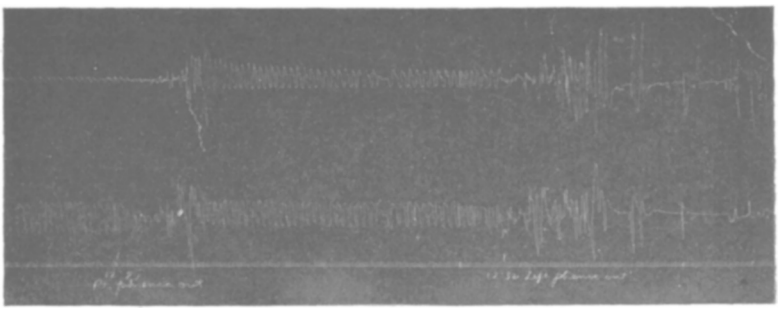

FIG. 1.
The upper tracing is of costal, the lower, of diaphragmatic, respiration. The figure shows respiration after division of the posterior *corpora quadrigemina*, followed by excision of both phrenics.

appear that the vagus which under the conditions of the experiments here recorded is the only afferent mechanism from the respiratory tract and muscles to remain uninjured, has a closer relationship to the control of diaphragmatic movements than it has to the control of costal movements.

5218

Total Erythrocyte and Leucocyte Counts in Pregnant and Non-Pregnant Albino Rats.

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Crosman[1] recently stated that the average leucocyte count of the pregnant albino rat is approximately 7,000 to 10,000 higher than that of non-pregnant animals. Comparison with our data on pregnant and non-pregnant rats respectively, shows that there is such great fluctuation in the counts of individual rats that only averages from a long series are significant in this regard. Our average count for the leucocytes of the pregnant female rat throughout the last third of pregnancy (16 to 22 days) is 10,758 per cu. mm. of blood as against 12,372 for our non-pregnant animals. (Table I.) These results suggest a decrease in the average count of the leucocytes during the last third of pregnancy. Certainly no leucocyte increase occurs. A high peak appears in one maternal count at the time when

[1] Crosman, A. M., *Anat. Rec.*, 1930, **45**, 259.

the fetuses are from 23 to 27 mm. long (19th day), namely, 16,000 cells. The fact that 3 other rats with fetuses at this same stage of development showed a similar increase arrests attention. However, we do not consider it justifiable to conclude that there is a significant increase of leucocytes during pregnancy.

TABLE I.

Table showing the average erythrocyte and leucocyte counts of pregnant and non-pregnant albino rats. σ is the standard deviation for the leucocyte counts.

	No.	Average Erythrocytes	Average Leucocytes
Non-pregnant females	28	9,336,071	12,372 σ3,541
Pregnant females	29	8,086,551	
	9		10,758 σ2,583

To further check our results we have compared them with the average leucocyte counts for non-pregnant rats given by Adams and Shevket[2] from Wistar stock and from Mt. Holyoke stock respectively. In the Wistar stock these investigators report an average leucocyte count of 12,540 per cu. mm.; and in the Mt. Holyoke stock 10,750. When compared with these averages, our counts show no significant discrepancy.

The erythrocyte counts from pregnant and non-pregnant rats show such a slight difference that we conclude that there is no change in the average count during pregnancy. The average erythrocyte count for 28 non-pregnant females is 9,336,071 per cu. mm.; and for 29 pregnant animals 8,086,551. The highest erythrocyte count occurs simultaneously with the highest leucocyte count in pregnant rats, *viz.*, when the fetuses are at the 23 mm. stage of development.

TABLE II.

Table showing the extremes of variability in the number of red and white blood corpuscles per cu. mm., respectively in pregnant and non-pregnant albino rats.

	Highest rbc count	Lowest rbc count	Highest wbc count	Lowest wbc count
Pregnant	10,660,000	6,100,000	16,000	8,200
Non-pregnant	12,990,000	6,970,000	20,000	8,500

The variability of both rbc and wbc counts is greatest in the non-pregnant rats. In all groups the corpuscles are more numerous in the non-pregnant animals. Examination of the counts in Table II alone would lead one to suspect conditions of slight anemia and leukopenia as being characteristic of pregnancy in the rat. However,

[2] Adams, E. A., and Shevket, F., *Physiol. Zool.*, 1929, **2**, 181.

the differences which appear in the averages as given in Table I do not seem sufficient to us to draw such a conclusion, because of the error inherent in the technical methods employed in making blood counts.

5219

Hepatectomy in the Salamander with Special Reference to Hemopoiesis and Cytology of the Liver Remnant.

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In the salamander, *Triturus viridescens,* granulocytopoiesis is normally restricted almost completely to the subcapsular region of the liver, erythrocytopoiesis and thrombocytopoiesis to the spleen. A relatively very slight granulocytopoietic activity occurs in the intestinal mucosa. As previously reported, splenectomy does not effect a compensatory erythrocytopoietic or thrombocytopoietic activity in the lympho-granulocytopoietic envelope of the liver. Following splenectomy the processes of erythrocyte and thrombocyte production are shifted to the general circulation.[1] The reverse experiment also gives a negative result; hepatectomy effects no compensatory granulocytopoietic activity in the spleen. Since the same ancestral cell, the lymphoid hemoblast, occurs in both regions, as a mesenchymal derivative, it must be concluded that certain specific conditions in spleen and liver are restrictive as regards hemocytopoietic stimuli. The differential stimuli for erythrocyte and granulocyte formation presumably inhere in some element in the character of the blood supply; the perihepatic granulocytopoietic region contains a very meager vascularization as compared with the abundant sinusoidal venous system of the spleen.

Total hepatectomy results in death within 9 days (20 specimens). The survival time is uninfluenced by coincident splenectomy. Removal of half of the liver (left and middle lobes) produces no noticeable hemopoietic effects (30 specimens). Such experimental animals lived until killed during the third month for study of the remaining liver tissue. These one-lobe livers show no microscopic evidence of regeneration. The remaining lobe, however, is somewhat enlarged by the twenty-seventh day, and has apparently

[1] Jordan, H. E., and Speidel, C. C., *Am. J. Anat.*, 1930, **46.**