

The only sufficiently tasteless salicylate I have been able to find is salophen, which is easily made pleasant by the mere addition of sugar.

Of soluble substances very few are suitable to candy medication. Sodium bicarbonate one-half grain to four and one-half grains of sugar with rather strong peppermint flavoring makes a fairly palatable tablet. Hexamethylenamine, which has a sweetish taste, can be made into a very pleasant chocolate tablet by using the following formula:

HEXAMETHYLENAMINE, $\frac{1}{4}$ GRAIN.

Hexamethylenamine	25 grains
Cacao powder	75 grains
Powdered sugar	400 grains
Tincture of vanilla.....	15 minims

Make into 100 five-grain tablets.

For the salines, I have not been able to devise a candy form. Have therefore selected sabromin and sajodin, which are the most tasteless representatives of bromides and of iodides, respectively, that I know of. These are easily put up in the form of palatable tablets, especially by the use of cacao.

One objection that can be urged against candy medication is that children might poison themselves by eating too many of them at one time. This is indeed a serious objection, which can, however, easily be overcome by not prescribing more tablets than could be taken at one time without danger.

In the candy tablet, Dr. Robert M. Fuller's invention has reached its highest utility. Perhaps some day candy tablets may be official in the Pharmacopœia. If all druggists were equipped to prepare them extemporaneously, so that doctors could modify the dose and combination to meet the needs of the case, they would obtain their highest opportunity for doing good, and would fill a long felt want.

THE PHARMACY OF THE OXYCHOLESTERIN OINTMENT BASES.*

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The history of the discovery of what is termed a mixture of iso and oxycholesterins or waxy alcohols is one of manifest interest and the details of which were ably presented by Dr. Unna before this branch at the meeting last June.

In so far as the chemistry applies to these compounds, little appears in the literature, but their peculiar properties in relation to the therapeutics of ointments will no doubt furnish an incentive for wider knowledge.

From the pharmaceutical point of view we are particularly interested, and the little that is known concerning them is of great value, and the possibility and even probability of these compounds finding a wide field of usefulness, makes it necessary that the pharmacist to some extent become acquainted with their pharmaceutical applications for which they may be desired.

The first question that presents itself is what are the iso and oxycholesterins,

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which impart such an all important property on account of which they find special usefulness? The nearest we can get to the answer for this is that they are said to be waxy alcohols, to which has been assigned the name, "so-called oxycholesterin group," unsaturated alcohols of an homologous series, perhaps included in the group starting with the formula $C_{10}H_{20}O$ and ending with the formula $O_{28}H_{44}O$.

This question to pharmacy then must remain for more specific determination, but sufficient for our present demands is the information that they are obtained through processes of alcoholic saponifications and fractional distillations from the washings of wool fat, they are, however, not supplied as such, but are mixed with certain proportions of neutral ointment bases, to which they impart the desired therapeutical properties.

References to greater or less extent will be made to the statements in the article on this subject by Dr. Unna, and first we note that he states that the base supplied consists of 5 percent. of free alcohols of the iso and oxycholesterin group, together with 95 percent. of petrolatum; this produces what is known as anhydrous eucerin, and this, with addition of a certain amount of water, yields "Eucerinum cum aqua" or, as commercially known, "Eucerin."

These then are assumed to be the preparations supplied and both of which so labeled were obtained.

The Eucerin anhydrous is an unctious pale yellow mass of petrolatum-like consistency; the Eucerin, an unctious mass of cream color appearance and softer consistence; Eucerin anhydrous is transparent in thin layers, amorphous, and possessing a very faint odor, peculiar to hydrocarbons, tasteless, neutral in reaction; these properties are merely noted for the substance at present obtained but are no criterion for what may hereafter be supplied, and which properties must depend upon the choice of base which is used for admixture, the object for enumerating these properties is to show that considered from formulas as given by Dr. Unna this is not the same, as further facts will prove.

Accepting the formula as given, it occurred that possibly a separation may be effected and with this idea in view a number of methods were tried which finally resolved itself in the process of treating the mass with sufficient ether to effect solution and which by addition of ethyl alcohol caused a separation of a white paraffin like body; this was removed by filtration and the filtrate subjected to fractional distillation, first obtaining the ether, and then the alcohol, with an oily residuum remaining and which constituted 27 percent. of the original anhydrous eucerin.

