

and female rats daily for 3 days prior to and for the 5 days during which the diacetic acid was fed did not appreciably alter the ability of these animals to burn diacetic acid. This dose of theelin was sufficient to maintain the female animals in active oestrus during the entire experiment. In one series of tests, 10 times this amount of theelin was given also with negative results. It is concluded that the greater ketosis which obtains in females than in males is to be traced to some substance produced by the ovary other than theelin.

### 7105

#### Relation of Anterior Pituitary to Sexual Differences in Ketosis in the Rat.

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Burn and Ling<sup>1</sup> have reported that the administration of an alkaline extract of the anterior pituitary gland to female rats fed on a butter fat diet brought about a marked rise in the level of ketonuria. The experiments on males were uniformly negative. In order to determine whether the sexual differences in ketonuria reported in the previous paper<sup>2</sup> might be traced directly or indirectly to this ketogenetic hormone, further experiments under varying conditions seemed advisable.

The experimental procedure was similar to that used in the previous work.<sup>2</sup> The extracts of anterior pituitary were made from fresh glands of steers according to the procedure of Burn and Ling.<sup>1</sup> The administration of this extract to normal or castrated male or female rats which were receiving diacetic acid resulted in a marked rise in the level of acetone bodies in the urine over that of the controls. The response was as prompt and as great in male as in female rats and in the castrated as the normal animals. No glycosuria was observed. The following is the number of experiments which were made on the anterior pituitary extract and all were strongly positive; normal males, 9; castrate males, 14; normal females, 11; oöphorectomized females, 14.

<sup>1</sup> Burn, J. H., and Ling, H. W., *Quart. J. Pharm. and Pharmacol.*, 1933, **6**, 31.

<sup>2</sup> Deuel, H. J., Jr., Grunewald, C. F., and Cutler, C., *PROC. SOC. EXP. BIOL. AND MED.*, 1933, **31**, 309.

When the anterior pituitary extract was injected in normal male and female rats which were fasted but to which 10% NaCl was administered instead of diacetic acid, the excretion of acetone bodies in the urine was promptly increased from an average of about 1 mg. per day to 30-65 mg. No sexual difference in response was noted. Boiled extract was inactive as was the filtrate after an alcoholic precipitation of the active extract. Negative results were likewise obtained when an active extract was fed by stomach tube instead of being injected subcutaneously.

It seems that the greater susceptibility of the female to ketosis may be associated with a larger production of the ketogenetic substance in the anterior lobe as the result of the stimulation of some substance produced in the ovary other than theelin.

## 7106 C

**Evidence for Characteristic Modifications of the Electrocardiogram Produced by Lesions of Ventricular Muscle Bands.\***

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Efforts to correlate the electrocardiogram with myocardial lesions as recently reviewed by Haney, Borman, and Meek<sup>1</sup> have not been altogether consistent. In this study individual ventricular muscle bands have been made anemic by ligating their blood supply. The specific muscles were so treated on 26 occasions in 7 dogs, under pento-barbital anesthesia, when the heart was exposed and beating in a snug cradle formed by stitching the pericardium to the edges of the wound. The electrocardiographic results are characteristic and entirely consistent for each of 4 muscles studied; the superficial sino-spiral, the superficial bulbo-spiral, the deep sino-spiral and the deep bulbo-spiral.

When vessel after vessel to a given muscle is ligated, the characteristic result is evident at once, and the magnitude of the effect increases as the lesion of the muscle progresses.

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\* This study was made while the author held a grant from the Committee on Scientific Research of the American Medical Association. A part of the experiment was carried out in the Physiological Laboratory of the School of Medicine of Rochester University.

<sup>1</sup> Haney, H. F., Borman, M. C., and Meek, W. J., *Am. J. Physiol.*, 1933, **106**, 64.