about pH 11 the dye becomes somewhat orange but on immediate addition of acid the blue color reappears. This orange dye may be an imine base: it decomposes rapidly.

The dissociation constant[5] of the dye base which penetrates is about $10^{-5.6}$ as shown by the experiments on *Nitella* and on partition coefficients. This dye is spectrophotometrically[2] identical with cresyl blue but the name may be altered to cresyl blue X since this dye is regarded by Cohen[4] and Preisler (on the basis of oxidation-reduction potential measurements) as a decomposition product of cresyl blue while cresyl blue is regarded by them as more strongly basic. But this does not alter any of the results and conclusions heretofore obtained. On this basis a parallel may exist in the case of methylene blue[6] from which also the more weakly basic component (azure B) penetrates more rapidly than methylene blue.

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Effects of Posterior Pituitary Extracts on the Lactic Acid of the Blood.

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It has been noted that pitocin increased the metabolic rate of rats, while pituitrin and pitressin decreased the oxygen consumption.[1] In the present experiments the effects of 20 to 30 cc.* of chloretone-free solution of each of the 3 posterior pituitary extracts were observed on 3 unanesthetized and 2 amytalized dogs. Subcutaneous injections were made at half hourly intervals and blood samples drawn every 2 hours for 6 hours were analyzed for lactic acid.

The 3 unanesthetized animals that received pitressin showed a consistent increase in lactic acid so that the results of any one of these may be taken as representative. In each of the 3 experiments, by the end of the second hour lactic acid had increased at least 20 mg. per cent, and then gradually diminished until the sixth

[5] Irwin, M., *J. Gen. Physiol.*, 1925-26, **9**, 561.

[6] Irwin, M., PROC. SOC. EXP. BIOL. AND MED., 1928, **25**, 563; *J. Gen. Physiol.*, 1928-29, **12**, 147; 1930-31, **14**, 19.

[1] Himwich, H. E., and Haynes, F. W., PROC. SOC. EXP. BIOL. AND MED., 1930, **27**, 815.

* 1 cc. pituitrin contains 10 oxytocic and 10 pressor units. 1 cc. pitocin contains 10 oxytocic units and 1 cc. pitressin contains 10 pressor units.

EFFECT OF PITRESSIN ON LACTIC ACID OF BLOOD, mg.%.

Preinjection	2 hrs.	4 hrs.	6 hrs.
13	33	27	13

hour when the lactic acid had returned to the preinjection level. One of the 3 dogs that were given pituitrin exhibited a similar rise in lactic acid. The other 2 animals as well as the 3 which were given pitocin, had variations in the concentration of lactic acid which were within the experimental error (±2.5 mg.%). With amytal there were no significant changes in lactic acid after the administration of any of the posterior pituitary extracts. Our task is to make further studies of the character of the metabolism during the depression of the metabolic rate.

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Effect of Posterior Pituitary Extract on Plasma Concentration and Fat Content and on Blood Sugar.

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Raab[1] has demonstrated that injections of pituitrin diminish the concentration of plasma fat of unanesthetized animals. The present work is concerned not only with the effects of pituitrin, but also those of pitocin and pitressin on the concentration and fat content of plasma and blood sugar. Eighteen experiments were made on unanesthetized dogs and 21 were performed under amytal on dogs weighing from 6 to 24 kilos and in various nutritive conditions. The dosage of the chloretone-free extracts varied from 10 cc. to 30 cc.* Blood was drawn from the femoral artery, usually at 2 hourly intervals and analyzed for sugar by the method of Hagedorn-Jensen.[2] The fat content was determined according to the procedure of Stewart and White.[3] Table I presents the changes in fats, plus and minus indicating changes of at least 40 mg. per cent. Table II contains the effects of the posterior pituitary extracts on the total

[1] Raab, W., *Z. f. d. ges. Exp. Med.*, 1926, **46**, 179.

* 1 cc. of pituitrin contains 10 oxytocic and 10 pressor units. 1 cc. of pitocin contains 10 oxytocic units and 1 cc. of pitressin contains 10 pressor units.

[2] Hagedorn, H. E., and Jensen, B. N., *Biochem. Z.*, 1923, **135**, 46.

[3] Stewart, C. P., and White, A. C., *Biochem. J.*, 1925, **19**, 840.