

A similar difference was observed also in nephrectomized dogs.

It is claimed by some investigators that the glycemia following depancreatization is due to an over-production of sugar. It is evident that the hyperglycemia in our cases of depancreatization can not be due to such a factor. We shall not discuss here whether our results can be adequately explained by the assumption that the removal of the pancreas causes a decrease of consumption of dextrose by the body tissues. We wish, however, to indicate that some of our facts hint at the possibility of a change in the permeability of the endothelia of the circulatory apparatus as a factor in the results of depancreatization.

38 (970)

The influence of the intra-intestinal administration of magnesium sulphate on the production of hyaline casts in dogs.

By F. L. GATES.

[From the Department of Physiology and Pharmacology of the Rockefeller Institute for Medical Research.]

Following our study of hyaline cast production after the intra-muscular or intravenous injection of hydrated magnesium sulphate and certain other salts, reported to this society in February and June of this year,¹ Dr. Meltzer suggested that the investigation be carried further by a series of experiments in which the MgSO_4 was given directly into the intestines, simulating its use as a purgative.

The typical procedure in the present series was to inject an $m/1$ solution of hydrated MgSO_4 , in doses of .18 or .2 gm. per kilo. body weight, through a glass cannula into the upper duodenum. The small intestine was isolated by ligatures just below the pylorus and at the ileo-cecal valve. The operation was performed under complete ether anesthesia and the dogs were killed at the end of five or six hours. For two animals the solution was diluted to $m/3$ before injection and in three other cases the ligature was not placed at the ileo-cecal valve. In each case control urines were examined for casts and albumin.

¹ PROC. SOC. EXP. BIOL. AND MED., Vol. XI, No. 3 (879); Vol. XI, No. 6 (919).

Of twelve dogs in this series ten showed hyaline casts after the magnesium injection; in eight the casts were abundant. They were usually accompanied by a trace of albumin. The casts were most numerous in the two to three hour period, but usually persisted in small numbers until the end of the experiment. Gross examination of the kidneys revealed no significant changes.

The general effects of the absorbed magnesium appeared in dullness and relaxation, partial or complete anesthesia and paralysis, and in one case in a typical "magnesium death" from respiratory paralysis.

39 (971)

Distribution of solutions in cardiectomized frogs with destroyed or inactive lymph hearts.

By T. S. GITHENS and S. J. MELTZER.

[From the Department of Physiology and Pharmacology of the Rockefeller Institute for Medical Research.]

It has been assumed, in various communications from this laboratory,¹ that the distribution of solutions in cardiectomized frogs takes place by way of a peripheral mechanism. Abel,² stated later emphatically that this distribution occurs by the pumping activities of the anterior lymph hearts, stating himself, at the same time, that it would be impossible for the posterior lymph hearts to accomplish such an effect. In opposition to Abel's statement, we demonstrated a year ago,³ at a meeting of this society, that strychnin is capable of producing convulsions in cardiectomized frogs from which the anterior lymph hearts were previously removed. In a recent paper by Abel,⁴ he admits the correctness of our contention that strychnin, etc., may become effective even in cardiectomized frogs without anterior lymph hearts. But now he assumes that the distribution is carried on by

¹ *Jour. of Exp. Medicine*, Vol. 13, 1911, p. 542; *Proc. of Royal Society*, B. Vol. 84, p. 99; *PROC. OF SOC. FOR EXP. BIOL. AND MEDICINE*, Vols. 8 and 9.

² Abel, *Jour. of Pharmacology and Exp. Therapeutics*, Vol. 3, 1912, p. 581.

³ Githens and Meltzer, *PROC. OF SOC. FOR EXP. BIOL. AND MEDICINE*, Vol. 11, p. 96.

⁴ Abel and Turner, *Jour. of Pharm.*, Vol. 6, p. 91, 1914.