

nor is the atrophy of these organs which follows ovariectomy prevented by the transplants. The precocious maturing of the uterus and vagina in the treated unoperated animal is effected by the ovarian (follicular) growth induced by the pituitary transplants.

The precocious maturing of the genital system, which is invariably induced by daily homoplastic pituitary transplants, stands in marked contrast to the failure to hasten sexual development by other methods of pituitary administration. Single transplants of one or several glands have been unsuccessful (Shafer,<sup>3</sup> Clairmont and Ehrlich,<sup>4</sup> Exner.<sup>5</sup>) The intraperitoneal injection of a suspension of the anterior hypophysis of ox, postpones sexual maturity (Evans and Long<sup>6</sup>). A number of investigators have shown that pituitary feeding does not hasten the development of this system.

I have also found that daily pituitary transplants in the adult female usually leads to an increase in the size of some of the follicles of the ovaries. They frequently become cystic. These ovaries may exceed the weight of like glands in the control by from two to four times. The cysts may attain a very considerable size (2 mm.). A thin layer of granulosa cells is present in some of the cysts, in others there is only a thin layer of lutein cells or at places only connective tissue.

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<sup>1</sup> Smith, P. E., *Anat. Rec.*, 1926, xxii, 221.

<sup>2</sup> Smith, P. E., *J. Am. Med. Assn.*, 1926, (in press).

<sup>3</sup> Schafer, E. A., *Berliner Universitätscher.* Teil 3, 1911.

<sup>4</sup> Clairmont and Ehrlich, *Arch. f. klin. Chirurg.*, 1909, lxxxix, 596.

<sup>5</sup> Exner, A., *Deutsch. Z. Chir.*, 1910, cvii, 172.

<sup>6</sup> Evans and Long, *Anat. Rec.*, 1921, xxi, 62.

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### The Effect of Liver Extract on Ducks.

THEO. C. BURNETT.

*From the Spreckels Physiological Laboratory, University of California,  
Berkeley, Calif.*

In previous communications<sup>1</sup> it was pointed out that liver extract contained both histamine and cholin, and that the depressor effect was possibly due to these substances. As a further link in the evidence leading to these conclusions the effect of liver extract has been tried on ducks. Hogben<sup>2</sup> has stated that a 1 per cent extract

of liver is without effect on ducks, that ducks are less susceptible to depressor bases, and that a pressor effect is more likely, as in rabbits.

The ducks used were fairly uniform in size, weighing about 2 kilos each. Intravenous injections of liver extract (kindly furnished by the Connaught Laboratory) were made in doses ranging from 0.25 to 1 cc. The blood pressure was taken from the carotid artery by the usual method. Such injections are practically without effect on the blood pressure. Sometimes there is a slight rise, sometimes a slight fall (usually due to manipulations), but never the abrupt fall so characteristic of the depressor effect in mammals. As liver extract contains histamine and cholin, the conclusion is still further justified that it is these substances that are responsible for its depressor effect.

Incidentally, it may be stated that Miss Ruth Holzapfel finds radiation with ultraviolet light has no injurious effect on the depressor substance of liver. We know from Ellis and Newton<sup>3</sup> that ultraviolet rays destroy the potency of insulin. It was thought the same might be true for liver extract, if the depressor substance was in the nature of an autocoid. This is a tentative statement as her experiments are yet too few to be conclusive.

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<sup>1</sup> MacDonald, W. J., and Burnett, T. C., *Bost. Med. and Surg. J.*, 1926, cxciv, 381; Burnett, T. C., *Am. J. Physiol.*, 1926, lxxviii, 449.

<sup>2</sup> Hogben, L. T., *Quart. J. Exp. Physiol.*, 1926, xv, 155.

<sup>3</sup> Ellis, M. M., and Newton, E. B., *Am. J. Physiol.*, 1925, lxxiii, 530.

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### White Blood Cells of the Normal Guinea Pig.

S. P. LUCIA. (Introduced by K. F. Meyer.)

*From the George Williams Hooper Foundation for Medical Research, University of California, Berkeley, Calif.*

Investigators have long since realized the importance of the guinea pig as an experimental animal. A criterion of normality in the blood picture of this animal is a necessity to establish a standard for comparative research. Many studies of the differential count of guinea pig blood have been attempted, but, the variations have been so great that a generalization concerning the average count has been impossible. The cause of these divergences may have been due to the breed of the animal, to the physical condition of the animal,