COMPARATIVE ERYTHROCYTE COUNTS OF REPRESENTATIVE VERTEBRATES

E. G. STANLEY BAKER, and LORETTA E. KLINE, DePauw University

During the course of regular laboratory work in Physiology, a question arose as to the normal erythrocyte count of some of our common vertebrates. A preliminary survey of the literature revealed little or no information on the subject. At the suggestion of Dr. C. P. Hickman, the authors undertook to determine the normal count in such common vertebrates as were easily available. We wish here to acknowledge our sincere appreciation to him for his help and interest in this work.

Attempts were made to secure representative members of all five classes of vertebrates, especially those in common laboratory use. All are inland forms except certain sea fishes that were procured at the Marine Biological Laboratory at Woods Hole. It should be stated that the figure presented for many of the animals is based on one individual only and should be confirmed on several individuals before it is accepted as conclusive. All animals used were apparently in normal healthy condition. In no case were pregnant animals used.

An American Standard haemocytometer with a Levy counting chamber, improved Neubaur double ruling was used. The blood was diluted with Hayem's solution. The blood was withdrawn from the most convenient place in the body. The place of extraction is indicated in the table. Anesthesia was used only on those animals which could *not* be handled otherwise.

Results are collected in the following table:

Animal	No. of animals used	Total No. of counts made	Point of extraction of blood	Anaesthesia	Average of all counts per cu. mm.
Mammals					
Cavia porcellus					
adult	1	5	tail	no	8,941,000
young	1	3	tail	no	6,013,000
Mus muscalus	2	10	tail	yes	5,442,500
Vespertilio subulatus	2	5	wing	yes	9,502,000
Marmota monax	1	3	heart	no	2,528,000
Felis domestica					
(6 weeks old)	3	8	ear	no	5,146,250
Mus norvegicus	2	5	heart	no	2,616,250
Albino rat	1	9	tail	no	9,306,000
Birds					
Gallus domesticus	2	10	comb	no	2,267,000
Passer domesticus	1	5	heart	no	3,258,000

"Proc. Ind. Acad. Sci., vol. 41, 1931 (1932)."

Animal	No. of animals used	Total No. of counts made	Point of extraction of blood	Anaesthesia	Average of all counts per cu. mm.
Reptiles					
Terrapene carolina	1	14	femoral artery	no	619,200
Coluber constrictor	1	10	post-cava	yes	777,000
Heterodon contortrix	1	16	post-cava	yes	603,100
Amphibians					
Eurycea bislineata	2	10	heart	no	393,300
Plethedon cinereus	2	10	heart	no	252,800
Rana catesbeiana					
tadpole	6	24	tail	no	242,000
adult	3	37	web of foot	no	441,500
Rana pipiens	1	10	web of foot	no	378,000
Rana clamitans	1	4	web of foot	no	817,500
Fishes					
Carassius auratus	2	10	heart	no	508,000
Prionotus strigalus	2	4	heart	no	1,852,500
Tautoga onitis	2	4	heart	no	2,112,500
Fundulus heteroclitus	2	3	heart	no	983,300
Fundulus majalis	2	4	heart	no	1,747,500

While the study is too limited to safely draw conclusions from, one or two general inferences are perhaps hinted at.

1. Much more work needs to be done before the normal erythrocyte count of most vertebrates is established with accuracy.

2. In all cases where comparisons were available, the young animal has a lower count than the adult. This is in accord with such literature as we have been able to find.

LITERATURE

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