DIFFICULT PRESCRIPTIONS.*

"IT CAN BE DONE"—SECOND SERIES.

BY J. LEON LASCOFF, PHAR.D.

In 1930, I presented a paper (with demonstrations) before the Section on Practical Pharmacy and Dispensing of the A. PH. A. The title of my paper was, "It Can Be Done." At that time, I was requested to continue my series and to make another report before this same section. However, being busy with the Revision Committee of the United States Pharmacopœia and the revision of our Recipe Book, I did not find time to continue this work. During the last few years, however, I have collected a number of interesting prescriptions which actually were presented for dispensing at our Pharmacy. On this occasion I am going to offer these to you for discussion.

Frequently (judging from the numerous requests for aid which we have received), the pharmacist will be confronted with prescriptions which present difficulties in compounding. In some cases, he will mix the components in the order in which they are named and place a "shake well" label on the bottle, "to cover a multitude of sins."

I am presenting herewith a number of difficult prescriptions which have come to our Pharmacy. At first glance it seems impossible to compound them properly; however, after a little experimental work, we were usually able to dispense it—"secundum artem." After all, we are pharmacists, and it is our responsibility and duty to properly compound medications. The methods used for this set of prescriptions, may be applied not only to these but to many others—I have found from my experience that it "Can Be Done."

Prescription No. 1.

℞

Ext. Bellad.	0.3
Ext. Opii	0.2
Bism. Subnit.	25.0
Mag. Ust.	10.0
Sod. Bicarb.	35.0
Aq. Menth. Pip. *ad*	180.0

If this prescription is compounded as written, a solid rock-like mass soon forms at the bottom of the bottle, which it is impossible to break up, and the patient cannot take the medicine properly. However, the addition of $^1/_2$ fluidounce of glycerin adds sufficient viscosity to hold the heavy powders in perfect suspension.

Prescription No. 2.

℞

Phenobarbital	grains	vi
Pot. Brom.	drachms	iv
Syr. Aurantii	drachms	vi
Water to make	ounces	iii

* Section on Practical Pharmacy and Dispensing, A. PH. A., Madison meeting, 1933.

If this preparation is compounded as written, the Phenobarbital, which is insoluble, settles to the bottom. If it is compounded, using the soluble Phenobarbital Sodium, we still obtain a cloudy mixture, more uniform than the other, but not quite clear. If, however, the Syrup of Orange is replaced by simple syrup which besides having no alcohol (Syrup of Orange contains among other things, citric acid), has a higher water content, we have a clear solution with no precipitation.

Prescription No. 3.

℞

Pot. Bromide	drachms	iv
Chloretone	grains	xv
Aq. Menth. Pip.	ounces	ii
Syrup to make	ounces	iv

There are three ways of compounding this. *First:* The addition of alcohol to dissolve the Chloretone. *Second:* The addition of Acacia to form a suspension. *Third:* Simply boiling the mixture until a clear solution results.

Prescription No. 4.

℞

Codein. Sulph.	grains	iii
Tereben	drachm	i
Ol. Oliv.	drachm	i
Divide in capsules		xii

Once again we find more than one way to compound this preparation. *First:* The addition of the Terebene and Olive Oil to a dry capsule, large enough to contain the volume, followed in this case by dropping into each capsule a $^1/_4$ grain Codeine Sulphate tablet triturate. *Second:* Dissolve Codeine *Alkaloid* in the Olive Oil by heat; add the terebene and seal the capsules.

Prescription No. 5.

℞

Iodi	0.5
Ol. Oliv.	90.0

We find that the Iodine will not completely dissolve in the Olive Oil, nor will it combine with the fatty acids in the Oil as it will with some (example, Sesame Oil). Therefore, it requires either that we heat the oil to dissolve the Iodine, by which process it will undoubtedly settle out, or that we dissolve the Iodine in a little ether and quickly add the Olive Oil by which means we get a clear solution which remains so.

Prescription No. 6.

R

Creosot. Carb.	drachm	ss
Acetphen.	drachm	ss
Sacch. Lact. *q. s.*		
Mix and make into capsules.		

If the above is compounded as written, the product will always be moist and oily. On the other hand, the addition of sufficient magnesium carbonate in no way

interferes with the therapeutic action of the mixture and at the same time keeps the powder dry and makes a satisfactory product.

Prescription No. 7.

