T. From the liver, which is therefore a great gland secreting or making the reddish-yellow bile fluid out of the blood, to the amount, perhaps, of from two to three pints per day in the average man.

S. When the chyme is made alkaline by the bile the pepsin coming from the stomach must stop dissolving the proteids. And will the ptyalin commence then to change the starches to sugar?

T. A good idea. A portion of the chyme goes on a long way before it loses its acidity, and peptic digestion is still going on there. But the use of the bile appears to be two-fold. It commences to dissolve or emulsify the fats so as to make them capable of absorption. But it especially prepares the chyme for the *pancreatic* fluid, which is poured into the duodenum from the *pancreas* immediately after the bile. The pancreatic fluid is strongly alkaline and contains trypsin, which dissolves proteids or albuminous matter more powerfully than pepsin. It has also a second ferment, which changes starch into sugar like the ptyalin of the saliva; and a third ferment or substance, which dissolves or makes a cream of fats.

S. Then the bile and the pancreatic fluid is the most universal solvent of all the different kinds of food.

T. Quite correct. And if the chyme were not made alkaline by a sufficient quantity of bile the pancreatic fluid would have no solvent effect at all.

S. So then, in the mouth the food is necessarily digested in an alkaline medium, in the stomach in an acid medium, and in the duodenum in an alkaline medium again.

T. You are right. And after this stage the chyme is changing into a whitish milk-like fluid called *chyle*, which is absorbed through the walls of the smaller intestines, which are covered with a fine velvet-like pile, offering a large surface for absorption.

V. Conclusion.

S. What are the parts following the duodenum?

T. First comes the *jejunum*, so called on account of its generally being found empty after death, about seven feet long; then the *ileum*, about twelve feet in length, so called on account of its position in the lower half of the abdomnal cavity, where it lies much convoluted. Last of all comes the large intestine, about five feet in length. It starts from near the base of the abdomen, at the right side, where the slender ileum enters its wall at right angles as it were, a short distance from its lower end, which is closed, and is called the *cæcum*, the first division of the large intestine. The second division, called the *colon*, ascends at the right side of the bowels, then goes right across in close proximity to the stomach and duodenum to the left side, and then descends the left side and terminates in the portion named the *rectum*.

S. Are there any digestive fluids poured out into the food in the small intestines?

T. There is what is called the intestinal juice; but much that is certain is not known of it. That the nineteen feet of the small intestines is where the greatest amount of absorption takes place there is no doubt. The material is moved along by contractions like those we have noticed in the act of swallowing in the gullet, only the contractions are not so violent. They are called *peristaltic* movements. The chyle, after passing through the thin scarf skin of the intestines, is collected into innumerable very minute, lymphatic capillaries, which are generally called lacteal vessels from the milk-like nature of the fluid. These capillaries unite as small streams do into larger ones, and the larger vessels pass away through the *mesenteries* which bind the intestines in their proper place to the wall of the abdomen. From thence it is carried to a greater vessel, the thoracic duct, and finally is thrown into the blood current entering the heart and becomes new blood itself, ready to build up any wasting portion of the body, whether it should be nerve, bone, muscle or gland material.

T. What do you think now? Can there be good health with bad digestion?

S. No. Because the food taken does not become a part of the body to repair the waste in the blood, nerves, gland substances, muscle and bone.

T. How may bad digestion be brought about then? Let me see how many different answers I can get.

S. By swallowing food hurriedly without mixing with saliva. By swallowing it in lumps so that the digestive fluids can not get at more than the surface.

T. Yes; such food will undergo putrefaction instead of digestion.

S. Anything that will change the natural character or quantity of the saliva, the gastric juice, the bile, the pancreatic juice or the intestinal fluid must injure digestion.

T. Very good indeed. Now what do you think might have such an effect on digestive secretions?

S. Gum chewing, tobacco chewing, tobacco smoking, rum drinking, anything poisonous, too much cold water, too much tea, too many pickles, too many sweeties, too much of anything, anything which makes a person feel bad.