

Compound Syrup of White Pine.*

By ROBERT S. SHERWIN, Ph.G.

Compound syrup of white pine is a very popular expectorant that is used in many parts of this country.

All large manufacturing pharmacists who do not deal solely in specialties manufacture this syrup. Originally the formulas varied somewhat. One of these older formulas was as follows, for one fluid ounce :

White pine bark.....	20 grains.
Ipecac.....	15 "
Chloroform.....	4 minims.
Morphine acetate.....	½ grains.

The names of the ingredients that I selected to manipulate were taken from the label of a large manufacturing pharmacist. His syrup, from the information I have obtained, has by far the widest sale.

According to the labels on a number of different syrups, the ingredients are practically identical.

I have found that the white pine bark that is used in this preparation should be taken from those parts of the limbs or trunk on which either little or no cork formation has taken place, as those parts contain the most oleoresin.

The bark from the older parts of the tree, and especially that from old trunks, contains practically no oil and very little resin; it is composed almost entirely of cork. This older, corky bark is all that I have been able to obtain from different wholesale druggists. When making this syrup I collected the bark myself. I have found that it is collected more easily in the spring of the year than in the late summer or fall. I have made the syrup from both the fresh and the dried bark, and find the dried to be not only more easily manipulated, but also to afford a better preparation. In preparing the syrup I use the sulphate of morphine. The hydrochlorate may be used, and the acetate is used by some manufacturers; the latter, however, is not so invariable in quality as the sulphate. I use one-half the quantity of chloroform that is stated on the labels of the various manufacturing pharmacists, yet my finished product contains more chloroform than any of the commercial samples that have come into my hands. Therefore, the manufacturers either do not put in as much as they state or it is lost by evaporation before it reaches the retail trade. All of the samples of the syrup on the market which I have examined contain coloring substances. I made my first lot of syrup by exhausting the drugs with a hydro-alcoholic menstruum, and dissolving the morphine sulphate, chloroform and sugar in the medicated percolate. This procedure yielded an unsatisfactory product, yet it was very much like the numerous syrups on the market. In a second attempt I exhausted the drugs with a menstruum composed of 2 parts of glycerin and one part

of water, and dissolved the morphine, chloroform, and sugar in the medicated percolate. This method gave a better product than the first did, but it was not as satisfactory as the preparation yielded by the following plan, which has given the best results so far :

White pine bark.....	of each.....	65.0 grammes.
Wild cherry bark.....	of each.....	8.7 "
Balm of Gilead buds.....	of each.....	6.5 "
Spikenard root.....	of each.....	4.4 "
Sanguinaria root.....	of each.....	0.4 "
Sassafras bark.....	of each.....	4.0 c.c.
Morphine sulphate.....	of each.....	150.0 "
Chloroform.....	of each.....	700.0 grammes.
Glycerin.....	of each.....	
Sugar.....	of each.....	

Water, a sufficient quantity to make 1,000 cubic centimetres

Mix the glycerine with 300 cubic centimetres of water. Having mixed the white pine bark and other vegetable drugs, reduce them to a No. 40 powder. Moisten the powder with a sufficient quantity of the menstruum, and allow it to macerate for twenty-four hours; then pack it firmly in a cylindrical glass percolator, and gradually pour on the remainder of the menstruum. When the liquid has disappeared from the surface, follow it with water, continuing the percolation until 500 cubic centimetres are obtained. Dissolve the morphine sulphate and chloroform, and then the sugar, in the percolate by agitation without heat, strain and pass enough water through the strainer to make the product measure 1,000 cubic centimetres.

Each 30 cubic centimetres of the product represent :

White pine bark.....	2.000 grammes.
Wild cherry bark.....	2.000 "
Balm of Gilead buds.....	0.250 "
Spikenard root.....	0.250 "
Sanguinaria root.....	0.150 "
Sassafras bark.....	0.120 "
Morphine sulphate.....	0.012 "
Chloroform.....	0.120 c.c.

The foregoing process makes a beautiful, bright, and permanent preparation, that may be given in doses of from one to three teaspoonfuls.

This syrup is as easily prepared as syrup of wild cherry. It costs less than \$1 per gallon, while those brands on the market are sold for about \$3.50 per gallon. It can be put up in bottles holding four fluid ounces, and syrup, bottles, corks, and labels need not cost over sixty cents per dozen.

Inasmuch as the compound syrup of white pine is used over such an extensive territory, and its sale in some parts of this territory is so enormous, I am of the opinion that there should be a formula for its preparation in the National Formulary. I believe the compound syrup of white pine is now used much more than a number of preparations which are now recognized in the National Formulary.

NOTE.—Since Mr. Sherwin's thesis was deposited with the faculty of the college, we have received a copy of the new and revised edition of the National Formulary, and find that compound syrup of white

pine is recognized therein under the title of *Syrupus Pini Strobi Compositus*. We print the formula in full, so that comparison with Mr. Sherwin's formula may be easily made :

White pine bark (<i>Pinus Strobus</i>)....	75 gms.
Wild cherry bark.....	75 "
Spikenard root.....	10 "
Balm of Gilead buds.....	10 "
Sanguinaria root.....	8 "
Sassafras bark.....	7 "
Morphine sulphate.....	0.5 "
Chloroform.....	6 c.c.
Sugar.....	750 gms.
Alcohol.....	—
Water.....	—
Syrup (U.S.P.), of each a sufficient quantity to make 1,000 cubic centimetres.	

Reduce the vegetable drugs to a moderately coarse (No. 40) powder, moisten the powder with a menstruum composed of one volume of alcohol and three volumes of water, and macerate for twelve hours. Then percolate with the same menstruum until 500 cubic centimetres of tincture have been obtained, in which dissolve the sugar and the morphine sulphate; lastly, add the chloroform and sufficient syrup to make 1,000 cubic centimetres, and strain.—*American Pharmaceutical Journal*.

Pharmacy in Victoria.

According to the report for 1895 of the Pharmacy Board of Victoria, Australasia, the number of would-be pharmacists in that colony is greater than ever, 148 students having entered for the preliminary examination, and 71 passed during the year, as against 126, of whom 60 passed, in 1894, the highest number previously on record. For the certificate of the Melbourne College of Pharmacy, 48 students presented themselves for examination in chemistry and practical chemistry, (30 passed), and the same number in materia medica and botany (26 passed). Having passed the preliminary examination before apprenticeship, served for not less than four years as an apprentice, attended courses of lectures in materia medica, botany, chemistry, and practical chemistry, and passed college examinations in those subjects, 29 candidates presented themselves for the final examination in practical pharmacy, and 16 passed. In 1891 there were 37 entries, and 26 passes. For the modified examination, open to those whose apprenticeship commenced before the passing of the Pharmacy Act, 1876, four candidates presented themselves, and all failed. The additions to the register of pharmaceutical chemists during 1895 were 20 only, the smallest number for any year on record, but the number of apprentices registered was fifty-one, the highest on record. There are now 1,170 pharmaceutical chemists registered under the Act, of whom 137 were registered under certificates from the Pharmaceutical Society of Great Britain, and 523 apprentices.—*Pharmaceutical Journal*.

*Abstracted from a thesis presented to the Philadelphia College of Pharmacy.