

The other special menstruum thus far studied by the writer is one that has been found well adapted to wild cherry bark, *Pareria brava*, and *uva ursi*. This is a mixture of two parts stronger alcohol, three parts glycerin, and five parts water. By measure this is very nearly two measures each of the alcohol and glycerin, and four of water.

Make from alcohol of s. g. .91953 at 15.6° C., and glycerin s. g. 1.2523 at 15.6° C., it has a s. g. at 15.6° C. = 60° F. 1.03833, at 25° C. = 77° F. 1.03283, or nearly .0006 for ea. 1° C.

One pint of this mixture at 10.6° C. = 60° F. weighs 492.03 gram. = 7593 grs. at 30.6° C. = 87° F. " 486.97 " = 7514 " 20° C. = 36° F. 5.06 " = 79 "

It appears very probable that special menstrua for special drugs can and should be very much multiplied. Indeed, it may be regarded as most certain that a proper degree of research would show that every drug requires a special menstruum in order to secure the best results. If there be a rule of any general applicability, it is that for drugs which contain definite alkaloids, the menstruum should be as strongly alcoholic as possible; a rule which is in opposition to former practice.

It remains now to notice the prominent fluid extracts with which the writer has had most experience, in detail.

#### FLUID EXTRACT OF ACONITE ROOT.

Not officinal, but should be, and should always bear a red label. The root should be in very fine powder, and the menstruum stronger alcohol. The officinal quantity of powder requires 5 fluid ounces for moistening, and the moistening powder should be passed through a sieve for packing. A pint of the menstruum at 25° C. = 77° F., weighs about 5907 grains, and a pint of the finished preparation, at the same temperature, should weigh about 6350 grains, giving a difference of about 440 grains, varying somewhat with the quality of the root and the dryness of the powder.

#### FLUID EXTRACT OF BELLADONNA ROOT.

Not officinal, but should be, as stronger and more uniform than that yielded by the leaf. The two are not necessary, and if the leaf was dropped, the root would soon go into general use. The fluid extract should always bear a red label.

The root should be in very fine powder, and the menstruum stronger alcohol.

#### FLUID EXTRACT OF BUCHU, OFFICINAL.

The leaf should be green and fresh, the short buchu the best, and be in very fine powder. Many menstrua tried, with various portions of glycerin and water, but none so good as stronger alcohol. About 8 f 3 required to moisten the powder, which should be passed through a sieve before packing. A pint of the menstruum weighs about 5907 grains, and a pint of the finished preparation about 6677 grains, giving a difference of about 770 grains.

#### FLUID EXTRACT OF CIMICIFUGA, OFFICINAL.

The root being in very fine powder, the officinal plan yields an excellent preparation by repercolation. The process could, however, be much simplified.

#### FLUID EXTRACT OF CINCHONA, OFFICINAL.

The bark should be in very fine powder, the menstruum one part glycerin and three parts alcohol, and 8 f 3 should be used to moisten the powder before sifting. Many menstrua were tried with this drug, but none seemed to answer so well as the mixture indicated. With it a fluid extract was prepared of which a minim represented about one and a half grains, and this has now stood more than four months without a deposit. Therefore, a preparation of one minim to the grain, or double the present officinal strength, would probably stand indefinitely, and this change of strength is, in the writer's judgment, very desirable. The details of this percolation were given in the Tables. In the management of this drug the weak percolates become overloaded with extract from time to time, but the alcohol can easily be recovered from them without much damage, as the glycerin takes care of the alkaloids and bitter principles.

The writer has found no demand for fluid extract of colchicum root, and believes it to be a useless preparation, while that of the seed is so commonly used, and a more uniform preparation.

#### FLUID EXTRACT OF CONIUM SEED, NOT OFFICINAL.

But should be. One hundred pounds of green unripe fruit or seed, yield about thirty-five pounds of dried unripe fruit, which when properly dried retain their green color. The best fluid extract of this very tender and sensitive drug, is made by crushing the fresh unripe seed with a small proportion of stronger alcohol slightly acidulated with hydrochloric acid and pressing out the liquid by a powerful press, and evaporating, without heat, by inclosing it over lime, until three pounds of the fresh unripe fruit is represented by one pint of the preparation.

