

some such device which would make the process referred to more practical, that led to the construction of the form of apparatus described above, which I believe to be practical and to have a wide field of usefulness in the analytical and technical laboratory on either the small or large scale.

The bulbs may be made of any size convenient for the work to be accomplished.

NOTE ON THE PREPARATION OF COLLODION MEMBRANES FOR DIALYSIS.

GEO. D. BEAL, PH. D., URBANA, ILL.

The use of dialysis membranes of collodion is becoming fairly well known, but has been only occasionally mentioned in the literature. This note is intended merely to place the information where it will be available to the members of the Association, no originality whatever being claimed for it.

Membranes of parchment or parchment paper, while properly semi-permeable, require the use of an open vessel as a holder, or else form a very clumsy sort of a bag. The advantage of being able to prepare a dialysis cell of any desired shape or size will be apparent at once. This may be done with collodion, which has been prescribed for a long time as a cement for sealing the holes in a parchment membrane, without taking note of the fact that it could itself be formed into a flexible, semi-permeable membrane, possessing considerable strength.

A glass vessel of the desired shape and size is carefully cleaned with chromic acid cleaning mixture and thoroughly dried, after rinsing well with distilled water. It is best not to use alcohol or ether in the drying of the vessel. Twenty-five to 50 cc. of Collodion U. S. P. (according to the size) are poured in, and the vessel rotated while being inclined on its longitudinal axis, in order to secure an even coating on the entire inner surface, and finally the excess allowed to drain off, rotating continually. The inverted flask is rotated until the membrane is firm to the touch and the odor of ether is gone.

Run a knife blade around the rim of the vessel, to start the film loose, then place a glass tube, with rounded edges, in the mouth of the collodion membrane to permit the escape of air, and pour water between the collodion and the vessel to loosen the film, when it may be withdrawn. The bag should be tested for leakage by filling with water, and kept under water until it is to be used.

It is essential that the vessel be clean and dry, and that the collodion be of the U. S. P. variety. I have never been able to make a good bag from acetone collodion.

We have used these membranes successfully in the purification of caramel, the precipitation of certain proteins by dialysis, the preparation of colloidal hydrated manganese dioxide, and a number of other experiments. They are also being used in biological work, and seem to be generally available and easily prepared.