shaped nose. I told her that her nose fitted her face exactly, and she went right out, and never troubled me again.

It is wonderful how our bodies are under the control of our brains and of these little nerve-cells which connect the brain with the rest of the body: our bodies are being all the time moulded and shaped to suit our mental,--and I might add, moral states. You can tell something about a man's character by the way he walks or stands, for there is expression in a man's feet--in fact I once heard of a person all of whose expression was in his feet. There is expression in the way a man stands or walks. When you see a person walking along in this way (illustrating), you feel that he is a pusillanimous sort of person, and is too shiftless to stand up straight, and too little self-respect to hold himself up properly. It takes an effort to hold one's self up straight. When I was in Egypt I saw many Arabs, and they were as straight as an arrow. The little Arab boys and girls out in the streets at play were also straight. I didn't understand the secret of this, and asked my dragoman, Mr. Lloyd, who had been in that country about thirty years, to explain it to me,--said I, "Are those people naturally straight?" "Oh, no," he answered; "they are trained to be straight; if they are out of the right position, the parents of the boys and girls will say to them, "Why do you sit down there in that position for, like a dunce,--why don't you sit up straight." They scold them whenever they catch them in bad positions and train them to be straight." I was riding

one afternoon on a country road near Cairo, when I saw a surprising sight: There were a lot of little children playing in front of a very poor hut made of mud; they had poor little scanty gowns; the little girl who was about four or five years old had a kind of pan balanced on her head, and the boy, about three years old had a board balanced on his head, and the purpose of this was to keep them in an upright position while at play: they had been taught to carry things on their heads so as to ^{keep} walk upright. Now when you try to balance something on your head when you are walking, you can't do it if you walk in this way (illustrating.) You must stand straight if you wish to balance anything on your head: the only way to maintain your equilibrium is to stand properly,--with the hips back and the chest in front. This must be done by training the muscles, for in order to maintain that position, it is necessary that the muscles of the back should be strong: they must be properly developed. The vertebrae of the body is the bow and the back muscles are the string of the bow, and they hold it taut. Now let this string relax, and the same thing happens ~~that happens~~ to the back that happens to the bow when the string is relaxed--the ends of the bow spring apart, and when they are tight, the ends of the bow come nearer together, and the bow is in the back. But you will see people going about with the bow in front. A lady came into my office the other day with this kind of a bow, and she had three big corns on her back; she was in the habit of sitting down in her chair in this way (illustrating), resting her back against the back of the chair, and the attrition of her back against the chair had actually produced three callosities in a row. I asked her to sit up straight, but she could not do it, and I actually was obliged to put one hand upon her back and the other upon her chest, and push hard until I heard the vertebrae slip

into place, going upward three notches; and when she got straightened up, she could not stand in the wrong position.

Many people say they can't stand up straight because it makes them so tired. So it does, and this will continue to be the case as long as the muscles remain weak,--you will be tired when you stand straight, until your muscles become strong. The thing that is necessary for correct carriage, is strength of the back-muscles. I once saw a little Scandinavian girl who was here for several years, and was as straight as an arrow. I asked her to put the tips of her fingers to the floor without bending her knees, first doing it myself. She did as I had done, and said she, "I can do better than that," and bent over and ~~touching~~ laid her flat hands on the floor, making the hinge at the hips. Well, I could do that too, at that time. She told me she knew nothing about gymnastics. "Then," I said, "you were not born in this country,--if you had been born in this country you couldn't do that." She said she was born in Denmark, and worked on land with other children, and showed me how they worked, bending at the hips. Said I, "Do you crouch down, bending your knees at your work?" "No," she answered. "Why/not?" "Because my father told me it didn't look well." Now there was a poor Scandinavian farmer who taught his children while at work to bend over at the hips so as to look well, and that it would make them round shouldered to bend over crouching down in this way.

I have found among the poorest and simplest primitive people, a pride of personal appearance; you have no idea how much pride these people have. While out ~~west~~ among the western mountains, the train ahead of the train I was on, was wrecked, and while waiting for the track to be cleared, I saw a majestic looking Indian; he was as straight

as a pine tree. I watched him, to see how he walked, and he walked in this way (illustrating.) When he stepped, he put his whole flat foot down. He was dressed up in primitive Indian style, with a grand figure, broad shoulders, deep-chested and proud as Lucifer. When he walked, he didn't keep his hips forward, striking on his heel and jarring his spine at every step, as is the usual manner of walking; he put his chest forward and hips back, so that his weight, every time he fell forward would fall on his flat foot instead of his heel--he simply fell forward at every step and just put his foot down at each step because he had to; he let his body fall forward till it was time to put down his foot, and then he put it down flat, not resting his weight upon his heel, and so he walked easily. But the thing that struck me particularly was the majestic bearing of that ^{wild} Indian,--he was evidently proud of it. Civilized people know a great many things that savages do not know, and savages know a great deal more about some things than civilized human beings do.

We haven't found out how to be even good animals. In the progress of civilization we have given our attention mostly to the brain and mind. I don't think we have respect enough for the body. In the earlier ages of Christianity there was great contempt for the body, and I am afraid some of that feeling has come down to us as a legacy. People used to think it was pious to be dirty. I once read of an old monk who was canonized because he hadn't combed his hair or taken a bath in fourteen years. It is said that his pantaloons had three hundred red patches on them, and they were hung up and preserved and kept on exhibition as evidences of his piety. One of his contemporaries wrote that the purest souls were to be found in the dirtiest bodies. There was once a Bishop of Paris who actually threatened people with excommu-

munication if they patronized the public baths,--and that was the only way they could get a bath in Paris,--and there are not enough public baths in Paris at the present time to accommodate the people. And they don't have baths in their houses in Paris. When I was there a number of years ago, I saw a two-wheeled cart, and I saw something on it steaming, which my guide said was a bath, ^{for one}. Then I saw a one-horse wagon and horse drawing a bath, and the guide said that was a bath for ~~for~~ two. ~~XXXXXXXXXXXX~~. Then I saw a two-horse vehicle with a bath which was said to be intended for a whole family. In those ~~days~~ early days, it was thought to be piety to be slack and dirty. One historian says that for a thousand years not a man, woman or child in Europe had a bath, except by accident. Baths were tolerated in Spain when people were born, when they were married, and when they died. One of the members of the English Embassy in Madrid, it is said once called for a bath-tub at his hotel, but they didn't have such a thing, so they brought him a couple of butcher's trays, and after making a sort of Colossus of Rhodes of himself in using the two trays at the same time he took his bath, but in doing so, he spilled ^{This was repeated a few days, and he} some of the water. He was sent away from that hotel by the proprietor who said he wouldn't have a man in his house who was so dirty that he was obliged to wash every day. Another Englishman while at a Spanish hotel is reported to have called for a bath-tub, and as they had none, they furnished him with an earthen dish, and he took his bath in it. The next day the same dish came to the table full of soup. But there are other countries as bad as Spain in this respect. Several years ago I was on Sherman Avenue with one of my nesses, and with her I went into a poor neglected garret in a dirty and dangerous place,--and I would not have dared to have gone if I had not had a good nurse to protect me. I found a man and his wife and a half dozen children. The wife was sick. The nurse called my

attention to the fact that the dish in which they had done their washing dishes had been also used for bathing the children, and also for a soup dish.

The body has been abused and neglected until the point ~~has~~ been reached where it was considered as not being of much account. There is an epitaph on a certain tombstone in Kansas which will illustrate this fact very well,--it reads like this :

"Under this sod, and under these trees,
Lieth the body of Solomon Pease;
He's not in this hole, but only his pod,--
He shelled out his soul and went up to God."

This idea that the body is the pod and the body the peas, and that the body is to be cast out and trodden under foot as of no account, is one that I don't take a bit of stock in. The body and soul are so intimately connected that if the body is dirty, miserable and neglected, the soul is like a man who lives in some morass or swamp surrounded with a pestilential atmosphere and placed in conditions which render it impossible for it to rise to its greatest heights of development and beauty. If we are going to "think the great thoughts of God after him" we must have a good brain and a healthy body. We do our thinking under water, and if that water is dirty our thoughts will be dirty, ~~too~~. We are composed of the food we eat, and if our food is unclean, the whole body will be tainted with impurity. If our brains and food are unclean, then the water under which our brain-cells are submerged and under which they do their thinking, will be turbid and dull, and then our thoughts will also be dull; our brains will be clouded and we will not have that clearness of mind that it is necessary for us to have, in order to appreciate the real beauties of nature and the

great and glorious things all about us.

But what has all this to do with exercise? General exercise is the means by which the body is purified. Some of you have travelled in mountainous regions, and you have noticed the rills and streams of water which come down the mountain sides, sparkling in the sunshine and clear as crystal, and when you drink of that water, after the exercise of mountain-climbing, how refreshing it is,--it is pure and clear as it can be. But let that water settle into a pool and become motionless, and it soon stagnates and is covered with a green filthy scum which is thick and slimy, and algae grow in it, and myriads of other microscopic animalcules get into it; lizards crawl in it, and frogs croak in it, and foul and poisonous effluvia rises from it, and people keep at a distance from it for fear they will contract some disease from the germs that abound in it. Now note the contrast between that stagnant pool and the mountain stream--the torrent that pours down the mountain side. The pool and the stream contain the very same water; the difference is simply in the condition of the water,--the water in the stream is active; the water in the pool is inactive; the one is exercising, if you please, but the other is inactive and stagnating. The mountain stream represents the man who is working hard every day, as the result of which a pure stream of blood is pouring through his veins and arteries to cleanse and purify every part of the body while vitalizing, vivifying and enlivening it; while the stagnant pool represents the sedentary man, who sits in his office and smokes and lounges about, taking no exercise and getting more and more dull and stupid and stagnant every day.

The most important kind of exercise is that which will give strength of mind. You see a man about sixty years of age trying to

run half a mile to catch a train,--but when he gets two or three blocks he becomes breathless and out of wind. He says, "When I was a boy I could run like a lamplighter, but now I can't run two blocks before I am out of breath." What is the matter with him? He has lost the strength of his respiratory muscles; he has lost breathing capacity, and he is losing his wind. I have brought in this ~~xxxxxxxxxx~~ articulated skeleton to show you what takes place when we breathe. This is an articulated chest, and is arranged so as to act just as we act when breathing: by simply pulling this little wire, I do just what the respiratory muscles do. Notice what you do when you take a breath. Let us suppose we are in a district school, learning this lesson: Put your hand to the side of your neck and take a deep breath--just as deep as you can--see how these muscles harden up and contract; as they contract they harden up. These muscles go down to this rib and to the sternum and pull it up; that is what they are for. Now put your hand to this place (the waist) I am quite sure you can all do this--except the ladies--I am not quite so sure about them; put your hand down here and breathe again as hard as you can (breathing.) The same thing happens as before,--the sides swell out. The lungs are like a pair of bellows of which the ribs are the handles. Notice how these cartilages are attached: there are twelve ribs in all; there are seven attached to the sternum; there are three attached to the sternum by cartilages, and ~~two~~ have no cartilages and are floating ribs. Now these cartilages are flexible; that makes it possible for the chest to change its shape. You see the sternum is not so long as the chest, and so the lower half of the chest is very flexible, and the cartilages here become longer and longer. Now suppose we had a chest like a mud turtle,--and there are people who got into that condition; that is the condition of the old man: that

run half a mile to catch a train,--but when he gets two or three blocks he becomes breathless and out of wind. He says, "When I was a boy I could run like a lamplighter, but now I can't run two blocks before I am out of breath." What is the matter with him? He has lost the strength of his respiratory muscles; he has lost breathing capacity, and he is losing his wind. I have brought in this ~~xxxxxxxxxx~~ articulated skeleton to show you what takes place when we breathe. This is an articulated chest, and is arranged so as to act just as we act when breathing: by simply pulling this little wire, I do just what the respiratory muscles do. Notice what you do when you take a breath. Let us suppose we are in a district school, learning this lesson: Put your hand to the side of your neck and take a deep breath--just as deep as you can--see how these muscles harden up and contract; as they contract they harden up. These muscles go down to this rib and to the sternum and pull it up; that is what they are for. Now put your hand to this place (the waist) I am quite sure you can all do this--except the ladies--I am not quite so sure about them; put your hand down here and breathe again as hard as you can (breathing.) The same thing happens as before,--the sides swell out. The lungs are like a pair of bellows of which the ribs are the handles. Notice how these cartilages are attached: there are twelve ribs in all; there are seven attached to the sternum; there are three attached to the sternum by cartilages, and two have no cartilages and are floating ribs. Now these cartilages are flexible; that makes it possible for the chest to change its shape. You see the sternum is not so long as the chest, and so the lower half of the chest is very flexible, and the cartilages here become longer and longer. Now suppose we had a chest like a mud turtle,--and there are people who got into that condition; that is the condition of the old man: that

is why he cannot take a deep breath,--because his chest is like that of a mud turtle, which is covered with a shell, although the back of the mud turtle has layers which are separated from each other, for the mud turtle is a vertebrate. When a person gets old and does not use his muscles; when a man is sedentary; when a lady keeps herself shut up in a bony cage, it is like saying to the breath, "Thus far shalt thou go, and no farther." Many people are in such bondage to fashion that they do not dare to take a deep breath; they do not dare to give themselves an opportunity to take a good breath; and when they try to take a deep breath they cannot do it because their muscles are so weak. Once a lady who was going to be an elocutionist, asked me if she had better not take some exercises in taking deep breaths. I gave her some exercises which would tend to increase her breathing powers and enable her to take a deep breath,--telling her to expand her chest, and so on. She suddenly became sober, and then a frown came upon her face, and she said "Do you mean to say that if I take the exercises which you prescribe, I shall breathe as you do?" I told her that was what I meant. "Ugh," said she, "I wouldn't do that for anything." "Why not?" "Because when I got home, all my young lady friends would point their fingers at me and say, 'She breathes just like a man.' She thought a woman had no right to breathe like a man. She would like to have the right to vote,--and I think she ought to have it, if she has the right to breathe; but she claimed that she had no right to breathe like a man. She could walk like a man, and talk better than a man (more, at any rate), and she could do a great many things better than a man can, but she cannot breathe as well as a man can.

I set out some years ago to investigate this subject of breathing: I had an instrument made for writing down the breathing, the breathing being indicated by curves; the breathing of the upper part

of the chest is indicated by small curves, and the breathing of the lower part of the chest is indicated by large curves,--this was when applied to a man. When the instrument was applied to a woman, the indications were exactly the reverse--small curves in the lower part of the chest, and large curves in the upper-chest. I then applied it to dogs, with the same result as when applied to men. When a dog has been running and stops to rest, his sides heave and swell, and his breathing bellows works just like this (illustrating by skeleton.) I have noticed the same thing in horses and cows. I have also studied breathing of the Indians in the West, and found that the breathing of the female Indians was the same as that of the males. I have found the same thing to be true among the Chinese in San Francisco, also the Mexicans Italians and Zulus. I went to the World's Fair in Chicago, and visited the Midway Plaisance, and got acquainted with a number of foreigners who were natural people, and I took their photographs and measured their breathing capacity; I measured them with instruments of various sorts and made some instructive records. Among these people I found that the men and women all breathed alike. Male and female dogs and male and female cats all breathe alike. When I found out these facts I concluded that male men and female men ought to breathe alike,--that even the civilized male man and the civilized female man ought to breathe alike, and that the waste should be free. But after much investigation and study, I have found that the civilized woman who never wears anything tight about her body is a very rare ~~bird~~ sort of bird. Now this woman to whom I have just referred, wanted to vote like a man, but I don't think a woman ought to be allowed to vote until she is willing to breathe right. So long as a woman is a slave to fashion she ought not to ask for the right of franchise,--and I don't think she will ever get

vim enough and courage enough to wrest that right from the hands of the tyrant man until she can breathe as well as a man.

Here is another illustration of a difference in breathing : Down in the stagnant pool we were talking about, there is a croaking frog. If you will examine him, you will see that his lungs simply consist of a little pouch in which there are a number of little partitions, and when the frog takes a drink of air, he comes up to the top of the water and sips it just as you or I would sip a glass of water. You have seen a frog sticking his nose out of the water,--the frog has no chin--man is the only animal that has a chin. Did you ever notice the lower jaw of a frog as he pumps air into his air-bag. When it is late in the Fall, the frog will get filled with air, and then go down and stay in the mud all winter. So a frog can do very well without lungs; take a frog's lungs out and he will live on for several days and hardly miss his lungs; he will go hopping round without any lungs. The frog is such a slow, sluggish, stupid animal, because it has so little breathing capacity; it does not require much air; it can get air enough through its skin to keep it going,--just as the earth-worm does--the earthworm has no lungs. Now, up in the eye of the sun there is a bird,--the skylark--flying away up above the clouds, a ~~mi~~ mile high, singing in the early morning. See that bird fly,--how it soars. Make an examination of that bird, and you will find that its lungs fill the greater part of its body. Its bones are hollow, so that when the bird takes a breath, it may be said to breathe clear to the tip ends of its toes--the air goes clear to the tips of its toes. These bones are hollow and communicate with the lungs of the bird, and that makes the bird light and gives it its great power of flight; that is what makes it soar over all the rest of the world. He is always sending up a song, because he has a song in his heart. Now if

you try to live without much air, and let the air you breathe stagnate in your lungs, just gasping a little air once in a while, sipping air occasionally, like a frog, you must expect to live a frog's life; but if you want to live like a bird, you must breathe like a bird. If a person allows himself to stagnate by sitting all the time, or in living an aimless weak sort of way, and never getting enough in a hurry to run, never exercising his arms enough to make him take a deep breath--if a person lives in that kind of way, the muscles will deteriorate, the cartilages will get weak. The amount of air that you breathe depends upon the amount of expansion that you give to your chest.. We can breathe in a gallon and breathe out a gallon of air by the fullest expansion, but we ordinarily breathe out and in only about ~~a pint~~ two-thirds of a pint, in other words, we can breathe out and in twelve times as much as we ordinarily do.

Claude Bernard, the eminent anatomist and physiologist, of Paris, has made some interesting experiments upon the students of the De Joinville Academy. He first examined the students to see how much air they could breathe out and in when exercising and when not exercising, and made a record of the results, and he found that when ^{the} students exercised, they breathed, when sound asleep, twice as much air out and in, as they formerly had done without exercise. Now see what that means: It means that when you live an active life you are living twice as well--not twice as fast, but twice as well as when leading a sedentary stagnant sort of life; your head will be so much the clearer, your ^{chest} ~~stomach~~ will be so much the better, your liver will do so much better work; ~~for~~ all these organs of the body depend upon oxygen as one of the most important supplies with which to do their work--and this supply is furnished through exercise creating a demand for a plentiful supply of air. The liver cannot destroy poisons without oxy-

gen, the stomach will not digest without oxygen,--all these processes require oxygen. And uric acid is burned up by oxygen, and if you don't have hydrogen enough to burn up the uric acid it will accumulate and do mischief. If we don't have vigorous exercise enough to raise the temperature of the body a little and to pump in a large quantity of air and oxygen, uric acid will form and accumulate in the body on any diet, unless there is a great deficiency of the nitrogenous element. Even the use of nut-foods will produce uric acid unless you have exercise enough to introduce oxygen sufficiently to burn the uric acid and convert it into urea which can be easily removed, whereas, uric acid is hard to remove.

Now the question is, What kind of exercise is best for the development of the respiratory muscles--the breathing muscles. Well, there are a great many kinds of exercises prescribed for this purpose, one of which is arm-raising (illustrating.) Such exercises as these will make you broad-chested. This method will broaden the chest, and this will deepen the chest. Another exercise is to bring the hands up in this fashion (illustrating.) Then go through a series of exercises of this kind (illustrating.) Rotation exercises of various kinds are very good. The body-bending exercises are also good. "But, there is another exercise which is better than any of these 2--but any kind of exercise which will make you take a deep breath, so that you will have to breathe hard, is good. But when a person is forcing his lungs to act to their full capacity, the muscles ^{of the lungs} soon get tired. But this is not the case when we take exercise which makes us breathe by creating a demand for air: Here is a boy who has been running a couple of miles,-- he is panting and breathing hard and deep, but he does not complain that his lungs are tired, although his legs are tired; his ~~lungs~~ lungs work away just as cheerfully and pumping as hard as ever, so long

as there is any need of it ;but when you compel your lungs to take in more air than there is any demand for, they get tired out,--they say "What is the use of working so hard , and there is no use for it. But, when one exercises, there is a divine order for work in the medulla oblongata in which there is a little center that is charged with intelligence, and which sends a message down to the lungs to take in a full breath, then to force out the air filled with carbonic acid gas; then another message comes to take in another full breath and fill the lungs again, and so on; every time you compress and empty the lungs there comes a message what to do, and at the proper time. The breathing of the lungs is not like the action of a pendulum: At every inspiration, and every expiration, there is a message sent to the lungs, and it comes with divine authority. But when you say, "I will send a message to my lungs to fill with air," it is only your human will to inflate your lungs with air when you do not need it. But when you need air or need to breathe, there is a divine will that commands your lungs to work, and they will then do their work easily and cheerfully. So the thing to do is to take such exercise as will put you out of breath and compel you to breathe,--it makes no difference whether the exercise is running, walking fast, sawing wood, splitting wood, playing lawn tennis or swimming, or whether you hop up and down in a corner (if it is ~~an~~ airy corner) anything that will compel you to breathe hard will strengthen your breathing capacity--and that is the only thing that will do that--you must have a demand for more air.

There is another exercise that I might suggest, and which is a good thing to do when you wish to expand the lungs: First get your breathing capacity tested. Then examine your ~~physical chart~~ physiological chart; look over at the right hand column, at the respiratory coefficient for your height, and see whether your lungs are working

sufficiently for a person of your height. Watch your coefficients. You may find that you are fat, and that your coefficient is low; that would mean that you are liable to get out of breath easily and die prematurely. The coefficient should come up to 250. I have been testing my lung-capacity, and have found that the coefficient is coming up: Ten years ago it was 150 cubic inches; six or seven years ago it was 175; three years ago it was 200, and the other day it was 225; so it is above the average for ^{a person of} my short height. It is better to be going that way than to be going the other way,--and I ~~found~~ I was going the other way. I was a little conscience-smitten, for I thought I might have exercised more. So I improve my opportunities for exercising: If I get a chance to walk, I walk as hard as I can, and as fast as I can; if I get a chance to go up stairs, I run; and if I get a chance to ride a bicycle, I get all the exercise I can out of that; and I do my utmost to get all the exercise I can, because I know I must work; one must work or stagnate; one must work or die.

When you go out for a walk, take a deep breath and see how many steps you can take while holding your breath, and hold it hard: It is only when you strain the muscles a little that they are strengthened by exercise, so it is only when the respiratory muscles are brought into vigorous use that they are likely to be strengthened. Perhaps you don't understand what a strain is: Some Sunday morning you start for church, and you are a little late; you are trying to put on a tight-fitting glove. Before you get to the front gate, you stop and try to pull on your glove. Then you take a step or two, and then stop and tug at your glove again,--as soon as you pull hard on your glove, your legs are set by the strain ^{on the muscles,} and you can't move. You try to crack a nut, and do not succeed at first; you put more energy on it, but you don't

crack it. You try to talk with a neighbor, but you have to talk between your efforts to crack the nut,--you say, "Mr. Jones, the weather was-- was--it wasn't so pleasant yesterday as--the day before," and the nut is cracked; but you couldn't finish the sentence while cracking the nut. Perhaps you are cutting a tough piece of beefsteak,--I allude to Sanitarium, which is as fresh and tough as we can get it. Meat is always tender while there is life in it; that is the reason the Kalmuc Tartars eat their beefsteak when just cut from the live animal, when it is is warm and quivering. It is very tender before the rigor mortalis takes place ~~sets in~~ after it has been killed; after that, the flesh becomes tough and does not become tender again until after it has rotted away; but so long as there is life in it, it is very tender and like jelly, and will almost fall to pieces in your mouth; any butcher will tell you that that is the fact--when you are cutting a piece of tough beefsteak, your muscles are set, and so long as they are set, the jaws are set. If you grasp a pencil hard, you can feel the effect upon the muscles of your arm; pinch the pencil harder and you can feel the swelling of the muscles in your side; pinch it harder and you can feel the expansion of the muscles of the back strong and vigorous; pinch it harder and you can feel the swelling of the muscles of the thigh. This is what occurs when any muscle is worked to its utmost capacity,--and this applies especially to the respiratory muscles. If you wish to develop the muscles to their greatest capacity, you must put them to the greatest strain. This is a useful exercise for strengthening the respiratory muscles: Take a deep breath; sound the syllable "Ah", under control, as steadily as you can, commencing low, and sounding it all the way up the scale. There is nothing so important in the way of developing strength as in the development of strength of wind,--breathing capacity. That will keep a man alive longer than anything else that

I know of .

The chest is the great engine of the body. The lungs help the circulation of the blood, the digestion, the liver and the portal circulation,--the chest is the engine of the body, and I hope you will improve your opportunities in the way of gymnastics and breathing exercises. To have exercises before breakfast so your liver will be well pumped out. Some of you have torpid livers and you want them renovated, and here is the place to do it. The diaphragm squeezes the liver against the abdominal wall every time it comes down, and that is every time you take a breath, and so the harder you breathe, the harder the liver will be squeezed, as it lies between the diaphragm and the abdominal wall, and you want to squeeze it dry and get all the bile out of it, and the oftener you repeat the deep breathing the better, and if there are gallstones in the liver that is the best way to get rid of them. The breathing-tube is also useful. Increasing the breathing-capacity is the most important thing to help the muscles and brain and body. People don't breathe enough; they don't even understand even the Philosophy of breathing, as well as ^{in a certain school out west,} did the boy who wrote the following "composition" of "Breath:" "Breath is made of air. If it wasn't for breath we couldn't live a week. The breath keeps the life going through the nose while we sleep. There is a poison in the breath that is poisoner than mad dog's; it is called 'carbonicide.' Once there was a carbonicide got into a Black Hole in Calcutta and killed 146 Englishmen before morning. Girls can't breathe much because their corsets squeeze their diaphragm. If I was a girl I would rather be a boy so I could run and holler and have a big diaphragm."

