

Section on Practical Pharmacy and Dispensing

Papers Presented at the Fifty-Ninth Convention

A NEW METHOD OF MAKING TINCTURE OF OPIUM.

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Tincture of opium, which is undoubtedly the most important galenical preparation in the Pharmacopoeia, has been the subject of much study and investigation. Many methods have been devised for its manufacture, the majority of which have involved both the principle of maceration and percolation. The chief feature of this method, however, is that it is based entirely on the principle of maceration. There are three points in which the writer claims it has an advantage over the U. S. P. method:

First. It entirely exhausts the opium.

Second. It avoids the slow process of percolation.

Third. It recovers a part of the menstruum left in the marc.

The process is as follows:

Take 100 grams of U. S. P. granulated opium and add to it 500 c. c. of boiling water; macerate for 48 hours with occasional stirring; add 500 c. c. of alcohol, macerate again for 48 hours with occasional agitation, allow the drug to precipitate; decant the clear supernatant liquid, place the residue on a filter and allow the menstruum to filter until it ceases to drop, then place the filter and contents in a tincture press and express as much as possible; add the filtrate to that portion decanted, measure the whole, noting the difference between that obtained and the 1000 c. c. first used. The marc is then exhausted with hot water by adding about 80 c. c. at a time, allowing it to macerate a few hours, then expressing it. This operation is repeated until the opium is exhausted, which can be ascertained by testing the filtrate with the general alkaloidal reagents. The combined extractions are then evaporated on a water bath until the volume is equal to one-half the difference noted above. This is then mixed with an equal volume of alcohol and added to the measured filtrates. The whole tincture is then filtered, and is ready for use.

If a press is not available, the same results can be obtained in the exhaustion of the drug with the hot water by repeatedly macerating and filtering instead of expressing, except that all of the alcohol left in the marc will be lost by the subsequent evaporation.

About 400 c. c. of hot water has usually been found sufficient to complete the exhaustion. Some samples of opium, however, seem harder than others to

exhaust. The principal objection to this method is the time that is required in evaporation. This is to a large extent under the control of the operator and can be hastened when desired by using a greater number of evaporating dishes or by evaporating in vacuo.

There seems to be no longer any dispute over the question whether water will exhaust opium of its morphine, since the U. S. P. has ruled upon this fact in its directions for making the deodorized tincture opium, also in the extraction of the opium in the assay process.

In 1902, Dr. E. A. Ruddiman published an article in the *Bulletin of Pharmacy*, vol. xvi., p. 368, in which he claimed that the opium was not entirely exhausted by the dilute alcohol used in the 1890 U. S. P. process.

In 1906, H. A. B. Dunning, in a paper read before the A. Ph. A., stated that it had been proved by assay that neither the old nor the new U. S. P. method for making tincture opium exhausts the opium completely. After repeatedly assaying the tincture made by the above method, the writer can state that his results have proved conclusively that this method does completely exhaust the opium of its morphine.

The saving in alcohol by using this method is quite an item in the cost of the tincture, especially where large quantities are made at a time.

In conclusion, the writer will state that this method has been in constant use by one firm for fifteen years with the most favorable results, and it is his firm belief that the practicability of this method will appeal especially to those pharmacists who are not prepared to assay their finished tincture.

NATIONAL FORMULARY AND U. S. P. WORK—WHAT HAVE YOU DONE WITH IT?

WM. A. HALL.

The U. S. P. and National Formulary work—What have you done with it? The thought that was in my mind a year ago when I consented to prepare a paper was a little history of what has been done in Detroit along that line, thinking it might be of help to organizations in other places, and that they might profit by what fruit we had gleaned out of it.

We first considered this work some six years ago. I think 1905 was the inception of it. We started in with the meeting that the Wayne County Medical Association had on the "U. S. Pharmacopoeia" which had just come out, and at that time we read a paper before the physicians and quite a number of the pharmacists of the city that were invited to be present on "What Physicians Are Prescribing." We were met with open arms by the physicians and invited to come again, and the thought was in each one's mind, both pharmacist's and physician's, that the idea was a happy one of a joint meeting. A committee was appointed by our local Pharmacists' Association, the Detroit Retail Druggists' Association, and secured the following year Prof. Schlotterbeck, who presented "Synthetics" for consid-