

	H <sub>2</sub> O	H <sub>2</sub> O Sol. ash	H <sub>2</sub> O Ins. ash	Total Ash	Alkalinity of Ash.			LaWall and Bradshaw
					H <sub>2</sub> O Sol.	H <sub>2</sub> O Insol.	Total	
Poke Root (Phytolacca).....	13.15	6.22	3.34	9.56	7.61	2.43	10.04	11.1
	12.39	6.8	6.23	13.03	8.7	3.05	11.75	
Pomegranate Bark.....	7.1	1.32	14.45	15.77	.83	19.60	20.43	
	10.64	.54	12.45	12.99	2.2	18.5	20.7	
Prickley Ash Bark (Xanthoxylum).....	10.27	.54	7.82	8.36	1.95	6.09	8.04	5.
	8.24	.93	5.25	6.18	2.	2.2	4.2	
Sage Leaf (Salvia).....	8.23	2.60	5.44	8.04	2.83	7.88	10.71	6.69
	8.12	2.16	6.62	8.78	2.5	7.2	9.7	
Sarsaparilla, Honduras.....	9.47	1.87	2.83	4.70	1.12	3.07	4.19	
	8.19	1.07	12.96	14.03	.4	1.5	1.9	
Mexican.....	7.45	1.77	12.45	14.22	.47	3.61	4.08	
	7.45	1.5	33.07	34.57	.45	3.85	4.3	
Sassafras Bark.....	9.87	.78	2.85	3.63	.69	1.71	2.4	4.15
	1.81	.33	13.38	13.71	.2	1.5	1.7	
Savine Tops.....	7.74	.86	6.68	7.54	1.41	9.53	10.94	
	3.86	1.04	7.46	8.5	2.15	4.35	6.5	
Senega Root.....	7.69	.82	3.21	4.03	.55	1.69	2.24	5.05
	9.65	.42	3.88	4.3	.6	1.6	2.2	
Senna Leaves, Alexandria.....	10.56	2.15	7.29	9.44	3.	12.04	15.04	8.2
"    "    T. V.....	8.17	2.14	12.18	14.32	1.25	3.45	4.7	
Serpentaria Root.....	11.91	.75	16.04	16.79	.32	4.79	5.11	
	6.59	.65	36.54	37.19	.5	2.	2.5	
Soap Tree Bark (Quillaja)....	8.02	1.96	17.34	19.30	4.2	30.3	34.5	9.3
Spearmint Herb.....	9.49	4.89	6.24	11.13	4.44	7.96	12.4	9.7
	9.99	5.08	5.32	10.40	4.	2.3	6.3	
Stillingia Root.....	10.99	.99	4.43	5.42	1.11	5.10	6.21	
	10.19	1.28	5.57	6.85	.5	1.3	1.8	
Stramonium Leaves.....	11.12	1.29	4.51	5.8	6.67	6.1	12.77	18.81
	7.19	5.30	14.8	20.1	4.6	8.35	12.95	
Sweet Flag Root (Calamus)...	12.03	1.47	1.62	3.09	.87	1.74	2.61	3.5
	10.43	1.15	4.73	5.88	.5	1.35	1.85	
Uva Ursi Leaves.....	8.27	.72	2.66	3.38	.83	3.06	3.89	
	9.82	.58	6.43	7.01	.85	3.5	4.35	
Valerian Root, Belgian.....	8.04	1.01	17.42	18.43	.29	2.43	2.72	
"    "    English.....	6.92	.94	30.32	31.26	.35	2.7	3.05	20.15
Wahoo, Bark of Root (Euonymus).....	11.24	1.41	8.75	10.16	1.54	6.33	7.87	11.1
	9.	.7	13.88	14.58	1.	4.2	5.2	
White Oak Bark (Quercus alba).....	8.86	.3	5.87	6.17	2.14	6.03	8.17	6.8
	9.37	.63	7.8	8.43	1.8	7.2	9.	
Wild Cherry Bark.....	9.09	.49	3.12	3.61	.97	4.68	5.65	3.4
	8.49	.71	6.86	7.57	1.6	2.1	3.7	
Witch Hazel Bark.....	7.66	.1	4.44	4.54	1.83	4.45	6.28	
	9.61	.45	5.29	5.74	1.3	4.7	6	
Witch Hazel Leaves.....	9.64	1.78	2.4	4.18	1.46	2.71	4.17	5.55
	9.62	.86	5.58	6.44	1.05	3.	4.05	

For comparison we have given in column eight the average ash of samples as determined by LaWall & Bradshaw.<sup>3</sup>

Lloyd<sup>4</sup> in his classical work on hydrastis does not mention an ash standard. The ash as a standard of itself should not be considered in case of alkaloidal drugs like hydrastis, but it is of sufficient importance to add another constant when adulterations are so prevalent.

