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DRESS

ABSTRACT OF LECTURES ON "DRESS"

by Dr. Kellogg.

Clothing Unnecessary.

In the first place, so far as health is concerned, it is unwholesome to wear dress,--and yet we must dress so as to be modest; besides, it is necessary to dress in order to keep warm. Man was naturally a tropical creature, and to live where he does not need to wear clothes,--that is his natural habitat; and when he moves to a climate like this, he is a belated person, and he finds himself under the necessity of wearing clothes, and clothing that is borrowed from some of the creatures about him.

Clothing is not so necessary as it seems. A civilized man once met a savage in a snowstorm; and all the clothing the Indian wore was war paint and a loin-cloth. But the Indian seemed to be thoroughly enjoying himself while the white man was shivering, although clad in warm clothing and furs. The white man asked the savage if he was'nt cold. "Is your face cold," asked the Indian. "No" replied the other. "Well, the Indian is all face." He was really "all face", so why should his back or limbs be cold any more than the other man's face should be cold? Every part of the Indian's body was full of vigor, vitality and activity that it could take care of itself and keep warm, as well as the face of the civilized man could take care of itself.

Effects of Civilization upon the Savage and Indian.

It is strange how tamely and how supinely people submit to the evils of modern civilization. When you bring the savage of the forest under the conditions of civilized society, and shut him up in civilized houses and put civilized clothes on him, if he survives for six months it will be because he is uncommonly tough. The

The savage has such tremendous vigor of life that it takes seven bullets to stop him in his attack, according to the testimony of an English officer.

The houses in which we live and our surroundings are so far removed from the normal and the natural conditions in which man was intended to live that they are capable of killing off the North American Indian or a South American monkey in six months' time as a rule. We have an illustration of this fact a few miles south of here where there was a colony of Indians left behind when their tribe removed to the far West; they had a tract of land down here, and some of them came back and settled about fifteen miles south of here. They sometimes came to town to see Buffalo Bill and his "Wild West" show. They came back about six years ago, (1901) and they are now diminished to about one-third of their original number. They returned about five or six years ago. What was the cause of this rapid diminution? It was because they were educated in the habits of civilization, and conformed to the customs of civilization. The civilized man is able to endure more of the hardships of civilized life than the Indian, although he could not endure so much in the forest,--he can bear the deforming influence of dress, etc., better than the savage can--they have become immune, to a certain degree, to these things, and typhoid fever and other diseases--the people of Chicago have so long been accustomed to these things that they are able to live, and to live very well, in the midst of these unfavorable surroundings.

Importance of the Question.

I do not know of any question of hygiene that is more important than that of dress. When we consider the fact that there are some thirty millions of women in this country, and many millions more in other civilized countries who are subjected to a torture compared with which that of the Inquisition was insignificant, to say

nothing of its influence upon human life and the subjection of the human system to morbid conditions in consequence of wrong habits of dress, which are far-reaching in their consequences and which are undermining the health of fifty or sixty millions of our people, physically, mentally, and morally. The great difficulty is, to get men and women to see the importance of this question. I am glad to see, however, that intelligent men and women are becoming more and more interested in the importance of this question. At the present time (1893) thousands of American women are taking an interest in this subject. Physical clubs and dress clubs have been formed in different parts of the country. Magazines wholly devoted to dress reform have been started, and are more or less successful, and there is much attention being given to this subject.

Civilized Women Deformed.

The question of the hygiene of dress ought to be publicly discussed; it is getting to be a question of a good deal of interest to civilized people. The fact has been discussed, and I think it is coming to be recognized that there is a serious modification being made in the human figure. Many civilized people,--civilized women at any rate, are deformed; and the cause of this, I think, must be attributed largely to the civilized dress.

Chinese Feet Binding.

When you see women in the Orient who put bandages about their feet and keep them tied up so that their feet are only three or four inches long,--all shrunken up and the toes doubled under and there is only a few cords and bones left of the feet, you say what a horrible thing that is. I have several shoes at home which have been

worn by these ladies, and the shoes are only about three inches long. Now consider how much worse it is to bind the body in this region where the vital organs lie--where the organs which are the very engines of the body and the source of life--the liver and stomach and all the other organs upon which life depends--remove the kidneys, and death occurs in twenty-four hours; or if we interfere with the functions of the other organs and death soon follows. A Chinese woman once said to a missionary, who told me about it, "How terrible it is that you English women bind themselves about your body,--why this is where we live." Now the Chinese believe that the soul is somewhere in the region of the stomach. (And I have known some people besides Chinese whose souls appeared to be in their stomachs.) The Chinese look upon this part of the body as the vital part, and as sacred--and so it is.

The first time I was in California, I made a visit to China town, and I was in quest of facts in relation to this matter, and I went and got introduced to a real live Chinese woman, the mother of a daughter. The mother had large feet, but she didn't intend to have her daughter labor for a living. She herself helped her husband make candles to burn before his idols. She was making arrangements for her daughter to marry about the age of sixteen; and she was laboring industriously to get her daughter's feet down to the regulation size. She had just got her a pair of shoes which were about 3 1/2 in. In one week more, she would wear shoes about the length of my finger. Her feet were so bound that the toes were forced under the foot, with the exception of the great toe, and then the young woman was obliged to walk on her great toe. That is the reason she could wear such small shoes. And she has pretty good health, after all, because the feet are not so important as other parts of the body, the kidneys, liver, lungs, and stomach, for instance. One does not digest with

his toes; one does not breathe with his feet, nor think with his feet. The feet do not have anything to do with circulating the blood, hence they are of comparatively little consequence. One might have both his feet taken off and live a pretty comfortable life, but one could not have a prolapsed stomach, or kidney, and have his internal viscera all tangled up and live a healthy life.

Flat Heads -- Head Compression.

Any pressure applied to the abdominal organs compresses the sensitive brain just as well as it does the liver and the other organs. We think it is a terrible thing for the Indians of Washington Territory to put a flat board in front, and another behind upon the heads of their infants, binding them with a band, which produces flatness. We think it is terrible tortures that the mothers of Africa inflict upon their children and keep binding them down, until they are elongated in the organ of self-esteem until they look like cones.

(Screen) This figure shows the shape of the skull of a flat-headed Indian. The flat-headed Indian thinks he is handsome when he has a flat head, and this flat head is produced by compressing it between two boards and fastened by a cord.

Relation Between the Exterior of Body, and Interior.

Within the last ten years particularly, I have been studying the consequences of errors in dress, and my study has been largely in a new line. I conceived the thought, a number of years ago, that there must be some definite relation between the exterior of the body and its internal conditions; in other words, that there must be a relation between external deformities and internal states or conditions of the body. I expected that we should find internal

deformities corresponding to external deformities. I could find no information upon this subject in any book, and so I undertook to begin an original study in this line. I devised a very simple apparatus consisting of an upright frame so arranged that a person could stand in the frame, and with clothing tightly fitted to the body, the exact outline of the body could be traced on any place.

Outlines of the Body.

I began taking my outlines in this way, and when I had made fifteen or twenty of them, I ^Pread them out on the floor of my office, and got down on the floor and studied them. I looked them over and over; I would go back and forth over them on my hands and knees, examining and comparing them in every possible way, but I could not make much out of them. After I had made forty or fifty more, I made another comparison, and found that some of them were alike. I began my tracings, and after I had made several hundred different tracings, I began to see something definite in them. I then began my tracings on the top of a paper, and also noted down the conditions which I found in the subject, making, in each case, a careful examination of the internal viscerae, and the condition of the liver, the stomach, the kidneys and the spleen, preparing and making an outline of two views--a front view and a side view. After a year or two of this kind of study, I found myself able to make classifications of cases, and to establish some relations existing between external forms and internal conditions, so that, after a while, I was able to make predictions as to what the internal conditions of such and such figures would be, from their external deformities; and I finally found myself able to predict, with the most absolute certainty, the conditions that I should find when I came to make an examination of the internal Viscerae.

Side of the Waist.

Some people think it is a terrible thing for a woman to have a large waist. It seems to be the common opinion that a woman must have a very small head, waist, and foot,--they must be small at each end and in the middle. Now I can not understand why a woman should have this concession to beauty, for there is not the least foundation for it,--not the slightest. When we come to study the models of great artists of ancient times, and of modern times, we find that whenever we have an undraped female figure, it always has a large waist. I have taken the trouble to measure the waists of Greek figures, and I find the average measurement of the Venus de Milo and other Greek models, in proportion to the height to be 47.6 per cent, or a little less than half the height,--you can almost say that the waist measure should be half the height. That is the normal proportion, nearly, as shown by the Venus de Milo. I have been taking the waist-measurements of the Apollo Belvidere and several other model masculine figures, and I find the average waist-measure to be 45 and a fraction per cent of the height. So that the waist of the average woman is larger than that of the average man. I have also found that the universal testimony of the great anatomists who have made a study of this matter is, that the viscera of women is larger than that of men, and that women have more liver and less heart than men.

I have made a study of Italians, Americans, American Indians,--the Yumas, the tribes of Indian Territory, and in the Dakotas, and Chinese women; and I have had medical missionaries in foreign lands,--in India and in different parts of the world,-- and in other Christian countries collect measurements for me, and I have made a careful study of all these figures. I also went down on the Midway

Plaisance, and by using "backsheesh" I was able to get the dimensions of quite a number of the women of different countries,-- there were some Samoan women there, and some Egyptian women, and some Nubian, and some women from other nations, and upon measuring them, I invariably found that the waists of those women who had grown up in the natural way were much larger than that of the average American woman. Dr. Anna Weld (?) of Wellesley College has shown that average to be 24 inches, and the proportion of this waist measurement to the height is 38 per cent or 39 per cent--about 39 per cent of the height. But I found among the Yum Indian women, the waist 50 per cent of the height, and thus the Yuma Indian has a waist just about half the height.

The Natural Human Figure.

Here is the Venus de Milo. I want, next, to give you as correct an idea as possible of what the natural human figure is, and that is represented as well in this figure of the Venus de Milo as anything that I could place before you. You see this figure is somewhat deformed, by age or accident; there is a portion of the arm gone--but notwithstanding this mutilation, this statue, having been buried for many, many years, has at last been exhumed, and is still considered as the best model of what the human female figure should be, that the world is able to present; there is no figure that is nearer the true ideal body than this. The original of this figure is the work of an ancient Grecian artist; it was probably chiseled 2000 years ago, and at that time it was considered among the Grecian artists as a perfect woman's figure.

Look upon the picture of Queen Louise; it is the picture of a woman with a healthy dress; you see these flowing lines have

grace and beauty in them. ~~Now compare this~~ Here is a picture which is intended to teach an important lesson. I hope you will not ridicule it, but that you will look at it in a solemn state of mind, because it contains a lesson which it is important for you to learn. This is one of the healthy figures which we have shown you, with a healthful dress draped upon it (unfortunately it leans over a little, but that does not affect the principle.) You see this dress hangs naturally upon this figure; the outlines of the figure itself support the dress, so that it falls in graceful and beautiful lines; here you see Hogarth's "line of beauty." The flowing lines are perfectly natural. When the simplest kind of dress is placed upon a normal figure, the figure itself gives the proper form to the dress and cause it to assume these graceful lines.

Here are some figures with the proportions that I find among normal people. This woman has never worn anything tight about her waist, and had developed a good figure when about twenty years of age. Here is a convex line from the chin clear down. There is no furrow there,--and there is no furrow here (pointing at figure), and there are no sharp angles here. You see that the modern type, when it approximates a state of health, agrees with the ancient type.

Here are the outlines of another young woman who had a good opportunity for physical development,--a young Welsh woman. You see she has a good waist, and a good strong figure. Her waist is large in proportion to her shoulders, as in the case of the Venus de Milo.

This is an Abyssinian woman. Here is the Venus de Medici, and here is an Italian woman. Here is the outline of a young woman who poses as a model in the art schools of Paris. While in that city I found that the artists would not allow their models to wear

tight clothing. The young woman who poses for a figure is compelled to wear loose clothing so she can have a good opportunity for physical development, and this young woman never wore anything tight in her life. She posed as a model ever since she was a very young child. She was not allowed to wear a corset, because her employer would have discharged her if she had. It seems that the artist was tying up his poor wife with the smallest kind of French waists, but he made his beautiful paintings from a normal figure.

The Deformed Figure.

At one time I was in a certain dancing school,--I wanted to find out something about the waists of little girls, and I found a whole lot of little girls there, all the way from ten to twelve years old, and I measured their waists and found the average of their waists to be 23 1/2 inches. I then looked at some of my statistics and found that the measurements of the Wellesley College girls was 24 inches,-- and they were about twenty years old. This is one of the girls whom I measured and she was only about 3 1/2 feet high, and her waist measurement was 23 1/2 inches. Will you tell me how it is that a woman continues to grow in every other direction except in this particular spot. This girl is two feet taller, almost, and her waist is only half an inch larger than that of the other girl. Every part of the body was doubled in size except this particular spot, and it increased only about half an inch in ten years. There is a reason for that. When this girl was twelve or fourteen years old, the dress maker said to her mother, "We must be careful about forming this girl's figure." There is nothing said about boy's waists, but the girls are supposed to be born with a bad shape, and it is necessary to call in a modiste or dressmaker to give the girl a shape,--and

what kind of a shape ~~shall she have~~ must she have? The fashion plates are consulted to see what kind of a shape she shall have and that girl is put into that shape, and she is supposed to grow into it as a cucumber grows in a bottle and takes the shape of the bottle. I tried that experiment when a boy, putting a cucumber into a square bottle, and by this means I had a square cucumber. I took it to school and the boys asked me what variety of cucumber that was, and I told them that cucumber grew in a bottle. So we find in the United States a new variety of woman--a woman that God never made, men made them--men make fashions and fashions make women. Women are called the weaker vessels, but whenever we have medical conventions doctors always have this particular toast at their banquets, "Woman, God's best gift to man, and the chief support of the doctors."

Now I will show you the difference between a normal waist and a fashionable waist. The fashionable waist is circular--perfectly round, while the normal waist is elliptical. See this outline; it is a hideous one. This is the consequence of compression of the waist. How is it possible that dress should have such an effect upon the figure? It is done, first, by the breaking down of the body by the constriction of the waist. Now let us notice how the constriction of the waist breaks down the figure: In the first place, simple constriction of the waist, ~~breaks down~~ you see, would change this line and that would cause a dipping in at the waist line by simple compression. Notice the compression of the ribs here at the sides and in front where they are most compressible, but this has the effect of throwing the spine backward. The compression of the ribs would have the effect to force the spine back because the greatest strain would be brought upon the ends of the ribs not attached to the breast bone; the upper ribs are pressed against the breastbone so they are not so easily pressed back but when this compression of the ribs is

brought to bear upon them, the spine is thereby pressed back. So you find, as a result of waist compression here, a hump of the spine. You will find also as a result of compression of the waist, a posterior curvature of the spine.

See this great hollow in this figure. This is the sort of figure that our fashionable women have. This woman was afraid she was going to be too fat, so she kept dressing herself tighter and tighter and tighter, because she saw that she was getting fatter and fatter and fatter. As she kept dressing tighter and tighter, this protrusion kept growing bigger and bigger and bigger, and she was ashamed of herself. But she kept binding her clothes on tighter and tighter, and this caused this bulging out to increase more and more, because, by reason of the constriction of the waist, there was less room for the liver, kidney, and stomach, and so they moved down, and other things moved out of their places further down and further to the front. Then there was no chance for the fat to be deposited under this tight band; it could not grow there any more than it could grow on the finger under the ring. You know there is a furrow on the finger under the ring. For the same reason there is a waist-furrow,--these strong bands have made it impossible for the blood to circulate through these parts very well, and also have made it impossible for the muscles to contract, and hence the muscles do not use up the material which was brought to that part of the body,--the material was not consumed in muscle work, and, as Nature had nothing else to do with it, she deposited it as fat.

Here is a representation of the "latest style." As you look at this figure, I would like to have you picture to yourselves, as well as you can, such a figure as this when the clothing is removed. Just remove this artistic dress, if you can, in your imagina-

tion, and see what hideous deformity you will find. Picture the little round waist no larger in proportion to the rest of the body than is this,--a waist like that of a wasp. The aim of women of fashion (most of them, not all) is to make their bodies conform to their ideal of a beautiful dress; whatever the consequences to her body may be, the fashionable woman will have a small waist. I will show you some of these consequences a little further on. In this figure, the organs are in an incorrect position. Here are the ribs; here is the sternum, and looking through the ribs, you see the lungs. Here is the right kidney, and here is the left kidney. The right kidney is a little lower than the left kidney, being overlapped by the liver. Now please observe the various relations of these organs. The lower border of the stomach falls about on this line, the upper border rising above the ribs, passing above this triangular space. The stomach follows this border two thirds of the distance down, to a point where a line drawn across would cut the lower border of the ribs. The small intestines are located below the colon (this is the normal position).

Here are a few other deformities. This young woman has worn a "health corset" all her life. She said she had never worn an ordinary corset,--it was a health corset. But it makes no difference what you call it, whether you call it a health corset or an anti-health corset. After giving her a glass of water, here is where the liver was instead of here. Here ~~was~~ the right kidney and here is where it ought to have been. It was not a surprise to me to hear that this young lady had for a long time been afflicted with nervous disorders of various kinds; she was so nervous that she could hardly live; she had been the same nervous invalid for ten or fifteen years; the restriction of this health corset had caused all the mischief. She said that when she put on her corset in the morning,

it was a nice fit (she drew in her breath, and then her waist was not constricted). She showed me that she had made no effort at constriction, claiming that it was "too loose." But did you ever hear of a woman admitting that "it was too small?" When she had exhaled her breath, she could double her coat over some distance, whereas, before, there was just room to button it up. This young lady ties her corset in this way (tying). That is not tight now, but the moment I draw in my breath, it straightens it right out. So this young woman applied her corset after she had exhaled the air from her lungs and it was just the proper fit; but the next time she breathed, the corset became tight. When she ran upstairs, or when she hurried anywhere, or had to take a long breath, the corset was too tight, and that long breath, not finding room for expansion at the sides, something must yield there in order to get the air in; as the yielding could not take place above, by reason of the ribs, it must take place below, and so the organs are forced down. And when the breakfast came in, it came from above, and there was not room for it, and something must give way, and the breakfast being uppermost, the internal organs must go down, and by this means they were gradually pushed down.

