sented itself. We have now succeeded in obtaining crystalline insulin from an extract made from pig's pancreas only. The main difficulty appears to us at present to be due to the higher content of fats and lipoids in pig's pancreas. It seems advisable to use beef pancreas exclusively to readily obtain crystalline insulin, unless fish islets can be obtained in considerable amounts.

It might be added that the crystallization of the products referred to above is effected by the methods previously described in papers on insulin from this laboratory and that the methods of defatting pancreatic extracts made from the pig's pancreas are those generally used.

Further detailed studies are now in progress, and at a later date a comprehensive paper will be published.

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Effects of Aconitine in the Rat.

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The primary purpose of these experiments was to determine the effects of aconitine on the pulse rate of the rat. In addition the lethal dosage was determined. Commercial crystalline aconitine (Lilly) was used.

In order to reduce bodily movements the rats were given 0.6 cc. of a 15% solution of urethane per hundred gm. of body weight. After the pulse rate had become constant various dosages of aconitine were injected intraperitoneally and the heart rate taken by an ausculatory method.[1] The dosage of aconitine administered in each case is stated in terms of mgm. per 100 gm. of body weight. What was estimated to be a lethal dose of aconitine, 0.032 mgm., was administered to each of 3 rats under urethane. One rat died in 41 minutes, the second in 79 minutes, while the third lived over 120 minutes.

Ten animals were given 0.0064 mgm. Under urethane the average heart rate was 337 beats per minute. Following the administration of the alkaloid the average of more than a hundred determina-

[1] Hoskins, R. G., Lee, M. O., and Durrant, E. P., *Am. J. Physiol.*, 1927, lxxxii, 621.

tions was 334 beats per minute. There was, therefore, no significant effect of the aconitine on heart rate. Similar results were obtained with 3 rats under amytal anesthesia.

Following urethane one rat was given 0.0128 mgm. and 3 others were given 0.0256 mgm. of aconitine. The heart beat became irregular in each of these animals.

Experiments were made to determine the minimum fatal dose of the alkaloid. No anesthetic or sedative was used. Two adult rats received 0.0256 mgm. and died within 2 hours. Two rats receiving 0.0192 mgm. and 2 rats receiving 0.0227 mgm. developed serious respiratory and heart disturbances but recovered. These data indicate that 0.026 mgm. is a lethal dose for the rat, while the minimum fatal dose is approximately 0.025 mgm.

The effect of the anesthetic, urethane, on aconitine poisoning was studied by reversing the order of administration, the aconitine being given first. In 2 animals a time interval of 15 minutes was allowed between the administration of aconitine and urethane, and in 2 others the time interval was 30 minutes. The dosages were 50% more than the lethal dose without urethane. Although symptoms of aconitine poisoning occurred as indicated by respiratory and heart reactions, all of the animals recovered.

From these experiments it is evident that urethane anesthesia exerts a definite effect in preventing death from what would otherwise be lethal doses of aconitine.

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Precipitin Production with Phosphorised Caseinogen.

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In a recent paper, Rimington and Kay[1] suggested that an ester linkage existed in caseinogen between phosphoric acid and some other constituent of the molecule. Still later Rimington[2] attempted to find out whether or not still further quantities of phosphorus could be induced to combine with the protein. The author succeeded in phosphorizing caseinogen and sero-globulin by means of

[1] Rimington and Kay, *Biochem. J.*, 1926, xx, 777.

[2] Rimington, *Ibid.*, 1927, xxi, 272.