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Studies in the physiology of vitamins. II, Does vitamin-B stimulate glands in a manner similar to the alkaloid pilocarpine?

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The hypothesis[1] that vitamin-B functions to stimulate glands in a manner similar to the alkaloid pilocarpine has been investigated experimentally. Extracts of rice polishings, wheat embryo, navy bean and yeast, and neutralized tomato juice, all of which were demonstrated to contain vitamin-B by tests on polyneuritic animals (pigeons and dogs), were examined for their action on the secretory function of the salivary glands. The effect of intravenous injection of these products on the flow of saliva was noted in anesthetized dogs in which the ducts of the submaxillary and sublingual glands were cannulized. In order to ascertain whether any slight temporary flow of saliva that might follow the injection was due to a vaso-dilator effect of the injected product on the sympathetic nervous system, blood pressure was determined by means of a manometer connected with the femoral artery. Normal dogs and polyneuritic dogs were used.

All of these products gave negative results. Stimulation of the chorda tympani nerve or injection of pilocarpine, however, always produced a characteristic flow.

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A contribution to the study of the relationship between vitamin-B and the food intake in the dog.

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Karr[2] showed that in the dog some relationship exists between

[1] Uhlmann, *Zeitsch. f. Biol.*, 1918, lxviii, 3.

[2] Karr, *Jour. Biol. Chem.*, 1920, xlviv, 255.

the desire to partake of food and the amount of vitamin-B which is ingested. Yeast and tomato juice were used as sources of vitamin-B in his experiments. The increase of appetite which followed the administration of these products was believed to be due to the vitamin-B contained therein since yeast appeared to be less potent in this respect when autoclaved. This conclusion is supported by the results obtained in our experiments in which extracts of rice polishings, wheat embryo and navy bean were tested for the property of promoting appetite in dogs which had been fed on a diet lacking this dietary essential. The administration of any one of these preparations to such a dog was followed by a recovery of appetite which lasted for varying periods. All of these products were demonstrated to contain vitamin-B by tests on polyneuritic animals (pigeons and dogs). The potency of these products in promoting appetite seemed to parallel their potency in relieving symptoms in polyneuritic animals and this parallelism suggests that vitamin-B is the appetite-promoting factor in the preparations used.

149 (1731)

Further studies on the affinity of sheep-corpuscles for anti-sheep hemolysin.

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In previous studies[1] on the rate of absorption of anti-sheep hemolysin by sheep corpuscles, it was shown that 0.05 c.c. of packed sheep-cells added to a saline solution containing 400 units of hemolysin, will absorb as many as 390 units after 10 minutes extraction at room temperature. The hemolysin was obtained by immunizing rabbits with sheep-cells in the usual manner and a unit was taken to be the smallest quantity which

[1] Kahn, R. L., and Lyon, D. S., *Proceed. Soc. of Amer. Bacter.*, Lansing Branch, 1920; *Abst. of Bacter.*, 1921, v, 23.