

honest desire to better myself and help my colleagues to better themselves and that I call upon you to do likewise in your profession.

I cannot pass over in silence the fact that many physicians, today, ignore the individual corner drug store—that many are dazzled by the brilliant displays of the corporation stores, either not knowing or not desiring to know, that it is mainly these gigantic combinations that reduce the individual druggist to the necessity of forgetting his professional ethics in his fight for existence.

I regret to say that many physicians today direct their patients to the corporation stores, in whose windows you may see, alongside with a biological display, several baskets of fresh-laid eggs at the rate of twenty-three for a quarter.

THE ABILITIES OF THE PHARMACIST.*

G. C. DIEKMAN, PHARM. D.

In speaking of the abilities of the Pharmacist, I will refer only to such of his or her abilities (for we have quite a number of women who have taken up the study and practice of Pharmacy), as are of particular interest to the physician who is critical as to the manner in which the prescriptions he writes are compounded.

In a large city like ours it is quite natural that there should be some persons engaged in the practice of pharmacy who do not meet the expectations of the physician in this regard. In most cases this may be attributed to carelessness, but I dare say that in some cases a lack of technical knowledge and skill is the source of the trouble.

It must be remembered that it is only in recent years that the state has interested itself in the matter of the practice of pharmacy, as far as the preliminary education of the candidate and his compulsory attendance upon the courses of study of a pharmacy school is concerned.

Prior to the year of 1898, a license to practice pharmacy in the City of New York was obtainable in one of a number of ways, as follows:

- (a) Registration upon the Diploma of a Medical school.
- (b) Registration upon the Diploma of a Pharmacy school.
- (c) Registration upon a License to practice Pharmacy, issued by the Board of Pharmacy of another state.
- (d) Registration obtained by passing a satisfactory examination before any of the Boards of Pharmacy of this state, of which there were four, namely, the New York City Board of Pharmacy, the Kings County Board of Pharmacy, the Erie County Board of Pharmacy, the State Board of Pharmacy.

In the first three instances the registration was obtainable without the formality of passing an examination. All applicants for registration were required to be at least 21 years old, and excepting in the first instance were required to furnish evidence of having had at least four years' experience in a place where drugs and medicines were sold and where physicians' prescriptions were compounded.

*Read before the New York Branch and the Medical Society of the County of New York, May 1, 1902.

It will be seen that neither the preliminary education of the applicant nor attendance and graduation from the course of studies of a College of Pharmacy were factors.

After January 1, 1898, and prior to January 1, 1905, all applicants to practice pharmacy were required to pass an examination before the Board of Pharmacy, but the applicant was still not required to furnish evidence of preliminary education, nor was graduation from a reputable college of pharmacy a prerequisite to examination.

Owing to the comparative ease with which a license to practice pharmacy was obtainable, many persons unfitted by habit or lack of preliminary education were tempted to take up the practice of pharmacy.

Many physicians obtained a license to practice pharmacy upon their medical diplomas, prior to January 1, 1898. It is not claimed that there were unfitted by lack of preliminary education, but it is claimed that they did not possess the necessary practical experience to successfully practice pharmacy.

The educated pharmacist, at an early stage, recognized the dangers arising from these lax conditions, not only to himself, but to the physician and public as well, and set about to provide a proper remedy. This remedy was found in the enactment of legislation requiring that all persons desiring to practice pharmacy must show evidence of possessing the necessary preliminary education, and must have been graduated from the course of studies of a recognized school of pharmacy.

For the enactment of these laws, regulating the practice of pharmacy in these two important particulars, the pharmacist is solely responsible, and he should be given the entire credit. It was through the efforts of individuals, supplemented by the State Pharmaceutical Association, that these laws, safeguarding the practice of pharmacy for the protection of the public, were enacted.

The requirements which the state now imposes upon all such as desire to enter upon the study and practice of pharmacy are defined in Section 233 of the Public Health Law, and briefly are as follows :

Satisfactory evidence verified by oath shall be required by the Regents of all candidates for admission to the examinations.

