cell, while the larger portion of the tube (C) becomes the reservoir for the fluid to be introduced into the cell. The smaller portion of the tube is placed in the trough in the slide with the reservoir in a vertical position, and sealed in place by means of De Khotinsky cement or sealing wax. For an outlet to the observation cell, a small glass tube (D) is drawn to approximately 0.5 mm and the opposite end bent to form an inverted U. This tube is placed in the other trough and similarly fastened in place, while the inverted U at the end prevents the liquid from running back along the tube. A cover glass (E, E′) is sealed over the ends of the troughs in such a way as to enclose the ends of both tubes. The side of the cover glass (E′) over the inlet and outlet tubes will be held a small distance above the surface, which will result in a small slant in the cover glass, giving a varying depth to the observation cell.

The material to be studied is introduced into the reservoir, where it drains into the observation cell. With the outlet closed by the finger, air pressure is exerted against the contents of the reservoir (C) with the result that the cover glass is slightly sprung, and the solid objects are forced between the cover glass and the slide where they become trapped with the release of the pressure and the return of the cover glass. Because of the varying depth of the cell it is now possible to select an individual object so located as to be firmly held by the cover glass, but not crushed or distorted. By adding any liquid to the reservoir, a constant bath of the desired liquid can be maintained around the object, while the object remains in focus in a photomicrographic camera or under a microscope. No difficulty has been encountered in maintaining coccidia in focus under either a No. 6 Leitz dry or a 1-7 oil immersion objective.

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A SIMPLE DEVICE FOR HOLDING ULTRA-FILTRATION MEMBRANES

THE use of filtration through collodion membranes as a means of purifying biological products and determining the size of colloidal particles is becoming more wide-spread. Many apparatuses have been described to hold the membranes but their construction requires special glass blowing or machine work. The device described here can be prepared in any laboratory.

The filter membrane is held between two glass funnels and is protected from their ground edges by a rubber washer above, and a rubber band stretched over a metal washer below the membrane (Figure 1).

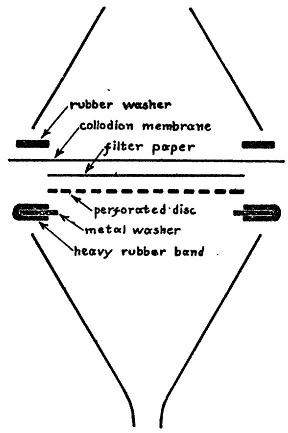

FIG. 1

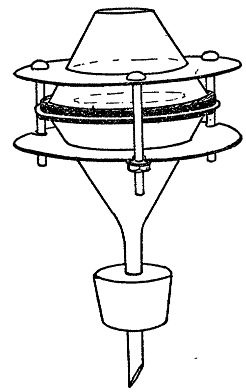

FIG. 2

The metal washer supports a perforated disc upon which is placed ordinary filter paper of the same diameter. When assembled, the top of the rubber band and of the filter paper are in the same plane, to prevent distortion of the membrane under pressure. The filter paper between the collodion membrane and perforated disc serves to increase the effective filtration area.

The funnels are clamped together by two rings of metal or Bakelite as shown in Figure 2. If the filter is to be autoclaved metal rings are advisable. In using metal rings, holes are drilled around their inner edges and a narrow strip of rubber woven through the holes and around the inner edge of the ring, forming a cushion between the funnels and rings.

When autoclaving, the membrane is replaced by filter paper and the apparatus is clamped loosely. After sterilization, the filter paper is replaced by the collodion membrane.

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The oxygen carriers of the blood in their relation to sex and season: OSCAR RIDDLE. For only two or three species of animals has it been definitely known that hemoglobin and red cells exist in different quantity in the blood of the two sexes, and seasonal changes in these values are very little known. Data of Riddle and Braucher make it clear that in two additional species—ring dove and pigeon—this sex difference is present, that here also these oxygen carriers exist in larger amount in male blood, and that hemoglobin and red-cell values markedly change with season. Riddle, Christman and Benedict have measured the basal metabolism of these