

COMMENTS AND SUGGESTIONS ON THE USE OF GLYCERIN IN
OFFICIAL PREPARATIONS.*

BY BERTHA MUELLER.¹

Within recent months considerable has been said and written on the conservation of alcohol, sugar and glycerin and, indeed, the subject is a timely one. While it is quite gratifying that the Government does not for the present consider it essential that the pharmacists of the country should be called upon to help in the conservation of these commodities, the time will no doubt come when we shall have to do our bit along these lines. Therefore, it will not be amiss to have worked ahead and tried out some formulas and suggestions given from time to time in the drug journals.

It is well known to every pharmacist that the use of these articles is very essential in the manufacture of pharmaceutical preparations, yet the amount required in a good many instances could be materially lessened. Especially is this true of glycerin where it is merely used as a sweetening agent, and there are a number of such instances among the official formulas.

Glycerin, then, being the chemical that can in many instances be more readily dispensed with than either alcohol or sugar, and at the same time the chemical the Government is in direct need of most, it occurred to the writer that a trying out of some of the official formulas with a view to reducing or, where permissible, omitting the glycerin entirely, might prove of interest. The following are a few preparations that have been tried out with that object in mind:

ELIXIR CALCIUM AND SODIUM GLYCEROPHOSPHATES N. F.

There appears to be really no good reason why the glycerophosphates should be mixed with so much aromatic elixir and glycerin as is the case in this elixir, for they do not taste badly and dissolve most readily and keep well in water having about one percent of lactic acid or a half percent of citric acid added to it. In our experience we found phosphoric acid unsatisfactory. Any aromatic water should serve to make a splendid vehicle for them. If, however, an elixir is preferred, the official formula modified as follows makes a very nice elixir, and one that keeps well:

Sol. Sodium Glycerophosphate.....	25.00
Calcium Glycerophosphate.....	8.75
Lactic Acid.....	10.00
Aromatic Elixir.....	500.00
Distilled Water to make.....	1000.00

GLYCERINATED ELIXIR OF GENTIAN N. F.

With an official Compound Tincture of Gentian and an Infusion of Gentian, both of which are splendid preparations in every way, there seems to be little excuse for an elixir of that drug. And it is particularly unfortunate that the glycerinated elixir should be so popular, for it is very costly on account of the high percent of glycerin in it, which does not seem to serve any real purpose.

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Furthermore, the gentian content is so small that it can not possibly be of much value as a bitter tonic. However, if it is considered wise to have an elixir of gentian the nature of which approaches that of the widely advertised proprietary, a very elegant and rather pleasant tasting elixir can be prepared without the glycerin according to the following formula:

Fluidextract of Gentian.....	10.00
Fluidextract of Taraxacum.....	15.00
Acetic Ether.....	0.50
Phosphoric Acid.....	5.00
Compound Tincture of Cardamom.....	60.00
Tincture of Sweet Orange Peel.....	15.00
Sugar.....	400.00
Sherry Wine to make.....	1000.00

COMPOUND ELIXIR OF PEPSIN AND RENNIN N. F.

The following is a very satisfactory formula for this elixir:

Pepsin.....	22.50
Rennin.....	16.50
Lactic Acid.....	2.00
Tincture of Sweet Orange Peel.....	15.00
Syrup.....	150.00
Alcohol.....	200.00
Oil of Myristica.....	0.10
Distilled Water to make.....	1000.00

ELIXIR OF TERPIN HYDRATE N. F.

Terpin Hydrate.....	17.50
Alcohol.....	425.00
Syrup.....	400.00
Glycerin.....	100.00
Tincture of Sweet Orange Peel.....	20.00
Distilled Water to make.....	1000.00

NOTE: In connection with this preparation it is worth while recording that in one experiment diluted glucose was substituted for the syrup; although at first it made a clear preparation, after some days a dirty precipitate made its appearance. Right here I should like to say that solutions of glucose do not keep well; for that reason it will be good policy to be very cautious about substituting it for the official syrup.

GLYCERITE OF TANNIC ACID U. S. P.

The formula adopted by the B. P. Codex as a substitute for the official glycerite of tannic acid makes a very unsightly preparation. And it would seem that this preparation is not used in large enough quantities to justify the use of a substitute, as it is only used for local application and usually in small amounts. In this preparation glycerin serves a definite purpose; therefore, it can not well be replaced by a substitute without causing a depreciation of its activity; hence it would be better to leave this formula stand as it is.

GLYCERITE OF BISMUTH N. F.