Pharmacist—They shall admit to the examination for pharmacist any candidate that pays a fee of \$10, and,

1. Is more than 21 years of age.
2. Is of good moral character.
3. Had prior to beginning the first year of study in the school fifteen counts or the equivalent.
4. Has studied pharmacology as outlined in the syllabus not less than two years in a school.
5. Has either received the diploma of graduate in pharmacy or equivalent degree from a school, or a license to practice pharmacology in some foreign country registered as meeting the minimum requirements of this article. The diploma of graduate in pharmacy or equivalent degree shall not be conferred on any one that did not file with the school at matriculation the pharmacy student certificate required above.
6. Has had four years' experience in a registered pharmacy, one year of which experience within five years of the date of application must have been in a pharmacy of the United States under the personal supervision of a pharmacist.

The requirement of fifteen counts before admission is not very high, but it has had the effect of bringing a much better class of men to the pharmacy schools, and will no doubt, just as soon as conditions warrant it, be materially raised.

All colleges of pharmacy in this state are now operating under supervision of the State Education Department, and each is required to give a course of study, which in duration and quality conforms with that prescribed in the Pharmaceutical Syllabus.

The State Education Department, before a college can become registered as meeting the minimum requirements, requires the following:

- (a) The value of apparatus and equipment shall not be less than \$5,000.
- (b) Not less than three professors shall be employed regularly in giving instruction.
- (c) Practical work shall be required in not less than three laboratory courses, including chemistry, pharmacy and materia medica.
- (d) A two-year course of instruction shall be afforded.
- (e) A minimum of recitation and laboratory hours shall be required of pharmacy schools as follows:

| Session. | Recitation. | Laboratory. | Total. |
|----------|-------------|-------------|--------|
| 1906-7 | 320 | 430 | 750 |
| 1907-8 | 385 | 515 | 900 |
| 1908-9 | 430 | 570 | 7000 |
| 1909-10 | 500 | 600 | 1100 |

It will thus be seen that 600 out of every 1100 hours of instruction are devoted to laboratory work. While the above represents the requirements at present imposed upon the registered schools by the State Education Department, the schools of this state exceed these requirements in every instance.

Manufacturing Pharmacy, which deals with the manufacture of galenical preparations, and Dispensing Pharmacy, which deals with the preparation and compounding of medicines, formulas and prescriptions, are important subjects of instruction. Analytical Chemistry, in so far as it relates to the recognition and detection of substances and establishes the presence of impurities or adulterations, and Microscopical and Commercial Pharmacy, dealing with the recognition of drugs and drug powders and their adulterants, are other important laboratory subjects.

Students are not permitted to graduate unless they have shown marked proficiency in their work, more especially so in the laboratory subjects.

In the work of the Dispensing Laboratory the student is enjoined to be accurate above all, not to use *about* such a quantity, but to use at all times *exact* quantities. Furthermore, he is impressed with the absolute necessity to at all times dispense only such articles as are wanted by the physician. The pharmacist has no right to delegate unto himself the liberty to deviate from the terms of the prescription or order, excepting with the express consent of the physician. Every pharmacist worthy of the name will uphold and subscribe to this principle and will assist the physician in seeing to it that it is strictly adhered to.

Violations of this principle should be brought to the attention of the proper authorities and redress will follow promptly. The honest pharmacist, and he constitutes by far the largest number of the profession, suffers quite as much from

the practice of substitution as do the physician and the public, and is just as anxious and desirous to have the evil eradicated.

In the subject of Manufacturing Pharmacy, the student is taught to properly prepare the different classes of galenical preparations, such as Tinctures, Fluid-extracts, Elixirs, Emulsions, Pills (with their coating), Suppositories, vaginal, rectal and urethral, Ampulles, Tablet Titurates, Compressed Tablets, Ointments, Cerates, Liniments, Cachets, Wafers, etc.