THE DISPENSING OF OILY SUBSTANCES.\*

J. LEON LASCOFF, NEW YORK.

In presenting this subject to you I have borne in mind the fact that prescriptions submitted to us with oily substances are difficult to dispense in a form which shall be both elegant in appearance and have uniform distribution. I refer especially to mineral oils.

Oils of the hydrocarbon variety are not easily miscible with some ingredients: firstly, their tendency when standing is to separate themselves; secondly,

<sup>3</sup>Proceedings A. Ph. A., 1910, Vol. 58, pages 750-755.

<sup>4</sup>Lloyd's Drugs and Medicines, pages 76-184.

\*Read before the Kings County Pharmaceutical Society, March 11, 1912.

a mineral oil is not a ready solvent for every drug and chemical. These facts need to be taken into consideration more now than ever before, as prescribers are using them more frequently and manufacturing concerns are bringing out new refinements of oil almost daily; each bearing another trade name and almost all differing in their solubility and absorbing qualities.

I shall demonstrate by illustration later on how some of these prescriptions look very simple and show no evidence of any difficulty on their face.

For many years *Liq. Petrolatum* of the U. S. P. was the standby of the prescriber and was the only hydrocarbon oil that entered into the usual prescriptions for atomizing purposes and for oleaginous applications. It was prescribed in combination with Menthol, Thymol, Eucalyptol, Ol. Eucalyptus, Ol. Pini Sylv. and Ol. Pini Pumilionis.

Then the more refined and purer petroleum oils such as Albolene, Benzonol, or Gylmol, etc., were added to the therapeutic list.

Other hydrocarbon oils are prescribed under the following names: Paraf. Liquidum, Mineral Glycerin, Glycolene, Russian Oil, (a statement was made by a certain physician of the West Side that when he prescribed Russian Mineral Oil, in each case the pharmacist called him up and inquired what he meant by this), Vaseline Oil, etc. Oils in combination on the market are: Rubrol (red color), Viridol (green color). Sprays: Sabolol spray, Pinoleum spray, etc.

The physician already informed of the latter oils prescribes them freely, even for internal use (such as aromatic albolene). Then, as is always the case, the physician experiments with combinations of various chemicals with the same oils even as far as adding alkaloidal salts, which of course adds danger to improperly dispensed prescriptions, if there be any difficulty in obtaining an equal distribution of the potent drug.

The convenience of emulsifying combinations containing oily ingredients with acacia has lessened the labors of the pharmacists, and when any difficulty was met with in obtaining a desirable mixture, an emulsion was the solution of the problem. This has not been the intention of the prescriber in most of the cases, as for instance, to use an emulsion of the hydrocarbon oils with acacia for atomizing purposes or for ear drops.

It is the duty of the pharmacist to produce an accurate and uniform finished product, and to manipulate the ingredients in such a way as to produce either a clear or a proper suspension to insure uniformity of the ingredients prescribed. The following are some examples:

℞ 1. Camphorae .....	½ gr.
Mentholis .....	½ gr.
Glycerini .....	2 dr.
Natrii bicarbon .....	3 gr.
Liq. albolini, Ad. ....	½ oz.
M. Sig. Ear Drops.	

—Dr. B.

Dissolve the camphor and menthol in a small quantity of Albolene with application of heat. The bicarb. of soda in the 2 drams of glycerin in the same manner (in a separate receptacle). In order to combine these to make a staple and uniform mixture add a little lanolin (anhydrous) and mix all well together.

The resulting mixture makes a uniform suspension and there will be no separation on standing.

℞ 2. Resorcini ..... 0.5  
 Albolini ..... 50.0  
 M. Sig. Drop into ear as directed.

—*Dr. F.*

As the resorcin is not soluble in albolene, or by heat, we dissolve it in a very small amount of alcohol, rubbing slowly in a mortar and then add the required amount of the albolene and a clear mixture is the result.

℞ 3. Resorcini ..... 0.3  
 Mentholis ..... 0.2  
 Albolini ..... 30.0  
 M. Sig. Ear Drops.

—*Dr. Davidson.*

In this case dissolve the menthol in the albolene by slow heating. Dissolve the resorcin as in the previous prescription and then mix together and a clear solution results.

