through the oil-talc mixture upon a strong porous filter medium to insure maximum saturation. The specific gravity of the filtrate was found to be 1.0065.

A $^{25}/_{0}$-cc portion of a representative specimen of the product was removed to an Erlenmeyer flask of $^{240}/_{0}$-cc capacity and $^{20}/_{0}$ cc of $N/10$ V. S. alcoholic potassium hydroxide added. Phenolphthalein T. S. was then added and the contents of the flask were thoroughly agitated, and then titrated with $N/10$ V. S. hydrochloric acid. Each cc of $N/10$ alkali consumed, corresponds to 0.015206 gram of methyl salicylate.

The filtrate was found to contain 0.060824 per cent. of methyl salicylate in aqueous solution, corresponding to 0.0001980 per cent. of gaultheria.

RESORCINOL AND PHLOROGLUCINOL AS COLOR REAGENTS.

BY E. V. LYNN AND F. A. LEE.

The polyhydric phenols have long been used in numerous reactions as agents for qualitative detection of a variety of compounds. The identification of methyl alcohol through its oxidation product, formaldehyde, the detection of sucrose in various food products, and the use of Seliwanoff's reagent in physiological chemistry might be cited as illustrations. We have been unable, however, to find any reference in the literature to a systematic record of comparative results with these compounds. Michael and Ryder[1] many years ago investigated the reaction of various phenols with aldehydes, but neglected to report the specific appearance in each case. During an extensive search for some means of identifying small quantities of cinnamic aldehyde in volatile oils, we had occasion to try the effect of an acid solution of resorcinol. The reaction was so striking that we were induced to investigate it further and, after quite a long series of tests, are much impressed with the possibilities of using phloroglucinol and resorcinol as agents for the detection and identification of a wide variety of substances.

The reagents which we finally selected as most satisfactory are one per cent. solutions of the phenols in concentrated hydrochloric acid. Most of the compounds tried were nearly insoluble in water so that alcoholic solution of the reagent might have seemed more promising. Nevertheless, we have found that the reactions are so sensitive that saturated aqueous solutions of the compound in question give just as reliable results. Both of these phenols of course absorb oxygen from the air and in time are rendered inert, hence the reagents used should be freshly prepared. We have found, however, that they will keep well if ordinary caution is used in protection. In order to make the tests equal volumes of the substance and of the reagents were mixed and allowed to stand. Most of the substances were tested in saturated aqueous solutions but formic, acetic and butyric aldehydes were used in 1% solution and vanillin, heliotropin, chloral hydrate and salicin were about one-tenth this strength, while dimethylaminobenzaldehyde was a 0.1% alcohol-water solution. The following table gives the description of the reactions observed.

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[1] *Am. Chem. Jour.*, 1887., p. 133.

Oil or compound.	Resorcin solution.	Phloroglucin solution.
Cinnamic Aldehyde	Carmine-red color, later a red precipitate	Red color, later a deep red precipitate
Furfural	Yellow color, changing to a black precipitate	Same as resorcin
Formaldehyde	White precipitate, changing to old rose color and precipitate	Orange-colored precipitate
Paraldehyde	Cream-colored precipitate	Yellowish brown precipitate
Acetaldehyde	Cream-colored precipitate changing to dirty brown	Yellowish brown precipitate changing to dark brown
Oil of Citronella	Faint yellow color, finally white opalescence	Light red color, later a light red precipitate
Oil of Geranium	White opalescence	White opalescence
Benzaldehyde	White precipitate	Orange-yellow precipitate changing to light violet
Vanillin	Faint pink color developed after thirty minutes	Brownish red color after five minutes, precipitate formed
Butyraldehyde	White precipitate	Tan precipitate
Heliotropin	Negative	Red color, later a blood-red precipitate
p-Dimethylamino-benzaldehyde	Negative	Red color fading to a white precipitate
Eugenol	Negative	Pink color formed after a few minutes
Chloral Hydrate	Negative	Negative
Camphor	Negative	Negative
Salicin	Negative	Negative

It will be seen by an examination of the foregoing table that the tests are characteristic for all of the aldehydes, except butyric. The reactions are especially good for all of the aromatic aldehydes tried and could be used to identify any of them in mixtures. Cinnamic aldehyde can be detected by these reactions in such diverse substances as oils of cassia and cinnamon. This compound can be detected easily by means of the above reagents if present to the extent of 4% or better in the oil under examination, and when less is present, it can be detected if the test is allowed to stand a long time. This was ascertained by adding known amounts of cinnamic aldehyde to oil of turpentine. The latter oil alone gives negative results with the resorcin and phloroglucin solutions.

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CHEMICAL EXAMINATION OF CEANOTHUS VELUTINUS.

BY E. V. LYNN, F. A. LEE AND W. H. CLAUSEN.

Being quite fairly wide-spread throughout eastern and western Washington, the sticky laurel has frequently attracted attention of the scientist as well as of the layman because of the waxy exudate and because of the strong odor at certain seasons. We have had occasion to experiment with portions of the plant during the past year and wish to report here the results of our preliminary examination. The work is to be continued and the complete report submitted later.