

possibly of the nature of an enzyme,<sup>7</sup> in the chick embryo tissue capable of inactivating the virus under optimum conditions of pH. Preliminary experiments with purified virus indicate that this may indeed be the case. With the purified virus free of chick tissue extract and hormone broth the region of rapid inactivation between pH 5.0 and pH 6.5 has not been apparent. Further experiments in which no hormone broth was employed have indicated that the inactivating material may be present also in normal chick embryo tissue. These possibilities are being investigated further.

## 10107

**An Antidiuretic Effect Produced by Certain Preparations of Heparin.\***

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In attempts to get evidence of the presence of an antidiuretic hormone in blood<sup>1</sup> it was found that commercial preparations of heparin produce antidiuresis when injected intravenously into diuretic rabbits in doses of 1 to 4 mg. Six preparations have been used in 62 injections. Three of 4 lots, obtained from the Connaught laboratories and derived from beef lung, contained 15 anticoagulant units per mg; the fourth, a highly purified solution (lot 43-1), obtained through the courtesy of Dr. C. H. Best, contained 1000 units per cc. Of 2 lots obtained from Hynson, Westcott and Dunning, both derived from dog liver, one contained 5 units per mg, the other 20 units per mg. All except lot 43-1 consistently produced brief definite antidiuresis (Fig. 1), characteristically preceded by a 10-minute latent period, when injected intravenously into rabbits. No effect was produced by subcutaneous injection into rats or frogs.

The antidiuretic action is not a property of the anticoagulant factor in the heparin, for the most potent Connaught specimen had little or no antidiuretic action and the effects of the 2 Hynson, Westcott and Dunning preparations were not proportional to their anticoagulant potencies.

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<sup>7</sup> Best, R. J., and Samuel, G., *Ann. Appl. Biol.*, 1936, **23**, 759.

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<sup>1</sup> Walker, A. M., *Am. J. Physiol.*, 1938, **123**, 210.

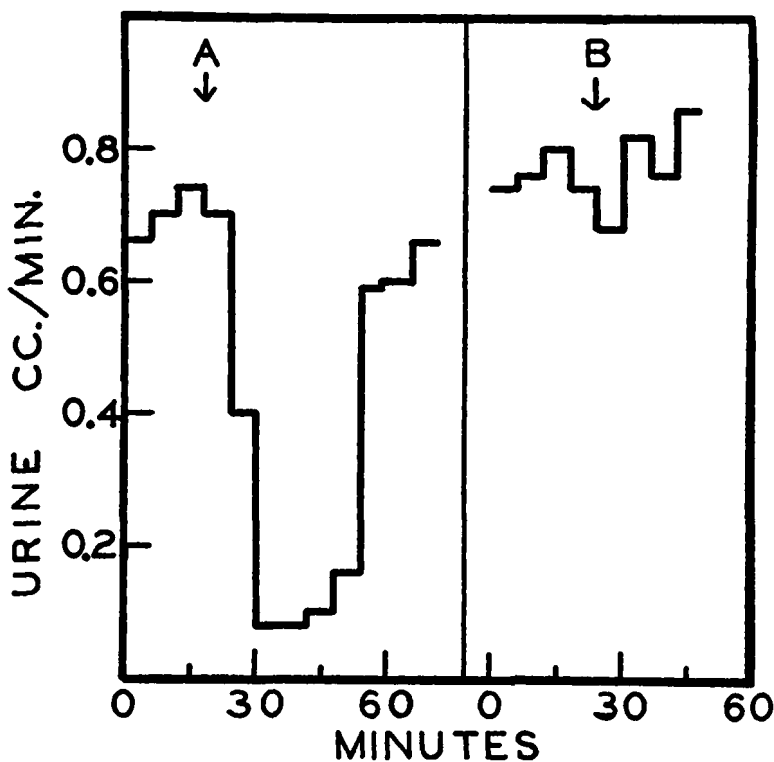


FIG. 1.

Typical record of the urine rate of a diuretic rabbit following the intravenous injection of 2.0 cc 0.9% sodium chloride solution containing (A): 30 units (2 mg) of heparin, Connaught Laboratories, lot 8-5; (B): 100 units (0.1 cc) of purified heparin, Connaught Laboratories, lot 43-1.

It is entirely problematical whether this finding has any relation to the antidiuretic activity of liver extracts described by Theobald and White<sup>2</sup> or to a possible influence of the liver upon kidney function such as is intimated by the chronic polyuria which develops in Eck-fistula dogs.<sup>3, 4</sup> There is no previous record of antidiuretic activity in lung extracts. The purpose of this note is to call the attention of those interested in antidiuretic hormones to the error which the use of heparin entails.

<sup>2</sup> Theobald, G. W., and White, M., *J. Physiol.*, 1933, **78**, 18P.

<sup>3</sup> Crandall, L. A., Jr., and Roberts, G. M., *Am. J. Physiol.*, 1936, **117**, 318.

<sup>4</sup> Knutti, R. E., Erickson, C. C., Madden, S. C., Rekers, P. E., and Whipple, G. H., *J. Exp. Med.*, 1937, **65**, 455.