

## Section on Practical Pharmacy and Dispensing

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### IMPROVED METHOD OF PREPARING CAMPHOR LINIMENT.

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This subject might be called an "old chestnut," having been iterated and reiterated before numerous pharmaceutical meetings. Nevertheless, it is very important, and inasmuch as the proposed process is very simple and does not seem to be generally followed, therefore the writer asks for your attention during a few minutes.

We are all familiar with the present U. S. P. formula and process for "*Lini-mentum Camphorae*," namely, "Introduce 200 gm. of Camphor, in coarse powder, and 800 gm. of Cottonseed Oil into a suitable flask, and apply a gentle heat, by means of a water bath, loosely stoppering the flask during the operation. Agitate the flask occasionally until the camphor is dissolved."

This, of course, should produce a Camphorated Oil containing 20 percent of camphor, and it undoubtedly will, provided the *modus operandi* is carried out carefully. Unfortunately, however, not all druggists are as careful as they should be, and cases have even come to the attention of the writer when oil and camphor were heated in an open dish or were put in a tin can on a hot stove.

Camphor Liniment has been the cause of more prosecutions by health boards and pharmacy boards than any other galenical. Shrewd lawyers have made the defense that in the official process, i. e., the heat of a water bath some of the camphor is bound to evaporate. And strange to say, judges have sustained this plea, even in cases when the preparation in question only contained 12 instead of 20 percent of camphor.

One of the quickest and simplest processes is circulatory displacement, by which the camphor is dissolved in a few hours, f. i., by setting aside over night. No doubt this process is used extensively by pharmacists all over the United States, including the writer, who has always advocated this simple method, which requires no further attention and above all, which requires no heat.

In the present revision of the U. S. P., Prof. Chas. F. Nixon, of Leominster, Mass., has recommended the process of percolation as follows: "Reduce the camphor to a coarse powder, and put it in a narrow glass percolator in which a layer of absorbent cotton has been placed. Pour on the oil till the camphor is covered and when the percolate begins to drop close the lower orifice and allow to stand for 12 hours. Then percolate slowly till the required quantity is obtained."

Prof. Nixon justly claims that this simple process can be carried out in every

pharmacy having a percolator, and the writer wants to add that in order to deserve the name of a pharmacy, not only one but several percolators should be there and should be used. It is evident that in this cold process there can be no loss of camphor by evaporation, as the same is dissolved before the required quantity of oil has passed.

From numerous experiments I can fully recommend the percolation process and the object of this paper is to make this process better known. I want to add further that the cotton in the percolator will also act as a filtering medium and that the resulting preparation will be perfectly clear. As oil attacks rubber, the use of the rubber tube as advised in the official percolation process is impracticable. I find that an ordinary sprinkler stopper with which the flow can be regulated, works satisfactorily. The finer the camphor is the more quickly will it dissolve, but even when coarsely cut it will be dissolved before all the oil is used up.

Upon inquiry, I find that this very simple method of preparing camphor liniment, does not seem to be known much by the pharmacist, very likely on account of its simplicity.

I might also suggest a modification of this process, namely, a combination of percolation and circulatory displacement by inserting a metal sieve, *f. i.*, a coffee or tea strainer, into the percolator several inches above the plug of cotton. By the use of this method it is not necessary to reduce the camphor to a coarse powder, as small pieces will dissolve by circulatory displacement, and the finished product can be drawn off through the stopper after having been filtered by passing through the cotton.

Last, but not least, I much prefer oil of sesamum to cottonseed oil, it being less sticky and gummy and being better absorbed. On the advantages of oil of sesamum over cottonseed oil I have written a number of papers and trust that the former will replace the latter in some of the U. S. P. preparations.

I advise pharmacists to give the percolation process or the "combined" process a trial and be convinced of its simplicity, and furthermore, of its effectiveness in obtaining a full strength camphor liniment, and thus run no risk of being prosecuted by the authorities.

#### DISCUSSION.

Mr. Jones, discussing this paper, said that he was accustomed to use the circulatory process, but used a glass jar that Spearmint gum came in, with a glass cover. He spread over the top of the jar a piece of gauze, placing on the gauze his powdered camphor and placing over that gauze the glass cover to fasten it. In the winter-time, when he was running a radiator, he placed it on the radiator. He found this a very simple and satisfactory process.

Mr. S. K. Sass, of Chicago, said he was in favor of percolation. A percolator was a thing to be found in almost every pharmacy; and where one was not found, it could hardly be called a pharmacy. But it was not every pharmacy that would have such a cover for a Spearmint jar, or some device of that sort. He believed that percolation was better, though he thought the process in the Pharmacopoeia was not bad. He dissolved his camphor in a can, which was loosely corked, and he thought no more camphor was lost in this way than by making it by any other process. In the case mentioned, where there were only 12 drams of camphor to 100 of the liniment, he thought the deficiency must have been intentional.