

health expected with a costive habit of the Bowels. Constipation is truly the "Father of Disease," being the primary cause of very much of the sickness from which people suffer. Thus we see how much depends upon perfect digestion of good nourishing food, and a perfect action of this important channel, the Bowels, as an escape or outlet of waste matter. And we see, too, how much we possess the chances of health in our own keeping.

THE LIVER.

This, the largest of the glandular organs, is located principally upon the right side, under the right lung. It usually weighs about 4 pounds, and is of a spongy nature. It forms bile from the venous blood, and a secretion which contributes to animal heat. It also destroys albuminous matter in the food, and forms urea, which the kidneys pass off. Every drop of blood passing through the Liver, that vital fluid is filtered or strained thereby. The bile from the Liver stimulates the Bowels to a natural movement, and when acting properly keeps the Bowels regular without medicine; but when the Liver is inactive all goes wrong. The Liver is subject to many forms of disease. The common diseases of the Liver are Inflammation, Jaundice and Cirrhosis or hardening. The bile sometimes becomes thick and hardened, forming Gall Stones, which cause great pain and serious sickness. Jaundice is known by the yellow skin, yellow eyes, nausea and general biliousness, it being an overflow of bile into the blood. The Liver is very easily deranged; it may have too much or too little bile, and in either case serious illness follows. Liver poison in the blood is the predisposing cause of Malaria, Ague and other Biliary troubles so commonly known.

Liver Complaints and Bilious diseases constitute nearly three-quarters of all the sickness from which mankind suffers.

THE BLOOD AND ITS CIRCULATION.

You have seen in our article upon the Stomach and Digestion, how the proceeds of digestion, the *Chyle*, is mixed with Lymph and carried to the heart in the form of blood, and that this fluid contains particles of all the substances required for building up the body and repairing the waste constantly going on. This liquid has solid particles in it, the red and the white *Corpuscles*. Blood will clot upon exposure to the air, which happily prevents a person bleeding to death if wounded in the veins. The blood contains about 80 per cent. of water. When the elements of food have become blood, they are carried to the heart,

as described, where the circulation is controlled by this self-acting force-pump. The arteries supply blood to every part of the body. These arteries terminate in small capillary or hair-like tubes, in which occur chemical changes, the oxygen of the red or arterial blood repairing the water in the system, its place being taken by the carbonic acid gas, which changes red to blue or venous blood, the blue blood returning through the veins to the heart to be re-purified; the veins possessing small valves, the blood cannot flow backward but must ever go onward. It requires about half a minute for the blood to make the entire circuit of the body, and any hindrance to free and perfect circulation is sure to bring ill results. Passing on its course through the pulmonary arteries, or arteries of the lungs, the blood is purified by the oxygen of the air we breathe, and is returned, as we have seen, through the pulmonary veins to the heart, pure, bright red blood, fitted to perfectly nourish the body. When the blood contains *Uric Acid*, Palpitation, Valvular disease, Rheumatism and other serious troubles follow.

You have seen how the blood passes through the liver by the Portal vein, traveling through the entire substance, forming bile which is conveyed by the gall duct into the Duodenum or large portion of the bowels. This is another process of its purification and an important feature in the circulation. The contraction of the heart driving the blood through the arteries of the lungs is its next important source of purification. Then comes the strongest contraction of the heart forcing the blood in the Aorta or great Artery, and thence over the entire body. Thus we see how in harmony all the organs act towards the maintenance of perfect health during right action, and how one organ acting wrong will disturb and disorganize all the others.

BAD BLOOD.

Without pure blood there can be no perfect health. With a free circulation of pure blood disease is impossible. Errors in diet, bad drink, bad air, a torpid liver, with constipated bowels, makes bad blood, and bad blood poisons the whole system and brings exhaustion and disease. Pure air and exercise give good circulation; wholesome, nourishing food gives nutritious blood. When the blood is bad it is often loaded with bile from an overcharged liver, or with uric acid from the kidneys. Then we have Rheumatism, Neuralgia; and the poisonous secretions that should escape from the bowels, the kidneys and the skin, are circulated through the system and break out in foul humors, eruptions, etc.; or if pent up, lead to fevers, inflammation, and serious disease. Therefore, take only simple, nourishing food, abundance of pure air, and drink pure