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A Physical Apparatus for the Determination of the Circulation Time of the Blood in Dogs

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A PHYSICAL APPARATUS FOR THE DETERMINATION OF THE CIRCULATION TIME OF THE BLOOD IN DOGS

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A radical departure from previous apparatus for the determination of blood circulation time is described in detail. The ensemble consists of an ionization chamber (Geiger Counter), a high-voltage (to 2500 volts) power supply, a three-stage amplifying system, and an output circuit for recording the discharges which occur when radiations enter the chamber. A separate electrical circuit is utilized to measure the time interval between the injection of the radioactive material (radium C) in the jugular vein of the dog and its arrival in that part of the femoral artery lying in the adductor canal. The technique of separating radium C from radium emanation is described as is also that of shielding the ionization chamber from extraneous radiations. The record obtained during an experimental test is interpreted as to accuracy and physiological significance and the advantages and disadvantages of the method are outlined.

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THE CIRCULATION TIME OF THE BLOOD IN DOGS BEFORE AND DURING THE DIGESTION OF FOOD

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The circulation time of the blood in dogs was investigated by an ensemble of physical apparatus consisting of an ionization chamber, a high-voltage power supply, a three-stage amplifying system, and an output circuit for recording and timing discharges which occur in the ionization chamber when radiations such as gamma and beta rays enter. Radium C was injected into the jugular vein of the dog and its arrival in that portion of the femoral artery lying in the adductor canal was detected by the discharges occurring in the