alveoli of earlier stages. The tissue in some parts took on the appearance of a cavernous haemangioma. Red blood corpuscles found in these spaces appeared to be in good condition with blood pigment nowhere to be seen.

Conclusions. In the earlier stages of atelectasis the apparent increased vascularity was partially due to collapsing of the air spaces thus bringing the capillary sinuses in closer proximity. The changes exhibited in the more chronic stages were less easily explained. The process was a gradual one, marked changes being present as early as 4 months which were found to increase with the duration of the disease. That the blood in the dilated spaces was in an active state was strongly suggested by the normality of the red blood cells and the lack of blood pigment. The gradual increase in the size of the blood sinuses was in favor of their being dilated capillary spaces rather than alveoli through which blood was flowing. This last factor is under investigation.

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Production of Intestinal Ulcers by Active Gastric Juice.*

WARREN B. MATTHEWS. (Introduced by L. R. Dragstedt.)

From the Department of Surgery, University of Chicago.

Gastric mucosa has[1] a strong natural immunity against corrosion by gastric juice, and wounds made artificially in it tend to heal readily. Mann,[2, 5] Dragstedt and Vaughan,[3] Morton,[4] and others have shown that when other tissues such as kidney, spleen, mucosas of various portions of the intestinal tract with an intact blood supply are implanted into defects made in the stomach wall, they tend to remain sound and healthy without erosion or ulceration, even though exposed to the normal stomach contents. Mann and Williamson,[6, 7] after draining the duodenal juices into the

* This work has been conducted under a grant from the Douglas Smith Foundation for Medical Research of the University of Chicago.

[1] Ivy, *Arch. Int. Med.*, 1920, **25**, 6.

[2] Mann, *J. Med. Res.*, 1917, **35**, 289.

[3] Dragstedt and Vaughan, *Arch. Surg.*, 1924, **8**, 791.

[4] Morton, C. B., 1927, **85**, 207.

[5] de Takats and Mann, *Ann. Surg.*, 1927, **85**, 698.

[6] Mann and Williamson, *Ann. Surg.*, 1923, **77**, 409.

[7] Mann, *S. Clin. N. Amer.*, 1925, **5**, 753.

lower ileum, anastomosed the upper jejunum to the stomach, ulcers formed in the jejunum. These ulcers were interpreted as due to the corrosive action of acid gastric contents on a sensitive intestinal mucosa now unprotected by the alkaline duodenal juices, plus the "motor drive" mechanical effect of the stomach contents being ejected forcibly against the spot on the intestinal wall where the ulcer was supposed to form. Ivy and Fauley[8] point out, the emaciation which most of these animals undergo must not be overlooked. Aschner and Karelitz[9] have summarized some 33 cases of ulcer of the ileum associated with Meckel's diverticulum containing heterotopic mucosa of gastric type. These ulcers were interpreted as due to gastric juice secreted by this heterotopic mucosa.

We attempted to duplicate this situation experimentally by making a small pawlow pouch, and causing it to empty into an isolated loop of lower ileum, whose other end communicated with the lower ileum just above the ileocaecal valve. In this way the possibility of mechanical action in possible ulcer formation was avoided. The union of pouch with intestinal loop was made by a side-to-side anastomosis, using only 00 chromic catgut for suturing. Clamps were not used on the intestine.

Results. 1. Except for one animal which died at 60 days of distemper, all the animals remained in apparent good health and nutrition until 2 died suddenly of peritonitis from perforation of ulcers, and the other 3 were sacrificed 80 days after the operation. 2. Ulcers formed in the ileal mucosa near or adjacent its union with the gastric mucosa of the pouch in all 6 dogs. The gastric mucosa was never involved. The ulcers were found between 30 and 80 days. All were chronic in type, large (from 1 to 5 cm. across), indurated, with clean, granulating bases usually formed of connective tissue. Grossly and microscopically they appeared similar to so-called "peptic ulcers" in the human intestine.

[8] Ivy and Fauley, *Am. J. Surg.*, n. s., 1931, **11**, 531.

[9] Aschner and Karelitz, *Ann. Surg.*, 1930, **91**, 573.