

# A SIMPLE METHOD OF PHOTOGRAPHING THE FUNDUS

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Photography of the fundus is extremely important for the diagnosis of many diseases, and for investigating the action of various drugs on the retinal vessels. Unfortunately, the numerous available methods of fundus photography are extremely complex, and require expensive apparatus which is not easily available [1-5].

We have developed a simple method of fundus photography which can be readily carried out in any laboratory.

The apparatus is based on the usual ophthalmoscope mirror. A lens of +20 diopters (3) and a perforated mirror 5 are fixed to a rod. The distance between them is 20 to 25 cm. To the side of the rod is fixed the 17 V 170 W lamp 4, taken from a cine projector, or other lamp giving sufficient illumination. For steady illumination and for focusing a 3.5-V lamp 4 supplied from a pocket torch cell or a transformer may be used. The whole apparatus is fixed to a stand. A "Zenith" 10 is fixed so that its optic axis coincides with that of the mirror. The camera has a "Industar-50" objective 6, carried on a sleeve No. 3 (7), moving on tube No. 4 (9), between which lies the diverging lens (8) of -11 diopters. The camera may be rigidly attached to the system, or fixed on a stand. To protect the eye (1) from the heat rays, a piece of heavy flint glass (2) is placed in front of the lens.

Figure 1 shows the position of the animal's eye in relation to the optical system.

The fundus is photographed as follows: 1) The animal is fixed prone by one of the usual methods; 2) two drops of a 0.1% solution of atropine sulphate are instilled into the conjunctival sac; after 15 min the pupil has dilated; 3) using light from a low-power lamp, the camera is focused and directed so that the blind spot lies in one of the upper quadrants of the frame; 4) after switching on the powerful lamp, an exposure of  $\frac{1}{50}$ ,  $\frac{1}{100}$  sec is made, and a film having a sensitivity of 130 All-Union State Standard units is used.

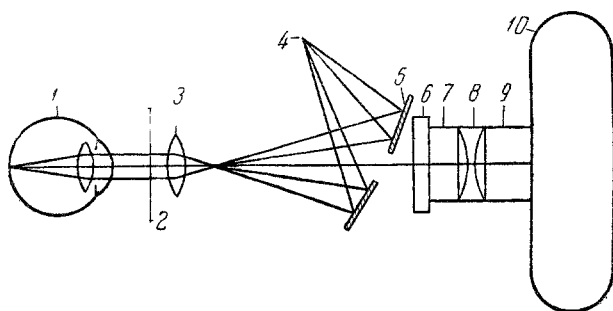


Fig. 1. Diagram of the device for photographing the fundus. Explanation in text.

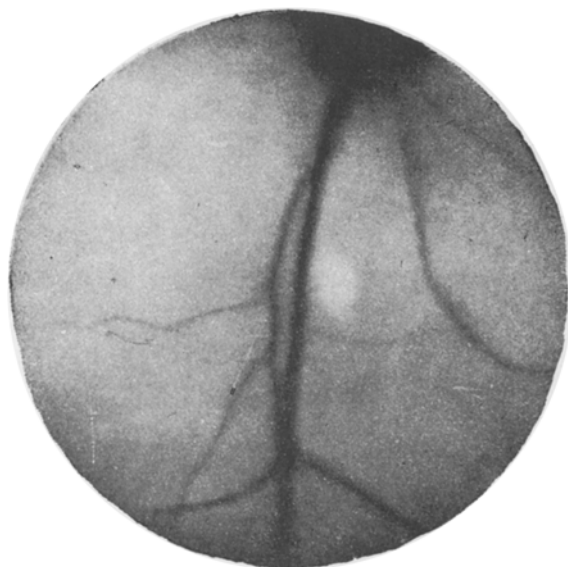


Fig. 2. Photograph of feline fundus.

Figure 2 shows a photograph of the feline fundus obtained by means of the method described.

### SUMMARY

A simple and practicable method for fundus photography which may be used in any laboratory is described. The apparatus is based on the usual mirror ophthalmoscopes. The arrangement of the animal's eye in relation to the optical system is illustrated in Fig. 1.

The method of use is as follows:

1. The animal is fixed prone by one of the accepted methods.
2. Two drops of 0.1% atropine sulphate are instilled into the conjunctival sac, and pupillary dilation occurs in 15 min.
3. The camera is focused by light from a low-power lamp, and directed so that the blindspot is imaged in one of the upper quadrants of the picture.
4. A powerful lamp is switched on and an exposure of  $\frac{1}{50}$ - $\frac{1}{100}$  sec is made. A film of 130 GOST is used.