The up-to-date pharmacist is prepared to furnish any pharmacopœial or National Formulary preparation of standard strength and purity, or to furnish and prepare any other formula which the physician may desire to have made. Contrary to the idea held by many, he is able to coat pills with Keratin or Gelatin, or to coat them with Gold or Silver Leaf or Tolu, or any other coating required by the physician. The many advantages possessed by a freshly made and freshly coated pill mass are obvious.

The preparations on exhibition here this evening are a fair sample of what can be done in the line of manufacturing pharmacy by the average pharmacist of today. The quality of these exhibits is by no means the exception, but rather the rule.

I would not have it understood that only the graduates of the present day possess the ability to properly compound and dispense. Many of my brethren in pharmacy who do not possess all the advantages of a preliminary education, are among our best and most accurate workers, they having received a most practical training in the different establishments where apprenticed and employed. Then again we have many of our pharmacists who have received a most excellent education abroad in some of the best Universities.

Then again, it must be remembered that many persons now practicing pharmacy successfully, judged from a professional and scientific standpoint, are graduates of colleges of pharmacy, before such time when attendance upon the studies of a college of pharmacy became compulsory. The list of graduates of the schools of pharmacy of this state will bear evidence of the fact that very many young men did not avail themselves of the "short cut" via the Board of Pharmacy, but attended a school of pharmacy and graduated therefrom.

In order to test the ability of the graduate in Pharmacy and to make certain that the college has not conferred the degree of Ph. G., or other degree, upon anyone unworthy, the state requires that before one may legally enter upon the practice of pharmacy in this state, he or she must pass the examinations prescribed by the State Education Department, through its State Board of Pharmacy.

In these examinations the practical ability of the candidate is thoroughly tested, as will be evidenced by the following rule of the State Board of Pharmacy, relating to practical work:

PRACTICAL EXAMINATIONS.

Rule 22 states as follows:

These shall consist of the manufacture of:

Two galenicals.

The dispensing of three prescriptions, and

The testing of two substances for identity or impurity.

In the practical examination ten samples shall be submitted for identity, which

shall be of pharmacopœial or National Formulary origin, five of which shall be crude drugs, and five shall be chemicals or galenicals.

In connection with the matter of these practical examinations, I beg to be permitted to bring before you examples of some of the exercises actually given, as follows:

Manufacturing—

| | |
|--------------------------------|---------|
| Basham's Mixture | 250 cc. |
| Emulsion of Asafoetida | 100 cc. |
| Unguentum Sulphuris | 15 gm. |
| Donovon's Solution | 25 cc. |
| Pills of Aloes and Mastic..... | No. xx |
| Chalk Mixture | 25 cc. |
| Ointment of Iodine | 10 gm. |
| Triplex Pills | No. x |
| Zinc Paste (Lassar) | 25 gm. |
| Tincture of Nux Vomica..... | 50 cc. |

Dispensing—

R

| | |
|-----------------------------|------|
| Sodium Salicylate | 8.0 |
| Sodium Bicarbonate | 5.8 |
| Glycerin | 20.0 |
| Distilled Water, q. s. | 60.0 |

M. s. a.

R

| | |
|-------------------------|-----|
| Phenyl Salicylate | 0.3 |
| Castor Oil | 0.3 |

Misce,

ft. caps. d. t. d. No. viii.

R

| | |
|--------------------------|-----|
| Tannic Acid | 1.0 |
| Powdered Opium | 0.2 |
| Cacao Butter, q. s. | |

Misce,

ft. suppos. No. vi.

R

| | |
|--------------------------------|------|
| Terpin Hydrate | 6.0 |
| Glycerin, | |
| Syrup of Wild Cherry, āā | 20.0 |
| Powdered Acacia, q. s. | |
| Distilled Water, ad. | 90.0 |

Misce,

ft. emulsio.

R

| | |
|---------------------------|----------|
| Silver Nitrate | gr. 1/10 |
| Kaolin, | |
| Petrolatum, āā q. s. | |

Misce,

ft. pil. No. xii.

