

We have been without Tincture of Ginger for sale over the counter or on physicians' prescriptions without liquor form 1403 for about five years. A little more peppermint or fluidextract of ginger is sold.

To conclude—let us change or eliminate these preparations, keeping all our U. S. P. and N. F. preparations unfit for beverage purposes, made and sold only as medicines.

A REVIEW OF FIVE HUNDRED PRESCRIPTIONS.*

BY A. C. TAYLOR.¹

To determine the problems that arise in compounding, observed from a viewpoint of occurrence; to establish the value and importance of each in college training, and the developing of questions in practical pharmacy for a Board Examination.

The prescriptions were all filled during last February and do not include prescriptions for biologicals. In nearly every case biologicals were called for verbally, phoned for, or the name written on a piece of paper. I had no record of them except that which was imperfectly determined by inventory and invoices. The number sold during the same period I estimate to be 17 units. I also filled 25 liquor prescriptions during the same period. The biological group required knowledge of product, attentive and careful selection, ability to price properly, and an acquaintance with the source, method of preparation and therapeutic value. The 25 liquor prescriptions plus the 123 containing narcotics, and 4 containing chloral hydrate, which are governed by a clause in our local pharmacy law, make 152 times that the problem of possible law entanglement confronted us. That brings the total number of prescriptions under consideration to 542, which number must be considered when arriving at percentages.

It is a generally accepted idea among Board members that the function of the examining board is to find out if a candidate will be a safe person to practice pharmacy. The proprietor of the pharmacy expects that the Board of Pharmacy has determined not only that the person holding a certificate as "Registered Pharmacist" is a safe person to practice pharmacy, but that he has acquired manual dexterity and skill; that he has learned to use in a practical way, the mental knowledge acquired during his college course. He expects this man to be thoroughly capable to handle any problem that may arise during the compounding and dispensing of medicines. He expects that the Board has determined his ability to fill prescriptions and dispense medicines correctly, promptly, neatly, legally and at a profit.

Now that pharmacy has lost a most valuable aid to pharmaceutical training—the old-time apprenticeship—the colleges must give more serious attention to the training of the student in practical work; work that the graduate must immediately commence to do as soon as he becomes a registered pharmacist. The filling of prescriptions is beyond argument the dominating work in a pharmacy. To ascertain if this graduate has acquired the proper amount of dispensing skill the Board subjects him to an examination in practical work. That usually consists

* Section on Practical Pharmacy and Dispensing, A. Ph. A., Baltimore meeting, 1930. No discussion.

¹ Washington, D. C.

of the filling of five or six prescriptions; so it is apparent that in the selection of prescriptions the aim is to include as many of the hundred or more possible problems, and constitutes the most significant part of the Board members' duties in connection with such an examination. It is certainly very important that the teachers in the pharmacy schools impress upon the students the necessity of considering all the problems that arise in compounding prescriptions. If we can get the student to look upon the filling of prescriptions as a scientific and outstanding procedure and not just the mixing of a few things to be put up as quickly as possible and gotten out of the way, we will have done a big thing for pharmacy.

Don't smile when I say that the first problem in the filling of any prescription is the proper way to receive a prescription from a customer. It is at this point that the confidence of the patron may be gained or lost. Notice the anxious look in the eyes of the mother who has just left her seriously sick baby. She is trying to satisfy herself that the pharmacist is a capable person to call upon to assist her, the doctor and the nurse in the fight to save the life of her precious one. To gain her confidence the pharmacist must have confidence in himself, and this faith in his own ability can only be gained through practice. It is not enough to tell a student how to do a thing of a technical nature—he must be shown how to do it. Sometime during his college course the student should compound, under intelligent and capable guidance, several hundred prescriptions of the current type. In no other way can he gain that confidence in himself which goes far in the making of a successful pharmacist. And then, again, throughout the entire college course the student should have impressed upon him the fact that in the compounding of prescriptions the pharmacist has the opportunity to render mankind a professional service of the highest type, assisting in the saving of human life. Students must be impressed with the value of this life of service, for after all that is what counts. To be a good prescriptionist the pharmacist must be sympathetic, courageous and earnest. He must have a degree of refinement and culture and meet the patrons in a way that will impress his educational and cultural training.

