from 1 plus to 2 plus. Two months later the serum of this rabbit was still 2 plus positive.

Rabbit No. 5, after showing a 4 plus reaction, was also anesthetized and kept under ether anesthesia for 5 minutes. Three days later the positiveness of its serum had dropped from 4 plus to 2 plus. No further injections were given to that rabbit.

After rabbit No. 9 had given a final reaction of 16 plus, it was killed by cutting the jugular vein. Fifteen cc. of clear serum was thus obtained which yielded 1,620 units of flocculate. The serum, therefore, contained 1,260 units of flocculate above the original 360 units injected.

Conclusions. (1) For lack of a better name, the antibodies causing flocculation of antigen in human syphilitic serum might be termed "flocculins". (2) It has been shown that flocculate obtained from human syphilitic serum, by means of flocculation tests for syphilis, will cause positive flocculation tests in rabbits when inoculated intravenously. Such reactions will remain positive for at least 2 months after the last injection. Rabbits inoculated with antigen emulsion alone do not develop positive flocculation tests. (3) Apparently, the serological factors involved in the formation of "flocculins" in the animal body are influenced by ether anesthesia. (4) Flocculate obtained from the serum of a rabbit injected with flocculate from human syphilitic serum, will cause the formation of "flocculins" in another rabbit when injected intravenously. (5) The serum of a rabbit inoculated with a definite number of flocculate units, may develop many more units than were thus injected.

8153 C

Intra-Enteric Pressure in Experimental and Clinical Intestinal Obstruction.*

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As a preliminary to a series of experiments on the effect of increased intra-enteric pressure upon the physiology and structure of the bowel wall, occasion was taken to measure the levels of sustained pressure which obtained in the intestine of dogs with low ileal obstruction.

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The intra-enteric pressure was determined in 19 dogs with low ileal type of obstruction of one to 7 days' duration. Simple obstruction was produced by sectioning the terminal ileum and inverting both ends. At the stated duration of obstruction, the animals were anesthetized, the abdomen opened, and a large calibre needle connected to a water manometer was inserted into the lumen of the obstructed ileum. Pressure readings ranged from 4 to 19 cm. of water, or roughly 4 times the normal. Active peristalsis was always observed even after 7 days of obstruction. The intra-enteric pressure in this series apparently increased with the duration of the obstruction. It was observed that the sustained pressure in low ileal obstruction was seldom above 14 cm. of water (Table I).

TABLE I.
Sustained Intra-enteric Pressure in Dogs with Simple Ileal Obstruction.

Dog	Days Obst.	Pressure Cm. H_2O	Dog	Days Obst.	Pressure Cm. H_2O
1	1	8	11	4	14
2	2	4	12	4	10
3	2	6	13	4	7
4	2	12	14	4	12
5	2	6	15	4	10
6	3	10	16	4	8
7	3	12	17	4	10
8	4	8	18	7	19
9	4	10	19	7	12
10	4	14			

On 6 additional dogs, 17 measurements of intra-enteric pressure were made at varying intervals after the establishment of obstruction in the following manner. A loop of gut of 3 to 4 inches in length was brought up on the abdominal wall and the adjacent skin was mobilized to cover it. When this satchel-like handle was well healed, complete obstruction was accomplished by inverting the ends of the severed terminal ileum. In a few instances 2 such subcutaneous loops were made in the same dog. The usual sustained intra-enteric pressure found varied between 6 and 8 cm. of water. The highest reading obtained was 17 cm. of water. These pressures are in accord with the findings of Owings and his associates.[1]

Opportunity has also been afforded to determine the intra-enteric pressures in 5 clinical cases of obstruction of the small bowel of mechanical origin. Pressures were determined at the time of operation (enterostomy) by connecting the enterostomy tube to a water manometer. The sustained pressure in these 5 cases varied

[1] Owings, J. C., *et al.*, *Arch. Surg.*, 1928, **17**, 507.

between 4 and 18 cm. of water. With peristaltic activity, pressures of 20 to 30 cm. of water were noted.

Pressures were obtained at operation when colostomy was performed for relief of distension in 8 cases of acute colonic obstruction due to malignancy. The sustained pressures varied in these 8 cases between 12 and 52 cm. of water; in 6 of the cases, pressures above 23 cm. of water were recorded, much higher figures than were observed in the small bowel. The duration of obstruction in these cases varied between 3 and 8 days. The significantly greater pressures in colonic obstructions are due to the action of the ileocaecal sphincter[2] which make of the obstructed colon a virtual closed-loop obstruction, in which the intra-enteric pressure may greatly exceed pressures observed in simple obstruction.[3, 4]

8154 P

A Crystalline Hydrobromide of Urobilin (Stercobilin)*

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The identity of crystalline urobilin and stercobilin, as isolated from human urine and feces, was established previously.[1-5] In confirmation of this the same crystalline hydrobromide has been prepared from each substance. The method of preparation is briefly as follows: The free urobilin is prepared from the hydrochloride as previously described.[2] It is not crystallized but is extracted from its chloroform solution with 25% hydrobromic acid. The latter is diluted with 3-4 volumes of distilled water, and the hydrobromide extracted with chloroform. The chloroform solution is dried over anhydrous Na_2SO_4, filtered, and concentrated to a small volume on the water bath. This is poured into at least 10 volumes of petro-

2 Sperling, Louis, *Arch. Surg.*, in press.

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