carried out when it is impossible to make the patient take food in any other manner, and when the general strength is suffering severely from the want of nourishment. The treatment is employed, perhaps, most frequently for patients suffering either from hysteria or from brain disease, and who obstinately refuse to take any nourishment by the mouth, and reject all nutrient suppositories or enemata. It is obvious, therefore, that the administration is a matter, generally, of considerable difficulty, and inasmuch as the patient will frequently attempt to vomit the fluid thus administered, it is of the utmost importance to so give the injection as to cause the least possible amount of gastric or œsophageal irritation.

Other patients for whom this treatment is necessary are those suffering from stricture of the œsophagus due either to cancer or to some form of cicatricial or fibroid growth ; the most satisfactory cases, of course, being those in which no tumour formation is present. For example, patients who have accidentally swallowed some caustic fluid or boiling liquid often have the mucous membrane of the gullet partially destroyed, and the resulting cicatrix, slowly contracting, narrows the passage of the canal. In such patients, careful feeding by means of the œsophagus tube often enables the strength to be maintained successfully until operative measures can be taken in order to dilate the canal.

Passing next to the consideration of the organs connected with Digestion, we find that the largest and most important is that known as the LIVER. This is a large, dark-red, fleshy mass weighing about fifty ounces, and situated immediately under the dome of the diaphragm chiefly on the right side of the abdomen ; it is divided into two parts or lobes, a right and a left, the former being much larger and thicker than the latter, and divided by grooves or fissures on its under surface into three smaller lobes. The largest of these fissures is called the *Portal Fissure*, and, along this, pass into the Liver the *Hepatic Artery*, conveying arterial blood from the aorta ; the *Portal Vein* which brings venous blood from the stomach, intestines, spleen and pancreas; and the *Bile Duct* which, as we have seen before, carries the bile from the Liver to the Duodenum. If, by dissection of the organ, we trace these three vessels inwards, we find them keeping one another company, each dividing and sub-

dividing into smaller and smaller branches. The Liver tissue is composed of cells—the *Hepatic Cells* — each one of which is about $\frac{1}{1000}$ of an inch in diameter. These cells are grouped together into small portions of tissue, about $\frac{1}{10}$ of an inch in width, which are called *Lobules*. In these Lobules, the capillaries of the hepatic artery begin to unite together, forming venules, and these again uniting, form the *Hepatic Vein*. which carries the blood from the Liver to the Inferior Vena Cava, and so to the Heart. The branches of the Bile Duct begin in the lobules as minute canals, joining together to finally form the one duct.

The *Hepatic Cells* secrete the BILE from the blood, manufacturing the substances they thus withdraw, into this highly specialised material—the Bile flowing from the thousands of hepatic cells into the minute passage of each and so to the small ducts and finally into the main Bile Duct. Bile is always being formed, thus differing from the saliva, the gastric, and pancreatic juices, which are, as a rule, chiefly secreted when food is being taken, and in consequence of the irritation by the passage of the food into the mouth and into the stomach. These fluids then flow out at once and are mixed with the food they are intended to digest. But as Bile is always being secreted, independently of the processes of digestion, it is obviously necessary that it should be stored up for use; and, as we have previously seen, this is effected by the bile flowing from the main duct into a reservoir in the shape of the Gall Bladder. The quantity of Bile secreted in twenty-four hours is about two pints, and as the food passes from the stomach into the duodenum and so causes peristaltic action in the muscles of the latter tube, the Gall Bladder is made to contract and thus to expel its contents through the common-duct, together with the secretions of the Pancreas, into the duodenum.

The second great function of the Liver is to store up carbohydrates. The blood in the portal vein carries to the Liver the sugar which has been absorbed from the *intestines ;* this passes out of the capillaries into the hepatic cells, and is converted by these cells into a starch-like substance called GLYCOGEN, which is then stored up for future use, as may be required by the system, in the form of minute grains in the substance of the cell.

(To be continued.)