GASTRO=ENTEROSTOMY.

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When I was asked by the Editor to write a few notes on the subject of the operation known as Gastro-enterostomy, it occurred to me that what was wanted was not so much a description of the operation itself as an account of the conditions which necessitated its performance, and in which it has given such brilliantly successful results.

We will begin with the process of digestion in a healthy person. The food when it reaches the stomach meets with gastric juice, which is poured out by the glands with which that organ is lined. This juice contains a ferment (pepsin) and an acid (hydrochloric acid) which together act on proteid foods (flesh, fish, and so on), and turn them into peptones. Starchy foods and fats are unchanged. Now it used to be thought that the main part in this conversion of the proteids was played by the pepsin, but we now know that the hydrochloric acid is of much greater importance, because it not only helps gastric digestion, but it is also essential for the much more important changes in the food which have to take place in the long coils of intestine through which it has subsequently to pass. As a matter of fact, unless some hydrochloric acid is poured into the first part of the intestine, the secretions which are required for intestinal digestion (namely, pancreatic and intestinal juices and bile) are not secreted in adequate quantity. In practice it comes to this, that so long as the stomach furnishes hydrochloric acid to start intestinal digestion, it does not matter very much whether its own digestive powers are up to the mark or not; the intestine can do the stomach's work as well as its own in this respect, if it has to.

Coming now to the abnormal, it often happens that for some cause or another the stomach is unable to do its work properly, and that the food, instead of being passed on into the intestine at the proper time, is retained in the stomach. This is really the important point. It does not matter so much whether the conversion of proteids into peptones has been effected, so long as the mass passes through the pylorus and leaves the stomach empty. If retention of food occurs, the stomach does not get any rest between meals, and, moreover, the retained food decomposes, and gives rise to pain, flatulence, and the other unpleasant symptoms which are associated with indigestion.

In mild cases relief can often be afforded by

appropriate dieting and by drugs—we need not go into this now—but in severe and longstanding trouble something more than this is necessary. We must somehow or other give the stomach a rest between meals. This is where surgery comes in.

What we do is to make a hole in the stomach and another in the first coil of small intestine which the food will reach after passing through the duodenum, and sew the margins of these two holes together. The result is that the food passes straight out of the stomach into the small intestine, and does not go through the pylorus at all, or at least only very partially. The hole can be made either on the front of the stomach or on the back. In most cases the latter is preferable (posterior gastro-enterostomy), but the important point is that the lowest available point shall be selected, otherwise there would be a tendency for food to collect in a pocket below the opening. After the abdomen has been opened in the usual way, the selected portions of stomach and intestine are fixed in two separate clamps, which are ranged side by side, and packed off with gauze The bowel and the from everything else. stomach are then sewn together by a continuous stitch; an opening is next made in each, and the cut edges of the stomach sewn to those Finally, the original stitch is of the bowel. resumed and carried round outside the margins of the opening, so as to bury it completely; everything is then cleaned up, and the stomach and intestine, now joined together, are returned to the abdomen, which is then sewn up in the usual way. As soon as the patient comes round from the anæsthetic, he is propped up in bed, and for a day or two is fed only on liquid food, a resumption to ordinary diet being made very carefully by degrees.

Such, very briefly, is a description of the operation itself. We will now see to what kind of cases it is applicable. These fall naturally into two classes : those in which there is some obstruction to the passage of food through the pylorus, and those in which the way is clear, but for some reason or other the stomach cannot tolerate the presence of food.

In the first class we have a narrowing of the pylorus from birth—congenital pyloric stenosis —which may be so marked as to cause the death of infants from sheer starvation unless the way be opened for food to pass into the intestine. Or, later on in life, it may be narrowed by the contraction of an ulcer in its vicinity, either on the gastric or duodenal side. This is the commonest cause of pyloric obstruction in young adults. Still later on it may be