Now I want you to see some other cases which are interesting. Here is a figure of a young woman who had worn a corset for a year, and you see what deformities were already produced here. You see the constrictive action was beginning. It was not yet very serious. This is the effect of the weight of the skirt-bands,-- for it was chiefly this that had produced this deformity. And there was an ugly protrusion beginning here; and see how flat the chest is here.

This young woman began corset wearing at thirteen years of age, reformed at 17, and wore proper clothing until she was twenty.

This is another interesting case. A young woman aged seventeen, had never worn anything tight, as she declared. Her mother also declared that she had never worn anything tight; she had been in the habit ever since she was twelve years old, of wearing a corset, but her mother assured me that it was not tight, and showed me that it was not, by putting her hand under it. Her mother had put the corset on her at twelve, so she would have a "good figure". I made tracings and measurements, showing a change of several inches here (at the waist) with the corset off. I made a tracing with the corset on, and then I made a tracing with the corset ~~on~~ off. She measured two inches less, when measured outside of her clothing, with her corset on, than when it was off. You see these two inches of constriction carried all the organs of digestion down that much. The diminution of the chest that much had resulted in the enlargement of the trunk below to just the same extent, and this produced a displacement of the stomach, spleen, and other internal organs. A side profile of this figure shows this state of things: a broken down front line, a protruding abdomen, a dislocated viscera, a flattened chest, a projecting chin, round shoulders, etc., all of which are the result of corset wearing. In a few years more, this young woman would have been utterly ruined.

Now observe the consequences of a moderate constriction of the waist. A woman whose waist was no smaller than this would certainly affirm that she had never worn anything tight in her life; that while she had worn a corset, she had not worn it tight; that though her waist was small, she did not have to wear anything to make it small. I am sure I have been told that hundreds of times. ...Here is the lower border of the stomach two thirds of the distance from the upper to the lower border of the ribs about the sternum. I will place my pointer across the lower border of the ribs and measure

across, and we find that almost the whole of the stomach is below that point, instead of being two inches above it, as a normal stomach should be. Here you see is a pocket off here. Please observe the kidneys also: the kidneys lie above the lower border of the ribs, almost in the chest-cavity,--in the upper part of the abdominal cavity. Here is where they should be, in a normal condition; but here the kidneys are crowded far down; they are crowded down below the liver, because when the liver goes down, the kidneys must go down also, because it has got to do so. The colon is dragged down by the stomach, until it is kinked and folded upon itself. Here the intestines are also crowded down. This is a front view. Here you see a side view of the figure. Here you see a great protrusion of the abdomen,--I will show you a figure of this kind. A protrusion of the abdomen always means a prolapsed stomach,--spleen, kidneys, bowels,--everything tumbled down, as you see here, instead of being in their proper position as you see in this figure.

Bustles.

Now look at this figure. This is not a manufactured figure, but a real figure. This poor woman found her figure increasing in size, and she is trying to keep her figure down. She was like a young woman who came up from Chicago; she had been at our training school. She had not been here over half an hour before she said, "Your nurses do not wear corsets. I do not see how they manage to keep their stomachs down. I would be a perfect fright if I did not wear a corset." Well, her stomach was down, sure enough,--it was away down, and the process of getting her stomach down had spoiled her figure. There is no such thing as these deformities belonging to a normal figure of either a man or a woman; it is a monstrosi-

ty and a deformity, and an abnormality in figure. Now this woman knows that these expansions are deformities and monstrosities, and so she keeps pinching her figure up at the waist, and that makes it bigger and bigger ~~here~~ in the abdomen, and she must hide this deformity in some way, and the fasion-makers and the dress-makers go to work to help her to hide it. Now, in order to cover this protrusion here, there must be something above here to match it, otherwise there would be an objectionable sort of declivity in this part of the body--an obliquity of line that would not be agreeable, so there must be an appendage up here, and this appendage up here balances the protrusion below, and hides that prominence. Now see what a figure this would be,--with the dress hanging right down behind, and hanging as you see it does in front. With such a figure as that, this woman would excite derision and be very unhappy, so the poor woman must have something in the rear to balance the protrusions in front, and cause the dress to hang, in the rear, something near as it would on a normal figure,--in other words, she must have a "bustle", and this is the origin of bustles and busts. This is the attempt of the fashion-makers to restore the deformed body to something like normal symmetry. There is a natural hollow in the back, and the fashion-makers know it. They first go to work with great persistency to destroy the natural concavity in the back which you see in the normal figure of a horse as well as of a woman. If a horse had not his concave line in the back, if his back was as straight as a fish-pole, you would not buy him. You want a horse with a fine curve in his back, rising from the hips. Most mammals have that kind of figure, and a horse having a back as straight as a fence rail, is not worth much. Fashion abhors this straight line, and in order to match this great hillock in front, they have to put on this great bustle in the rear.

This, you see, is a recognition on the part of the fashion-makers that they have done the body a damage and an injury with the corset, and now they are doing their best to make it up by these appendages, but it is not so beautiful as the original figure.

Results of Tight Dress.

Now this consequence of the deforming influence of dress means not simply deformity on the outside, but deformity on the inside as well. External deformity means displacement of almost every internal organ,--the lungs are compressed, so that they are not free to operate as usual; the stomach, liver, and other organs are crowded downward, and the liver comes out over the kidney. There is a little hollow in which the right kidney fits into the liver, so when the liver is crowded down, as it must be when the waist is compressed, it crowds this kidney right down there too. So it is not a very uncommon thing to find the right kidney displaced. I examined one young woman, fifteen or twenty years of age, who was very much surprised to find that she had crowded the kidney out of place by crowding her liver down, and this was caused by the constriction of her waist, for the liver being crowded down, had crowded the right kidney down with it. I have found by keeping a careful record of cases, that about one third of the women who come to this institution have a displaced or movable kidney on the right side,--the left side is all right because the pressure slips the other organs down in front of it, and it remains where it belongs; but this right kidney, under the downward pressure, or the avalanche of pressure downward by the other organs, yields and goes down.

Here is the stomach,--notice all these branches of nerves all running down from this point,--running out all over the stomach.

The upper ends of the nerves are attached. The stomach and all the other organs of the abdomen are floating organs; this is true also of the liver,--the liver is attached by the membranes, and then left to float--and that is true of the spleen and bowels--and the bowels float about at a great rate, too, sometimes. We have great activity of the bowels in this way when they become diseased, so much so that we can see it and feel it too.

These organs, then, are moving floating organs. "But why don't they all move about?" "Why don't the liver, spleen, kidneys, and stomach, move about?" They do; they move with every breath; every time we breathe, all the organs move up and down, and this movement is necessary for the health; this movement is a part of the gymnastics of the abdomen; it is by this constant movement that the blood is kept in circulation; this movement is for the purpose of preventing the stagnation of the blood in the organs; it is a very important thing, this respiration by the way of maintaining the health of the internal organs, but when the movement becomes extreme, then serious consequences are the result. You notice these large nerves running out from the stomach. Here are the bowels also,--here you see the blood is distributed to the whole of the intestines,--notice these large blood vessels; the same nerves go to the liver and the spleen. These white threads are nerves which enter and become a part of the abdomen, sent out by these nerve centers. Now this is an important thing which I wish you to notice,--and that is the fact that when an organ falls down below the normal limit to which it may naturally move in the process of respiration, it puts these nerves stretch. Now the on the ~~stretch~~ nerves that go to the viscera,--stomach, bowels, and liver,--when these organs drop down, these nerves are put on a perpetual strain,--pulling all the while. "Why", you say, "I do not

feel it." Yes you do feel it, sometimes; sometimes you feel it so much you can hardly get around without someone to hold you up. I have met many persons who say, "Doctor, I can not stand on my feet; I feel as if I wanted to take my hands and hold myself together; I feel as though I was falling apart." This feeling is due to the pulling and stretching of these nerves,--that is what produces this sensation. But there is something more in this pulling and this dragging,--there are certain nervous centers which by this means become congested and excited. These branches that run off into the brain and into the spinal cord, that run into the skull, these are connected with all the nerves of the body, and reflex movements are set up from this cause. Some time ago, I found upon examining a patient, who was suffering from a pain in the right leg, that the bowels were prolapsed, and that this pain in the right leg was entirely due to the pulling upon the nerves by means of these prolapsed bowels, and this irritation was propagated to the right leg. In putting the bandage around the abdomen, I took off the strain, and the pain was relieved. I have seen pain relieved by the application of an abdominal bandage, in many cases. Now this does not cure anything, it simply gives relief, and the relief comes from the release of the pressure upon the abdominal organs from above, and the development of these organs so that they can remain in position.

There is another thing that happens by reason of a woman's wearing tight clothing, and that is, the damming up of the passages which carry away the impurities of the body. Here in the body is a whole system of sewers for this purpose. Everything that comes into the stomach is dissolved and carried into the blood, and goes into the portal vein and goes into the liver, for there are some things that come into the stomach that do not belong there, and the liver

is supplied with sewerage to carry these things off,--it might be called a sort of "slop hopper" through which the system carries off the used-up waste material. The housewife throws the dish water etc into the slop hopper, so the liver throws off into these sewers the impurities of the system. Now the compression of the waist has the effect to compress some of these little sewers, and the consequence is that the bile is dammed up. Now the liver is full of these little sewers, ~~and the consequence is that the bile is dammed up.~~ which must be kept open. If, for instance, you tie up your finger, the vessels are dammed up and the fingers get blue; so it is with the liver when the bile ducts are dammed up. **If** it don't get blue, it gets green, for the reason that the bile is absorbed because it can not get away, and finally the accumulation of the bile becomes so great, that it gets into the blood again; and it is the absorbed bile that tints the skin and gives it its tawny hue. It also tints the white of the eye, the sclerotic. It is the constriction of the liver that makes it necessary for a woman to use all kinds of cosmetics. Men do not use cosmetics,--they are utilized by women; their skins get so bad that they have to cover them up, to make them look better than they otherwise would.

In the corset wearer, the abdominal muscles are relaxed, and so the organs are all loose, and jostling about in the abdominal cavity; they have too much latitude; the ligaments being weak, are stretched to two or three times their natural length, and so the organs are travelling around like a horse ~~with a short strap so that it will not get all snarled up in the halter~~ who is tied with too long ~~a strap~~ a halter. The experienced horseman ties his horse with a short strap, so that the horse will not get all snarled up in the halter, because, in wandering about, he might get all tangled up and

choke himself, or hang himself,--I have known of such cases. So it is here: When the stomach gets its ligaments stretched, and the colon, liver, and kidneys get to wandering around in the abdominal cavity, they are in danger of getting into trouble, and they do get into trouble. When the kidneys are dragged down with the other organs, the ureters which carry the secretions of the kidneys and bladder get compressed and kinked up, so that the secretions of the kidneys can not flow downward first, but flow upward first, which results in stretching and injuring the kidneys. Some years ago, I found a bunch in a lady's right side, which was very tender. Upon examination, I found an enormous discharge of pus at that point, which occurred every day, and was attended with great pain, with chills, and blood poisoning was constantly present. I saw that something must be done at once, so I made a careful investigation, and I found this bunch to be an enlarged kidney. The lady had had a floating kidney for years, but had neglected it, and it became an enlarged and suppurating kidney. The patient was very miserable, and was a complete invalid, and confined to her bed with fever and chills, and frequently she had great pain and was emaciated and looked as though she could not live but a short time. I had to perform an operation, and remove the floating kidney. I found that it was filled up with a hard, rocky mass; the kidney was so large that I had to amputate the last rib in order to get it out. When I discovered the kidney, I found a stone half as large as my fist inside of it. It was one solid stone, weighing four and a half ounces; it was the largest stone that I ever knew of being removed from a kidney when the patient was alive.

Now that is one of the consequences of a floating kidney.

There are other symptoms of the same thing,--palpitation of the heart, sick headaches, constant pain in the back of the neck, and depression and constant local pain. These are some of the symptoms commonly induced by floating kidney. Sometimes a floating kidney gives no pain. Of course it does not do anyone particular harm just then, but bye-and-bye it will be painful and troublesome. So it is a serious thing to have a floating kidney. It comes out from under the ribs and we can feel it; it is called a palpable kidney. When it comes out and goes back when we breathe out, it is a movable kidney. When it comes down and remains down, just like the prolapsed bowels and other organs, then it is a floating kidney. These are the three degrees of a displaced kidney which are recognized by the medical profession.

What harm is there in a displaced colon? Bye-and-bye it collapses like a rubber tube and the opening is completely cut off, and we have a pseudo-stricture; the upper part of the bladder comes in contact with the lower part of the colon, and then we have the fecal matters remaining at this point, and the result is catarrh or an inactive state of the bowels, chronic constipation, catarrh of the colon, appendicitis, and sometimes chronic intestinal catarrh, which is an exceedingly troublesome thing. So it is a very serious matter to have a displaced colon.

Here is a compressed liver and colon. Now the compression of the liver by falling too near the gall-bladder prevents the proper discharge of gall, and the result is hardening, and gallstones. I have seen a gall-bladder that contained as many as forty gallstones, --~~I have~~ some of them being as big as my thumb. It is a fact known to all abdominal surgeons that the gall-bladder is affected in this way, by gallstones, four times in woman where it does not occur once

in man; I have never had occasion to operate for such cases in men, --not one case.

I once attended a post-mortem examination of a minister's wife, who ought to have been a model for the rest of the community, but she had worn her clothes so tight that the liver was forced clear over to the other side, and then lapped over and had started to come back again, and it was all ridged and furrowed in consequence of the pressure of the ribs upon it, showing the marks of the ribs.

This liver, when it was in the body of the foolish woman who owned it, was doubled over on itself, and this part of the liver was pressed into the ribs. You see how the right lobe of the liver has been squeezed all out of shape, and a portion of it has been pressed upwards against the ribs. You see how these ribs have been crowded down onto the liver by constriction of the waist. Here the ribs have been pressed into the other side, and this portion of the liver had been prolonged into the shape of an appendage. In some cases, this compression of the waist has been so great that a portion of the liver has been actually cut off.

A German surgeon, a few years ago, found it necessary to perform an operation upon one of his lady patients for what he supposed to be a tumor. The poor woman had something in her abdomen rolling about, and she was in such great pain that she was likely to die. The surgeon cut open her abdomen, and instead of a tumor he found that the liver had been cut in two. She had compressed her waist until she had snipped her liver in two, and one part was floating about wherever it listed. The surgeon took this portion of the liver out of the abdomen, and the poor woman lived, but she had to get along after that with only half a liver. A great many women have the use of only half their livers. I have heard of two such women as

I have just described. When I was a student in Bellevue College, I used to meet some of my friends there. We made arrangements with the professor by which we met several hard cases. There was a room furnished us, and some of these hard cases were brought in there for us to pass our diagnosis upon, and we found that the most difficult portion of our instruction. From that time, instead of going home to dinner, I would go in there and make observations of hard cases. One day, I found a case that puzzled me very much. In the case of a lady whom I was examining, I found a large mass rolling about in the abdomen, and I could not make out what it was. By and by a bright idea dawned upon me, and I said to the Professor that this seemed to be a "fissured liver, induced by tight lacing." The Professor said he thought that was the right term to apply to it. The next time I examined the lady, I said to her, rather bashfully, as so few ladies are willing to admit that they wear tight clothing, "Perhaps you wear your clothing pretty tight." "INDEED I DO!" she answered. "I tie my corset-strings to the bed-post at night, and tighten them in the morning, and take them up at night again, and in the morning I have had a friend to help me get them tighter," etc. So I got where I could make my diagnosis right away,--that this was a case of fissured liver from tight lacing. Said the lady "After a while I felt a great bunch growing upon the lower portion of my body, and the doctor told me that it was a portion of my liver, which had been nearly cut in two." Upon conversing with the doctor about the case afterwards, I found that this was really true.

Here is the interesting case of a young lady, some thirty years of age, in whom I found a tumor, as I thought. The next day, she came in again, and I found the tumor had disappeared from that

place, and was over here. The next day, the tumor had rolled over here. So I became very much disturbed about it, and investigated the subject further, and I said to her, "This is a very strange tumor; it rolls all over the abdominal cavity." Upon further questioning her, I found that when she was very young, she had had what is called "an ague-cake", or enlarged spleen, which had made her waist a little larger than she thought it ought to be. The lump was about as large as her fist, and it was large enough to make her waist a little too big, as she thought, for she wanted a small waist,--like that of some of her mates. So she asked some of them what she should do with this lump, and they suggested that if she could get it out from under her ribs, she could tighten her clothes more, because now it was in the way. So she went to work to get it out from under her ribs. Every night she drew her corset up very tight, and next morning she tightened it more. She kept on in this way, until one morning she said, as she was tightening her corset, she felt something pop out from under her ribs, and after she had forced it out, it had the freedom of the whole abdominal cavity, and rolled about until it got clear to the bottom. This lump was her spleen, which was thus crowded down,--and not only her spleen was down, but all the other internal organs were down also. Here is where the liver was; here is where it ought to be, and she had all the horrors of dyspepsia in consequence of the excited state of the nervous system induced by tight lacing.

Results of Tight Belts, etc., in Men.

Men have escaped some of the evils of fashionable dress, although I must admit that our masculine dress is not so healthful as it ought to be. The lady dress reformers have gotten ahead of us,

so that women can dress more healthfully than men if they desire to do so; for men must wear suspenders, or be subject to all sorts of inconvenience. The blacksmith throws off his suspenders and ties them around his waist, in order to support his pantaloons while showing horses. I saw such a man some time ago, and asked him if he had ever worn a corset or a belt, and he said he had not. Then I asked him how his kidneys could have gotten out of place. Then he told me how he had thrown down his suspenders and fastened them around his waist in order to sustain his pantaloons. It was by this means that he got a floating kidney. I at one time saw an officer in the same condition, and I asked him if he wore a belt. He said he did; that he had a heavy belt which had been presented to him, and that when drilling soldiers he wore his heavy belt and sword, and that had done him harm and gave him pain in the region of the waist. There are many men who meet with accidents of this kind,--and such accidents are incident to their profession.

