into a bladder-fistula dog excreting 3.0 cc. of urine per minute resulted in a suppression of urine to 0.4 cc. per minute, the duration of the antidiuretic effect being 25 minutes. Three batches of cultured posterior lobe and 3 of non-cultured were thus tested; results were practically identical.

In regard to the effect of injecting anterior pituitary cultures into hypophysectomized rats, it was found that 60 anterior lobes which had been grown for 6 days, and in which the amount of tissue had increased considerably, produced definite hormonal restorative effects upon the thyroid, adrenals and ovaries of the hypophysectomized rat. This effect, however, was no greater than that produced by an extract of an equivalent number of non-cultured pituitaries. The lack of a more delicate test for assaying anterior lobe hormones was a handicap in this study.

Conclusion. With growth *in vitro,* pars intermedia cells of the posterior lobe of the pituitary retain their power to elaborate melanophore-expanding principle. Under the conditions of experiment no discernible production of hormones took place with growth of anterior lobe cell *in vitro.*

We wish to thank Dr. K. I. Melville for his very kind assistance in the assay of posterior lobe hormone.

8355 P

Effect of Thyroidectomy and Thyroid Feeding on the Estrus Cycle in the Rat.

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Many investigators have reported both anatomical and physiological disturbances in the reproductive system following ablation of the thyroid gland.[1-5] In the adult female rat the most striking functional change is an increase in the length and irregularity of cycles.[4, 5] It seemed of interest to determine to what extent the nor-

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mal cycles could be restored in thyroidectomized animals by replacement therapy.

Twenty-one young adult rats were thyroidectomized. Vaginal smears were made for varying periods before and after operation and following institution of thyroid feeding (.03 gm. to .06 gm. per day of desiccated sheep thyroid (Armour) added to the food). At the conclusion of the experiment the animals were sacrificed and the neck examined macroscopically for regenerated thyroid tissue. It was found, as in the case of previous workers, that changes in the cycle were not likely to occur if small remnants of thyroid tissue were left behind. In our group 12 animals had had complete extirpation of the gland. These constitute the basis of the present report.

Following thyroidectomy there was generally a single prolonged diestrus period which was attributable to the operative procedure and which was not counted in computing the averages. Complete removal of the gland was followed by a prolongation of the cycle in diestrus averaging one to 5 days. Four to 5-day cycles did occur, but at irregular intervals.

When small doses of desiccated thyroid substance were added to the diet there was a tendency for the cycles to return to normal both in duration and regularity. In most instances, however, the average duration was one day longer than the preoperative level.

When thyroid feeding was discontinued the irregularity and lengthening of the cycles tended to recur.

The number of animals in this series is small. The results, however, indicate a general tendency for alterations in the sexual cycle following thyroidectomy, to be restored toward the normal by replacement therapy with thyroid substance.

Further work is in progress to evaluate the thyroid ovarian relationship.

8356 P

Carbohydrate Matrix of the Epithelial Cell Inclusion in Trachoma.

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Since the discovery by Prowazek and Halberstaedter of the epithelial cell inclusion in the conjunctiva of patients with trachoma, a voluminous literature has appeared on this structure. The great