

NOTE.

An Improved Form of Gas-Washing Bottle.—The ordinary forms of the gas-washing bottle have the following disadvantages: The pressure on the gas is always considerable and is not the same in any part of the apparatus. It not only varies from bottle to bottle but also in the individual bubbles as they rise through the liquid. The length of time during which the bubbles of gas are in contact with the liquid does not depend upon the rate of flow of the gas, but only upon the height of the liquid in the bottle, thus making a large overhead pressure necessary to secure efficient washing. Finally, the liquid is not satisfactorily stirred.

The various forms of apparatus proposed to overcome some or all of these objections are usually not entirely satisfactory, and inevitably complicated in structure and difficult to make. The form proposed is similar in principle to that suggested by Cumming.¹

In its simplest form the apparatus consists of an ordinary bottle, or preferably a square medicine bottle, fitted up as a common wash-bottle, which is laid on its side and has a small side tube at C (as shown in Fig. 1). The gas enters the wash-bottle at F and forms bubbles at the bend

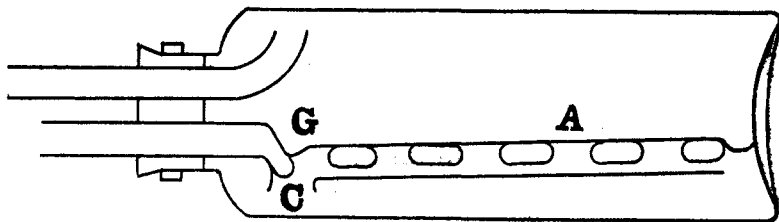


Fig. 1

G in the tube A. The tube A should be of such a size (approximately 5 mm., inside diameter) that the bubbles formed sweep the liquid through it into the bottle, thus causing efficient circulation of the liquid through C. C should be about twice the diameter of the tube A.

The rate of flow of gas in the tube can be varied within considerable limits, and can be made as slow as desired. The character of the washing can be varied by slightly tipping the tube A, or varying the height of the liquid in the bottle. Because of the slow rate at which the bubbles pass through the tube A, the washing is very efficient, and because of the slight head the pressure on the gas can be kept constant, and the amount of spray formed negligible.

These advantages make the bottle described satisfactory not only for ordinary gas washing, but also for saturating a gas with a liquid as in vapor-pressure work. In case the cork is an undesirable feature of the

¹ *Trans. Faraday Soc.*, 6, 10 (1910).

bottle, as is the case in careful vapor-pressure work, or where the cork is subject to attack by the liquid used, the form of the apparatus illustrated in Fig. 2 can be used.

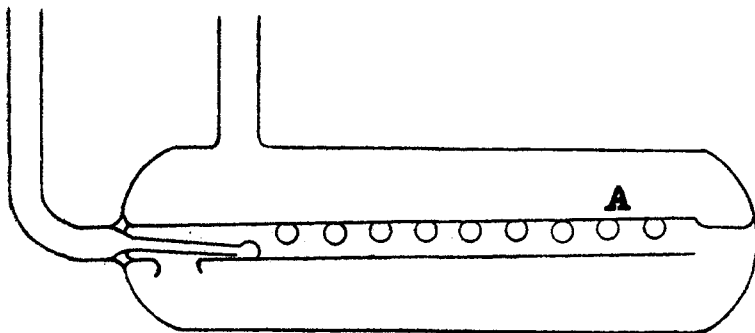


Fig. 2

The nozzle shown at B, which should have a diameter of about 2 mm., makes the bubbling more regular and the circulation more certain, thus making the latter form preferable to that illustrated in Fig. 1.

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ERRATA.

On p. 2258, October number, line 7 from bottom, for "p. 2238," read p. 2254.

On p. 2261, October number, line 25 from top, for "(p. 2233)" read "(p. 2249)."

On p. 2264, October number, line 21 from top, for "(p. 2244)" read "(p. 2260)."

On p. 2286, October number, footnote 1, for "p. 2268," read "p. 2284."

On p. 2287, October number, footnote 1, for "p. 2274," read "p. 2290."

On p. 2288, October number, footnote 2, for "p. 2273," read "p. 2289."

On p. 2290, October number, footnote 1, for "p. 2270," read "p. 2286."

On p. 2304, October number, footnote 1, for "p. 2286," read "p. 2302."

CORRECTION.

Some of the values given for atomic volumes on page 1646 (37, July, 1915) were taken, in the preliminary draft of the table, from Ostwald's "Lehrbuch der Allgemeinen Chemie," Vol. I, p. 854 (1891). It has been intended to substitute later more accurate values, calculated from the more recently found densities and atomic weights of the elements in question, but through an oversight this was not done in every case. The cor-