It is impossible for an examiner of a Board to devise any type of examination that will enable him to find out if any applicant is 75% efficient in these virtues, but the colleges can and should give a great deal of attention to the consideration of methods to impress upon the pharmacy student the importance of his position in the world.

After the pharmacist has received the prescription from the customer what are the problems he must grasp within the first few seconds and be able to act upon intelligently and without hesitancy?

1. Can the prescription be filled quickly, so that the patron may be expected to wait for it, or should the offer be made to deliver it?
2. At a glance the pharmacist must consider the legibility of the prescription.
3. Does any ambiguity occur?
4. Doses must be carefully scrutinized.
5. Care must be exercised that legal requirements have been complied with.
6. A fair and profitable price to charge for the prescription must be decided upon.

Now to get down to the problems connected with compounding. In reading the prescription the problem of deciphering illegible writing is always a trying one

and success must often be attributed solely to experience. In the prescriptions reviewed there was not much reason for complaint. Out of the 500 only two prescriptions required a knowledge of classical Latin but nearly every one required a knowledge of Latin abbreviations and contractions. One required a knowledge of a foreign language; in this case it was Polish.

I thought it might be interesting to know the frequency of each type of prescriptions; table follows:

Type.	Times.	Type.	Times.
Mixtures	206	Plasters	2
Proprietaries without admixture	101	Infusions	2
Capsules	81	Cachets	1
Preparations without admixture	20	Pastes	1
Powders	20	Collodions	1
Tablets	18		—
Ointments	15		500
Percentage solutions	14	Biologicals	17
Emulsions	10	Liquor Prescriptions	25
Pills	5		—
Suppositories	3	Total	542

In the filling of these 500 prescriptions we used:

U. S. P. drugs	675		
N. R. drugs	4	123 prescriptions contained narcotics	
Non-official drugs	8	Codeine	105
U. S. P. preparations	340	Morphine	18
N. F. preparations	66	Dionin	3
Non-official preparations, not proprietaries	36	Cocaine	2
Animal gland products	31	Paregoric	5
Proprietary chemicals and preparations	161	Laudanum	5
	—	Total	138
Total	1321		

Of the 340 U. S. P. preparations the following are comparative figures:

Tinctures	55	Liniments	20
Spirits	35	Infusions	4
Syrups	34	Mucilages	1
Extracts	26	Fluidextracts	21
Waters	29	Pills	3
Liquors	19	Magmas	8
Ointments	15		—
Mixtures	20	Total	300
Elixirs	10		

Of the 66 N. F. preparations we used:

Elixirs	36	Spirits	2
Mixtures	10	Pastes	2
Ointments	5	Ampuls	1
Liniments	4		—
Syrups	3	Total	66
Oleo sugars	3		

The 36 non-official preparations, not proprietary, were almost all for the D. C. Formulary Emulsion of Cod Liver Oil or as it is more commonly called Phosphatic Emulsion.

STRAINING.

The question of straining was presented 21 times.

To strain or not to strain?	5 times
Method of straining?	16 times

FILTERING.

The question of filtering was presented 32 times.

Method of filtering?	27 times
Filtration of volatile liquid	
Selection of proper funnel, etc.	
Selection of proper filtering agent.	
Proper folding of filter.	

The question of effervescence was presented 14 times. Elimination of the gas had to be considered as well as securing the stopper of the container.

The question of evaporation was considered only twice, but the use of heat was called upon twenty other times.

We had occasion to make pills only once, but that one time required a knowledge of excipients. We were called upon twice for enteric coated pills; this required knowledge of the processes in vogue and knack in doing it.

The problem of trituration arose 197 times as to proper method, proper amount, proper utensils and tools.

While tablet prescriptions were common we were able to dispense ready-made tablets in every case but one. We made tablet triturates once; this required knowledge of methods and knack.

The problem of sterilization arose 16 times, in each case in connection with eye preparations, and we were able to depend upon heat in each case.

