

# THE USE OF THE OXYHEMOMETER IN DETERMINING THE RATE OF THE BLOOD FLOW IN ANIMALS

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In order to determine the rate of the blood flow in animals we used a type 0-38 oxyhemometer and a solution of methylene blue.

Experiments were carried out on 12 rabbits and 8 cats. The pick-up of the oxyhemometer was applied to the rabbit's ear; into the auricular vein on the opposite side was injected 0.3-0.4 ml of a 2% solution of methylene blue. The moment of appearance of the dye in the vessels of ear with the pick-up was indicated by a fall in the photoelectric current. At this moment the oxyhemometer pointer is deflected to the right. The time from the beginning of the injection of the methylene blue solution to the beginning of the deflection of the oxyhemometer pointer ( $4\frac{1}{2}$ -6 seconds) gives the rate of the blood flow. In cats under hexobarbital anesthesia, by injection of 0.3-0.4 ml of 2% methylene blue solution into the jugular vein exposed in the neck, the circulation time was 5-6  $\frac{1}{2}$  seconds.

When it enters the blood stream, methylene blue is diluted and quickly decolorized, as shown by the return of the oxyhemometer pointer to its initial position after 1-1  $\frac{1}{2}$  minutes. This enables repeated determinations of the circulation time to be made every 2-3 minutes, and in our experiments the results of these determinations varied within limits of  $\pm 0.2$ -0.3 seconds.

In experiments on white rabbits, because of the absence of skin pigment, in order to reduce the strength of the beam of light falling on the photoelectric cell, before adjusting the oxyhemometer it was necessary to interpose a filter (for example, a piece of white paper) between the photoelectric cell and the ear, and to leave it until the end of the experiment.

## SUMMARY

The author attempted to determine the circulation time in cats and rabbits. For this purpose an oxyhemometer pick-up (type 0-38) was applied to the pinna and 0.3-0.4 ml of 2% methylene blue solution was injected intravenously (into the vein of the contralateral pinna in rabbits and into the dissected jugular vein in the cervical area in cats).

The time from the commencement of injections of methylene blue to the first deflection of the pointer of the oxyhemometer pick-up gave the circulation time and equaled 4.5 to 6 seconds in rabbits and 5 to 6.5 seconds in cats.