This difference in the stability of the sulfur in the original and in the acid hydrolysed material and the behavior towards the uric acid reagent can be explained on the assumption that a S-S linkage exists in the insulin material. In the acid hydrolysate the sulfur is in a more stable form but when the fragment containing the sulfur was linked with the other groups the sulfur became labile. This is similar to the effect which the linkage of other amino acids to cystine has on the stability of sulfur in cystine. The general behavior, therefore, is very much like what would be expected of an amino acid complex containing cystine. There is, as yet, however, no proof that insulin as such contains this sulfur; for ordinary proteins like casein, gelatine, egg albumin, and Witte's peptone behave similarly to insulin in their response to the uric acid reagent under the above conditions.

The reactions mentioned above are being studied on a quantitative basis to correlate, if possible, the potency of insulin preparations with the intensity of the reactions.

This is a preliminary report.

[1] Abel, John J., and Geiling, E. M. K., *J. Exp. Ther.*, 1925, xxv, 423.
[2] Brand, E., and Sandberg, Marta, *J. Biol. Chem.*, 1926, lxx, 381.
[3] Folin, O., and Looney, J. M., *J. Biol. Chem.*, 1922, li, 421.
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Method for Study of Muscular Activity of Intestinal Segment During Perfusion Through its Lumen.

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A method for the study of the muscular activity of the intestinal segment permitting a continuous flow through its lumen of a fluid which is readily replaceable by another is presented. A segment, suspended vertically, is attached by its cephalad end to a stationary glass inlet-tube and by its caudal end to a movable glass outlet-tube. The stationary tube immediately branches into two, each branch receiving fluid from a bottle which delivers at constant pressure. In both bottles the pressure is adjusted to the same value before the actual experiment is begun, so that, when one fluid replaces the other, any change in the muscular activity of the segment cannot be

ascribed to a pressure difference. The outflow may be so regulated that any desired rate of perfusion can be maintained. In the outlet system a graduated side arm is arranged in communication with a tambour to record the pressure changes within the segment. These pressure changes produce volume changes in the graduated side arm which calibrates continuously the record made by the tambour. The contractions of the longitudinal fibers are simultaneously recorded by attaching a thread to the glass outlet tube and bringing it over a system of pulleys to a lever. The segment with its attachments is immersed in a beaker of oxygenated Locke's solution kept at body temperature. The method has proved useful in the study of the influence of extracts on the muscular coats after passage through the mucosa.

This is a preliminary report.

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Depancreatized Dogs Kept Alive Several Months with Insulin Administered by Stomach Tube.

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Gaebler and Murlin[1] have found that insulin in ox-blood serum administered to phlorhizinized dogs by stomach tube caused positive, though small, effects on the respiratory metabolism and on the excretion of sugar, indicating combustion of more glucose than was burning just before the insulin was given. Blood serum was chosen because of its anti-tryptic action.[2] The insulin effect was not so great nor so prolonged as had been obtained earlier[3] with a salt precipitate of insulin on depancreatized dogs. Recently a number of dogs totally deprived of the pancreas and fed on meat have been kept alive for periods of six weeks to four months on daily doses of 40 to 100 clinical units of insulin in blood serum administered carefully by stomach tube in such a way as to preclude the possibility of absorption from the mouth. The effect on respiratory metabolism is immediate. Respiratory quotients as high as 1.06 have been obtained and in several instances, *as reported with salt precipitates,*[3] *the capacity to oxidize sugar has persisted for 24 hours and more.* Frank, Nothmann and Wagner[4] have observed similarly prolonged effects from the use of their synthetic compound given by mouth.