℞ 4. Cocaini hydrochloridi ..... 0.2  
 Sol. adrenalini hydroch ..... 6.0  
 Mentholis ..... 0.1  
 Liq. petrolat. q. s ad. .... 30.0

The adrenalin is not miscible with mineral oils, therefore use the adrenalin inhalant, which is an oily solution of some strength and dissolves easily in the oil. Instead of the salt of cocaine use the pure alkaloid which is soluble in liquid petrolatum by heat. Put the menthol into the bottle while the liquid petrolatum is still warm; it will therefore dissolve and the entire mixture is clear.

℞ 5. Mercury salicylatis in albolini. .... 20%  
 Sig. To be used for injection.

Mercury salicylate we all know is not soluble in albolene nor does it remain in stable suspension for any length of time. The precipitate is thick, heavy, and very difficult to agitate, and as this is one of the most important mixtures with a very strong and powerful drug and used for deep injections, a uniform and easily subdivided solution must be made. In order to produce this effect emulsify the salicylate of mercury with the albolene by the addition of one-half percent of lanolin anhydrous.

℞ 6. Tr. benzoini co. .... 1 dr.  
 Eucalyptolis ..... 10 M.  
 Benzoinolis liq. q. s. .... 1 oz.  
 Spray throat.

If this prescription is compounded as written the benzoinol separates from the entire mixture. Rub the tr. benzoin compound with a little lanolin and one-half the quantity of Benzoinol. Apply a little heat to dissolve, add the eucalyptol and the balance of the benzoinol and the result is perfect. The doctor is under the impression that because benzoinol is a benzoin preparation the compound tr. benzoin should dissolve with it, but we know that it does not.

℞ 7. Mentholated oil ..... 10%  
 Sabolol oil q. s. .... 30.0

In this prescription I simply mention this to indicate the intent of the pre-

scriber. The mentholated oil 10% means menthol dissolved in albolene or any other mineral oil in the percentage of ten, and sabolol oil is sabolol spray, a proprietary article, in its original state.

℞ 8. Quinine and urea hydrochl. ....	0.6
Mercury salicylate .....	3.0
Adepis lanal. (anhydrous) .....	1.0
Ol. olivarum .....	30.0

The proper way to dispense this prescription is to dissolve the quinine and urea hydrochl. in a few drops of water, emulsifying with the lanolin, then adding the mercury salicylate. Then rub up well with the ol. olivarum. Care must be taken that this preparation should be thoroughly sterilized.

℞ 9. Euresolis (Knoll) .....	3.0
Calamini praep. ....	6.0
Zinci oxidi .....	9.0
Amyli .....	12.0
Ol. olivar. ....	15.0
Magnesiae lactis (Phillips).	

This prescription was sent to me by Mr. H. A. Voght, a pharmacist, who found some difficulty. I tried it according to his description of the method he used in dispensing it and found it satisfactory. The following is the method:

Saponify olive oil and euresol with the milk of magnesia. Rub up with starch, zinc oxide and calamini, then q. s. rose water.

℞ 10. Camphorae .....	0.2
Mentholis .....	3.0
Ol. pini pumilionis. ....	2.0
Milk magnesia q. s. Ad. ....	60.0

Rub up the camphor in a glass mortar with the menthol and ol. pini pumilionis, then saponify with the milk of magnesia, and it will form a nice uniform mixture, and the camphor as well as the menthol will be in suspension. No acacia is necessary in this case, in spite of the fact that I have known it to be used.

℞ 11. Ext. aloes .....	½ gr.
Podophyllini .....	¼ gr.
Cascarini .....	¼ gr.
Ol. carui .....	1 M.
D. t. D. Pill No. 24.	

In this prescription you will notice that one M. of the ol. carui. is prescribed per dose. Some pharmacists use extract of licorice as an excipient, but it is far better to emulsify the oil with a little acacia and then add the other ingredients, when it will form a nice mass from which the oil will not be separated.

℞ 12. Nitroglycerini .....	1/100 gr.
Extr. nuc. vom. ....	1/8 gr.
Ext. digitalis fl. ....	1 M.
Zinci valerianici .....	3 gr.
Ol. mentha. pip. ....	3 gr.
M. f. D. t. D. Capsules No. 30.	

This prescription was dispensed in several stores and different methods were used. Some of them, from the appearance of the capsules, formed a dry mixture of all the ingredients and dropped the oil of peppermint in afterwards. The finished products were not of elegant appearance.

My method was to emulsify the oil of peppermint with a little acacia and then add all other ingredients, using also extract glycyrrhiza, which formed a nice mass.

℞ 13. Methylene blue .....	0.2
Phenyl. salicylatis .....	0.3
Ol. santali .....	0.4
M. f. D. t. D. Capsules No. 30.	

