

The author wishes at this time to express his thanks to Professor Victor Lenher for valuable suggestions in this work, and to H. S. Miner, of the Welsbach Light Company, for a large part of the material.

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NOTE.

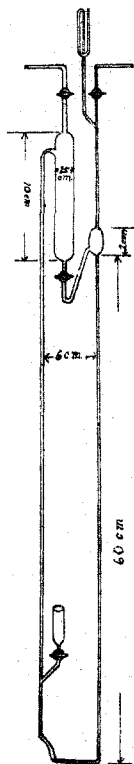
A Modified Boltwood Pump.—The modification of the Boltwood pump, which is represented by the accompanying diagram, may be of interest to those engaged in work which requires a high vacuum.

The original pump as stipulated by Boltwood¹ consists of a large bulb, 6 cm. diameter, which acts as the reservoir for the mercury and a smaller bulb of two to three centimeters diameter. The whole apparatus is about 120 cm. long, and 30 cm. wide, using from 700 to 1000 grams of mercury. The apparatus shown in the diagram is at present in use in this laboratory, and gives just as efficient service as the larger forms—sparks being obtained in Pflücker tubes after three minutes' operation, and within a quarter of an hour the pressure cannot be measured on an ordinary manometer—occupies only one-third the space, and requires 100 g. Hg for successful operation.

It might be added in this connection, that there is considerable deviation from the prescribed internal diameter of the dropping tube (2.5 mm.) in the manufactured forms; and it has been observed by the author, that a slightly larger tube refuses to give low vacuums—obviously while a tube smaller than 2 mm. works so slowly as to be comparable to the older hand-lift varieties.

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[CONTRIBUTION FROM THE CHEMICAL LABORATORY OF HARVARD COLLEGE.]
SOME DERIVATIVES OF PARA-AMINO BENZOHYDROL.²

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This paper is a report of the beginning of the work in an extensive research on derivatives of para-aminobenzophenone which is being con-

¹ *Am. Chem. J.*, 19, 76 (1897).

² This research was suggested by the late Professor Henry A. Torrey and most of the experimental work was done under his direction, but the writing of the paper was deprived of the benefit of his supervision by his too early death.—C. L. JACKSON.