

The results obtained with the modified impregnated blotter technique were reasonably uniform for evaluating the germicidal strength of the various liquid antiseptics under test. One advantage of this test method is the very clear visualization possible for photographic record of bactericidal activity. In order to make comparative evaluations of several antiseptics tenable, it was necessary to set up tentative standards for comparison. We therefore prepared according to U. S. P. formulas, solutions of 5% and 10% phenol; tincture of iodine; mercurchrome; 50% and 90% alcohol; 10% argyrol; compound cresol solution, and several other U. S. P. or N. F. antiseptics and disinfectants (see Table I). The relative antiseptic strengths were determined by measuring the width of each inhibition and diffusion zone in terms of centimeters or fractions thereof. Photographs and charts were made in order to clearly show the comparative antiseptic activity of standard antiseptics when compared with 10% phenol which had a fairly constant inhibition zone on standard culture media of approximately 1 cm.

SUMMARY AND CONCLUSION.

(1) Liquid antiseptics may be checked tested for germicidal strength with visual interpretation in terms of the width of the zones of inhibition against pyogenic cocci or other test organisms. (2) The blotter impregnation technique gives uniform results provided the culture media preparation is standardized. (3) The U. S. P. arsenicals, iodides, coal tars and silver preparations have high germicidal coefficients when compared with 10% phenol. (4) 10% phenol gave a zone of 1 cm., so that phenol coefficients equaled the actual zone widths in these particular tests.

REFERENCES.

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A PROPOSAL FOR AN ALTERNATIVE PERMISSIBLE PROCESS FOR THE MANUFACTURE OF THE TINCTURE OF SWEET ORANGE AND OF LEMON.

BY EDWARD M. GERSTENZANG.*

Observation of the inconvenient features of the official processes for the manufacture of the tinctures, has prompted the following comments and suggestions.

The official processes, while feasible on a small scale in the retail pharmacy, are not very practical in the manufacturing laboratory since in order to obtain the outer rind grated from the fresh fruit, as the U. S. P. specifies, comparatively large quantities of the latter must be employed with the resulting expense of material and labor, particularly where no immediate use can be found for the edible portion of the fruit. Since approximately seven Gm. of outer rind are obtainable from a lemon and eighteen Gm. from an orange, a liter of tincture requires about seventy of the former and twenty-eight of the latter. Add to this the necessary tedious hand labor, and the cost becomes quite impressive.

A simple expedient, therefore, suggests itself, which is amply justified by experiment and reason. The official tinctures of sweet orange and of lemon are essentially alcoholic solutions of the volatile oils and coloring principles obtained by maceration of the outer yellow rind grated from the fresh fruit.

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Inasmuch as the official oils of sweet orange and of lemon are obtained by expression of the fresh peel of the fruit, all the original delicacy of flavor and aroma are retained.

Experience shows that 5% solutions of the oils in alcohol of the proper strength duplicate the properties of the official tinctures with the exception of the color.

The proposed alternative tinctures were prepared by the following formula and process:

TINCTURE OF SWEET ORANGE OR OF LEMON.

Oil of Orange or of Lemon.....	50.0 cc.
Water.....	190.0 cc.
Tartrazine certified food color.....	<i>q. s.</i>
Purified Talc.....	<i>q. s.</i>
Alcohol.....	<i>q. s.</i> , 1000.0 cc

Dissolve the oil in 750 cc. of alcohol, add the water and sufficient alcohol to make 1000 cc. Add the purified talc, shake well and filter until clear. Add traces of the tartrazine cautiously until the desired color is obtained.

The two tinctures are undistinguishable by the physical senses from the official tinctures in the preparations into which they enter. Moreover, the alternative tinctures possess the advantage of constant composition. The tartrazine food color was found to be unaffected to any appreciable extent by several hours' exposure of the tinctures to bright sunlight and a precedent for the use of an "artificial" color in place of a natural color is found in N. F. VI which directs the use of amaranth for coloring Elixir Triple Bromides, in place of the cudbear of the N. F. V.

By the simple process outlined, considerable economy of money, time and labor is effected and a product is obtained which satisfies every requirement.

SALTS OF TRIETHANOLAMINE.*

BY GEORGE W. FIERO.¹

Triethanolamine, combined with a fatty acid, is being used to a large extent as an emulsifying agent, particularly in the field of cosmetics. It appears to be superior to other soaps for this purpose because of the ease of emulsification. Triethanolamine soaps have also been suggested as detergents to replace ordinary soaps for certain purposes.

The present study is a comparison of the salts of several fatty acids with triethanolamine. These salts were prepared by the reaction of molecular quantities of the fatty acid with triethanolamine. Pure fatty acids (Eastman) were used in all cases since commercial products are often mixtures.

Surface Tension.—The surface tension was determined by means of a duNouy apparatus at 40° C. on 0.14% aqueous solutions of the various triethanolamine salts. This concentration was chosen since it is considered optimum for detergent action using ordinary soaps. The surface tensions were found as follows:

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