

the sale of other poisonous substances or mixtures of poisonous substances in unbroken packages, for use in the arts or as insecticides, upon condition that they bear a label with the names of such poisonous substances and the word "Poison" printed thereon in prominent type, and the names of at least two readily obtainable antidotes with directions for their administration.

In concluding, I want to refer very briefly to the work of the Board of Pharmacy during the last eight years, most of which time I have been a member of it. In that time the Board has examined 3926 applicants for registered pharmacists and 2503 candidates for assistant pharmacists, to say nothing of the hundreds upon hundreds of apprentice applicants, whose examinations have been about the same as is required for eighth grade pupils in the public schools. Some applicants for registered pharmacist and assistant pharmacist, in fact, a great many of them, have taken two, three and even four examinations, and therefore the numbers above mentioned do not necessarily mean that many different *individuals*. Of the above numbers, 1592 applicants for registered pharmacist and 1366 applicants for assistant pharmacist passed successful examinations and were granted certificates. Every applicant has been examined in four branches in written work and until the year 1912 has been required to compound four prescriptions. During the past year applicants have compounded but three prescriptions or preparations each. This means that approximately 25,716 written examination papers have been carefully gone over and rated by the Board and that 24,709 prescriptions have been compounded under its close supervision.

From the organization of the Board in 1881 until July 1, 1911, it was self-sustaining. During all that time the General Assembly did not appropriate a single penny for its maintenance. Since July 1, 1911, we have been paying all moneys received into the State Treasury. Up to October 1 of this year we have paid \$28,826.50 into the State Treasury and had spent \$19,938.76 of the \$31,560.00 appropriated to maintain the office until July 1, 1913. By July 1, 1913, we will have paid into the State Treasury approximately \$45,000.00. You will observe that the Board is paying more money into the State Treasury than it receives by way of appropriations. The Board feels that the General Assembly should at least appropriate as much as the state receives.

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#### A QUESTIONABLE PRESCRIPTION.\*

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The following prescription was recently brought to my attention by one of the members of the State Board of Pharmacy, who informed me that it was one which had been sent to his store by a local physician:

"Phenol (carbolic acid) $C_6H_5OH$ .....	2 grains
Arsenic Trioxide (arsenous acid) $As_2O_3$ .....	1 grain
Silver Oxide $Ag_2O$ .....	6 grains
Mercurous Iodide (proto-iodide) $HgI$ .....	12 grains
Extract of Hyoscyamus.....	6 grains
Extract of Liquorice (powdered).....	100 grains
Mix and make into 48 pills.	
Sig.—Take one pill before meals."	

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\*Read before the Northwestern Branch.

Physiologists inform us that very little absorption takes place in the stomach, except such as the soluble mineral salts, and such organic liquids as chloroform, alcohol, etc. Water taken into the stomach is almost immediately thrown into the intestinal tract. In those cases where the medical substances are not rendered inactive by the acid contents of the stomach, solution here will hasten the absorption of the drug in the intestinal tract.

It is in such cases that the dispensing pharmacist must exercise scientific judgment. He should know that the stomach contents are usually acid from the small amount, about 0.2%, of free hydrochloric acid present in the gastric juice; and he should endeavor to prevent those things from going into solution in the acid stomach contents, which would be rendered inactive and inert by so doing. The safest rule to follow is to dispense pills so that they may pass through the stomach and be dissolved by the alkaline intestinal juices. This will necessitate a careful study of the ingredients of the prescription, and the selection of an excipient that will give a finished product meeting the general requirements of stability, solubility, etc.

To attempt to even guess at the purpose and motive, which might have inspired the above prescription in the mind of the physician who wrote it is not within the scope and purpose of this paper.

The formula as it stands presents a serious chemical incompatibility if not properly compounded, and even then, one of the ingredients at least will be inactive and inert.

If the above ingredients are mixed in the order in which they are given, we would have a mixture of phenol, arsenic trioxide, and silver oxide, which upon trituration would immediately burst into flame. This is caused by the energy liberated in the disruption of the molecules of silver oxide—giving up their oxygen and leaving the silver as a hard metallic scale, and occurs only when the silver oxide is mixed with the arsenic trioxide and then brought in contact with the phenol. This is perhaps due to the fact that the arsenic trioxide is a weak reducing agent, and helps to tip over the somewhat unstable molecule of silver oxide in the presence of other reducing agents, as phenol, which in itself could not do so in the small proportion used in this formula. No free iodine or free mercury were found at any time in any of the combinations of ingredients used.

In order to prevent the silver oxide from being reduced so rapidly as to cause combustion, compound as follows:

Rub the phenol and the arsenic trioxide together first (the gritty  $As_2O_3$  assisting in the powdering of the phenol) then add a little of the powdered extract of glycyrrhiza (20 to 30 grains) and then incorporate the extract of hyoscyamus (if the latter is added directly to the phenol-arsenic mixture, the whole mixture rubs up into a sticky mass, due perhaps to the moisture in the extract of hyoscyamus which makes it difficult to incorporate the remaining ingredients), next incorporate the protoiodide; then the silver oxide and finally the remaining extract of liquorice.

It is useless to try to keep the silver oxide from reducing, because according to the famous pharmacologist Jacobi, "this metal is absorbed in extremely small amount and is reduced to the inactive metallic state as soon as it enters the

body; it is absolutely proved that the silver cannot be absorbed in amounts sufficient to have any action whatsoever."

A series of experiments were made with the above pills compounded with different excipients, including water, glycerin, glycerite of starch, syrup and glucose, to find out which were most easily disintegrated in water, in artificial gastric juice and artificial pancreatic juice. The pills were suspended from platinum loops in bottles filled with these fluids and kept at body temperature for several hours.

It was found that the pills containing water as the excipient disintegrated and dissolved the most completely; glycerin came next in efficiency. In all cases there was a considerable residue which did not go into solution, showing that some of the material was insoluble and consequently, practically inert medically. In nearly every case the pills were not greatly affected by the artificial gastric juice, but were considerably disintegrated in the alkaline pancreatic juice.

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### BUSINESS LIFE BOATS.

How about your life boats? By this we mean your resources, upon which you can fall back in times of trouble. There are two of these which should be constantly looked after as to sea-worthiness as they are the first into which you will scramble in time of impending financial shipwreck.

They are, first, your credit.

And second, your moral standing.

Now the peculiar thing about these two "boats" is that one cannot be lowered without the other. To establish and maintain a good line of credit your reputation as a moral man has got to be A No. One. Ideas on this matter differ, but it has been proven time and time again that the man who leads an immoral life in the long run loses his business. He may think that he is pulling the wool over the public's eyes, but the very things that he wants to keep under cover and which he undoubtedly thinks are secret are just the ones to leak out, and then it is only a question of time before every one is "on to him."

Not only make your business clean, but make yourself clean, and see that the same thing is true of your clerks. Let people know that your store is a safe store. As to credit, you all know the importance of this. It is of untold value to you and you should make every effort to keep it always spotless.

There are many kinds of icebergs that obstruct the business highways, and a watch has to be constantly kept to steer clear of them. It is a fact and a sorry one too, that it always takes some big disaster to awaken people to the realization of the importance of changing things so as to assure safety in the future to others. So if your competitor is hit by a financial "berg" and goes under, look to it that you steer clear of the same trouble that sank him. We can always learn from the other fellow's blunders as well as our own, and even if things are seemingly calm around you now, and you are sailing along smoothly, just keep a sharp lookout, your credit the best, and your character as near the high water mark as possible.—*The Apothecary.*