lactate at levels from 0.04 to 0.06 gm. per kilo; by the intravenous injection of calcium lactate at the level of 0.1 gm. per kilo, and, giving 0.75 gm. of NaH CO_3 *per os;* by the intravenous injection of calcium lactate at a level of 0.09 gm. per kilo, and by administering *per os* NaH_2PO_4 at 0.275 gm. per kilo; by interchanging the routes of the last procedure, giving 0.07 gm. of calcium lactate *per os*, with intravenous injection of NaH_2PO_4 at a level of 0.27 gm. per kilo. These last two groups of dogs lived only one week; the others received treatment, in some cases, for 22 days, and were observed for the following 7 months. No cataracts were seen.

We have negative results only, except that, contrary to the opinion of some clinicians, convulsions (oil of wormwood and strychnine) *per se* did not produce cataracts.

[1] Luckhardt, A. B., and Blumenstock, J., *Am. J. Physiol. Proc.*, 1923, lxiii, 3, 406.

[2] Graefe-Saemisch Handbuch der gesammten Augesheilkunde, Pathologie und Therapie des Linsensystems, 1911, p. 142.

[3] Binger, C., *J. of Pharm. and Exp. Therap.*, 1917-18, x, 105.

[4] Greenwald, I., *J. Biol. Chem.*, 1913, xiv, 87.

[5] Burge, W. E., *Arch. Ophthal.*, N. Y., 1909, xxxviii.

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A Simplified Technique for Hepatectomy.

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For the past year there has been employed in this laboratory a simplified method for hepatectomy. The technique used is an extension of Mann's method for abdominal evisceration,[1] and is briefly as follows: Through a mid-line incision the inferior *vena cava* proximal to the lumbo-adrenal vein is loosely ligated with stout linen so that about ⅘ of its lumen is occluded. The portal vein, at its point of bifurcation in the portal fissure, is similarly ligated proximal to its last tributary. The intestine should be mildly congested but not cyanosed, and the ligature only rarely requires to be slightly loosened.

The dogs uniformly make an excellent recovery. The liver is removed at a second operation, which is best done six or more weeks later. The structures in the lesser omentum are tied and cut, as is also the *vena cava* below and above the liver. The intestines do not become cyanosed.

The animal makes an excellent recovery, and walks normally. We have evidence that the venous return from the posterior half of the body is not impaired. The subsequent fate of the animal is the same as that following hepatectomy by Mann's three-stage operation.[2]

This is a preliminary report.

[1] Mann, F. C., *Ergebnisse der Physiol.*, 1925, xxiv, 379.

[2] Mann, F. C., *Am. J. Med. Sci.*, 1921, clxi, 37.

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Concerning the Origin of Glycuronic Acid.

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Recently considerable work has been done in order to determine the probable source of glycuronic acid in the animal body. Some authors[1] contend that glycuronic acid is an intermediary product of glucose catabolism while others[2] believe that it is an unusual product of glucose metabolism produced only under the strain required for the detoxication of some aromatic or aliphatic substance. Other experimenters[3] think that it is derived from the catabolism of exogenous or endogenous protein material, since 58.5% of protein material is convertible into glucose.

Quick[4] found that fasting dogs, fed on benzoic acid, excrete large amounts of the glycuronic acid conjugate, and that depancreatized dogs form glycuronic acid with a decrease in urinary sugar. The excretion of benzoyl glycuronic acid is accompanied by increased endogenous catabolism. These facts indicate that glycuronic acid is made more readily from glycogenetic amino acids than from glucose itself.

Using rabbits, the effect of various amino acids on glycuronic acid formation was tried. The rabbits were fed a week on carrots and a little lettuce. Then total nitrogens (Kjeldahl) and glycuronic acids (Quick's method) were determined. The experiment was divided into three parts. During the first period, menthol was fed while giving a diet of lettuce and carrots. Then food was taken away and menthol only was given, and in the last period menthol and an amino acid were fed. Two grams of menthol as a warm water suspension was administered daily through a stomach tube. The amino acids* in the third period were fed in 1 or 2 gm. doses