Incompatibility had to be considered in 62 prescriptions, besides a number of times where there were apparent therapeutic incompatibilities, or the combining of therapeutic antagonists, but we consider this out of the province of the dispenser, unless dangerous.

In the majority of cases the difficulty was overcome by substitution of a different salt of the same chemical, or the addition of a solvent or preparation that would in no way change the nature of the mixture or alter its therapeutic value. It always appears to me when I encounter something unusual in the way of incompatibility, it is not a rule that gets one out of difficulties, but experience.

Order of mixing often overcomes what is thought to be an incompatible.

Only two of the 66 problems under this head were unconquerable. One, an ointment; the other a mixture that was corrected when the doctor substituted strong acid for the diluted form, as written for originally. It is important that the applicant for the position as registered pharmacist should have a knowledge of incompatibilities among the newer remedies.

Physical incompatibilities occur more often than chemical ones. The only one of a chemical nature occurred when aspirin and tincture of iron were combined with glycerin and water. The danger of precipitation of alkaloids by bromides often presents itself, but usually the prescription is dispensed as written with a sticker on the bottle, ordering "it to be well shaken." The most common incompatibility of a physical nature is the separation of a precipitate due to menstrua.

Incomplete solution is a frequent problem that only experience can cope with; to filter or not to filter represents the principal problem in this connection.

Our old friends potassium chlorate and tannic acid to be combined in powders showed up once in this group, so the problem of mixing solids that are apt to explode tallied once.

Development of excessive moisture arose as a problem 20 times.

Of the 20 ointments dispensed only 10 required extemporaneous preparation. Method and order of mixing ingredients, thorough pulverization of powdered ingredients are the problems met with in the preparation of a smooth product. In two cases the selection of the base or vehicle was left to the judgment of the dispenser. In the selection for one, the necessity of the base absorbing or carrying a large amount of liquid was the first consideration and in the other case the desire was to obtain an ointment that would be most readily absorbed. This required a knowledge of the mechanical properties and therapeutic possibilities of ointment bases.

AROMATIC ELIXIR OF GLUSIDE.*

BY CLYDE M. SNOW AND BERNARD FANTUS.

There is a need for a sweet vehicle for medicaments that would be suitable for patients suffering from *diabetes mellitus*, in whom the giving of sugar is inadvisable. The elixir of gluside of the British Codex, which has also been admitted to the "Recipe Book," is nothing more or less than a 5 per cent solution of gluside with 3 per cent of sodium bicarbonate in 12.5 per cent alcohol. It is merely a sweetener, but has no flavoring value and is obviously intended to be used in quantities of 5 to 20 minims added to fluid medicament for purposes of sweetening. Believing that physicians would welcome as delicious a preparation as the aromatic elixir, that did not contain any sugar, we addressed ourselves to the study of the development of such a preparation and offer, as result of it, the following formula.

ELIXIR GLUSIDI AROMATICUM.

Aromatic Elixir of Gluside.

Compound Spirit of Orange	0.50 cc.
Gluside	0.2 Gm.
Glycerin	20.0 cc.
Alcohol	25.0 cc.
Water, a sufficient quantity to make	100.0 cc.
Purified Talc	2.0 Gm.

As this elixir is mixable with water and alcohol in all proportions, it seems that it might also be useful for the extemporaneous preparation of an aqueous aromatic elixir by dilution of 1 part with 4 parts of water, yielding a 5 per cent alcohol fluid of delicious taste and flavor, suitable, *e. g.*, as a pleasant vehicle for medicament for a child in competition with other aqueous elixirs (N. F.), against which the criticism of poor keeping qualities has been leveled. Containing no sugar it would not only be useful in diabetes, but also in other conditions in which sugar might be objectionable, as in gastro intestinal fermentation.

This aqueous aromatic elixir would be a better vehicle for sodium or potassium bromide than the aromatic elixirs now used, as it could carry an average medicinal dose of 1 Gm. of the salt per teaspoonful, which the aromatic elixir cannot. It would also meet the dictates of economy as a good deal of the alcohol, now unnecessarily used in the form of these elixirs, could be dispensed with.

* Section on Practical Pharmacy and Dispensing, A. Ph. A., Baltimore meeting, 1930.