

"IT CAN BE DONE."*

BY J. LEON LASCOFF.¹

At a joint meeting of physicians and pharmacists recently held by the Westchester County Pharmaceutical Society of New York, Dr. Cary Eggleston, a prominent New York physician and professor of Clinical Medicine at Cornell University Medical College, spoke on the relations between physicians and pharmacists. Among other points, he brought out the failure of the pharmacists to meet physicians' requirements. Some years ago he wrote a prescription for "Troches of Brown Mixture and Ammonium Chloride," which preparation was official in the Pharmacopœia, and marked on the prescription the letters, "U. S. P." Some pharmacists phoned him asking permission to dispense ready-made proprietary lozenges, and some dispensed the proprietary article without even consulting him. Each and every time he wrote this particular prescription he had trouble. Dr. Eggleston complained to me about it and asked me whether there was some difficulty involved in making these troches.

The preparation of these troches is really very simple. The beginner in the pharmacy college is taught to make up these and other lozenges according to official directions and formulas. Furthermore, at the examinations for "Licensed Pharmacist," I frequently included the making of this preparation. Some of the candidates turned out products which might compare favorably with the machine-made article. Another shortcoming that Dr. Eggleston mentioned was the dispensing of gelatin-coated pills. Here again, he had calls from pharmacists who wanted to give the ready-made product and who admitted lack of knowledge as to the proper coating of these pills. I say, *It can be done*. A simple method will be outlined later on. The same applies to salol-coated capsules.

It seems that our pharmacists are seeking to rush out their orders, subordinating the physicians' desires to their own convenience. In addition, there seems to be a sacrifice of accuracy for speed, as is indicated by some of the unsatisfactory products turned out. It is a condition such as this which discourages the physician in his prescribing and which tempts, and in many cases forces, him to call for some manufactured article. The manufacturer is familiar with the attitude taken by the average pharmacist and has been quick to turn it to his own advantage. I don't blame him. Consequently, we find the manufacturer preparing combinations desired by the physician, a large number of which combinations I could enumerate in this paper. Beside U. S. P. and N. F. preparations, the manufacturer is also putting up special ones which are in great demand.

The worst side to these ready-made items, one which the pharmacist has complained about for some time, is that the patient reads the prescription and, instead of consulting his physician, goes to some cut-rate drug store or perfume emporium and asks for a bottle of what the doctor prescribed. The patient is thus resorting to the dangerous procedure of self-medication.

As Dr. Army not long ago stated, in his address on the future of pharmacy—"Unless the pharmacist encourages the physician in the writing of prescriptions,

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pharmacy will be doomed." If the manufacturer continues to put up more preparations of this kind and the pharmacist sells them, then pharmacy *will* be doomed. His position will be the same as that of the grocery clerk who mechanically picks off the shelf what is called for. It will be a matter of simply filling from one bottle into the other. Is it for this that we have our boys take a three-year course at college with the additional practical requirement—to say nothing of the coming four-year course?

A short time ago I had a call for Lassar's Paste as prepared by a certain manufacturer. We had in stock the paste prepared by several other manufacturers. When I called the physician to tell him it would take some time to obtain the desired preparation, I asked him if he had any objections to my preparing the paste according to the official formula. He was very agreeable about it and thankful to me, mentioning that the reason he preferred the manufactured product was that he had seen some preparations as made by pharmacists, which were actually unfit for use. This is certainly a sad state of affairs.

Another prescription brought to my attention was one calling for the official "Emulsum Asafœtidae." Instead of a white, presentable emulsion being dispensed, one that was half watery, as well as gritty, resulted. In this case the pharmacist again thought of nothing else but speed. If he had been thorough about pulverizing the asafœtida and had taken a little more time, there is no reason why a satisfactory emulsion could not have been turned out. *It can be done.*

The popular Whitfield's Ointment, formula of which is given in our "A. P. H. A. Recipe Book," can be easily prepared in a few minutes by any pharmacy student, to say nothing of the practicing pharmacist, and this is now being made up by a manufacturer under a trade-marked name.

