the effects on ovaries and secondary sex organs are concerned; both types of anterior pituitaries produce a stimulation of thyroid and adrenal glands. Injection of extracts of human anterior pituitaries act in about the same way as implantations of pieces of gland tissue.

8115 C

Effects of Cattle Anterior Pituitary Extracts and KI on Liver Glycogen in Guinea Pigs.*

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Silberberg[1] has shown that oral administration of KI inhibits the hypertrophic changes in the thyroid gland which are produced by injections of extracts of anterior pituitary gland of cattle. A similar inhibiting effect was shown by Siebert and Thurston to be exerted by KI administration in respect to the rise in metabolism which otherwise would have been produced by injections of such extracts of anterior pituitary. We now wished to determine whether KI exerts an inhibiting effect on the changes in carbohydrate metabolism which, according to Eitel and Loeser[2] as well as Holden,[3] are called forth when extracts of cattle anterior pituitary gland are injected into guinea pigs. These changes consist in a marked diminution in the liver glycogen and an increase in blood sugar which Holden finds is of a very transitory character.

Male guinea pigs (190-220 gm.) kept under optimum conditions were used in the majority of tests. In certain cases females were used. The experiments were divided into 2 parts. In the first part, 13 guinea pigs were injected with anterior pituitary extract and simultaneously fed KI. In the second part, 14 guinea pigs were given KI alone. The amount of extract of cattle anterior pituitary gland injected daily intraperitoneally was 1 cc. Two or more animals were injected for each period, namely 2, 4, 6, and 8 days. For 4 days previous to the first injection and continuing throughout

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1 Holden, Raymond F., PROC. SOC. EXP. BIOL. AND MED., 1934, **31**, 773.

2 Eitel, H., and Loeser, A., *Arch. Exp. Path. u. Pharm.*, 1932, **167**, 381.

3 Shaffer, P. A., and Somogyi, M. J., *Biol. Chem.*, 1933, **100**, 695.

the period of injections each animal received daily 0.05 gm. of KI *per os*. Twenty-four hours following the last injection, the animals were killed by a blow on the head, and immediately following death blood from the heart and 2 pieces of liver weighing from 0.5-1 gm. each were removed from each guinea pig. Blood sugars were determined according to the Shaffer and Somogyi[3] method. Duplicate glycogen determinations were carried out by the modified Pflueger[4] method. As the normal values for glycogen and blood sugar we accepted the amounts determined by Holden in his earlier experiments.

Administration of KI did not have any noticeable effect on the decrease in liver glycogen produced by injections of anterior pituitary extract. The minimum values for glycogen were obtained after 6 injections had been given; this was followed by an insignificant rise following the eighth injection. The average amounts obtained in 2 or more guinea pigs are shown in Fig. 1. Normal values in untreated animals according to Holden are 2540 mg. % and according to Eitel and Loeser 2590 mg. %. The administration of KI *per os* does not therefore modify appreciably the effects of administration of anterior pituitary extract on the liver glycogen. (See Fig. 1.)

In a control experiment, a number of guinea pigs were given

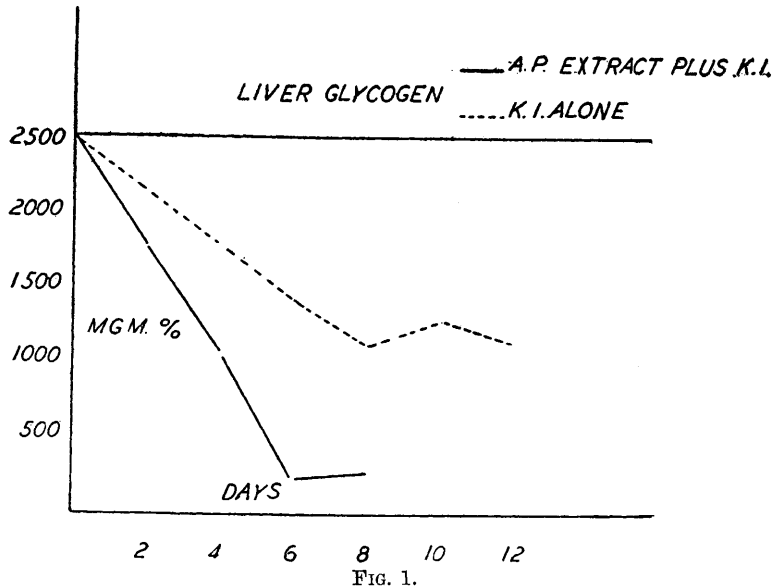

FIG. 1.

[4] Good, C. A., Kramer, H., and Somogyi, M., *J. Biol. Chem.*, 1933, **100**, 483.

daily doses of 0.05 gm. of KI alone by mouth, the total quantities of KI received by these animals being the same as the total quantities given simultaneously with anterior pituitary extracts in the preceding experiment. The effects of the administration of KI alone are also represented on the chart. It is noted that KI, as such, produces a reduction in liver glycogen, but the reduction is less in this case than when KI is given in conjunction with anterior pituitary extracts; even after 12 days' feeding of KI the glycogen failed to diminish in amount to below 1140 mg. %. Whether this reduction is due to a stimulation of the thyroid has not yet been decided. In other species than the guinea pig such an effect has not yet been observed. Thus in white mice, Romeis and Zwehl[5] found no effect on liver glycogen after administration of sodium iodide. Likewise, Coggeshell and Greene,[6] using albino rats, were not able to demonstrate a change from the normal in liver glycogen after administration of inorganic iodides.

In neither of our series of experiments did we find significant changes in the blood sugar content.

Conclusions. 1. KI given *per os* previously to and simultaneously with intraperitoneal injections of anterior pituitary extracts of cattle fails to modify the effect of the extracts on the liver glycogen. 2. Oral administration of KI alone may cause a moderate reduction in liver glycogen.

8116 P

Deleterious Effects of Local Application of Staphylococcus Bacteriophage.*

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During the study of the therapeutic value of specific bacteriophage in experimental staphylococcus skin infections in rabbits it was observed that certain strains of bacteriophage, instead of promoting the healing, have caused a temporary intensification of the local

5 Romeis, B., and Zwehl, T., *Klin. Woch.*, 1925, **4**, 703.

6 Coggeshell, H. C., Greene, J. H., *Am. J. Physiol.*, 1933, **105**, 103.

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