Dissolve the phenyl salicylate in the santal oil by application of heat, then rub up the methylene blue with a little sugar of milk and divide in thirty capsules, then with a dropper put in each capsule 0.4 santal oil. Seal and put into a larger capsule.

A different method was used by another pharmacist. He mixed the phenyl salicylate with the methylene blue and then rubbed same together with santal oil and then divided into capsules. This was not the proper method because there was not an equal division of doses.

℞ 14. Ol. gaultheriae .....	2 dr.
Ol. terebinth .....	2 oz.
Alcohol q. s.....	4 oz.

In compounding this prescription in the order written it will turn out a cloudy mixture, but by mixing the oil of wintergreen with the alcohol and adding the latter to the ol. terebinth little by little it will form a nice, clear mixture.

All of the prescriptions which I demonstrated to you were presented in our store for dispensing and written by various medical men, with the exception of the one by Mr. Voght mentioned heretofore.

It is true that some of these difficulties might be easily overcome by any experienced pharmacist, or even by a student of a college of pharmacy, yet we must consider the fact all are not experts, and that when we strike a snag it is our duty to experiment, with the prescription at hand. I have shown to you that with a little care and more perseverance we may obtain brilliant results. There should be nothing to discourage repeated experimenting in our profession. We owe that to ourselves, to the prescriber, and to the patient. The everyday pharmacist, in the rush of his work, is not expected to be an expert, yet I am positive that he is willing to learn from the experiences of his colleagues, and therefore the frequent publications in the pharmaceutical press of just such material as I have offered you should be more and more practiced and encouraged. All our ideas do not originate within ourselves; we must learn by absorption and very many of my successful experiments have been the result of reading and listening to the effort of other colleagues.

Any junior clerk, without experience or pharmaceutical education, can mix five or six or more ingredients, if he knows how to measure and weigh, and then if the preparation does not mix or combine put on a shake label.

I once had a very capable assistant who dispensed a great many prescriptions per day in the store where he was formerly employed, but he acknowledged that it was done mechanically, and that he was never allowed to make the prescription over again if it did not look satisfactory, because time and material would have been wasted.

In conclusion, it should be the pride of every pharmacist to send out from

his prescription room preparations which he feels have been given the benefits of all pharmaceutical knowledge that is within him, and never to say to himself that is good enough, or that it will serve the purpose. He must consider that his duty is fully completed only when his conscience tells him that he did what was right and that he would not hesitate to apply the preparation to a member of his own family or even to himself.

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### THE COMMERCIAL ADVANTAGES OF PROPERLY APPLIED PROFESSIONAL PHARMACY.\*

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FRANKLIN M. APPLE, PH. G., PHAR. D.

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When solicited by your learned Dean, Prof. Sturmer, to address you upon this topic I was prompted to reply in the negative to his request, but, upon second thought presuming that I may be able to present at least one thought that may prove helpful to uplift pharmacy—both professionally and commercially—I agreed to offer a brief discourse, for which I bespeak your charitable criticism.

Upon taking up this topic for discussion it is necessary to ascertain if it is possible to absolutely divorce commercial pharmacy from professional pharmacy. Can one view professional pharmacy in all its phases without taking into consideration the commercial aspects of the subject? I feel certain, in the light of our customs and the laws upon the subject, that it is impossible to ignore the question of reward for services rendered to society in any professional vocation, unless one is endowed with such an abundance of worldly goods that he can take up his professional work as an altruist; but there are very, very few of those of our calling who could afford, if they so desired, to join the ranks of those of our citizens who are so generously provided with riches that they can follow the lead of some others who endeavor to appease their troubled consciences by making donations to colleges, institutions, libraries and movements for the betterment of the society against which they have greatly sinned. Such being the facts we must be guided by the conditions that surround the great majority of those of our calling, and recognize the commercial side of professional pharmacy as a necessity.

At the outstart I do not wish you to confound commercial pharmacy as practiced today in many establishments with the commercial pharmacy of which I wish to speak, for they are absolutely incompatible. To some, yea, many minds commercial pharmacy means customs, practices and merchandising that are flagrant cases of misbranding when the name pharmacy is attached thereto, having about as much right to have that honored name appended to their trading as a clothes horse has to be recognized as a member of the equine family.

The topic under consideration would indicate that there exists such a calling or occupation as professional pharmacy. What constitutes such a vocation?

Professional pharmacy consists of the art and science of selecting, preserving,

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\* Read before the Senior Class of the Medico-Chi College of Pharmacy, February 28, 1913.