

lation of the unsaponifiable portion of the lymph fat was made on the basis of the assumption that all lipids present are C18 fatty acids.

It is known that, in fasting, lipids are excreted by the intestinal mucosa into the lumen of the bowel (Bloor and Sperry, etc.). Rony, Mortimer and Ivy found that in fasting the thoracic duct lymph fat consists chiefly of this fat, the major portion of which is reabsorbed by the intestinal mucosa and passed into the lacteals and thoracic duct. In view of this it is of interest to compare our data listed above (Table I) with those obtained by Sperry on fecal lipids.³

a. Iodine number. Sperry found that the iodine number of the fecal fat of fasting dogs varied between 78.6 and 103 with an average value of 90.4. This is very similar but slightly higher than our figures on lymph fat, the value for lymph being 80.2.

b. Unsaponifiable portion. The fecal fat of dogs kept on a lipid-free diet contains 35 to 40% unsaponifiable lipids, according to Sperry. This compares favorably with our figures on thoracic duct lymph fat in fasting, namely, from 30.5 to 33.8% unsaponifiable substance.

No figures are available for the lipid P content of the fecal fat in fasting.

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Gastrectomy and Subsequent Hematologic Studies in the Hog.

G. L. MAISON AND A. C. IVY.

From the Department of Physiology and Pharmacology, Northwestern University Medical School.

Blood studies in gastrectomized animals have been done in the dog¹ and in the rat.² The presence of substances effective in pernicious anemia in hog's liver and whole desiccated stomach made it seem worth while to study the effect of gastrectomy in the hog on hematopoiesis. We desire to report our preliminary observations during the past 7 months.

Five Poland China pigs 12½ weeks of age were selected. On the 24th of June, 1933, four of the pigs were gastrectomized by us in the Physiological Laboratory of the University of Wisconsin Med-

³ Sperry, W. M., *J. Biol. Chem.*, 1924, **60**, 261; 1926, **68**, 357.

¹ Ivy, Morgan and Farrell, *Surg. Gynec. and Obst.*, 1931, **53**, 2.

² Jung, Maison and Highstone, *Proc. Inst. Med.*, Chicago, 1933, **9**, 389.

ical School at Madison,* one being reserved as control. The distal end of the esophagus was sutured to the side of the first loop of jejunum after closing the proximal end of the duodenum. The operation is more easily performed in the hog than in the dog.

One animal died on the day following operation due to peritonitis consequent to spillage of material from a stomach distended with food, the stomach of this hog not having emptied after 12 hours of starvation. The remaining animals were transferred from Madison to our laboratories on their 48th postoperative day. They have been kept in open air cages since their second postoperative week. A second animal died of stricture of the lower esophagus 71 days after operation. This stricture occurred at the site at which the clamp had been applied. The remaining 2 pigs and the control are living and well on their 210th postoperative day.

The results of gastrectomy and of therapy with ferric ammonium citrate on the microcytic hypochromic anemia, which developed to a point requiring treatment in their fourth postoperative month, are summarized in the accompanying table. The diet has consisted of a mixed meal (18% P; 3.5% fat; 45% C; and 7% fiber) made into a thick mush and brought to the boiling point in a steam cooker. This diet contains essential salts, including 0.04% iron oxide, 0.0005% copper sulphate, and 0.0005% potassium iodide. Cod

TABLE I.

	Normal		Body Weight Gastrectomized		
Preoperative (6-14-33)	26 lb.		32 lb.	40 lb.	
Postoperative (1-7-34)	160 "		68 "	116 "	
Mean Hematologic Findings.					
	Millions	Hb. Gm.	Hematocrit	Mean Dia.	Thousands
	RBC	Sahli Method	%	of RBC	WBC
In 9 normal pigs	7.26	14.8	44.2	5.51 micra	24.0
Values 120 days after Gastrectomy.					
In 2 pigs before treatment	8.04	11.2	33.6		25.6
Feeding of Iron Started 120th Day after Gastrectomy.					
In 2 gastrectomized animals after 2.4 gm. Fe ₃ NH ₄ citrate per day for 33 days in food	8.16	10.2	30.5	4.58 micra	21.2
Subcutaneous Injections of Iron Started on 154th Day after Gastrectomy.					
In 2 gastrectomized animals after 0.09 gm. Fe ₃ NH ₄ citrate subcutaneously daily for 40 days	8.82	13.1	39.4	5.12 micra	

* The authors wish to express their obligation to Drs. Meek and Eyster for their generous loan of laboratory facilities and to Mr. John Fargo of the Department of Animal Husbandry of the College of Agriculture of the University of Wisconsin for his kindness in housing the animals as well as his many helpful suggestions relative to the care of hogs.

liver oil was added to this diet. Other pigs are now under way and a more detailed report will be forthcoming when more gastrectomized pigs have been observed for longer intervals.

Summary. In 2 gastrectomized pigs, we have observed the occurrence of a microcytic, hypochromic anemia, which appeared about 3 months postoperatively and which did not respond to 2.4 gm. of iron salt given daily and orally, but did respond to 0.09 gm. of iron given daily and subcutaneously. The growth of the 2 gastrectomized pigs has been retarded.