Here is another case, which is also a very interesting one. It is a man with a prolapsed stomach. When I saw that, I said to myself, "How can this be? No man has ever worn a corset",--but I must take that back. Military officers sometimes wear corsets. They have not ambition enough to train themselves into good figures, so they put on corsets so as to make the soldiers under them believe they have good figures, when they have not. Of course this poor man had never worn a corset in his life, but I found, upon talking with him, that he had been in the habit of wearing his suspenders tied tightly around his waist, so that his pantaloons were in this manner suspended from his waist, for he was a farmer, and this allowed free motion to his shoulders and arms. This is the same thing as wearing skirts suspended at the waist,--and that is worse than wearing cor-

sets. Tight waist bands with heavy skirts dragging at the waist produces far greater damage than wearing corsets. Well, I found this man's stomach, instead of being in its proper place, way down here.

Here is another very interesting case. This man was about forty years of age, living near Boston, and for many years he had been an invalid and suffered all sorts of trouble. He had been under the "rest cure" treatment by Dr. Mitchell for a time; and he was here for a time, and got better; went away again and had a relapse; came back again and I found he had a prolapsed stomach. Said I, "You must stand up straight, because you are now in such a position that your whole internal organs must be out of place." This is the way he stood (assuming position). By habitually assuming such a position, the internal organs were all tumbled down out of place. This was his position in a chair (sitting down). Very many people sit in their chairs in just that way. By this position, the central portion of the body is broken down. This is his position when sitting, and when he was sitting in this way, he was acquiring a crook in his back, while the internal organs were crowded out of place. I said to this poor man, "We can do nothing for you until you stand up." I then made him straighten up, putting back his hips and shoulders, elevating his chest and drawing in his chin,--and then he looked like a different man. After that he sat up straight and stood straight all the time; he made a business of it, and I never caught him once in his old collapsed position--those relaxed positions assumed by the "City Fathers" with the abdomen projecting forward and a great hump in his back like the hump of a camel. This gentleman was very enthusiastic on this subject, and in six weeks he was so much improved that he pronounced himself a new man and went home.

I saw him a year later, and he was in excellent health. He had gained ten or fifteen pounds. He had diminished his diameter in the abdominal region. This was cured by simply making him stand up, because the bad standing, the bad sitting, and the bad poise were the principle causes of this deformity. This cause is in operation in many women who wear their clothing tight. Their waists are weak, and when they sit down, they sit in this relaxed position--lying in the chair, I sometimes call it. This produces the same trouble.

Bad

Bad Figures from Sitting.

Now we will consider, if you please, some of the causes which give people bad figures. Imagine a man sitting up straight in his chair, and that the chair is of the right height, and allows his feet to rest solidly upon the floor. (Sitting down, and illustrating by different positions.) This chair is about the right height. One can not sit properly in a chair, unless he sits down properly, and in sitting down properly in a chair you must be sure to stand close to the chair before you sit down. You do not want to sit down in a chair before you get to it; if you do, you are likely to sit down on the front side of the chair,--if the chair does not tip over, when he sits down, he is too far forward; when he rests the back part of the body against the chair, the front part of the body will collapse; the support is so far away that when you get your back against the support, you will have to recline. So the first thing in sitting properly in a chair, is to sit far back in the chair, so that the hips will touch the back of the chair; be sure to do that. Now let the upper part of the body strike the back of the chair, so the hips will touch the back of the chair; the center of the back does not touch the chair at all; it does not need to do that, because there are some strong muscles which brace up this part of the

body. The back is like a bow, and the muscles are like the string of a bow. The string of the bow is in the back, and so the central portion of the body does not want to strike the back of the chair. In order to get it there, we have to loosen the string, so to speak, --we have to relax the muscles and let the back fall down. When the central portion of the back touches the chair, the muscles relax, the chin drops in, and we have a relaxed position. The hips should be placed far back, the upper part of the back ~~touching~~ the chair, and the central part of the back not touching the chair at all. In this position a person can breathe just as easily as when he stands erect and in a correct position.

A chair has recently been produced in which the evils of the ordinary chair are overcome. The seat in ordinary use may be held responsible for a large part of these mischiefs. No one can sit in the ordinary chair without soon getting into an abnormal and disease-producing position. When one sits, it is either because he is tired and desires to rest, or because convenience or necessity demands the sitting position. Sitting in an ordinary chair soon becomes tiresome, so that, however erect and natural one's position may be when he first sits down, he soon relaxes into an abnormal and disease-inviting attitude.

It is impossible that the muscles should be relaxed when one is sitting in the upright position, without injury. Complete relaxation requires a reclining position, as otherwise the natural support of the organs being removed, they will necessarily fall out of place, as the ligaments which attach them to the back are not sufficiently strong to maintain their weight, except for very short periods. Each act of breathing, as the diaphragm descends, forces the unsupported organs further down, so that they descend more and more

the longer the wrong position is maintained. In the cases of students, bookkeepers, editors, and those who do desk work, these organs are most certain to be found out of place.

It has been said, "We should never lie down when we are sitting up." In the ordinary chair, complete relaxation results in distortion of the body and prolapse of the internal parts, and interferes with respiration. But the new chair renders it possible to relax without this distortion of the trunk and the evils which result, by affording the body such support as will maintain the natural attitude without the expenditure of too much muscular ~~exercise~~ energy. This is accomplished by the introduction of three important principles:

1. By giving the back of the chair a special curve carefully compared to the natural contour of the human spine by means of hundreds of drawings made from living subjects.

2. By giving the back of the chair a special angle whereby the trunk is inclined backward to such a degree as to carry the head backward sufficiently to make it serve, in connection with the muscles of the neck, as a lever, acting upon the upper part of the chest and lifting it upward and forward. This lifting of the chest renders tense the muscles of the abdomen, whereby the abdominal viscera are lifted upward and held in their normal places. The efficiency with which this is accomplished is clearly shown by Figures 1 and 2, which represent the same person sitting in the Sanitas chair and in an ordinary chair. The center of the back is in contact with the chair in both cases. This is necessary in order that the chair should afford such support to the trunk as is required to give rest to the muscles. As soon as the muscles of the trunk relax, as they do necessarily when weary, the trunk being acted upon by gravity naturally falls into a position which may require mechanical support. The illustration shows the position of a person seeking to maintain the

proper form of the trunk while at the same time receiving support from the back of an ordinary chair. The impossibility of maintaining such a position is apparent. The muscles soon become weary, the trunk relaxes, and the body falls into the position shown in the cut.

3. Still another principle which enters into the construction of Sanitas chairs is the angle of the seat. In most chairs, the seat is so nearly horizontal that as soon as a person relaxes his muscles in the sitting position, there is a tendency to slide forward. The farther the hips were removed from the back of the chair, the greater is the distortion of the trunk when the spine is allowed to come in contact with the back of the chair. In the new chair the ~~back~~^{seat} slopes back sufficiently to prevent slipping forward. Care is also taken so see that the height is such as to permit the feet to rest squarely upon the floor. It is far better that the seat should be a little too low than that it should be a little too high. A too high seat compresses the blood-vessels ^{and} ~~or~~ nerves which pass along the under side of the leg, interfering with the circulation and causing numbness and sometimes painful sensations in the lower extremities.

This figure shows what happens when a woman who wears a corset sits down,--this line represents the outlines of the woman with a corset, when she sits down. The corset crowds in the body at the waist more and more, and as it forces in the body in this vicinity, more and more, the consequence is, that all the abdominal viscerae are crowded down more and more. And this is the only way in which this prolapse of the viscerae is produced. Then, by sitting down, and by a strained position and the crowding in of this tight corset with its metallic stays, there is produced the crowding down of the internal organs, which are not so much depressed in a standing position.

Here is a form of bad sitting. This is the kind of bad sitting which causes people to be round-shouldered, and to have a weak and hollow chest. When a person sits in a rocking-chair, he sits in this position (sitting down in rocking-chair). This rocking-chair is more like the old-fashioned rocking-chairs, and not so painful as those we have nowadays. Here is a better specimen of the fashionable rocking-chair (sitting down in it). Now, when one sits down in a rocking-chair, of course he collapses. One does not sit down in a rocking-chair; he simply throws himself into it, or drops into it. He does not sit in the rocking-chair, he lies in it, because his back rests against the chair all the way, so I don't think we ought to say one sits in a rocking-chair, but that he lies down in it. When one takes this position, the whole body is collapsed. Now suppose one should try to sit up straight in a rocking-chair, with his chest well up, and then, sitting in that position, suppose he should try to rock himself (rocking) sitting up straight (laughter). You see there is no comfort in using a rocking-chair in that fashion,--and you can not use it in any other way, because, when you are sitting up straight in this way in a rocking-chair, the head is strained, and the muscles are strained, because you have to sit up free from the chair, so there is nothing to recommend in the rocking-chair. It is really impossible to sit in a rocking-chair without violating the laws of health. Rocking-chairs ought all to be gathered up into a great pile and fire set to them. I think if we could burn up all the rocking-chairs in the world, it would save a great many people from untimely deaths. There is no question in my mind but that rocking-chair sitting is one of the most common causes of collapsed chests and lungs.

This young woman is trying hard to sit straight, but she is having a hard time. See the muscles of the neck,--how they are strained; she is trying very hard to keep straight.

See how this young woman is collapsed; she is not sitting upon her thighs, but upon her back, and the weight of her body is resting upon the back. This is an ordinary fault. You see young ladies practicing while sitting upon piano stools in this position. That is the way they become so unhealthy. It is not the music that deforms them--although it is bad enough sometimes--and it is not the muscles of the arms, but it is the stool-sitting--the bad and incorrect position of the chest.

This is another bad position,--sitting with the feet crossed. This causes a relax of the whole body; a relaxed position of the legs causes all the rest of the body to collapse. There is a curious relation existing between the different muscles. Ask a man to pull in his chin, it pulls the whole man right up into line. There is an associated movement in the muscles. You see a man set his teeth firmly together, and the moment he shuts his teeth, he clenches his fist,--and if he does not look out, the fist will go out in a violent way. You see the association of the movement of the muscles is the ~~best~~ thing we must take into account. If a person keeps his chin in where it belongs, he can keep the rest of the body straight; the very opposite is true if this is not done. When one relaxes these muscles, he relaxes other muscles. When one relaxes the muscles of his head, the other muscles follow suit, and a relaxed air pervades the whole man. A great many will get their spines deformed by sitting in chairs which are too big for them. In every family there should be an assortment of chairs, adapted to all ages. there should be a chair for the child as well as for the adult, and

the child's chair should be so constructed as to allow the child's feet to rest solidly upon the floor, and the whole back properly supported. This poor boy is getting a crooked spine.

Standing and Walking.

Here are some points on bad standing, and correct standing. At these points the hips and the heels touch the wall, and the back touches the wall here, the heels standing out here, and thus we have a flat chest produced. Here we have the heels touching the wall, and the hips thrown forward. Here is the correct position (assuming position), just as I am standing now. And here is the incorrect position (assuming position), with the chin protruding and the back on the same line. And here is the position we see very often, when we tell people to stand up straight, and this is the way they will do it (position.) They think they are standing superlatively straight when they take this position.

Just a word about walking. It is as important to walk correctly as it is to stand correctly. Here is a man walking properly. Instead of setting his heel down in this way, the whole foot is placed upon the floor at the same time, as nearly as possible, and then the whole body is raised from the rear foot. You must not get the idea that the toes must be put down before the heel. Some Delsarte people think they must put down the toes before the heels, and then they must walk in this way (walking in the Delsarte way). The foot must be put down with the heel touching the floor just a little sooner than the toe.

This man I hired to walk for me at one time. He had this sort of teetering gait (walking thus). His whole body was relaxed, and he was just throwing himself along--swinging along. This is called "heel-stepping". You often see people walk in that way in the

cities,--swinging their arms as they go, walking as if they were in a great hurry. This is jarring to the body, and such a person soon gets tired out, for the whole body is jarred by this movement. If a person walks in this way, his whole body is pendant, as he walks jolting along.

This young lady has the same fault as this man,--heel-stepping. The hips are carried so far forward that you have to turn the toes half-way down in order to bring them from the floor at the same time with the heel. When the chest is carried forward, the toes are naturally brought down.

I am very often asked such questions as these by ladies, "Do you think it injurious for me to go upstairs?" And I answer, "No; it is the best exercise that I know of, if it is properly done." I have heard many mothers say their daughters were injured by going to school, and by going upstairs. If a girl has been spoiled by going upstairs, there was not much of a girl to spoil; the muscles of such girls have not been properly developed. But if such a girl will go up stairs properly, she will not be ~~benefited~~ injured but benefited. Sometimes girls will pick up their skirts and run upstairs, and then they are injured, or course. They will not be injured if they go upstairs in a rational way,--and that is the way I am talking about. First put one foot upon the step, standing erect; then raise the body with the calf of the leg, keeping the body straight all the time, and so march along upstairs. If one walks correctly and erect in going upstairs, the weight of the body is carried entirely upon the muscles of the legs. This is a slender stick which I hold in my hand, and yet I might have, on the top of this slender staff, a weight of perhaps twenty pounds, without breaking the staff, so long as I held it straight. So, if we keep the weight of the body poised over the bones of the body, the weight of the body then rests upon the

bones of the body. But just as soon as you bend over, the weight of the body hangs on the muscles of the back,--as soon as you bend over, the bones are out from under the body. If a person keeps the weight of the body over the bones, the bones carry the weight, the muscles of the limbs prying the body along. If a person bends over, the weight of the body leaves the muscles of the legs, and the muscles of the back have to carry the lower part of the body in addition to the upper part, and in a strained position; so it is twice as hard to walk upstairs bending over in this way, as it is when walking in this way. (Assuming incorrect and correct positions.) While walking in this (the correct) position, the weight of the body is on the bones, but when you bend forward, the weight is on the muscles. So the correct method of going upstairs consists simply in keeping in an upright position and carrying the weight of the body on the calves of the legs all the time, rising from one step to another by an effort of the muscles of the legs. In this way a person can go up a long flight of stairs or travel up hill a long distance without injury, and without feeling fatigue. When you are going upstairs, keep your chest forward, and imagine that your chest is drawing you up, instead of going up in this way,--with your body following your head.

Breathing.

Constriction of the waist not only produces deformities which I have mentioned, but also other deformities which I shall show you. One of the most important functions of the body is that performed by the lungs,--breathing, respiration. The lungs are a great air-pump, which pumps the fresh air in and pump the carbonic gas and other poisons out, and at the same time drives the blood in towards

the heart, pumping the air into the upper part and the blood into the lower part. Some years ago, I was performing an operation for a tumor, and the tumor was attached to the axillary vein, and I had to dissect it off the vein, and I found it difficult to do so, because, at every breath, the veins would collapse and disappear, so I had to make my cuts between the breaths, and I had a good deal of difficulty in doing it, showing to me more clearly than ever, the work that the lungs do,--furnishing blood to the liver and every other organ,--particularly the liver which lies underneath the diaphragm; and at every expansion of the chest there is a strong pull at the liver, pulling the blood out of it. At every restriction of the respiratory process the lungs are crippled and hence the blood is not properly circulated, and all the bodily functions suffer, particularly the digestive functions. Now these illustrations represent normal respiration and abnormal respiration. When I was a student at Bellevue Hospital, Prof. Austin Flint taught (and it is still believed and taught) that there are two kinds of breathing or types of respiration, the masculine and the feminine. But I could not understand this; so long as a woman had to breathe as well as a man, and her heart beats the same, and she has the same kind of lungs, and why shouldn't her lungs act just the same as a man's lungs do? I could get no explanation of this theory; but when I began the practice of medicine, I found that women breathe just like men, and the conviction after a while dawned upon me that all women ought to breathe like men, and I watched the dogs and the cows, and the two sexes of different kinds of animals, and I could not see but what the male and the female classes of animals breathed alike, and so I thought "It must be that a man and a woman ought to breathe alike; that there was no such thing as masculine breathing and feminine breathing,--or rather, man-breathing and woman-breathing. I finally adopted a plan of investigation

by means of an instrument which exactly traced the respiration, or the current of air produced by the lungs. When this instrument is applied to any portion of the lungs, it will represent their action by curves. Where the curves are small, that means that the muscular movements of the lungs are small. When I applied this instrument to the upper part of the chest of a man, I found it made the small curves representing small movements; but when I applied the instrument to the lower part of the chest, it made these large curves, indicating free movements of that part of the chest. That was what was wanted, as I knew,--free movement at the lower part of the chest, and slight movement at the upper part of the chest, whereas, physiologists have been telling us that in women we have the opposite of this, viz., free movement at the upper part of the chest, and slow movement (or no movement) at the lower part of the chest. And this is what I found in women who wore a corset. But upon examining a civilized woman who had never worn a corset, I found that she breathed just like a man.

And here is the tracing made of that woman's breathing--small movements at the upper part of the chest, and free movements at the lower part of the chest. Then I thought that if a man were put under the same circumstances as the woman in the corset, he would breathe in the same way; so, after some persuasion, I induced a young man to put on a corset. I induced him to wear the corset long enough for me to apply this instrument to his chest and see how he breathed. So he wore the corset with pain and torture till I had applied the instrument, and then he threw it away very promptly and gladly after I had gotten thru with it,--and he breathed just like a woman while in a corset. So I saw that what is called "feminine breathing" is simply corset-breathing, and that it is not properly called "feminine breathing" at all, because a man breathes just the

same way under the same conditions.

Then I extended the experiments a little further, and found a poor dog who was willing to wear a corset for a little while while in the interest of science, and I put a corset on him, and upon examination, I found that he also breathed just like a woman with a corset on. Here is the tracing that shows this. I also found that a dog without any corset on breathes just like a woman without a corset on. And I found that a female dog breathes just like a male dog does. So there is really no difference between male and female respiration. Females and males of all species breathe just alike, under the same circumstances.

I took my machine away down into New Mexico among the Yuma Indians, and carried it into the forests where the Indians lived in their native state, and had never worn anything like civilized clothing, and I found an Indian woman who was sufficiently tame to allow me to apply my instrument to her chest and see how she breathed, and she breathed just like a civilized man or a civilized woman who had never worn a corset would breathe,--and she breathed just as a dog breathes.