A considerable number of these preparations are being put up for skin specialists by certain manufacturers, whereas previously prescriptions were written, naming all ingredients. Another example which came to my attention was a preparation intended to present sodium sulphocyanate for use and which was detailed to physicians. Again an example of a frequently prescribed chemical being taken out of the hands of the pharmacist. It doesn't take much effort on the part of the physician to write out some trade-marked name, if he has to be uncertain as to how his own prescriptions will be compounded. The manufacturer has again made use of the advantage gradually being yielded to him by the unwary pharmacist.

Taking all this into consideration, what is left for the pharmacist to do? He complains, "There are not enough prescriptions being written to-day." Surely, *He is the one who is discouraging prescription writing.* How long would it really take him to prepare the ointment mentioned from the formula given in the Recipe Book?

So many pharmacists complain that it takes too long to compound prescriptions and, considering the time taken by the licensed clerk, that the profit resulting is very small. Does not this apply to the salesman out in front? Some clerks are very efficient and because of their efficiency are able to make quick sales; I mean by that sales in which there is no lost time or effort. This is applicable to the prescription department. With underpaid or inefficient help we cannot expect the proper response. Employ efficient help who can, with no sacrifice of

accuracy, supply more prompt service to those who are in pain or in urgent need of medication.

At our practical examination, we gave five prescriptions for compounding by the candidates. Some did splendid work in less time than others who devoted four hours to the prescriptions, and who, in the end, turned out worthless preparations. A competent, able pharmacist can strike a happy medium between speed and accuracy.

I will illustrate a number of prescriptions which came to my pharmacy, as well as a number presented for my comments and advice. Many of the latter were published in various publications, among others, *The Practical Druggist*, *The New York Pharmacist*, *The Messenger* of the Columbia Pharmacy College. On many occasions one or another inquirer would be doubtful as to whether the prescription in question could be compounded satisfactorily, stating it could not be done. I will demonstrate facts—*It can be done*.

In order to cover as wide a variety of preparations as possible in the time at my disposal, I have included the following types: Lotion, mixture, pills (gelatin-coated and graphite-coated), capsules (keratin-coated and salol-coated), suppositories, and ampuls.

To arrive at a finished preparation and to turn a seemingly incompatible prescription into a presentable combination, I have made use, at times, of acacia, tragacanth, or aquaphor,¹ acacia being confined to preparations for internal administration; tragacanth and aquaphor to those for external use.

PRESCRIPTION NO. 1.

Red sulphide of mercury	1.2
Precipitated sulphur	6.0
Zinc oxide	10.0
Venetian talc	10.0
Liquid albolene	30.0
Distilled water	120.00
M. Sig. Externally.	

If compounded in the order written, a uniform lotion will not be obtained, even by shaking. The sulphide of mercury will be separated from the other compounds of the mixture; there is no means of suspension of the albolene, and the sulphur, zinc oxide and talc will sink to the bottom.

To obtain a uniform mixture, with an equal subdivision of the ingredients, the following procedure is advised: Incorporate the sulphide of mercury with 0.8 Gm. of powdered tragacanth in a little water. In a separate mortar incorporate the sulphur, talc, zinc oxide and albolene. Pour the latter mixture into the first, a little at a time, until all are homogeneously mixed; finally, add sufficient distilled water.

NOTE: It is just as important, and at times more important for the pharmacist to give the same attention to the proper compounding of prescriptions for external use as he does for those to be taken internally. He should not underestimate the value which many external preparations possess in alleviating suffering. The preparation under discussion, for example, if compounded carelessly, may have but little therapeutic value.

¹ A neutral base similar to anhydrous lanolin.

ABSTRACT OF DISCUSSION.

J. Carlton Wolf said that in Baltimore similar prescriptions are frequently prescribed, usually containing olive oil; the latter is emulsified, the zinc oxide is rubbed into a paste and then the two are mixed, a smooth mixture resulting.