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ADDRESS TO MEDICAL STUDENTS, Mar. 30, 1901.

J. H. Kellogg, M. D.

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OPENING PRAYER by Br. Roth.

CHAIRMAN: -- We have come to a very important occasion, and one which is of importance also to the members of our Medical College. This College has gained a standing in the medical profession and in the world beyond the most sanguine expectations of the friends of the school. Just a few days ago I received a letter from one of the leading surgeons of Chicago--Professor of Surgery in the Northwestern University--saying that he would like to do some work in connection with our medical missionary work, and wanting to know whether there was an opening. I was quite surprised at this, because he is a worldwide reputation; and it is not customary for a professor to hold a professorship in more than one school. He is allowed to demonstrate anatomy, but when it comes to surgery, etc., it is not usually tolerated. But the Medical Missionary College is regarded as an exception to all other schools. When I first talked with Dr. Davis about taking part in the work of the Medical Missionary College, she said the faculty would not permit it; but the matter was submitted to the faculty, and they decided that it was all right to do work in connection with the Medical Missionary College. We have now had connected with our school four professors of leading Colleges in Chicago. And it has an interesting matter to me that notwithstanding the fact that we are looked upon as cranks and fanatics by a large number of people--notwithstanding that, these learned profes-

sons have been willing to come and stand by our side. When I asked Dr. Holmes if he was willing that we should put his name in our announcement, he said "Why not?" I was surprised at that; I thought he might object.

I find that there is a recognition of our principles, and of the great truths which stand behind our work. There is a dignity and value in our principles such that although we are a small people, and it is a day of small things with us--notwithstanding that, it is the dignity of truth that commands respect, and should inspire us with enthusiasm, hope and courage. We have at the Sanitarium a very wealthy man,--a few days ago there was quite an exodus of ^{"tares"} people who went from here over across the road. When this gentleman heard that they had left the Sanitarium, he came to one of the doctors and said, "Don't be discouraged; you can spare those people; you have got the truth, and the truth is going to triumph; you need not be the least bit afraid." This man is not a professor of religion, but he knows that truth will triumph, and he has lived long enough to find that out.

We have a reputation beyond our expectation; we have not earned it, but the Lord has made it for us. He has provided for us and cared for us in a most wonderful way, and how much courage that should give us, and how loyal we should be,--to what? To the school? No. To the faculty? No; but to the principles which have done so much for us. We have no endowment. Here we are,--a medical college, without even a building, and without any endowment. If it were only an ordinary medical school, or worldly school it would have no recognition; but from the very fact that we have these principles here, God has put it into the hearts of men to recognize these principles, giving us favor and recognition which we could not possibly have had without them. I feel that we have every reason to feel grateful to God.

There is another phase of this matter that you perhaps have not seen : While our medical school has received this recognition from the scientific world, it has not had any recognition, so to speak, from our own denomination. Our own friends--our own people--know but little about this school. They certainly have no conception of its scope, importance and value; they have no conception of it. When a school, even if it is a small school, like the Keene Academy, or the Graysville Academy, and especially, if it is a religious school, like Union College--when such a school is organized, it is considered a great matter; it is brought before the campmeeting for assistance, and every one lifts, and by-and-by it is started; but this school has started so easily that its existence is hardly recognized. I dare say that there are thousands of our friends who don't know that there is such a thing as a medical missionary college among us, or have any conception of what it means to the world, or of the great principles that have been set forth here from day to day, or of the power that it is going to give you as healers in the world, and the influence which it will give you, as well as the ability for usefulness in the world's work.

Now there is a reason for this . This is the first General Conference that has been held here since this school was started . This school was organized, if I remember rightly, six years ago this summer Conference was held in the spring before the school was organized , so this is the first time that the people have come in here from all over the world to see what is going on in Battle Creek since this school was organized, and the first time they have had a chance to see it . Some two thousand people or over , as I understand, have applied for accommodations among us. That means a tremendous gathering here

ing here,--and many are coming who have not applied for accommodations, thinking they can find a place somewhere--but over two thousand people have applied for accommodations, and next week you will find that every corner will be occupied, for people will be here from parts of the United States, and from all over the world.

Now all these people are going to be here, and they are going to look at us,--they are going to look at you and me and the Medical College, and we are going to be on inspection for the next three weeks; and I have been anxious that the people should get a good impression, so I want to give you a few suggestions. You will want to talk with your old friends from abroad, and they will want to know all about the home-news and home gossip,--and that is all right; but I want to suggest to you that this is the greatest opportunity you have ever had in your lives for doing splendid ~~medical~~ missionary work, and I want to give you some suggestions as to what to say and what to talk about: In the first place, if you have got any grievances, don't talk about them. If you find anything not right, or which you think is not right, don't talk about them. Why? Because it is a bad thing, any way, to look on the weak side of things. You can't live here long without without finding a lot of weak things. I know there is one weak thing here,--and that is myself--and I am willing you should say all the bad things you know about me, for I deserve everything you will say; but I am talking about the work and the place. Now suppose some of you have got an inkling of something that is not right,--for instance, that the Preachers have not taken as much interest as they should,--don't talk about that. If you have a great grievance of any sort, don't talk about it. That is the policy I propose to pursue. Let us talk about the truth. God has given us the greatest truth and the brightest truth that shines on the face of the earth to-day; there is no doubt about that,--we have got the

greatest truth the world has ever received in these principles that we have here. I don't mean to say that we have got anything new, because the principles we have here are all old; they are in the Bible; they are the outgrowth of what we find in the Bible in the first Chapter of Genesis. These principles are not new but they have been covered up; and through the labors of hundreds and thousands of men all along down through the generations of the past these truths have been gradually coming out and coming out, until, at the present day the principles we recognize now as God's truth are the brightest light that has ever shone in the world. How many of you believe that? Hands up,--you believe it, and I believe it. A few days ago, while coming across the continent, a good brother was heard lamenting and mourning that Dr. Kellogg had given up the truth,--it was such an awful thing. Now I want to tell you this: I might try to give up the truth, but I could not, because the truth would not give me up. These principles have gotten hold of me, and I could not shake them off if I should try; they have grown into my very constitution, and I could not shake them off if I had any desire to do so,--and I have no desire to do it. After having given up my whole life in seeking for truth and working for truth, I could not give it up, for in doing so, I would simply have to throw my whole life away. Now let us talk about the truth, and when people come to us and we have some opportunity for conversation, let us bring up something of the truth that is particularly dear and sweet to us, and get them interested in that. Let us see how much good we can do in letting our light shine.

For years I have been getting an inkling of these principles and arranging them, but within the last year or two it seems to me that the principles of truth which I have been gathering up for the

last twenty-five years have sort of arranged themselves in a harmonious way around one great central truth. One likes to have one great central truth, out of which proceed many other things. The different systems of theology or religion are simply an arbitrary category of catalogue of facts or principles which are formulated as elements of belief. Take, for example, the Athanasian Creed, and read it, and you can see that it is simply an arbitrary statement, -- "I believe so, and so," and no reason given--there is no logical outgrowth of one proposition from another, but each statement stands by itself, a mysticism which Christian people are expected to believe. I believe there are no mysticisms which should serve as a foundation for our belief. That is one thing that has been a great trouble with myself,--trying to believe mysticisms--but I never took much stock in them. When I was a boy, there were many things that I could not lay hold of--I could not believe them; they were mythical, hazy and foggy, and I found the study of those things distasteful to me. I struggled for many years to try to believe many things that were unbelievable. I remember the first experience of this kind that I had,--it was when I was a small boy of about nine or ten years attending Sabbath School. I told my teacher that I had been studying the subject of the Creation, and that there was one thing that troubled me a great deal, and I asked the teacher about it. I had spoken to my father about it, but didn't get any satisfaction. I asked my father "Who made the Devil?" "Why, God made him." "And why did he make him?" "Hush, hush, child! You should not ask such a question as that." So I asked my Sabbath-School teacher, when studying the subject of Creation, the creation of Adam, Eve, the Devil, and so on; and I asked, "Did God make the Devil?" "Yes." "Why did he make him bad?"

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Why did he not make him good?" The teacher didn't say a word. She motioned for the Sabbath-School Superintendent to come there, and when he came, she said, "Take this boy out of my class." So I was taken out of that class and put in another class at the other end of the room, and I didn't dare say anything more upon that subject: I thought I must try to believe it, but I must not inquire into it. But that is not the question that I wish to discuss here,--I only mention it incidentally.

It has seemed to me from that time to this, that it is wrong for us to try and compel our consciences or our reason to accept things which are against consistency,--things which violate the law of logical consistency. And so, for many years, I didn't know whether I really "believed" ~~or not~~ much or not: I thought, "Perhaps there is a future,--I hope there is. I believe there is a God--there must be a God; and it is safest to believe in religion; it is best and safest to live in reference to the future--that is the safest thing to do; I am going to that, because it is safe." But I didn't find any very solid foundation for my religious beliefs, because they were discrete facts ^{between} ~~in~~ which I could not find the harmonious consistent relationship that I wanted to see.

Now there has been gradually growing up among us a great truth which harmonizes all correct religious views and principles--every religious truth that is essential to man's salvation harmonizes with one great central truth,--and that is the great truth that God is in man. I don't believe in what is called "Systematic Theology, but I believe in the harmony of truth, and I want to spend a little time in trying to show you how, in my mind, this great central

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fact brings complete harmony with the whole thing. I wish we had time for a Bible study,--how many have Bibles? Quite a number have them. I will give you, very hastily, a few texts and thoughts upon this subject, and later, I will hand you a list of texts.

Gen. 1 : 27. "God made man in his own image." What does that mean? To me it means a great deal more than it did twenty, ten, or even five years ago: God made man in his own image, and he gave him dominion over everything that he had created; he had dominion over every living thing. The Psalmist also says that God gave man dominion over everything that he had made. Adam was God's image; he was placed here, to represent God in the world. He was not simply a higher animal. Zoologists teach us that man is simply a higher animal, and they try to find the "missing link" between man and the lower animals. You will sometimes see in some medical journals the claim that the missing link has been found at last, but that is a mistake,--they can't find it. There is a great chasm between even the highest animal and the lowest man. The gorilla, representing the ape family, comes nearest to man, in physical structure,--he is a wonderfully intelligent animal. Some of you have seen the chimpanzee, and you know what a wonderfully intelligent creature they are; they can be taught to do wonderful things. I saw a chimpanzee at the World's Fair who would gather up a lot of sticks, tie a string around them and make a bundle of them. I have seen an account of one chimpanzee on shipboard coats and put them on, on a cold day. These creatures are wonderfully intelligent, but every zoologist now recognizes the fact that between the highest ape and the lowest man, there is a vast chasm; that the highest ape is very far below the lowest man. Why is this? It is because man ^{belongs to} ~~lives in~~ a kingdom by himself. God created him by himself after he had made all the other things; ~~he had~~ made the world

,and the whole vegetable kingdom and the whole animal kingdom, and then he said, "Let us make man in our image." This was another creation, an entirely separate creation,--a creation by itself.

Now Christ was the "second Adam." Through Christ, we can form a conception of what Adam was when God created him in his own image. Christ is the second Adam, and Christ was the image of God. In 2 Cor. 4 : 4 we read that Christ was the image of God. And he was the second Adam, so you see that Christ and Adam were alike. Christ was the second Adam and Christ was also the second image. So if we can see what Christ was in the world, we can see what Adam was intended to be, and what he was before he fell. He was God's image, as Christ was. He was put in the world and had dominion as Christ had it. We see what dominion Christ had,--the power he had to work miracles. Adam was put in the world with that same dominion and that same power. The animals were subject to him, and the earth was subject to him; he had dominion, as Christ had dominion.

Now since Adam's time, there have been men who have acquired dominion to some extent. Moses came so near to God in the forty years' discipline that he had in the wilderness, that he had sufficient dominion so that at his command the waters of the Red Sea divided, and let the Hebrew multitude pass over. He also smote the rock and the water gushed forth. Moses, of course, did not do anything of himself, but God worked through him. When Daniel was thrown into the den of lions they could not eat him, because he had dominion over them. The three Hebrews had dominion, so that when thrown into the fiery furnace they were not burned. They could not be burned, because they had dominion over the elements--over fire. That is just

the sort of dominion that Adam had over everything. Adam did not have to sit down and study Algebra to learn the relations of things: he already knew everything that he needed to know,--and why? Because he had God in him. We see men nowadays spending their whole lives in the study of chemistry, astronomy, or other branches of science, in order to get a little dominion--just to subdue the earth and get dominion,--and they do get a little trace of dominion now and then. But Adam knew everything that he needed to know, because he had God in him. God made Adam in his own image and put himself into him, and the self that he put into man was Christ. The Bible represents Christ as being in man,--as the Apostle Paul says, "Christ in you, the Hope of glory." Col. 1 : 27. Now Adam Had Christ in him.

Now Adam had Christ in him; he had this Divine Presence in him. You get that from Gen. 2 : 7. "And the Lord God formed man of the dust of the ground and breathed into his nostrils the breath of lives. That was not simply a breath of air. The "breath of lives" was the breath that all living things have. Many living things do not live on air,--they do not have lungs, consequently they could not breathe air. The oyster, the earth-worm, etc., have no lungs, but they have life. The earth-worm breathes with his skin, and the fish breathes with his gills, but there is no cavity through which air is received. A fish will die if he has no water; so it is not always air that keeps animals alive. In Job 32 : 8 we are told that "There is a spirit in man, and the inspiration of the Almighty giveth them understanding.

Now this "Spirit in man," is God himself. That is the reason the Apostle Paul says, "Know ye not that ye are the temples of the ~~Holy Ghost~~ God, and that the Spirit of God dwelleth in you. 1 Cor. 3 : 16. "Know ye not that your bodies are the temples of the Holy Ghost (Spirit) which is in you." 1 Cor. 6 : 19. Job says, "The Spirit of God hath formed me.

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There are many passages of Scripture which show that God is still creating. Christ said, "My Father worketh hitherto, and I work." John 5 : 17. In Is. 48 : 7 there is a text which shows that the work of creation is still going on. Those of you who are studying histology know where the blood-corpuses come from,--where do they come from? ("The red marrow.") Yes, from the red marrow of the bones. Every single corpuscle in the blood is a new creation. The same God who created man in the first place is creating him now; he is creating man to-day just as he created Adam in the first place. There is not a man that lives that God did not create him. The idea that God made one man in the first place, and that creation ^{of man} has been going on itself since that time, is a mistake. The idea that God made a tree in the first place and that the work of creating trees has been going of itself ever since is a great mistake. God creates to-day,--the creating power of God is still at work.

Now this creative power of God is working in us. We have many evidences of this,--for instance in the process of digestion--how can we understand this process: here is the gastric juice poured out in the stomach, but how can we account for its origin? How can we understand its action. Now suppose, for example, some one swallows a pig's stomach: the gastric juice will digest the pig's stomach. Suppose a man swallows a live oyster,--the gastric juice will digest the live oyster. Then why does not the stomach digest itself? Can any of you explain that? We cannot explain the simplest phenomena of digestion, or of sleep, etc. A man goes to sleep,--why does he wake up? What awakens him in the morning? We don't know anything about it. Bouchard has one theory, another authority has another theory, and another has another theory, but there is no satisfactory theory as to why this is? It seems easy to understand how a man gets

to sleep, but the question is, How is it that he wakes up,--that is the difficulty--when one goes to sleep, why don't he stay asleep. How is energy produced from food? We know that energy is derived from food that has been eaten, --that food is organized into muscle, glycogen being deposited in the muscles, and so on. Now I strike a blow; I toss a ball into the air,--how does the energy get from me into the ball? And how does the energy get from the food into the muscles, and from the muscles into the ball? Can you explain that? It is not explained in the text-books. Have you studied your "Physics?" If not, look that question up? I have done so. Look into the most abstruse works you have, and see if you can find how energy gets from the food into the muscles of the arm, and from them into the thing to which he applies his hand. There is no explanation of it at all. This wonderful physiology of the body grows more and more wonderful to me every day. One hand beats the other hand,--and how? There must be a command which comes to one hand to beat the other. I bid my arm "Strike," and it strikes. I say "Beat again," and it beats again. Now here is my heart beating,--and how does my heart beat? The heart is a muscle, just like my biceps or triceps; the nerves are connected with it. Now what makes the heart beat? Does it not have a command to beat every time it beats? Yes. And if there is a command, there must be a will to give that command, and to execute it,--there must be a mind; Is it my mind? Is it my will that causes the heart to beat? ("No, sir.") No; it is impossible for my will to cause the heart to beat; I cannot control my heart-beat. And yet the heart goes on beating, and every heart-beat requires a command. So there is proof, in the very ^{simple} fact that the heart beats, that there is an intelligence residing in the body and control-

ling the simplest functions of life. These simplest functions are really the most profound things. When we come down to the multiplication of cells or cario-carnosis, there is no explanation of it.

But God is constantly creating, - even right in the body. Now see what it is to dwell in the presence of God: It is simply to consciously recognize the presence of God in us and about us. It is not to reach some state of spiritual ecstasy. It is not to go to church somewhere and sit down in church and sing hymns and listen to sermons, pray, etc. That is not drawing near to God, and coming into the presence of God. Coming into the presence of God is simply a recognition of the constant presence of an Infinite Power and Intelligence in our own bodies, in everybody else, and in everything about us. God is in man,--that is the great, fundamental fact. Out of that fact everything else grows; that settles every question in theology that needs to be settled,--for example, the nature of man. We know it is said in the Word of God, that man is simply the temple of God, God dwelling in man; that is all there is in the question of the nature of man.

But how is it about the future? God creates to-day in man, by his Spirit,--"there is a Spirit in man." What does Paul say about it? "But if the Spirit of him that raised up Jesus from the dead, dwell in you, he that raised up Christ from the dead shall also quicken your mortal bodies by his Spirit that dwelleth in you." Rom. 8: 11. He will quicken your mortal bodies by his Spirit,--what spirit is that? ("The Spirit that dwelleth in you.") So the same spirit that God breathed into man's nostrils when he had created him, and the same Spirit that is with him in his development,--that same Spirit ^{lives} ~~that is~~ in him and cares for him. Now when the man dies, what becomes of that spirit? ("It returns to God who gave it.") Yes; it is simply

the controlling power that returns to God. While man's will is active, God serves with him,--even "Ye have made me to serve with your sins;" that is what God says--"thou hast made me to serve with thy sins." (Is. 43 : 24.) That is what God says . So, when man has God's Spirit dwelling in him, everything he does, he does with God's power,--it is a divine power that he uses, whether he strikes a murderous blow or utters a horrible oath; and so, God serves with a man when he is sinning. God does not sin, but he permits man to use His divine energy, power and life in committing sin, and so he is serving with him in his sin. Now when a man dies,, his intelligence goes out, and then the spirit that has been given to man for man's use--that spirit returns to God,--not that it travels off in bodily shape, but the power of God in him ceases to be his servant, and thus returns to God.

Well, how is it in regard to the resurrection? "The Spirit that dwelleth in you will quicken your mortal bodies (make them alive) by his Spirit that dwells within you." Here it is : The same Spirit that has built my body once, will build it again in the resurrection,--and when it is thus built, it will be appropriately built, won't it ? The Spirit that dwells within me knows all about me. The Spirit that created every cell in my body,--does not that Spirit know all about me ? Yes, everything. So in the resurrection day that Spirit returns to the body again. Now we have evidences of this; we have a number of Scripture texts upon the subject of the resurrection,--for example, here is a text, Luke 8 : 55: A young woman had died, and when she was raised from the dead, what does the text tell us about it,--"Her spirit came again;" her spirit had left her, and it came again. Does that mean simply that her breath came

again? Suppose here is a person who is dead. Suppose you inflate his lungs with pure oxygen, and continue doing so for a whole day,-- will that person live again? ("No.") Breath alone won't make a person live; when a person is alive, he breathes, but breath won't make a person live when he is dead; but her spirit came again, and then she was alive. We have other Scriptures showing that a man's soul or spirit came again and he was alive,--he had been dead, and life returned in that way. In 1 Kings, 17 : 22 -we read that a child had died, and that "the soul of the child came into him again, and he revived. When the same thing came into the child that had left him, he was made alive again.

There is something in man that does not perish with the man. That is the thing that I want you to see,--there is something in man that does not perish with the man; and the thing that makes a man alive is the thing that does not perish when the man dies,--and I believe there is an instinct in every man's heart and soul that tells him so--that there is something in him that does not die when a man goes into the grave. There are proofs of that, for instance, in these texts that I have given you--"her spirit came again," "the Spirit shall quicken your mortal bodies," etc. Now, can the Spirit of God die? ("No.") No, the Spirit of God is eternal,--it is immortal, and we have proof of that. Now the soul that "departed" from the child--that is, the spirit--that departed--came again. Now if that spirit came again, had it perished when the child died? ("No.") Had the soul perished at death the death of the body? If it had perished, it could not have returned,--and if it could have returned, it would have been a dead soul and could not have imparted life. But it was a live soul, and hence it had power to make that dead body alive; so, when that soul came back, it made that body a living being again.

So, it is said of the child, that its soul came into it again and it revived. The same thing occurred in the case of the young lady who had died,--her spirit came again; and the soul of the child came again: The soul had gone out of the body, and the soul came into it again. Then there was something that had gone out of the body, and existed outside of the body, and came back into the body. Is not that true?

Now what was that thing that came back into the body? It was the same thing that God put into man in the first place, and that made him alive -- and what was that? ("The Spirit of God.") Yes,--it was God. Now the great mistake of Orthodoxy has been, that man is immortal, naturally,, and that when a man dies, there is a sort of transformation by which the man keeps on living after he is dead. But the Bible does not teach that. Man dies and disappears, but the Living Element in man, which is God, does not die. This is proved by the declaration of Christ himself,-- and what does he say? "I have power to lay down my life, and I have power to take it again." John 10 : 18.) Who has power to take his life again? ("Christ.") Yes; he had power to take his life again, after he had laid it down,-- this is the full meaning of the statement. What life is Christ talking about there? Eternal life? No. Is it God's life? Not at all. He is talking about his human life--his earth-life--his body-life. Man has two lives,--the visible life and the invisible life,--the Divine Life. The visible life is only the expression of the invisible or divine life in man, creating, healing and supporting him all the time. Is not that so? God is keeping the heart beating all the time, and the movements of the heart sustain the body-life. God is at work in the body in a thousand ways,--in digestion, in organ and cell of the body, maintaining the body-life. Cut off the head of a

man and his body life disappears. Send a bullet through the head or the heart; stop the activities of any of the great functions of the body,--as, the breathing, the beating of the heart--and the cessation of these activities results in the cessation of life,--and of what life? ("The human life.") Yes, the human life, which is technically called the somatic life, or the body-life. Then there is a tissue-life which survives the somatic life for a little while --the muscles continue to contract for a little while after death, so that is a life which disappears a little later than the body-life. These lives disappear at death or soon after. What is it that disappears at death? It is the human life. What is it that goes out at death? ("The breath.") No; that ~~is~~ is going out all the time at the rate of about sixteen times a minute. A man may lose his breath and get it again, but if he loses his life, that is quite another thing.

So you see that in ordinary death, it is simply the body that dies. Christ died on the cross; now was that the giving up of his earthly life, or did his infinite life perish? ? It is impossible for that which is immortal to die. Christ the man could die, but the Christ, who is a part of the Godhead, could not die. Now some of you may say, "That is terrible heresy." But in Col. 1 : 17, we read that "In him (Christ) all things consist," ^(hold together.) "All things were made by him, and without him was not anything made that was made ." (John 1 : 3.) Everything that was made was made by Christ,--and after they were created, how did they "consist" or hold together? ("In him.") In Christ. Christ is all in all,--he is all and in all. He holds everything together; he keeps everything in order. Christ is the active creating power of God. God keeps the universe in harmony through Christ. Now, when Christ died, did the whole universe go into chaos? No.

Christ is our life: "For ye are dead, and your life is hid with Christ in God; when Christ, who is our life, shall appear, then shall ye appear with him in glory." (Col. 3 : 3,4.) "Christ in you, the hope of glory." (Col. 1 : 27.) Christ is our life; he is in us just as truly as he was in the twelve apostles, in David, or in Adam,--what was true of them was true of every man. When Christ died, did everything perish? No; the God-life in Christ did not perish when he died.

"Then," you say, "what about the atonement? If there was nothing but the human life of Christ that died on the cross, what was the atonement?" Now I am going to utter a "terrible heresy," but I feel compelled to say it: The death of Christ on the cross was not the whole atonement,--it was only a part of it .; it was only the outward spectacle of something greater. The sacrifice that Christ made on the earth was HIS LIFE. He came into this world and lived ~~and died~~ a life of service for man, and died, and the death on the cross was only the termination of that life; it was a part of ~~his~~ his earthly experience,--a part of his life; you will read that in the tenth chapter of Hebrews, 5th verse: "Sacrifices and offerings for sin thou wouldst not, but a body hast thou prepared me,--" Christ is speaking now--" in burnt offerings and sacrifices for sins thou hast had no pleasure. Then said I 'Lo, I come, in the volume of the book it is written of me, to do thy will, O God.'" (Heb. 10 : 5,6,7.) The sacrifice was not simply dying,--it was not simply making a physical offering, but the offering was a mental and moral offering--an offering of the whole life of the Christ. "Why did he die on the cross, then?" Because he must die at the hand of man, if at all. He could not die of disease, because he never sinned, and he could not die of accident, because that would imply that his Father did not take good care

of him; so he could not die any other way except by the hand of man. He gave himself to man,--he surrendered himself absolutely to man and lived his whole ^{earthly} life for man. And v

And why did Christ live his earthly life for man? To point us to something greater than man. Looking at it from a human standpoint, man was a failure. As the Bible says (speaking after the manner of men) "It repented the Lord that he had made man." (Gen. 6 : 6) To use human words, he was sorry that he had made man, because man had sinned and was worthy to die. Then Christ said, "I will stay with man, and live in him and for him;" so Christ was in man. The life of God which was put in man is the life of Christ that is holding the whole universe together; that life is everywhere and in everything. Christ said of man, "I will be in him and live in him and let him sin, trample me under foot and misuse me; but I will stay with him, even in his sins, so that I may bring him back to God." That is the real sacrifice, or atonement, and so the death of Christ is only a part of the great atoning scheme; it is simply the visible part, the outward expression of the sacrifice, so that we can see it. But the whole sacrifice or offering of Christ for man is the life of Christ in every man.