Drying the paraffin-like mass retained on the filter, this was found to represent 71.6 percent., making a total of 98.6 percent. of the original, with a loss of 1.4 percent., which was later obtained from ether by evaporation, the alcoholic distillate retaining nothing.

The paraffin-like body obtained, together with the oily residue, developed the fact that petrolatum as such was not the base, although they were found to be hydrocarbons and that the oxycholesterin group was wholly retained in solution by the oil.

From tests applied, namely, the only one so far as ascertained producing any

distinctive reaction, concentrated sulphuric acid, no cholesterin remained in the paraffin mass, further attempts to further separate this group from the oil proved unsuccessful, due to limited time.

Now, comparing the statement by Dr. Unna that this anhydrous base will carry an amount of water up to 500 percent., with the statement on label for same, we find there, that this capacity is only 150 percent., while the base, supposedly already containing water, will carry 200 percent. To reconcile these differences as to exact meaning would serve no purpose other than satisfying an opinion, sufficient, that the product supplied is somewhat different from the one spoken of in Dr. Unna's address, but this does not materially affect its properties as I will later demonstrate.

As to tests for identity of these cholesterins, the one devised by Lifschuetz, the acetic sulphuric acid test with the spectrum, no doubt affords a distinctive reaction, but one which is as characteristic is concentrated sulphuric acid alone, by contact, which produces a clear, reddish brown ring, in distinction to the acetic-sulphuric acid, which produces a light brown to brown coloration.

Admixture with concentrated nitric acid produces no reaction in the cold, but on heating, the acid is practically decomposed with evolution of nitrogen tetroxide and a light brown color is imparted to the liquid.

It is indifferent to concentrated hydrochloric and acetic acids, as likewise to strong solutions of the hydroxides of sodium, potassium and ammonium.

Its solution in ether, benzine, chloroform and carbon tetrachloride is opalescent and on standing the solution in ether and benzine clear from above downward and the solution in chloroform and carbon tetrachloride clears from below upward.

The oily portion separated, and which contains all of the cholesterins, is non-saponifiable with alcoholic potash.

As to eucerin anhydrous this answers well for all purposes and will carry water up to four times its own weight; this is effected by gradual addition and thorough incorporation, and in this respect justifies its ability and contradicts the label, while the eucerin will carry an amount of water proportionate to this and dependent on amount already added.

That for pharmaceutical purposes it will assume a place occupied by no other base heretofore known may well be considered probable from its physical properties of carrying enormous quantities of water aside from its stability, neutrality, and its indifference to most medicaments used in ointments.

Mixtures prepared with this base with varying proportions of water up to 400 percent., and subjected to ranges in temperature from 50° to 100° F., and kept for days under these conditions have remained permanent.

The basis of the working formula adopted was one carrying two parts of 200 percent. of water, with which experimental ointments containing boric acid 10 percent., zinc oxide 20 percent., yellow mercuric oxide 10 percent., phenol 3 percent., sodium hyposulphite 10 percent., silver nitrate 5 percent., and potassium iodide 10 percent., were made, all of which yield ointments representing the specific therapeutic agent that answers the demand for all that is desired.

This formula also was employed for cold cream, to which any desired odor may be imparted.

Particular reference is made to the statement for its capacity for metallic mercury and the simplicity and rapidity with which this can be effected.

In so far as the quantity of mercury is concerned, the statement holds true, but as to simplicity and rapidity, there must be a great latitude in the meaning of the words as used by Dr. Unna. The exact time was not noted, but during three days, as time permitted and elbow grease held out, it was rub, rub, rub.

In respects to Balsam Peru, this is a failure and no appreciable amount of water can be incorporated, separation takes place and an unsightly ointment results.

Similarly with ichthyol, it is inadvisable to use more than half its weight of water.

