

EXTEMPORANEOUS PREPARATION OF SULPHUROUS ACID.

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In the April 1917 issue of the JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION there is an interesting article by Prof. Otto Raubenheimer on the above subject, the article being entitled "Sulphurous Acid, Its Extemporaneous Preparation."

This article is of practical value to the retail druggist, although sulphurous acid is not often prescribed. When it is necessary to dispense same, the stock acid has deteriorated to such an extent as to render it unfit to use. The average pharmacist has not the equipment or the time to prepare it according to the U. S. P. VIII.

For those who have not read Prof. Raubenheimer's article, I will briefly state the three processes he gives.

- 1.—By the interaction of potassium sulphite and tartaric acid.
- 2.—By the interaction of calcium sulphite and sulphuric acid.
- 3.—By the interaction of sodium sulphite and hydrochloric acid.

The first two processes produce precipitates, and as Prof. Raubenheimer states, potassium and calcium sulphites are infrequently kept in drug stores; in the third process, the by-product, sodium chloride, is left in solution. The finished acid made by the third process will contain about 12 percent of sodium chloride. The writer cannot agree here with Prof. Raubenheimer regarding the inertness of the sodium chloride. Sulphurous acid, containing that quantity of sodium chloride in solution, when applied to a sensitive surface or sore would produce an undesirable irritation. Furthermore, a pharmacist dispensing sulphurous acid containing sodium chloride in it would be liable to prosecution on the grounds that it does not conform to the standard set for that acid in the U. S. P. VIII, namely, that it is completely volatilized by heat.

Five days ago the writer had occasion to run some arsenic determinations according to the U. S. P. IX: sulphurous acid is used to reduce arsenic compounds to the arsenous state. A pure acid is required for this work. Not having time to prepare it according to the U. S. P. VIII, the writer devised the following process: charge a 500-mil Woulfe bottle with 70 grammes of anhydrous sodium sulphite and about 100 mls of water, connect the Woulfe bottle with a receiving bottle of about 350 mls capacity, containing about 300 mls of water, surround the receiving bottle with ice and when the water has been chilled add a small quantity of sulphuric acid through a thistle tube into the Woulfe bottle. Slowly add sulphuric acid until about 30 mls are used. The heat generated by the acid and water mixing facilitates the liberation of the sulphur dioxide, which passes over into the receiving bottle and dissolves in the water. Theoretically the above quantities used would produce 500 mls of a 6.4 percent *w/v* acid, provided no sulphur dioxide remained in the Woulfe bottle. By this process the writer produced 300 mls of sulphurous acid assaying 9 percent SO_2 *w/w* in 35 minutes.

Sample No. 1.—This was not assayed at time of preparation. Stored in a half filled (clear glass) glass stoppered bottle for 5 days, it assayed at that time

2.83 percent SO_2 w/w, specific gravity 1.020, at 25 C., and gave a marked reaction for sulphuric acid.

Sample No. 2.—Was assayed immediately after preparation. It contained 8.97 percent SO_2 w/w, specific gravity 1.051, at 15 C. and gave a fair reaction for sulphuric acid. The sulphuric acid present was not oxidized from the sulphurous acid but was carried over by the spray, likewise the specific gravity is slightly too high, being due to the small quantity of sulphuric acid and sodium sulphate present. The specific gravities were taken with a calibrated thermo-urinometer. The presence of these impurities can be avoided by interposing a small wash bottle of water between the Woulfe bottle and the receiving bottle. Both the above samples, however, produced arsenic-free sulphurous acid, conforming to the U. S. P. IX, except as to strength.

The process given here is for the convenience of the chemist or the pharmacist who is equipped to assay preparations and adjust them to the desired strength. No experiments were made to see if by controlling the quantities and the rate of liberation of the sulphur dioxide, a product of the desired strength could be produced. If so this process with slight modifications could be used in every drug store.

This would be an interesting problem for some pharmacy student to work out,

BILLS IN CONGRESS OF INTEREST TO THE DRUG TRADE.

The opening of the special session of Congress brought with it the introduction of a flood of bills into both the House of Representatives and the Senate, many of which are of interest to or have a direct bearing on the drug trade. One of these contemplates the taxing of all persons, firms, and corporations engaged in the mail order business. The bill was introduced by Congressman M. Clyde Kelly, of Pennsylvania. It provides that all persons, firms, or corporations in the United States which are now conducting or may hereafter conduct an interstate mail order business, shall pay a tax of two percent upon the total cash value of all goods, wares and merchandise sold within any state.

To stop the giving of coupons, prize tickets, or other devices, with the sale of various kinds of goods, to be redeemed for other goods or for cash, Congressman Richard W. Austin, of Tennessee, has introduced a bill providing that each such coupon, prize ticket, or other device shall be taxed two cents, and a similar tax is to be levied, on and after September 1st, next, on the redemption thereof. Mr. Austin would have any person, firm, or corporation failing to affix such stamp or stamps as required, subjected to a fine of \$50. Congressman Luther W. Nott, of New York, would put a stop to the giving of coupons and coupon devices accompanying such articles as are usually sold in a cigar store, by placing a tax of four percent of the retail selling price of the article purchased, on each sale, the tax to be paid by the retail dealer.—*Pharmaceutical Era*, April, 1917.