

as outlined in *Bulletin* No. 1308 of the Agriculture Department (3). The results of these tests are recorded in the following table.

It can be observed readily from the preceding table that there are several oils just as desirable as linseed oil for compound solution of cresol. The authors sought to eliminate any comparison of the oils on a price basis, so no experiments were made to ascertain just how low a grade of oil could be used for making the soap of the various products; consequently, all of the oils used were of high grade. Corn oil and sesame oil make a satisfactory product, which has a chill point somewhat lower than the product made from linseed oil. Cocoanut oil makes a satisfactory product which shows a phenol coefficient from 50 to 100 per cent higher than the coefficients shown by products made from other oils. The price of cocoanut oil is slightly higher than linseed oil, but it apparently makes a product that is decidedly more efficient.

#### CONCLUSIONS.

It may be said that there are several oils; namely, corn, soy bean, cocoanut and linseed that will make a satisfactory cresol compound. Peanut and sesame oils are not desirable for use in such a product. It appears from the above experiments that cocoanut oil is the only one of this group that can be used to manufacture a satisfactory product which at the same time shows an increased phenol coefficient. For this reason it may be desirable as a base for compound solution of cresol. Finally, it seems that there may be oils more desirable, for the manufacture of these soap cresol solutions, than linseed oil that is now prescribed by the United States Pharmacopœia.

#### REFERENCES.

- (1) U. S. Department of Agriculture, Department *Bulletin* No. 1308, 1 (1924).
- (2) United States Pharmacopœia, Tenth Revision, 210 (1926).
- (3) U. S. Department of Agriculture, Department *Bulletin* No. 1308, 5 (1924).

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### IMPROVEMENT IN TECHNIQUE IN THE PREPARATION OF THREE COMMON PRODUCTS.\*

BY EDWARD D. DAVY.

There are distinct advantages in the modification of some of the commonly accepted formulas both as to the ease of preparation and the appearance of the finished product, and this without altering the value of the product in any way.

The three products used to illustrate improvement in technique are: Syrup of White Pine Compound, N. F., Elixir of Phenobarbital, and Soft Soap, U. S. P. IX.

*Syrup of White Pine Compound* when prepared by the N. F. formula without change yields a product which, upon aging, results in an oleaginous suspension which, after a few days, forms an oily layer on the surface of the syrup making an unsightly preparation. This condition may be corrected by siphoning or otherwise removing the clear liquid after aging. The directions for preparing the product do not provide for clarification.

The Oil of Sassafras which represents an excess over saturation is the chief offender, though the resin from the Balm of Gilead Buds also contributes to this

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\* Section on Practical Pharmacy and Dispensing, A. PH. A.

oleaginous material. To correct the excessive oil residue in this syrup, if one adds the oil to the menstruum the excess is retained by the drug, and saturation is all that should be expected. The sugar is dissolved in the percolate and the chloroform added as indicated in the formula.

*Elixir Phenobarbital.*—While no formula appears in our standard texts this elixir was selected because of the difficulty encountered in filtering the finished product when cudbear is used as the coloring agent. In addition the maximum color effect is not obtained when the cudbear is macerated in alcohol as is usually prescribed. The alcoholic extract or tincture when added to the preparation results in a product not brilliantly clear and the colloidal material from the previously clear alcoholic solution makes filtration very difficult, being accentuated by the presence of both glycerin and syrup.

This filtration difficulty is avoided by macerating the cudbear in alcohol, glycerin and water in approximately the same ratio as is represented in the finished product. Filtration is fairly rapid and the depth of color is increased and it remains brilliantly clear. The phenobarbital is dissolved in a small amount of alcohol reserved for this purpose and added to the clear filtrate from the cudbear. Sugar in amount to the syrup prescribed is then dissolved by agitation.

To show the solvent action of glycerin on the coloring from cudbear, one need only to evaporate a portion of the alcohol-glycerin filtrate. The glycerin residue remains perfectly clear and may be diluted with water without loss of its brilliancy.

