failure to find remnants of thyroid or parathyroid tissue at autopsy; (2) failure in the normal metabolic response on exposure to cold, as described elsewhere;[2] (3) negligible excretion of guanidoacetic acid;[2] (4) low serum calcium (4-6.5 mg.) in every case where blood was available for analysis.

Summary and Conclusions. In pregnant rats deprived of their thyroid and parathyroids a very high rate of mortality occurred at term. While it seems logical to attribute these results to parathyroid deficiency, and indeed more recent experiments in this laboratory support this conclusion, nevertheless other factors may be of importance. Work is in progress in an attempt to elucidate the problem.

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Effect of Progesterone on Cell-Division in the Uterine Epithelium.

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It has been stated (see, for example, Sex and Internal Secretions, edited by E. Allen, 1932, p. 528) that the corpus luteum hormone, progestin, does not cause active proliferation with mitotic division in the endometrium, the proliferation observed after ovulation being ascribed to the action of oestrin and not progestin.

Examination of a cross section of the rabbit's uterus after injection of the castrated animal with progestin for five days, as in the usual method of assay, reveals very little evidence of mitotic division; it is, no doubt, this observation which has given rise to the conclusion that progestin does not induce cell division. The great increase, however, in extent of the surface epithelium and gland cells which is seen in the sections, obviously depending upon an increase in the total number of cells, suggests that cell-division has in some way been induced.

In the course of the experiments reported by Makepeace, Corner and Allen[1] it was noted that the uteri of animals examined after 3

[2] Bodansky, M., *et al., Endocrinology,* 1936, **20**, 822.

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

days of progestin treatment showed frequent mitoses in the epithelium. Probably, therefore, when the injections of progesterone are continued for 5 days, as in the experiments of other workers, the endometrium passes beyond the division stage, and by the time of autopsy all of the mitotic figures have disappeared.

The following experiment was done to test this conjecture under controlled conditions. Complete oöphorectomies were done on 6 rabbits. At the time of operation, a specimen was removed from the middle of one horn of each uterus as a control. Two of the rabbits each received daily for 3 days 0.5 mg. progesterone (crystalline progestin), an amount comparable with that produced in a rabbit with active corpora lutea. Two rabbits each received 3 daily doses of 50 international units of oestrin in the form of Amniotin in oil. Two animals were kept as controls and received no injections.

The animals were killed on the fourth day after operation. Specimens from the uteri were taken at autopsy, as nearly as possible from the middle part of the horn not used as the control. The sections were stained with iron hematoxylin and the mitotic figures were counted in two sections for each rabbit, one taken at operation and one taken at autopsy. The results obtained are shown in Table I.

TABLE I.

Treatment	Number of Mitoses	
	At operation	At autopsy
Control	6	12
"	7	8
Oestrin	8	13
"	12	15
Progesterone	9	ca. 500
"	12	ca. 750

The difference between the number of mitotic divisions in the oestrin-injected animals and in the control animals is so slight as to be negligible. On the other hand, the ratio of the number of figures found in sections from the progesterone-injected animals to the number found in oestrin-injected animals is at least 50:1. The conclusion to be drawn from these results is that an initial effect of progesterone is to stimulate cell-division of the uterine epithelium.

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