animals. This may be seen from the values of the standard errors, and the fact that the value of the difference between the means divided by the standard error of the difference between the means is less than 2. This would be in agreement with the conclusions reached by Emery. (2) The statistical analysis, however, reveals that splenectomized rats, injected with pituitary from heterozoic animals, show a greater increase in ovarian and uterine weights than normal rats similarly treated.

These results are in total accord with the general contention that the refractory state which develops after prolonged treatment with heterozoic endocrine material is brought about by a mechanism similar to that responsible for the production of antibodies following injection of antigenic material.

It may be argued that the effects obtained with the sheep pituitary material are due to the greater quantities of sheep as compared to the amounts of castrate rat pituitary injected. As has already been pointed out, however, the sheep and rat material produced approximately the same intensity of effect on the ovarian and uterine weights. That the amount of protein injected does not determine the difference may be seen from some of our earlier experiments[2] which show that great differences in effect in splenectomized and control animals are obtained with the use of small amounts of an endocrine preparation (Follutein) which contains very little protein.

Summary. Splenectomy in rats is without effect on the ovarian and uterine weight response to injections of homozoic pituitary material. Splenectomized rats, however, show greater response when treated with pituitary material from a heterozoic source than similarly treated controls. This lends further support to the contention that the state of refractoriness which develops after prolonged treatment with hormone preparations is immunological in nature.

10012

Effect of Parathyroid Extract upon Volume of Parathyroid Glands in Normal and Partially Nephrectomized Rats.

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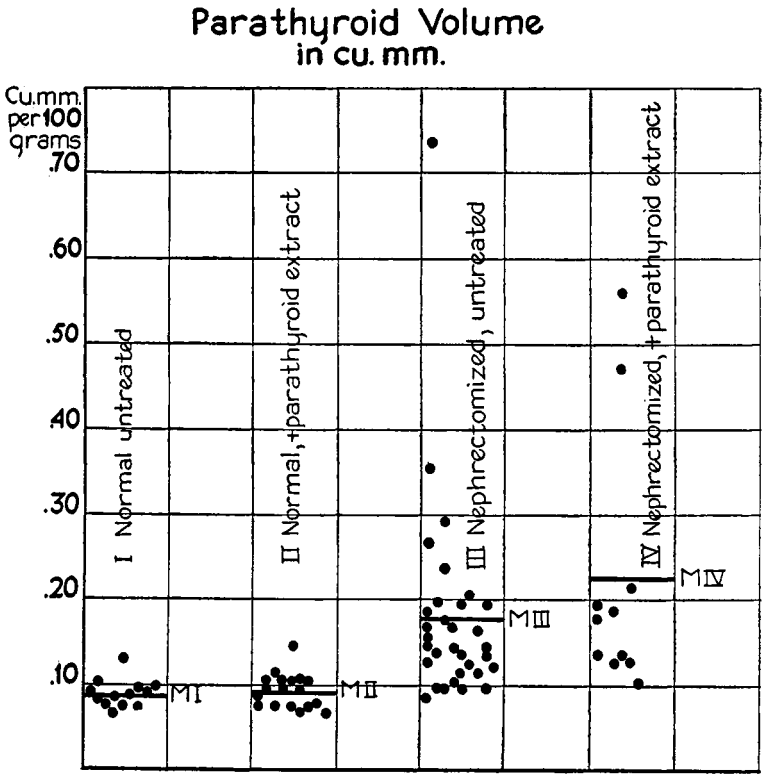
In the course of certain experiments upon sensitiveness of partially nephrectomized rats to parathyroid extract, an opportunity



was offered to ascertain whether the administration of this hormone over shorter or longer periods leads to a reduction in the size of the parathyroid glands. It is a commonly held belief that substitution therapy brings about functional atrophy of the endocrine glands producing the secretion. In the case of the parathyroids, Jaffé and Bodansky[1] have reported that in dogs, the size of the parathyroid was reduced from one-third to one-half of that usually found; and that there were microscopic evidences of atrophy after acute or chronic experimental hyperparathyroidism. However, they did not weigh or measure the glands, and it seemed desirable to obtain more precise information on the subject.

White and hooded rats were maintained on a standard diet.[2] Parathyroid extract (Lilly) was given by intraperitoneal injection in total doses ranging from 200 to 2150 Hansen units over periods of from 3 to 51 days. The combined volume of the parathyroid glands,

[1] Jaffé, H., and Bodansky, A., *J. Exp. Med.*, 1930, **52**, 669.

[2] Donohue, W., Spingarn, C., and Pappenheimer, A. M., *J. Exp. Med.*, 1937, **66**, 697.

after short fixation in Zenker, was measured from serial sections.[3] Determinations were made on 4 groups of rats:

Group (I) Normal, untreated controls.
" (II) Normals, treated with parathyroid extract.
" (III) Partially nephrectomized, untreated rats.
" (IV) Partially nephrectomized rats, injected with parathyroid extract.

The individual data are shown on the scatter chart, and the mean values in the various groups are presented in Table I.

TABLE I.

Group	No. of rats	Mean volume of parathyroids in mm³	
		Abs.	Per 100 g
I	13	.1483	.0886
II	18	.1506	.0914
III	32	.2314	.1789
IV	11	.2413	.2222

It is obvious that the injection of parathyroid extract, even in large doses, does not bring about an involution of the normal glands, nor does it prevent the hyperplasia which follows partial nephrectomy.

We are greatly indebted to the Eli Lilly Co. for the parathyroid extract used in these experiments.

10013

Effect of Testosterone Propionate upon Endometrial Cycle of the Human.

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Experimental evidence is accumulating which indicates that male hormone counteracts the physiologic effects of estrogenic hormone. Ihrke and D'Amour[1] reported suppression of the estrous cycle in female rats while being injected with male hormone concentrates prepared from bull testes. Similar results were obtained by Robson[2]

[3] Jarrett, W. A., Peters, H. A., and Pappenheimer, A. M., PROC. SOC. EXP. BIOL. AND MED., 1935, **32**, 1211.

[1] Ihrke, I. A., and D'Amour, F. E., *Am. J. Physiol.*, 1931, **96**, 289.

[2] Robson, J. M., PROC. SOC. EXP. BIOL. AND MED., 1936, **35**, 49.