*Sapo Mollis U. S. P. IX.*—(Cold process.) Since there is a considerable demand for a potash soap as contrasted with the U. S. P. X sodium-potassium mixture, suitable for liquefaction for use in general soap service and in the surgery of hospitals, it was thought advisable to offer a convenient procedure for its preparation, one which has worked successfully in our laboratory for several years.

The following procedure makes a good soft soap, or if one chooses he may, by adding distilled water, prepare a liquid soap containing up to 22% anhydrous soap. The U. S. P. IX formula with regard to oil, potassium hydroxide and the initial water to be used needs no change.

The alkali is dissolved in distilled water (10% of the weight of finished soap or 100 cc. for 1000 Gm. of soft soap) and immediately add all the oil and stir well. For small amounts of soap the saponification will be completed in from three to four hours. Stirring the mixture at intervals to emulsify the unsaponified oil is all that is necessary for saponification. Occasionally when working with small amounts of soap and always when working with quantities of 500 to 800 pounds or more it is necessary to increase the water content by about 20% as saponification approaches completion. Completeness of saponification may be told by dissolving a small amount of the soap concentrate in distilled water; if saponification is complete a clear solution results.

One should check the alkalinity or acidity by dissolving a weighed sample of the soap concentrate in alcohol and proceed as usual to adjust the product to any degree of alkalinity, or neutrality if that is desired. All additions of either alkali or oil must be made while in the concentrated form.

If one desires he may make a solution of the alkali and assay it previous to mixing with the oil.—I have found that potassium hydroxide, U. S. P. grade, when properly protected from moisture, may be added in the quantity prescribed and a

soap with only a slight alkalinity results. Benzoic Acid may be added to a liquid soap to reduce alkalinity when it is desired to make a neutral or acid-liquid soap.

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### POTENT MEDICAMENTS IN SUGAR-COATED PILLS AND IN CONFECTIONS.\*

BY JOHN F. SUCHY.<sup>1</sup>

The subject of pill-coating and candied medicaments has received much consideration in recent years. The coated commercial pill or tablet has become a masterpiece of attractiveness and palatability. Disagreeable substances have been skilfully blended into confection form until their gustatory incompatibilities have completely faded away. Repellance has given place to attractiveness and one can now look forward to the swallowing of his tonic or cathartic dose, of strychnine, of Nux Vomica or of Atropine with pleasant anticipation. Nature's warnings of physiological potency—extreme bitterness or nausea—have become masked. Disagreeables have become agreeables—a creditable achievement of modern pharmacy.

As is true with so many good things, undesirable factors so frequently manifest themselves, calling for modification or restriction. The barbiturates once hailed as hypnotics par excellence have been found to have a destructive action on the white blood cells. Emetine though found distinctly amœbicidal, cannot be practically used in tooth-pastes in sufficient quantities to effect pyorrhœal cures. So it has also proved true of our sugar coatings and confections. Frequent newspaper head-lines call attention to poisonings of children due to accidental ingestion of pills or other medicaments containing highly potent substances. More intimate experiences of members of this group will undoubtedly recall instances when these individuals themselves, their children or child-friends have eaten such pills or licked off their alluring coatings. The interest of the author in this study began only last fall and even since then articles regarding two pertinent incidents have appeared in the local press of Western Montana, an area occupied by less than 250,000 inhabitants. The first—a case in Orchard Homes, a community adjacent to the city of Missoula, wherein a 2½ year-old girl swallowed eighteen aspirin gum tablets with the result that her subsequent condition was for some time considered as critical. The second incident occurred only about two months ago in Great Falls where two youngsters showed symptoms of poisoning, presumably due to the eating of pills containing belladonna—one of these cases resulted in a fatality.

About two years ago a rather pitiful case was reported from Butte where an uncle from one of the eastern states had just arrived for a visit with his Montana relatives and accidentally or perhaps thoughtlessly left a package of Hinkle's Pills on the dresser of his room. Somewhat later during his absence his little niece spied the alluring pellets, tasted them, found them good and ate several with the sad sequel that shortly afterwards she died in convulsions.

In a fine address (1) delivered in 1930 and later published in the *Journal of the American Medical Association*, President Aikman of the Pediatrics Society of

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\* Section on Practical Pharmacy and Dispensing, A. Ph. A., Portland meeting, 1935.

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