TABLE I.
Rate of Perfusion (drops/min.).

Exp. No.	Ringer Solution	Isoartemisin Solution	Change in Rate	% Change
1 a	29.3	29.2	—0.1	—
b	21.0	22.8	1.8	8.6
2 a	20.8	22.9	2.1	10.1
b	19.4	21.0	1.6	8.2
3 a	15.8	21.2	5.4	34.2
b	11.6	15.8	4.2	36.2
4 a	13.1	14.2	1.1	8.4
b	11.2	16.6	5.4	48.2
c	13.0	17.4	4.4	33.8
5 a	21.4	23.3	1.9	8.9
6 a	30.6	30.2	—0.4	...
b	23.3	27.0	3.7	15.9
c	23.1	29.1	6.0	26.0
7 a	26.4	29.6	3.2	12.1
b	26.0	27.6	1.6	6.2
c	24.5	38.9	14.4	58.8
8 a	18.2	22.8	4.6	25.3
b	16.2	17.4	1.2	7.4
9 a	30.2	35.9	5.7	18.9
b	25.7	33.9	8.2	31.9
c	18.8	23.8	5.0	26.6
10 a	30.2	33.3	3.1	10.3
b	28.0	30.1	2.1	7.5
c	22.8	25.5	2.7	11.8
11 a	17.7	24.7	7.0	39.6
b	16.7	17.7	1.0	6.0

tion of isoartemisin. 2. A slight but significant dilator action on the vessels of the frog leg was observed.

8922 P

Differential Cell Counts of the Pituitary in the Thymus Treated Strain of Rats.

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In an attempt to ascertain the possible mechanism of the previously reported acceleration in the rate of growth and development of rats produced by injections of thymus extract, differential cell counts of the pituitary, in a series of rats have been made, at intervals between birth and 45 days of age, the period of most rapid growth.

All rats (test and controls) were killed with ether, the pituitaries removed as soon as possible, weighed immediately, fixed in Helly's fluid embedded in paraffin and sectioned horizontally; interrupted serial sections were made and stained by a modified Mallory's stain. Slight overstaining emphasizes the acidophils and made counting easier. No attempt was made to record finer histologic differences in the cells, although all counts were made under oil-immersion with a Zeiss ocular net micrometer.

As far as possible, the same procedure was followed in making a count; one begins at one lateral aspect of the anterior lobe, as near the "equator" as possible and counts approximately 500 cells while moving toward the center of the gland; this is repeated from the opposite edge of the gland; about every 3rd oil immersion field is counted. A second section is then counted in the same manner, distant about 50 or more micra from the first in the smaller animals, farther in the larger. At least 2000 cells per pituitary per animal are reported; in two instances, once in the female thymus group and again in the male control, the percentage differences in acidophils betwen the first two sections counted were 10.1 and 10.5 respectively. In these two animals 2000 more cells were counted and the average of the total 4000 cells reported.

With these exceptions differences between consecutive counts in the same pituitary are quite uniform. In the thymus-injected group the average difference in percentage of acidophils was 2.4 (7.3-0.2) and 3.4 (10.1-0.5) and for the basophils 0.9 (4.3-0.1) and 1.2 (2.9-0.2) for males and females respectively; in the controls for acidophils it was 3.6 (10.5-0.2) and 3.6 (7.4-0.1), for basophils 0.8 (1.9-0.2) and 1.2 (2.5-0.1), respectively in males and females.

Table I shows the results of counts in 36 thymus-injected rats

TABLE I.

Pituitary cell counts in thymus-injected and control rats, male and female, in various age groups. Figures in parentheses indicate number of rats, per group, per age studied. * indicates that protocols from these rats are shown in Table IV.

Age Group	Males						Females					
	Thymus Injected			Control			Control			Thymus Injected		
	Acid.		Baso.	Acid.		Baso.	Acid.		Baso.	Acid.		Baso.
0-1	15.5	(2)	1.2	7.4	(2)	1.0	11.7	(2)	0.9	10.7	(3)	1.3
*4-7	23.6	(3)	3.9	14.2	(2)	1.1	11.6	(2)	2.4	18.6	(2)	4.4
*9-11	24.0	(3)	2.8	14.2	(1)	2.1	15.4	(1)	3.6	21.2	(2)	4.9*
13-17	25.1	(2)	2.2	24.2	(1)	2.7	19.3	(1)	4.9	20.8	(2)	5.6
19-21	21.2	(2)	2.6	27.4	(2)	5.1	23.6	(2)	7.7	18.0	(2)	6.1
25-27	26.7	(2)	6.6	24.8	(1)	4.6	16.9	(1)	8.8	28.3	(1)	3.4
29-32	27.5	(1)	5.4	21.7	(2)	4.7	29.1	(1)	2.1	23.5	(1)	4.9
33-37	24.3	(1)	1.4	26.9	(2)	5.4	27.8	(3)	7.7	25.3	(3)	3.7*
39-41	29.3	(1)	5.2	28.4	(2)	2.9	23.7	(2)	5.6	28.3	(1)	5.4
43-45	22.4	(1)	4.5	29.0	(1)	5.4	22.5	(1)	6.7	30.4	(1)	4.1
Total		(18)			(16)			(16)			(18)	

and 32 controls. Although the number of rats per age group is too few to permit tabulation of frequency distribution or calculation of mean and standard deviations, the percentage of acidophils seems definitely higher in the thymus-treated precocious strain between birth and about 15 days of age.

