

tion or removal of the thermometer, which contains mercury with carbon dioxide under twenty atmospheres' pressure. The thermometer was standardized at the Reichsanstalt. The float is handled by means of a small iron cylinder rising vertically. It is much enlarged above the second cover (asbestos) to hold a short mercury thermostat made of especially resistant glass. The two covers have hit-and-miss slits that they may be taken off for removal of crucible. All exposed surfaces of the bath, except where it is heated, are jacketed with heavy asbestos. The large excess of acid sometimes used in the determinations is first driven off in a hot air platinum bath (to be described in due time) before the crucibles are placed in this bath. Notable corrosion is thus avoided. The source of heat is a complex Bunsen burner.

So far the bath has given perfect satisfaction.

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April, 1902.

On an Adulteration of Lavender Oil with Salicylic Acid.—A French lavender oil, which the following constants showed to be of good quality,

$$d_{15^{\circ}} = 0.893,$$

$$[\alpha]_D = 6^{\circ} 42',$$

$$\text{Acid number} = 4.48,$$

$$\text{Ester content} = 35.52 \text{ per cent. as linanyl acetate,}$$

$$\text{Soluble in 2.5 vol. and more 70 per cent. alcohol,}$$

turned red after some time, something never observed before in lavender oil. This discoloration was traced back to salicylic acid, which evidently had acted on some defective parts inside the tinned cans.

The salicylic acid was isolated from the oil by shaking the same with a potash solution of 10° Bé. Hydrochloric acid precipitated the organic acid from the alkaline solution. Another part could be obtained by extracting the filtrate with ether. The acid was purified by repeated fractional precipitation with hydrochloric acid from its alkaline solution, recrystallization out of chloroform and finally out of water with addition of some animal charcoal. The white crystals, now quite odorless, melted at 156°-157°. They were identified as salicylic acid by the characteristic violet color-

tion with ferric chloride solution and the odor of salicyl methyl ester by heating with methyl alcohol and sulphuric acid.

The acid number of the oil indicates 1.104 per cent. salicylic acid, but as some of the acid reaction is due to the natural oil anyhow, one can guess that about 1 per cent. of salicylic acid has been added, and this is an amount, which it would hardly pay to put in. In my opinion it was a test case, to see if the sophistication would be found out, with the intention of putting more in the next time and also to use an oil of a poorer quality, anticipating that the analyst would neglect the acid number and figure the whole saponification number for esters.

The oil did not contain any salicylic ester: no fraction of the oil, distilled *in vacuo*, gave a violet color with ferric chloride solution.

An alcoholic solution of a pure lavender oil does not show any red or violet color with ferric chloride, but an oil adulterated with salicylic acid will.

The occurrence of this attempt of adulteration adds salicylic acid to the list of other materials, as succinyl methyl ester,¹ rosin² and benzoic acid,³ already found in lavender oil, put in to raise the ester content found by analysis or else obscure the analysis.

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The Production of Acylamines by the Interaction of Sodium Salts of Monobasic Acids and Amine Hydrochlorides.—On page 758 (August number) of this Journal, Frederick L. Dunlap publishes a paper under the above heading. Dr. Dunlap produces some aceto compounds by the action of an acetate on the hydrochlorides of various amines. He states that he is aware of the existence of United States Patents Nos. 574,395 and 574,396 "For the manufacture of acetanilide." He goes on to show that the method which he outlines is a general one. He fails to state that the patents cited make a specific point of the general nature of the reaction in question; that, in fact, the letters patent are granted, not "For the manufacture of acetanilide," but for a "Process for obtaining aceto derivatives of aromatic amines."

¹ Schimmel's Report, April, 1897, p. 24.

² *Ibid.*, October, 1900, p. 47.

³ *Ibid.*, April, 1902, p. 46.