"But," you say, "the Word says, "the blood of Christ cleanseth from all sin." (1 John, 1 : 7.) That text used to be, to me, the greatest stumbling-block in the Bible, until a thought dawned upon me that cleared it up,--and that was, that the blood of Jesus Christ is simply an expression of his life; that "the blood of Christ" stands for the life of Christ. It is the life of Christ that cleanses, and "the blood of Christ" is only the concrete representation of the life of Christ. This makes it very clear why, all through the Bible, the blood of animals is held sacred,--because it is of ~~the true~~

a representation or type of the true sacrifice. The cleansing power is not the corpuscles which the blood contains,--they have no cleansing power--they are simply atoms of matter; but the blood is held sacred because of what it represents. God commanded Noah not to eat blood. (Gen. 9 : 4.) Why? Because the blood is the life,--it represents God's life; and so, in all the sacrifices the blood was held sacred.

The blood of Christ, then, represents the life of Christ. That life? Simply the life that Christ led upon earth? No; it is the life that is in every man, and that is suffering in every man,--for Christ suffers in man. He bore our sorrows--how? You say "On the tree;" but the marginal reading is, "to the tree;" he bore our sorrows to the tree." (1 Pet. 2: 24.) Christ is crucified daily,--as the Apostle says, "Always bearing about in the body the dying of the Lord Jesus." (2 Cor, 4:10.) He also says "We were reconciled to God by the death of his Son, much more being reconciled, we shall be saved by his life." (Rom. 5:10.)

It is not simply the life that Christ led in the few years that he lived upon the earth, but it is his life in every single individual that is the great sacrifice, and the cleansing power is the life of Christ within man which is all the while seeking to lead us away from wrong, to cast out evil from us and to help us in the cultivation of the true, the right, the beautiful and the sweet, and that is all the time prompting us to the good. This Spirit of God that dwells within is not only telling us what is right, but it gives us the power to do right. I hope the Lord will help us all to see that this cleansing, saving power is not outside of us but inside of us,--it is near at hand and not afar off; God is not far off but is "near every one of us." He is in us, ready to lead us, guide us and

help us. He is the voice behind us, saying "This is the way, walk ye in it."

Now Adam had these instincts and leadings; he had them so distinctly that he could not mistake his way and get lost. We see the same instinct in the homing-pigeons. When carried away hundreds of miles from home, they find their way back again when released. Why? Because it has the clairvoyant power by which it knows its way without outward prompting; God leads ~~him~~ ~~pigeon~~ in the right direction. In a similar manner God is trying to lead us in the right way. At first it takes a loud knocking to make us hear, but after cultivation of the inner ear and cherishing the influences of and leadings of the Spirit we can hear more easily.

We have every day experiences which teach us these things,-- and I want you to get this thought, because it is very important, and comes into every experience every day of your lives. As an illustration of what I mean, I will give you a little incident in my experience. While in Chicago at one time, I had to make the train at such a time. I heard one of the doctors was sick at 1926, and I rode down there. Then I was rather short of time, and I had to go to Twelfth St. to take the cars, and was told that I had but twelve minutes to get there, and the street-car had gone by. I looked down Twenty-second St., and there was no car in sight. Then I walked on with long strides; but I thought it was ridiculous to try to catch the car on foot, but something told me to walk on, and to walk as hard as I could, and I did. Then I saw the car ahead of me, and it was going on, and I couldn't catch it, but I kept walking on, and I walked about a mile and a half, and then I saw that the car had stopped. I then walked a few steps, and I thought it meant something for me that the car had stopped, so I ran, and as I was doing so, another car

came around the corner, and I had to wait for that car to get out of my way, and then I got the car, and was in time to get my ticket and got on board the train just as it was starting. Now at first I thought I was taking those long strides for nothing; and there were several people standing on the bridge laughing at me because I was walking to catch the train, and I didn't know why I was doing it, but that car was going to wait for me, and so the impression was given to "Walk on." Now it is a precious thought to me,--to feel that God is taking care of us and looking after us all the time, even in the very smallest things. If we will just ~~to will~~ believe this and be willing to trust him, we may be sure that God is caring for us all the time. He is not far away, but right by us, and ready to enter into the little struggles and battles of our lives in every little thing. Now is not that a sweet thought? It seems to me that that fact is the only thing that makes life tolerable,--to know that God is taking care of us, and that nothing can surprise God; that he knows all things and can take care of us. I find this to be true in my every day experience; and it is a constant reproach to me that while I am so faulty, I have so many proofs that God is taking care of me. And it comes to me with great force that I must be careful to see that all my energies, and all my strength and all my time are spent in co-operation with God, when I find that God is so ready to cooperate with me, matching every effort that I make in his service. Whenever I am doing a thing that is worthy, I find that God is present and helping me,--and when I am in difficulty I find him present helping me out. Now if we will just believe this, it will make life a delight, even though we are in the midst of trouble. When I used to think that God was away off somewhere, I didn't have any hope that I

could persuade God to pay any attention to me, being so busy about other things. My conception of him was that of an old man with sharp features and sharp eyes, sitting at a desk afar off, and looking out over the world and putting down what he saw in a great book. That is not the picture which the Bible gives of God; but he is there described as an ever present helper in every time of need. "The meek will he guide in judgment; and the meek will he teach his way." (Ps. 25 : 9.) If we are ever so faulty, and want to do the right thing, needing help every hour, the Lord will help us. When we put ourselves in the right position God helps us. It is not an arbitrary thing; and it is not that God is persuaded by our entreaties to do something that he would not do otherwise before the entreaties were made. God is all the time trying to do the best thing possible for us, but if we combat him, he does not succeed. He gives himself to man's service, so that man may lead God's life; God brings himself down to man in order to promote man.

Now it seems to me that if we recognize this great truth, -- of God in man -- it just settles the whole problem of life both here and hereafter; in this manner it is all settled, and everything is harmonious, and there is no mysticism about it, -- it is, so to speak, all plain, straight, clear sailing, and all we have to do is simply to take hold and work with all our might, co-operating with God.

God has given us the greatest light in the world, and we have the greatest opportunity here in this Medical College, of co-operating with God, -- the greatest opportunity in the world, to prepare ourselves to teach the truth, to guide and help others into the truth, and to lift men and women who have fallen low into ignorance, sin and degradation. This truth has a mighty lifting power in it, --

I don't mean simply physical truths, but the whole thing,--God in man seeking to bring him back to his own image . See how beautifully this thought is expressed in 2 Cor. 3 : 18,--"But we all with open face, beholding as in a glass the glory of the Lord, are changed into the same image from glory to glory, even as by the Spirit of the Lord." We are thus changed "from glory to glory, that is, from character to character, ²into the same image." What image is that? It is Christ, the image of God; Christ is that image. By looking into a glass, we may be changed into the same image that Christ is--and what is that glass? ("Christ.") That is Christ,--his life on the earth. In looking at Christ we see the glory of the Lord. That is why Christ came into the world and lives in man,--because we would not know God without Christ. Because, when we look out into the great world of nature, we see manifestations of the justice and power of God, but when we look at Christ what do we see? A GREAT FRIEND . (With emotion.) Oh my friends! this thought seems to me so wonderful that it overcomes me,--Christ is our great friend, willing to come and live in humanity--to live in man with all his weakness and sin--is not that a great thing? ("Yes.") And Christ came to us just as we are, wicked and full of sin, stays with us all the time, and helps us all he can . (Weeping.) Well, I am glad you know ~~xxxxxxxxxxxx~~ this . I did not know it for many years, and all that time I was miserable and hopeless; but now that I know it I don't care about knowing many other things; so long as I know that thing, I can cling to it. That is the one great hope there is for us in this world,--and it is our hope for the world to come; the whole thing is centered about the one great fact,--that Christ is so great a friend that he willing to live in us and lead us in order that we may come back to the Father and bear his glorious image, the same image that is borne by Christ.

Now, for example, the question of Divine Healing is settled in that way: Who is it that heals? It is God. The same power that creates heals. It takes the same power to heal that it does to create. Here is a man with the tobacco habit, and nicotine is eliminated; but do the kidneys eliminate nicotine? Does the liver eliminate it? Does the liver destroy poisons? ("Not by itself.") What is it then that does it? It is God in the liver that is destroying poisons,-- it is God working in the liver-cells, and it is God in the kidneys-- it is the living presence of God there--it is God at work destroying and eliminating poisons. Then, if it were not for that fact, the first time a man smoked a pipe, he would die of nicotine poison if God did not work in the liver and kidneys to destroy it, would he not? If it were not for that fact, a man would die, the first pipe he smoked. But he goes on smoking and smoking and smoking, and God keeps healing and healing him. But by-and-by the nicotine accumulates in the liver and kidneys which are the instruments through which God has been healing the man, to such an extent that these great centers are paralyzed, and the man has a weak heart--a tobacco heart. Then the man says, "I will pray to be healed right away." Prayer for healing is offered, but there is no change,--and why? ~~xxxxxxx~~ Because God has already done all he can for him through his appointed instrumentalities,--God has not been neglecting the man and waiting for him to be real sick before he did anything for him; he has been doing all he consistently could for the man all the time. And now, after crippling and weakening the organs of elimination, when he prays to be healed right off, God is not going to heal him suddenly; he is not going to bring any extra power to bear on that man to heal him, because he has been doing all he could for him all the

time. Another thing: There are certain things that God cannot do -- he cannot do wrong; he cannot do wrong, and he cannot be inconsistent; his own perfections restrict him to the path of absolute consistency, right, and truth. Now God cannot heal that man consistently while he is violating the laws of health by continuing the practice of smoking tobacco. Why? Because by so doing, he would be putting his approval upon the habit of tobacco-smoking. It is not wonderful why this is: There is a poison ^{which God has} planted in tobacco, and if that man can smoke tobacco without being poisoned, then God, who is in man to protect him and take care of him, ~~then~~ would stultify himself in preventing the effects of the poison. "Then how can God help the man?" He cannot help him by making his weak heart well at once, or by healing his liver and kidneys, but he can impress it upon him that tobacco is poison, and he can give the man the power to stop the use of it; and then by continuing the same healing power that was already at work, and by continuing that work from day to day, he can gradually heal the man,--and that is Divine Healing. All the healing in the world is divine healing. No doctor has power to heal; no medicine has power to heal; it is God alone that has power to heal. I think that is the great thing to get before the people,--that God heals as well as creates, and that it is the divine power in man that is creating and healing him all the time, and that that is the source for us to look for healing, and that we should not look to man for healing.

There are people so deluded that they think that they can find some one who can get God to do something that he would not otherwise do. That is an idea of Roman Catholicism which teaches that through the virgin Mary God can be persuaded to do something that he otherwise would not do. That is a doctrine that has come down to us from

the Roman Catholic church, and we have not shaken it off; we have simply changed the form of it --we have simply changed the form of words which mean the very same thing. We might as well ask the virgin Mary to intercede with God for us, as to ask Moses to do so,--suppose Moses were alive, or suppose Enoch or Elijah were alive, and we should ask them to intercede with God--it would be the same thing as asking the Virgin Mary to intercede with God, if she were alive. There is no one that wants to heal us more than God; there is no one that is more interested in us than is God, and we have simply to go to him for help, and his Spirit within us will do for us everything that should be done,--and the first thing to be done is to teach us where we have gone astray, and to lead us back into the divine way, and when that is done, he will heal us and do for us all that can consistently be done.

This idea,--that God is in every one-- settles every theological problem, clears away every mystery and makes everything simple: it is the great central thought, harmonizing ^{all} ~~every~~ other questions which revolve around it. There are many other questions which lead out from this: We find that the body is the true sanctuary of God,--the body is the temple, the real sanctuary; we have to get away from the architectural idea which is a ^{small} ~~simple~~ conception of it -- only one side of it: the real temple in which God dwells, that is of concern to us, is the body,--it is ourselves.

Now, I repeat: In coming in contact with these delegates which are coming together at this time, don't waste time in gossip and small talk, but let your conversation be elevating, and let them see that you ^{have been} ~~are one~~ with Christ and learned of him. Talk about the great work to be done in the world; talk of methods of blessing and

enlightening our fellow men. If you find some one who is getting wrong conceptions about things, tell them about the truth, let them know what you are doing, and how you are doing your work; let them know that you see God in man,--that man is the temple of God, and you are studying man as the temple of God; and make clear some things that people do not understand,--for instance, the motives and principles of our work.

ELD. FIBBARD : When I first heard Dr. Kellogg speak on these lines, I did not fully understand him; but after having had some personal talks with him, I find that I can understand him, and I can say that I most heartily agree with every word, and the Scriptures carry them out.

In Jer. 23 : 23, God asks the question, "Am I a God at hand, saith the Lord, and not a God afar off?" In the 8th chapter of Ezekiel, God calls the attention of the prophet to the sins of the House of Israel in Jerusalem,--Ezekiel was up in Mesopotamia, and while there, the Lord, in a vision, called the prophet's attention to wickedness that was going on in the temple at Jerusalem, and he says to Ezekiel, "Do you see what the ancients of the House of Israel do in the dark? Every man in the chambers of his imagery,--for they say, 'The Lord hath forsaken the earth.'" And so in other things which I have followed up,--take the case of Moses, for instance--one who "endured, as seeing God who is invisible;" God's presence was real to Moses. David, in the 139th Psalm says, "Whither shall I go from thy Spirit, or whither shall I flee from thy presence? If I ascend up into Heaven, thou art there," and so on--you will remember these Scriptures. And brethren and sisters who have known God have realiz-

ed His immediate presence; and it seems to me to be the first open step towards heathenism, to think that God is away off somewhere, and not right at hand,--that is heathenism straight--to think of God as a corporeal presence somewhere, and not thinking of him as the universal Life-giver, present everywhere; to lose sight of that fact, I say, is heathenism. And though we may claim to be Christians and Seventh-day Adventists, yet, if we think of the Lord as not present, we are simply heathen and do not know God. Why I have seen some of our young people who thought that God did not know what was going on in the Universe, only as the angels brought it to him; and that he didn't know of our prayers until the angels had written them down and carried them to him, and that he was only present in every part of the Universe because he had messengers everywhere who brought him word of what was occurring.--

CHAIRMAN: That is a telegraph system.

ELD. HIBBARD: It is worse than that. He knoweth our thoughts,--where? ("Afar off.") "In him we live and move and have what? ("Our being.") "He giveth to all, life and breath and all things." In Job 34th chapter we read, "If he (God) gather unto himself his spirit and his breath, all flesh shall perish together, and man shall turn again into dust." (Vss. 13, 14.) "If he gather unto himself his spirit ("God is that spirit,") etc. God does not die when man dies,--the Holy Spirit never dies; the Holy Spirit is life everlasting. He is to us, "life because of righteousness." So, when man dies, God simply takes away from him his life and breath and man returns to dust again,--he dies. God said to Adam, "Dust thou art, and unto dust shalt thou return; so God takes away his life and breath and man returns to dust. But, as the Doctor has

said, that life and breath is not man's intelligence. A man does not know anything when he is dead, but God knows; there is no individual consciousness in death, ~~there is no spirit in the~~ There is no spirit in the shape of man that has left man at death and gifted with human intelligence. But God has life, and he is life, and he never dies. These things are very precious to me.

BRO. THURKEL: This is the first time I have had the opportunity of meeting with you for a long time, and I must say that these truths have great power,--they have wonderful power. The thing that gives me most comfort is the suggestion that Eld. Hibbard made,--that God knows our thoughts afar off; he sees around, beside, behind and before us, as he has known us from the beginning,--he knows our thoughts afar off. Just so long as I am trying to live for him, he arranges every detail of my life. And there is no accident that can occur in my life but what God knows it,--there is no obstacle that we can meet in our work but what God has arranged for it--and for this I thank God all the time. Every time I wake up in the morning, the first thought that comes to me is, "I wonder what is God's plan for me to-day. And when a new worker comes to me, I wonder what God's plan is for him; and every day it becomes more wonderful how those plans are manifested in our experiences; and some time before going away, I would like to tell you some of our good experiences out in the field, and what our principles are doing for the people when presented to them. I thank God for the glorious truth that we have and for the light we have just received on the second chapter of Malachi, and especially the sixth verse, where it is said of the priest that the law of truth (not "the law of the Sabbath," the law of "health-reform," and so on, but the law of truth.)

in the 8th verse we read, "But ye are departed out of the way;" and then it says, (v.9) "Ye have been partial in the law,--" that is what has been the matter with us. I am glad God is bringing out this grand harmony,--this great principle, that God is in us. Now this great truth just blends everything together; life is worth living when we see this harmony; it puts a difference face upon life. I thank God for the wonderful light of truth; it is just breaking out, and I can see from day to day that it is growing grander and more glorious, and I mean to walk by it.

CHAIRMAN. It is not a light that is merely reflected upon us by those who have gone before us, but it is one great truth which God has given us. Now let us seek truth, love truth, and work for truth. I am glad that God has put it in the minds of these young people to go out and work for truth. Let us consecrate ourselves to God so completely that he can lead us day by day, and not be rebelling against him, but will be constantly seeking to be led in the way that God wants us to go.

STEREOPTICON VIEWS AND REPORTS OF SANITARIUMS,
At the "Battle Creek Tabernacle", April 10, 1901.

A. J. Read, M. D. Chairman.

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Opening Prayer by Dr. Paulson.

CHAIRMAN. Dr. Kellogg will not be able to attend the meeting this evening, so we will have reports from the different sanitariums, each superintendent speaking in reference his own field. (Screen.)

This represents the original Health Reform Institute; this is the original building, standing just at the rear of the present Sanitarium. It has not outlived its usefulness, but still serves as an important part in the health-reform work. Br. Corliss had charge of this building and he will say a few words in reference to it.

ELD. CORLISS : This building was the main Sanitarium building thirty-three years ago (describing interior of building, from screen.) Mrs. Chamberlain, who was afterwards Dr. Chamberlain, was the matron. Shortly after I went there, we added fourteen feet ^{to the end of} this building and also added another story. We thought then, that we had a large Sanitarium building, but had no idea that it would ever reach its present dimensions. At first we had but one bath-room in this building, the ladies using it one day, and the gentlemen the next, and we heated the water by means of a stove and coils connecting with a large wooden tank in the upper part of the building. One man acted as elevator and wheel-chair, carrying patients to and from their rooms in his arms. Dr. Ley, who is present, was then the physician in chief of the institution. (I think his picture appears here on the screen.)

CHAIRMAN: From that building, the Sanitarium outgrew its original proportions until it became necessary to add many other buildings, and, at the present time, the institution looks about as represented in this bird's-eye view of it. It employs about twenty-eight physicians and six hundred helpers. (This slide will appear again.) The next work to be reported will be the St. Helena work, by Dr. Sanderson. (Screen.)

DR. SANDERSON: This is the original building of the St. Helena Sanitarium. At first it was called "The Rural Health-Retreat" that was many years before I saw the place, but this is a good illustration of its origin. It started about twenty-five years ago, and has gradually developed from that time to the present. I think that sanitarium building has the most select and favorable location of any sanitarium building we have, so far as surroundings are concerned. It is situated in the Napa Valley, in the central portion of California, and surrounded by mountains, the valley at that place being about half a mile wide. (Screen.) This is a view of the building as it appeared three years ago, before the last addition was placed upon it. This only shows the back part of the building. This is the summer-house. These are palm trees. (Explaining building by screen.) The main building is now five stories high. The building is situated upon the side-hill. (Screen.) Here is a view of the building taken from across the valley looking against the side of the hill, the hill descending abruptly about three hundred feet below the building, and the road winding around in front of the building. (Screen.) This represents the building before the addition was placed upon it. This is the tank that was in the building some years ago. This is a picture of the large cottage situated in the centre of the garden. These are rose-bushes inside of

the garden. Here is the rose-arbor, which is now covered with blooming roses. This cottage of twenty rooms was built about six years ago. (Screen.) This is a view of the top of the building looking down upon the top of the valley; this picture was also taken before the addition was built on. The side-hill ascends abruptly from this walk at the top of the building, until it goes up about two hundred feet, to the top of the hill. Then there is a little valley; then you come to another mountain which is about 1800 feet high, the sanitarium being about 300 feet above the level of the sea, and about three hundred feet above the valley. This little mountain is called "Glass Mountain, situated in front of the building along the edge of Napa Valley. There is a little three-cornered valley of about sixty acres situated between this mountain and the foot of this hill. That valley is made up of three or four different farms, one of which is at present occupied by Sr. White.--

Q. How are you supplied with water?

A. We have a crystal spring about three hundred feet from the building, which runs about 12000 gallons a day. That supplies us with water. We also have a supply of water of about 35000 gallons from a canon in the mountain.. (Screen.) This is another side-view taken from across the top of the mountain called "Sugar-Loaf. Here you see the abruptness of the side-hill. (Describing little buildings, school-house, etc.) This is a pine grove. (Screen.) This is a picture of the valley situated directly in front of the institution. This is a prune orchard which belonged to Br. Pratt who was the founder of the institution. This is the group of buildings which belong to Sr. White. (Screen.) Here is a group of the class of nurses that graduated four years ago. Here is the class that graduated three years ago. This is Br. Van Dorn who is running one of the missions in Chicago.

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This class was graduated since that time.

ELD. G. V. Reager, of Spokane; About three years ago I was called to the Upper Columbia Conference, and soon after my arrival there, we saw the need of a sanitarium in that part of the world. We had no means with which to start one, but we put about \$500 into a mission in Spokane, a city of 40,000 inhabitants. In about two years we had earned, in our mission, \$1200, and thought we had enough to make a beginning in starting a sanitarium. We had some correspondence with Dr. Leadsworth, of California, relative to his coming there to open up the health-work. Mrs. Leadsworth came first, and the doctor a little later, and this building was selected (a screen) for a location for the new institution. This was a private residence, and was said to be the largest in the State of Washington. It was built a few years ago, in what was called "boom times," by Mr. Cook, who was said to be worth about one and a half million dollars, but when the crash which followed the boom came, he lost everything.

We rented this building for \$60 a month. It contained some twenty large rooms beside five rooms in the basement. We have recently added a building to the rear, containing eight rooms. We put this \$1200 into the sanitarium, and that gave us a start. The whole house not being in readiness at first, we fitted up treatment-rooms with our first money, and afterward, other rooms, as they were required by the arrival of patients. In about a year's time the institution has been so prosperous that our earnings have been \$18,000. This money has been paid in salaries, running expenses, and in advancing the work. With the exception of about \$5,000 it has been used in fitting up the building and adding better facilities.

At present we have plans drawn for a 48-room building, which, with the present structure, will give us 70 rooms in all. The gentleman from whom we rent this property has tendered us a donation of \$750 toward the new structure, and we have secured more than half enough funds to assure the completion of the building.

We now have three physicians connected with the institution,--Dr.

Leadworth the medical superintendent, and Drs. Kirby and Armstrong, who have been secured from the American Medical Missionary College, located here in Battle Creek. We are now filled with patients--in fact we have been compelled to rent three other buildings, so as to have room enough to accommodate our patrons. Our institution is called ^{"The} Mountview Sanitarium," because it is located on a high hill from which you can see 50 miles away into Idaho, and can also see mountain peaks in British Columbia fully 200 miles distant. If you ever come to Spokane, be sure to visit Mountview Sanitarium. During the first ten months of the existence of this institution, we expended about \$1200 in charity work.

CHAIRMAN: In the absence of Dr. Simmons, physician-in-chief of the Portland (Ore.) sanitarium, I will state that the work there is carried on both in the sanitarium building and in the Mission, which is situated down in the city. I understand that the work there, at the present time, is in a prosperous condition, as is also the work in the mission.

DR. MORAN, of Los Angeles, Cal.: The Los Angeles Sanitarium is one of our newest institutions. The sanitarium proper was opened a year ago this month, April 1st. The first work in Los Angeles commenced four months previous to that. We first opened a vegetarian restaurant. The work grew very rapidly, and by the first of February we had not sufficient room to accommodate the people who came to us. Before this, we could only secure one-half of the lower story, but we now secured the entire building devoting the entire lower floor to our restaurant work. Our dining-room is 75 feet long and 50 wide, and has a seating capacity of 200. At the present time we are serving about 700 people daily. The upper two stories are occupied by our medical

work. We have about forty rooms, and the building keeps full. Up to the first of last November, we had not been able to accommodate but a small fraction of the applicants who came to us. The building is 150 feet long, 50 feet wide and three stories high; it is located on Third Street, in the very heart of the city. (Screen.)

This is a view looking down Third Street. (Describing building.) (Screen.) This is our present sanitarium family. We now have two physicians, five nurses and other helpers, making 42 workers, in all.

DR. LOPER, of ~~Neb~~ the Nebraska sanitarium was called for. Not being present, the Chairman said:

CHAIRMAN: (Screen.) This represents the original building used for sanitarium work; it is also used for patients' rooms at the present time.--

DR. PAULSON: The first building was a gift by one of our brethren in College View. Dr. Loper was then laying a foundation for this work. As time passed on, there arose the necessity for a sanitarium. The whole building is now fitted up, and is nearly full. There is a good work going on there; they have a large family and are gaining in influence.

ELD. VILCOX, of the Boulder, Colo. Sanitarium: Our work was begun in Boulder, Colo., in 1895. In 1896 the present building was dedicated. I would say here, that Boulder is situated thirty miles north of Denver, and is a town of 7000 inhabitants. There is no manufacturing in the city. The sanitarium is situated on the west side of the city, and is crowded right up against the foothills. This building will accommodate something like, and, in addition to the main building, the institution also owns two cottages. (Screen.) This cottage is given up to the use of our consumptive patients at the present time.

and the lower cottage is used as a dormitory for our nurses, -although it is incapable of holding all our nurses. In our work we find it necessary to separate our consumptive and non-consumptive patients. Here is another partial view of the building showing the porches filled with patients and helpers. Here is a view of our nurses' class. This spring we are going to organize our sixth nurses' class. This is a view of our dining-room. We have a novel feature in our dining-room work,-- an arrangement for removing the odor of foods. From the window of this dining room we can see eight or ten little lakes,--it is a very pleasant view. These are views near the sanitarium.

