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THE BIOLOGICAL LABORATORY AT COLD SPRING HARBOR[1]

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THROUGHOUT more than a half a century the Biological Laboratory has been fortunate in the character, even more than in the number, of its friends. These fall into two groups, one made up of men and women professionally devoted to scientific careers, who have studied, taught, attended the Symposia or conducted research at Cold Spring Harbor. Many of these maintain their membership in the association, even though they reside in educational communities scattered all over the United States or in foreign lands.

The second comprises neighbors (in the sense that they are chiefly Long Islanders), who represent public-spirited and enlightened sentiment in the area.

The two classes overlap, of course. Within a few weeks we have lost a distinguished man who belonged to both, and who for fifty years had been in many ways the first of our friends and builders, namely, Dr. Charles B. Davenport. You will remember also that his son-in-law, Dr. Reginald G. Harris, was director of the laboratory until his death, and that all other members of his family have been closely tied up with the growth of our institution. Many of you knew Dr. Davenport so well that no words of mine could enhance your appreciation. We have endeavored to crystallize our joint thoughts in a resolution which appeared in SCIENCE of March 10, 1944.

Nothing in human affairs is more satisfactory than a tradition of sound heads and large hearts. It is an inspiring experience to look back through the annual reports of many years and to read the names of the men and women of science and of national and world affairs who have given time, energy and judgment toward the advancement of our work. Happily, some of those from the early days are still working with us, and others, such as Mr. Russell C. Leffingwell, Mr.

[1] Address at a winter meeting of the members of the Long Island Biological Association, held at the residence of Mr. and Mrs. Russell C. Leffingwell in New York City, March 20, 1944.

SCIENTIFIC APPARATUS AND LABORATORY METHODS

PARAFFIN "CONWAY UNIT" FOR THE DETERMINATION OF AMMONIA

IN 1933 Conway and Byrne[1] described an apparatus for the micro-determination of volatile substances such as ammonia. The unit consisted of a flat, cylindrical, glass cup with a lower concentric inner wall arising from the floor of the cup. Absorption of ammonia occurs from the outer chamber to the inner one, the entire cup having been sealed by a glass plate resting on the outer wall whose upper edge has been ground to a plane surface and smeared with vaseline. Borsook[2] modified this "Conway unit" by turning it out of lucite on a lathe and varying the dimensions to suit his electrometric determination.

Where a large number of these units are required the cost of having them made of glass, as described by Conway and Byrne, becomes excessive. Under present wartime conditions, the large lucite rods used for the manufacture of the modified form suggested by Borsook are unavailable. We attempted casting the units with acrylic resin (Trulite), the plastic used for dentures, but were unable to eliminate the inclusion of air bubbles with the molding facilities at hand. Turning to other substances we found that high melting paraffin (M. P. 55°–58° C) made highly satisfactory units. These were cast in a brass mold which was turned from a 3-inch piece of brass rod. The paraffin cups are very easily made and being inexpensive can be replaced when they become chipped, broken or discolored after long use. The material is inert to the reagents used for determining NH_3 or urea. Being white and translucent they offer an excellent background for end point titration of the indicator in the inner chamber.

The mold, Fig. 1, is cut on the lathe from a metal rod and the grooves for the walls of the unit are tapered with their bottoms somewhat rounded to facilitate the removal of the hardened cup. Loosely fitting rods fit in holes drilled through the mold as indicated in the diagram. A thin metal plate under the mold prevents these rods from falling through.

To make the cups the surfaces of the mold are first swabbed with mineral oil, then wiped clean with cleansing tissue. The liquefied paraffin is poured and as soon as the paraffin has hardened, the mold is placed in a refrigerator for about ten minutes. The hardened cup can then be easily released from the mold by tapping lightly on the rods. The upper edge of the outer wall of the unit is now ground to a plane surface by rubbing it on a flat paper-covered surface. A glass plate cover used during the period of distillation can then be securely sealed with glycerine, made alkaline to phenolphthalein.

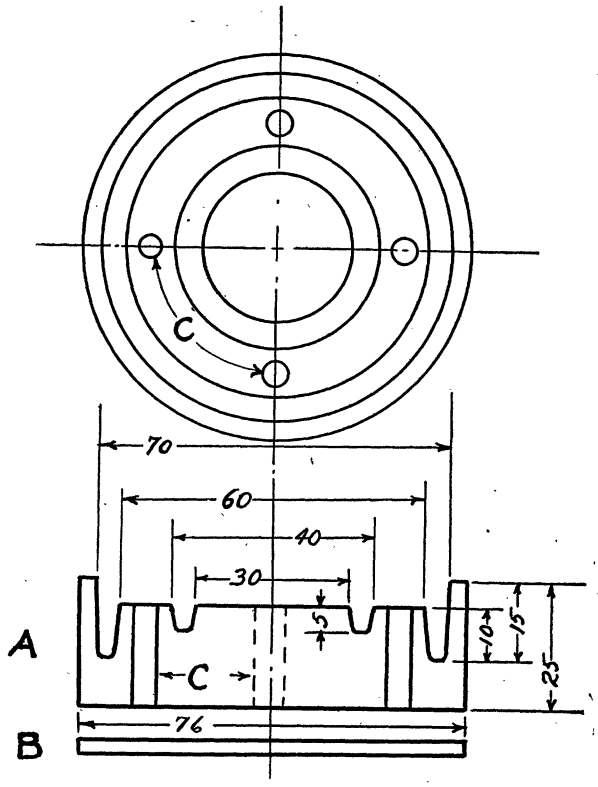

FIG. 1. A. Cross-section of mold. B. Circular metal plate for support of rods in holes C. Dimensions in millimeters.

We believe that paraffin may offer a satisfactory substitute for many other types of simple reaction vessels.

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[1] E. J. Conway and A. Byrne, *Biochem. Jour.*, 27–419, 1933.

[2] H. Borsook and J. W. Dubnoff, *Jour. Biol. Chem.*, 131–163, 1939.

BOOKS RECEIVED

AUBLE, ROBERT NEIL. *Shop Job Sheets in Radio.* Illustrated. Pp. 111 + 134. The Macmillan Company. $1.50.

DREW, CHARLES E. *How to Pass Radio License Examinations.* Second edition. Illustrated. Pp. 320. John Wiley and Sons. $3.00.

HOWELLS, WILLIAM. *Mankind So Far.* Illustrated. Pp. xii + 319. Doubleday, Doran and Company. $4.50.

KUDO, RICHARD R. *Manual of Human Protozoa. With Special Reference to Their Detection and Identification.* Illustrated. Pp. ix + 125. Charles C Thomas. $2.00.

MORTON, J. R., D. R. CLIPPINGER and L. P. EBLIN. *A Laboratory Program for General Chemistry.* Pp. v + 272. Illustrated. Houghton Mifflin Company. $2.00.

University of California Publications in Zoology. Volumes 48–51. Illustrated. Pp. 191. University of California Press, Berkeley.

WILSON, CHARLES MORROW. *Middle America.* Illustrated. Pp. 317. W. W. Norton. $3.50.