The author stated that the important point is a uniform division of doses; the prescription had been selected because it had to be made up a number of times before a satisfactory mixture was obtained. Four persons check a prescription in the pharmacy of the author—the last one to pass on a prescription is known as the “kicker;” he is not always the favorite, because he will not permit a prescription to pass unless it is beyond reproach.

PRESCRIPTION NO. 2.

Calamine	℥ ii
Olive oil	℥ ss
Solution of coal tar	℥ ss
Lime water ad	℥ ii

As in prescription No. 1, if compounded as written, the same undesirable separations will occur. In this case, the Coal Tar Solution presents an added complication. Ten grains of powdered tragacanth, as well as previous saponification of the olive oil with the lime water, will produce an acceptable product.

Louis Saalbach thought the Solution of Coal Tar was a help, not a hindrance.

PRESCRIPTION NO. 3.

Fluidextract of cimicifuga	18.0
Elixir three bromides	45.0
Peppermint water ad	120.00
M. Sig.: 8.0 t. i. d. p. c.	

Compounding this prescription as written produces a preparation having a murky, unsightly precipitate at the bottom of the bottle due to the separation of resins and other insoluble matter. The addition of thirty grains of powdered acacia in making this mixture solves the problem. Due to possible gelatinization of the acacia by the alcohol present, care must be taken. A mucilage should first be made with the acacia and a portion of the peppermint water, adding the fluid-extract a little at a time; then the remainder of the peppermint water and the elixir is added. The resulting product is a fine, homogeneous mixture with no precipitation.

ABSTRACT OF DISCUSSION.

J. Carlton Wolf said that a compound known as “Williams’ Pink Mixture” is frequently ordered in which honey could be used as a suspension agent. He had suggested the use of honey to physicians, but their preference was for a suspending agent without flavor, such as tragacanth.

L. M. Kantner stated that the prescription referred to was that of an old Baltimore physician who prescribed it in certain throat conditions; he had a definite reason for prescribing honey in the preparation.

PRESCRIPTION NO. 4.

Aristol	grs. x
Menthol	grs. ii
Camphor	grs. ii
Distilled water ad	oz. ii
M. ft. Sol.	
Sig.: ℥ i in glass water as a gargle.	

If compounded as written, it is impossible to obtain a presentable product; the three principal ingredients are insoluble in water. The following procedure produces an acceptable combination:

Liquefy the camphor and menthol by trituration in a mortar; incorporate therein the aristol. In a separate mortar, prepare a mucilage using ten grains of tragacanth with sufficient water. Add this mucilage to the other mixture; incorporating all with the remainder of the water. This will make a uniform mixture without separation of the principal ingredients.

PRESCRIPTION NO. 5.

Iodine	grs. ii
Stearate of zinc	℥ ss
Liquid petrolatum ad	oz. 1
M. et Sig.: Nasal drops.	

In this prescription care must be taken to have the iodine evenly distributed. If mixed as written, the entire amount of iodine will settle at the bottom; to obtain a satisfactory product, there are two methods which may be used. In the first, the iodine may be dissolved by means of a minimum amount of potassium iodide solution, taking up the water with a little aquaphor, and then incorporating the remaining ingredients. The second method which may be used is to dissolve the iodine in a minimum amount of ether, incorporating the other ingredients; the ether, of course, will evaporate from the preparation.

ABSTRACT OF DISCUSSION.

Louis Saalbach recalled a similar prescription—alcohol was used to dissolve the iodine and then this solution was added to the albolene—the mixture was warmed to drive off the alcohol.

William Gray reported on a similar preparation.

The author reported on a preparation which contained iodine, camphor and menthol. He said the important thing was to make certain that the iodine was held in solution.

PRESCRIPTION NO. 6.