DR. PAULSON, of Chicago: (Screen.) This represents the Chicago branch sanitarium. I suppose you have heard Dr. Kellogg tell about two young men who felt that they must do something for this work, and invested forty thousand dollars in it. This building was purchased as the foundation of our work in Chicago, and was opened as a sanitarium during the year of the World's Fair, and has since been very prosperous. I took charge of the institution a year ago, and went to work in carrying out the ideas of these two men, and the Lord sent us the best people to be helped. I said "We will earn our way, and as many as want to stay and work with me can stay, and those who do not, can leave;" and those who stayed met and we prayed and pledged ourselves to stand by the work, and God has been blessing it this winter. We have had a house-full most of the time, and we have been patronized by some of the most influential people in Chicago. We have had a sweet experience, and no friction. God's principles have been controlling us, and we have been able to reach the very highest classes in the city, and from those, there has been a gradual transition down to the poorest, and to the lowest moral lepers in Chicago. (Screen.)

This represents the front view of our training-school (Describing building from screen.). This building came to us in a providential way; it had been the building used as the "Home for the Friendless, and has a good history. It is situated in a very favorable part of the city for the line of work that we are doing. It came into our hands at a very small rental, the rent that we pay not nearly covering the interest of the money invested. When we took the building, there was not a piece of furniture in it, --nothing but the dirty floor and dingy paper on the walls. Eld. Warren went down there and took charge of it first, and he will tell us his experience in it.

ELD. WARREN: (Screen.) This is the large building on the corner of Wabash Avenue and Twentieth St., formerly known as "The Home for the Friendless." When we went there, they had built a much larger institution further out in the city, and we found that we must clear the building, in the first place, of dirt and filth that had been accumulating for years. We first made ready a room for a school-room. When it was ready, fifty of our students met there in that big empty house and prayed, and asked God to help us, and teach us so that we would know how to do the work, that we had come there to try and do. The power of the Lord came into that room in so clear a manner that I don't think that any of those who were present will ever forget that occasion. We have had many precious experiences in our work there, for which I thank God.

DR. FAULSON: The history of our struggles in Chicago will never be written on earth, --although it is written in Heaven. We have had showers and sunshine, but these will ripen the work. This Chicago work is a pioneer of this line of work. Living there and working as we have, and trying to build up one institution after another, we have met

with some disappointments, and I have been able to sympathize with Moses more than ever before. We have often seen our need, for instance, of \$75 before the day was over; and we considered this a call to prayer. We prayed, and in some peculiar manner, before the day was over the needed assistance came,--that money came in--and it was clear to every one of us that that was a special providence. Then we would get together and sing "Praise God from whom all blessings flow. I believe that we have workers there that might be dropped down anywhere on the face of the earth, and find from their experience there that the Lord answers prayer in time of need.

If nothing had been done by us in Chicago, except the reflex influence of the lives of those who have labored there, that ~~labor~~ labor will not be lost. Of course we are not satisfied with our efforts nor with ourselves here in the flesh, yet as David said, we "shall be satisfied when we awake with His likeness.

BR. SADLER: This picture represents "The Star of Hope Mission," the predecessor of the "Life-Boat Mission," located on West Madison St, one of the worst sections in the city of Chicago, and is located near the Dearborn Station. It is one of the best known and most successful Gospel missions in the city of Chicago. It is frequently visited by evangelistic workers from other centers. This mission, in the three years that it has been running, has acquired the reputation of being a center of evangelistic work and successful Gospel methods. (Screen.) This is a view of the "Workingmen's Home in its present location. Many of you know how this institution was started,--down in the very heart of the city slums on Custom-House Place. I am sorry Br. Williamson the manager is not here, for he could tell you many interesting things; he used to conduct the lodging-house on Custom)House Place during the World's Fair, and this became the Workingmen's Home. Shortly afterwards

Br. Williamson was converted, became manager of the Home, and has continued to act as manager there. This institution affords accommodations for three hundred men, --bath-rooms, lunch-counters etc. Large meetings are held each evening at 6 : 30. (Screen.)

This picture represents the "Children's Christian Home, on South Park Avenue. Some years ago we had a children's department in the training - school building, but it was thought best to move it out and let it constitute a separate institution. Sr. Black, the present matron, took charge of this work as a matter of faith, as there was not a single provision made for it. The rent of the building was \$15 a month; it had to be refitted with pipes, which had all been torn out. (Screen.) Here is a group of children; they are taught to pray and to read the Bible.

DR. PAULSON: I took one little girl into my home, after she had been in this Home about a year and a half. Her father had been in Manila in the Phillipine war, and was dead; She drifted into a Catholic school, and then into Sr. Black's "Christian Home" and though only about nine years old when she came into our home, she could show nearly all the points of our faith from the Bible. She could not be gotten to bed without reading her Bible. She loves pure, sweet things, --and ~~ix~~ if they are not found in Sr. Black's "Home," I don't know where they are

FR. SADLER: A branch home has been established in Wisconsin, and many of these children are sent there. In the summer time many of these children are sent out into ^{homes in} the country. This institution has never received any help; it has been a self-supporting work from the start, and has been carried on by a hard struggle. (Screen.)

Here is a view on South Park (Clark?) st., one of the worst portions of the city. This view was taken from up the alley. Here is

one of these little fellows that I have been telling you about. These buildings have now been condemned and torn down. You can see by his face that this little fellow was a born criminal, although he is only eight or nine years old. (Screen.)

Here is a group of street children ~~which~~ such as you will frequently meet in Chicago; This picture ^{of the Mission} was taken some time ago. (Screen.)

Here is a view passing along secondhand clothing-stores. This is one of the places where stolen property is taken in order to evade the officers of the law. Here is a boy lying asleep on the curbstone.

(Screen.) This is a view of the Harrison Street police station. This is one of the most noted police stations in the city, and is situated in the centre of one of the most criminal districts in the world. These men are lying sandwiched in together on the cold flagstones of the floor, about two hundred of them. When this picture was taken, a selection was made among these men, and those selected were taken to the Workmen's Home where they could get a night's lodging and the opportunity of cleaning themselves up. (Screen.)

This picture was taken by a flash-light at 10 o'clock at night. This little girl is offering her prayers in this poverty-stricken home. One is often agreeably surprised to find such diamonds in the rough where you would not expect to find anything good,--people who are walking according to the best light they have.

DR. PAULSON: I ought to say, that we have daily classes in the nurses' course, and they are so arranged that workers can have some experience in different lines, in the city. We sometimes have twenty or thirty nurses out, and the work is self-supporting. My wife wrote me to-day that a leading banker has called upon us for a nurse. I wish to say, to the glory of God that one of our nurses has been able to enter one of these leading homes, and that a family altar has been

erected, and soon the members of the family became soundly converted. Such things have happened more than once. God has greatly blessed us in our work, and I believe that what we have seen there is only a partial indication of what will yet be done.

CHAIRMAN: I regret that some of our work is not represented here. We will hear a few words from Dr. Herr in regard to the work in Cleveland, Ohio.

DR. HERR: Cleveland is the largest city west of Philadelphia and Baltimore, with the exception of Chicago and St. Louis, and the Medical Missionary Board have not been slow in realizing this as a favorable centre for medical missionary work. About two years ago, with the aid and co-operation of the Ohio conference, the work was established there. (Screen.) We are located in this building at the junction of the residence portion with the business portion of the city. This is convenient for business men who may wish for baths or other treatment before going to their homes. We get a great deal of that kind of work in addition to our regular patients. We draw our best patronage from Euclid Avenue, which Bayard Taylor says is the greatest ^{thoroughfare} ~~avenue~~ in the world.

We also have accommodations in our "Helping Hand" mission. Both the sanitarium work and the medical missionary work have been self-supporting for a year or more. We also have a dressmaking department which is more than self-supporting. Two months ago, our hygienic restaurant was opened half a block up the avenue from this building; at the present time we are feeding over a hundred per day, and we trust that the restaurant will soon be self-supporting. Our work has progressed until we have reached the limits of our capacity and have arranged for additional bathrooms, as we have but one now. Our restaurant was an old mansion, contains twenty or thirty rooms, and is now full of roomers.

(Reassembling location from screen.- Our building is located diagonally across from this building (the Hiccock Building) a four million dollar building with all modern improvements. This will be just opposite our sanitarium work, and will be an aid to us. Just this side, and opposite this building, the old public library is being torn down, and a sixteen-story building is being erected. So we are at the junction of the residence portion with the business portion of the city, and just opposite these trees in the picture. (Screen.) This is a continuation of the residence portion, on Euclid Avenue. (Screen.) Just around the corner from us, there is this immense building (the Rose Block) which has just been erected; it is a large business block.

MRS. DR. NICOLA: The So. Lancaster sanitarium is one of the youngest members of the sanitarium family. It was but two years ago this month when the New England Sanitarium and Benevolent Association was incorporated, and they came into possession of the building, a picture of which you see on the screen.

At the time the building came into the hands of the New England Sanitarium and Benevolent Association, it was occupied by the students of the S. Lancaster Academy, and was occupied by them until nearly the last of the month, two years ago. At that time, when the school broke up and the students left, we began the work of a sanitarium, and this, I think, was on the 23d of May. On the 15th of June of the same year, our first patient arrived,--and that was then an important matter to us. At that time our equipment consisted of two bath-tubs and a small faradic battery. We had to settle a room when the patient arrived. We warned our patients that we were not prepared to receive them, but they came in spite of us. We had been warned, before entering the work there that the people of New England were a very conservative people, and were very slow to take up anything new, and we expected that, but we were

happily disappointed, for we had a very cordial reception. Our first patient was sent to us from a neighboring city by a prominent citizen, and from this small beginning the work has been favorably progressing. (Screen.) This is the front view of the sanitarium. Our capacity is taxed to the utmost now. Our patronage for the past year has been more than doubled. I have not the statistics to show you just how many patients we have had, but for the year ending last December, we had treated over three hundred patients, and there had been over fifty surgical operations. The work has steadily progressed, and the patronage has been at least two and a half times as much this year as it was last year.

We find that while the New England people are perhaps a little slow to take up with anything new, they become interested in our work and principles, and we have not only an opportunity to help those who come to us, but have invitations to go out and help people at their homes. There has been a demand for hygienic lunches to be served at our popular societies. At two Sunday-School conventions the sanitarium has been invited to serve supper, and at each time have been given an opportunity to explain a few reasons why we serve the food we do. About a month ago we were invited to serve supper at a banquet given by the Christian Endeavor Society of Boston. The banquet was held in one of the popular churches in Boston, and was given to 100 of the leading ministers of the city who were the invited guests of the Christian Endeavor Society. At that time we were given an opportunity for an hour's address upon the principles which underlie healthful living. We had also a practical way of demonstrating our principles in part, in the way of lunches. We find that such calls as these are increasing upon us.

One of the most encouraging features of our work is, that many come to us who are not really sick,--they do not really need to be treated

for disease, but who came there to learn how to live. We have received a number of encouraging letters from who have been with us, stating that they have carried the principles of healthful living into their homes. Two years ago there was a Congregationalist pastor who spent a short time with us, and then sent for his wife to come there and learn how to cook hygienically. He and his family became thorough converts to these principles. This led to the opening of a hygienic vegetarian ~~XXXXXXXXXX~~ café in Boston. It was opened on the 19th of March last, and on that day 110 partook of hygienic food. From that time we have fed there as many as 40 to 65 per day. This clergyman is now devoting his whole time in preaching the Gospel of Health.

CHAIRMAN : The next work which we will speak of is that in Guadalajara, Mexico. (Screen.) This view gives an idea of the plan of the building. I ~~was~~ recently had the privilege of having a short visit with the founder of the work there, Eld. D. T. Jones, who has put a good share of the latter part of his life into this work. He has felt a great burden for the work, and has spared no expense and effort, even though that effort cost him considerable exertion. In his weakness and sickness he has labored faithfully and persistently for the upbuilding of the work in Guadalajara. I could hardly appreciate the importance of this work, until I attended the recent Pan-American Medical Congress in Havana. At that congress there were representatives from nearly all Spanish-speaking ~~Latin~~ countries, and I think I have realized as never before the importance of upholding the truth and principles we hold before the Spanish speaking people.

The work in Mexico, and the health-journal which goes out from this institution is making a beginning of that work in Spanish fields, and especially in Mexico. All that is needed for a grand success of the

work in Mexico is a thoroughly consecrated effort on the part of those who connect with the work, and faithful laborers to carry it on to the end.

The work there has not only been carried on in the sanitarium building, but, as the next view on the screen shows, they also have a Mission in which the poor are treated. In this little building more patients are treated every day than in the sanitarium building, but these patients have to pay only a small pittance for the work that is done for them, and the fact that this is appreciated is shown by the number of people who come there daily for treatment. There is also an effort being made to carry on medical work in other parts of Mexico; but that work is still in its infancy. We hope the time is not far distant when not only ⁱⁿ Mexico but the other Spanish-speaking countries, we shall have more representatives in this line of work.

The work is reaching abroad to foreign countries. I was very much amused, when I first connected with the sanitarium, on receiving an old German lady for treatment. She then lived in Philadelphia, having ~~come~~ recently come from Berlin. She said she had visited a health institution in Germany and asked for treatment in hydrotherapy, and she said the physician in charge asked her why she didn't go to Battle Creek, Mich., where they gave such treatments

DR. OTTOSEN, of the Skodsberg sanitarium. (Screen.)

The buildings you see represented here, are situated in the southern part of Denmark, eight miles north of the city of Copenhagen a city of 500,000 inhabitants. It is 6,000 miles east of the Mexican institution. We are 150 miles from Hamburg, 200 miles from Berlin, 500 miles to London, Eng., 250 miles from Christiania, Norway, 250 miles from Stockholm, and about 250 miles from St. Petersburg. Our buildings are

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right along the seaboard. This is the border of the sound. (Describing location from screen.) Seventy thousand ships pass right by our windows every year,--more than 200 every day. We can see the coast of Sweden across this sound which is eight miles wide; it is a beautiful view.

About five years ago, when it was decided to establish the work in Denmark, several of us came together in Copenhagen and sought the Lord earnestly in prayer that he would lead us to find the right place for a sanitarium. We sought many days for a place, but found none. After having another season of prayer, we felt that the Lord had heard our prayers, and we again went out in search of a location, and just as we were coming along this road and saw this building, several of us spoke at the same time, saying, "That is the house," referring to the larger of these two buildings. The widow who owned the two buildings lived in this smaller house. This large building was erected by the King of Denmark; he built this house for the noblemen who kept him company. His palace is situated right across the road. Here you see his initials with the royal crown. This widow let us have this property at a very cheap price, when she found what we proposed to do with it, and the work in which we were engaged,--she sold it to us at a very low price. (Screen.)

This is the sanitarium building proper, and this building is called "The Annex." Here in front we have a number of little row-boats for exercise. (Screen.) This is a walk along the sea-board. You will hear several different languages spoken among us, as our patrons come from five or six different countries.

Just back of the institution we have a large public park or woods, about ten English square miles in area, being a very nice place for patients to enjoy themselves. (Screen.) This shows the work at its beginning,--some of these came from the Battle Creek Sanitarium.

ELD. CONRADI, of Friedensau, Germany: You will notice that this building (screen) is not quite finished; this is our new Sanitarium in Germany, and is to be opened this coming month. The building is situated in the central part of Germany, about 70 miles from Berlin, 150 miles from Magdeburg a city of 230,000 inhabitants, and about 7 miles from Burg, a city of 30,000 people. This place was secured in the fall of 1899, with a farm of 90 acres of land. (I am sorry we have not the other buildings represented here.) We have a stream ~~running~~ flowing in front, giving us water-power for turning a mill. In the same year we erected our food factory there, and we have a mill there in running order. (Screen.) This building was commenced in March ~~last~~ of last year. It took so long to get the necessary permission that we could not finish it last fall, but it is to be opened in May.

When we bought the place, there was simply the mill and farm. The land is all ~~grown over~~ with pine timber. This is the only building there, and it is very quiet. Last year we had our campmeeting in this place, and it was our first experience along that line. But there were over a thousand people present on Sunday, and we taught them how to live in a healthful and practical manner. It was very nice for the people to to away from the cities and villages and come there and eat and drink; but, while they had no meat, they had good health-food from the factory, and they enjoyed it. We fed about a thousand vegetarians there, and they all felt happy while there, and we expect to have our campmeeting there this year. (Describing sanitarium building from screen.) This part is to be used as a bath-room. This is the swimming-pool. Here is to be the dining-room. Above here is to be the reading-room. Above the

bathroom is the place for the sun-bath and the air-bath. We have our industrial school here also; there are some thirty in training. More than half our nurses are from different parts of Europe. I hope that next time we come here, we will be able to tell you more about the growth of the work. Thus far the authorities have been very kind to us and permitted us to have a doctor to take charge of the building.

When we came there, there was no particular name for the place, but since settling there we applied to Government for a name, and we proposed the present name,--"The Pasture of Peace," and this name was granted to us by the Government. When we came to our place we found forty or fifty people working ~~there~~ on the estate of a lord which surrounded ours, and on our industrial farm we found people from all parts of the world, and they were very peaceful. This lord noticed that, and asked why we were so peaceful and quiet, while his laborers quarrelled. We told him, "This is the Pasture of Peace, and the Lord of peace is ruling here, and we expect he will make a pasture of peace of it, but will care for our spiritual as well as bodily good.

DR. DE FOREST : (Screen.) This is the Basle Institution, formerly known as "The Primary Polyglot. Many of you know the manner of the founding of that institution. No doubt many prayers have been pit in that institution. It faces to the South, and overlooks a beautiful park. Until recently, this ^{place} ~~building~~ has been filled with soldiers but the city has grown around it and it has recently been converted into a beautiful park.. This gives the institution added value, as the view from it is very fine. To the South, one sees the blue Jura Mountains in the distance; to the North we can see the Black Forest in Germany, while in the far West the Vosges Mountains are seen.

In the summer of 1895, I received word that I should make

this my field of labor, and we arrived there after a rather trying journey, and we found that our brethren had all gone to campmeet-^{through}ing. You can imagine our dilemma while trying to travel a country the language of which we did not understand, but the Lord helped us, and we arrived safely at our destination. When we went into the building, we found everything in disorder and dirt. The institution, however, was fitted up so that it opened its doors to patients in March, 1896. Since that time, about 450 persons have come into the institution as regular patients, and the results of their treatment have been good. Many times it has been a march and a battle, but the Lord has been our helper, and to him be the glory..

(Screen.) Here is a group of nurses. And here is the second and third class together. Some of these persons are now doing efficient work in foreign fields.

I might say, in regard to our Nurses' Training-School, that we have sought to make it a permanent school for medical missionary nurses. Thirteen are at work in foreign fields.

BR. SPICER, of Calcutta: (Screen.) This is a view of one of the leading streets in Calcutta; there is something of the appearance of a European city here. (Screen.) This is a view of the front veranda of our building, and a group of our workers; this was taken about three years ago.

From the very beginning of our work in India, it has been as a medical as well as an evangelistic mission, for, when Eld. D.A. Robinson went to India, he represented the medical missionary interests, and I believe the first patient taken into his home was a Hindoo gentleman in the government service. He was in such a bad condition that he was willing to break his caste and let Br. Robin-

son take him into his home and give him some simple care and treatment, which brought him through successfully. Br. Robinson told me, later, that this man became well and strong, and that his family priest, a Brahmin, fell at his feet and thanked him for saving the man's life. This man is now in touch with us, friendly and interested, and I believe he is not far from the Kingdom of Heaven.

Our work began with this mission building, but later, the work was transferred to a building more centrally located, so as to reach the European class, of which there must be from seven to ten thousand in the city of Calcutta. Later, the work was removed to another building which is now occupied by the medical branch.

By the last word that I received from Dr. Ingersoll, I learn that their hands are full, and that they need more help. As one encouragement, he tells me that a lady and her daughter who were very much interested at the time I left, and were attending meetings, were keeping the Sabbath, and that when the Census-taker called at their house to learn their names, occupation, and religion, they put themselves down as Seventh-day Adventists.

I need not say how great the need of India is for this line of work. India has suffered from pestilence and disease more severely than has any other land. They are deplorably ignorant of the sanitary science, and the consequence is, that disease and death are sown broadcast in the land. The only thing that we can do for them is to help lift up their lives and give them true principles. So that whatever work is done, whether evangelistic or medical missionary work, must be done by the one Gospel--two ideas in the one Gospel--the health of the physical man, and of the spiritual man.

ELD. DANIELS: (Screen.) This is the first sanitarium established in Australasia. It is located in Sydney. You can see but little of the building here; it is much larger than it appears to be from this cut. We have occupied this building about three years. When we secured the building at first we had no patronage, and it seemed like taking a great burden and risk upon our hands. The rental was about \$750 a year; but in a short time our patronage increased until the building was full, and then we rented another building almost as large, just across the road. That filled up, and we rented the third building of nearly the same size, and during the last year and a half we have had all three of the buildings pretty well filled. This is the building that Sr. White has written about, as being poorly prepared ^{medical} ~~missionary~~ ~~work~~ to represent our medical missionary work. We are now erecting a building about thirteen miles from this building, in a country place outside of Sydney. It is very accessible, as there are two railways from the city running past the ground and close to it. We have eighty acres of ground, and are going to open up a building there that will accommodate about one hundred patients. At the present time, this building is near completion, and we shall vacate the building which we now occupy in about three months from the present time.

CHAIRMAN: If we had the views, and the time, we might pass on ^{and} from Australia to Samoa, Raratonga, Honolulu where little centers of work have sprung up, and then we should have completed our medical missionary trip around the world back to this country.

DIVINE HEALING, April 16, 1901.

J. K. Kellogg, M. D.

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THIS question of Divine Healing has been a sort of troublesome factor in our work from the very beginning. I remember, some twenty-five years ago, when I first took charge of this institution, we had some brethren who were very active,--and especially Bro. Lockwood,--in the promulgation of this question of Divine Healing. This Bro. Lockwood would watch and whenever we had a patient for a surgical operation, he would get hold of them and coax them to come down to his house and be prayed for. I remember we had one patient who was going to have an operation, and I saw Bro. Lockwood coming up the street, and I said to one of our Doctors, Dr. Lindsay, "Now he has heard that that patient is going to have an operation, and I am sure he is going to try and persuade that woman to go down to his house and be prayed for; I wish you would go into the lady's room and get there before he does, and stay there until he goes away." So the doctor got there first, and shortly afterwards Bro. Lockwood came in. There was only one chair in the room, so Dr. Lindsay sat on the bed. Bro. ~~Lockwood~~^{Lockwood} stayed there three hours, and Dr. Lindsay stayed there and chatted with them and entertained them, and saw it out. We were having that experience all the time,--brethren trying to entice our patients away to be prayed for.

From that time to the present, there has been a sort of competition between the faith-healers and rational medicine in the denomination. We have had some brethren who thought they had some sort of a patent on prayer,--a sort of monopoly,--and they seemed to enjoy the idea of being looked upon as people who had power to persuade the Lord to

do something that other people could not get the Lord to do. Now I don't take a bit of stock in that sort of faith-healing or divine healing. The Lord heals people, not because of anybody's argument or persuasion. I don't think that any amount of loud praying or long praying, or shouting or gesticulation, or anything else can persuade the Lord to do anything for a person that he is not willing to do otherwise. It is man's need that leads God to heal him; it is his attitude that makes it possible for God to heal him.

I believe that God is trying to heal every man who wants to be healed. "But, do you say there are some things that God cannot do?" Certainly there are,--and that is one thing that we must have clearly understood. I think it is generally believed that God can do everything, and that if men only get high enough up, that God can do everything that they want him to do. But God cannot do everything; there are many things that he cannot do. In the first place, it is impossible for God to do anything wrong; it is impossible for God to lie; it is impossible for him to deceive. He cannot do anything wrong, because he is perfectly good,--being perfectly good, it is absolutely impossible for him to do anything wrong. In the second place, it is impossible for him to do anything inconsistent,--he is infinitely wise, and he cannot do anything inconsistent. Being absolutely perfect, he cannot do anything less than the most perfect thing.

I was once talking with a man who endorsed the "flat-earth" theory, and was trying to make him believe that the earth is round. "Why," he said, "couldn't God make the earth flat, if he wanted to?" "No," I said, "it is impossible." "Why?" Because the earth is round, hence it is best that it should be round; if the round form is not the best form for the earth, God would not have made it round; the fact that it is round is proof that that is the best way to make it,--and it could not have

been made in any other way, because God could not make the earth any way but the best way; it seems to me that that is plain and reasonable.

DR. PAULSON: God does not have to keep on trying experiments.

DR. WELLOGG: It is simply this: We discover an order of things done in the same way every time, and we say that is a law. How has it come to be a law? Because the first time God did a thing, he did it the best way it could possibly be done, so it could not be done a bit better. That is because God is perfect. Now if it is best for the earth to be round, that is the only way that God could possibly make it; and the fact that the earth is round is evidence that that was the best way to make it; otherwise, God did not do a perfect thing when he made the earth,--he came short of perfection when he made it.

That very principle applies to this question of healing: Here is a man with a broken leg or arm, or a displaced joint. Now, shall we say that God cannot put that shoulder or arm back in place for that man? Now the question is not whether God has the power to do that, simply as a magazine of energy, as a store of power or magazine of power--for he has power to obliterate that man entirely; but we have to look at the thing from the standpoint of propriety. Suppose a man has a broken arm, and he prays, "Oh, Lord! heal my arm,--" and, snap! the thing is done, and all right: Don't you see that if that was all that was required in such cases, men would neglect to take care of their arms and legs? But the Lord says, "Whatever a man soweth, that shall he also reap." That is an everlasting principle; it is just as immutable as the rising sun; it is simply effect following cause.

