of this point may be of interest, both in connection with the question of presence of creatinine in blood, and with the site of formation.

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A study of interrupted duodenal obstruction in the rabbit.

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The obstruction was produced, 20 cm. below the pylorus, by means of a ligature tied over an elastic compressor on the outside of the abdominal wall. Such an obstruction causes almost no trauma to the intestine, and can be released at any time desired without employing a second anesthetic and laparotomy, with their complicating effects.

If the obstruction at this level is not released, the period of survival averages seventeen hours. The variations from this average time are within three hours.

If the obstruction is released after a duration of fifteen hours or less, the animal survives. If, however, the obstruction is released after a duration of sixteen hours or more, the animal does not survive.

The sharp line of demarcation between the duration which is fatal, and that which is followed by recovery is quite striking. Also, the recovery of the animals from an obstruction of twelve to fifteen hours duration was remarkably rapid. Even though such animals before release of the obstruction gave evidence of being in a very serious condition, a striking degree of recovery is shown within one to three hours following the release of obstruction. If the animal's condition was due to absorption of a highly toxic substance from the obstructed content, such rapid recovery would hardly be expected. If the condition were due, however, to depletion of chloride[1] or the loss of fixed base,[2] the rapid

[1] Hayden, R. L., and Orr, T. G., *J. Exp. Med.*, 1923, xxxvii, 365.

[2] Gamble, J. L., and McIver, Monroe A., PROC. SOC. EXP. BIOL. AND MED., 1925, xxii, 365.

recovery could be the result of rapid reabsorption of these substances which accumulate in the fluid distending the stomach, since the non-operative release of obstruction allows the obstructed content to move rapidly on to the lower parts of the canal where absorption is rapid.

To test this point, further experiments were performed in which the obstruction was released after fourteen hours, but just prior to release, the stomach was emptied of its accumulated fluid and washed with distilled water. Distilled water was left in the stomach so that loss of water was not a factor in the result. None of these animals survived. Autopsy showed that the release had been complete and that no performation or peritonitis or other observable complication existed.

Since these animals, in which the stomach was evacuated prior to release of obstruction, succumbed to a duration of obstruction which had been shown in the earlier series of experiments to be a non-fatal duration, the experiments indicate that the cause of early death of rabbits with high intestinal obstruction is not due to dehydration, nor absorption of a toxic substance, nor extreme gastric dilatation, but to a loss in the gastric contents of something essential to the animal's recovery. This loss is likely the chloride and sodium as held by the writers referred to above.

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Influence of continued administration of morphine and of withdrawal on contraction of small intestines of dogs.

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Two experiments were carried out on dogs with Thiry-Vella fistulae of ileum. The operations for formation of the fistulae were performed several weeks before the experiments were started. Graphic records of the intestinal contractions were made by introducing into the fistula a sausage-shaped rubber balloon fastened on a catheter and filled with water; the catheter was connected with a Brodie bellows-recorder which made the tracing on