TABLE II.
Comparison of pituitary cell counts in male and female, thymus-injected and control rats, from birth to 13 days of age; and from 13-45 days. Numbers in parentheses, the same as for Table I.

Age Group	Males				Females			
	Thymus Injected		Control		Control		Thymus Injected	
	Acid.	Baso.	Acid.	Baso.	Acid.	Baso.	Acid.	Baso.
0-13	21.7 (8)	2.8	11.5 (5)	1.2	12.4 (5)	2.0	15.9 (7)	3.2
13-45	24.9 (10)	3.9	26.1 (11)	4.4	24.2 (11)	6.6	24.0 (11)	4.6

TABLE III.
Pituitary cell counts, thymus-injected and control rats, from birth to 13 days of age and from 13-45 days. Numbers in parentheses same as before.

Age Group	Thymus Injected		Total Cells Counted	Control	
	Acid.	Baso.		Acid.	Baso.
0-13	19.0 (15)	3.0	54,954	11.9 (10)	1.6
13-45	24.4 (21)	4.3	93,550	25.1 (22)	5.5

Tables II and III show this more clearly. From birth to 13 days of age in more rapidly growing thymus-injected rats the acidophil content is 60% higher than in the non-injected controls (19.0% against 11.9%). The same age group, in the more sexually precocious strain (thymus-injected), shows an 88% greater basophil count than the control (3.0% opposed to 1.6%).

TABLE IV.
Relationship between percentage of acidophils and body-weight (growth) in thymus-injected rats at different ages and weights. * and † indicate litter mates at different ages.

Sex	Gen.	Age	Wt. gms.	Ears	Teeth	Eyes	Hair	Genital	Acid.	Remarks
				Thymus Injected						
M*	F10	4	22	1	2	2	1	3	19.6	Well nourished
M	F10	5	28	1	1	2	1	3	27.9	
M	F4	7	29	1	4	5	3	—	23.3	
M	F7	9	54	0	1	2	2	3	33.9	
M	F10	10	36	1	1	2	2	4	23.3	
M*	F10	11	25	1	2	3	1	6	15.4	Poorly nourished
F†	F7	9	56	0	1	2	1	7	25.8	
F*	F10	11	30	1	2	2	1	—	16.6	
F	F7	34	88	1	1	2	1	14	31.6	
F†	F7	34	58	1	1	2	1	6	22.0	Poor growth after 14 days

TABLE V.
Relationship between percentage of acidophils and body-weight (growth) in control rats. Note similarity of weight and percentage of acidophils, but at a greater age, to treated rats in Table IV.

				Control		
Sex	Age	Wt. gms.	% Acid	Remarks	General Development	
M	20	34	24.2	Better than normal	Ears	2½-3
M	21	47	30.4	Much larger than normal	Teeth	9-10
M	35	48	22.9	Below normal	Eyes	14-17
M	36	75	30.8	Very good weight	Hair	12-16
F	5	9	9.7	Less than normal	Genitals:	
F	5	12	13.4	Normal	Testes	31-40
F	20	28	18.0	’’	Vagina	55-62
F	20	36	29.0	Better than normal		

The correlation between rapid growth in thymus-treated animals and acidophil content of the pituitary, suggested by the first 3 tables, seems further substantiated by Tables IV and V, in which body weight in grams, irrespective of age, seems to bear a definite relationship to the acidophil count in the pituitary in both control and thymus-treated rats.

Further work is in progress to ascertain the possible significance of these findings.

8923 C

Relation of Oestrin and Pregnancy Urine Hormone in Influencing Uterine Motility.*

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The relationship which exists between oestrin and progestin in regulating uterine motility suggested the possibility of a similar relation between oestrin and pregnancy urine hormone. Reynolds and Friedman[1] and Reynolds[2] have shown that the uterine motility of the unanesthetized rabbit, as recorded by the uterine fistula method, is inhibited by intravenous injections of pregnancy urine hormone. The inhibition of uterine motility induced by pregnancy urine hormone in either normal rabbits or castrated rabbits treated with oestrin, is somewhat similar to that obtained with progestin

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[1] Reynolds, S., and Friedman, M., *Am. J. Physiol.*, 1930, **94**, 705.

[2] Reynolds, S., *Am. J. Physiol.*, 1932, **100**, 545.