Now, if a man thinks that by prayer he can change this order, so that he does not reap what he has sown,--and God has said that, and established that order--God would not be true to that principle. Now God is so true to that principle, that if a wicked man,--a distiller or a

butcher goes out and sows barley in a field and takes proper care of it, he gets just as good a crop as though that field had been sown for missionary purposes, whereas the crop has been raised purposely for the manufacture of beer,--provided the man tills his ground properly and complies with all the conditions of agriculture which apply to the raising of barley. God makes the rain fall upon the just and upon the unjust. It is said, "Whatsoever a man soweth, that shall he also reap;" so if that man sows barley in good soil, and takes good care of it, he gets a good crop.

Now if God will make barley grow for a man to use for the purpose of making whiskey to make a man drunk with,--if God stands by that principle under those circumstances, he must stand by it under all circumstances and conditions. And so, if a man sows for disease by bad habits, he must suffer the consequences, and the only way he can get out of it is by sowing for health. If a man has a disordered stomach, he can pray as much as he wants to, and God won't help him, only so far as to lead his mind in the right direction so as to correct his habits, and that is the way God will help him. Here is a case of tobacco-heart--how did he get it? He got it by smoking, and he got it by smoking until his body was saturated with nicotine, and his nerve-centres were paralyzed, and his heart cannot do its work properly. What is God doing for that man? The first time that man smoked a cigar, the nicotine that was taken into his body--part of it was destroyed by the liver. Now can that man's liver itself destroy that poison? No, it is God working in the liver. Can the kidneys working by themselves do anything? No, it is God at work in the kidneys removing the nicotine; and so it is with the skin and the lungs,--they are all at work resisting that nicotine. That is the case with the first cigar, and so it is with the next, and the next, and the next cigar, and so on; and so long as that man

man continues to smoke, God has been at work curing him of the evil effects of his bad habit, just so far as he consistently ^{can,} ^{with} ~~can,~~ in view of the principle that "Whatsoever a man soweth, that shall he also reap--that principle runs right along with it--God is doing all he consistently with that principle, to save the man; he labors with him, to save him from all the consequences of smoking, but he does not do anything extraordinary; he simply goes right on all the time doing what he was doing before. Here in the liver, with a sort of capsule for destroying the poisons which are generated in the body, and its purpose is to destroy these poisons which are generated in the body, and to keep the ^{blood} body pure, so that the poisons which are naturally formed in the body shall be destroyed as rapidly as possible, and that man may live as long as possible, and that the time when these poisons shall accumulate to such a degree as to set up degenerations of the arteries and the tissues, and in that way bring on old age and death,--that that time shall be postponed to the remotest moment possible.

Now if a man takes external poisons into his body, he uses up the energy of his liver in destroying this poison--nicotine, etc., and then, the normal purpose of the liver, which is to extend the man's life to the greatest possible limit, will fail at an early date; the work of destroying body-poisons will be neglected, and the liver will not be able to make the blood as pure as before, and consequently the day will come early when the poisons of that man's body will accumulate to such a degree as to cause death, and death will come at an earlier date than it otherwise would. There is the sowing, and there is the reaping. Take the case of Br. Mackey, for forty years a drunkard: To-day he is living a fairly healthy life, but we cannot expect him to live very long. The time is not far ahead when he will begin to show the effects of his disabil-
pation, because his capital is gone. There is a certain reaping that every

Single man who sins is bound to experience. God cannot consistently act against himself; he will not act against himself. Here is a man smoking: is his liver at work doing some extraordinary thing? Not at all; it is working to save him from instantaneous death, but it is doing that every day; the kidneys are working to carry off that nicotine, but their energies and work are being expended on the nicotine instead of on the systemic poisons that they ought to deal with in order to keep the blood pure, and in order to keep the body up to its highest level; and, after a while, the liver capacity will be used up, and his kidney capacity will be used up, and his lungs and his skin will not keep the body pure and free from poisons, and so he reaches the point where the nicotine "hangs on his breath." We always know those people when we meet them. When a man has just begun to smoke, and he smokes a single cigar a day, and he takes a walk in the open air, -- in two or three hours afterwards you would not know it. But after that man has been smoking for ten years, the "nicotine hangs on his breath," because his body is saturated with it, and when he gets to the point where his body is saturated with poisons, pretty soon he begins to show the symptoms, -- nervousness and an intermittent heart -- the mechanism of the heart is impaired. Now God has been doing all he could for that man; he has been healing him every single day. There is no healing but divine healing, and God has been doing all he could for that man under those circumstances.

Now that man goes and prays that God will heal that tobacco heart. Now has God got to do something more than he has been doing before that time? If so, he has been neglecting that man up to that time, and has not been doing all he could for him. He asks God to save him when he feels that he is going to die, but what more can the Lord do for him than he has already done? The only possible thing would be, to create a new heart for him. There is one thing the Lord can do for him, --

and that is, when he puts himself in the right attitude to receive spiritual impressions, he can see that he has been doing wrong, and he can stop smoking, and God heals him. But it is just as impossible for God to take that man who is smoking and making a tobacco heart all the time and to heal him, as it is impossible for God to lay aside that law, "Whatsoever a man soweth, that shall he also reap," for that would be saying, "Whatsoever a man soweth, that shall he also NOT reap; it is saying that God heals a man who is sowing for disease, and by some extraordinary act God prevents the effects of that sowing, and when that is done, then God is controverting Himself, --he is against himself--and it simply subverts the entire principle, "Whatsoever a man soweth, that shall he also reap."

That is a principle that we must recognize. We cannot expect God to answer prayer to relieve a prolapsed stomach, liver, or kidneys, or to relieve suffering and pain to be given when we are wearing tight clothing and holding the liver and kidneys down. Each woman might pray for an endless time, but the Lord is not going to lift those organs up into place; there is no power in prayer to elevate those organs unless the woman helps, for "Whatsoever a man soweth, that shall he also reap." If she sows for a prolapsed stomach, she will have a prolapsed stomach, and there is no getting away from it. God is consistent, and that principle must be applied in every case.

And if we rightly apply that principle, we will find the way out. But how is it when a man repents and God seems to heal him? Now God does not do anything extraordinary for that man at that time. We will say, here is a man like Tom Muckey, --drinking whiskey every day of his life for forty years, and suffering every day in consequence. Now there are two consequences that a man suffers from when he drinks whiskey, --one immediate, the other remote; he really gets two crops from

his sowing,--one crop to-day, and another crop possibly next year, or possibly ten years from now. One result is the immediate intoxication and fuddling of his senses, the obfuscations of his senses; and the second crop is the degenerations that come in early in life,--arterio-sclerosis, Bright's Disease, cirrhotic liver, and those consequences that come along later, thus shortening his life. Now he stops drinking whiskey. Of course the immediate consequences of the sowing will cease, and the immediate symptoms will disappear, as he stops his evil sowing in drinking whiskey. He no longer has the acute gastric symptoms, the mental intoxication and the nervous disturbance coming from the use of alcohol. But the remote effects from which he has been sowing for forty years do not disappear. Now he asks God to heal him, and, as soon as he stops this sowing, the healing process will begin,--that is, a healing from the immediate effects. The energy of the body that has been struggling to remove the alcohol from the body--that energy will now be used in reparative processes; the energy which has been used in eliminating alcohol from the liver can now be turned upon the body itself to remove the body-poisons and to purify the blood, and so the blotches will begin to disappear from his nose, and his vital processes which have been held down by alcohol, will begin to rise, and that same power, working in the same way, and with the same willingness, and without any more willingness, and with the same amount of energy, and no more energy,--that same power working under more favorable conditions and in a more favorable attitude, will improve his physical conditions, his vital condition will rise, and his vital functions will be better performed.

Now suppose a man's mental and moral conditions become more favorable: there we have the same principle extended further: when a man is in harmony with God and submits his will entirely to God, then he is able to hear the voice of God saying, "This is the way, walk ye in it."

In the first place God put in man instincts capable of leading him perfectly right in every particular, telling him what to do, which way to go when he is lost in the woods, and which way to go home, and everything he needed to know, and these instincts were perfect guides. Now, as man wandered away from God, those instincts became confused and obtuse, and man does not hear these voices. But, as he puts himself in an attitude of prayer, and prays earnestly and honestly and opens his heart and mind to God, God can speak to him. God has been speaking to him all the time, but he did not hear; but now he simply opens his ears--he opens his mental and moral ears, and he can hear God speak, and then he is capable of appreciating those things that he did not appreciate before, for he simply hears God speaking to him. It is not quite as though he heard a voice actually speaking to him, but it comes so distinct and plain that I have sometimes thought there was an actual voice speaking to me. Of course I was conscious that there was no voice, yet it was just like a voice talking to me. A new thought comes into one's mind so naturally that he hardly realizes ~~that~~ it is new; but he gets up from his knees and starts off in a ^{new} certain direction, he does not always know why, but it is because he has just surrendered his will to God, and his will--not a new will, not a new impulse, not a new force brought to bear upon him--but the same force that there was before; but now he is surrendered to God's will, and directed by God's will, --he starts off in a new direction because he has surrendered to God, and yielded himself to the power that is seeking to lead him aright: Sometimes the change is so great that it seems to the man that something new has taken hold of him, but it has not; it is just the power of God which has been dwelling in him all the time. It is not God doing anything extraordinary for that man; it is simply God doing all he had been doing all the time.

I cannot reconcile the idea of God doing something extraordinary for a man--I cannot reconcile it at all with the infinite love of God,

with the fact that Christ gave himself for every man, with the fact that God dwells in man, and suffers with man in all his sins and sorrows.

In Isaiah 44 : 22, the Lord says, "Return unto me, for I have redeemed thee." Now God has redeemed man before he returns to him,-- before he turned round and to return unto God, he was redeemed and Christ was dwelling in him. Now I cannot imagine such an attitude as a man suffering any misery, and God standing away off somewhere watching him, and, because that man is ignorant and does not know anything about God, and has not had the Gospel presented to him in such a way that he can understand it--I cannot believe any such thing as God standing far off off and seeing a man suffering and dying just because he is ignorant and has never heard the way to God--I don't believe any such thing, and I can't believe it. But God dwells in man, and he is doing all he can for him all the time; he is right in him and doing all he can for him, and just so far as a man sows for righteousness, God will help him and do for him all he can do; he is doing all he can for him all the while, and when it seems to us as though God is not doing anything for us that we would have done, it is because he cannot consistently do it, for if he could do it, he would do it, and the reason he does not do it is because he can't do it, and the reason he can't do it, is because it would not be consistent for him to do it ; it would not be in harmony with the great principles that at-~~we~~ govern the Universe,--it is for the reason that he could not make the earth flat,--he couldn't make it flat because it needed to be round, and it was the very best way for it to be round.

I think, if you will study the causes of disease, you will find this to be true in each individual case. I want to tell you that I have

seen many of these so-called cases of divine healing, and I have never yet seen a case,--and I will tell you frankly and freely, and I am willing to stand up on the highest place on the face of the earth and declare it--that never have seen one single case of so-called divine healing that was not consistent with what I have said this morning; I never saw a case in which, for example, a man had a big sore on his hand and that sore was healed instantaneously in answer to prayer; or a case in which a man had a broken ~~XXXXXXXX~~ leg and it was set instantaneously, or a dislocated shoulder, or a joint that was out of place, or anything of that sort healed instantaneously,--not a case in which a man was blind, and the eyes have disappeared and the optic nerve is dead, or the optic nerve or media destroyed by disease--in which it was restored instantaneously--I have never seen anything of that sort healed instantaneously in answer to prayer. And I think I may say further, that I never saw one case in which an organic change in any organ took place instantaneously in answer to prayer.

DR. PAULSON: Do you mean to say that you don't believe such things have ever happened?

DR. KELLOGG: I say that I have never seen such things, and I don't believe that any such thing has ever happened in my day. I believe the Bible; I believe that God can make a man from the beginning. Man did not make himself,--God made him.

What difference does one's attitude make? That is the important thing--a man's attitude. The man's need is always present, and God is always trying to do all he can for the man. Then what makes the difference? How is it? We see a man here to-day sick, and to-morrow well: I have seen these things. I have seen a man get well, apparently without any organic change--his organic conditions remain the same, but to-day he is sick and to-morrow he is well. For instance, there was a lady

here,--one of our own nurses (Miss Johnson from Honolulu) was an example of this,--she went to Honolulu and got sick. She then came back here and took treatment for several months for prolapsed and dilated stomach. She was dreadfully nervous and depressed. She returned looking very poor, with pinched features, and was as depressed and nervous as she could be, and it seemed as though everything we did for her was useless; I didn't see that she made any improvement whatever, and finally made up my mind that there was no use for to stay here. I talked with her and told her that it was no use for her to stay here. I felt that way the first time I saw her,--I was satisfied that it was not such a case that treatment would help. She was prayed for and got well in a week,--after taking treatments without benefit, she was prayed for and got well in a week.---

DR. PAULSON: She got well the next day.

DR. KELLOGG: She was immediately healed. Now was there any difference in the condition of her stomach? Her stomach was exactly in the same place that it was before; there was no physical change in this woman that could be seen; yet she was well. Now that is what we call divine healing, or faith-healing. Now from my standpoint, the real position to take, is, that all healing is divine, and we cannot say that the doctor heals the man, or that medicine heals him, or that doctors heal by one method and preachers heal by another method, but God does all the healing; and we want to keep this constantly in mind, that we cannot heal anybody,--that God heals.--

DR. PAULSON: In that particular case, was it not the most rational thing that could be done, to pray for her?

DR. KELLOGG: Yes. In my own mind I have made a classification in this way: I have said, Here is a patient (just as in this case) whom I thought ought to be prayed for, and I told the brethren we could not

cure her by any remedies, and so this is a case for you,--to talk with her and labor with her and pray for her,--that is what we would have to do for her; all that can be done for her is to lay her case before the Lord--the Lord can heal her. What is the difference? We will take two very distinct classes,--first, here is a man with a dislocated shoulder: now it is utterly useless to pray for God to replace that shoulder. It is possible that by prayer that man's mental state can be lifted to such an extent that he will be entirely unconscious of any pain in his shoulder; that man can get well with his shoulder dislocated--that is, get well of the pain and discomfort, but that man's shoulder will be dislocated just the same.

DR. RILEY: That was a similar case with that of this young lady, was it not?

DR. KELLOGG: Yes

DR. RILEY: What in your opinion ailed that young lady?

DR. KELLOGG: I have classified these cases into three distinct classes --one class in which the trouble is purely organic--for instance, here is a man with a splinter in his toe: he is suffering great pain; his toe is all swelled up. Or he gets a needle into his foot: Now we would not think of praying for that man to be healed--we would pull out the needle. Here is a man with typhoid fever,--it is the same sort of case --there are germs in him making trouble,--what will we do? Pray for him to be healed, so that he can stand up and walk? Here is a man with pneumonia, and getting along fairly well under treatment. Some of the brethren come in and say pray for him, and say, "Now you must exercise faith,--rise right up and walk." That is a case in which there are germs in the body, and God is doing for that man everything that can be done: There is a natural method by which those germs can be

cast out and their action antidoted, and there is a natural method by which the needle can be gotten out of the foot. But we can assist nature by pulling out the needle, and by applying eliminative treatment we can restore the vital resistance of the body, and thus destroy germs--and that is true of every single acute disease--the same principle applies. God is already doing for the man all that he can do; and here is a chance for us to co-operate with God. Praying only helps the patient's mind and directs the doctor's mind into the right channels so that he knows what to do; but praying is not going to bring forth any extraordinary exhibition of God's power, because God is already doing for the man all he can do for him all the time.--in fact God is doing nothing less than all he can do for any man at any time. If God is doing anything less than the best that he can do for any man under all the circumstances and conditions, then he is not a God of infinite love. Can you possibly find any escape from that? If God is a God of infinite love, he is doing to-day for every man everything that he can do for him, under all the circumstances and conditions of the case.

QUES. May not the attitude of a man--that a man takes toward the Lord make some difference in the circumstances?

ANS. That is just the situation. Now if God does more for a man to-morrow than he has been doing for him to-day, it is because the man's attitude has changed. Now what change in the man's attitude is possible? God is the same to-day, to-morrow and forever; so that if God can do more to-morrow than he can do to-day, it is because there is some change in the man which makes it possible for God to do more for him to-morrow than he can do to-day.

Let me get a little closer yet: If God is ^{does} ~~doing~~ more for a man to-morrow than he is doing to-day, it is not because God has changed.--it is because the man has changed. It seems to me that that

that is perfectly plain. We don't want to charge God with being, whimsical, and subject to influence--^{and} accident, we might say. Here is a brother who is sick: he calls on the elders of the church; it is possible there are no elders there--can't a man be healed because there are no elders there? Must he die because there are no elders there to pray for him? If we must ask some one to pray for us, and to intercede with God in our behalf, it seems to me we might better ask for Noah or Elijah, or some of the rest of those good men that we know are in Heaven--it seems to me we might better ask them to intercede for us, because they are close to God in Heaven; they are perfect men and God translated them, and I think we would a good deal better ask for Moses to help us than to appeal for a preacher to intercede for us. I would a good deal rather ask Noah to do it than to--to--appeal to anybody on the face of this earth, because they are all fallible; I think Moses is much nearer the Lord than anybody I know of in this world. But that is Catholic Roman Catholic doctrine,--papal doctrine--and I don't think we want anything to do with it; I think this is a subtle phase of error that has come down to us from the Roman Catholic church.

Q. Don't you believe in praying?

A. Yes, certainly. Do I believe in calling on the brethren to pray? Certainly,--but what for? For the same reason that we would call the brethren together and have a social meeting--for the same reason that we are here to-day--so that we may strengthen each other's faith by social intercourse, so that by association our minds may be cleared, and we get a better hold on the Lord opening our hearts more completely, and see and understand our situation better.

To show how the Lord works, here is a case that I once operated upon: A lady had a bunch in the abdomen somewhere between the

nasiform cartilage and the umbilicus. I had seen the case in the office, and, as she was rather a feeble woman, I told Dr. Winegar to be sure and have everything ready when we came to operate upon the case. She said she would do so; and just before the operation I asked her, "Are you sure that everything is in readiness? because the moment the patient is ready, we want to begin the operation." "Yes," she said she had looked after it well. I came up to the operating table to begin the operation, and the things that we wanted were not there at all. I guess I looked at Dr. Winegar rather reproachfully, and she said she had told the girl all about it, and told her everything that was wanted, and to have them ready, but there was not a thing there. We felt very serious about the case,--and I had prayed the Lord very earnestly to help us. Dr. Winegar and the girl hurried after the instruments; the girl seemed to feel very much embarrassed because she had forgotten the things, and she could not understand why she had forgotten them. As I was washing the skin and getting the patient ready for the operation, I made another examination; I ought to have made an examination any way, before operating, but I had made an examination the day before, so I didn't think it was necessary to make another examination that day. I had made up my mind to make the incision in a certain place; but when I came to operate, something led me to make an incision about two inches higher up than I had at first intended to make it. In the pause, while waiting for the instruments, I changed my plan of operating and made the incision two inches higher than I had at first intended, and when I came to make the incision I cut through the skin **near** the peritoneum, opening into a big abscess, and the pus just poured out. If I had made that incision an inch lower, that pus would all have poured into the peritoneum--the situ-

ation was such that I could hardly have avoided opening right into the abscess and letting the pus into the peritoneal cavity, but by making my incision two inches higher, I opened it at just the right point to avoid that; all I had to do then was, to clean it out, put in some gauze and the thing was done. If I had gone in below, I would have had a bad thing to deal with; I might have managed it, but it would have been utterly impossible to have prevented the abdominal cavity from becoming infected, for if it were not infected at that moment it would have been infected later, for the infection would have travelled down through the gauze, and we could not have done a thing to have prevented the infection of the abdominal cavity; but by cutting through just at the point where we did, and opening the abscess at that particular place, we didn't open into the abdominal peritoneum at all. Now it seems to me that is the way God answers prayer. I know he has answered our prayers hundreds of times in leading us in the right direction when we are willing to be led. It was not because we were particularly good, but because our purpose was right and we wanted to help somebody, and he cooperated with us.

Now the good man puts himself in an attitude of trust in God, and belief in him; he throws away his trust in himself, and acknowledges that he cannot do anything in himself; he simply trusts God; his mind is receptive, so that he is ready to change his plans to meet God's plans. Now if I had gone ahead and been in what you might call a positive state of mind, and been going to carry out my own plans any way, and had not been in what one might call a plastic state of mind--the state in which prayer puts a man's mind--it is self that makes a man rigid and aggressive and obstinate,--and that is all through with when a man really prays; he puts himself in a plastic state where he can be led and

molded, and then God can help him. It is not because God has changed in answer to prayer,--it is the man that has changed; God is seeking to lead us right all the time. We change our attitude only in refusing to be led, or placing ourselves in an attitude to be led. How did God make that nurse forget? No, he did not; he knew beforehand all about it,--he knew the whole thing, and all that we would do; and it was simply by following in the line of God's providence.

Q. Would you have done that if it had not been for the delay?? Did not God do two things,--he led your mind, and he made the chance that could be improved?

A. He didn't lead my mind then any more than he is leading it all the time. I expect I am something of a fatalist. From a human standpoint things are always getting in God's way, but from a divine standpoint nothing ever gets in God's way. I have been complaining and grumbling, and I have made up my mind that I have got to make a confession. I have always thought, and said that brethren were in our way and were hindering us in our work. Now I see that it is because there never was a time up to this moment when our work was prepared to go. We wanted them to help us start sanitariums, etc., when we were not prepared. Where were our doctors and our nurses to start these sanitariums? We did not have our methods perfected; our principles were not clearly brought out and illustrated so that they were prepared to be sent out into the world.

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Our doctrines have never been brought out so that our people could see them in a clear light. "The nature of man" has never been understood until now. That doctrine that everything there is of man goes into the ground and rots, I do not think ever inspired anybody, any I do not see anything very inspiring in it. That has been an incubus that the people have had to accept, but always with a sort of mental reservation. I do not think there is anybody here that did not accept that doctrine without a sort of wish that there was something better to believe. Now that is not a Bible doctrine at all. The Bible doctrine is that there is a spirit in man--and he will quicken your mortal bodies by his spirit, that dwelleth in you. So there is a spirit in man that is capable of resurrecting him. There is a spirit that goes back to him, also. When the girl was resurrected he said "Her spirit returned to her." That girl's spirit returned to her. When Elijah resurrected the child, the child's spirit came back to him again. It was not "a" soul, it was his soul. It was not "a" spirit, it was the spirit, or her spirit, that came back to the girl. So every man has a spirit in him that survives death and comes back and builds up the body that it created before and inspired and cared for.

Now, we have a doctrine of the Sanctuary. Many people have never really believed that, because it was so architectural. Sister Henry and Bishop Vincent were old friends, you remember, and he said "Sister Henry, you can never believe these doctrines, they are so material; these Seventh-day Adventists are so material." He had special reference to the sanctuary question. Now the belief is almost entirely a material one. One sees three or four rooms set apart in Heaven or somewhere, and Christ walking back and forth from one room to another. This has been for me a perfectly terrible thing to believe. Two years ago it dawned upon me, when reading the 10th of Hebrews, that the Body was the Sanctuary. I wrote to Professor Prescott, and asked him to read the 5th, 6th, and 10th

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of Hebrews, showing that the body was the true sanctuary. He xxx tried to persuade me that I was in error, but about six weeks ago, I think it was, I learned that he was preaching the same thing. And that is the whole message, the restoration of the Kingdom, Christ taking possession again, and the cleansing of the sanctuary--our bodies--so that Christ can work in us. I do not take any credit for that, but I felt very bad that I could not persuade Professor Prescott, and lately I was surprised to find that we were in perfect accord. Now that doctrine is so simple and so beautiful that when we go out into the world with that doctrine, and tell them that man is upon such a different level--instead of being simply a mass of clay that d we and rats and goes down into the earth, he is a temple of the living God, he is the true tabernacle of God. That puts the whole thing on an entirely different basis. It becomes the clearest doctrine. There has never been a time when our doctrines have been in such a condition to present to the world. Now the time has come when our health principles are at a point where we can meet any kind of opposition, and we can talk all our different doctrines, the diet question, the meat question, the dress question, they have all reached a point where they are in perfect harmony and have a scientific foundation that the world will recognize, and our religious faith, our theological doctrines are all in harmony with it so that the time has come when the truth can go to the world with a harmonious simplicity that intelligent people all over the world can recognize. God is ready as soon as we are ready and the way is open as soon as we are ready, and if we find an obstacle in the way, it is because we are not ready. When we find a thing that we cannot do, that we think ought to be done, it is not because the work is at fault. It may be that God has a work for us somewhere else and he is taking that means of leading us there. But when God has a work ready for us, there is nothing that can lead us away from it. The same thing is true with a sick man. When he is ready for God

to do something for him more than he has been doing for him it will be done. And if more has not been done for him before it is not because God is not ready but because the man is ready and his attitude has changed. This is especially true in what we call mental depression or hypochondria.

Dr. Paulson-- "The Lord is ready to save me."--Ezekiah.

Dr. Craig.-- Wasn't this true in Mrs. Henry's case?

