tremities on the morning of the second day and was found dead a few hours later.

Microscopic studies of the long bones and costochondral junctions of the ribs revealed marked differences in the degree of decalcification in the respective groups. The control parathyroid guinea pigs showed osteoclastic activity and fibrous replacement at the costochondral junctions with a minimal amount of lacunar resorption in the corticalis. The long bones showed the greatest amount of osteoclasis and fibrous ingrowth, though this was pronounced, at the growing ends of the bones with lesser lacunar resorption and fibrous replacement in the shaft.

Those animals that received the phosphate solution in addition to parathyroid hormone showed a greater degree of fibrous replacement in the shafts of the long bones, in the marrow cavity, and more active osteoclasis throughout. It required twice the amount of parathyroid hormone alone to produce the degree of decalcification and other pathologic changes observed in fibrous osteodystrophy *(Osteitis fibrosa cystica)* than when parathyroid and the phosphate solution were used together. All the sections in this group showed wide hemorrhagic areas in the marrow cavities of the long bones.

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Anterior Pituitary Therapy and Uterine Motility in the Unanesthetized Rabbit.

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In earlier experiments[1, 2] on the action of the ovary-stimulating substance of human urine of pregnancy on uterine motility, it was shown that the contracting uterus of the unanesthetized rabbit either approaches the quiescent state or becomes fully quiescent 5 to 7 hours following a single intravenous injection of this material. This takes place whether or not the ovaries are present and so may happen independently of ovarian tissues which might contribute to

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1 Reynolds, S. R. M., *Am. J. Physiol.*, 1932, **100**, 545.

2 Reynolds, S. R. M., and Friedman, M. H., *Am. J. Physiol.*, 1930, **94**, 705.

the effect. The significance of this finding has not been determined however, and it has never been shown that the action of urine-substance parallels the action of anterior pituitary therapy in its effect on uterine motility as it does in certain respects upon the ovary. The data from the present experiments give this latter information and show that the effect of the injection of fresh saline suspension of anterior pituitary glands of the ox or the injection of alkaline extracts of these glands exactly parallels the effect of the injection of pregnancy urine-substance.

Beef anterior pituitary preparations used were of 2 varieties: (1) Fresh saline suspension was made within 4 hours of the death of the animal by triturating the glands in a mortar and using the supernatant fluid either immediately or after standing for 2 to 3 days in the ice box. The amount employed was the fluid obtained from 1 to 3 glands. This was at least 5 to 15 times the m. e. d. for ovulation in a *post partum* rabbit of medium weight. (2) An alkaline extract of ox pituitaries similar to that described by Bugbee *et al.*[3] was also used. Since the extracts were not freshly made when employed, the approximate m. e. d. for ovulation was determined at the time each extract was used. 0.1-0.2 cc. in a single intravenous injection regularly elicited ovulation. The amounts used in the experiments, however, ranged from 10 to 30 times this amount (equivalent to ½-1½ gm. fresh tissue).

TABLE I.

Condition of Rabbits	Response	Partial Response	No Response	Total
Intact (fistula)	5	0	0	5
Castrated (fistula)	5	4	1	10
Total	10	4	1	15

Since the technique of these experiments exactly duplicates others already described,[1] a mere summary of the results is given in Table I. A "response" means that within 5 to 7 hours a decrease of the spontaneous rhythmical motility occurred, so that nearly complete quiescence supervened, in intact unanesthetized rabbits; in castrated rabbits the "response" refers to a similar, but transitory quiescence of motility which has been induced by oestrin (Theelin). A "partial response" indicates that the quiescent condition was approximated, but not attained within the time that the motility was recorded. The possible reasons for this have been discussed before,[1] as have the necessary precautions in this type of experimentation.

[3] Bugbee, E. P., Simond, A. E., and Grimes, H. M., *Endocrinology*, 1931, **15**, 41.

Two experiments in which inactivated (boiled) extracts were used showed that extracts so treated were without effect on uterine motility. Therefore, the "response" we have obtained is probably specific for active extracts. The significance of these results may possibly be indicated by the close similarity in action of anterior lobe therapy and of human pregnancy-urine, but it may be no more than a coincidence that quiescence of uterine motility normally takes place following coitus and prior to ovulation in the intact animal[4] and under the conditions just described.

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Suprarenal Cortex and Temperature Regulation.

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The presence of the suprarenal cortex is necessary for proper temperature regulation in the rat. Wyman and tum Suden[1] found that suprarenalectomized rats having gross masses of cortical tissue, transplanted or accessory, maintained their body temperature as well as normal rats during 2 hours in a moderately cold room (40° to 50° F), but that rats having cortical insufficiency suffered a decline in body temperature and did not recover their original temperatures in a warm room so soon as those having cortical tissue. It was suggested that a disturbance in physical heat regulation, i. e., increased heat loss, as well as metabolic disturbance might account for this disability. Hartman, Brownell and Crosby[2] found that the administration of cortin enabled suprarenalectomized rats to produce heat and maintain their temperature in a cold environment almost as well as normals, and suggested that inadequate heat production is responsible for the disability of suprarenalectomized animals.

The importance of the sympathico-adrenal system in temperature

[4] Reynolds, S. R. M., and Friedman, M. H., *Am. J. Physiol.*, 1930, **94**, 696.

[1] Wyman, L. C., and tum Suden, C., *Am. J. Physiol.*, 1929, **89**, 362.

[2] Hartman, F. A., Brownell, K. A., and Crosby, A. A., *Am. J. Physiol.*, 1931, **98**, 674.