change the hydrogen ion concentration of 100 c.c. of medium from one stated hydrogen ion concentration to the other. While for most purposes of interest to the sanitary or medical bacteriologist the range of hydrogen ion concentration between the limits of P_H 8.0 and P_H 5.0 is sufficient, the buffer index between other limits may be determined for special purposes.

The titration of a large number of samples of bouillon of supposedly the same composition showed wide variation in their buffer indices. If one is working with an easily cultivated organism such as *Bacterium coli* and wishes to determine its limiting hydrogen ion concentration in a few hours, a medium of low buffer index should be selected. If on the other hand a large amount of growth or the fermentation of a large amount of sugar is desired, a medium of high buffer index should be used. Less fermentable sugar is required in a poorly buffered medium than in a medium of high buffer content. In a bouillon of low buffer index a small amount of dextrose may be sufficient to produce a high terminal acidity whereas the same organism may ferment a much larger amount of dextrose in a bouillon of high reserve alkalinity and high buffer index and yet produce a terminal alkalinity.

The author has devised a very simple method of titrating the reserve acidity, reserve alkalinity, and buffer index of media, a method requiring only a few cubic centimeters of medium and easily carried out by a laboratory technician in a few minutes. A description of this method is now in press.

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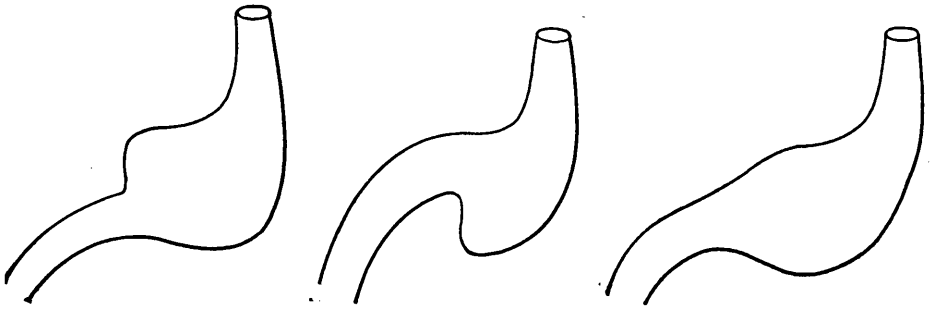
I. Gastric resection: experimental data on the duodenal loop.

By W. HOWARD BARBER and LOUIS C. LANGE.

[*From the Department of Experimental Surgery, New York University and Bellevue Hospital Medical College.*]

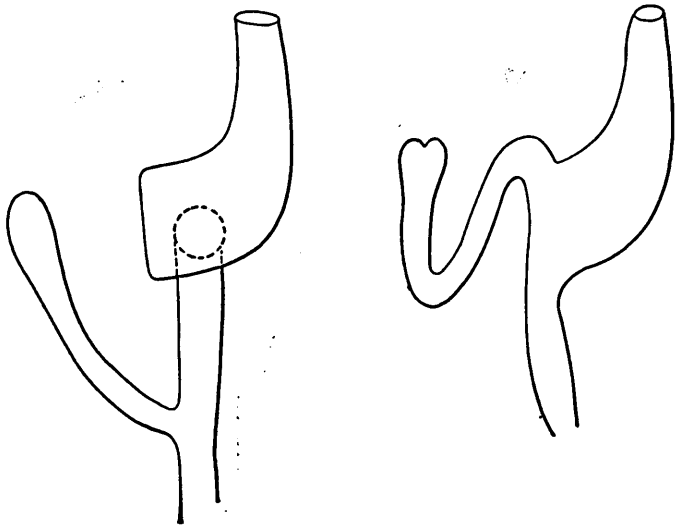
Operable new growths and malignant ulcers require in selected cases resection of the pyloric end of the stomach. After resection, the surgeon is forced to meet the problem of gastroenterostomy.

Taking for granted the removal of the greater portion of the pyloric end of the stomach, continuity of the gastroenteric canal may be re-ëstablished by any one of the following methods as suggested in the following diagrams:



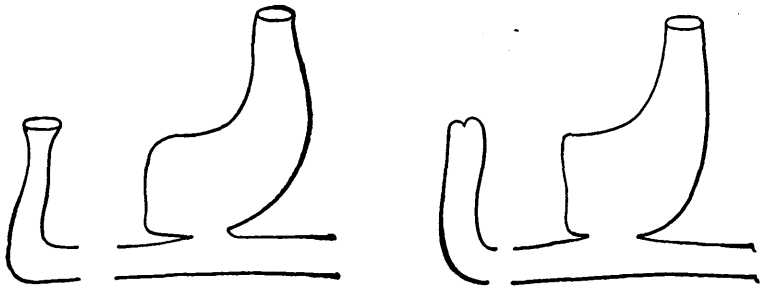
A *B* *C*

Terminal Gastroduodenal Anastomosis.



D
Laterotermínal Gastrojejunal Anastomosis.

E
Terminolateral Gastrojejunal Anastomosis.



F *G*

Lateral Gastrojejunal Anastomosis.

Compatible with life.	*Incompatible with life.*
Terminal methods, *A*, *B*, *C*.	Laterоterminal, *D*.
Lateral, *F*.	Terminolateral, *E*.
	Lateral, *G*.

Lethal Factor-Pancreatic Injury.

Types of gastroenteric anastomosis following partial gastrectomy.

These experiments have been performed upon dogs without mortality in the method of terminal gastroduodenostomy and with high mortality in those methods involving duodenal occlusion or duodenostomy.

146 (1728)

II. Gastric resection: notes on the surgical pathology.

By **W. HOWARD BARBER** and **LUIGI CELANO.**

[*From the Department of Experimental Surgery, New York University and Bellevue Hospital Medical College.*]

Terminal anastomosis between the divided ends of the stomach and jejunum, as represented in Part I, Fig. D, combined with duodenal occlusion and implantation of the duodenal loop into the jejunum caudad of the stomach gives the following results:

Exp. No.	Days of Life.	Pathology.
69	4	Peritonitis.
77	2	Pancreatitis.
82	3	Pancreatitis.
83	2	Peritonitis.
84	3	Pancreatitis.
85	2	Pancreatitis.
91	1	Pancreatitis.