

the matter has been discussed with the manufacturer, the dealer should receive notice of the disposition of the case, and, in fairness to both dealer and manufacturer, notices should also be sent when the drugs examined are found to be of standard strength. This course would unite the honest manufacturers and dealers with the drug officials in their campaign against impure and adulterated drugs and would thus result in a more adequate protection of the public against them.

Much constructive work can be done by the drug officials, with expert assistance which they can easily enlist, in working out proper standards and in establishing accurate methods of analysis. It is needless to say, that both standards and methods should be published, and that intelligent criticism should be encouraged. Bulletins of information for the drug trade and the public, can also be made very valuable and a good start has already been made in this direction by some of the states.

If some such plan of action could receive the support of this and other organizations interested in the enforcement of the drug laws, it would be only a short time until all antagonism between officials and dealers would disappear and everybody concerned would be working harmoniously for the enforcement of these laws.

*Scientific Division Eli Lilly & Company, Indianapolis.*

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## A PLEA FOR A HIGHER STANDARD FOR ENTRANCE TO THE PROFESSION OF PHARMACY.

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We are living in an age of progress in which the arts, sciences, and trades are making rapid advancement. Old methods and standards are inadequate to cope with modern problems. The professions allied to pharmacy, medicine and dentistry, have changed their methods and raised their standards and are giving to the public better service than ever before. It behooves us, the pharmacists of the country, to advance with and keep abreast of this progress or we will lose out and the profession will be seriously injured.

If pharmacy is a profession, the standard for entrance to it should be comparable to the present-day standards for entrance to the other professions. But is pharmacy a profession? I am ashamed to say that this question is asked in all seriousness by the pharmacists themselves. A short time ago, a series of articles appeared in Merck's Report in which this question was viewed from all standpoints by the pharmacists of the United States and some men who are prominent in pharmacy to-day declared that it is not a profession but a commercial business. Careful consideration of these articles, showed clearly that pharmacy will be what we pharmacists desire to make it. If we wish, we can make it a commercial proposition, or we can make it a dignified profession.

What are some of the things that should be done to make it a dignified profession? First, and most important, we must raise the standard for entrance to the profession.

Our standard to-day is very low. To prove this, I have only to cite the fact, that some of our state legislatures have seriously considered such bills as the one to register, without examination, all persons who have been connected with a drug store for ten years, be it in the capacity of porter, errand-boy, or soda-fountain tender.

We were all highly indignant when a New York judge declared that pharmacists are a class of men with little learning. This, however, shows us how people outside of the profession view us. When we stop to consider that in many of our states, a man can become a full-registered pharmacist by serving a four-year apprenticeship, which may mean selling patent medicine and kodaks for four years, and passing an examination so easy that he can prepare for it by taking a three months' "quiz-compend-cram" course in one of our so-called schools of pharmacy, we must concede that they are, in a measure, justified in taking such a view of us. Men in the other professions, the lawyer, engineer, doctor, dentist, chemist, and even the agriculturist, look upon our profession as an inferior one, because it requires so little preparation to enter it.

Ten years ago, the profession of medicine was in a rut. Little or no standard was maintained in many states, and we suffered from an over-production of incompetent and poorly-trained physicians and the public had little confidence in the profession. By the combined efforts of the physicians and their boards of medical registration, all this has been changed. Standards have been raised and maintained, so that to-day, in many states, a person must complete a six year college course and pass a rigid examination, before he is allowed to practice and, in a short time, he will be compelled, in addition, to spend one year in hospital work. This elevation of standard has accomplished wonders for the profession and to-day we have fewer but better physicians and the public is better served. Pharmacy is to-day, where medicine was ten years ago and an elevation in our standard will do for pharmacy what it has done for medicine.

The standards for entrance to the trades, have been raised with a like result. To illustrate, a plumber must serve four years apprenticeship, and does not receive full wage until the end of six years. The pharmacist serves a four-year apprenticeship which may mean four years behind a soda fountain and then takes an examination that he can prepare for by taking a three months' "cram-course." Plumbing is a trade, while pharmacy is a profession, and the only difference in preparation, is that the pharmacist must take this easy examination. I am speaking now of the standards obtaining in many of our western and middle-western states. I know that some states have higher requirements, and, as a result, the pharmacists in these states enjoy a much better professional business.

