bottom of the jacket and leaves by way of the glass tube suspended in the center of the cooling coil. By using CO_2-acetone as a coolant, temperatures as low as −65°C. can be maintained in the extraction chamber.

The temperature can be controlled by empirically determining the temperature in the CO_2-acetone bath necessary to keep the extraction chamber at the desired level or, more easily, by a thermoregulator, D. The thermoregulator used in this laboratory is of the type commonly employed in commercial refrigeration. It controls the circulating pump, E, and with the CO_2-acetone in the Dewar kept from 20°–30°C. lower

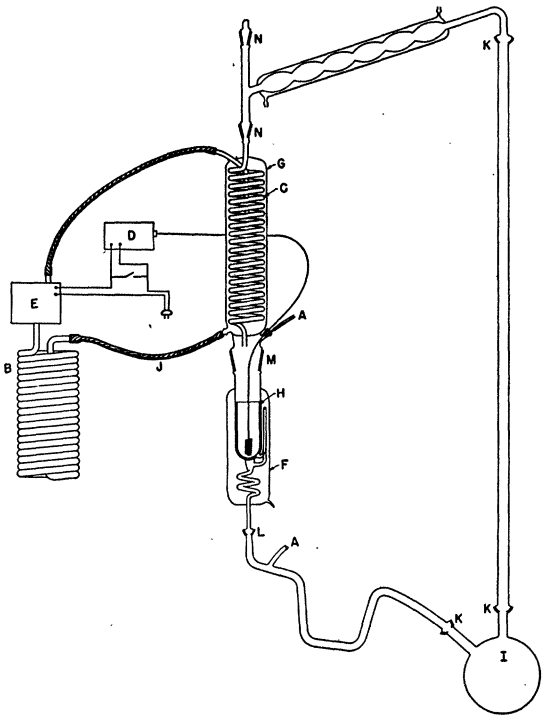

FIG. 1

than that desired in the extraction chamber, the temperature can be maintained within ±1° C. down to −20°C. For lower temperatures the thermoregulator is shorted out, and the pump runs independently of it.

The temperature in the extraction chamber is obtained by placing a thermometer outside the thimble and observing it through the walls of the chamber. A thermocouple may be inserted through the same opening at which the thermoregulator enters.

Openings to the atmosphere, provided at A, are connected to $CaCl_2$ tubes. Ball and socket joints, K (28/15) and L (18/9), permit easy handling and prevent strains in the setup; the other joints, N (19/38) and M (60/50), are standard taper. Rubber tubing, J, connects the copper coil with the cooling jacket.

The apparatus lends itself readily to successive extractions with different solvents merely by changing the solvent in the flask and trap. The residual solvent in the extraction chamber is removed by applying suction to the outlet of the extraction chamber, L.

An Alternate Method of Cleaning Mercury

LEON SEGAL

402 Rose Avenue, New Orleans, Louisiana

The classical operation of squeezing mercury through a chamois often leads to extensive spilling unless a mercury press is used. A simple and thoroughly satisfactory alternative method utilizes nothing more than vacuum filtration in place of squeezing through the chamois. The schematic arrangement is shown in Fig. 1.

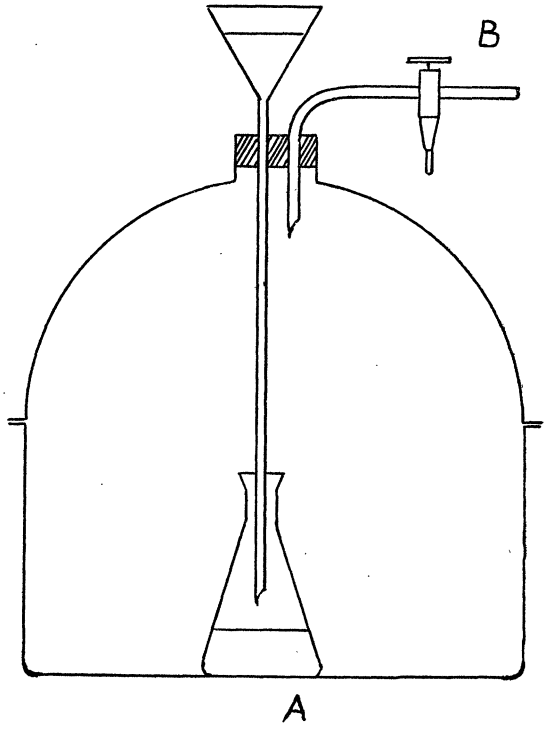

FIG. 1

The vessel, A, is a Pyrex low-vacuum distilling apparatus, and B is a three-way stopcock with an outlet through the plug. In operation, a 2-inch, long-stem funnel requiring only a 4-inch square of chamois will filter, on house vacuum (ca. 25–35 mm.), 5 pounds of mercury within a few minutes. As a receiver, a 500-ml. Erlenmeyer flask will hold splattering down to a minimum. The weight of the mercury and the effect of the suction are sufficient to hold the chamois snugly against the funnel so that air does not leak between the funnel wall and chamois.

When cleaned mercury is to be used immediately, a filter flask of the appropriate size can be substituted for the receiver and vacuum chamber. When, however, it is desired to catch the mercury directly in a cleaned container for storage, the vacuum chamber is preferred, permitting the use of almost any size and shape of container. The container may be removed, stoppered, and put away without again handling the filtered mercury.

This method has been used by the author over a period of time with excellent results in rapidity of filtering; in cleanliness of mercury, and in minimum of loss.