When separating out those metals which are normally deposited on the cathode, a direct analysis of the amount deposited can be gotten by weighing the cathode before and after completion of electro-ultra-filtration, provided the current applied is above the deposition potential of the metal being removed.

The collodion solutions can be prepared so as to give varying porosity according to the method of Bronfenbrenner.[1] An electro-ultra-filter has also been described by the same author.[2] However, the apparatus of Bronfenbrenner is costly, and does not provide for the collection and analysis of the filtrate-dialysate, nor for the discharge of the protein from the thimble. The essential feature of the apparatus herein described lies in the fact that the thimble is kept from clogging by means of the repulsion between the negatively charged protein and the cathode.

E. J. CZARNETZKY

THE UTILITY OF BROKEN AUTOMATIC PIPETTES

AT a time when attempts are being made to utilize all waste materials, it is advisable that the broken glass apparatus in the laboratory be turned to some practical use. Below are described two pieces of apparatus which have been assembled out of two broken 25 cc automatic pipettes which were left unnoticed in an old storeroom for several years.

An automatic pipette consists of two parts: one is the calibrated portion which holds a known volume of the liquid and the other is the oval cap having an inlet for the air and an exit for the overflowing liquid. Most of the defects of the automatic pipettes are connected with the oval cap, which generally becomes loosened and frequently breaks. An automatic pipette with a broken cap can be made into a very convenient gas sampler. Fig. 1 depicts the sampling apparatus as used with a Haldane's gas-analysis apparatus (portable form) in this laboratory. The portion P of the pipette is connected by means of a half-pressure rubber tubing with a 40 cc leveling bulb L. About 32 cc of pure mercury are introduced into the leveling bulb and thence into the sampling apparatus. A 3-way stopcock S is provided, one of the free ends of which is connected with the measuring pipette of the gas-analysis apparatus, while the other is utilized for expelling the gases from the apparatus. The end F is joined to the respiratory flask and sampling is done by the washing method. After three or four washings the sampling apparatus is put in communication with the measuring pipette of the gas-analysis apparatus and the sample is introduced therein.

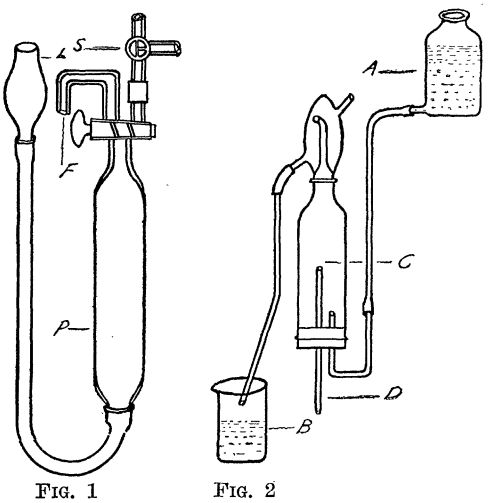

FIG. 1 FIG. 2

Another trouble in an old automatic pipette is usually associated with the stopcock, which occasionally leaks, or the calibrated portion, which may break accidentally. Under such circumstances the broken pipette can be very conveniently utilized in the construction of a constant-rate dropping device for liquids (Fig. 2) which is very frequently needed in all physiological laboratories. The pipette is cut finely about the middle of the calibrated portion and the cut end is fused. A rubber stopper is introduced into this cut end. Through the stopper passes a tube D with a fine orifice below, and another tube is also inserted which connects the portion C with a small aspirator A. The overflowing liquid collects in the beaker B. The flow of water from the aspirator is controlled by applying a suitable clamp to the rubber tubing connecting the aspirator with the portion C. The number of drops delivered per minute varies with the bore of the dropping tube D, and minor adjustments are easily obtainable by pushing the tube D up or down. The apparatus was tested in this laboratory, and highly satisfactory results have been obtained.

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