Dr. Kellogg-- I have not felt very free to speak about this case, while Mrs. Henry was alive, because I did not want to hurt her feelings. Mrs. Henry came here and I examined her and found that she had a weak heart and was very anemic. She had anemic murmurs about the base of the heart and the heart was weak. It was organic weak, somewhat dilated, and with a slight dropsy, and she was very breathless. Under the influence of treatment, massages, baths, etc. she gradually became well--she became better in every way and became strong enough to sit in her chair at the Tabernacle and talk an hour in a good, strong, clear, loud voice. She did this repeatedly. Now I consider this a very hard thing to do. It always seems harder to me to talk sitting down than standing up, especially before a large audience. But she stayed in her chair still. I used to feel that something ought to be done. I talked with Mrs. Poy and Mrs. Dr. Kress about it and I said "How in the world can we get Mrs. Henry out of that chair," and I felt distressed, because she was a very strong-headed woman and if I told her, she was whimsical and had a nurse wheeling her around when she was well and might as well get out of it and walk, she would never have forgiven me in the world. I prayed about it and asked the Lord earnestly to show me how to get her out of that chair, because she was perfectly well. She was well organically. She looked well, had a strong voice, and had strength and vigor, but she still considered herself ill, and one day while she was in the chapel with some brethren praying for somebody else the thought came to her "Why not pray for yourself?" So she asked the Lord to heal her, and she got up from her knees well, and got up and declared herself well, and started off the next morning walking up and down the stairs and all

over the house--wall. She believed that she was instantaneously healed, and she was, but it was not from the organic disease of the heart, for the heart had been healed sometime before. She was healed of the organic disease of the heart by the treatment, already but she was healed of a morbid mental state which held her in bondage. Now I know perfectly well that one half the chronically sick people are in bondage to a morbidly diseased mind.

Dr. Fulton:-- I had a patient come here with a diagnosis of spastic paraplegia. He could move his limbs very slightly after four to six weeks. Upon examination I made up my mind that his difficulty was in reality more mental than physical, and that he had a phase of hysteria. Finally I asked him to get up and walk around the room. He declared that he could not do it. I told him to get right up and walk across the room. He arose slowly and walked across the room, expecting to fall at every moment, until he reached the opposite side of the room. He stood there a moment and I told him to come back--and he went right on walking all that day and has been walking ever since, I guess.

Dr. Kellogg:-- That is just what I have been stating: He was in bondage to a diseased mind. We had a man here who had not walked in eight years. I tried hard to get that man to walk but without avail. Finally I took him ~~XXXXXXXXXXXXXXXXXXXX~~ to the other end of the room and told him to walk back. He was very nervous and when he got on to his feet he broke out into a cold perspiration from head to foot. Another strong vigorous man was in the same situation, so one day I took him in a wheel chair up on the third floor and got him into one of the rooms and got him to sit there and put the chair outside the door and I sat there and chatted with him for a few minutes and then I asked him to excuse me and I stepped out for a little while and took the chair away with me. We had our office back in "C" office then. But I kept my eye on the hall, and three or four hours afterwards I met him coming down the hall edging along, leaning against the wall. He was very angry with me and he just got into a furious rage and as soon as he

say he be shouted out "You have played me a very mean trick." I begged his pardon and of course "the chair had been carried away", and I hurried around and got his chair for him and took him back to his room. The next morning I was going along on the walk outside of the sanitarium and I heard someone shout and I looked up and I saw this man on the lower porch of the building walking up and down as fast as he could and waving his handkerchief up in the air. Now that man was cured just that instant. Now suppose that man has been prayed for; that would have been a case of "divine healing," or "faith healing," from a paralysis of eight years standing. Now the country is full of just that sort of thing.

Dr. Paulson:--I had a case of a man who had not talked for fourteen years. When he went home his wife said we had wrought a miracle. The man had a hysterical fit in the bath room and the nurse came out and said that the man had a stroke of apoplexy in the bath room. It did look something like ~~epilepsy~~ epilepsy, but there was evidence of a hysterical nature. Then I did a very cute thing. I touched the nerve here (indicating) so that he winked a little and then he said in a sort of half whisper "Get me to talk". He had a sort of an instinct that it was possible for him to talk. So I said "Say 'Sunshine'". He said it "Shine". Then I told the nurse "Keep this man talking for an hour". Inside of three or four minutes he was talking as well as anybody. We had a beautiful letter from his wife saying that he was talking yet. Now if that had been done by Dowle or some of these faith healers, or hypnotist it would have made him a great man.

Dr. Kellogg:-- We find these faith healers and magnetic healers and hypnotists all over the country, and then there is Dowle and Schlatter and the hypnotist Charcot--at Nancy there is a school of hypnotism there where they are beginning to claim to be able to cure almost every known disease by means of hypnotism and to produce even organic changes. There was one interesting case of a young woman who was placed under a hypnotic spell and the initials of her name were simply marked upon her arm. She was told that it was a red hot iron, but only a pencil was used to make the initials.

upon her arm. In three weeks the skin slipped off and there was every appearance of her having a severe burn on her arm, and her initials were actually burned on there. I know that that is a fact. It was simply the mental impression was so great there was a vaso-motor spasm so intense that it produced a necrosis. There was death of the tissue because of the continued spasm of the small vessels. There are certain cases of dermographism in which you make a mark on the flesh and the tissue will rise up and there will be a ridge there for hours. This was simply an extreme case of the same sort. All these cases that are cured by hypnotism and are cured by mesmerism and by the so-called "mind cure", and by liver pads and electric belts and etc.--you see there is a vast multitude of them--are all cases which if prayed for might be healed at once of their disease. They require only a change of mental state in order that they may be well. Sometimes they are not sick at all but think they are sick. Sometimes they are sick because of a vital depression resulting from a morbid mental state. That is a very serious matter. We know the power there is in it. I remember some weeks ago a lady was sitting at the table eating her dinner and she received a letter saying that her child was very sick, and she was nauseated and got up and went straight out of the room and vomited everything she had eaten, just because of the news she had received from home. You know what a terribly depressing effect morbid mental conditions may have. Prayer will divert the attention and deliver the person from that morbid mental state. Hope in God may lift a person from looking down into the grave ^{to} believing that they are well. And the positive state of mind that the patient may reach by actual positive belief in God, may lift them out of that morbid condition to such a degree that they are healed. There is power in it. When you pray for the sick, of this class you must tell them they are healed and they must believe they are. They must believe that they are entirely healed, that they are entirely delivered from the bondage of that morbid state, otherwise they cannot have the elevation of spirits and mind necessary to exercise the beneficent effect upon their bodies.

Now if that depressed mental state depends upon a deranged organic condition it is very possible that when he is lifted mentally to a degree above this, that he will pretty soon drift back into health again. I believe that probably nine-tenths of the patients who have been healed by prayer belong to these classes, and many times we have patients come to us who have been "healed" by these faith-healers and who have relapsed, and are just as bad off as they were before, if not worse.

Dr. Loper.--We had three cases that Schmitter "healed," that came back to us.

Dr. Kellogg.-- Why? Because the patient does not continue in that state of mental and spiritual exaltation which is necessary to be maintained in order to overcome these derangements. There has been no organic change in the man, but he is practically healed so long as he believes he is healed because his elevation of spirits give such tone and vigor and energy, and exercise such a tonic effect upon his nervous system that it actually keeps him well.

Dr. Paulson.--If there had been a thoroughgoing change in his physical habits of life at the same time, is it not possible that the effect might have been made permanent?

Dr. Kellogg.--I was going to say, there are three great classes into which I have divided these cases. Every case of organic, chronic, disease, is a case of a broken arm. That is, if it is not an arm that is broken it is the same thing, it is the tissue that is broken, and the cure must involve an organic change in that tissue or arm. The worn-out and broken-down tissues must be carried away and new tissue built in, in the place of that which has been broken down.

Now in case of the other class, in which there is an abnormal psychological state. The patient has been depressed,--perhaps a woman loses

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her husband, and she raves and mourns, and gets into a low state of mind right away, and goes into a "decline." A woman here in town lost her husband, and three months afterward she was still going to the cemetery every day and putting flowers on his grave. She came to me one day, and said that she knew she was going off in the same way her husband did (he died of consumption) for she had the same cough, etc. She would shut herself up everyday and cough, just as her husband had, and stay there coughing. I examined her, and I found no evidence of consumption, or disease of the lungs whatever. "Well," I said, "you will have a hard time dying of consumption." "Why?" "Because you have such a powerful constitution. You will be years and years at it. You will have a terribly hard time at it, and if I were you I wouldn't do it." "Why, Doctor, what do you mean?" "I mean that that there is nothing in the world the matter with you except that you are inviting disease." "Why do you think I am going to get well?" "Certainly. If I were you I would not cough at all, and I would cultivate a flower-garden at home instead of at the cemetery, and if I were you I would take a nice little boy to raise,--and about that time there was a case occurred at the Sanitarium, where a little boy needed a home, and she took care of him, and followed my advice and planted and cultivated a flower garden at home, and less than a year ago I saw her, and she had gotten well, and she was rosy, and happy, and she had got so much better that she had married again, and that boy has grown up to be a young man. It was simply that morbid state of mind. Now that woman would certainly have died if she had kept on in that way. We have all seen just such cases. Now the moment we remove that morbid, depressed state of mind, the patient is on the road to recovery. Now if such a case as that is prayed for, and the depressed state of mind is removed that way, it is a case of faith-healing--it is a case of consumption cured by faith-healing. Now there are plenty of such cases in which the morbid mental state depends upon organic condi-

tions, as in gastric neurasthenia, etc., and then we have cases which are purely psychic, such as comes from loss of friends, property, etc.

Then we have the class in which the morbid mental condition depends upon morbid organic conditions. The first class which I have designated, are those which are purely organic in character. The second, is purely psychic. The third is the mixed type, in which the mental depression is due to some morbid organic condition.

Now the first of these three classes demands surgical attention. In those cases we may pray for God to bless the surgeon and to put in his mind to do the best thing possible for that patient, but the open wound must be closed. The psychological cases must be prayed for. Sometimes the mere presence of cheerful friends will do good. Here is a patient terribly depressed in the morning, and a cheerful friend comes in and cheers him up, and when he goes away the patient is greatly improved. A few cheerful words will change the whole aspect of his case. Oftentimes a patient will say "Oh doctor, I am glad you came in this morning, you do me so much good." It changes the mental state. In prayer the patient opens his heart to the impressions which the Spirit of God is all the time trying to impress upon him, and he thinks different things and the great healing power, the great healing energy, the great beneficent power, just lifts him way up high enough so that he is delivered from that state.

Now the intermediate class of cases, are the the most interesting of all these cases. These are the cases in which we need to work and pray both. The prayer will remove the mental state. Some of these cases will seem to be cured by prayer alone. A man with a prolapsed stomach,-- or a woman, it is generally a woman--will pray, and get such an abundant blessing that she will be temporarily relieved, and thinks that she is entirely well, and go right on with her habits of life just as before, and pretty soon she is right back again where she was before, because she has not corrected the cause. In this case we must pray,--that will do a great

deal of good, but when we must give them proper treatment and proper diet in order to make the cure permanent. These cases do not relapse. You will see them in our campmeetings, call for all who are sick on the grounds to come forward and be prayed for. Sometimes there as many as forty or fifty there at once. Dr. Sanderson will remember that there were about forty there at one time, to be prayed for. I asked the elders, "Are you sure that these people are already prepared to be healed?" "Oh yes." "Are you sure that their habits of dress, and diet etc., are corrected, so that if they exercise faith to be cured that they will be cured permanently?" "Oh Yes, that has all been attended to," and yet I could not see how they had had time for a thorough examination of their cases,--and if I remember right about one-half of them who were cured, relapsed in about a week.

Dr. Paulson.--Suppose they had obeyed all the physical laws relating to the care of their own bodies, and had kept in proper relation to the Lord in physical as well as spiritual relations,--

Dr. Kellogg.--They would never have been sick.

Dr. Paulson.--Then if they had been prayed for,--

Dr. Wiley.--If they kept in right relations to the Lord, would they go on and keep well?

Dr. Kellogg.--I have often asked, "Why should man die at all?"

If he is prayed for and healed to-day, and if he only has faith enough, why should he die at all? "Whatsoever man soweth, that shall he also reap."

As I said before, here are the immediate effects, and the remote effects.

The man who has for forty years violated the laws of health, is going to reap the effects later on, and when such a man is prayed for, and "healed" he is only relieved of the immediate effects of his wrong-doing. He stops sinning, and sows for righteousness, and he reaps his reward. He sows for health, and reaps the fruit,--better health. He stops sowing for disease and ceases to reap the fruits of disease, but there are other crops coming

and, thousands of years afterwards, and that is not going to be healed until there is a new creation,--until his body is changed by ~~Christ~~ the coming of Christ, and then that man will be thoroughly healed. The thing that prayer does is to change the psychological condition, and then, so far as that psychological state can influence the organic condition, just so far the man will be organically healed, but only as Sr. White has said,--"The only way God can influence the body is through the nervous system"--"God influences man through the nervous system."

When a man prays, there is an impression upon his nervous system, and so far as the nervous system is capable of effecting organic changes in a man, just so far that man may be organically changed and healed.

DR. LOPER: We read of cases in the Scriptures where by the word of Christ they were healed immediately,--did these cases come under all these heads, or were they permanently healed?

DR. KELLOGG: Christ had a special mission upon the earth--to reveal God to man,--I think we may go back further, and say that Jesus Christ was what Adam was. When Adam first came upon the earth, he didn't have to have clothes; he was thoroughly protected; he was so near God that he was perfectly protected by an atmosphere of light that it hid him completely; it was only when he sinned that the light lifted and he discovered that he was naked, because the light had lifted. It was just as when we look at an arc light or look at the sun; we can't see the exact shape and detail of its structure because it is so bright. Adam and Eve were clothed in light, and there was an illumination on their bodies that they were not naked, but clothed; the details of their structure were not observable, because they were clothed in light. When they sinned that light departed.

Adam was the first man in Eden, and he was given command over

everything that God had made. When Moses put out his rod, and the Red Sea opened, he was only doing what Adam could do; ~~Adam~~^{he} had dominion over ~~all~~ things on the earth. When Daniel was in the lions' den, he had dominion over the lions, just as Adam had. When the three Hebrews were cast into the fiery furnace, they became where Adam was before he sinned, and got where fire could not burn them; they had secured dominion again.

Now Christ was the second Adam. Christ, according to 1st Cor. 15 : 45, was the second Adam; he came into the world to show what Adam was intended to be in the world. He had dominion; he was not simply a higher animal. God made the vegetables, and then he made the animal kingdom, and then he made another creation, and that was, to place his own image in the earth. He made man. Man was the best thing that he made, the highest thing that he made, to serve as the representative of God to the world, -- to represent God to the world, and Christ came back to this earth to show just what Adam was intended to be in the earth.

Now when man gets back where he is perfect, and is in close communion with God, and has holy flesh, he stands where Adam stood as he came from the Creator, then he will have the same power that Adam had. But I want to say, right here, that I don't think there is a man or woman on the face of this whole earth that is so perfect that it will be safe to trust him with that power -- the power to heal. Suppose a man should come forward here, and we have a poor man here who has lost a limb, and this man could touch him and the limb would grow on immediately: Why the whole world would bow down and worship that man. But there has no such man ever appeared in my time. And I want to say that it is just as easy to make a limb grow on as it would be to create new tissue, to fill a cavity

in a diseased lung or to cause a cirrhotic ^{liver} to return to its normal state or cause a cancerous breast to disappear--one is just as easy as the other. But the people who pray for these organic healings only pray for internal affections. I remember some years ago when Bro. Prescott was very much exercised over this matter, and he was telling me about a woman with a dislocated shoulder, and arm, that he thought had been broken, and that he claimed had been healed by prayer. I told him that I didn't believe the arm had been broken, but that it had only been sprained a little. I asked him if he should lose a leg if he would have faith enough to cause that leg to grow on. "No," he said, "I am afraid my faith would hardly reach that." "Why not?" I asked. "It is no more to ask the Lord to cause a leg grow on than it is to have a dislocated shoulder or a dislocated arm lifted up; it is no more to ask to have a leg grown on than it is to have a cavity in a lung grown in where there is a lung tissue destroyed; where there is a lung destroyed, and tubercular cysts, a new lung grown in; and God might as well make a big thing as a little thing, and if he can fill up that cavity and make healthy tissue in place of that diseased tissue, he can grow on a leg just as well. You should not limit the power of God; you should not say he can instantly heal an ulcer in the stomach, or remove a cancer, or something of that sort, and doubt his power to remove unhealthy tissue in the lung and put healthy tissue in the place of it, and to doubt his power to grow on a leg that has been removed. I think that is the rational way of looking at it, and if we will look at these cases in this light we will see that that is the way it is.

Our work has been brought into disrepute many times many times by these methods. Doctors have often written me in reference to this matter: A woman came here with a cancerous breast; some of the brethren

get hold of her and urged her not to be treated or operated upon, and said to her "Let us pray for you." She consented and they prayed for her, and she immediately said, "I am healed." I examined the breast, and there was not a bit of difference. She went home. It was a very bad case, and I really didn't want to operate upon it, and I was not very sorry when she went away. But soon after the doctor who had sent the patient here and who knew the case very well, wrote me about it and said "I see by the papers that this woman claims to be cured by prayer,--is this true? I have never taken any stock in any such thing as this ordinarily, and I would like to have you look into the matter and see if there is any truth in it." I wrote him that some good people in the town had prayed for the lady, and she thought that she was healed, but that it was nothing that we had had anything to do with. Soon after that he wrote back that he thought I would be interested in knowing that the woman was dead. I have seen many thousands of such cases, and I have never seen one single case healed. I have seen scores of persons suffering from cancer of the breast and I have never seen one single case of cancer of the breast healed in answer to prayer.

I remembr another similar instance in which a woman had an enormous fibroid tumor, and I could not tell very easily whether it was the kidney or the spleen that was involved, and the history was ambiguous. But these good brethren prayed for her and she pronounced her healed, and she went home. About two weeks afterward her doctor wrote me, and said "I sent a patient to your place and she was prayed for, and it was announced in the papers that she had gone to the Battle Creek Sanitarium and had been healed in answer to prayer; I thought you would be interested in knowing that I have just performed a post mortem examination upon this lady, and found that her death was caused by cancer of the kidney." That doctor supposed that we were involved in that. I tell you it does not do the

cause of God any good--such things bring disrepute upon religion, and it is a great stigma upon the Gospel.

Now let us try and get a good consistent position and say ~~that~~ God heals all the time, and it is no more to God's glory to heal a man in a minute than it is to heal him in a month. I want to get rid of the supernatural,--I am glad to shake off the supernatural; I don't want to be in bondage to mysticism and superstition and the supernatural. I want to believe that God is healing all the time; that to be perfectly natural is to be perfectly spiritual. God is in nature, and he is doing for us all the time all he can do, and we are not going to persuade him to do anything. He is not susceptible to influence, but the only thing that God cares for and requires is our own attitude; he is not going to be influenced to suit somebody else and to be persuaded by any kind of influence that can be brought to bear upon him.

Ques.--How about a child, that is perfectly passive?

Ans.-- While I was West a few weeks ago, a brother reported to me the case of his child. He said that his child was very sick, and the doctor was twelve miles away and the father went after the doctor; but the doctor said "It is a hopeless case, and the child will die about 12 o'clock to-night." He put 12 o'clock as the hour of the child's probable death on account of the fact that doctors know that death generally occurs about midnight, and doctors often take advantage of that fact to prophesy and thus get an influence over people. The majority of deaths occur about 12 o'clock or a little after; then the vitality is naturally lowest. So the doctors prey upon their superstition. So about 12 o'clock the child began to sink. He said "I just earnestly prayed to the Lord to help us, and my wife and I went to work and put on cloths and did everything that we possibly could, but the child got worse and apparently died,--his eyes were set

and in a minute he ceased to breathe, and the child seemed to be dead. I caught the child up in my arms and told my wife to dash a pail of cold water over him, and she did so, and the child gave a great gasp, and began to breathe, and has been breathing ever since." Now how did that man know that that was the thing to do? He had never read that that was the thing to do, but God put that into his mind, and thus saved his child. God put into that man's mind the thing to do to heal the child. A brother told me the other day (Eld. Knox, I believe,) "The time will come when preachers will heal by touch just as doctors heal by remedies to-day." I said "Do you believe that the Lord is going to have two ways of healing,-- one to be practiced by doctors, and the other to be practiced by the preachers? Then the preachers will have the start of the doctors, because they can heal in a second while we can only heal in weeks and months, by our remedies." I think that is commonly believed by our ministers,--that they will have that special gift.

Dr. Ottosen.--Eld. Breed told me about an instance of this sort in which a cure was effected by prayer.

Dr. Kellogg.--From the description which Eld. Breed gives, any doctor would say that it was a simple case of hysteria.

Dr. Paulson.--I know the woman well, and she is a very hysterical woman.

Dr. Kellogg.--There are lots of people suffering in the same way, from muscular asthenopia, that only need to be lifted upon a higher level to be able to overcome it. People get run down in health, and their eyes become weak, and they need glasses to get over it. There was one man here at one time who had had forty operations performed upon his eyes for muscular asthenopia. That man is getting well without any operation at all. We simply gave him tonic Hyeriatric treatment, and that was all that was necessary. I think the great majority of cases of muscular asthenopia

are generally due to a lowering of the nerve-tone, and a lifting-up of the general nerve-tone will lift the man up above this little inequality of the eye muscles.

Dr. DeForrest, is it generally recognized in Copenhagen, that muscular asthenopia is due to hysteria?

Dr. DeForrest.--Yes, entirely.

Craig.--

Dr. Kellogg.--I remember the case of a lady who was so blind that she could barely distinguish light from darkness when an electric light was almost touching her eye. If the light was on she could just barely say that she could see light. In ten days that girl was reading Good Health as well as you can, and yet she had hardly been able to distinguish light from darkness,--she had been taking iodides and everything of that sort to absorb a supposed clot. It was hysterical blindness.

Dr. Kellogg.--We had a case here in 1876 of a boy who came here so blind that he could look straight at the sun without seeing it. In three weeks that boy could see as well as anybody. I never did know just what was the matter with him, nor just how he got well. He could just tell the direction in which the sun was, by the impression. In this connection I would speak of the case of a woman who exhibited an extraordinary high temperature. Her temperature kept rising until it came up to 120°, and it kept coming up until the thermometer would not indicate it any longer,--it finally got up to 160, and finally an Army Surgeon, Dr. Lee(?) told me he had special thermometers made in Chicago, and he himself had tested her, and the thermometer registered 300°, and it then broke the thermometer! And I could not persuade him that it was a fraud. He said it could not be, for he had examined her himself. But I said, "Were the bedclothes scorched? Did you smell any burning feathers, or hair, around there?" "No." "Well," I said, "You certainly would not have needed to employ a heaters in your hospital, for that woman has a high enough temperature to heat your rooms,

And it would be a great economy to keep her in your hospital as a source of heat,--she could run a steam engine just as well as not." It turned out afterwards that this woman had acquired the knack of squeezing the thermometer so as to raise the mercury, but she was so shrewd about it that they did not detect it for months.

Dr. Loper.--I was reading in a medical journal the other day of a case of a man where both eyes had been removed and they grew in again. The name was "Bailer," I think.

Dr. Kellogg.--I was conversant with that case, for it was right here in town. It was announced in our papers, and in the medical papers as a case in which a man was stone blind, and had been so for a long time. But the fact is the optic nerve was not destroyed, and his eyes were sufficiently acute so that he could tell where the sun was, and if he was placed in a room he could tell where the window was from the impression made by the light. That man proclaimed that he had been prayed for and had been healed. And I thought I would make an investigation of this, so I sent for him to come to my office. He did so, and I examined him in company with Dr. Dunlap, and we found that that man could not see any better than any other man who is stone blind. He could barely make out where the window was, and when a bright arc light was exposed in the room he could not tell where it was. I had a letter from an eminent physician in Washington who said he didn't take any stock in such things generally, but that this case had been announced by reputable people, and it was reported that the people concerned were Seventh-Day Adventists, and so he thought it must be honest, and he wanted me to examine the case. He thought it might be possible that the optic nerve was reproduced, and in that way the man was getting impressions of light. His wife was another case of the same kind. She had a fibroid tumor of the uterus; she was prayed for

and "healed." A few days later Dr. Lindsay examined her, and she was certain that the tumor was there, the same as before. She was relieved of the pain, but the tumor was still there. She was free from pain, but she had the fibroid tumor, just the same. Afterward the pain returned, and she said that she had a new fibroid tumor, and so she was prayed for and healed again. A few years afterward she came to me with what she claimed was a new tumor, -- ~~was~~ it was the same tumor all the time, but she thought it was another one. By this time the tumor had grown to such an extent that it had grown fast to everything, and she was so degenerated and deteriorated that it was impossible to operate in her case, and I told her it was impossible to do anything for her, and I suggested that now was the time for them to pray for her, for that was the only thing that could be done. You see it was necessary to have an actual curative power exercised in her behalf. Now there was a case for the exercise of faith for the exercise of a miraculous ^{creative} curative healing power in a case of organic change, -- but she died.

I will state another case, and that was W. C. White's wife. She had tuberculosis. Sister White prayed for her and the leading brethren of the denomination prayed for her. I was sent for to come to St. Helena to examine her. In the meantime the brethren had prayed for her, and when I arrived I called at her cottage just as she had been prayed for. She had just come from the room, and I asked her if I should examine her. She said "Yes, you may examine me if you like, but I am healed." I examined her and found large cavities in her lungs, and the condition was just what I expected it would be. About six or eight weeks afterwards she died of tuberculosis. She thought she was healed but she wasn't. I never saw a case of consumption healed by faith. I have seen many of them prayed for, but when I examined them and found bacilli in the sputum, and cavities in the lungs, I have never seen a single case healed in answer to prayer. I believe in God, and I believe in prayer, but I do not believe there is any

man on the face of the earth to-day that could be safely entrusted with the authority that Adam had, or the authority that the Lord Jesus Christ had-- so that by touch he could heal. The world would bow down and worship such a man that very moment,--they would bow down and worship him instead of God.

I want to say, however, that I think it is very important that we should be very careful how we approach and talk to some people, who have a simple faith, and cannot understand the philosophy of it, and we do not want to disturb their faith. And if a man goes on, in faith believing, God will do for that man all he can do, and it is better for that man to believe that God answers his prayer direct, and does what he asks of him, just as he asks for it, than for him not to pray. Such a man may not understand the philosophy of prayer, and that it is not the change in God's attitude toward him, but the change in his attitude toward God, that heals.

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R.F.H.

SANITARIUM PARLOR LECTURE, May 2, 1901.

The Power of Nature.

J.H.Kellogg, M. D.

