

walls of the tube are chiefly composed, contract in their turn and force the blood still further on. The opening from the ventricle into the pulmonary artery is also closed by two curtains, each having the shape of a half-moon, from which they derive their name of the SEMI-LUNAR VALVES; when the artery then contracts, instead of the blood being pumped back into the heart, these valves, by their falling together, close the opening and thus prevent any possible return; so the force of the contraction of the heart is assisted by the contractions of the walls of the arteries in pumping on the blood; and each part of the artery being composed of the same muscular tissue, and all the muscles along the tube contracting in turn, the current of blood is continually pumped onwards. After a little while, the pulmonary artery divides into two chief branches, right and left, which run into the right and left lung respectively. In each lung, the arteries then split up into numerous branches, which grow smaller and smaller as they divide and sub-divide, passing into every minute division of the lung tissue; and the vast importance of which sub-division we shall see hereafter when we consider the action of respiration or breathing upon the purification of the blood. When the arteries have become extremely minute they are continued as CAPILLARIES—thread-like little tubes through which only a few blood cells, minute as we have seen them to be, slowly squeeze their way.

Then we find the capillaries coalescing and joining together, and gradually enlarging until they become the PULMONARY VEINS. Then these veins running back, side by side with the arteries, grow larger and larger by joining each other, until they finally form one large vein which discharges its blood into the LEFT AURICLE of the heart, thus completing the pulmonary or lesser circulation of the blood. Then the left auricle, being distended with blood, contracts and forces its contents through the opening known as the MITRAL ORIFICE into the LEFT VENTRICLE, and the walls of this chamber contracting, forces the blood through the opening at its upper part, into the chief artery of the body known as the AORTA, while, just as we saw was the case on the right side of the heart, the return of blood from the ventricle into the auricle is prevented by the closure of the curtains across the opening, which in this case are known as the MITRAL, or BICUSPID VALVES, the former name being given to them because of their fancied resemblance to a bishop's mitre. Then the contraction of the aorta forces a little blood back and so closes its semilunar valves, thus preventing any reflux of blood into the ventricle; while the blood stream flows along the artery.

(To be continued.)

## Physical Decadence.

### THE INFLUENCE OF DRESS IN PRODUCING THE PHYSICAL DECADENCE OF AMERICAN WOMEN.

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(Continued from page 144.)

**W**HEN the waist is constricted, both elements of the respiratory process through which the abdominal pelvic circulation is assisted, are seriously weakened.

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 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 it 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

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