But I found one woman who had been in the habit of wearing a corset, but who has reformed (Jenness Miller). She happened to be here, and I induced her to allow me to apply my instrument, and she breathed with slight movements at the upper chest, and while the movements were somewhat freer than they should be, as the result of her early habits of corset-wearing, yet they were not so great as at the waist; for many years she had cultivated chest breathing, so the muscles of this part of the body were disproportionately strong, and the movements of this part of the chest were freer than normal. There is no harm in this, however, provided there are, at the same time, the

proper movements at the waist.

I think I have demonstrated,--in fact it is admitted, at the present time, by some of our best authorities--that there is no such thing as a "feminine type of respiration." The British Medical Journal, published in London, reports a discussion of this subject before the British Medical Society, by the President of the Society and other leading members, in which they demonstrated that there is no such thing as a "feminine type of respiration," or woman respiration, but that men and women breathe just alike, under the same circumstances.

The purpose of this chart is to show the change of the trunk in normal respiration and in abnormal respiration. The dotted lines show full respiration,--the expansion is all along that line--in taking breath, we expand all along that line. The trunk may be considered a rubber bag, if you please, with handles, and as you draw them, the bag expands; it swells out more in the center because the center is the most flexible, and you have a movement all along this line of the body in taking breath. In taking breath, we fill air into the lungs, and as we do so, the diaphragm is crowded down, and as we fill in more air, we crowd down a larger amount of material into the abdomen; the organs are carried down and the diameter of the chest is increased. As the lungs expand more and more and fill a larger space within the chest, the organs below the ~~trunk~~ lungs are carried down, and increase the diameter of the lower trunk, and in that way the trunk expands from the ~~lower~~ neck to the lower part of the abdomen. If a person takes a very full breath, after having taken an ordinary respiration, then if he take in a little more air, the chest is lifted slightly, and the lower part of the abdomen is drawn in. Chest expansion at the upper end is produced by contraction of the diaphragm; but full respiration produces an expansion

of the whole trunk, the greatest expansion being at the waist.

Here you see the effects of chest respiration. The chest is swollen out, as shown by the dotted lines. Now these figures are not fancies; they are facts; they are just as I have found them, and the tracings as I made them, of actual cases.

This represents abdominal breathing; there is very little movement shown at the waist. There are some who recommend abdominal respiration, but this forces down the stomach, spleen, and other internal organs, carrying them down out of place. Where there is uniform expansion, there is little opportunity for displacement; but where the expansion is all in one place, a condition of things takes place which is very favorable to displacement of the viscerae.

This shows normal respiration; the dark lines show the normal figure at rest, and the dotted lines show the change of figure which takes place when one breathes out all they can. Now the principal movement, you see, is not down in the abdomen, it is up at the waist. It is between this point and this point (indicating) that the principal change takes place in breathing. When a person takes a deep breath, then we have the lines which you see outside--the outer dotted lines. These are the effects of breathing just as I have found them in normal persons.

THE INFLUENCE OF DRESS

in Producing the Physical Decadence of American Women.

Mr. Chairman, Ladies and Gentlemen : As my subject suggests, I am to undertake to show that certain features of the modes of dress common among civilized American women has been, and is, a prominent factor in producing a widespread and marked physical deterioration among the women of this country. Possibly the question may be asked whether such a deterioration exists . It is not probable, however,, that it will be worth while to spend any considerable time ^{in attempting} to demonstrate the proposition that American women are degenerating physically, before an audience chiefly made up of medical men and women. For, has there been a medical convention dinner within the last quarter of a century at which there was not heard the familiar toast, "Woman, -God's best gift to man and the chief support of the doctors"? A few months ago, I addressed ^{an} audience of six or seven hundred young women at an educational center in a neighboring State, upon the question of Physical Culture. As my audience seemed to be an amiable one, I ventured to ask a few questions; and, among other ^{inquiries asked} questions, inquired how many young women present (all of whom had reached adult age), believed themselves to be physically superior to their mothers. A bare half-dozen raised their hands and timidly looked about, apparently to see ~~if~~ any one was present prepared to contest their claim.

One of the most convincing evidences of the failure of American women is to be found in the fact developed by the last census of the United States, that there has been in the last ten years, an enormous falling off in the birth-rate, as the result of which several million babies are lacking. ~~✓~~ A lowered birth-rate is a matter of much more serious concern than an increased death-rate, although the immediate results as regards the amount of population might be the same. An increased death-rate may mean nothing more than a temporary increase in the activity of one or more causes of disease and death, while a lowered birth-rate means a radical and constitutional fault of some sort, ^{threatening} affecting the very ^{existence} constitution of the race. Any who have had an opportunity to become acquainted with the physical condition of the average young woman of the present generation, will be easily convinced that the next census will show a still greater falling off in the birth-rate than the last. A corset-choked woman knows very well that she is quite unfit, physically, for the rearing of healthy children; and besides the physical unfitness, she finds herself so lacking in fortitude, and so oppressed with neuralgias and an abnormal susceptibility to pain, that she very naturally shrinks from the physical ordeal, as well as the mental and moral responsibility which motherhood involves.

Another most significant fact for which mothers must be held largely responsible, is the enormous business carried on at the present time in the manufacture and sale of infant foods.. Accord-

For the Advancement of Science at its last meeting, there is consumed in the United States every year, not less than eight or ten million dollars' worth of infant foods. That these foods are rarely if ever perfect substitutes for the child's natural aliment, is well known. What has created such an enormous demand for these poor substitutes? Certainly it is not the unnatural increase of the number of infants which has exhausted the natural food supply, for we have already ^{mentioned,} ~~called attention to the fact that~~ within the last ten years there has been a falling off in the birth-rate amounting to several million.

These facts point with tremendous emphasis to the ^{fact} ~~source~~ of the decline of the stamina of American women. A host of other facts confirming and supporting those given, might ~~be brought~~ be brought forward, but I will not thus unnecessarily consume your time, since the proposition is not likely to be disputed by any intelligent physician who has had wide opportunities for observation. ^{But} I must not devote more of the half-hour allotted me, to introductory remarks, ^I fully realizing that I am likely to incur the displeasure of some of my fair auditors before I have done with my subject. I may as well declare myself at once, as ~~neither asking nor expecting favors from those whose views differ from my own, and will begin by asserting that the average~~

prepared to defend the proposition that the average

civilized American woman, ^{is} ~~as~~ deformed. This very uncomplimentary proposition doubtless impresses the ears of my hearers, as somewhat startling. Nevertheless I believe the facts which I shall present, will convince the majority of you, that however repulsive and distressing the fact may be, it is nevertheless true.

A penchant for modifying the natural form of the body so as to produce deformity in some parts, seems to prevail quite extensively in the human race,--although it must be admitted that in many savage, and some civilized tribes, this strange propensity takes a less dangerous direction than among the civilized races. The Indian woman of Alaska ornaments her upper lip with a pen stuck through it. Among the women of some other savage tribes, fashion demands that a fish-bone or a piece of wood must be inserted in the under lip in a similar fashion, by means of which the flesh is dragged down and a strange deformity produced. ~~The~~ civilized woman finds the lobe of the ear a more convenient place ^{from} ~~suspending~~ ^{which to hang} her jewelry, and so she bores a hole through this part of her body, and inserts a wire weighted with a stone, ^{and thus} ~~by means~~ of which she emulates the example of her savage sister. There are mothers roaming in the forest, shoeless, hatless, and without other garments than a bark apron and the picturesque designs of the tattooer's pencil, whose solicitude for ^{their} ~~the~~ children leads them to mold their heads into cones, or, to ^{them to} ~~the~~ shape of a fascinating flatness, by the steady pressure of a board against the infant's skull. Other mothers, less barbarous but none the less


solicitous for the welfare of their ~~daughters~~, squeeze the feet of their ^{daughters} ~~little ones~~ into shapeless masses of bones and gristle, under the firm belief that no young lady can make an eligible bride if her foot exceeds in measure, the conventional three inches. Other mothers still more civilized, and none the less fondly thoughtful, ^{of their daughters interests,} base their expectations of a successful career ^{for them} as much upon the meagre dimensions of their waists as upon the comeliness of their countenance or the brilliancy of their accomplishments.

While engaged some years ago in some anthropometric studies among Chinese women and the primitive Indian tribes of Arizona and New Mexico, I was very forcibly struck with the marked difference between the savage or semi-civilized woman, and the civilized woman. I have made, personally, and secured through others, a large number of measurements which place upon a mathematical basis, certain points of difference which are exceedingly noticeable,--particularly, ~~the broader shoulders, smaller hips and~~ ^{the} larger waists of the savage or the semi-civilized woman, when compared with the highly civilized woman. I have since extended my studies of the subject, to the ^{peasant} present women of various nationalities, particularly French, German, and Italian women, and a single race of East India women. Early in the course of my studies, the thought occurred to me, that there might be ^a positive and constant relation between the external configuration of the body, and mal-positions of various internal organs. I accordingly devised a simple apparatus for the purpose of making outline tra-

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cings of a figure at any desired angle. With this instrument I have made a number of tracings (several hundred in all), and have made a careful study of the position of the abdominal and pelvic viscera in each case.

Table



The following is a tabulated statement of some facts which I have collected, and which bear especially upon the matter of waist proportions: -

Mrs. Wood

Mrs.

	Percentage of Waist to Hight.
Apoxyomenos,--Contemporary with Alexander,	45.2
Archilles Borghese,--Louvre,	57.1
Germanicus, by Cleomenes,--Louvre,	47.5
Meleager,--Vatican,	46.8
Antinous,	46.1
Athlete Fun, pouring oil in hand,--Louvre,	44.9
Youth Supplicating--Bronze,--Berlin,	45.7

	Hight	Waist	Percent- age.
Average of 43 women 18 to 25 years of age,	60.7	27.1	44.64
Average of 25 women, ^{18 to 30 years of age} same age , wearing Corsets or tight bands	62.5	23.3	37.3
Average of same after reforming, <i>dress,</i>	62.5	27.15	43.4
Average ^{of} ten girls 9 to 12 years of age,		23.5	
Average 2,000 men, 18 to 27 years, meas- ured by Dr. Seaver, of Yale	68.6	29.3	42.7

Mrs. Wood

A few remarks upon the above figures will render them more significant. Of the 100 American women whose average proportions are given ^{in the table,} ~~above,~~ the majority were upwards of 30 years of age.

Dr. M. Anna Wood, of Wellesley College, has measured 1100 women between the ages of nineteen and twenty-one years. Her measurements make the hight of the average American woman to be 63 inches, waist 24.6 inches, hips 35 inches; percentage of waist to hight 39, and hips to hight 55.5.

	Height.	Waist.	Percentage of waist to height.	Hips	Percent- age
American women	61.64	24.44	39.6	— 35.	53.8
English women (brickmakers who wear heavy skirt)	60.4	25	41.3		
French women	61.6	28	45.4		
Telugu women of India	60.49	24.65	40.6	— 32.3	51.0
Chinese women	57.85	26.27	45.4	— 32.1	54.9
Yuma women	66.56	36.84	55.2	— 41.7	64.3
Civilized men—American	67.96	29.46	43.3		
Mrs. Langtry	67.	26.	38.8	45.	
Venus de Milo			47.6		
Average of seven ancient models			46.4		

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The Telugu women of India, as I am informed by Miss Cummings, who kindly made a ^{large} number of measurements for me in aid of my researches, sustain the simple skirt, which forms ^{almost} ~~about~~ their only clothing, by means of a cord tied around the waist ~~which is then~~ ^{and} drawn as tight as possible. This is doubtless the reason for the small waists of these women as compared with women of other semi-civilized tribes. ^{Q/} English working women doubtless often do themselves great harm by wearing many heavy skirts attached to waist bands. I once found a young Englishwoman engaged in the very laborious occupation of making brick, kneading the clay with her fist as a baker kneads dough, and beating it into the molds with her fist, who ~~carried~~ ^{was} at the same time ^{carrying} upon her waist ~~a~~ ^{the} weight of six heavy quilted skirts with no other supports than bands. ^{The average}

^{waist measure of a dozen English women brick makers was 25 in, and proportion to height,}
The German peasant woman, unless she has the misfortune to live sufficiently near some large city to be somewhat influenced by the ~~morbid ideas~~ ^{example} of her more fashionable sisters, discards waist bands altogether and wears her garments suspended from the ^{by means of a waist} shoulders, which gives her a more vigorous figure than the English peasant woman.

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French women are in the last named respect ^{also} more fortunate than their English sisters, by reason of which they enjoy the advantages of a waist proportion of 45.4 of their height.

Chinese women, of whom I ^{received many more much more data} myself have made a large number of measurements, and ^{through} the kindness of Miss Culbertson, of the Home for Chinese Women, San Francisco, and a lady ^{medical} missionary in China, although considerably below the average height of the American woman, has two inches greater waist circumference, which

is doubtless attributable to the fact that her mode of dress is such as to allow the most ^{perfect} ~~approved~~ freedom of movement and room for development at the middle portion of the trunk.

But the primitive Yuma Indian ^{woman} of Arizona and New Mexico excel all others whose waist measures I have taken, the waist proportion being 55.2 of the height.

The famous English beauty, Mrs. Langtry, has recently had published a detailed account of her physical proportions, by which it appears that her height is 67 inches and her waist measure only 26 inches, ~~38.8% of her height.~~ Mrs. Langtry takes evident pride in the fact that many of her measurements correspond very closely with those of some ancient Grecian models; but she omitted to call attention to the fact that her waist measure is only 38.8% of ^{her} height, ^{while} that of the queen of all the ancient statues of women which have been discovered, ^{the famous} Venus de Milo, is 47.6% of the height. Her ^{Mrs. Langtry's} waist measure to be in the same proportion as that of the Greek beauty should be 32 inches. I have taken the pains to make

measurements of a considerable number of male statues, the work of ^{ancient preserved European} eminent artists in various galleries, and find the average percentage of waist to height of seven ancient models to be 46.4, ^{or a little} ~~less than that of the average ancient man~~

I have recently made measurements of 43 working women between the ages of 18 and 25 years, ~~the average being~~ ~~years.~~

These young women were all wearing loose garments, having been induced to do so by a representation of the evils resulting from waist constriction. Some had but recently adopted a healthful style of clothing, while others had enjoyed the advantage of ample waist room for several months, or years. In a few in-

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stances corsets and tight waist bands had never been worn. I

found the average waist measure of 43 young women, who were se-

lected ~~entirely~~ ^{only} with reference to age, to be 27.15 inches, or 44.64%

nearly three inches in excess of the average American feminine

waist.

The waist of a young woman the same height as Mrs. Laughey would measure 30 inches instead of 28 inches with this proportion and of

Comparative measures made in the cases of 25 of these young

women showed that before the adoption of loose garments their

average waist measure was 23.3 inches. Since that time there had

been an increase in waist proportion to such an extent that the

average waist measure at the time the measurements were taken was

27.15 inches, ~~a gain of 3.85 inches, or 6.16%.~~

The proportion of waist to height in these 25 young women had ~~increased~~

increased by the change in dress from 37.3% to 43.4%, *and the waist measure had gained 3.85 inches, or 6.16%*

I recently ~~measured~~ secured the measurements of ten girls

between the ages of 9 and 12 years, ~~and found the average height~~

~~to be~~ and found the average ~~proportion~~ of waist ^{measure to} ~~to height to~~

be 23.5 ~~inches.~~

From these facts is it not evident that the small waist of the civilized American woman is a deformity? Can any one assign a physiological reason why the civilized woman should have a smaller waist than the savage woman, or ^{why} whether Mrs. Langtry's waist measure should be 38.8% of her height while ~~that of the Venus de Milo is 47.6%~~ Mrs. Langtry's waist measure if in the same proportion of that of Venus de Milo, would be ^{26 inches} 32, instead of 26 inches; and if in the same proportion to height as in Chinese or French peasant women, it would be 30.5 inches. Certainly no other reason can be given for the abnormally small waist of the civilized woman than the fact that this portion of the body has been subjected to abnormal pressure in such a manner as to prevent natural development, and to compel the acquirement of a deformity.

If in answer to the question Why the modern civilized woman has a smaller waist than the beautiful women of ancient Greece, whose figures ~~have~~ furnished models for ~~the~~ sculptors whose Masterpieces modern artists have sought in vain to equal, it be said that the change observable is a product of evolution, or ^a result of civilization, may we not pertinently inquire why a similar change is not to be found in the modern man?

I have made careful measurements of seven nude male figures, all the work of ancient Greek and Roman artists, and found the average percentage of waist to height to be 46.6%. The average percentage of waist measure in two thousand men, 18 to 27 years of age, taken without selection, measured by Dr. Seaver, of Yale, was 42.7. There has evidently been no appreciable change in the proportions of masculine waists. Why, then, should there have been such a remarkable diminution in the

course she was worn out trying to keep up her studies read novels and keep up with the fashions,--and then she charged her breaking down to hard study. It is not likely that her studies would do her any harm . . .

Q. Is there a Sanitarium Cook-book? Where can we get it? What is its price?

A. There is a Sanitarium cook-book in the printer's hands. I will announce it when it is out. The plates were destroyed when the printing-office was burned, but the copy was not burned and I hope we shall have the book out in the course of a few months, at the longest. It is very easy to get up a "cook-book",-- just scrape up a lot of old recipes and put them into a book. My wife says she wont allow anything of that kind,--she wont have anything in her book but what is "pure gold." I told her that I thought it was going to contain pure diamonds instead of pure gold .; but she wants it to be perfect, and she keeps finding something good, so I don't know just when it will be out . . .

Q. Is there any cure for insomnia of several years' standing?

A. Yes. The thing to do first, is to find out why you don't sleep. There are a few principal reasons why people don't sleep: one reason is, because they eat late suppers. I think eating late suppers is responsible for more insomnia, than any other: another reason is, that they don't work enough. The Bible says he that will not work shall not eat, and nature says, "he that will

size of the feminine waist?

