

Whether a steroid with androgenic effects will be secreted has been investigated using a technique previously described<sup>1</sup> by which small well-defined endocrine cell populations and contiguous biological indicator tissue are grafted to the anterior chamber of the eye.

In these investigations grafts from the ventral prostate and the seminal vesicle were used as indicators. In control experiments pieces from these organs were auto-transplanted to the anterior chamber of the eye of rats castrated 14–40 days previously, and exposed to various oestrogens, gestagens and androgens (crystals in the eye). The results show that the development of a secretory epithelium in such grafts is probably a reaction specific to androgenic steroids and that the ventral prostate is clearly a more sensitive indicator than the seminal vesicle. Both these types of indicator tissue have been used in the experiments described here. The animals used in the experiments belong to a strain inbred for more than thirty generations, and the indicator grafts were taken from adult males castrated 2–3 weeks previously.

In a first series, immature and adult female rats which had been hypophysectomized 5–8 days previously were spayed and small pieces from the ovaries were autotransplanted to the eye. The adult animals were divided into two groups which received ovarian transplants respectively with and without corpora lutea. The animals were injected with 10 I.U. human chorionic gonadotrophin per day from the day of transplantation and killed 10–14 days later, after which the transplants were excised, serially sectioned and stained with hæmatoxylin-eosin. In all cases the ovarian grafts exhibited androgen effects, the contiguous prostate transplant showing a pronounced response with the development of large lumina and tall, columnar secretory epithelium except in the largest lumina, where the epithelium was more cuboidal. Transplants of the seminal vesicle sometimes developed a high epithelium, but in the cases where the ovarian transplants were very small the epithelium was lower or of the castrate type. Systemic androgenic effects were never recorded, since control transplants of the prostate and seminal vesicle in the other eye always exhibited castrate characteristics.

Experiments in progress using the same technique have been designed to elucidate which endocrine cell system or systems may be responsible for this androgen effect. So far the following isolated cell systems have been investigated in adult rats not hypophysectomized: granulosa cells, corpus luteum cells and interstitial gland cells. Pieces of follicle wall containing only granulosa cells and theca interna cells have also been transplanted. In the granulosa cell and follicle wall transplants the granulosa cells were transformed into corpus luteum cells as previously described<sup>1</sup>. Interstitial gland cells and fragments of follicle wall have also been autotransplanted in hypophysectomized animals which were stimulated with human chorionic gonadotrophin as above. Androgen activity was only recorded in the transplants of interstitial gland cells and pieces of follicle wall. The indicator tissue contiguous to the transplants of corpus luteum cells or transformed granulosa cells showed a typical castrate appearance. In some of the follicle-wall transplants the granulosa cells did not survive and only theca interna cells were to be found at the end of the experiment, but androgen effect was nevertheless recorded.

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<sup>2</sup> Falck, B., Menander, K., and Nordanstedt, O., *Lunds universitets årskrift.*, N.F. Avd. 2, **56**, No. 16.

### Simultaneous Staining of Heinz Bodies and Reticulocytes with New Methylene Blue N in *Uromastix acanthinurus* after Iproniazid Treatment

In dogs given iproniazid ('Marsild') it was observed that Brecher's method<sup>1</sup> for counting reticulocytes very clearly showed the presence of Heinz bodies<sup>2</sup>, which yielded a method for demonstration of both Heinz bodies and reticulocytes in the same preparation<sup>3</sup>. Since, to the best of my knowledge, nothing is known of the possible occurrence of Heinz bodies and reticulocytes in lower vertebrates, I performed a corresponding investigation with the lizard *Uromastix acanthinurus*. As staining technique the method of Brecher<sup>1</sup> was used according to Thompson's method<sup>3</sup>. The erythrocytes appeared to be stained a pale greenish-blue, while the reticulum was deep blue and sharply outlined. The Heinz bodies stood out prominently against the pale-green background of the erythrocytes and were pale to deep blue. As in the dog erythrocytes<sup>3</sup>, these bodies were stained at least as well as by the usual methods<sup>2,4,5</sup>. As these results correspond very well with those obtained in the dog<sup>3</sup> a more general importance should no doubt be attached to it.

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<sup>2</sup> Heinz, R., *Berl. klin. Wochenschr.*, **27**, 47 (1890).

<sup>3</sup> Thompson, E. C., *Stain Tech.*, **36**, 38 (1961).

<sup>4</sup> Webster, S. H., Liljgren, E. J., and Zimmer, D. J., *Stain Tech.*, **23**, 97 (1948); *J. Pharmacol. Exp. Therap.*, **95**, 201 (1949).

<sup>5</sup> Spicer, S. S., and Thompson, E. C., *J. Indust. Hyg. Tox.*, **31**, 206 (1949).

## BIOLOGY

### Lack of Ultrasonic Components in the Flight Noise of Owls

DURING the course of some observations on the ultrasonic components of the songs and call notes of a number of species of birds<sup>1</sup>, we noticed to our surprise the extent to which the wing beats of small birds produced ultrasonic 'noises'. This raised interesting problems as to how far the silent flight of the smaller and medium-sized owls is also 'silent' above the normal upper limit of the human ear: for if the owls' wings are noisy at the higher frequencies, then most of the supposed advantage to owls of this adaptation would be lost, since it is likely that the vast majority of small mammals on which these birds prey possess good hearing in the ultrasonic range<sup>2</sup>.

In order to follow up this suggestion we carried out a number of observations with the ultrasonic bat-detector<sup>1</sup> on owls and other birds of corresponding size in free flight in aviaries at the Sub-department of Animal Behaviour in Cambridge and at the London