ation with exposure of the bone. The site of injection was 4 feet from the pyloric ring.

Microscopic sections showed typical chronic gastric ulcers. The large intramuscular abscess contained a large amount of fat and many large, clear cells with vesicular nuclei. The lymph nodes and nodules in the spleen contained a definite hyperplasia of the reticulo-endothelial cells.

Summary. These experiments have allowed us to inject the drug into the gastro-intestinal tract without passing through the stomach, and should rule out any local toxic effect of cinchophen in the stomach. No ulcers developed in the mucosa of the intestine.

Conclusion. Gastric ulcers that are produced in dogs by the injection of cinchophen are not due to a local toxic action on the gastric mucosa.

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Source of Fat Found in the Thoracic Duct Lymph in Fasting.

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Thoracic duct lymph of fasting dogs contains 0.3 to 1.3% total fatty acids.[1] Further observations showed that with the continuous collection of the lymph under anesthesia, there is usually a spontaneous decline in the lipid content, amounting to 50% or even more in 4 hours. Injection of pilocarpine or secretin is followed by an increase of the lipid content of the lymph up to or considerably above the initial level, the maximum effect appearing about 4 hours after the injection. In enterectomized animals, the initial lipid content is low and does not rise following pilocarpine; nor does pilocarpine cause a rise of lipids in the lymph of dogs with common bile duct fistula.

Method. 26 dogs were fasted 3 to 8 days. Cannulation of the thoracic duct was done under nembutal anesthesia. For the preparation of the enterectomized animals, the bowel was removed from the recto-sigmoid junction to the midportion of the duodenum, the free end of the duodenum being brought to the outside through a

[1] Rony, H. R., Mortimer, B., and Ivy, A. C., *J. Biol. Chem.*, 1932, **46**, 737.

stab wound. The animal was allowed to recover and was fasted several days, fluid being given twice daily subcutaneously. The dose of pilocarpine was 1 mg. per kilo and that of the secretin 60 dog units total intravenously. Total fatty acids and cholesterol were determined by Bloor's oxidation method.

The finding that the thoracic duct lymph of fasting enterectomized animals is clear, and low in lipids indicates that the principal source of the milky lymph in fasting is the bowel. Furthermore, the effect of pilocarpine and secretin suggests that the lipids of the lymph come from the lumen of the bowel; in the first place when the bile is shunted to the outside, the lipid content in the lymph is low and does not rise with pilocarpine; in the second place, the delay in the appearance of the maximum lipid content after pilocarpine and secretin is consistent with the known effects of these agents on intestinal secretions. Whether pilocarpine and secretin increase the lymph fat by their effect on bile and pancreatic juice excretion or primarily by actual increase of lipid secretion into the lumen of the bowel, or both these factors together, we cannot say definitely.

These findings are in partial accord with the work of Bloor and Sperry on lipid excretion. In comparing the amounts of lipids found by us in the lymph in fasting with those found by Bloor and Sperry in the feces of sham-fed animals, it appears that from 50 to 70% of the total lipids excreted into the lumen of the bowel is reabsorbed. This extensive reabsorption along with other considerations suggests that the lipid excretion in fasting may serve other purposes than lubrication or elimination of waste lipid material as advanced by Bloor and Sperry. Possibly the purpose of this phenomenon is to subject to hydrolysis and resynthesis some of the fat mobilized in fasting, in order to modify it to a form suitable for utilization.

The principal source of the lipids in thoracic duct lymph in fasting is the bowel. In fasting, fat is being excreted from the blood by the mucous membrane of the bowel into the lumen of the bowel, where a large part of it is reabsorbed.