Several

~~Two~~ other pertinent questions may be asked in this relation:

1. Why does the civilized woman require a smaller waist than the civilized man? Certainly no physiological reason can be given, and well known anatomical facts suggest that if there is any natural difference in proportion, woman requires a larger waist than man. She has a larger liver in proportion to her size and weight than man, and the exigencies of motherhood require provision for an increase in waist capacity to which man is not subject. It is interesting to note, also, in this connection, that the waist proportion of the Venus de Milo, who may be considered as the typical woman of ancient Greeks, is 47.7, while that of the average Grecian man, as already shown, is 46.4. . We can draw

but one conclusion from these considerations, namely, that the small waists of women of modern times is an abnormality.

my table tables also show the average feminine waist to be nearly two percent larger in proportion to the height than

2. A second question to which we invite attention is, Why does the waist of a civilized woman cease to grow at the age of ten or twelve years, while the rest of the body continues to develop--lungs, liver, stomach, bowels, spleen, pancreas--all the organs which occupy the region of the waist line continue to grow, but the waist of the civilized woman absolutely refuses to increase in size, notwithstanding the developing force beneath it after the age of twelve or fourteen years. I have measured the waists of

the most of women if it allowed development the waist would change for natural development

a large number of little girls from ~~ten~~ ^{seven} to twelve years of age, and find their ^{average} waist measures to ~~average from 22 to 25 inches~~ ^{be 23.5 inches}. I

have in some instances found the waist measure 26 inches in girls of twelve or ~~thirteen~~ years, ~~of age~~. *The natural answer to this question is the fact that* About this age the constrict-

corset 2

ing influence of tight bands, ~~or~~ waists, or corsets, begins. The fashionable dress-maker insists that the young lady's figure must be formed, and so as she develops she grows into a mould like a cucumber in a bottle. And thus it happens that we find the average civilized woman with a waist disproportionately small, as we find among the aristocratic class of Chinese women, dwarfed and misshapen feet. The small-footed ~~the~~ woman of China in consequence of her deformity is compelled to strut about in a most ungraceful fashion, requiring usually one or more persons to assist her in maintaining her balance. She cannot run, skip or dance as can her large-footed sisters. She is willing, however, to endure the inconveniences of being a cripple and the loss of the use of her feet and legs rather than forego the pleasure of being in fashion. If the sacrifice which the civilized woman makes to fashion was no greater, there would be comparatively small ground for complaint; but the constant girding of the waist results in mischiefs of vastly greater magnitude than those which the Chinese woman inflicts upon herself.

As the flat-head mother watches with interest and growing pride the progressive depression of ^{her} the infant's skull, as from day to day she binds more tightly upon it the flattened disk of wood, and as the Chinese woman glories in ~~her~~ the shriveled and misshapen stump of what was once her child's foot, as the developing mark of aristocratic gentility, in like manner does the civilized mother pride herself in the smallness and roundness of her daughter's corset-deformed waist, disregarding alike the suggestions of art, the warnings of science, and the admonitions

which nature gives in the discomfort and distress occasioned by the effort to secure a change in the natural contour of the human form, which is more monstrous in its violation of the laws of beauty, more widely at variance with the dictates of reason, and more disastrous in its consequences upon bodily health and vigor *of their children* than any similar barbarity practiced upon themselves, by the members of any savage or semi-savage tribe. How such a disfiguration of the physique could ever have become to be considered desirable or beautiful, is a ~~a~~ problem hard to solve, since it involves not only an enormous loss of strength and vigor, but a violation of the precepts and principles of art which have been handed down to us by the great masters as well as the ~~precepts~~ *rules* of hygiene, in which all medical men of every age agree.

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OFFICE OF THE

Medical and Surgical Sanitarium

Battle Creek, Mich.,

I may ask still further, how does it happen that the ~~uncorrected~~ waist of the ~~girl~~ of average girl of ten ~~years~~ 9 to 12 years ~~is~~ measures 23.5 inches while the waist measure of young women of 18 to 30 years who have worn corsets or tight bands for a number of years is on 23.3 inches? Why should the waist decrease ~~and still~~ in size with age while every other bodily dimension increases?

Still another question of interest ~~the~~ arises from the fact which ~~is~~ ~~one~~ to which almost every woman can testify that the waist of the average woman accustomed to ~~constriction~~ from the clothing, increases in measure whenever it has an opportunity for development, as when the mode of dress is changed, or ~~a~~ the ordinary clothing laid aside for a few ~~or~~ weeks, as during ~~a~~ confinement to bed from illness.

Probably few women will question the fact that the waist is made smaller by ~~waist~~ the constriction of the corset and tight bands. A ~~doctor~~ said to me of my nurses, when she learned of her healthful mode of dress, "But how do you manage to keep your stomach down?" The corset is worn with a deliberate purpose to modify the form of the figure, which it does to the great damage of health and vigor. I have shown

Let me call your attention more directly to some of the important particulars in which the ordinary mode of dress among civilized women, particularly constriction of the waist, results in physical injury. *the chief of these are,*

1. Downward displacement of all the abdominal and pelvic organs, and numerous functional and organic diseases growing out of this disturbance of the static relation of these organs.

2. Lack of development of the muscles of the trunk, which by long compression and disuse, to a very large degree lose their functional activity, resulting in relaxation of the abdominal walls, weakness of the muscles of the back, ~~and~~ general physical feebleness, *and*

3. Destruction of the natural curves of the body which are not only necessary for health, but are also essential to physical

grace and beauty, and the development of many bodily deformities, such as drooping shoulders, flat or hollow chest, sunken epigastrium, straight spine.

~~3~~ ~~4~~ ^{and} An ungraceful, unnatural carriage of the body, in sitting, standing and walking.

~~4~~ ~~5~~ An abnormal mode of respiration.

by careful measurements in some
hundreds of cases that the waist
of adult women
increase within a few months under
the influence of proper clothing
and proper exercise from
one or two to six or eight inches.

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The idea that a displaced stomach can be a possible cause of disease or inconvenience may be ~~also~~^{known} to some. Nevertheless, the researches of Glenard, Bouchard, Dujardin-Beaumont, and other eminent French physicians has shown beyond room for doubt that displacement of the stomach, bowels, kidneys, liver, and other abdominal viscera may be productive of the most pronounced disturbances of health and the source of great inconvenience. Indeed, from my own studies on this subject I have become convinced that a displaced and dilated stomach is more likely to be productive of immediate and harmful consequences of grave character than displacement of the pelvic viscera. But before one can fully understand the relation of constriction of the waist to displacement of the abdominal viscera, it will be necessary to call to mind a few important anatomical facts.

The trunk is practically divided into two cavities. The division of the lower cavity into pelvis and abdomen is an artificial and not an anatomical subdivision, useful for the purpose of description, but misleading and confusing unless ignored in studies concerning causation and pathological relations. Anatomically the trunk is divided by the diaphragm into two cavities only, the upper containing the chief organs of respiration and circulation, and the lower containing the principal organ of digestion and genito-urinary apparatus. The chief anatomical facts which I desire to be kept in mind are the normal position of each of the several viscera which occupy the lower cavity of the trunk and the mode in which these various organs are held in place.

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It will be remembered that the liver, spleen, pancreas and stomach are all located above the waist line, as shown in the accompanying diagram after Ziemmsen. The transverse colon lies at the waist line, the point of junction of the ascending and transverse colon on the right side dropping a little below the line, while the point of conjunction of the transverse with the ascending colon at the left side rises considerably above the waist line, being held in place by the pluro-colic fold of the mesocolon. The kidneys lie just at the line of the waist. A greater portion of the space below the waist is occupied by the small intestine, the bladder and rectum, with the uterus and its appendages in the female and the prostate gland and other special structures in the male. It is noticeable that the organs of the greatest weight and functional importance are located at or above the waist line.

How are all these important organs held in position? Although fitted together with the nicety of an articulation, the viscera are certainly not held together by anything corresponding to the firm ligamentous bands which unite the osseous elements of a joint. Every abdominal surgeon will testify to the extreme propensity for escaping from the abdominal cavity when the slightest opportunity offers, manifested by some of the viscera. The so-called ligaments which hold in place the liver, stomach, spleen and bowels cannot properly be called ligaments, as very little ligamentous structure enters into their composition. The same must be said of the ligaments which are supposed to support in place the uterus and ovaries, although it must be added that some of the uterine ligaments contain muscular tissue which plays a

very important part in maintaining the uterus in its proper relations to the trunk and contiguous organs. I think the idea is gaining ground among those who have made a special study of this subject, that the chief factors in the support of the pelvic viscera, as well as other of the organs of the lower trunkal cavity, are the tone of the muscular walls of the abdomen and the juxtaposition of the organs themselves.

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Compression

Compression of the waist necessarily involves displacement of the organs occupying this portion of the trunk. The unyielding character of the chest-walls, ^{and} the resistance of the diaphragm prevent any considerable displacement in an upward direction, and consequently the result of waist-compression, either by the corset or by tight bands, is, that the liver, stomach, bowels and other organs occupying this zone of the body, are carried downward. The same compressing force which diminishes the circumference of the body at the waist, ^{interferes} ~~interferes~~ with the normal activity and development of the muscles which form the anterior wall of the lower trunk, so that they offer little resistance to the displacing force applied at the waist.

In nearly twenty years of medical practice, I have had to deal almost exclusively with chronic disorders of various sorts, and especially with two classes of chronic disease, digestive disorders, and maladies peculiar to women. Having under observation from ^{1000 to} 1500 to ~~2000~~ cases annually, under conditions favorable for careful study and comparison, I long ago observed the remarkable frequency of the constant association of certain forms of pelvic and digestive disorders (especially in women), with a narrowed waist and protruding abdomen. I did not, however, attach ^{as} great importance to the matter as I should have done, had I not, ^{I frankly confess,} ~~I frankly confess,~~ had a very erroneous notion respecting the normal contour of the female figure. **It was only after careful**

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study of this matter among savage women and women whose figures had never been modified by the deforming influence of the ordinary civilized dress, that I acquired a basis from which to view this subject in a rational way. I then began careful inquiry into the matter, and for several years back, have made, in all cases of pelvic diseases of women coming under my observation, a careful study of the condition and the relative positions of the various abdominal viscerae, as well as of the pelvic organs.

"In two hundred and fifty cases of women suffering from pelvic disease, taken consecutively and without selection, in each of which a careful examination was made with reference to the condition and position of each of the abdominal viscera, as well as of the pelvic organs, I observed the following disturbances of the static relations of the viscera :

In 232 cases, downward displacement of stomach and bowels.

In 71 cases, right kidney distinctly movable and sensitive to pressure. . .

In 6 cases, both kidneys freely movable.

In 9 cases, marked downward displacement of the liver.

In 2 cases, downward displacement of the spleen.

In one of these cases, the spleen lay at the bottom of the abdomen. I have made a large number of outline tracings in cases of women suffering from pelvic disease, and supplemented these by careful examinations of the position and conditions of the abdominal and pelvic viscera, and with the following results, as regards the relation of static changes in the abdominal organs, to similar changes in the organs of the pelvis.

In 150 cases of pelvic diseases the stomach, the bowels were displaced in 138 cases.

In 66 cases, the stomach and bowels were displaced without displacement of the uterus. In 26 of these cases, there was also displacement of one kidney, and in 5, displacement of the liver.

In only 7 cases was there displacement of the uterus without displacement of the abdominal viscera, and three of these were cases of large uterine fibroids, in which the visceral displacement was probably present, but masked by the morbid growth. "

I shall have thrown upon the screen presently, outline ~~and~~ tracings of the figures of some of these cases, which will show very clearly the amount of visceral displacement occasioned by an improper dress. These statistics seem to me to show very

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clearly that visceral displacement is not a disease especially confined to the pelvis. Indeed a careful anatomical study of the means by which the pelvic organs are held in place, suggest that they are better provided for in this respect than any other of the ~~truncal~~ ^{truncal} viscerae below the diaphragm.. The data which I have collected respecting the relative frequency in the displacement of the pelvic organs and other ^{organs} viscera of the abdomen, clearly support this idea. In 150 cases of pelvic disease, there were only 4 cases in which displacement of the pelvic organs was present, without displacement of one or more of the abdominal viscera,; whereas there were 66 cases in which the stomach and bowels were displaced without displacement of any pelvic organ. In 26 of these ~~cases~~ ^{cases} there was also a displacement of the kidney, ~~and~~ and in 5, a displacement of the liver.. It is evident then, that visceral displacement of the organs of the lower trunk must be regarded (of course leaving room for exceptions) as a general disorder affecting, more or less, the entire contents of the abdomen and pelvis, rather than as a disease confined to one or two of the organs in which the subjective symptoms of disease happen to be most prominently manifested.

How a displacement of the stomach, kidney, the bowels, the uterus, or an ovary may occasion disease, is a pathological question which it is not necessary to spend time in discussing on this occasion, since the disturbances in blood-circulation, and hence, in nutritive changes, (possibly also, in the supply of nervous energy), and a possible development of abnormal and per-

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nicious nerve-reflexes are etiological factors, the influence of which is too well known and understood to be disputed, and which are likely to come into active operation under the morbid conditions established in an organ crowded, by abnormal pressure, out of its proper place. Nature has placed each internal organ in ^{the} position in which it can do its work most easily and efficiently; and the studies of the results of visceral displacement which have been made by eminent scientific physicians, have shown that to morbid conditions of this sort may be fairly attributable the most serious, and, not infrequently the most obstinate disturbances of some of the most important, and through them, all the other vital functions of the body.

The question may be raised, whether we are treating the subject fairly, in charging upon errors in dress, so great and so serious modifications of the human form as we have pointed out, and whether it is not possible that visceral displacements in some of those cases to which I have called attention, are not to be found in men as well as in women. In order to place this subject upon a rational basis, I recently made a careful examination respecting the position of the stomach, liver, kidney and bowels in 50 men and 71 women. ~~The results are as follows :-~~ ~~Of the 50 men, there was slight prolapsus of the stomach and bowels in only 6 cases.~~ In the 71 women examined, prolapsus of the stomach and bowels was found in 56 cases. In 19 ^{of these} cases the right kidney was found prolapsed, and in one case, both kidneys. The 15 cases in which the stomach and bowels were not prolapsed were all

persons under 24 years of age., and none of these had ever laced tightly, and 4 had never worn corsets or tight waist-bands, having always worn clothing suspended from the shoulders. It was noticeable that in a number of cases in which corsets had never been worn, tight waist-bands had produced very extensive displacement of the stomach, bowels and kidney. The liver was displaced downward, *one of these in these 50* in ~~one~~ *in one, the right kidney was displaced.* ~~in~~ *in* only 6 cases in which the stomach and bowels could be said to be prolapsed, and in only 3 of these was the degree of prolapse anything at all comparable to that observed in the women; and in these three (and in one other of these 6 cases, making 4 in all), it was found, on inquiry, that a belt, or something equivalent, had been worn, -- in three cases as means of sustaining the pantaloons, and in one case the patient attributed his condition (~~as he himself recognized it to be due~~) to the wearing of a truss furnished with a belt drawn tightly about the waist.. This belt had been worn a sufficiently long time to be an ample cause for the visceral displacement observed. In the 2 cases of slight visceral prolapse in which belts had not been worn, there was considerable deformity of the figure due to *a* general weakness, and an habitual standing with the weight upon one foot. By comparison, we see that the relative frequency of visceral prolapse in the men and women examined, was 12 percent of the men, and 80 percent of the women. In other words, visceral prolapse was found to be six and two-thirds times as frequent in women as in men. It is also noticeable that, with the exception of two cases of visceral prolapse in the

men, the visceral prolapse in the men was due to the same causes which produce visceral prolapses in women,--viz. constriction of the waist. It of course makes no difference whether the constriction is applied by means of a corset, a waist-band, or a belt.

(Mem. ~~Mention the case of prolapsus of a kidney in a man.~~)

I have met a number of cases of visceral prolapse in men in which the disease was directly traceable to the wearing of a belt. One case was that of a military officer, where the cause was evidently a tight sword-belt in which he carried almost constantly, a heavy sword., the officer being chiefly employed in training men. I have also made some observations ^{of the same character} among blacksmiths who have a habit of sustaining their ~~their~~ pantaloons by means of ^{the} ~~an~~ apron-strings tied ~~to~~ tightly about the waist, so as to give greater freedom ^{to} ~~for~~ the movements of the arms. Farmers also sometimes seek to liberate the shoulders by wearing the suspenders ^{tied} about the waist. Leaving out of consideration the 4 cases of ~~the~~ men in whom the visceral displacement was due to the same causes which produce this morbid condition in women, we find but 2 cases in which the viscera had become displaced from other causes, or, one in twenty five,--a frequency just one-twentieth of that in which this diseased condition is found in women who consider themselves enjoying ordinary health.

These facts, it seems to me, are amply sufficient to establish my proposition,--that constriction of the waist is a cause

of downward displacement of the abdominal pelvic viscera, and of the diseases which naturally grow out of such disturbances of the static relations of this portion of the trunk.

The injury inflicted upon the body at its central portion by constriction of the waist attacks the very citadel of its strength and vigor, the stomach and its associate organs constituting the headquarters for the supplies of force and energy to the whole system. It is doubtless for this reason that the great abdominal brain, the largest collection of nerve matter in the sympathetic system, is found in such close relation to the stomach, lying as it does, exactly in the plane of the waist, any abnormal pressure at this point must act indirectly upon this great center of reflex nervous activity.

By the inactivity of the muscles of the middle portion of the trunk, and the failure of development due to continued pressure, the muscles of the central and anterior portions of the trunk become ~~normal~~ abnormally weak so that their natural tone is insufficient to support the abdominal contents in their normal positions. As we have already shown, an additional injury results from the failure of these weakened muscles to perform their duty as guys which balance the upper half of the pelvis upon the trunk, and by their efficient action in health maintain a healthful and graceful poise of the body.

The strong and beautiful curves which one observes in a spirited horse are not only attractive from an esthetic point of view, but are also of the highest significance from a physiological standpoint. In the healthy, vigorous horse one observes that the head is held high, the neck and back strongly curved, the limbs firmly set, the whole expression indicates vigor and strength. The same is equally true of the human body; an erect head, well

curved back, prominent chest, retracted abdomen, and firmly set limbs are indicative of an energized carriage of the body which is characteristic of health. The flat chest, posterior dorsal curves, projecting chin, protruding abdomen, are equally indicative of a relaxed and weak carriage of the body, characteristic of feebleness and disease. The spiritless and tired horse does not hold its head down; he simply lacks the vigor and disposition to hold it up. ~~So~~ the woman who has been accustomed to the support of stays of steel or bone, finds herself, when without these artificial supports, feeling, as she says, as though she would fall in pieces. The muscles of the waist lack the ability to balance the chest and shoulders upon the hips.