℞

Ichthyol	2.0
Menthol	0.3
Camphor	0.6
Glycerin	10.0
Olive Oil	30.0
Lime Water to make	180.0

If compounded as written, this makes an unsightly mess, as the oily constituents rise to the top and the aqueous remain at the bottom. The proper way to compound this is as follows. Liquefy the Camphor and Menthol by triturating them together; add the Olive Oil; to this add fifteen grains of tragacanth as a suspending agent. The Ichthyol may then be dissolved in the Glycerin and Lime Water and these added to the other components. This gives a homogeneous mixture which will not settle out on standing.

Prescription No. 8.

℞

Camphor	drachms	ii
Oil of Turpentine	ounces	ii
Water	ounces	ii
Oleic Acid sufficient		

In the above prescription the physician evidently has in mind that the Oleic Acid will act as an emulsifying agent for the Oil and Water. Unfortunately, however, this is not the case. If compounded as written, two distinct layers will form with the Oleic Acid strongly favoring the Oil. To properly dispense this requires the procedure: Dissolve the Camphor in the Turpentine; add this to the yolk of one egg in a bottle, gradually, shaking after each addition. When all has been added, add the Water in small portions and a perfect emulsion which remains uniform.

Prescription No. 9.

℞

Yellow Mercurous Iodide	grains	iv
Fowler's Solution	drachms	ii
Water to make	ounces	iv

If this is dispensed as written, there is precipitation of the Mercurous Iodide which is insoluble, and the agonizing uncertainty of dosage. It is replaced by the Mercurous Iodide Red Mercuric Iodide and with the addition of two drachms of Solution of Potassium Iodide (Saturated), a clear solution results in which there is no precipitation, and no uncertainty of dosage for the patient.

Prescription No. 10.

℞

Zinc Stearate	10.0
Zinc Oxide	10.0
Calamine	5.0
Lime Water to make	120.0

The Zinc Stearate will not mix with the Lime Water. This can be overcome by the addition of Glycerin to bring the viscosity of the liquid up to the point where the Zinc Stearate will be held in suspension.

Prescription No. 11.

℞

Zinc Sulph.	grain	i
Sod. Borate	grains	v
Boric Acid	grains	v
Water	ounce	i

Here we have the age-old incompatibility of Zinc Sulphate and Sodium Borate with the formation of Zinc Borate. The Solution of this problem involves the addition of Glycerin to form the soluble Glycero-Borate and a perfectly clear solution results.

Prescription No. 12.

℞

Phenolphthalein	grains	x
Acid Sod. Oleate	grains	xxx
Acid Salicylic	grains	xiv
Menthol	grains	xxx

In the first instance the Menthol, Salicylic Acid and Phenolphthalein were triturated together and when the Acid Sod. Oleate was added a nearly liquid mass resulted, necessitating the addition of enormous amounts of Althea, etc. In the proper manner the Menthol was rubbed up with some milk sugar, and then the other ingredients were added, the Sod. Oleate being added last. Also a small amount of Althea was added thus making a nice plastic mass from which a suitable pill can be made. The pill made by the first method is about three times the size of that made by the second method. This is a distinct disadvantage, as it is always desirable to have a pill as small as possible.

Prescription No. 13.

℞

Liquor Burowi	8.0
Naftalan	8.0
Zinc. Oxid.	20.0
Talc.	20.0
Ol. Oliv.	100.0

Mix the above well and add Lime Water.

In the above, if it be compounded as written, separation will surely take place. We may, if we wish, add magnesium carbonate, but since the Naftalan is in the form of an ointment there would not be enough absorption of the water. Once again, the addition of a small quantity of tragacanth solves the difficulty and gives us the smooth homogeneous product we are looking for.

Prescription No. 14.

℞

Adrenalin	drachm	ss
Sol. Neo Silvol 20%	drachm	i
Menthol Albolene to make	ounce	i

Here we have a separation of oily and aqueous mixtures, which can very readily be overcome by the addition of half a drachm of anhydrous lanolin to make a uniform product.

IODINE IN LIQUID PETROLATUM.

Recently, an interesting problem was brought to my attention—"How can we dissolve inorganic Iodine in Mineral Oil, and in vegetable oil where there is no great absorption by the oil?"

Prescription No. 15.