With solution of ammonium hydroxide, subacetate of lead solution and aluminum acetate solution these will, using part for part by weight, produce pharmaceutically perfect ointments; glycerin in any quantity equal to carrying capacity, to any consistency will produce perfect combination. Alcohol is not as readily carried and difficulty is experienced in incorporating an equal part.

Reverting now again to the cholesterin to which this property is attributed but of which, in isolated state, none is obtainable and have not been separated, it is with interest we look forward to such and ascertain under what precise condition they act.

The oily residuum obtained by distilling the filtrate before mentioned presents a peculiar behavior toward different bodies and through experiment it developed that in admixtures with alcohol, chloroform, carbon tetrachloride and ether, the capacity for carrying water was to a great extent impaired and no permanent emulsification was possible by addition of water.

Assuming from Dr. Unna's statement from experiments carried out that Anhydrous Eucerin will absorb or carry 50 percent. water and attributing this to the 5 percent. of the cholesterin group, it follows that 1 part of this substance imparts a capacity for carrying 80 parts of water, a quantity in itself which is enormous.

But a most peculiar condition developed by trying numerous bodies in conjunction with this. By itself, as above stated, it will carry 80 parts of water, but alcohol, chloroform, carbon tetrachloride and ether impair this property, while on the other hand the addition of benzin produced a most peculiar phenomenon. By using 5 drops of this oily residuum, which being 27 percent. of the whole, this itself will represent 18.5 percent. of the oxycholesterin and 18.5 percent. of 5 drops will equal approximately .9 of a grain, adding to this a small quantity of benzin 30 minutes, developed the fact that it will carry by gradual additions, water up to 900 parts; in other words, the intensity imparted by benzin increases its capacity for water $11\frac{1}{4}$ times the original capacity.

Applying this idea to the base as furnished it holds equal to this condition, and by addition of an amount of benzin equal to amount of base taken, an ointment is produced which can and does hold 9 times or 900 percent. of water compared to the original amount ascertained.

Following this out to experimental conclusion other hydrocarbons were tried

as mineral oil and liquid petrolatum and these likewise increased the physical properties for its carrying capacity for water.

Benzol and xylol of the aromatic group also acted in similar manner, but to lesser intensity.

Trying out experiments with vegetable oils olive and almond, and with lard, produced mixtures which would carry no water whatever and the conclusion is reached that with the employment of the cholesterins for ointment bases, the hydrocarbons *are essential*, for it is to them in combination that this property is imparted.

SUGGESTIONS FOR THE EXTENSION OF THE PROPAGANDA.*

JAMES BAILLIE, ST. PAUL, MINN.

The subject upon which I have been asked to speak appears upon the program of this meeting as "A System for the Extension of the Propaganda."

To formulate such a system would, I am afraid, entail months of careful thought and practical experiment, and to attempt to do so in the short space of time allotted to me would be folly. The best that I can therefore do is to offer a few suggestions upon which such a system might be founded. The main idea of this propaganda, as I understand it, is to eliminate as far as possible the exploitation among physicians of the products of the specialty houses and introduce in their stead the preparations of the U. S. P. and N. F.

To do this would mean the strenuous cooperation of all the retail drug trade, and the basis of all true cooperation is well directed individual effort, each unit working like a well-oiled piece of machinery for the benefit of the whole.

Each individual must find his place in the plan and do his utmost to extend the knowledge of the U. S. P. and N. F. preparations among the prescribing fraternity and to do this means more than mere talk and getting together schemes. It means active, practical, go ahead work. It means that every pharmacist must give more time and study to improving his own knowledge of the standard preparations, so that he can speak of them as of something he is really intimate with.

In the beginning the pharmacist has himself alone to blame for the present condition of affairs. He has let this, the most important part of his calling, slip from him by his own indifference and lack of true professional knowledge, ability, and pride in his own handiwork.

The physician *cannot* be held responsible. The specialty houses have only filled a place which the pharmacist ought never to have left vacant, and in the great majority of cases the physician has been forced to supply his own and his patients' needs where he best could, largely, I am afraid, to his own, and to the detriment of the drug trade, not to speak of the patient who has to foot the bill and is in the end the greatest sufferer.

*Read at the November 21st meeting of the Northwestern Branch at Minneapolis, Minn.