Milk of magnesia	℥ iv
Liquid petrolatum	℥ ii
Sodium borate	℥ i
Rose water ad	℥ viii
Sig: Cleansing Lotion	

At first glance this prescription may present no difficulties. If compounded in the order written, the oil will separate, in spite of the fact that the physician expected the Milk of Magnesia to keep it in suspension. After the addition of three drachms of Aquaphor (a neutral base similar in nature to anhydrous lanolin) to the liquid petrolatum, the rose water, in which the sodium borate has been dissolved, is added and a satisfactory homogeneous lotion results.

PRESCRIPTION NO. 7.

Potassium citrate	℥ ii
Spirit of nitrous ether	℥ ss
Syrup of orange	℥ ss
Water to make	℥ ii
Sig. ℥ i in wine-glass water t. i. d.	

The potassium citrate is thrown out of solution by the alcohol in the spirit, but due to the free solubility of the citrate in water, some of the water is drawn along; the result is, that there are two conflicting layers causing a cloudy mixture. If half of the water is replaced by glycerin, a clear mixture is obtained.

PRESCRIPTION No. 8.

Camphor	gr. i
Salol	grs. iii
Aspirin	grs. ii
Caffeine citrate	gr. i
M. ft. Of such doses, capsules No. XII	

In combining the ingredients as written, a damp powder results, gradually becoming semi-liquid. This can be overcome by replacing half of the citrated caffeine by caffeine alkaloid (in order to adjust the strength), adding heavy magnesium oxide—one grain to the capsule—combining the latter with each ingredient separately and finally mixing all to form a uniform powder.

The author stated further that in combinations of this kind he used a double capsule; the camphor is divided and put into a small capsule—this and the other ingredients are placed in a larger capsule. He did not favor the placing of anything in the top of a capsule, but in a mixture of this kind it could be done.

PRESCRIPTION No. 9.

Exsiccated ferrous sulphate	grs. i
Extract aloe	grs. i
Apiol	ʒ. i
Oil of savin	ʒ. i
M. ft. D. t. d. 24 pills	

If the ordinary excipients are used, as for example, extract of licorice or of gentian, a large amount of powdered licorice must be used to keep the oil from separating out of the pill. The result will be a pill weighing about ten grains each.

The addition of one grain of wax and one-half grain heavy magnesium oxide to each pill will give us a product which in the first place will be small in size and in which the ingredients will be uniformly divided, permitting no leakage of the oil.

J. Carleton Wolf said he had found that pilular extract of gentian apparently enveloped the oil and held it in.

PRESCRIPTION No. 10.

1 cc. Ampuls hyoscine hydrobromide $\frac{1}{150}$ gr. each
Tales ampuls No. 12

While most ampuls required by the physician may be obtained from the manufacturer, occasionally we have calls for odd strengths; for example, ampuls of sparteine sulphate, 2 grains each, as prescribed by Dr. Solis-Cohen; or hyoscine hydrobromide, $\frac{1}{150}$ grain. I have no intention of going into a lengthy discourse on the various methods of filling ampuls—I did that about fifteen years ago. I present a method whereby the pharmacist can extemporaneously, with the facilities available in the average pharmacy, prepare such ampuls of this nature.

The author demonstrated the method, using the hypodermic syringe, together with a special bottle to insure sterile conditions as nearly as possible. He said that a good opportunity was afforded for the pharmacist to display his art and to convince the physician as well as himself that *it can be done*.

PRESCRIPTION No. 11-A.

Adrenal residue (liquid) minims xii
 Cacao butter to make
 Ten (10) rectal suppositories

If anhydrous lanolin or aquaphor be added to absorb the adrenal residue, the suppository thus made is soft and unfit for use. The most practical way I have found, is to use a ready-made cacao butter suppository, or one made in the pharmacy by machine. Bore a hole through the center of this cacao butter suppository and place therein the twelve minims of liquid using the same procedure as for filling soft capsules. Close the opening by covering it with previously melted cacao butter, by means of a spatula.

PRESCRIPTION No. 11-B.

Solution adrenalin chloride	m. x
Extract belladonna	gr. $\frac{1}{8}$
Cacao butter to make	
Twelve (12) rectal suppositories	

In this case, first mix the extract belladonna with the solution of adrenalin chloride, and proceed as with Prescription No. 11-A.

