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Inhibition of Menstruation by Crystalline Progesterone.

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It has been shown¹ that partially purified extracts of the corpus luteum, containing progesterone, possess the property of inhibiting menstruation in the monkey. In view of the possibility that contaminating substances were involved in this result, the experiments have been repeated on five animals with crystalline progesterone, both natural and synthetic.

The hormones used consisted of 2 lots of β -progesterone prepared in our laboratory from sows' ovaries, 2 lots of synthetic β -progesterone donated by the Schering Corporation through the kindness of Dr. Erwin Schwenk, and a lot of synthetic α -progesterone donated by E. Merck, Darmstadt. The animals were chosen and the experiments conducted in the same way as those of Corner, 1935.¹ Each animal was allowed one or more control cycles and the time of the next menses having been estimated as closely as possible from the history, treatment with progesterone was begun about a week before the expected onset. The dosage was uniformly 1 mg. daily, equivalent to 1 international unit. One animal received natural β -progesterone throughout. Two received the first of the Schering preparations for 11 days, and then the second Schering preparation for 5 and 6 days respectively; menstruation then being overdue, the experiments were continued with natural progesterone for a few days longer. Finally, 2 received the Merck α -progesterone throughout. In all 5 experiments, the expected menstruation was delayed for about 2 weeks, after which the hormone was discontinued according to plan. Bleeding began 2 to 4 days thereafter.

The only feature in which the result with crystalline progesterone differed from that with the partially purified substance used in previous experiments, was in the more rapid onset of bleeding after discontinuance, namely 2 to 4 days instead of 5 to 8. This may have been due to more rapid utilization or excretion of the pure hormone.

In conclusion, it may be stated that all 4 of the definitely established effects of corpus luteum extracts upon the uterus, namely progestational proliferation of the endometrium,² inhibition of ac-

¹ Corner, G. W., *Am. J. Physiol.*, 1935, **113**, 238.

² Wintersteiner, O., and Allen, W. M., *J. Biol. Chem.*, 1934, **107**, 321.

tion of pituitrin upon the myometrium,³ inhibition of uterine motility *in vivo*,⁴ and suppression of menstruation,¹ have now been achieved with crystalline progesterone.

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Effect of Thyroid Feeding and Thyroidectomy on Thymus Size in the New-born Rat.

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Certain clinical indications have led to the feeling that a possible interrelationship between thyroid size or condition in the mother and the size of the thymus in the offspring might be demonstrable. This has been investigated experimentally, using the albino rat as the experimental animal.

A study of basal metabolic conditions in normal and thyroid-treated animals has been made. Although somewhat inconclusive, due to variability greater than 10%, the results indicate that one milligram of desiccated thyroid (Parke-Davis) given orally per day will maintain the thyroidectomized rat of about 150 gm. weight in fairly normal metabolic balance.

With this determined, three experiments were set up, each group containing eight proven breeding females, whose normal litters had been used to establish normal thymus size. Group 1 received 2 mg. of desiccated thyroid per day; Group 2, 5 mg.; the females in Group 3 were thyroidectomized. Weight curves were kept on all animals for 2 weeks prior to pregnancy. Vaginal smears were done to determine the stages of estrus and the time of breeding to within 4 hours. All animals were fed on a diet containing $\frac{1}{3}$ dried whole milk and $\frac{2}{3}$ ground whole wheat, plus 1% sodium chloride and 1% calcium lactate. Lettuce and liver were given 3 times a week.

The results were as follows: Prior to pregnancy, the animals in Group 1 made a steady gain in weight; Group 2 gained, but somewhat more slowly; Group 3 showed some gain in weight. Repeated estrous cycles were seemingly normal for the thyroid-fed normal

³ Makepeace, A. W., Corner, G. W., and Allen, W. M., *Am. J. Physiol.*, 1936, **115**, 376.

⁴ Allen, W. M., and Reynolds, S. R. M., *Am. J. Obstet. and Gyn.*, 1935, **30**, 309.