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Ladies and Gentlemen : I hardly know what will be my subject to-night, but I see I have a beautiful text here in these lovely American flowers. I was thinking, as I glanced through the open door, on coming in, and saw them waiting for me, of the impression that I receive every morning on these spring days when I look through the window and see the buds and leaves of the trees unfolding and expanding from day to day,--what a wonderful object-lesson we have before us of the power there is in nature--a life and energy and Power manifested in every bud and leaf and flower. What is it in these trees that causes them to put forth these buds and leaves? Whence do these trees derive their wonderful power and energy of life which we see manifested all about us at this time? All nature is awakening from its winter sleep; we see the grass springing up, the trees putting forth their buds, and the flowers unfolding their petals. We see the foliage coming out upon all the trees, and the immense forest will soon be covered with their garment of leaves. Where does all this energy come from? What is the source of it all? I was asking two or three of my little boys the other day, while talking with them about the wonders of nature, if a tree could make leaves. "Oh, no," they said, "a tree cannot make leaves." "Then where did the leaves come from?" I asked. "God makes the leaves," said the little boys. "But didn't the leaves come out of the trees?" "Yes, the leaves come out of the trees." "Well, then, where were the leaves made?" "They were made in the tree." "Then where is God at work making the leaves?" "In the tree," answered every little boy. A new idea seemed to dawn upon

them at once that God is in the tree, because God makes the leaves of the tree, and the leaves come out of the tree; so there is a demonstration of the truth that God is in the tree.

Now, while it is important to know that God is in the trees and flowers, and all the living world about us, how much more important it is to know that God dwells in us. ~~Now~~ We don't have to depend upon an object-lesson from nature to know that, although by the eye of faith we can see it in nature, for the apostle Paul says, "For the invisible things of him, from the creation of the world are clearly seen, ~~but~~ being understood by the things that are made, even his eternal power and Godhead." (Rom. 1 : 20.) We cannot see invisible things except by imagination or the eye of faith. By the power of imagination we can see living energy making the leaves of the tree and pushing them out. Now that same energy is in us; and it was the same apostle who said, "Know ye not that your bodies are the temple of the Holy Ghost?" So our bodies are temples, as a tree is a temple, but the body is a more beautiful temple than a tree. In Gen. 1 : 26, we read, "And God said, 'Let us make man in our ~~own~~ image, after our likeness.'" In the next chapter (7th verse), it is said that "The Lord God...breathed into his (man's) nostrils the breath of life and man became a living soul." That is when God made man a temple,--when he put himself into him, and he has been living in him ever since.

That is a great and encouraging thought, especially for the sick man,--that he don't have to depend upon the doctors to heal him, but that there is within him a greater power than the doctor; that there is within man a power that is far beyond that of the doctor, that is doing the healing work. Doctors, I repeat, cannot heal; a doctor cannot heal, any more than a dummy or a post; doctors have no power to heal.

How many people there are going about the world for the purpose of finding some doctor who can cure them. A thousand people probably have said to me, "Doctor, can you cure me?" And I always have to shake my head and say, "No, I cannot cure you." How many people there are who are traveling about the world to find some mineral spring, or some all-healing spring to cure him! Ever since the expedition of Ponce de Leon into Florida in search of the Fountain of Youth, people have been searching for some all-healing spring or some rejuvenating spring into which he might dip from time to time and renew his youth--ever since that time, and far back of that time, men have been looking for some mineral water, or other water, that in its power to heal, or to give life; but there is no such thing on the face of the earth,--there is no spring the waters of which can heal.

Men frequently go about seeking medicines that will cure all sorts of diseases; they even study the columns of newspapers in hopes of finding some panacea or cure for ailments of all kinds. There is once in awhile some omnibus medicine which is widely advertised to cure all diseases, and to cure without any attention being paid to diet or habits of life. But that claim seems so perfectly ridiculous that one would hardly think anybody would believe it; but there are people who are willing to swallow any amount of medicine, provided they can be assured that it will cure them,--that it will antidote their bad habits and cure them. I once saw an account of a lady's advertising "Warner's Safe Liver and Kidney Cure,--" she said she knew that it would cure Bright's disease of the kidneys, because it was curing her--that she had taken a hundred bottles of it and was still taking it. Now that sort of thing that is forever curing and that never cures, is not to be relied upon. Medicine does not cure, except by killing something. Some

people are cured of tapeworms and other things, but this is done by the use of germicides or something that will kill tapeworms,--but we leave out all those things now; we are not talking about germicides, or surgical remedies. But when, for example, a man has a fever and we call upon a doctor to cure the fever, he is absolutely powerless to cure it; there is no doctor who can cure a fever. Sometimes people think that if they can find some one whose goodness fits him to intercede with Providence, ~~that~~ Providence will cure them; but this is a fallacy. There is nobody so good that he can do anything more than take care of himself. There is nobody whose goodness is so great that he can do anything more than look out for his own needs and wants--in fact he can't do that. There is nobody good enough to influence God. God is so far above us--his plans are so far above our plans, and all his thoughts are so far above our thoughts that there is no human being that has power to influence Deity, and we ought to get rid of that notion; it is purely a superstition, a fallacy, a myth; the only thing we can do that will bring relief or cure, is, to relate ourselves properly to Deity and to nature.

We ought not to think of God as a being far removed from us, looking down upon the world at an immeasurable distance, but we ought to look upon him as close by, in the trees, plants and roses, in the lilies of the valley, and all the beautiful flowers,--and in us--in our own bodies, manifesting himself through us in most wonderful ways. I was the other day talking with a gentleman upon this very question, and he said that at one time he was traveling through ~~Europe~~ central Europe, and he got the blues terribly, and said he I have begun to doubt whether there is a future life,--" this man was really doubting as to whether there ~~is~~ any future life, and I thought that was a good opportunity to put a new thought into his mind, and I said, "You are sometimes hungry, are you not?" "Yes," he said he was. "Well, what does that signify?"

I asked. "Why," said he, "it signifies that I want something to eat."

I said, "It signifies something more than that,--it signifies that there is food for you to eat; when a man is hungry, that is an instinct within him that indicates not only that he needs food to eat, but that there is food for him to eat." He said he had never thought of that. There could be no such thing as hunger if there were no food, for hunger is simply an instinct within us to reach out for food, and if there were no such thing as food, then ~~then~~ that instinct would be disappointed. What does thirst mean? It means that there is water for us to drink. If there were no water, there could be no instinct to lead us to drink. If there were no water to drink there would be no thirst, for thirst is an instinct that leads us to drink water. We might apply this principle to all our instincts which lead to the supply of all our daily wants, for each one of these instincts indicates a want to be supplied, and that there is a supply to meet that want.

Now is there any instinct within us which is so strong as the instinct which leads us to reach out for life? I am sure there is none. I am sure this is an instinct which each man shares in common with all the animal kingdom. Every animal will fight for its life. Very often animals will gnaw off a limb in order to save their life and escape from a trap; if an animal can't get away from a trap in any other way it will amputate a limb, and cases of this kind are recorded--in fact there are some animals which eat themselves when very hungry. Cases are told where certain animals (hyenas, I think they are), that when pressed with great hunger will actually eat portions of its own thighs.

This instinct for life is the most imperative of all the instincts,--this longing for and reaching out for life which man has, in common with the animal kingdom, but there is one instinct that no animal has, which man has,--and man does not belong to the animal kingdom--he is

not an animal. Some of you may remember the story of King William who was at one time traveling in his kingdom of Germany, and while doing so, visited a public school and addressed the children. He held up a stone and asked the children, "To what kingdom does this ~~stone~~ belong?" "To the mineral kingdom Sire," was the prompt response. The king then then held up a little flower and said, "And to what kingdom does this belong?" "To the vegetable kingdom," replied the children. Then, pointing to himself, the king said, "To what kingdom do I belong?" Well, there was a great silence: Nobody wanted to say that THE KING--the great King of Germany--belonged to the animal kingdom. By-and-by a tall boy stood up, and with a very reverential air he said, "To God's Kingdom sire." Now that was the truth; that boy recognized the great fact that man is not an animal,--that man does not belong to the animal kingdom. He was not made, in the beginning, along with the rest of the animals. The earth was made, and the vegetables were made, and the animals were made, and after all these things were made, man was made, the master of them all. He was placed in the earth above these things to have dominion over them all, for God gave him dominion over all the things which he had made,--as the Psalmist says, "Thou madest him to have dominion, over ~~the~~ the works of thy hands; thou hast put all things under his feet." (Ps. 8 : 6.).

Now man has this dominion,--he was placed over everything else. He does not belong to the animal kingdom; he is not an animal; he is a creature who stands above all the animal kingdom, but, in common with the members of the animal kingdom, he has a desire for life. But, I repeat he is different from all the members of the animal kingdom--different from every other animal that lives--he has a desire for a future life; his mind is not satisfied with this life. An animal does not look be-

yond the grave, but man sees that his body is going ~~to~~ the grave, and he feels within him an instinct reaching out after something beyond; so he asks the question that you find in the sacred Book, "If a man die, shall he live again?" (Job, 14 : 14.) To that question there is something in man which says, "Yes, he will live again." Why? Because man has something within him that does not die when he goes down to the grave; he feels that there is something within him that does not die; there is something in man that has the power of an endless life--there is that power in man.

Now I want you to see the bearing of this thought in the case of every man who is sick,--how we can bring it to ourselves and make a practical application of this fact. There is, in every human being the power of an endless life, so we ought not to be afraid when we see disease approaching, because we have in us this power which is greater than disease. The power that man has in his body,--the energy which exists in his body to keep, to preserve, and to heal it, is the very same energy which we observe when we look out into the world--the same power that is manifested in the volcano, the earthquake--all these great manifestations of force are simply manifestations of a force which is in man maintaining his life and all its functions; we see the same power harnessed up in electricity and the telegraph, communicating messages from one part of the world to the other--we see this same power at work in the body. We see the power of gravitation at work in the body,--we see all the forces of nature at work in the body, and all working automatically. Now I beat this box,--I beat it again; every time my fist beats the box my fist receives an order to "beat;" that order comes from my brain to my fist, to "strike," and it strikes. Now without that order, my fist would not strike; without an order, my hand would not move; there must be

a command given to the hand before it will move. Now I hold my hand aloft, and it remains there and does not stir until the command comes; when the command comes, it strikes, and every time it beats, it gets an order to beat before it beats. There is a will and a command behind the hand. Now place your hand upon your left side,--you feel a beating there. Put your finger upon your wrist,--you feel a beating there. This is the beating of the heart,--and the heart is a muscle; it beats, as the muscles of the hand do, and every time it beats, it beats in obedience to a command,--every beat requires a command--there is a command behind every beat. The heart would never make another beat if it were not for the fact that it receives a distinct command to beat. In this manner it beats about seventy times a minute, and thus it keeps beating on through life,--it keeps beat--beat--beating, just about as fast as that,--and before every beat there is an order--there is a command for every single beat.

Now there is a will that is issuing these commands. But that is not my will; it is not my will that can make my heart beat either fast or slow, and I cannot make it stop one beat--I can't make it lose or gain a single beat, or vary its beating in the slightest degree. But there is a will controlling my heart.

There is also a power within what controls us when asleep so that we awaken in the morning. I know this, and so when I go to sleep I expect to wake up in the morning. When I am asleep why do I not remain asleep? The wisest physiologists in the world cannot answer this question and explain why a man wakes up in the morning. That is one of the simplest of the daily occurrences of life--one of the simplest of all the phenomena that we encounter in our daily lives is the fact that we wake up in the morning. And yet I believe there is no work on Physiology that explains why a man wakes up in the morning. Did you ever see

an explanation of it? The Physiologies in your schools don't say a word about it. The physiologists and the scientists give a wide berth to these questions which they cannot explain, and they give no rationale as to why a man wakes up in the morning. What makes me wake up in the morning? At night I am wearied, and the accumulated poisons in my body paralyze my brain, and so I fall asleep at night, but what wakes me in the morning. The Prophet Isaiah knew what awakened him in the morning, for he says, "He wakeneth me morning by morning." (Is. 50 : 4.)

Now is not that a beautiful thought,--God wakes us up in the morning? We go to sleep at night and there is some one who stands by us all the time, whose will keeps our hearts beating, and wakes us in the morning. There is one Will that never sleeps,--there is a Mind that never sleeps. That Mind and Will dwells in man, and keeps the machinery of life going while he is asleep,--keeping the heart, the lungs and all the vital machinery of the body in motion while we are asleep; and that Power that cares for us and keeps us while we are asleep awakens us when we have slept enough.

I am not talking theology or religion to you now; I am telling you physiological and scientific truth, and there is no scientist but what will say that what I am telling you is true, for it is a fact that is *generally* recognized by scientists that, as Herbert Spencer says, "We are obliged to admit that behind all and beneath all, there is an Infinite Intelligence eternally at work."

Now that Infinite Intelligence that dwells in us is the same power that heals. It takes the same power to heal that it does to create. When we find a doctor who has power to heal somebody, we have found a doctor that can make a man out of a lump of clay, and cause him to walk and to sleep and to wake up in the morning and to engage in all the avoca-

tions of life. But a doctor who cannot create cannot heal, for it takes the same power to heal that it does to create, or to originate life. The healing power is the creative power; that power within us that makes for health,--that brings us from disease back to health again--that is the creative power, and that process is a creative work; the healing process is a creative process.

Now in order that we may be made well, it is necessary that we shall co-operate with the Creator,--that we should work in harmony with the Creator. Here is a man who is sick,--how did he get sick? He had to work hard to get sick. Bob Ingersoll once said that if he had been consulted by the Creator when he created man, he would have suggested to the Lord that health should be made contagious, instead of disease being contagious, and easy to contract, that it ought to be the other way. That is a good illustration of the superficial nature of Ingersoll's reasoning. He had not looked into this question enough to see that a person who gets sick must do some hard work,--for instance, if he proposes to catch small-pox or chicken-pox, he must go and hunt up some one who has it, and rub against him,--and so of any other infectious disease. So long as he stays by himself in a wholesome place, he will not catch the disease, but if he wants to get anything of that kind (and I don't suppose anybody does) he must go into some unhealthy place, or go and find some bad water or hunt up some man who has an infectious disease and expose himself to him and so catch the disease. Or suppose a man sets out to get dyspepsia (very few people do that intentionally, but many people have it) such a person must sit down at the table three times a day and work hard and eat three times a day and two or three hours at a time. I knew

of one case in Chicago where some people at a banquet in Chicagosat at the table seven hours; they had over two-hundred courses. One of those guests,--Gov.....stopped to see me. He told me that he had been to this great banquet and asked me what was good for the gout. He said that he had used some capsicum pills, and that a certain doctor had prescribed certain pills for his gout, but as he was going away, when he had got off a few rods, the doctor called after him,--"Hey, Governor! Governor! If those pills do you any good I wish you would let me know, for I've got the gout myself." Then the Governor said he would not have anything to do with those pills,"and," said he, "I want you to give me something that you take yourself." And I said, "I will: the thing that I would take myself, if I had this trouble, would be a dose of temperance in eating, a dose of exercise every day, and I would take a dose of strict regimen in diet, and I would take exercise enough to make me sweat, every day of my life." But he said, "I have no time for exercise; and as for temperance in eating in order to a long life,--a short life is a merry one." So he kept on with his big dinners--and the gout kept on too.

As I have said, we have to work hard to get disease. If a man wants to get a real great, tremendous, monumental, ponderous dyspepsia he must work hard and long for it,--he must work years and years for it. It takes about twenty years to make a magnificent dyspepsia, as some of you know by experience--and you wonder why you don't get well in one year, when you have been twenty years making your dyspepsia. One can catch dyspepsia,--they can catch it at the dinner-table, but, as I said, it takes a long time to do it. Now Mr. Ingersoll thought it was easier to catch disease than to catch health. That idea is perfectly ridiculous. All a man has to do to catch health is to open his lungs and breathe it in;-- all he has to do is to exercise his muscle and thus open his lungs and take it in; just go out doors into the fresh air and sun-

shine, and breathe health in from the air. Health is all about us; the sunlight and the air is full of it; and good wholesome food is full of it--apples and peaches and bread and the like good and wholesome foods which God has made for us, is full of health and life and energy. When we take healthy ^{food} into our bodies we catch life from it; and when we take disease into our bodies in the shape of unwholesome foods, we catch disease as the result. When a man eats pork which contains trichiniae he gets trichiniae, and when he eats beefsteak which contains tapeworm, he gets tapeworm. That is the way people get maladies. If a person eats diseased, lumpy-jawed beefsteak or beefsteak that has tuberculosis or tubercle-germs in it, he will get tubercle germs and tuberculosis. So we catch disease by cultivating it, and we may catch health by cultivating health. We have to work hard to catch disease, but we catch health involuntarily: When we go to bed at night and go to sleep we can breathe it in, and we can breathe in health all night, if we will leave the windows open. We can climb mountains and exercise in a variety of ways and be drinking in health all the time. Health is cheap; all we have to do is to open our mouths and take it in; we may absorb it from the sunlight and air and all these which we see lying all about us. Disease hides away from us, so that we have to hunt for it; but ~~life~~ ^{health} is seeking for us: the light comes into the windows and health comes in with it; all we have to do is to open the windows and let the light shine in, and it will destroy the germs and the mold and vitalize the house, and when the light shines into the dark cellar-- when you have torn away the banking and opened the cellar windows so that the light can shine into the dark cellar, the white stems of the potato-sprouts begin to turn green. A similar renovation takes place in a tenement-house when it is well ventilated,-- the fresh bloom comes

into their cheeks and the sparkle comes into their eyes; there is life, and life for us, in all these agencies about us .

There is no life in a mineral spring; there is no life in a bottle of medicine; and there is no living power in man that he can impart to some one else, but there is abounding life in nature all around us,- and where does it come from? It comes from the sunshine. The sun is the great source of in the solar system; the sun is sending out life and energy in every sunbeam, and it is the light of the sun that shines upon the plants , flowers and trees and awakens them to new life. Here is a tree that looks as though it were dead--six weeks ago every tree in this grove looked as though it were dead ; now look at them,--what has happened to them? The warm sunshine has penetrated their roots, crystallizing in the tree and giving it leaves, and then blossoms and finally, fruit. Now that same life and power that is in the sunlight, and that is imparting such energy to the tree--that same power is communicated to us when the sunlight shines upon us. But we hide ourselves in darkness, and clothe ourselves in black which keeps out the sunlight. I am ashamed that I am wearing black clothes; but one of these days I am going to wear white clothing including a white overcoat and hat. I have not courage enough for that now, but some of these days I am going to get courage enough to clothe myself in white garments,--the Bible speaks of that, and I believe in it, because when we are clad in this manner the sun shines through the clothing into our bodies. But when we are clothed in black the sunshine is shut away from the body. We have an out-of-door gymnasium with a high wall around it, and dressing-rooms in it on both sides of it, and we have a swimming-tank in the middle of it; and we expect to see you all down there; the gentlemen have their hours and the ladies have their hours, and we expect you will come there , put on your bathing suits and bathe in the sunshine, and after

that, you can have a swimming-bath, and then roll in the warm sand and take a sand-bath. The sand-bath is very famous in certain parts of Europe. Then we have trees, where you can get under the shade; and we will let you climb our apple-trees and eat some of the apples--only don't eat them when they are green. We gave also saws, saw-bucks and axes which we will permit you to use. We have also a Maypole and swings that you can swing in, and various other facilities for gymnastic exercise, among which we have a running-path which is one-tenth of a mile around it. We also have a variety of other very enticing things down there, which we hope will be the means of ~~enticing you~~ drawing you down there into this outside gymnasium where you can get into the fresh air and the bright sunshine.

Why, my friends, the thing for us to do, is to go back to savagery for a while. We have got too much civilization; we are so perverted that we have got so far away from ~~civilization~~ that we have greatly degenerated,--and that is the reason we are sick and suffering so much. Take the wild horse of the prairie, --see what tremendous energy he has. Did you ever read Steven Thompson's wonderful book, "Some Wild Animals I Have Known?" If you will read that book you will be vegetarians--as I am. If you get acquainted with an animal as Steven Thompson did, you won't eat him for fear you might be eating a friend--like an uncle, aunt or cousin. He tells a story about a wild horse, or rather a "mustang." Some men tried to catch him, but they could not. Finally a man laid a plan for catching the mustang. He had ^{half} a dozen ^{men} with fresh horses, and he had these arranged in relays, and then they kept the mustang going from one relay to another for four days; every few miles there was a relay of fresh horses and he drove this mustang steadily from one relay to another for four days--and he got away from them at last.

There was one thing that the mustang did in the race, that was a good in hydrotherapy: there was a river in the vicinity, and every once in a while the mustang would wind around to that river, take a little sip of water and a little bath, and after being in this manner refreshed, away he would go like the wind. When he was fatigued or exhausted, he would manage to get to that river, and get a drink and a cold bath, and then he was as good as ever for another day or two. I know by experience how that mustang felt after his bath. Now see what endurance that animal had when he was wild. Now you shut that horse up in a stable for five or six months, and at the end of that time he would not be worth much. Keep him there for five or six years, and what would he be worth then. Suppose when he had been somewhere he was brought home on a dray or ambulance, and he were kept shut up and treated in this manner for forty or fifty years, and what kind of a horse would he be then. For some of you, we know what that kind of treatment makes. Look into a looking-glass and put out your tongue: it looks as if it needed a city scavenger to take care of it. Then look at your eyes, and see how bleared and dull they^{are}; you wonder what has become of the lustre and brightness of your eyes in youthful days. Look at your skin,--see how dirty, dingy and tawny it is; that is not dirt on the skin--it is dirt in the skin; it is more than skin-deep--it extends all through,--the muscles are dirty; the brain is dirty, and the whole body partakes of the character of that dingy, dirty, tawney skin which contains an accumulation of the filth and ashes of the body which has been swept out of the body and passed through the liver and the kidneys.

Now is it any wonder that we are sick? The wonder is that we are alive. We need a return to savagery, and the thing that civilization

needs to do, more than anything else, is for somebody to preach an exodus out of the cities into the woods; many a man has found the benefit of that. How many business men do you suppose remain in the city during the "heated term?" Every season they make a trip to the woods. I said to one of these ^{professional} ~~business~~ men the other day, "Well, doctor, how are you?" "First rate," he answered. "When are you coming here to spend a month with us?" "Not at all, I think, for I take to the woods every summer, and so I keep well." Now if a man can keep himself well in this manner, it must be because there is a rejuvenating power in the woods. Suppose you lived in that way: You would not see the pale cheeks, the sallow complexion and the miserable woebegone appearance that is so common in the cities behind bank-desks, editorial tables and so on, in our great cities,--you would not find such people as you find in counting-rooms and editorial sanctums--that is not the sort of folks you would find in the woods living in the fresh life-giving air and sunlight; you would find a rosy-cheeked healthy, vigorous sort of people. But you go into the cities and notice the people that come from the nooks and corners of the city--Chicago, for instance--how many healthy, vigorous looking people do you see? Scarcely one; they are poor, weasend specimens of humanity;--the children also are poor, pale weakened, spindle-shanked boys and girls. But when we think of how much poison there is in the air and in the street-dust, which they are inhaling we wonder that any of them are alive. Now let these same people live in the woods six months, and there would be a wonderful transformation.

Now we are here for the purpose of bringing you back to nature,--to bring you back in harmony with those powers that work continually

for activity, life and salvation, thus making health contagious all the time, by the use of baths, electricity, static and sinusoidal, massage and all our other various appliances that we set to work, and by which we get near to nature and work together with nature, coming in contact with the great forces of the world which, are all the time making for health for man and for the whole animal creation as well.

Now the thing that keeps a horse well, the same thing is necessary to keep a man in health. Let me give you an illustration of this: Some of you gentlemen are farmers, and some of you ladies are farmers' wives. You know if you shut up a horse all winter, when he sweats in the spring there is some gummy stuff that accumulates in his hair, and it adheres there; that there is a sort of foam that comes out on his back when he sweats, and leaves something that looks like white frost, and which the hostler can hardly get off. It also has a very strong odor,--and what is that material? It is the extract of horse. Now you take that horse out and exercise him every day and take care of him properly and give him good food to eat and water to drink, and will come out fresh and vigorous in the spring, and his perspiration will be limpid like water; that is also extract of horse, but it is the extract of a clean horse, but the other was extract of a dirty horse--a horse in which the rubbish and filth of ages, almost, have accumulated. The body of such a horse is like the Augean Stables,--it requires Herculean power to clean the filth out of that horse. Now we might say that such a horse is like a man who has been shut up,--a sedentary man is like a sedentary horse that has been shut up in the stable for months. What kind of man is the sedentary man? He is such a man that when he takes a bath, it is necessary to open the windows and doors so as to carry off some of the waste matters of the body that have es-

caped into the air. Some of our bath-men are very well acquainted with the truth that I am telling you ; and that dirt is organic dirt which is washed out of the body by perspiration. This perspiration is simply extract of the tissues, and it is no wonder . It is no wonder that the sedentary man scratches his head when he wants to think,--he has to scratch his head or rub his brow when he wants to think. Sometimes a man gets really disturbed when he cannot think, and beats his head. I knew one man who was so disturbed and wrought up because he could not make his head work that he beat his head against the wall a few times to wake it up so that he could think. There is many a man who sits in his office at work, and he chews the end of a cigar all day long for nothing in the world except to enable him to think. If you were to take that cigar away from him he could not run up a column of figures. Ask a lady to think of something and she will try hard, and when she cannot, she will put her finger up ~~to~~ here ~~to~~ and press it hard, and say, "Just let me think now,--let me think." You have had that experience yourselves . What do you do that for? Here is the fifth nerve that goes from the face to the brain, and by pressure on the fifth nerve the brain is awakened. Some people chew a stick or gum for the same purpose, and some men cannot do business until they have taken snuff, making themselves sneeze a few times before they can get their brains wide awake. This effect which sneezing has upon the brain gave rise to the old theory that sneezing purges the brain; that there is a passage from the brain into the nose and that when a person sneezes, in some way or other the brain is relieved of certain obnoxious things that have been accumulating there . . . There are people who believe that even at the present time . There is something in the formation of the brain that gives some countenance to that idea: There is a little cribiform process at the base of the brain

where the nerves come down to the nose where the holes are, and it was supposed that that was the place where the impurities came out when a person sneezed.