℞

Iodine	grains	iii
Liq. Petrol. to make	ounce	i

According to F. W. Stedem, a pharmacist of Narberth, Pa., this prescription can be easily put up by triturating the Iodine in a glass mortar, with two-thirds of the oil until as much as possible has been dissolved and then washing the rest into a bottle with the remaining Mineral Oil and holding the container under a stream of hot water for from two to five minutes. However, upon analysis, this product was shown to have only 1.77 grains of Iodine in the finished product.

An Ether Method, which was tried as part of the experimental work, is as follows: Dissolve the Iodine in a little Ether and add the Oil. This, on analysis, shows only 1.66 grains of the Iodine to the fluidounce.

Still another method was the process of triturating the Iodine with the Mineral Oil and allowing the mixture to stand for a time. This, on analysis, has also been found to be low in Iodine, assaying only 2.501 grains of Iodine to the fluidounce.

In my opinion, the best way to put up this preparation is to add to the Iodine, in a glass mortar, ten minims of a saturated solution of Potassium Iodide, picking this up with ten grains of Aquaphor and finally adding the Mineral Oil. In this way I believe, loss of Iodine is avoided, and the therapeutic value of the preparation is in no way affected.

Prescription No. 16.

℞

Digitalis Suppositories in Glycerinated Gelatin Base

Gelatin	100.0
Glycerin	100.0
Water to make	200.0

Suppositories No. xii

Pulv. Digitalis, Allen's or Squibb's Standardized, $1^1/_2$ grains to each 2 Gm.

Allow the Gelatin to remain in water for one hour and then decant the water. Add the Glycerin and heat on a water-bath until dissolved. Strain and continue the heating until the product weighs 200.0 Gm. Rub the Digitalis with the Glycerin to make a paste and add to the glycerinated gelatin, while the latter is still in the liquid state. Pour into a suppository mold and allow to cool.

AMPULS.

Frequently the pharmacist will be called on to make up some special strength of ampul. In my opinion it is inadvisable for the pharmacist to attempt to make any ampuls but those which cannot be obtained from the manufacturer, as he can

never hope to compete with the manufacturer in releasing large quantities of standard strength ampuls. Again, in making up small quantities of ampuls of some special formula, the pharmacist makes a very strong appeal to the physician.

In putting up such ampuls, instead of using a burette, it will be found very simple and convenient to use a sterile hypo syringe. The solution to be put in ampuls should be prepared in a sterile bottle with a rubber cork, through which the needle may be passed.

Some time ago, I was asked whether it is possible or profitable for a prescription shop to put up ampuls of a special formula. My answer was "Yes" to both queries.

I am glad to say that I am able to show you here, the essential points of ampul filling, and, barring the sterilization process, how little time and effort are really necessary.

Of course, care should be taken that no inferior glass be used, but only the very best.

THE ACCURACY OF MEDICINE DROPPERS WITH FLARED TIPS.[1]

BY WILLIAM J. HUSA[2] AND LYDIA M. HUSA.

The so-called "eye pipettes," which are medicine droppers with flared tips, are commonly used for dropping liquids into the eyes, the flared tip serving to protect the eyes from injury. For the use of pharmacists in dispensing liquids which are to be dropped into the eyes, there are available the "dropping outfits" consisting of a bottle and a dropper packed together in a cardboard box, and the "eye drops bottles'" in which the dropper is contained in the bottle when not in use, the bulb of the dropper serving as a stopper for the bottle.

It has been observed that pharmacists also frequently use these containers and droppers for dispensing liquid medicaments for internal use when the dose is prescribed in drops. In one case the following prescription was dispensed in an "eye drops bottle:"

℞

Sol Atropine Sulph. 1–1000 8

Sig. gtts. iii q 3 h, as necessary for nausea.

The medicine was administered to a child as prescribed, measuring the drops from the dropper with flared tip supplied by the pharmacist. The result was that the child showed symptoms suggesting a slight overdose of atropine sulphate. While no permanent harmful results followed in the case cited, it was thought that possibly the dropper with flared tip delivered somewhat larger drops than the physician intended.

It is well known that the size of drops is variable, being influenced by a number of factors including the surface tension of the liquid, the kind of tip on the dropper, the rate of dropping, the temperature, etc. Various attempts have been made from

[1] Presented before the Section on Practical Pharmacy and Dispensing, A. PH. A., Madison, Wisconsin, 1933.

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