PRESCRIPTION No. 12.

Pancreatin	grs. v
D. t. d. keratin coated capsules No. XX	

It is comparatively easy to make keratin-coated pills. However, this becomes difficult when applied to capsules. The ammonia water used in dissolving the keratin will dissolve the gelatin of the capsule. To obtain a satisfactorily coated capsule, dissolve the keratin in acetic acid. Add to this solution a small quantity of collodion. Coat the capsule (size No. 2) with this solution and place the coated capsule in an empty capsule (size No. 1), in order to protect the coating.

The same procedure applies to capsules coated with salol, as follows:

If coated in the usual way, by melting the salol, a large amount of the material is required. I have seen as much as ten grains used per capsule. In addition capsules coated in this manner are very apt to lose the coating, due to cracking of the salol mass and subsequent peeling. To obtain a satisfactory product apply, first of all, a uniform coating of shellac previously dissolved in pure alcohol. Then make a solution of the salol in ether, with which solution coat the shellacked capsule and place this coated capsule into another empty capsule.

The author said that when suitable keratin cannot be found the physician should be advised so he can make a change of coating.

COATING OF PILLS.

Coating pills with gelatin is not difficult at all. A satisfactory method of doing this consists in melting the gelatin, using no glycerin. The pills to be coated must be hard and smooth. By means of a flat tray made of celluloid or of glass, in which has been placed the melted gelatin, coat the pills by rolling them until a uniform coating is obtained.

H. A. B. Dunning said that gelatin coating had been a difficult problem with them. The method finally adopted is to make the pills and stick a pin into them. A highly concentrated gelatin solution is made—the pill is immersed in the warm gelatin solution and a blotting paper is used to get rid of the superfluous drop of gelatin and then the coating is allowed to dry and the pin holes are filled.

I. A. Becker stated that the subject of coating would be a study of the N. F. Committee.

The author was voted the thanks of the Section and by motion he was asked to prepare a paper along the same lines for next year's meeting.

ON BORAX IN COLD CREAM.*

BY W. L. SCOVILLE.

All formulas for Cold Cream—and there are scores of them—call for borax. Seemingly, without borax is no cold cream made.

Why is this unanimity concerning borax in so great a variety of formulas? What is the function of borax in cold cream?

No one seems to have inquired into the question in any experimental way. E. R. Jones said (*Bulletin of Pharmacy*, 1924, page 15) that "although soap does not appear in the formula it is present nevertheless and is formed by the reaction of alkaline borax solution on the free cerotic acid of the beeswax"—but he offers no evidence in support of that opinion. It is an easy assumption and the readiest explanation, but it does not fit well with some facts regarding the saponification of beeswax. The U. S. Pharmacopœia tests for saponifiable adulterants of beeswax by boiling it for half an hour in a 12 to 14 per cent aqueous solution of sodium hydroxide—by which no soap is formed. If beeswax will not saponify, even in part, under as drastic treatment as that, it does not seem probable that any of it will be saponified by a warm but weak solution of borax. The saponification of beeswax requires four hours of boiling in an alcoholic solution of potassium hydroxide.

Another possible explanation is that borax reduces the surface tension of water to an extent which promotes emulsification. We know that surface tension is an important factor in emulsions, and that emulsifying agents act, in part at least, by reducing the surface tension of water.

This hypothesis is no easier to prove than the other, particularly when it is considered that the alkaline salts have a greater influence on surface tension than do most neutral salts. It is known that sodium or potassium carbonate can take the place of borax in making a cold cream, but the substitution of one alkali for another does not throw any light on the question.

Facts regarding the influence of neutral and acid salts, and of organic compounds, upon surface tension are not easily found. It was only after Mr. F. A. Maurina had carried out a series of tests to ascertain the influence of a number of salts and organic compounds, that my interest in this question was brought to the point of experimentation.

Mr. Maurina found that of the neutral salts which he tried, lithium benzoate

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