pigs were injected with 7 to 20 mg of desoxycorticosterone acetate to determine its effect on pituitary weight and on the lactogen content of the AP. A significant increase in pituitary weight was obtained, but there was no increase in the lactogen content of the AP.

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Effect of an Ant. Hypophyseal Extract upon Serum Calcium and Phosphorus.

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The elaboration of a parathyreotropic factor by the anterior hypophysis has been indicated by work from a number of sources. The literature in this connection has been reviewed recently by Friedgood and McLean.[1]

These workers have presented data establishing a statistically significant increase in the serum calcium of guinea pigs receiving daily injections of 1 cc of an alkaline pituitary extract* over a period of 9 days. Friedgood[2] has also published data indicating an elevation in the serum calcium level of white rats under similar conditions. In 4 rats, each of which had received daily subcutaneous injections of 1 cc of the extract for a period of 6 days, values for serum calcium were found to be 12.8, 12.6, 12.5, and 11.7 mg %, respectively. Two control animals showed serum calcium levels of 10.7 mg %. Four other rats were given intraperitoneal injections of 1, 2, 3, and 4 cc of the extract, respectively, twice daily and sacrificed on the second day. Their blood calcium values were found to be 12.7, 12.3, 10.1, and 10.3 mg %, respectively. No control values were reported.

In view of the small number of rats which were used to test the reactivity of this animal to the extract, and the inadequacy of the control values, it appeared to us that the suitability of the rat for the assay of the so-called parathyreotropic factor should be further investigated.

Albino rats, varying in age from 99 to 281 days and in weight

1 Friedgood, H. B., and McLean, R., *Am. J. Physiol.*, 1937, **118**, 588.

* Obtained from E. R. Squibb and Sons.

2 Friedgood, H. B., *Endocrinol.*, 1936, **20**, 159.

from 159 to 352 g, were used in the first assay. With the exception of 3 litter mate females, all the animals were males. Only one female was used in the experimental series. The animals were raised on a commercially prepared diet known as Fox Chow; in some instances a supplement of meat scraps was supplied twice weekly. Fox Chow alone was fed for several days preceding and during the course of each experiment.

Each of 20 experimental animals received a daily subcutaneous injection of 1 cc of an alkaline (pH 8.25) extract of anterior pituitary glands† for a period of 6 or 7 days. On the day following the last injection the animals were placed under light ether anesthesia and blood was drawn by cardiac puncture. Calcium was determined on 1 or 2 cc portions of serum by the method of Tweedy and Koch,[3] and inorganic phosphorus was determined on 1 cc portions of the same serum sample by the method of Fiske and Subbarow.[4] Control values were obtained by simultaneously carrying out the above analyses on samples of serum from 18 untreated litter mates of the experimental animals. Inorganic phosphorus values were obtained for 19 treated animals and 15 controls.

A statistical evaluation of the data (Table I) reveals that the calcium levels in the blood of the treated animals were not significantly affected by multiple injections of the anterior pituitary extract under the experimental conditions described. Furthermore, the small difference between the mean phosphorus values, when considered in relation to the probable error of this difference (Table I), may be regarded as only slightly suggestive of an increase in serum inorganic phosphorus.

TABLE I.

Type of animal	Max. mg%	Min. mg%	Mean* mg%	M.D.†	P.E.M.D.‡
		Serum Calcium.			
Treated	12.50	8.32	9.62 ± 0.14	0.01	0.18
Control	12.48	8.81	9.63 ± 0.12		
		Serum Inorganic Phosphorus.			
Treated	6.95	5.26	5.89 ± 0.07	0.27	0.08
Control	5.97	5.10	5.62 ± 0.04		

*Including probable error of the mean.
†Mean difference.
‡Probable error of the mean difference.

† Obtained from E. R. Squibb and Sons through the courtesy of Dr. J. A. Morrell.

[3] Tweedy, W. R., and Koch, F. C., *J. Lab. and Clin. Med.*, 1929, **14**, 1.

[4] Fiske, C. H., and Subbarow, Y., *J. Biol. Chem.*, 1925, **66**, 375.

A group of 14 younger rats (52-54 days old) received from one to 3 daily subcutaneous injections of 1 cc of the hormone preparation, and 8 of their litter mates were used as controls. Approximately half of each group of these animals were females. Serum calcium values in the treated animals ranged from 9.7 to 11.4 mg % with a mean value of 10.8, while serum calcium values in the control series ranged from 9 to 12.2 mg % with a mean value of 10.7. In no instance did the serum calcium of a treated animal show a significantly greater value than that found for its litter mate control. Serum inorganic phosphorus determinations were not made.

Summary. A slight increase in serum inorganic phosphorus without a significant increase in serum calcium after multiple injections of anterior pituitary extract in rats is regarded as insufficient proof of the presence of a parathyreotropic factor in the extract examined.

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Nuclear Changes in Rous Sarcoma Cells Cultivated *in vitro*.

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Various authors (Borrel,[1] Roskin,[2] Lipschütz,[3] Fischer,[4] Zweibaum[5]) have indicated that the structure of Rous sarcoma cells shows certain peculiarities, which differentiate them from normal mesenchyme cells.

These indications are very fragmentary and there is little agreement between the various descriptions. The morphological features of the Rous sarcoma cell are still not sufficiently known.

The structural peculiarities of the Rous sarcoma cells appear with great clarity and they are easily detectable in pure culture of sarcoma cells. Our studies of cell strains, cultured without addition of normal tissue revealed that the sarcoma cells *in vitro* constantly show pro-

1 Borrel, A., *C. R. Soc. Biol.*, 1926, **94**, 500.

2 Roskin, G., *Virchows Arch.*, 1926, **261**, 919.

3 Lipschütz, B., *Z. Kregsforsch.*, 1929, **28**, 491.

4 Fischer, A., *Gewebezüchtung*, Munich, 1930.

5 Zweibaum, J., *Arch. exp. Zellforsch.*, 1933, **14**, 358.