PIPETTES FOR HOLDING AND MEASURING FLUIDS.

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There are many applications in bacteriology and especially in serology for pipettes which will serve the double purpose of holding and measuring fluids. We have devised such pieces of apparatus which are simple in construction, easy and convenient to operate and which have proved to be satisfactory in our laboratory.

Figure I represents the pipette for use when it is desired to handle sterile liquids. The glass parts and rubber connections are sterilized in the usual way and assembled aseptically.

By releasing the clamp (C) on rubbering-tubing connection (D) the sterile fluid contained in the reservoir (B) which may be of any suitable shape, will flow into the pipette (G) which is of the desired calibration.

The side-arm (E) which is plugged with sterile cotton (F) to avoid air contamination, compensates for the air displaced by the liquid entering the calibrated tube (G) or replaced when the clamp (J) on rubber-tubing connection (I) is released thus permitting the measured fluid to flow thru the capillary-tubing (K). The latter may be protected by a sterile test-tube (M) plugged with cotton (L).

Applying negative or positive pressure by means of the rubber-tubing (H) which is connected to the side-arm, the liquid which remains in the capillary-tubing or pipette proper or in both may be removed. The small amount of sterile liquid which may be discharged from time to time from the same may be collected in sterile tubes or flasks and thus prevent waste of fluid. However, it is not advisable to return such material to the stock solution in the reservoir for fear of contamination.

After the opening in the capillary-tubing has been sealed in the flame the liquid is stored by placing the appartus in the refrigerating-room. When more fluid is to be used a file-scratch is made near the sealed end of the capillary-tubing. It is broken off, the opening sterilized by flaming and the pipette is manipulated as before. It may be advisable to warm the liquid before so doing. Of course, sterile fluid may be taken directly from the reservoir.

Evaporation of the material may be cut down to a negligible quantity by covering the cotton stopper (A) in the holding-chamber with a rubber cap or by inverting a test-tube over it etc., and by tying a knot in the rubber-tubing (H).

In this way a sterile liquid may be conveniently stored with a minimum amount of evaporation and used in definite quantities without becoming contaminated.

In serological work where sterility is not necessary but where it is essential to bring the reacting substance to an equal volume by adding physiological salt solution the pipette as shown in figure II may be used to an advantage because of its convenience in operation and time saving.

The apparatus is entirely glass in construction and in operation is similar to the pipette previously considered. A rack holding the tubes containing the reacting substances is placed under the pipette and the required amount of physiological salt solution is added to each tube.

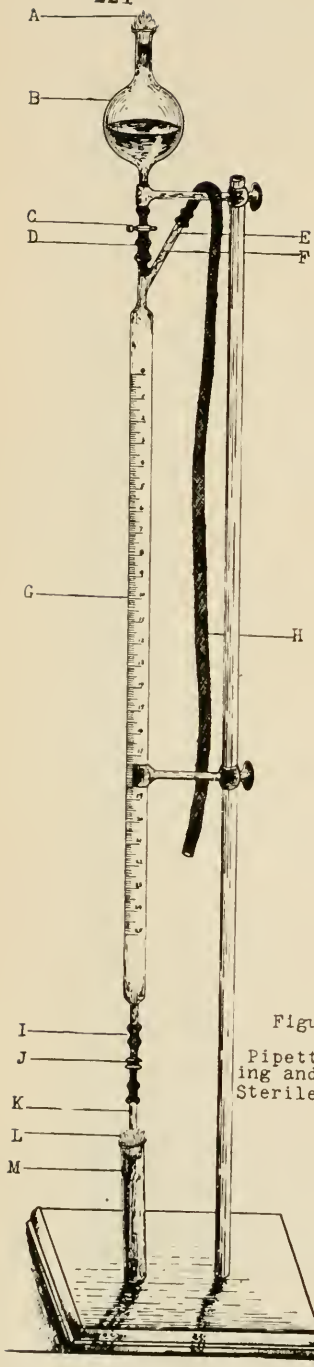

Figure I.

Pipette for Holding and Measuring Sterile Fluids.

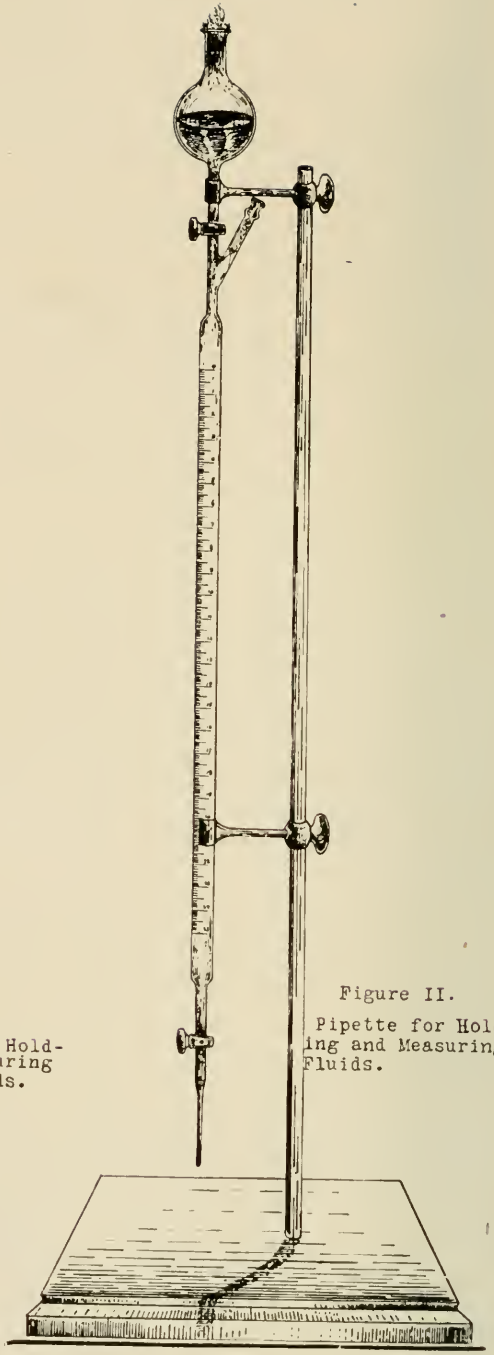

Figure II.

Pipette for Holding and Measuring Fluids.