termedia are practically identical in absolute weight in the control and test animals.

Large, vacuolated basophilic cells typical of those described as "castration cells" or "signet ring cells" were found in the glands of the test animals.

Allowing the epididymis to remain intact did not alter the results from total castration, either volumetrically or histologically.

A significant decrease in the body weight, and body length of the castrated animals was also found.

6654

Effect of Insulin on Blood Sugar of Rabbits During Infection.

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It is generally believed that the effect of insulin is diminished during infection in diabetes patients, and that temporarily more must be given to maintain a normal blood sugar level. To obtain information on the subject the following experiments were performed:

Healthy rabbits were injected intravenously with 0.5 unit of insulin per kg. of body weight. The blood sugar was determined by the Folin-Wu-Benedict method before insulin injection and thereafter at 15 to 30 minute intervals for 3½ hours. After at least 2 curves were obtained on successive days, the rabbits were inoculated intracutaneously with 0.1 cc. of a 1-400 dilution of a culture of Type I pneumococci. Usually on the next day, when the tem-

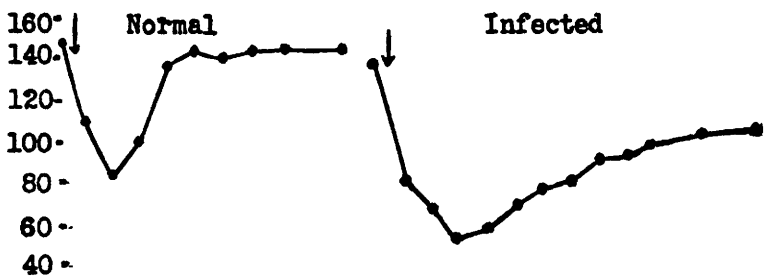

FIG. 1.

Blood sugar levels at 15 minute intervals after the injection of insulin into a normal rabbit and after it had been infected with pneumococci. Arrows indicate the time of insulin injection.

perature and local reaction indicated the development of infection, the insulin injection and blood sugar determinations were repeated. Tests were made daily, usually for 2 or 3 days until the animal died or recovered.

Results. In general, similar results were obtained in all 6 animals. A typical experiment is illustrated in the text-figure. It appears that insulin administered during infection takes a little longer to produce its maximum effect, but the effect is more pronounced and lasts considerably longer. It also appears that the effect on reducing the blood sugar is in proportion to the gravity of the infection. In one animal, after insulin injection on the second day of infection the blood sugar dropped progressively to 78 mg. in 1¼ hours when death occurred. In another (temp. 41°C.) the level dropped even more rapidly. Convulsions occurred when the level dropped below 50 mg. and death followed about 30 minutes later with a level of 22 mg.

6655

Presence of Clostridium botulinum in Livers of Birds not Affected with Botulism.

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There has been some difference of opinion as to whether or not *Clostridium botulinum* possesses the ability to invade tissue. The identification of western duck sickness with botulism[1, 2] gives to this problem considerable hygienic importance, and the morbidity during an epizootic furnishes a sufficient number of birds to subject this problem to statistical analysis.

It has been observed[3] that cultures made from animals dying of lamsiekte contained botulinum in 50% of the cases, while 3% of the animals dying from other causes yielded such positives. During experiments by others regarding the ability of botulinum to pro-

[1] Kalmbach, E. R., *Science*, 1930, **72**, 658.

[2] Kalmbach, E. R., *Science*, 1932, **75**, 57.

[3] Scheuber, J. R., 15th An. Rep., S. A. Director of Veterinary Research, 1929, Part I, 223.