

glad to do whatever he can in assisting others to profit both by our successes and failures.

H. G. BYERS.

A Modified Burette for Standard Alkali Solutions.—Glass stoppered burettes offer serious obstacles to their constant employment for standard solutions of caustic alkalis. The tendency of the stopcock to stick, rapid wear, resulting in leakage, or breaking of the cock or of the shell, and other difficulties constitute serious objections to this form of burette for caustic alkali solutions. The type of burette in which a glass tip is connected to the burette by means of a rubber tube, the flow being controlled by a pinchcock or a glass ball, is an alternative which is still in considerable use, but the objection to this type on the ground of inaccuracy is well understood, and the United States Bureau of Standards will not calibrate such burettes.

It occurred to the writer that the substitution of metal for glass for the movable part of the stopcock might overcome the difficulty and that of the metals adapted to this purpose, silver might perhaps be preferable both because of its fairly good resisting powers towards caustic alkali, as well as on the ground of reasonable cost. Accordingly, a burette fitted with a silver stopcock was tried by filling with half-normal potassium hydroxide solution and allowing to stand for a week. The stopcock did not show the slightest sign of sticking or leakage. The burette was then emptied and filled with 30 per cent. sodium hydroxide solution and in the course of several weeks the stopcock was operated several times nearly every day. The stopcock is still apparently in as good condition as when first received, although it has not been lubricated again since it was first put into use. This stopcock was made for the writer by the Bausch & Lomb Optical Company, of Rochester, New York.

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The Purification of Mercury.—The accompanying cut is of an apparatus which has been used by the writer in the Harvard laboratory for more than a year, and he believes it possesses several advantages over the original apparatus of L. Meyer,¹ and, perhaps, over a somewhat similar modification of the original by Hildebrand² in that large quantities of mercury can be rapidly and thoroughly freed from those substances which are likely to occur in it and which dissolve in dilute nitric acid or in mercurous nitrate.

The method of Meyer is so familiar to every one that details are unnecessary. The writer uses a 5 cm. tube, 1.5 m. long. He finds that 8 per

¹ *Z. anal. Chem.*, 2, 241.

² *THIS JOURNAL*, 31, 933.