luted fibrinogen solution and streptococcus culture with thrombin, and the observation of subsequent lysis. Only one strain (Group A) failed to lyse fibrin clots from fibrinogen prepared in the above manner. This strain was also negative with a plasma clot. In tests made with known non-lysing strains of streptococci, the clots showed no sign of lysis after remaining overnight in the water bath. All other groups of streptococci tested, as well as several unidentified species of bacteria, failed to lyse the fibrin clot.

Preliminary experiments indicate that this fibrinogen preparation will also serve for the determination of staphylococcus coagulase.

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Effect of Adrenalectomy on the Growth of Mammary Glands in Underfed Albino Rats.*

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It has been found[1] that growth of hair is greatly accelerated by bilateral adrenalectomy in underfed rats. Since the mammary glands are similar in origin and location to the hair bulbs, the present experiments have been made to see if these glands, likewise, grow more rapidly after adrenalectomy in underfed animals.

After weaning at the age of 22 days, rats were isolated and thereafter fed 2 g of ground Purina dog chow each morning and 2 each evening. Rats gained very little weight on this quantity of food. Females were adrenalectomized via the dorsal approach usually when about 30 days old while unoperated litter mates served as controls. Three per cent NaCl solution was kept accessible for the adrenalectomized animals.

Usually 10 to 15 days after adrenalectomy, the adrenalectomized rats and their unoperated and underfed litter mate controls were killed and the skins of their ventral body walls were fixed in Bouin's fluid. The mammary glands were then dissected out, stained, cleared and mounted.

When the mammary glands (Figs. 1 and 2) of the adrenalectomized and control animals are compared, many more bud-like projec-

* I am indebted to Mr. Hobart Parkhurst for technical assistance in these experiments.

1 Butcher, E. O., *Endocrinology*, 1939, **25**, 787.

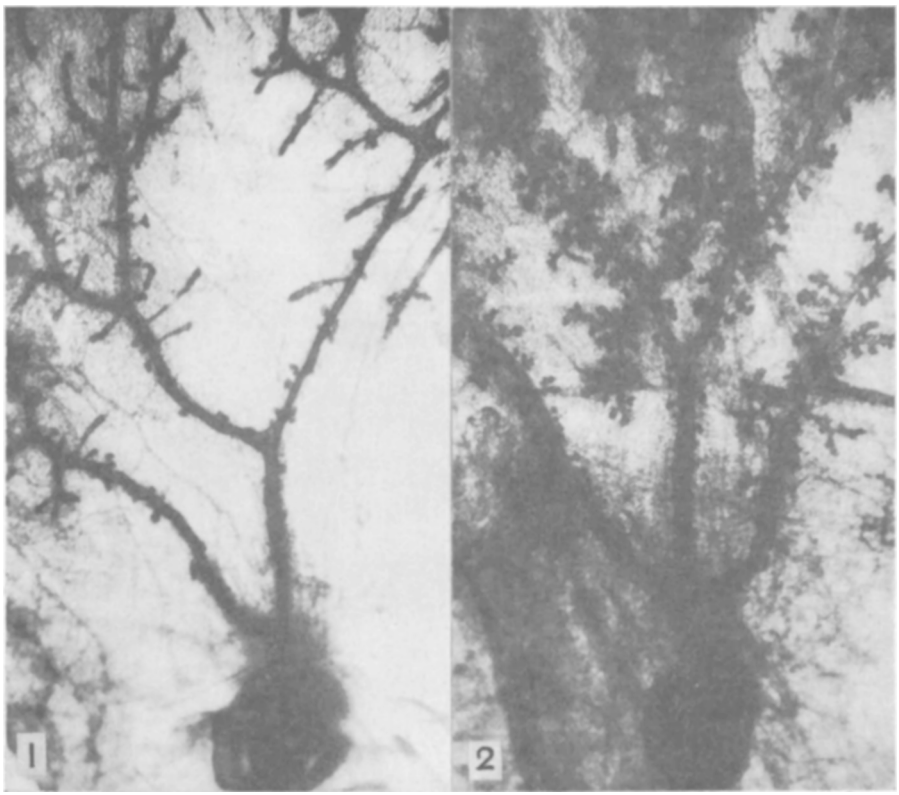

FIG. 1.

Whole mount of third thoracic mammary gland of a 40-day-old rat, underfed since the age of 22 days (body weight, 27th day—43 g, 40th day—44 g, diameter of gland—6 mm). × 17.

FIG. 2.

Whole mount of third thoracic mammary gland of a litter mate 40-day-old rat, underfed since the age of 22 days, and adrenalectomized when 27 days old (body weight, 27th day—41 g, 40th day—47 g, diameter of gland—9 mm). ×17.

tions are seen along the course and at the ends of the ducts in the adrenalectomized rat. The gland of the adrenalectomized animal also covers a larger area than the gland of the control animal.

Since increased sexual activity is said to follow adrenalectomy in male rats,[2] there existed the remote possibility that the ovaries might become more active after adrenalectomy and induce the more rapid growth of the mammary glands. Accordingly, 2 underfed rats of a litter were both adrenalectomized and ovariectomized, 2 were adrenalectomized, while the 2 or 3 others of the litter were unoperated. All the animals of the litter were sacrificed about 10

[2] Marine, D., *Glandular Physiology and Therapy*, Am. Med. Assn., 1935, 331.

days after the operations. The mammary glands of the adrenalectomized and ovariectomized animals were comparable to the glands of adrenalectomized rats, and possessed more bud-like projections than the glands of the unoperated rats. These results were confirmed by the use of other litters. It was thus evident that the ovary was not responsible for the changes in the mammary glands of the adrenalectomized underfed individual. It seems quite probable that adrenalectomy allows more substances which are necessary for the growth of the mammary glands to pass through the capillary walls into the tissue spaces.

Summary. The mammary glands of underfed albino rats grow more rapidly upon adrenalectomy. This enlargement is not due to increased sexual activity resulting from the adrenalectomy.

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Relation of Skim Milk Feeding to Cataract Production.*

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Mitchell and Dodge[1] reported that 68% of the rats placed on a synthetic diet containing 70% lactose developed mature bilateral cataracts and on a diet containing 50% lactose, 27% of the rats became similarly afflicted. Since skim milk solids contain about 50% of lactose, it was thought that skim milk might be dangerously high in lactose. However, cataracts have never been observed in this laboratory in rats on a skim milk or whole milk diet but have been observed in rats receiving skim milk containing added galactose. In this connection it was thought advisable to make a study of the relation of lactose and galactose to nutritional cataract in animals on a skim milk diet.

Day[2] and others[3] have reported a type of nutritional cataract

* Published with the approval of the Director of the Wisconsin Agricultural Experiment Station. These studies were aided in part by grants from the Wisconsin Alumni Research Foundation and the Works Progress Administration.

1 Mitchell, H. S., and Dodge, W. M., Jr., *J. Nutrition*, 1935, **9**, 37.

2 Day, P. L., Darby, W. J., and Langston, W. C., *J. Nutrition*, 1937, **13**, 389.

3 O'Brien, C. S., *Arch. Ophth.*, 1932, **8**, 880; Yudkin, A. M., *J. Am. Med. Assn.*, 1933, **101**, 921; Guha, B. C., *Nature*, 1935, **135**, 395; Bourne, M. C., and Pyke, M. A., *Biochem. J.*, 1935, **29**, 1856.