As I shall show you presently in outlines which will be thrown upon the screen, the direct effect of the corset, and of any constriction of the waist, is to break down the natural curve of the back, straightening the spine, thus depressing the chest and causing the shoulders to fall forward and general collapse of the front wall of the trunk.

In consequence of the weakening of the muscles which support the trunk, and especially weakness of the waist muscles, an ungraceful and unnatural carriage of the body appears not only in standing and walking but in sitting. The weak waisted woman is comfortable only when sitting in a rocking or easy chair. She cannot be comfortable unless the back is supported, consequently in sitting the muscles of the trunk are completely relaxed, the whole spine lies in contact with the back of the chair, thus causing collapse of the ~~of the~~ waist, protrusion of the lower

abdomen by the depression at the waist line occasioned by depression of the ribs.

Such persons standing assume a great variety of awkward and unhealthy positions, some of the most common of which will be shown presently upon the screen. The most common of these faults are drooping shoulders, projecting chin, hips too far forward, weight resting upon heels or upon one foot, and a general lacking of even and graceful balance of the body. In walking the forward position of the hips makes it impossible to plant the whole sole of the foot down at once and firmly, and so the weight is thrust continually upon the heels. This difficulty is also increased by wearing high-heeled shoes. A swinging, swaying, wriggling, or otherwise awkward gait is the most common mode of walking one sees in women, very few of whom are good walkers in consequence of the inability to balance the body through weakness of the muscles of the waist.

The fourth charge which I have made against the common mode of dress in which the waist is constricted is that it induces and necessitates an abnormal mode of respiration.

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In normal breathing the shape of the chest-cavity is changed in the act of inspiration in such a manner that its diam-

eter is increased in all directions. The greatest increase, however, is in its longitudinal diameter, due to flattening of the diaphragm, and in the lateral transverse diameter of the lower part of the chest, due to the action of the inspiratory muscles, and, according to Brüger, also in part due to the depression of the abdominal viscera by the contracting diaphragm. In normal respiration in children of both sexes, and in both men and women of savage tribes in which the dress of the two sexes is practically alike, the chief movements noticeable to the eye in inspiration are widening of the chest at its lower part and bulging of the abdominal wall. There is at the same time a rhythmical action of the muscles of the pelvic floor, induced by the increase of the abdominal pressure resulting from the flattening of the diaphragm, acting against the resistance of the tense abdominal muscles.

That the respiratory movements are practically alike in adult persons of the two sexes, I think has been fully established by the observations of Mays and others, as well as by my own studies upon Indian women of various tribes, Chinese women, Italian peasant women, and American women whose breathing has never been interfered with by tight-fitting clothing.

The relation of corsets and tight bands to respiration has usually been studied with reference to their influence upon the lungs or the respiratory process. The important relation of the respiratory process to the abdominal and pelvic viscera has too often been overlooked, although the disturbance of the normal relation existing between respiration and the circulation of the blood in the abdominal and pelvic viscera is undoubtedly a matter of far greater importance than any interference with the respiratory process occasioned by constriction of the waist. The effect of inspiration is to increase abdominal tension. This is accomplished by the flattening of the diaphragm, which is facilitated by the increase in the lateral transverse diameter of the lower part of the chest, induced by contraction of the serratus and other inspiratory muscles. The effect

of abdominal tension is to facilitate the emptying of the veins of the portal circulation in which there is a natural tendency to congestion as the result of the resistance of the hepatic capillary system, which intervenes between them and the general venous system. In normal respiration, in which the intra-thoracic pressure is diminished by proper expansion of the chest cavity, this emptying of the portal circulation is also facilitated by a sort of suction action which draws the blood from the abdominal viscera into the thoracic cavity. Thus, in normal respiration there is a double action, the tendency of which is to accelerate the circulation in the abdominal and pelvic organs; and it is reasonable to suppose that the health of these organs must largely depend upon a continuous and efficient action of this pumping process which is so essential a feature in the maintenance of the blood current in this region of the body.

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When the waist is constricted, both elements of the respiratory process through which the abdominal pelvic circulation is assisted, are seriously weakened. The increase of the abdominal tension resulting from the pressure of the diaphragm, is prevented by the fact that the transverse diameter of the lower portion of the chest is not only diminished but fixed. The lateral attachments of the diaphragm are thus approached in such a manner that this muscle is rendered incapable of efficient contraction. At the same time, the intra-thoracic negative pressure is diminished through the crippling of the inspiratory act. The lower portion of the chest being held firmly, any increase in the transverse diameter of this part is impossible. The normal descent of the diaphragm being prevented, the longitudinal diameter of the chest cannot be increased to the proper extent. The chest is left free to act only in its upper part, the elasticity of which is much less than that of the lower portion, in consequence of the rigid character of the ribs, and the shortness of the cartilages which connect the ribs to the sternum, as well as the comparative weakness of the muscles which act upon this portion of the chest.

The crippled condition of respiration in a woman whose waist is constricted by a corset or tight bands is clearly shown by the readiness with which such a woman gets out of breath when called upon to make unusual exertion, or when there is a special demand for lung activity from any other cause. The first thing done for a

fainting woman is to cut her waistbands and corset strings, but no one would ever think of tearing open a man's vest or slitting up his shirt front under the same circumstances.

The proper action of the chest may be aptly compared to that of a pair of bellows. The lower ribs to which the strong breathing muscles are attached, serve as the handles. The breathing apparatus of a woman whose waist is constricted by a corset or tight bands is nearly as much embarrassed in its action as would be a pair of bellows with the handles tied together. The clavicular respiration, so conspicuous in women who constrict the waist, is not seen among savage women, nor in a woman whose respiratory organs have not been restricted in their action by improper clothing. That this mode of breathing is quite abnormal might be fairly inferred from the structure of the upper part of the chest, which is certainly not such as to suggest any considerable degree of mobility. But this mode of breathing is not only abnormal, but as I think I have already shown, it may be productive of disease. This is true of ordinary respiration, but is most emphatically true of forced respiration, such as is induced by singing or active muscular exercise. Under the imperative demand for an increased supply of air, the respiratory muscles are made to act with undue violence. In consequence of the constriction and the compression of the abdominal walls by the corset, this abnormal force is largely expended upon the organs of the pelvis, which are forced down out of position. The pelvic floor is more yielding than the rigid walls of the upper chest, and is depressed, thus laying the foundation for chronic displacement. A civilized woman wearing the common dress, cannot expand her waist more than one-fourth of an inch when taking a deep inspiration. The expansion must occur somewhere, and the abnormal mode of dress necessitates that the expansion shall be at the upper and lower extremities of the trunk. The greater resistance of the upper ribs and yielding character of the structures which form the pelvic floor, lead to a lowering of all the organs which are dependent on the latter for support.

The tracings shown in Figs. 8 and 9 also show an important fact as to the influence of constriction of the waist upon breathing. These tracings were made with a ~~new form of~~ pneumograph¹ which I have devised, in which the tracings obtained represent the whole of the respiratory movement. Fig. 8 represents the normal respiratory movement. Noting the time relation between inspiration and expiration, it will be observed that expiration is perceptibly longer than the movements of inspiration. I find this relation to

be, on the average, about five for inspiration and seven for expiration. Fig. 9 is a facsimile of the tracings produced while wearing a corset by the same person who without a corset produced the tracings of Fig. 8. It will be observed that there is an increase in the time of inspiration as compared with expiration, which one would naturally expect from the resistance offered by the corset. It will also be noticed that a marked change in the form of the tracings is produced by the constriction of the waist. The expiratory portion of the tracing which appears above the horizontal line, drops suddenly, instead of making a gradual decline as in normal respiration. I should mention, by way of explanation, that in the use of the pneumograph in obtaining the tracings shown in Figs. 8 and 9, a line is first drawn around the cylinder covered with smoked paper, before the recording begins. In respiration, the expiratory curve is shown above the line, the inspiratory curve below the line; so that it becomes easy to measure the relative time occupied by the two movements, and also to analyze the form of the movement. The tracings obtained from the woman in corset show most clearly an abnormal resistance to inspiratory action. Figs. 2 and 5 express the same thing in a different manner.

In natural breathing the action is chiefly at the waist, although the entire trunk wall and every organ within the trunk participates in the movement. The action begins with expansion at the sides, ^{and} then in front, then a slight elevating of the chest, and in forced respiration ^a drawing in of the lower abdomen at the same time. In ordinary respiration there is simply a lifting forward of the whole front wall of the abdomen, chest and abdomen, the movement extending all along the line from the upper end of the breast bone to the pubis. *g* The so-called abdominal respiration is unnatural and unhealthful; indeed it has been in many cases productive of serious injury. Teachers of elocution and vocal music often instruct their pupils to breath abdominally, that is to give prominence to the movements of the lower abdomen in breathing. When the waist is constricted, the inability of the chest at the sides compels an exaggerated movement downward so that the viscera are forced down into the abdomen to an unusual extent. In natural respiration, the expansion at the sides of the waist or increase in the circumference of the trunk ^{at its} ~~from the~~ center, prevents this excessive downward movement. It will be readily seen how by violent efforts to force the breath downward with the waist ~~constricted~~ confined so as to prevent proper expansion, the supporting ligaments of the various viscera might in time be so stretched as to produce a general sag of the abdominal contents.

Correct breathing is as necessary for the health of the pelvic and abdominal viscera as for a healthy condition of the lungs, for the respiratory act not only pumps air in and out of the body,

but draws blood to the heart, assisting particularly the portal circulation and thus aiding absorption of the products of digestion and so facilitating the digestive process. It is quite possible, also, that the ~~rythmical~~ ^{impelled} movements to all the viscera of the trunk by normal respiration is a sort of vital gymnastics which is essential to the health of each organ.

It is thus evident that in its interference with proper respiration as well as from the mechanical injuries which it inflicts, the common mode of dress which involves ~~xxx~~ constriction of the waist is the most potent means of impairing the health and vigor of the whole body, and may justly be reckoned as perhaps the greatest of all factors in the general decadence in physical vigor so apparent among the women of the present and rising generation.

That there has not been a general rebellion against this unnatural and mischief-making mode of dress on the part of the intelligent women of this enlightened age is probably due to the popular or fallacious idea which seems to be so thoroughly fixed in the minds of both men and women, that woman is "the weaker vessel" and naturally subject to ailments and weaknesses and general physical inefficiency from which men enjoy immunity. No one who has made himself familiar with the women of savage nations, or even the women of the peasant classes in civilized countries, must have recognized the fallaciousness of this popular idea which had its birth in the age of chivalry and has come down to us along with numerous other sentiments and superstitions which have no foundation either in natural experience or physiological science.

The average civilized woman is certainly very much inferior to the

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average civilized man in physical vigor. The constancy of this observation has led both the profession and the laity to regard woman as naturally weaker than man. But that this is not necessarily so is shown by the constant experience and observation of travelers among uncivilized tribes. Travelers in China are often astonished at the immense loads which the Chinese women carry upon their shoulders. Some years ago, I saw a woman in the market place of Naples, Italy, carrying off upon her head an immense load of vegetables which required two men to lift to its position. De Saussure relates that when he had finished his observations in the valley of Zermatt, he packed a collection of mineralogical specimens in a box, and called for a porter to carry it out of the valley, as the mountain roads were too steep to be traveled by four-footed animals of any sort. After a fruitless search for a man who was able to transport his box of specimens, he was finally told that if he wished a porter to carry the package he must employ a woman, as no man could be found who was able to even lift the box. He accordingly engaged a woman who offered herself for the service, and stated that she carried the heavy box of minerals over the steep mountain roads without the slightest injury to herself. Stanley reports that the two hundred women porters whom he employed on one of his expeditions, proved to be the best porters he ever had in Africa.

When in England a few years ago, I made an expedition into the "Black Country" for the purpose of studying the women brick-makers and nail makers of that district. I found at Lye some of the finest specimens of well developed women I ever saw anywhere.

Women who had spent all their lives in brick yards or before the forge, swinging the blacksmith's hammer and making the anvil ring. These women never go in out of the rain for fear they will get wet and take cold, and although working in mud and water a great share of the time, have no other protection for their feet than shoes often full of holes and almost without soles, and wholly inadequate to protect the feet from water. They are constantly engaged in lifting heavy weights. One woman I saw tossing and kneading upon a block before her, a mass of clay, which, as I found by actual test, weighed over sixty pounds. She handled it in her hands as though it were only a small mass of dough; and although thus employed from early morn until late at night, she was in no way disabled by her occupation. A physician of long experience, who practiced in the place, assured me that so far as his practice among women was concerned, it amounted to nothing in a gynecological way, but that his obstetrical practice was very large. Not long ago, a public meeting was held at Birmingham, England, by the nail makers of that district for the purpose of protesting against the employment of women in the business of nail making. The reason given by a prominent member of the association for his objection to the employment of women, was that by this kind of labor a woman became so "unsexed" that she could outwork a man, continuing her labor hours after a man was completely used up.

These facts and many others which might be cited show that woman is not necessarily weaker than man. The weakness of woman is due not to natural constitution, but a vicious mode of dress and neglect of physical exercise. Although possibly heredity has some influence in the matter at the present day.

The practical bearings of this question are too evident to require more than mention.

1. It is evident that pelvic disease involving the displacement of organs is only a part of a general disorder in which every organ below the diaphragm may be involved, and any system of treatment which addresses itself exclusively to the disorders found present in the pelvis must be unsuccessful. Here is to be found the secret of the failure of so many methods and systems which have been proposed for the relief or cure of pelvic disease, particularly displacements. I do not hesitate to make the assertion that any method of treatment either medical or surgical, which does not address itself to the removal of the causes of the disorder as well as its effects and amelioration of symptoms, must result in failure. Temporary relief, often apparent cure, may be effected, but sooner or later the patient will find herself in the same wretched condition as before. This explains the almost universal failure of pessaries, local applications of electricity, operations upon the perineum, and the various forms of anterior and posterior colporrhaphy, operations for shortening the round ligaments, ventro-fixation of the fundus, and a great variety of other methods and procedures which have been adopted for the relief of the various forms of displacements of the pelvic organs. The pessary sometimes succeeds, provided there is some coincident change in the habits of the patient which increases the strength of the muscles of the waist and abdomen. But in my estimation nothing can be more absurd than to thrust a pessary up among a mass of prolapsed abdominal and pelvic viscera, stretched away from

their normal moorings, jostling one another about in the abdominal cavity, swagging in whatever direction the body happens to incline. No wonder that such patients often complain that the pessary gives pain. Certainly it is no marvel that ulceration, ovarian irritation and inflammation, and even salpingitis, are not uncommon results.

Thirty years ago Banning undertook to effect a cure of pelvic ~~disease~~ disorders by means of braces, which supported the trunk in a natural position. The weak point in his system was its inability to ~~to~~ give strength to the weakened muscles. An external skeleton consisting of an iron frame work was no more efficient in developing the muscles of the trunk than one composed of hickory or whalebone stays. Neptune's girdle and the Umschlag of the old German Water-Cures not infrequently perfected cures by allaying local congestions, irritation of the abdominal sympathetic ganglia, and especially by supporting the relaxed abdominal walls and holding up in position the prolapsed viscera. Patients were sometimes cured by being sent on long journeys abroad, in which they gained muscular strength and vigor by mountain climbing, horseback riding, and the active exercise necessarily involved by sight-seeing.

Cures have been created by each of these and other haphazard methods of treatment, but they were accidental and not owing to scientific methods, and patients were not infrequently made worse. I have known of cases in which young women were injured for life by being advised by their physician to exercise in a gymnasium without the same careful prescription as to the ~~amount~~ kind and

amount of exercise to be taken, as a judicious physician would give respecting the administration of a powerful drug.

2. It must be evident that a large share of the symptoms present in cases belonging to the class which is generally referred to the gynaecologist, are really due to disorders of other organs which are involved in the general disturbance, or as the French call it, Des Equilibration of the viscera of the lower half of the trunk. Most women suffering from pelvic disease complain of pain when on the feet, dragging pain in the bowels and lower portion of the back, pain at the extreme lower end of the spine, soreness and pain in the region of the navel, a feeling of the lack of support in the lower abdomen, a sensation commonly described as goneness at the pit of the stomach, weakness of the lower limbs, pain in the back, crawling, tingling, numb, stinging and other sensations in the legs, cold hands and feet, burning of the soles and palms. Sometimes the patient says she is only comfortable when on her feet, when holding up the bowels with the hands. Such patients tenaciously cling to the corset because they evidently need some support. Such patients often complain that when they undertake to stand without a corset, there is such a sinking at the stomach that they are compelled to sit down. The evident cause is the dragging of the prolapsed bowels and stomach occasioned by the relaxation of the abdominal ~~back~~ muscles by which the branches of the pneumogastric ~~nerve~~ and sympathetic nerves are put under an unnatural strain. It is evident that in these cases a large part of the symptoms are due not to the pelvic disorder but to the general disease of which this is a part.

3. If we expect to cure a patient who has been a chronic sufferer from pelvic disorders, we must treat the patient rather than the malady. This is a principle which applies, in fact, to most chronic disorders, and a failure to recognize this principle is the rock upon which professional effort often splits. It is as hopeless to undertake to cure such maladies by the usual routine methods, which are addressed to local symptoms and conditions only, as to expect to kill a noxious weed by picking off its flowers or a few of its leaves. The whole disease must be eradicated root and branch. This can only be accomplished by a removal of all the morbid conditions which are the real causes of the multitudinous symptoms by which the disorder is recognized and for which it is often named. Rational treatment of this class of disease must, then, include first the adoption of proper dress, which will be one in which ever muscle of the trunk will have perfect freedom to act. The patient must be instructed to have her dress measure taken with the waist fully expanded and to allow an inch or two for growth in the hope that she may to some degree overcome the deformed condition which she has induced by ignorant obedience to fashion rather than to the laws of physiology and the dictates of common sense.

Health corsets are a device of the devil to keep women in bondage who are seeking for deliverance from ^{the} weakness and misery from which a really healthful mode of dress might emancipate her. Shoulder braces and harnesses of every description are, on the whole, a snare and a delusion. The only correct principle is to suspend everything from the shoulders by means of a waist which

will equally distribute the weight upon natural bearings and at the same time give latitude for the greatest freedom of waist movement.

