

These experiments show that the blood of animals which have become insensitive to the anterior pituitary-like substance of pregnancy urine is able to inactivate this hormone.

## 7461 P

**Prolonged Pregnancy in Albino Rat following Injection of Pregnancy Urine Extract.**

EDITH C. HOOPEES. (Introduced by Franklin F. Snyder.)

*From the Department of Physiology and Hygiene, Goucher College, Baltimore.*

Previous observers have found marked alterations in the termination of pregnancy in the rat, following (1) injections of extracts of the corpus luteum (Nelson, *et al.*<sup>1</sup>), (2) injections of extracts of the anterior pituitary (Teel,<sup>2</sup> Hain<sup>3</sup>), and implants of the anterior pituitary (Hain<sup>3</sup>), (3) injections of the urine of pregnant women (Levin, *et al.*,<sup>4</sup> Hain<sup>3</sup>), and (4) hypophysectomy (Pencharz and Long<sup>5</sup>). The results of these investigations are difficult to evaluate in view of the differences in the substances administered, in their preparation and dosage, and in the parity and stage of pregnancy of the animals when treated.

In the present experiments the attempt was made to observe the duration of pregnancy in rats injected near term with a uniform dose of urine extract. The investigation was planned to take into account the factors which were found to be involved in prolongation of pregnancy in the rabbit (Snyder<sup>6</sup>). A satisfactory method for the prolongation of pregnancy was found to be the subcutaneous injection of 75 R.U. of pregnancy urine (Antuitrin-S of Parke, Davis Co.) 19 days after mating. The day of recovery of spermatozoa from the vagina was designated day 1. The appearance of the placental sign, usually on the 14th day, also aided in estimating the duration of pregnancy.

In a consecutive series of 19 animals, prolongation of pregnancy occurred in 16. Usually hysterotomy was performed a few days

---

<sup>1</sup> Nelson, W. O., Pffner, J. J., and Haterius, H. O., *Am. J. Physiol.*, 1930, **91**, 690.

<sup>2</sup> Teel, H. M., *Am. J. Physiol.*, 1926, **79**, 170.

<sup>3</sup> Hain, A. M., *Quart. J. Exp. Physiol.*, 1932, **22**, 249.

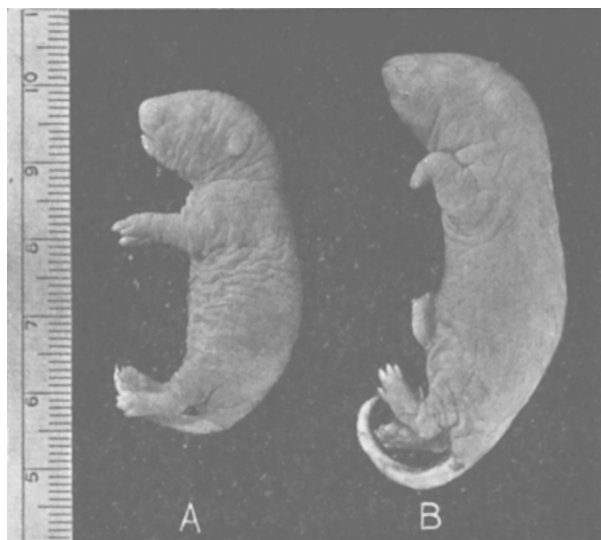
<sup>4</sup> Levin, L., Katzman, P. A., and Doisy, E. A., *Endocrinology*, 1931, **15**, 207.

<sup>5</sup> Pencharz, R. I., and Long, J. A., *Am. J. Anat.*, 1933, **53**, 117.

<sup>6</sup> Snyder, F. F., *Bull. Johns Hopkins Hospital*, 1934, **54**, 1.

past term. Hemorrhage or discharge from the vagina appeared in 12 cases. In one rat, laparotomy about the 40th day showed the uterus strikingly distended by fetuses so that it had the form of 3 large lumps. It was surrounded by dense adhesions to the abdominal organs.

Fetuses examined on the 26th day have in every case been dead. Hysterotomy on the 25th day, however, which has been performed twice, revealed living fetuses in both cases. The average length and weight of each litter was greater than normal. The uterine fluid was hemorrhagic. In another case, a litter of 4 postmature fetuses was born on the 25th day. One was living. Two of the dead fetuses measured 5.7 cm. in length and weighed over 6 gm. These data indicate that the young die between the 25th and 26th days. In one case, however, hysterotomy on the 23rd day showed a litter of 4, of which 3 were dead.



A, Normal newborn, 23rd day; B, Postmature fetus, removed by hysterotomy on the 26th day.

The photograph shows a typical postmature fetus and a control. The mothers were litter mates. Both of their litters contained 6 animals. The mother of A was untreated, and normal parturition occurred on the 23rd day. The mother of B was injected with 75 R.U. on the 19th day. On the 26th day, the 6 fetuses were removed by hysterotomy. They were all dead, and 5 of them, judging from the discoloration, must have died some time before re-

moval. The 6th, from its color, had evidently died more recently. The average formalin length was 5.2 cm.; the average weight 8.2 gm. The control was 4.5 cm. long and weighed 6.5 gm. Other evidences of postmature development are shown by the appearance of the vibrissae, the skin, the tails, and the extremities. There was no blood in the lumen of the uterus and the placentae appeared normal.

*Conclusion.* Prolongation of pregnancy with development of fetuses of excessive size was regularly observed in rats following a single injection of 75 rat units of urine extract administered 4 days before term.

## 7462 C

## Sodium, Potassium, Calcium, Magnesium and Phosphorus Content of Skeletal and Cardiac Muscle, Bladder and Uterus.

WALTER WILKINS. (Introduced by C. S. Robinson.)

*From the Department of Biochemistry, Vanderbilt University Medical School, Nashville.*

Few values are given in the literature for the distribution of mineral substances in the different kinds of muscle from the same animal.

Table I contains the results of the analysis of skeletal muscle (taken from the shoulder), right and left ventricle, uterus and bladder of 2 beef animals. The analyses were made by the methods de-

TABLE I.

Tissue	Mg. per 100 gm.				Milli-equivalents per kilo				mg. per mMols 100 gm. per kilo		
	Na	K	Ca	Mg	Na	K	Ca	Mg	Sum of individ. bases	Total P	P
Beef No. 1											
Sk. Mus.	42	330	2.7	19.1	18.3	84.4	1.35	15.7	120	224	72.2
R. V.	88	248	4.3	15.9	38.2	63.4	2.15	13.1	117	238	76.8
L. V.	79	283	3.8	14.7	34.4	72.4	1.90	12.1	121	239	77.1
Uterus	219	114	10.7	9.1	95.3	29.1	5.35	7.5	137	69	22.2
Bladder	134	304	5.1	11.9	58.2	77.7	2.55	9.8	148	107	34.6
Beef No. 2											
Sk. Mus.	55	335	3.0	16.5	23.9	85.7	1.50	13.6	125	179	57.8
R. V.	92	283	4.6	16.3	40.0	72.4	2.3	13.4	128	228	73.5
L. V.	78	292	3.7	17.4	33.9	74.7	1.8	14.3	125	238	76.8
Uterus	216	98	8.2	6.5	93.9	25.0	4.1	5.3	128	61	19.8
Bladder	133	268	6.3	11.4	57.8	68.6	3.1	9.4	139	100	32.2