An excellent preparation may also be made from the dried unripe fruit in fine powder, by repercolation with stronger alcohol slightly acidulated with hydrochloric acid.

#### FLUID EXTRACT OF ERGOT, OFFICINAL.

Ergot cannot be obtained in fine powder without material injury. It should be had in as fine a powder as practicable without drying, and this grinding should be done at the time when it is to be percolated. Skillfully repercolated with diluted alcohol acidulated with one per cent. of acetic acid, the preparation appears unexceptionable. A pint of the menstruum, at 25° C. = 77° F., weighs about 6824 grains, and a pint of the finished preparation weighs about 7224 grains, giving a difference of about 400 grains.

#### FLUID EXTRACT OF IPECACUANHA, OFFICINAL.

This preparation is very much in need of special study and research, the present formula being troublesome and uncertain in regard to the precipitation of the resin, and yielding a preparation not uniform in appearance and properties.

#### FLUID EXTRACT OF PAREIRA BRAVA, NOT OFFICINAL.

But should be. This drug from its density is a refractory substance to percolate. It should be in the finest possible powder and be percolated very slowly with the mixture of alcohol, glycerin, and water.

#### FLUID EXTRACT OF WILD CHERRY BARK, OFFICINAL.

This is, perhaps, the most troublesome of the officinal formulas, and requires more

knowledge and skill than repercolation does. If the menstruum be watery enough, and contain but little alcohol, the reaction between the constituents of the bark for the production of hydrocyanic acid and oil of bitter almonds takes place during the maceration, and thus saves the circuitous route by emulsion of almonds. The mixture of alcohol, glycerin, and water is well adapted to this percolation, and yields a preparation having much more of the sensible properties of the drug than the officinal process. It should also be made double the present officinal strength.

A pint of the menstruum weighs about 7540 grains at mean temperatures, and a pint of the preparation of full strength about 8290 grains, giving a difference of about 750 grains. Or, for the present officinal half-strength, the weight of a pint would be about 7915 grains, with a difference of about 375 grains.

The hydrocyanic acid and oil of bitter almonds of this preparation seem to suffer spontaneous decomposition, as the proportion, always very small, appears to diminish somewhat rapidly. As the physician often needs these sedative constituents, they should be added at the time of prescribing.

#### FLUID EXTRACT OF RHUBARB, OFFICINAL.

The rhubarb should be in very fine powder, and be repercolated with the mixture of one part glycerin and three parts stronger alcohol. Many menstrua were tried with this drug, but none seemed to do so well as that indicated. A pint of the menstruum weighed about 6828 grains, and a pint of the finished preparation about 7328 grains, giving a difference of about 500 grains.

#### FLUID EXTRACT OF SARSAPARILLA, AND COMPOUND FLUID EXTRACT OF SARSAPARILLA, BOTH OFFICINAL.

Should be in fine powder, and be repercolated with diluted alcohol, and glycerin added to the weak residuary percolate in such amount as to constitute one-fourth the weight of the finished preparation. This should then be reduced to the proper extent by distillation, and the glycerin residue be added to the strong percolate.

The mezereon of the compound fluid extract is often complained of, and probably might be omitted without injury.

#### FLUID EXTRACT OF SENNA, OFFICINAL.

This preparation, made by the officinal process, is often complained of for want of purgative strength. In order to try the effect of stronger alcohol as a menstruum for senna, a portion was completely exhausted by the use of 18 pints of the alcohol. The residue was dried, and when taken by the writer in doses of 180 to 200 grains, proved purgative, and produced griping. Other portions were exhausted by weaker alcohol, and the residue tried in the same way, but the purgative power did not disappear entirely until the alcohol was reduced by the addition of half its volume of water. It appears, therefore, that the officinal diluted alcohol, as now used, or that which is a little stronger, as made by mixing equal weights of stronger alcohol and water, are one or the other proper for the repercolation of senna. The diluted alcohol has been tried and does well, but whether the other would be better has not been tried. The addition of glycerin, even in small proportion, overloads the preparation with mucilaginous extractive matter.