

for blue sky light and other sources, it was found that the effect of light on the penetration of this oxidation-reduction dye varies, not as a function of the amount of energy, but as a function of the wave length. The details of this experiment will be published elsewhere.

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The proof that a hormone is concerned in external pancreatic secretion.

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Direct evidence has been presented by us^{1, 2} which proves that a humoral mechanism is in part, at least, concerned in the stimulation of the pancreas to secrete pancreatic juice. Indirect evidence has also been presented¹ which suggests that a hormone is the exciting humoral agent.

We now have evidence which, according to our interpretation, proves unequivocally that a hormone is concerned in the genesis of the external secretion of the pancreas.

This evidence was obtained from two different preparations: In one preparation, a Thiry fistula of the jejunum and a pancreatic transplant was made. In the other preparation, a twelve inch loop of the jejunum was transplanted subcutaneously (4 inches took) and later a pancreatic transplant was made.

When N/10, or N/100 HCl, is applied to the mucosa of the intestinal transplant, the pancreatic transplant secretes copiously. When N/10, or N/120 HCl, is applied to the mucosa of the Thiry fistula, the pancreatic transplant secretes copiously. The latent period of stimulation varies from three to six minutes.

The interesting observation has also been made that fresh olive oil applied to the Thiry fistula does not stimulate the pancreatic

¹ Ivy, A. C., *Proc. Am. Physiol. Soc.*, Cleveland, Dec., 1925.

² Ivy, A. C., and Farrell, J. I., *Proc. Am. Physiol. Soc.*, Cleveland, Dec., 1925.

transplant; but if the olive oil is digested with pancreatin, and the neutralized digest (neutralized with Na_2CO_3) applied to the mucosa of the Thiry fistula, the pancreatic transplant is stimulated.

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Studies on inorganic salt metabolism. II. The effect of the sudden alteration of the acid-base balance of the diet on dogs.

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During the course of a study on inorganic salt metabolism in dogs which has been in progress in this laboratory for the past 4 years, it has frequently been observed that convulsions, usually followed by death, occur in the experimental animals after the sudden alteration of the acid-base balance of the diet. The convulsions appear to result from an increase in the acid or alkali content of the diet beyond the limit of tolerance of the animal as well as after the sudden reversal of the dietary reaction. The nutritive condition of the dogs has been excellent, there having been no known dietary fault other than a disproportion of its acid-base balance. The onset of the symptoms has been sudden, the attacks, which are characterized by marked twitching, clonic contractions of the limbs, rapid respiration, gasping for breath and excessive salivation, are of short duration, as a rule. The animals recover quickly and appear to be hungry, eating with relish any food that may be available. From the standpoint of our studies, no significance was at first attached to these observations, the condition being attributed to other causes. It occurred, however, with such frequency, and the convulsive attacks were so similar in the various animals affected, that it seemed there must be some common underlying cause. In order to determine whether or not a disturbance in the acid-base balance of the diet was an etiological factor in producing this condition the following experiment was planned: