TABLE III.

Sample No.	Assay.	Sample No.	Assay.
1	52.09%	4	50.7 %
	52.18%		50.8 %
2	49.2 %	5	50.1 %
	49.5 %		50.04%
3	49.4 %	6	50.1 %
	49.1 %		49.84%

All of these ointments except the first fall within the U. S. P. purity rubric limits and, therefore, meet the U. S. P. requirements for this ointment.

The dilute ointment of mercury can easily be made by mixing a sufficient amount of the stronger ointment with sufficient base to produce the required percentage of mercury. The larger the amount of ointment that is prepared at any one time, the less the danger of error. It is, therefore, recommended that the stronger ointment be prepared and the dilute ointment made from it when needed.

The advantages of this method of preparing mercury ointment are:

(1) The ointment can be prepared in less time. (Requires about one hour.)

(2) It is easier to prepare. The old trituration procedure was not only time-consuming but also very tiresome.

(3) The free mercury is in a much finer divided condition and therefore ought to be of greater therapeutic value.

The disadvantage of the method is in the danger of loss of mercury in washing. However, in the hands of a careful worker, this disadvantage is reduced to a minimum, as shown by the work of LeBlanc, Prout and others. This formula and procedure are recommended for the favorable consideration of the Sub-Committee on Ointments of the U. S. P. Revision Committee.

AN OINTMENT BASE FOR OFFICIAL OINTMENTS.*

BY C. O. LEE AND H. G. DEKAY.

The criticisms of the official ointments are in a large measure traceable to their bases. The usual story about them is that they become rancid or grainy or both, or are too stiff or too soft. It is too much to expect any class of preparations to be without fault, but constant effort to improve them is the pharmacist's responsibility.

In his "Summary of Comments," Seltzer,[1] among other things, reported on thirteen ointments of the Pharmacopœia. Ten of the thirteen comments are definite proposals for changes in the present bases. To us the suggested changes are well founded.

An ideal ointment base is, of course, a pharmaceutical dream that has never come true and perhaps never will. We should, however, continue to dream and to strive for galenical ideals. If the present Committee of Revision takes cognizance of the suggestions that are now being made with reference to ointments, the forthcoming Pharmacopœia will have an improved list of preparations from the pharmaceutical point of view. Formulas that have remained unchanged through a

* Section on Practical Pharmacy and Dispensing, A. PH. A., Toronto meeting, 1932.

[1] U. S. P. XI Bulletins, Sub-Committee 13, Bull. 14, page 19 (1931).

number of revisions of the Pharmacopœia have a fair chance of being revamped. We are all hopeful of many improvements in our official ointments.

A brief review of some of the criticisms that have been offered will help us to see ointment problems more clearly. The reader is referred to the various U. S. P. XI Circulars and Bulletins of Sub-Committee 13 for the following proposed changes: Concerning Unguentum, it is proposed to replace lard by white petrolatum or hydrogenated oil, or at least introduce the petrolatum base as an alternative. It has been suggested that the almond oil in *Unguentum Aquæ Rosæ* be replaced with hydrogenated oil or liquid petrolatum. The use of 30 per cent of wool fat in *Unguentum Belladonnæ* is questioned. It is recommended that the wool fat in *Unguentum Chrysarobini* be replaced by petrolatum. The stickiness of *Unguentum Hydrargyri Ammoniati* is too well known and objectionable. To correct this, it is suggested that wool fat be omitted from the formula. Wool fat is used in *Unguentum Hydrargyri Oxidi Flavi* and *Unguentum Iodi* presumably to aid absorption. Since neither preparation is intended to be absorbed, the omission of wool fat in these formulas is advised. Unguentum Sulphuris has been a pharmaceutical abomination altogether too long. Lard in this formula should certainly be omitted and petrolatum will likely replace it. As for *Unguentum Zinci Oxidi*, we have heard no defense of the present formula and an improvement in this ointment both as to base and to technique of manufacture is imperative. Much more could be cited concerning the need and the urge for improvements in the official ointments, but this will suffice for the present.