What does it signify when we see people bathing their faces, or smoking a cigar or taking a glass of grog or doing something else for the purpose of stimulating or waking up the brain? These people are trying all the while to overcome the filth which has accumulated in the body and which befogs the brain. Now if you will live much out of doors and take proper exercise, nature will do this work for you. Drinking water dilutes these waste matters and thus helps carry them away. Exercise sets the lungs to work, and they work hard pumping the blood along and bringing in oxygen which burns up the waste materials which water dilutes; the tissues are washed out; the breathing is increased by exercise, and thus an increased volume of air is taken in, as the result of exercise; and all these means work together for the purifying of the body and the cleansing of the brain and sweeping away its cobwebs.

Now what is true of the brain is true of every other part of the body; it is just as true of the stomach, liver, nerves, glands and other structures of the body as it is of the brain. When ~~is~~ a man ~~is~~ is in such a condition that he cannot think well, he cannot digest well, and when a man is in such a condition that he can't digest well, the liver, pancreas and spleen cannot do their work well, and the bones that make the blood cannot make good blood, and the whole body is in a degraded state. So a man's brain is a sort of index to his body: When a man is dull, stupid and sleepy in his brain, he is dull, stupid and sleepy everywhere. When a man begins to feel better in his brain, -- when he is getting a little clearer-headed, then he is getting a little more energy in his body, and he is getting better. A man said to me the

other day, "I am not getting any better." "Why?" "Because I am falling off in flesh,--I have lost five pounds." "How do you feel?" "Why, I feel first rate." "Then you need not be troubled; the loss of five pounds of fat don't amount to anything, because it is easy to lose it or to get it. A bicycle-rider sometimes loses eight pounds of flesh in a day, because it was sweat out of him, some of it, and some of it he lost in tissue that was consumed. He probably did about eight days' work in that one day--and perhaps more,--so that is nothing to be worried about. Weight is a very fluctuating quantity. Fat is a surplus--an accumulation stored up for future use, and we may not be any worse off for unloading a little of this dead material.

I want to impress upon your minds two or three great principles, one of which is this great fact that there is a power within us that makes for health, and that that power is working for us all the time to make us well, and that the principle thing we have to do is to co-operate with that power. There are certain things that will facilitate that process,--for instance, the cold-bath in the morning. I take a cold bath every morning--unless I am somewhere where I can't get water. Let the air do the drying. It does no more harm to wear clothes when your skin is wet with water, than it is to wear them when you perspire. Every sixteenth of a square inch--every space no larger than a pin-point--has nerves in it, and when you apply cold water to the skin it comes in contact with these nerves there is an impulse sent onward to the brain and toward the nerve-centers, and then all these nerve-centers and nerve-cells are all set to work--it is a sort of eye-opener for the body. Many people think they must have an "eye-opener" in the morning and a "night-cap" at night, but I tell you there is nothing like

a cold-bath for an eye-opener,--if you think it is not, let some one drop a little ice-water on you so that it will run down your spine; I dare say the one who should try that experiment on you would not care to repeat it.

Now this cold application is not merely temporary in its effects, but it sends an impulse into every nerve-centre; it awakens the whole vital machinery, and sets the heart and the lungs going with renewed activity. You know when a person dashes cold water upon you, you suddenly gasp, and you can't help it. When a boy suddenly goes into cool water he gasps for breath, and he can't help himself. The heart is thus set to going more rapidly, and the blood is circulated more rapidly; and not only that, but the centres which make gastric juice, roll up their sleeves, metaphorically speaking, and "pitch in" with all their might to prepare for the breakfast which is coming; the liver also makes more bile, and in like manner every other organ and gland of the body is waked up and stirred up to renewed activity. There is more power for healing in cold water than in hot water. Hot water is a soothing agent and a pain-relieving agent; but cold water has power to give an impulse to the body; it is an agent that excites and stimulates the body, thus increasing the activity of the healing processes within the body. Here is a poor pale anaemic who is brought here for treatment; you would think he was going to die pretty soon; he has only about half as many blood-corpuscles as he ought to have. We first apply cold water with the hands, then with a sheet, and then rub him all over; then he may have a douche or a shower bath. We first make a mild application, and then a more vigorous one. Under this treatment we can see the blood increase from day to day.. Dr. Stewart called me up stairs to see

a man one day, and we found him so bad that he could not be sent home, as was desired. During the first few days he was so sick that he rapidly declined, in his blood-count until it was only 400,000 instead of being five million, as it should have been,--he had only 400,000 blood-corpuses to the cubic millimetre (one-twenty-fifth of a cubic inch. We said, "This man must die; nobody can live with so few corpuses as this patient has." He was so feeble that he could not raise his head, so we had to keep him perfectly flat in the bed,--we couldn't raise his head six inches without his fainting away. We usually think a man's case is pretty bad if he cannot sit up without fainting away, but this man could not have his head raised six inches without fainting away, because if his head were raised to that height, the blood would run out of his head,--besides, we had to keep warm things round his head to keep him from fainting. Now what should we do for that man? You say, "Give him lots of iron." Not a grain of iron. "Give him lots of arsenic." Not a bit of it. "Give him some medicine that will make blood." No, we won't do that,--there is no medicine that will make blood. What we did for the man was to give him easily digested food,--granose, granola, and other simple foods such as you are daily eating at our table; but of beef-juice, beef-tea, mutton-broth, tea, and the like, not a drop of any sort--nothing but the most pure and wholesome foods--such food as we prescribe for other people and such food as we eat ourselves. Besides, we gave this man each day a rubbing with cold water. Now does not this seem ridiculously simple,--dip a mit in cold water and rub it on the skin, that was all. By this means the man's blood increased day after day until he reached the point where he had four or five million corpuses, and went home, saying he would come back and get the other five hundred thousand corpuses; but he got them without coming back.

I have mentioned this case so that you can see the power there is in these simple things; they are so simple that people ignore them. Sunlight is so cheap that we do not appreciate it, but pull down the curtains and shut it out; and so of water,--we have plenty of it at home, but instead of making use of it, we pay a dollar a bottle for some fluid that has no power in it, and that did not cost the manufacturer over five cents. So people are looking in the wrong direction. We must not look to doctors to heal; we must not look to medicines to heal; we must not look to mineral springs to heal, but we must look, for healing power, to the curative power in nature,--the power that causes these trees to blossom, bloom, bud, and leave out in the spring, and makes the flowers bloom,--that is the power that we must look to for healing. And that power is working through natural agents: The same power that makes the flowers bloom is capable of making the roses bloom in our cheeks. And I hope and believe that there is no one in this room but what, if they will properly relate themselves to this great healing power in the world, and which is manifested all about us--I hope and believe that there is not one here who may not have, if not perfect health, at least he will probably have a fair share of health,--a glorious increase of health by proper attention to the laws of health and the use of these simple remedies. There is a great increase in health that many patients never get; we are satisfied with too little health. It is not so in regard to the acquisition of gold. A man digs one day in a gold mine, and he finds some golden ore; the next day he brings a bag and he gets more, and so on, until by-and-by he brings a dray with him, and so his appetite for gold increases--the more he gets the more he wants, it is a mania with him. I would like to see

such a mania get hold of people in regard to health. Many people are contented with a little health; but the more health we get, the more we should want. Instead of this, we see many people going about in a pusillanimous sort of way--moping along, with their chins hanging down, and they remind one of some poor jaded horses that we see in the streets--"plugs," we call them; but we see most men and women going about in the same fashion. We don't see many **fine horses**, because horses are abused. and don't have a good chance. We don't see many fine men and women going about the streets, because men and women are abused: From the time they were little boys and girls they were brought up on second hand food. I met a lady to-day, and she inquired about the best food for children, and wanted to know if it was beef, chicken, etc. "No," I said, "that is second-hand diet." "Do you mean to say that I have been feeding my children on second-hand food?" "Certainly I do,--and you might as well clothe them with second-hand clothing as to make the clothing up out of second-hand material. Who would want to use the same muscles that an ox has used? And yet many are content to do that; they are content to use the same blood that the ox has used, and to use the same liver that the pig has used before. Now this ^{beef-juice} is simply second-hand and deteriorated material that was discharged from the body of the animal. If you want your body to be as strong as that of the ox, then eat the things that the ox eats,--eat grain at first hand--eat it before the ox has used it for his own purposes and left only the waste residue behind.

I am speaking plainly to you because this is a serious matter, and I want you to be fully persuaded in your own minds about it, and also be able to persuade your neighbors of the truth of the matter. If you will go to my home I will show you some rosy-cheeked boys and girls who

eat first-hand food. Nothing in the shape of animal food ever comes upon our table,--no milk, butter, eggs nor meat; everything my boys and girls eat is just as God made it to be eaten. That is first-hand food--it is "bread from heaven;" and when we talk about eating anything animal, they are disgusted. The idea of eating anything dead is perfectly terrible in our household; it is as loathesome to them as cannibalism. Any sort of animal thing for food is repulsive, for it is not sweet and clean. All animals are filthy. Shut any animal in a cage, no matter what animal you select, and confine him there for a week, and at the end of that time that box will be a filthy place. But you shut up an apple or a potato in a box for a month, and at the end of that time it is as sweet as it was when you put it in there. Any wholesome article of food does not become filthy if you shut it up for a little while. What makes the box filthy? Why the filth that is loose in the box was in the animal first,--it was inside of the animal before it was outside of him. So, when we eat an animal, we also eat the filth that is in him along with the animal. But, as I said before, if you shut up fruit--a peach, a pear, or a plum, or a potato in a box and you find no filthy environment. I am talking plain facts, because I want you to think of these things.

I want to get your attention to a few of these great principles,--that we should get life from the Great Source of life. God is all about us, and he is life, and he dwells within us, and is seeking to heal us and to arouse our native inborn instincts, so they will lead us back to the true life again. Now a man is sick, and he is reaching out for life, and that is what he needs; and there is life for him, and all the life he needs, and he has only to reach out and take it. But

there are certain conditions on which we must take this life: we must co-operate with this healing power; we must comply with the rules and laws of life, we must eat pure food; we must breathe pure air; we must drink pure water, and do those things which make for life and health. Now my friends, if we will do these things,--what does the Bible say? "If ye know these things, happy are ye if ye do them." Now I would admonish each one of you to labor earnestly to cultivate health. If you will work as hard to cultivate health as you do to cultivate disease, I dare say there are very few of you here who will not have as large a share of health as he can reasonably expect, and within a reasonably short space of time.

MEDICAL GYMNASTICS , May 10, 1901.

J. H. Kellogg, M. D.

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WE might spend a few moments in looking over the history of Medical Gymnastics, or The Use of Gymnastics in Medicine. This is not a new idea,--the use of gymnastics for medical purposes--helping the sick to recover from diseases of various sorts. It is a very interesting idea that both active and passive gymnastics have been used for medical purposes from the most ancient times, and, with the exception of water, this seems to be the most ancient of remedies. It is well to remember this, so that when we hear people speaking of hydrotherapy, as etc., being something new, we can say "It is old." I always take pains to explain to people, especially those who are opposed to novel notions, that our reforms are none of them new; that, as a rule, the new thing is the evil thing, and the old thing is the right thing; that by adopting these reforms, we are simply going back into the good old ways, and not the adoption of something new. There are some people who take pride in recommending new things, and in bringing out unique, extraordinary and sensational things, but that is something that we have nothing to do with. Our whole mission is to persuade people to come back to nature, and to the old thing ^{way} as the right thing ^{way}. But that is contrary to popular ideas. The popular idea now is, that man started out as a beast, and has been gradually growing upward into a man. But we understand from the Bible that that is not true; we know from the Bible that man started, not at the bottom of the scale of being, but at the top; we know this, not only from the Bible, but we know it outside of the Bible. From the high position in which man was placed in the beginning, he has been going down instead of up,--de-

generating instead of advancing. There have been periods in which man has been coming up, and then he has degenerated again, so there has been more or less oscillation in his progress; but if we go back far enough, we find man standing at the top in the scale of created beings, and from that point we find that he has been degenerating.

Now it is so in medicine. The human race started out with the use of natural agents in medicine, and I thought perhaps it would be well to stop and consider for a few moments the nature of these agents. There is, at present, a rising interest in what is known as Rational therapeutics. There is a series of volumes on this subject by Solomon De Solis Cohen, which is published by F.A. Davis & Co., to which I would call your attention. Two volumes of this series are devoted to "Physiologic Therapeutics." Those volumes show that there is a demand for information upon this subject. There are also two volumes of the series devoted to the use of Electricity. There is one volume devoted to "Phototherapy," and other similar agents. One volume of the series is edited by Dr. Winternitz. One volume is devoted to "Massotherapy. Another volume is devoted to "Mental Therapeutics." Another volume is devoted to "Mineral Springs," which is an interesting subject. Another volume is devoted to "Serumtherapy." All the non-drug methods are considered in this series of medical works.

The first remedies utilized by the human race were physiological remedies. See how natural it is that these remedies should be employed,--remedies adapted to the needs of the sick man.. Here is a man who is sick,--what does he need? He needs life--he needs more life, and more energy; he needs vitality. Where do we get vitality?

where do we get vitality when we are sick? We can't go to the drugstore and get it out of a bottle. We can't find it bottled up, or in any water which comes from mineral springs. We can't find it done up in little pellets or pills to be swallowed. If we get life, we have got to get it from the sources of life,--air, water, sunlight and food.

The great source of life in this world, so far as we can see it, is sunlight. The great source of all energy in this world, so far as we can see, is sunlight. The sunlight shines upon the green plant, giving life to the little chlorophyll cells of the plant; under the influence of light, these chlorophyll cells, which seem to be the little alchemists of the plant,--the light acts upon these cells to decompose the carbon dioxide or CO_2 --a feat which the chemist can hardly accomplish--it requires a breaking up of the molecules of the carbon dioxide, or carbon and oxygen, and the influence of sunlight does this readily, and thus color and life is imparted to the plant; and when we look out of the windows and see the green leaves and the grassy carpet of the earth,--when we see the whole earth covered with this green, we think what countless chlorophyll grains are at work under this influence--and all this marvelous energy exists in the sunlight. Under these little chlorophyll grains, the energy of the sunlight is stored away in latent form, in wood, stones and all kinds of organic bodies. This wonderful operation is like piling up a heap of stones, one above the other, and if these stones were to be tipped over and struck the earth again it would be found

that the energy with which they struck the earth would be exactly equal to the energy which was generated in them while piling them up. When we lift up a stone from the earth, the energy which was used in doing that, if the stone is let fall to the earth again, is the same as was used in lifting it up.. So, when a stone is carried up to some elevated position--for instance, to the top of a tower--and then released, and it falls to the earth, the same amount of energy which was generated in carrying it up, is used in bringing it back to the earth again, is equal to the energy used in carrying it up,--the energy is exactly equal in both cases. The same principle applies if a stone rolls over a precipice or off the top of a tower, and then falls and strikes the earth, the energy generated will be exactly equivalent to the energy deposited in the stone in carrying it up to the top of the tower or precipice.

It is upon the same principle that the sunlight deposits its energy in latent form in woody structures,-- in plants and leaves, producing growth of plants, while actively engaged in putting forth leaves and buds and preparing them for the production of fruit. This energy is thus stored up in foods,--so that in foods we have stored-up energy; this is the real source of life--it is the real supply of life, and is conveyed by the circulation to different parts of the body. The inhalation of the oxygen of the air is the vehicle or means by which the complex molecules of the food are broken up; it is the means, so to speak, by which the pile of stones is tumbled down, it is the means by which the stone which was carried to the top of the tower or precipice is rolled down; it is the means by which the charge of gunpowder is ignited,--in other words, oxygen is the means

by which the energy latent in food is liberated. Water dilutes the ^{and} Poisons of the body, carries off the poisonous products and decompositions taking place in the body. So that food, air and water are the three most important vehicles of the development of the body,--the food being the source of energy, water being the means of conveying away the poisonous products and waste substances of the body, and oxygen being the means by which the stored up energy in the body is set free.

Now this energy, as I have said, comes from the sunlight. We see the bare lawn become green; we see the apparently dead tree putting forth leaves and blossoms,--and this all takes place through the influence of the sunlight. In the beginning of winter we see the earth apparently hopelessly barren and dead, and looking like a tomb; but, when weeks and weeks have passed, we see the whole earth blossoming out with life and energy. What is the secret of this energy? It is sunlight. Now the same sunlight which falls upon the tree and causes its latent energies to put forth such marvelous manifestations of life in bud and blossom and fruit,--that same sunlight falling upon our bodies accomplishes a corresponding work in them.

We see an illustration of the effects of light upon a potato: Here is a potato that has been laid away in the dark and the sprouts are white,--bring that potato out to the light, and these white sprouts soon become become green. Now take a boy or girl who has been confined in the house until their face is as pale as the potato sprout,--let them live out of doors awhile, and the same thing happens to them as to the potato when permitted to grow out of doors. We see the color-cells of the skin increasing and developing until

they become vigorous and active, sometimes producing what we call freckles. This is an evidence of what the sunlight is doing in the body. This increase of pigment cells is an evidence of an increase of the influence of light upon the entire body, or so far as light permeates the body. Here is the foundation of what is called "phototherapy." When a person has been exposed to the sun for a few hours on a hot summer's day, he has what is called "sunburn;" but this is not correct, for it is not a burn. If it were a burn, the person would know it right away,--he would have pain in that part of the body instantly; but he does not feel any pain instantaneously from sunburn. The effect of exposure causes rather an agreeable sensation, but the pain comes the next morning. A boy goes in swimming in the afternoon on a hot sunny day, and his back is exposed to the sun, and he has sunburn, but he is unconscious of it. The next morning his back is almost a solid blister. This action of the sun does not cause a burn but an affection of the skin called a "solar erythema,"--an erythema resulting from the action of the actinic rays of the sun upon the skin,--but it is not a burn. White cows have sunburns, as well as men. Black men don't have sunburn, neither do black cows. White sheep sometimes have sunburn, also red and white cows have sunburn on the white spots, but there is no sunburn on the dark spots. Here is a person whose face has been exposed to the sun,--he has no sunburn on his face, because the dark spots caused by the pigment-cells are so numerous as to prevent it; these color-spots protect the skin of the face against the action of the actinic rays of the sun. These facts have been recognized by those who have made a careful examination and study of the properties of light.

Light has three kinds of rays,--luminous, chemical and actinic rays. Actinic rays exert an active influence upon the nervous system, and unquestionably they have ^{a similar} ~~the same~~ influence ^{on plants} that they do upon the nerves,--we see that their growth is diminished when deprived of the action of these rays. The action of these rays varies in its influence upon different colors. We once made some experiments with violets under glasses of different colors--blue and red--and found that violets under red glass did not grow as rapidly as under blue glass. We found the same thing to be true in reference to the ^{activity} ~~growth~~ of insects. Suppose you have here two boxes, one of which is covered with red glass and the other with blue glass, and there are different kinds of insects or flies in these boxes, and exposed to sunlight,-- they will fly about actively under the blue glass, and they will go to sleep under the red glass, and this is for the reason that red glass shuts off the light, while blue glass does not. This is an important principle relating to our subject. I mention this fact to you to show you the power there is in sunlight. We overlook the operations of nature because they are so common--the phenomena of the waking up of nature in the spring--the resurrection of nature in the spring--is so common that we do not stop to think what it means. We do not stop to think that it is a continually renewed evidence of the great intelligent power there is in the world all about us,--the great scientist Herbert Spencer calls it "the great unknowable Intelligence." But the Christian recognizes this intelligence as God,--as the divine presence in everything; it is the great power that is back of the phenomena of nature, and it is present in our own bodies, as well as in all nature about us.

We see what power there is in sunlight; we see that it is the source of energy. A little while ago, I said that the sunlight was the source of all the energy there is in the world. Now think of all the locomotives, and steam-engines and all the machinery which is run by means of fuel or coal,--what is the real source of all the energy there is in that fuel? ("Sunlight.") Where did the energy that is in the fuel or coal come from? ("The plant.") Where did the plant get its energy? From the energy that was stored in the sunlight. We see the electric light which has been generated from coal by machinery,--and what is that? It is resuscitated sunlight. Sunlight, then, is the same light as that which shines upon us this evening from these electric lamps. This is the same light that shone out upon plants hundreds of years ago, and was then fixed in plant structures; and now we see the same sunlight coming back again. Suppose a person takes a piece of glass, or tin or wood, and paints it over and covers it with powdered sea-shells, burning them and mixing a little mucilage with them, painting the board upon which they are spread, and exposing them to the sunlight,--and how will that board differ from other boards? ("You can see in the dark by it.") Yes,--and that principle has been used in painting the dials of clocks in this manner, so that you can see the time during the darkest night. Watch-dials have been painted in the same manner, and in the night you can see a glow of light from them. Now that light that you see coming back to you from the clock-face or the watch-dial, and the light that you see coming back from this board painted with sea-shells--this ~~effervescent~~ ~~light~~ phosphorescent light--is the sunlight that has shone during the day, and that has been retained or stored up in this manner, and that has come back again in

the night. It is a sort of inorganic memory. Of course, after this painting has been done, the light is being thrown off from the board during the day, as well as in the night, but the daylight is so great that you don't recognize the phosphorescent light or stored up light in the day time, but you can see it in the night. This is true of all phosphorescent surfaces. There are some germs which have the power of rendering some substances capable of absorbing sunlight and giving it off again in this way.

Now the same Principle,--that of storing the sunlight--is true in regard to coal and other substances which absorb light--they store it up and then give it off again--and it is so with all organic substances. So the same power that operates in wind-mills, water-wheels, etc., and raises water to the right height--does the sunlight have anything to do with that? ("Yes.") In the first place the sun evaporated the water and carried it up into the clouds, and then sent it down, and it comes down from the mountain-tops and mountain-sides in streams that run water-wheels and other machinery, and thus we can make water do a great deal of work through the energy which was stored up in it by the sunlight. So by the aid of a peculiarly shaped wheel, the rarefaction of water and the power of the air--the influence of the air which flows in--we have the power of the sunlight again, to run the water-wheel. So you will find that the only source of energy in the world,--with the possible exception of gravitation--but we could not derive any advantage from gravitation if it were not for the sunlight which lifts things up; gravitation pulls things down and then the sunlight lifts them up again, and we take advantage of the situation, and so get a great deal of work done by this means. The tides are also caused by the influences which

come from the sun.

Now here is the great source of light all about us, and we recognize it in our daily experience,--for instance, here is a man who gets sick: he has been habitually shut up in his place of business, until he gets pale, sallow and hollow-eyed, and loses his appetite,--he gets thin and poor and miserable: his brain is dull, and he can't do business. He gets cross, irritable and savage, and he drives his customers away from him. So with the poor mother who has been shut up in her house by her family cares and household duties--she is peevish and impatient, and cannot control her children. Now the business man runs away from his ~~business~~ place of business--and where does he go? ("He goes to the mountains.") Yes,--or he takes to the woods; he goes back to nature. He comes back in a couple of weeks, and he looks like another man; his friends hardly recognize him, for he looks like another man--and he is another man, for he has got new life. Where did he get this new life? He got it in the lap of nature; he didn't get it from a bottle; he didn't get it from any drug purchased at the drugstore; he didn't get it at the mineral springs,--he went out into the woods, and there is where he found it.

You see the real sources of life are all about us,--there is a great abundant ocean of life all about us. But the whole channel of human life has been diverted in the wrong direction. Men would make a Professional monopoly of these forces of nature, and so they have undertaken, so to speak, to "corner" life; they try to make a sort of monopoly or trust of it. A terrible error has got abroad in the earth,--and that is, that life and health can be bottled up; that health can be confined by a cork, and that you can take it

into your body in teaspoonful doses, in little drops, or in pills,-- that that is the road to life and health. Now that is the greatest possible mistake,--you cannot imagine a greater error than that. Life is all about us; the world is full of life. Every sun-ray has life in it. Every drop of pure water, and every morsel of good, wholesome food has life in it. The great source of life is nature all about us. Then you would say the place for the sick man to look for life is where? Is it drugs? or the medicine bottle? Is it pills, capsules, powders, lotions, or mineral springs? Not at all. It is the great forces of sunlight, electricity, water, air-- all these forces of nature that we have all about us. This is the great reservoir of energy upon which the whole world draws for life,-- every animal and every vegetable, and all living things--all are ours, if we will receive them--and here is the place for us to go for them. Of course the ultimate source of life is God; we generally say "God," but that means nature.

Now what does exercise have to do with this? Exercise does not give us life; it consumes life, but it brings us in such relationship with the sources of life about us, as it enables us to appropriate and utilize the energies of life. Exercise out of doors brings us in contact with the sunlight; it brings our lungs into greater activity, so that we take in a larger amount of air, and prepares the way for the reception of food, and gives us an appetite and digestive capacity, and so prepares us to appropriate the energy and the life that is all about us, and which exists in our food, in the sunlight and all the other sources of energy with which nature so abundantly supplies us.

QUES.-- Then is it not heat or sunlight which keeps the stream of life going?

ANS.---Next time I speak to you, I will take up this subject and speak of things which have a practical bearing upon it. We want to know all about how the muscle contracts--what is the source of energy in the muscle--what are its special properties, and the causes of muscular excitability or muscular irritability. We want to know the sources of muscular power, and the various irritants which will cause muscular reflex action, and cause fatigue. These are some of the questions which we will consider,--also the circulation of the blood in the muscles. Then we will take up the influence of exercise upon the great functions of the body--upon the heart, upon the respiration, upon the circulation, upon the digestive functions, and upon the excretory functions. From that, we will pass on to the more practical phases of the subject. I hope you will all take interest enough in these things to make a practical use of what I am telling you concerning them. I am anxious that all our students shall get a better knowledge of what we call "The Sanitarium Method." We want you to have a better knowledge of these physiological remedies, -- and you have a better chance to understand them ~~than~~ anybody else in the world, and we don't want to be behind the rest of the world in our knowledge of these things, and then we can take an active part in presenting them to the world.