If all women would at once adopt a healthful mode of dress, probably half of our profession would be obliged to seek some other calling. Certainly at the present time more than half our business consists in efforts to repair damages which ignorant women have inflicted upon themselves by submission to fashions which originated neither in a proper knowledge of the requirements of the body or a just consideration of the principles of beauty. The idea that a small waist or a round waist is beautiful is a mischievous and dangerous notion which ought to be eradicated from the public mind. Nature never made a waist round, smooth, slight ^{or} and tapering as though it were chiseled out of a block of wood, and why should we allow ourselves to be persuaded by the fashion mongers that a thing ^{which} from an artistic standpoint is truly hideous is otherwise than monstrous and repulsive? An artist who would make a nude figure with the waist modeled after ^a the French corset would not be allowed to exhibit his work in any respectable gallery.

A singular illustration of the inconsistency of human nature is to be found in the fact that the same artist who takes so great care of his model's figure that he will not allow her to wear a corset, or subject herself to ~~any~~ waist constriction, ^{any sort} never thinks to criticise his wife, who squeezes herself into a French mold of the latest pattern regardless of the fact that the circumference of her trunk is decreased by several inches at the middle only at the

expense of a commensurate increase below, making an unsightly protuberance consisting of displaced adipose tissue, relaxed abdominal muscles, and a promiscuous assemblage of stomach, bowels, kidney, spleen, and other things which have been forcibly ejected from the snug corners in which nature carefully stowed them away, and thrust into an uncouth and shapeless mass, and ~~xxxxxxxxxxxx~~ unnatural prominence in front which seems to be ballasted ^{up} by an unnatural and unsightly mass behind. We see in the enormous busts and bustles which fashion ^{has} describes, ~~for~~ an evident attempt to cover up the uncouthness of form which the corset and other fashionable modes of torture have induced by means of these excrescences, and by their aid to approach as far as possible to the ideal figure which in its native grace and beauty requires no such accessories.

The first gown which Mrs. Miller exhibited was a lovely tea gown, ~~entrains~~; made of brocaded silk front. Having given the audience the privilege of asking questions, the remainder of her time was spent in answering queries about her various gowns, etc.

Question.--Are there any bones in this dress?

Ans. All of my fitted dresses have very slender bones to straighten the seams, but which as you see do not impede my freedom to bend or twist in any direction. The dresses which come nearest to my ideal of artistic effects are not close fitting and need no bones.

Question. Do you advise making dresses with trains?

Ans. It all depends upon the purpose for which the dress is to be worn. Utility, decency and health demand that a street dress shall be short as I have already said. But for the woman of leisure, in her drawingroom, the floor of which is as clean as can be, then ^{a train} ~~it is~~ suitable, graceful and artistic. It accentuates height and ^{still} allows freedom of movement, ^{for it should always be light} A woman who understands how to manage a train, winds it in graceful lines about her feet when she is standing to ~~talk~~ talk. It should never be left to ^{for} ~~cause~~ people to stumble over it. The slight ^{ly} flowing, graceful line which it gives, adds to a woman's beauty. Dress reformers have made a mistake in trying to get everybody to conform to the same pattern for every occasion.

enough so that the point of the shoulder shall escape above. The fullness of the sleeve must come at the elbow so that in extending the arm it shall not draw from the elbow to the under arm seam.

Question. "What makes that dress set so nicely in the back? Do you wear a bustle?"

"Bustle!" exclaimed the beautiful apostle of dress reform throwing up her hands with a gesture of horror [^] which did not forget to be graceful. "Bustle, indeed! Now can you tell me what makes the dress set so badly?" continued Mrs. Miller, as she took the bad standing position common to nine-tenths of womankind, by which the chest is flattened, the abdomen protruded and the spine robbed of its natural graceful ~~the~~ curve. The change in the appearance of both the gown and the woman was striking, and after the laugh which followed her question was over, Mrs. Miller elevated her chest and threw her hips well back, by which her spine took on its natural curve when it was made ^{plain} ~~pain~~ that no bustle was needed by a woman who knew how to stand. "In the other case, I had no center of gravity and consequently no bustle!" she explained.

The next gown was a carriage and calling dress, with a demi-train, for a woman, who while wanting to reform her dress, still prefers to keep in the extreme of fashion outwardly. "There are women who say that they would rather die than not look like other women. This dress shows that they can still look like other women and not die. This dress should never be worn on the street. A dress which touches the ground is indecent and uncleanly and not

therefor. Catherine de Medicis invented a thirteen inch corset and compelled her women to squeeze themselves into it. A steel hasp was also used to gird in the waists of women, and from that day to this, lacing has been in vogue, until there is an inherited tendency to weakness in ^{the middle} ~~that~~ part of the body in both men and women. The woman who is cramped at the waist line can neither poise nor walk with grace and ease.

The next dress in which Mrs. Miller appeared was an elaborate evening costume of light silk, trimmed with wine colored velvet and steel beads. It was sleeveless and made with a train.

It was cut away slightly in the neck but would not be called a low necked dress. In speaking of it she said:--

I do not believe a woman can wear a dress cut much lower in the neck than this without feeling self-conscious and without exciting passionate suggestions in the minds of the men with whom she is associated. The nudity of the savage is natural and taken as a matter of course, and English ladies and their daughters go about in costumes which for us would be immodest, both at home and in society, without thinking anything about it, but I do not believe our American women can wear a low cut dress modestly. If a woman has a nice arm, there is no immodesty in appearing with it uncovered, but if your arm is spread out like a ham or is red and spotted, I beg you never to appear with it uncovered.

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Copyrighted.

Fig. 1—EXERCISE AND BICYCLE COSTUME.



2

Copyrighted.

Fig. 2—SHORT DIVIDED SKIRT BELONGING WITH EXERCISE AND BICYCLE COSTUME (front).



3

Copyrighted.

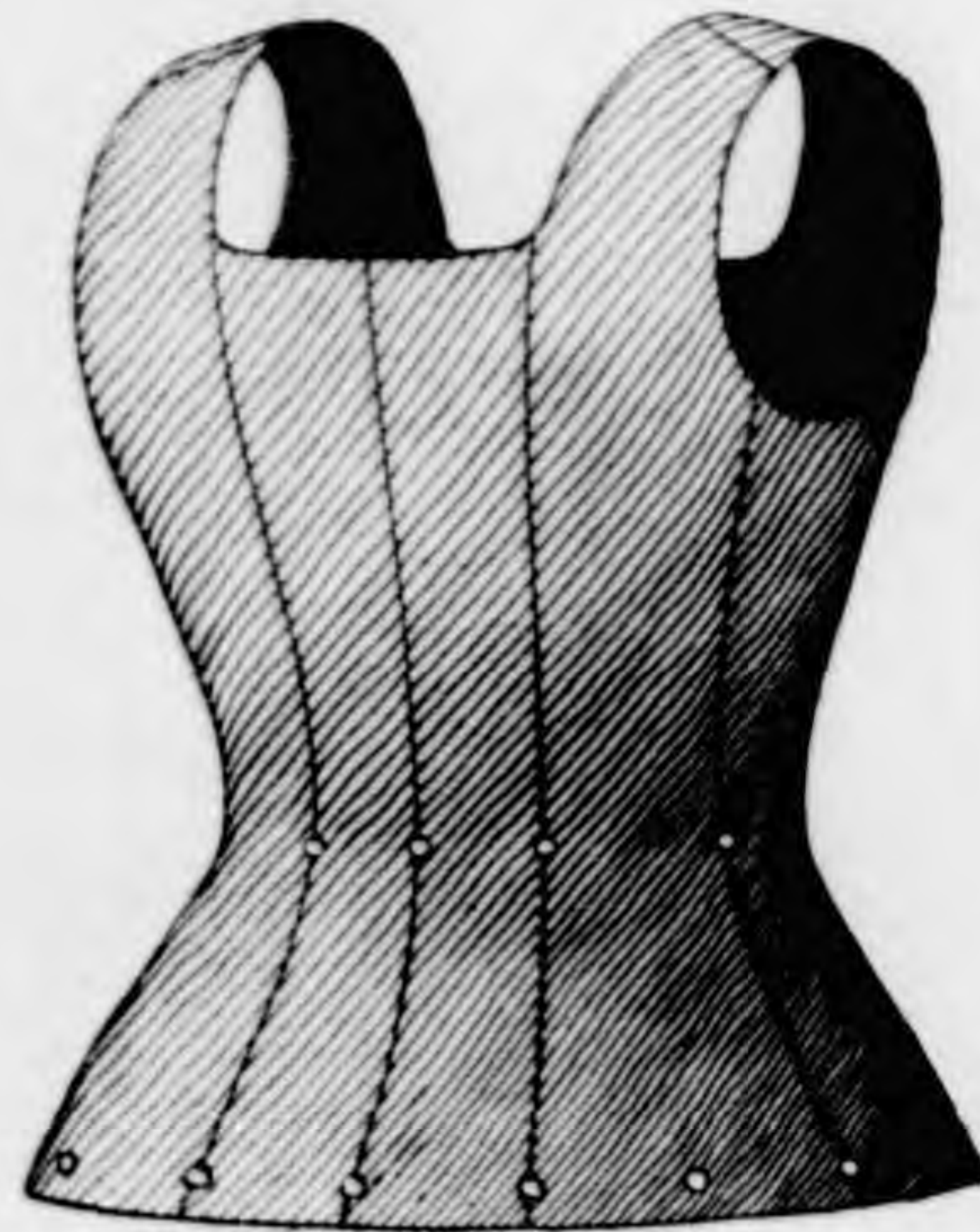
Fig. 3—SHORT DIVIDED SKIRT BELONGING WITH EXERCISE AND BICYCLE COSTUME (back).

2

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4 Copyrighted.
 Fig. 4 THE EMANCIPATOR (front).



5 Copyrighted.
 Fig. 5 THE EMANCIPATOR (back).



6 Copyrighted.
 Fig. 6 WOMAN'S PRACTICAL BUSINESS DRESS
 SHOWING DIVIDE (front).

3

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Copyrighted.
 Fig. 70.
 KNICKERBOCKERS
 (front).

Copyrighted.
 Fig. 69.—GORED DIVIDED SKIRT WITH YOKE (front).



Copyrighted.
 Fig. 71.—LADIES' LEGGINGS.

4

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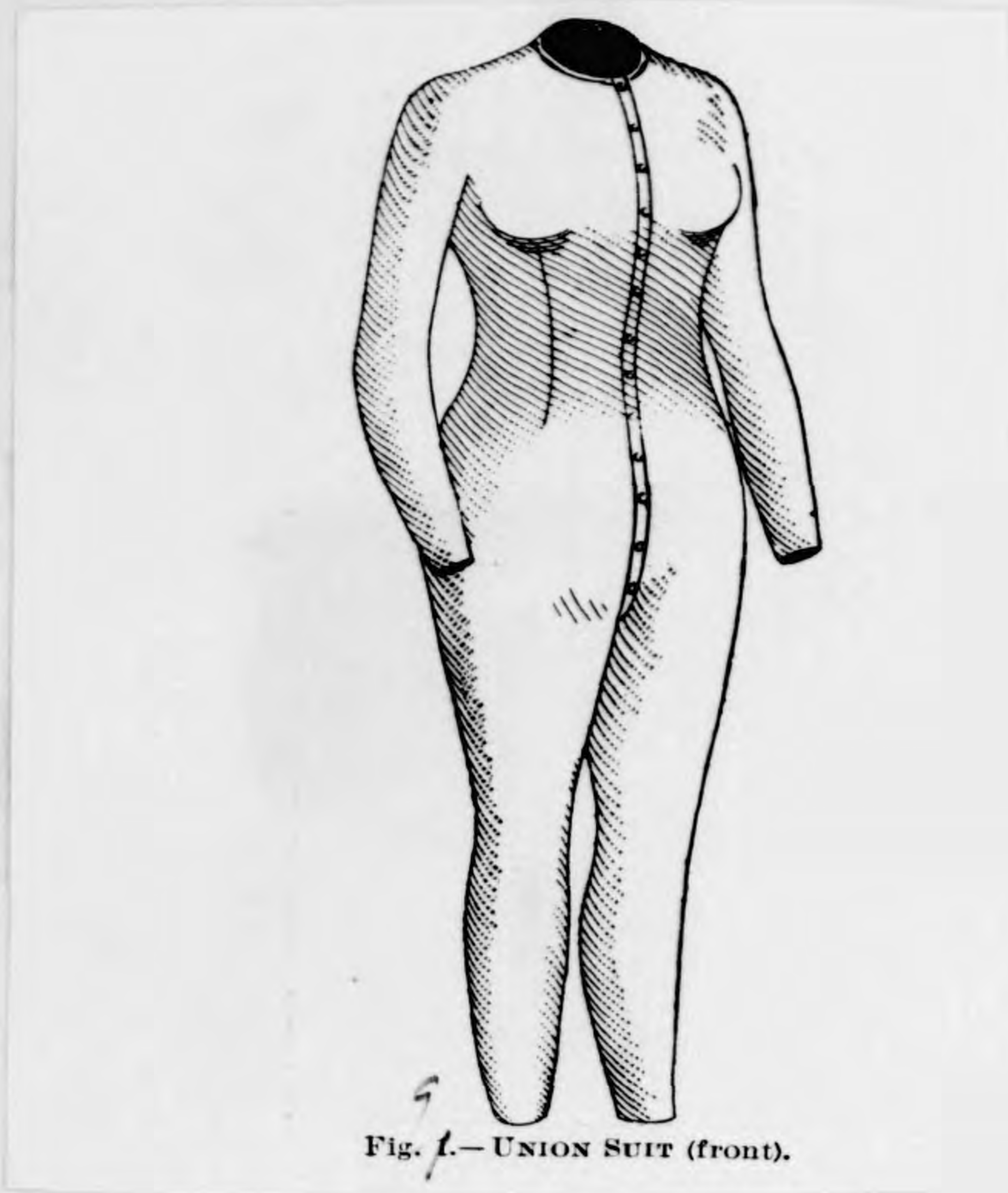
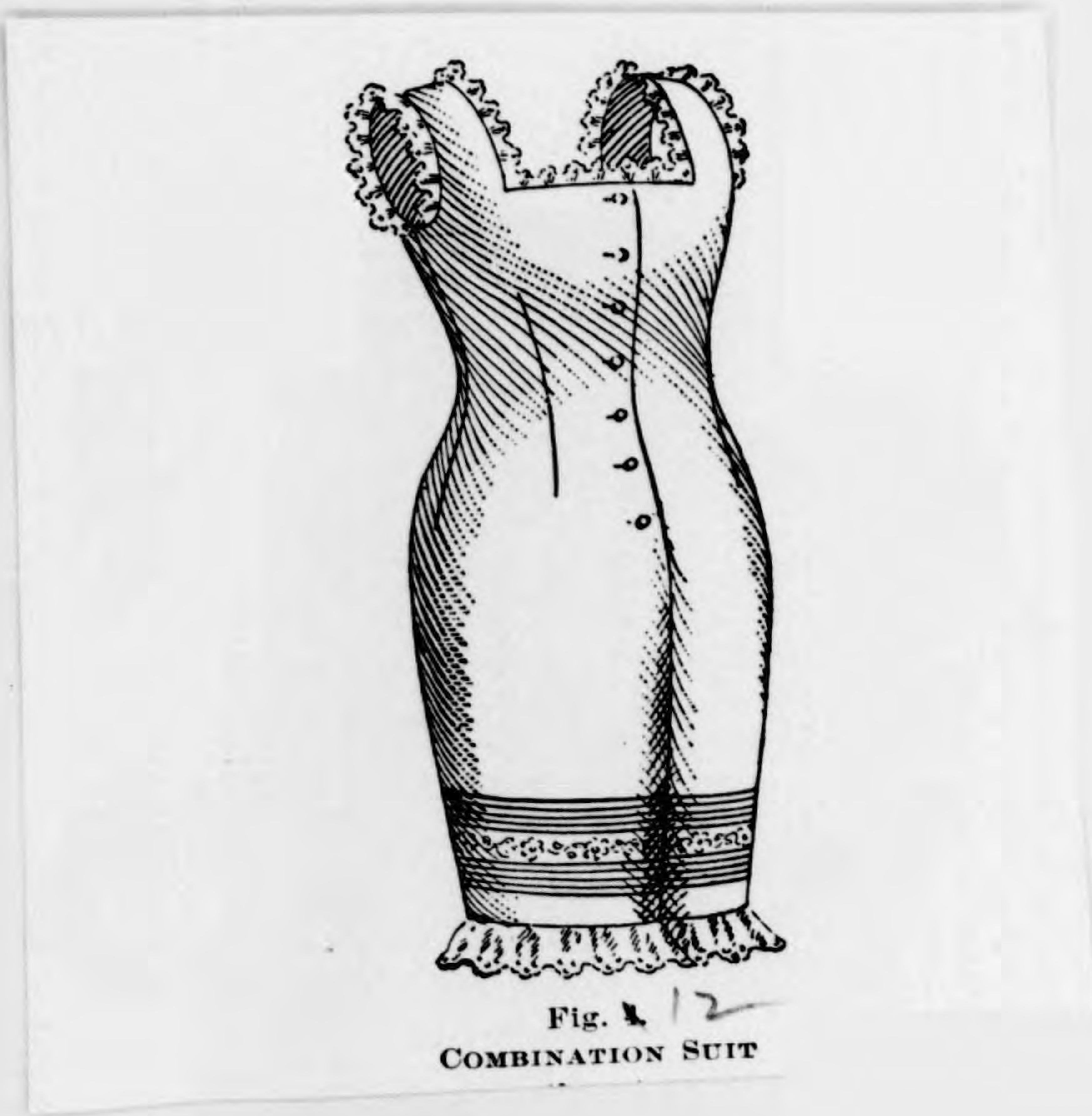


Fig. 1.—UNION SUIT (front).