We, at Purdue, became interested in ointment bases through our efforts to meet the request of our athletic department for a softer ointment of Zinc Oxide, which, it was claimed, was so harsh when cold that the athletes objected to using it. Our work with this preparation was reported in a paper at Miami last year.[1] The base which we reported was composed of anhydrous lanolin 5%, paraffin 5% and white petrolatum 90%. These were carefully fused upon a water-bath. It was also suggested that the paraffin could be replaced by white wax or cetaceum. We felt then, as we feel now, that a simple compound base of this kind has many favorable qualities. "It is simple in composition and very easy to make. Its consistency and keeping qualities are good. In fact, there is no reason why it should not prove to be a good stock base for a number of ointments."

During the past year this base has been used many times in making the official ointments as a matter of study and comparison. With the exception of Ointments of Rose Water and Pine Tar, it works very well. For these, additional amounts of wax are needed. Advanced undergraduate and graduate students have been asked to make various ointments using both the official bases and the one we have proposed. The praise almost invariably has been in favor of the new base.

In the zinc oxide ointment formula that we proposed last year, 12 Gm. of glycerin per 100 Gm. of ointment were used to levigate the zinc oxide previous to incorporating it in the base. Objections were made to the use of glycerin, and castor oil was suggested in its place. We mention this, here, because, if the zinc oxide is levigated with a portion of the melted proposed new base, as the official

[1] Jour. A. Ph. A., 20 (1931), 779.

directions state, the finished product will be a little too stiff and much more work will be needed to get a smooth ointment.

In a communication to Chairman Seltzer of Sub-Committee 13, we suggested that the new ointment base which we have been discussing would make a good Simple Ointment. Bibbins[1] and Lascoff independently submitted a formula for Simple Ointment, each containing the same ingredients but in different proportions. For purposes of comparison, these three formulas are shown in Table I below.

TABLE I.

Ingredients.	Lascoff Formula, Grams.	Bibbins Formula, Grams.	Purdue Formula, Grams.
White wax	90	60	50
Anhydrous wool fat	120	90	50
White petrolatum	390	450	900

These formulas differ in consistency of the finished product. As to this quality, who is to decide? It is our feeling, however, that Simple Ointment is designed to be used as a diluent in ointment mixtures or as a base for certain simple prescriptions as the occasion arises. In either case, it should not be too stiff, which, we believe, is the case with the present Simple Ointment.

We wish to conclude by saying that we have no argument for the use of a mixed base, largely composed of petrolatum, where animal fats or vegetable oils are therapeutically indicated. In all other instances, we believe that a simple compound base, in the nature of those given in Table I, is a great improvement over any that are now official. It is certainly much better than petrolatum alone. A base such as has been proposed does not solve all of our ointment ills, but it alleviates a number of them.

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DISPERSED PHASE FLAVORS IN EMULSIONS.*

BY W. PAUL BRIGGS.[1]

The purpose of this report is to describe a slight modification of the technic commonly employed in flavoring emulsions to improve their palatability. No new flavors will be suggested since this paper deals with the methods of employing flavors and not with the quality or advantages of any particular flavor.

The first mention of Emulsions occurs in the Edinburgh Pharmacopœia of 1839. In 1870 a formula was published for a preparation very similar to Emulsion of Cod Liver Oil called Cod Liver Cream. Emulsions as a class were not admitted to the United States Pharmacopœia until the seventh revision when the Emulsions of Ammoniac, Almond, Asafetida and Chloroform were recognized. However, for several revisions previous to 1890 Emulsions of Ammoniac and Al-

[1] U. S. P. XI Bulletins, Sub-Committee 13, Bull. 31, page 70 (1932).

* Section on Practical Pharmacy and Dispensing, A. PH. A., Toronto meeting, 1932.

[1] Associate Professor of Pharmacy and Dean of The School of Pharmacy of The George Washington University.