

as follows: The injection of any compounds which have either magnesium or the sulphate radical as a component caused the appearance of hyaline casts in the urine. The injection of salts which had in their composition neither Mg nor SO₄, produced, however, no such effect. Of the magnesium salts, besides the sulphate, the chlorid, nitrate and the acetate were studied also. They all caused the appearance of hyaline casts in abundance. The acetate was perhaps less effective. Of the sulphates, besides the magnesium, also the salts of sodium, ammonium, and potassium were studied. All gave hyaline casts; the action of potassium, however, was less transparent. On the other hand the chlorids of sodium and of ammonium and the nitrate and the acetate of sodium produced no hyaline casts. The effects of potassium salts were apparently complicated by the profound action of these salts upon the heart and probably also by some direct action upon the kidneys. Of course, we could not attempt to give here any further details, nor enter upon a theoretical discussion of the possible significance of the reported facts. We wish only to add the statement that an analysis of the experiments seems to show that there is some definite relation between the diuretic action of the salts under discussion and their specific capacity for producing hyaline casts.

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The specific dynamic action of levulose, glycocoll and alanin in phlorhizin glycosuria.

By **GRAHAM LUSK.**

[From the Physiological Laboratory of the Cornell University Medical College, New York City.]

Ingestion of levulose by a dog which has been phlorhizinized does not increase the metabolism; the respiratory quotient is not changed and levulose is converted into dextrose, for this alone appears in the urine and in increased quantity. Ingestion of glycocoll or alanin largely increases the metabolism in glycosuria, although they are not oxidized and are converted into glucose and urea. The conclusion is drawn that the preliminary cleavage products of carbohydrate break-down are not stimulants of metabolism,

but that the increased heat production following carbohydrate ingestion is due to the mass action of sugar molecules. On the contrary, amino-acids or the oxy- or keto-acids produced from them act as stimuli upon the cells thereby increasing the heat production.

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The production of duodenal lesions and ulcers in dogs by injections of epinephrin and of gastric lesions and ulcers in rabbits by extirpation of the adrenals.

By **G. A. FRIEDMAN, M.D.**

[From the Department of Clinical Pathology, Columbia University.]

In several papers I have pointed out the frequency of polycythemia or polyglobulia in patients suffering with non-bleeding duodenal ulcer. I have also called attention to the presence of eosinopenia in such patients. In gastric ulcer occurs just the reverse anemia and relative eosinophilia.

Of eighteen operatively demonstrated cases of duodenal ulcer, in fifteen polyglobulia was found, while of twelve cases of gastric ulcer, polycythemia was noted only in one.

For details I refer to my article, which will soon appear in the *Journal of the Am. Med. Sc.*

The question arose, what has duodenal ulcer to do with polyglobulia. As several investigators who injected adrenalin in dogs and in men, have found an increase in erythrocytes from 30-70 and 100 per cent (this experimental polyglobulia lasting sometimes about thirty hours) and also a reduction in the number of eosinophiles, the idea has gained access to us, that the initial lesion of duodenal ulcer may be caused by hyperfunction of the adrenals.

As in none of our patients with duodenal ulcer high blood pressure was noted, the assumption was, that in such patients a slight excess of epinephrin may circulate in the blood in quantities not sufficient to cause hypertention, but enough to exert its hormone influence upon the duodenal mucosa.

I have succeeded in producing duodenal lesions and ulcers in eight dogs by subcutaneous and intravenous injections of adrenalin hydrochloride in a period of about one to two weeks daily (with