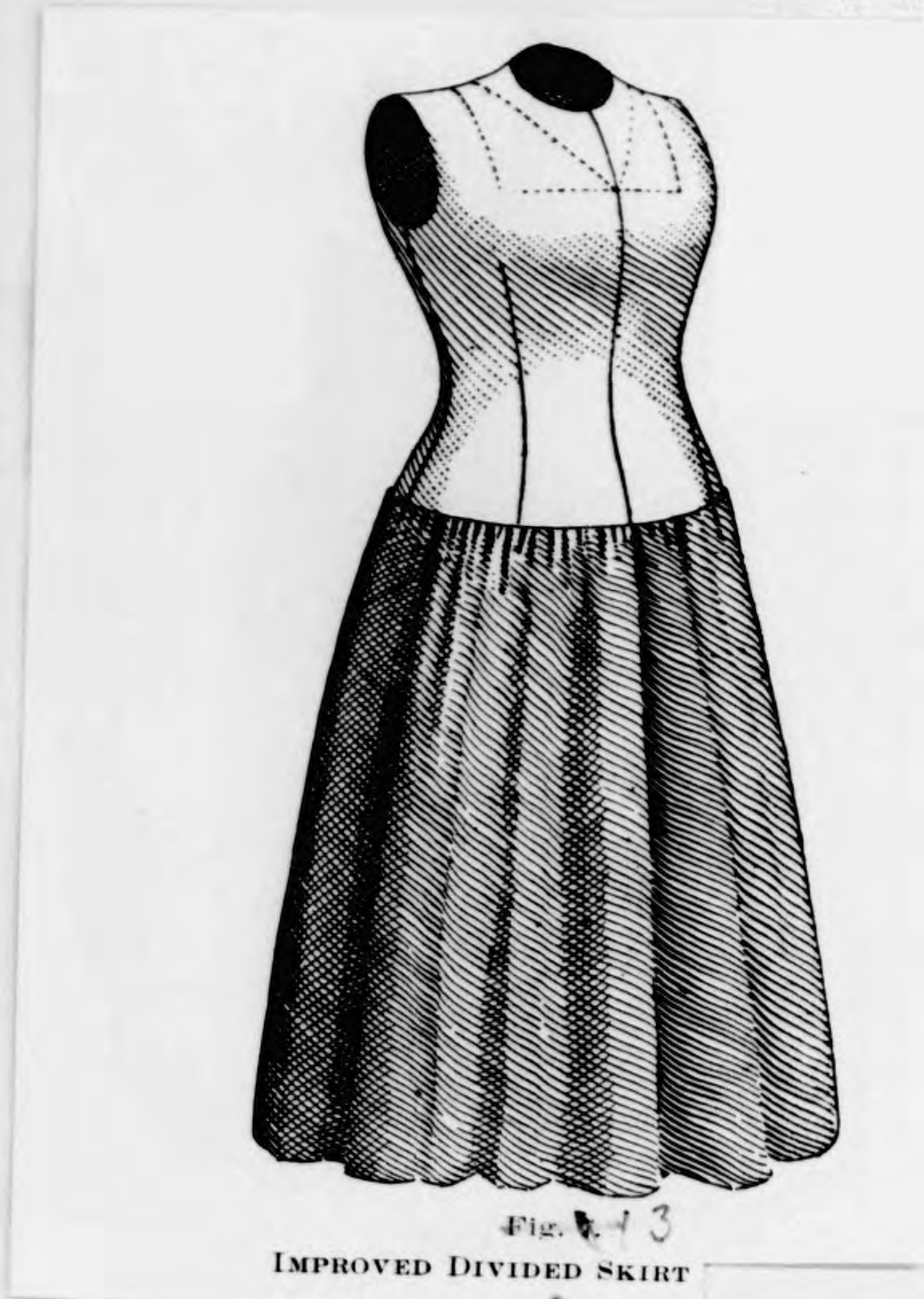
Fig. 2.—TIGHTS.

10

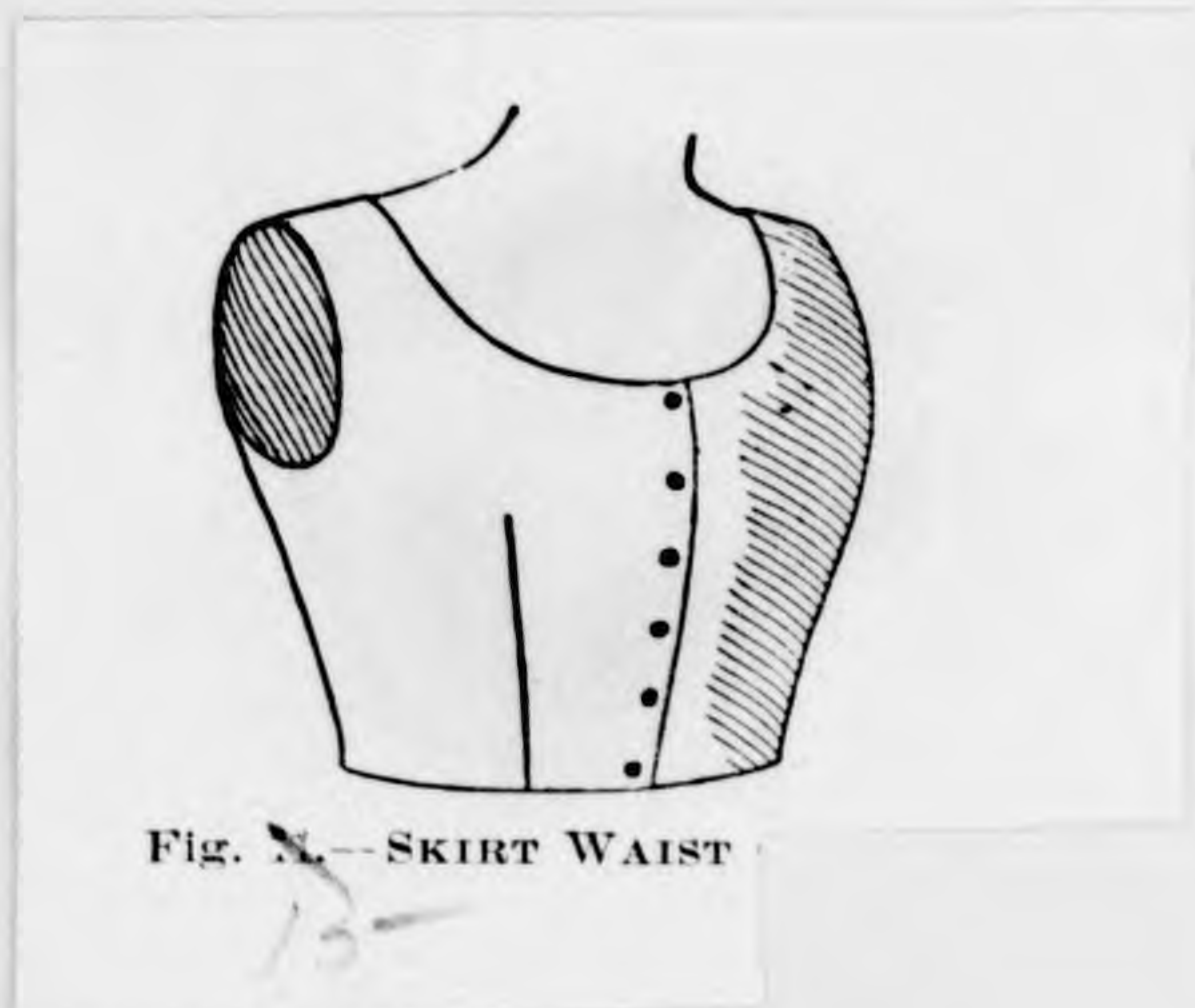


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14



13

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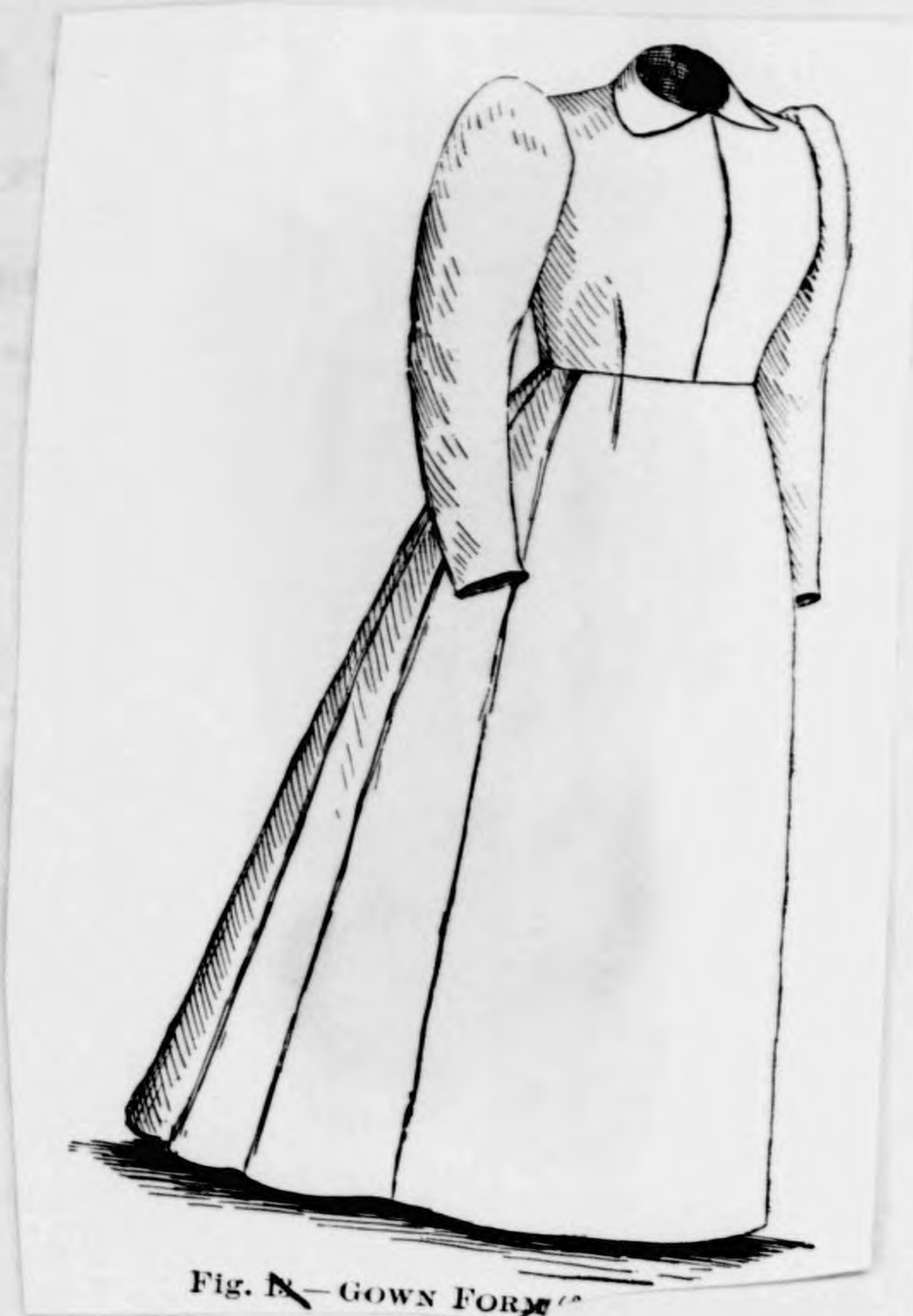


Fig. 16 - GOWN FORM

16

Cuts and plates for new book --

Plate 1, Red and white blood corpuscles, bone, muscle, connective tissue, nerve cells, kidney.

Plate 2 ~~Structure~~ The Skeleton.

Fig. 1, -- H.H.B. Fig. 50

Fig. 2, " " 49

Fig. 3, " " 122

Fig. 4, " " 123

Fig. 5 2nd Book Phy. Fig. 8

Plate 1, Fig. 1 & 2 2nd Book Phy.

Plate 2 fig. 23 & 12 H.H.B.

Plate 3 H.H.B. Plate 7

Fig. 6 H.H.B. Fig. 224

" 7 " " 1207 H.H.B.

" 8 " " Pancreas, Fig. 128

Plate 4 ^{The} Circulation of blood. H.H.B.

Fig. 9 Heart.

- 10 Inside of heart,
- 11 Valves of the veins.
- 12 Lymphatic vessels
- 13 Glands and vessels.
- 14 Nerve cells.
- 15 Ganglion
- 16 The Brain.
- 17 Brain and spinal cord
- 18 The facial nerve.
- 19 The Ear.
- 20 The Eye
- 21 Section of the Eye Ball.
- 22 The structure of the skin
- 23 The root of a hair.

From Knot
The inside of the nose
The bronchial tubes
and air cells

Bones
Plate IV, The Muscles

Plate V
Circulation

(Cuts found in 1st book of Phy. may have to be reproduced.)

Add to Physiology

Plate - Muscles

Cuts Bone Knot

mucous tubes & air cells

Hygiene of the Home

+ Primitive Asiatic House

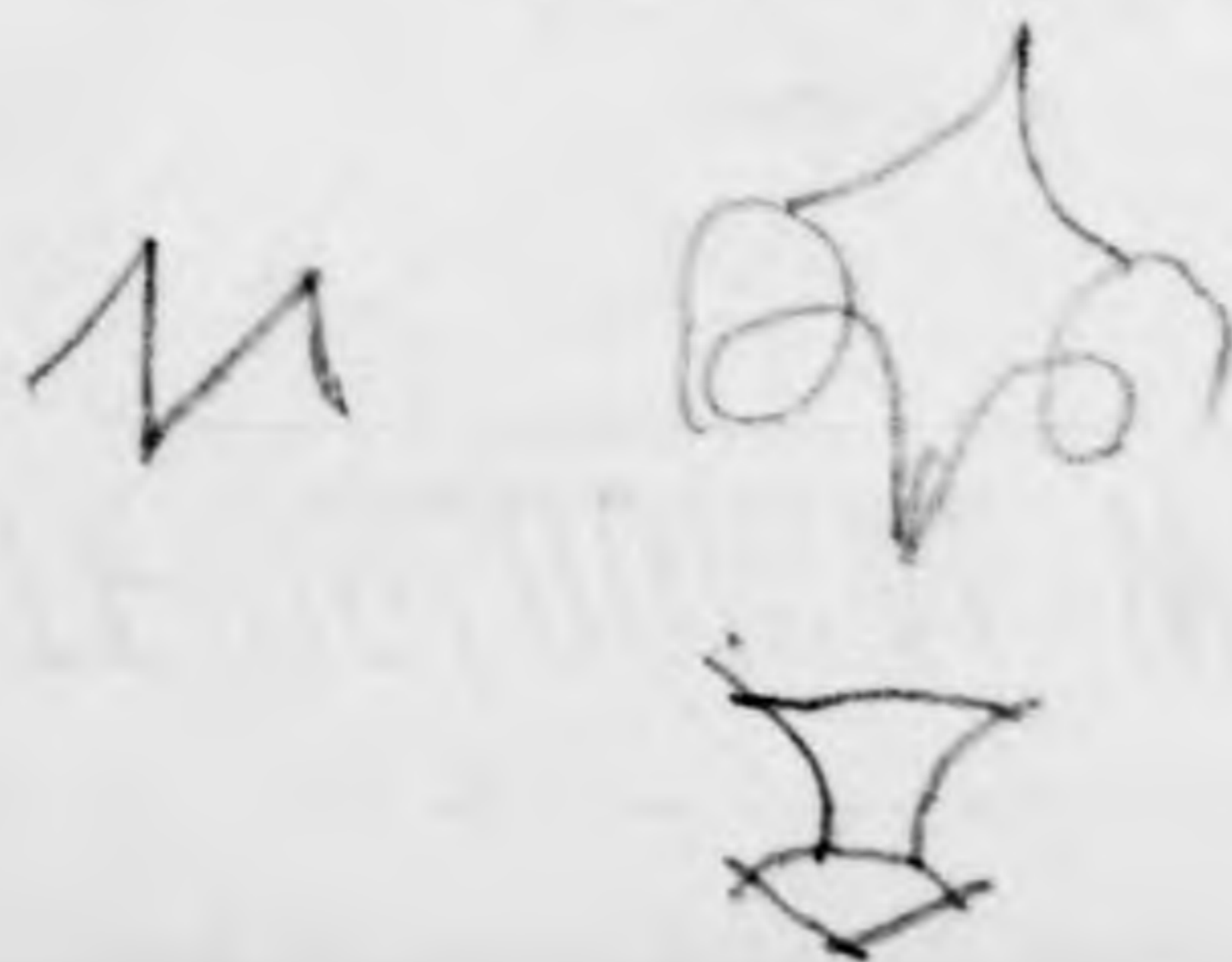
~~First House~~ (Cellar sewer)

+ Esquimaux

+ Log house

~~Street in Chinese City, p 45~~

See cuts of science
leaflets



Plain climbing
sitting -

(see article in (Ed. Ex))

1725 - Nichinca

1806 - Coma

1770 Running

1923 consumption germ

1925 germs

1926 germs

1985 ~~8 times~~ women's foot

1866 to 1819 healthful dress,

2073 Germ virus for

21413.4

Effect of bad shoes

2550

Deer or leucise

2554

Egypt. Girls

2549

2 other girls

- 107 Eskimo huts
- 28 Chief Pasqual
- 34 German girl at work
- 43 Home of Cliff Swallows.
- 65 Arab women grinding Corn
- 98 oldest house
- 128 Primitive House
- 140 African hut
- 150 Krooman village
- 214 Mex. Indians
- 1132 snuff taking
- 1339 Kidney stone

ancient millers (see food cat)

sections of grain 1528 1532

- 1546 Small waist
- 1557 Natural waist

~~Reds~~ - walking ~~stair climbing~~
 swimming ~~sitting~~

24-72-24-75 - Swimming

24-67-24-70 - Good & bad sitting
in RR seat

24-82 - Gymnastics

Goods

Cocunut tree p 55

Mead fruit 57

Plantain ..

Oriental Churn

Earthen made of grinding wheat

Richard 92

Cuts from "Stomach" to be used in new book.

Figs 12 & 13 p 64

Fig. 14 p 101,

• **15 p 102**

Plate 1, Germs.

• **3 Germs in water**

• **4 Uniformity of the trunk**

Fig 9 p 32 Starch granules

• **16 p 113 vinegar cells**

Plates 9 and 10 healthful clothing

Human teeth covered with tartar
" " injured "
Teeth of healthy cow.
" cow fed on distillery slops

Pigeon Breast