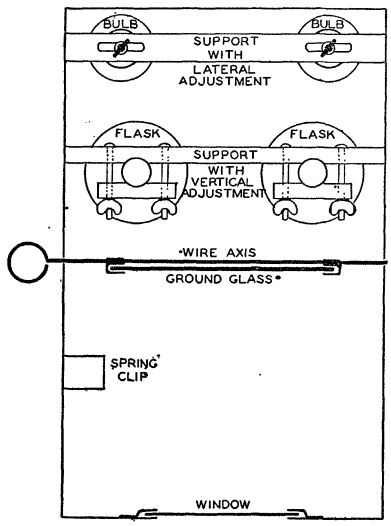

FIG. 1. Illuminator for viewing a transparent object by transmitted light with a binocular dissecting microscope.

inverted position on a wooden cross-piece in such a way as to provide for lateral adjustment. In front of the bulbs are two identical 500 cc flasks with alkaline copper sulfate solution. They are held in clamps to allow vertical adjustment and are at such a distance apart as to give a correct angle between the beams at the microscope mirror. In front of these flasks is a ground glass from a 5 by 7 inch camera. This glass is mounted in two pieces of folded tin soldered at the top to a heavy wire running through the two sides of the box and bent at one end to form a handle. By rotating this wire, the glass can be raised out of the beam of light into a horizontal position and held there by a spring clip. The window in front is 8 cm high and is made of a lantern slide cover or other piece of plane glass slid into a dust-tight groove.

In assembling the outfit care should be taken with regard to rotation of the bulbs so as to present the flat surface of the filament to the flasks. The distances between the bulbs and the flasks must be determined empirically according to the condensing focus of the particular flasks used. The other distances can be approximately determined from the distance at which the microscope is to be used, and by means of the clamps, final adjustment can be made to the position of greatest efficiency in actual use.

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A MODIFIED BULB PIPETTE

WHILE isolating and transferring Protozoa with a pipette of the medicine dropper type, it occurred to the writer that the manipulation of the pipette might be made much easier if the rubber bulb were moved down over the pipette a short distance. This actually proved to be the case when pipettes of this type were made and used for various types of work. The writer has found no mention of such a modification in the literature and felt that a sketch and a few explanatory remarks as to the construction of the pipette might be of some value to others.

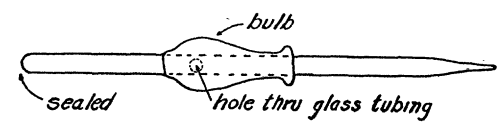

FIG. 1.

The pipette, shown in the accompanying figure, is not difficult to make. One end of a length of glass tubing is first sealed with a flame. The region where the bulb is to be placed is then heated with a small flame and a hole is blown through. The edges of the hole are then rounded down in the flame. A small hole is made in the end of an ordinary rubber pipette bulb, and the bulb is pushed down over the glass tubing. It is placed in such a position that the chamber of the bulb will communicate with the lumen of the pipette by means of the hole previously made in the side of the tubing. To insure a tight fit, cord or fine wire may be wrapped and drawn up over either end of the bulb. The open end of the glass tubing is then heated and drawn out.

The size and kind of glass tubing, as well as the length of the pipette, the size of the point, and the place for the bulb will depend upon the preference of the user and the use to which the pipette is to be put.

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NEW TOWER FILLING MATERIAL

MANY types of tower packing are at present available for such purposes as filling reaction, absorption and distilling towers. The author has recently developed a novel form which is free draining and presents a large active surface per unit volume. It consists of a maltese cross whose wings have been rotated a sufficient number of degrees (for example, thirty degrees) to impart a rotating motion to the gas passing through the packing. This packing may also be made in circular form, with two or more wings, in which case it roughly resembles a propeller. Projections or webs may be added for structural strength or to prevent too close contact between adjacent packing units. For example, the center may be considerably thickened so that if two units superimpose they will not touch at all points. Holes may be introduced for drainage. Two or more units may be connected by webs or other