Since the value of the bismuth salts lies in their insolubility, there seems to be no object in having bismuth preparations containing soluble salts of this chem-

ical; hence the glycerite of bismuth as well as the several official preparations into which it enters are unnecessary preparations and could well be dispensed with.

ALKALINE ANTISEPTIC SOLUTION N. F.

A permanent, very elegant, agreeable tasting Alkaline Antiseptic Solution can be prepared according to the official formula, with only one-third of the amount of glycerin called for in that formula. The solutions of Carmine and Cochineal N. F.¹ could both be dispensed with, as they serve no further purpose than to act as coloring agents. If a coloring agent is desired, the Compound Tincture of Persionis modified according to the following formula makes a very nice coloring agent for either acid or alkaline solutions:

Powdered Cudbear.....	100.00
Caramel.....	100.00
Alcohol, one part	} q. s..... 1000.00
Distilled Water, two parts	

Moisten the cudbear with a part of the menstruum in which the caramel has previously been dissolved; allow to macerate for 48 hours, then extract by the usual methods of percolation. This makes a tincture that keeps well and gives a pretty red color to solutions.

SOLUTION OF FERRIC SALICYLATE N. F.

A very elegant looking solution of Ferric Salicylate, that keeps as well as one that contains glycerin, can be made according to the following formula:

Citric Acid.....	8.50
Methyl Salicylate.....	6.50
Sodium Salicylate.....	125.00
Tincture of Ferric Citrochlor.....	125.00
Aromatic Elixir.....	150.00
Distilled Water to make.....	1000.00

SOLUTION OF PANCREATIN N. F.

A very satisfactory solution of pancreatin can be prepared according to the official formula by substituting one decigram of saccharin for the glycerin in one thousand mils of the preparation.

AROMATIC SOLUTION OF PEPSIN N. F.

This solution of pepsin can be prepared and stands up well, according to the following formula:

Pepsin.....	17.50
Oil of Cinnamon.....	0.25
Oil of Cloves.....	0.50
Oil of Pimenta.....	0.25
Alcohol.....	35.00
Hydrochloric Acid.....	10.00
Glycerin.....	100.00
Talcum.....	15.00
Distilled Water to make.....	1000.00

We can not help but feel that with an official elixir of pepsin and rennin compound, and an aromatic solution of pepsin, there is no real need for the glycerite

¹ Uniformity in color of preparations is important.—Editor.

of pepsin and the solution of pepsin into which it enters in conjunction with another lot of glycerin.

SYRUP OF CALCIUM LACTOPHOSPHATE U. S. P.

The following formula produces a preparation that is stable and looks well:

Precipitated Calcium Carbonate.....	25.00
Lactic Acid.....	60.00
Phosphoric Acid.....	40.00
Stronger Orange Flower Water.....	50.00
Sugar.....	650.00
Distilled Water to make.....	1000.00

Glycerin is not necessary in Syrup of Hypophosphites and in Compound Syrup of Hypophosphites. The U. S. P. VIII formulas for these syrups yield just as nice and just as stable preparations as the formulas calling for glycerin. And the Compound Solution of Hypophosphites is nothing more than an unnecessary duplicate of the syrup and could well be dispensed with.

Aromatic Fluidextract of Cascara can be made according to the official formula without the glycerin. It stands up just as well as the preparation containing the glycerin, and is plenty sweet enough.

The compound tinctures of cardamom, gentian, and cinchona can all be prepared and stand up well without the use of glycerin in them. So far as taste is concerned, glycerin makes no material difference in any of them. In our experience the use of glycerin in compound tincture of cardamom as an agent to prevent the formation of gelatinous clots and sediment has not proven successful. Likewise it is uncalled for, since the preparation can be made without that annoyance occurring. As pointed out in a paper written by Mr. J. K. Thum some years ago, these undesirable features can be prevented by substituting spirit of cinnamon for the cinnamon bark.

The following is a very satisfactory formula for the making of the compound tincture of cardamom:

Cardamom.....	25.00
Caraway.....	12.00
Cochineal.....	5.00
Spirit of Cinnamon.....	3.00
Diluted Alcohol to make.....	1000.0

It has been our experience that the sediment formed in the compound tinctures of gentian and cinchona is the result of faulty technic followed in their manufacture. In preparing a percolator for the extraction of the drugs from which these tinctures are made, it is well to pack the cotton tightly into the neck of the percolator, then the previously mixed and macerated drugs should be placed into the percolator without packing, then the menstruum added and percolation allowed to proceed according to U. S. P. directions (the U. S. P. menstruum minus glycerin being used). These tinctures prepared according to this method throw down very little inert matter on standing.