R

| | |
|--------------------------|-----|
| Ichthyol | 2.0 |
| Cacao Butter, q. s. | |

Misce,

ft. globuli No. vi.

| | | |
|---|--|---------|
| ℞ | Zinc Sulphate, Sulphurated Potash, āā | 4.0 |
| | Rose Water, q. s. ad. | |
| | Misce, ft. lotio. | |
| ℞ | Red Iodide of Mercury..... | 0.01 |
| | Sugar of Milk, q. s. | |
| | Misce, ft. d. t. d. tabellae No. 1. | |
| ℞ | Cod Liver Oil..... | 25.0 |
| | Acacia, Sugar, āā q. s. | |
| | Distilled Water, q. s. ad. | 0.50 |
| | Misce, ft. s. a. | |
| ℞ | Menthol | gr. v |
| | Camphor | gr. x |
| | Liquid Petrolatum, ad. | oz. ii |
| | Misce, Sig. Use as a spray. | |
| ℞ | Yellow Oxide of Mercury..... | 0.8 |
| | Wool fat, White Petrolatum, āā | 4.0 |
| | Misce, ft. unguentum. | |
| ℞ | Terpin Hydrate | oz. ss |
| | Glycerin | oz. iss |
| | Elixir of Orange, q. s. ad. | oz. iv |
| | Sig. | |
| ℞ | Ammoniac | 4.0 |
| | Paregoric | 8.0 |
| | Distilled Water | 100.0 |
| | Misce, ft. emulsio. | |
| ℞ | Tannate of Mercury | 0.1 |
| | Misce, ft. tabellae. No. xxiv. | |
| | Sig. Capiat unam pro re nata. | |
| | (Translate into English and write upon label.) | |
| ℞ | Extract of Belladonna..... | 0.02 |
| | Thymol Iodide | 0.06 |
| | Cacao Butter, q. s. | |
| | Misce, ft. suppos. d. t. d. No. vi. | |
| | Sig. Unum omni tertia hora. | |
| | (Translate into English and write upon label.) | |

Test the following:

- (a) Potassium Iodide for Iodate.
- (b) Potassium Citrate for Tartrate.

- (a) Bismuth Subnitrate for presence of Carbonate and insoluble foreign salts.
- (b) Potassium Bromide for Bromate.

- (a) Tannic Acid for Dextrose and Resins.
- (b) Menthol for presence of Thymol.

- (a) Borax for presence of Carbonate or Bicarbonate.
- (b) Cream of Tartar for presence of Starch or other insoluble matter.

The results of the practical examinations, that is, the work turned out by the candidates, is very gratifying and proves that they are highly proficient in this branch of their study.

If time permitted I should like to dwell in more detail upon other factors tending to prove the ability of the pharmacist, such as a more detailed account of the college courses and a more thorough analysis of the State Board of Pharmacy examinations, and I trust that in the discussion which is to follow, such points as I may have omitted, or others which I may have treated lightly, will receive attention

In closing, I say without hesitation that the up-to-date pharmacist possesses a rare degree of ability, for which he is not commonly given credit, except by the few, and I trust that the practicing physician will more often give these pharmacists an opportunity to display and prove their abilities.

SOME OF THE GOOD THINGS OF THE NATIONAL FORMULARY.*

LOUIS SAALBACH, PHARM. D.

The N. F. as a handbook is not properly appreciated by the average pharmacist. It is full of good things from a pharmaceutical, therapeutical and commercial standpoint. Within its pages may be found formulas which might pave the way for future fortunes, if one was inclined to devote his life to the chase of the elusive dollar,—formulas which will produce preparations whose prototypes now grace the shelves of the average drugstore in endless variety, with fanciful trade names and literature descanting upon the virtues, both real and imaginary, which the component parts of the mixture are supposed to possess. And why should it be necessary to pay one's money into the already overloaded coffers of the pharmaceutical houses? Is it not better pharmacy to produce a preparation which we know has the substances, or the active constituents which are implied by the name under which it is known? In every instance such preparations may

*Read before the Pittsburgh Branch.