duced by administration of preparations of anterior pituitary in guinea pigs we now have established the occurrence of exophthalmos.

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Effect of Amytal upon Basal Metabolism in Guinea Pigs.*

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Deuel, Chambers and Milhorat[1] have shown that there was only a very slight lowering of basal metabolism in dogs which had been injected with sodium amytal. A series of experiments was carried out to determine what effect doses of amytal sufficient to cause the animals to remain quiet would have upon the basal metabolism of normal guinea pigs, and upon guinea pigs which had been given various substances which would cause a rise in the basal metabolic rate. We used the isoamylethylbarbituric acid (Amytal—Lilly) which was prepared according to the directions given on the label of the bottle. 0.10 cc. of a saturated solution of the potassium salt of the amytal was injected subcutaneously into guinea pigs which had an average weight of about 400 gm., 5 or 10 minutes before placing the animals on the metabolism apparatus. The guinea pigs remained perfectly quiet throughout the 2-hour period in which they were on the apparatus. No shivering occurred. No ill effects from the use of the amytal and no increased tolerance for the drug were noted. The average basal metabolism of 76 normal guinea pigs without amytal was 3.59 calories per kilo per hour, while in 72 other guinea pigs which had been injected with amytal, the average basal metabolism was 3.52 calories per kilo per hour. Thus the average metabolism of this latter series was approximately 2% below the average of the series which had not received amytal. The maximum and minimum variations are approximately the same in both sets, being plus or minus 10%. Twenty-four guinea pigs were used to determine what effect amytal has upon basal

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[1] Deuel, Harry J., Jr., Chambers, William H., and Milhorat, Adolph T., *J. Biol. Chem.*, 1926, **69**, 249.

metabolism if various substances are given which cause a rise in the basal metabolic rate. For this purpose 8 guinea pigs were given daily 1 cc. intraperitoneal injections of acid anterior pituitary extract; 4 of these received amytal previous to the period during which the determinations were being made, and in 4 others the determinations were made at the same time without the use of amytal. The metabolism was tested at biweekly intervals for periods of 2 to 3 weeks and the maximum and minimum variations and the average curves of the 2 sets of animals were compared. The maximum rise as well as the average curve and the minimum rise was found to be very slightly lower in the group of animals which had received amytal, but the curve of metabolism was very similar in both types of cases. The variations between the maximum and the minimum rise in metabolism was also smaller in the group which had received amytal.

Eight other guinea pigs were given Armour anterior pituitary tablets (5 grain) daily. Four of these were given amytal, and in 4 others determinations were made at the same time without amytal. The results were compared after biweekly determinations were made in both sets of animals over a 3-week period. In this series the metabolism curve is the same in both sets of guinea pigs. The variations are considerably less in the group which had received amytal, but in this set the maximum and minimum determination, as well as the average curve was very slightly higher in the group which had received amytal. Thyroid substance (Armour, 0.05 grains daily by mouth) was given to 8 guinea pigs, 4 of which received amytal and 4 in which the determinations were made without amytal, the metabolic rate was tested in both sets at the same time at biweekly intervals over a 3-week period, and the results compared. The maximum and minimum values were smaller in the group which had received amytal, the average curve was very slightly less but the type of curve was similar in both sets.