As a result of our low standard, we have a great army of poorly-trained men, causing fierce competition, low wages, long hours, the commercialization of the profession, and lack of public confidence. There is hardly a city, village or hamlet in the United States, that does not contain two or three times as many

drug stores as are necessary, to carry on the legitimate drug business of the community. This fierce competition causes the druggist to add side-line after side-line, until it is difficult, in some cases, to distinguish the drug store from the notion shop. It also causes the druggist to pay his clerks low wages and to work himself and his clerks long hours, in order to make a living.

Fierce competition demands cheap help, cheap help demands low standards, low standards cause overcrowding of the profession, and overcrowding causes fierce competition. Thus we have a complete cycle of cause and effect. If we attempt to break the chain at any point, we are told that we will disturb trade conditions. What if we do disturb trade conditions? You cannot remove a cancer without causing the patient pain. An uplifting of standards will not debar any one who is already registered, and the effect upon trade conditions will be so gradual that any one who is failing, will have time to adjust his affairs and enter another field.

Our low standards permit many undesirables to enter the profession, men who have no respect or regard for it, but who adopt it for the purpose of private gain. The "boose and dope" seller can easily qualify, and conduct a "saloon or dope joint" under the guise of a drug business and thus bring the legitimate pharmacist into disrepute. Only a short time ago, a saloon-keeper applied for membership in one of our state pharmaceutical associations, believing that, since he was pretending to conduct a drug business, he was eligible for membership.

The profession of pharmacy is not very attractive to our best prepared young men, because of the small compensation received by the drug-clerk. The shoe-clerk and the grocer-clerk receive as much compensation and have much shorter hours, with no educational qualifications for entrance. A young man who has completed a high-school course, and who is trying to decide what profession to enter, usually steers clear of pharmacy. A great many men who are in the profession, are dissatisfied with it and do not encourage their friends who are well-prepared to enter it. I have heard men who are pharmacists, declare that they would never let their sons enter the profession. Under these conditions, we cannot hope to recruit the profession from the ranks of the best-prepared young men.

There is a demand to-day, more than ever before, for well-trained pharmacists. The younger physicians are asking for careful urinary analysis, the incubation, isolation and determination of bacteria, the determination of the bacterial content of the secretions of the body, etc., all of which require skilful laboratory workers. I am sorry to see that, in some places, this work, instead of going to the pharmacist where it belongs, is going to the younger physicians because they are better prepared for it.

Our medical colleges are laying much stress upon bacterial diagnosis and upon the use of biological products, in the treatment of diseases. The pharmacist should be prepared to assist the physician in this work. To be prepared for this, a person should have a good college course of four years or more. What incentive is there for a young man to secure this preparation and become registered as a pharmacist when he is placed on a par, in the eyes of the law, with the man

who has sold patent medicines and kodaks for four years and has taken a short "cram-course" in pharmacy?

I have shown that our low standard causes overcrowding of the profession, fierce competition, low wages, poorly-trained and incompetent pharmacists, and lack of public confidence. Therefore I believe that the hope of the profession lies in an elevation of standard for entrance to it.

I would respectfully urge that the Association inaugurate a campaign to secure a higher standard for entrance to our profession.

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#### SIMPLE METHOD FOR DETERMINING GLUCOSE IN DIABETIC URINE AND OTHER LIQUIDS.

Ten mils of the urine is measured into a 200-mil flask, and water added to make 200 mils. A solution of potassium carbonate (2 oz. to 6 oz. of distilled water) is filtered and made up to 8 fl. oz. To 20 mils of the diluted urine, 10 mils of the potassium carbonate solution is added in a small flask, the mixture boiled carefully for three minutes, cooled, and made up to 50 or 100 mils with distilled water. A solution of pure glucose is prepared, 1 Gm. in 200 mils of distilled water; 20 mils of this and 10 mils of the potassium carbonate solution are boiled together in a small flask for three minutes, cooled, and made up to 50 or 100 mils. The two solutions are then compared by holding the glass tubes over a piece of white paper at an angle of 45°. By pouring the liquid from the known solution into a measure glass until the tints of both are alike, and observing the amount of the known glucose solution used, the percentage can readily be determined; for example, if 27 mils of the pure glucose solution were required for the solution, then, multiplying by 2 we obtain 5.4 as the percentage of glucose in the urine.—A. F. Dimmock, M. D. (*Brit. Med. Journ.*, August 29, 1914, 399).

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#### THE MOST POWERFUL MAGNET.

Probably the strongest electro-magnet is produced on the new method which Professors Perot and Deslandres are applying with success. Their idea is to take one of the strong electro-magnets of laboratory type with pointed pole-pieces which already give a high value of the magnetic field, and then to put an extra coil around the air-gap between the poles so as to add considerable to the field. Such coil is made of thin copper strip and is cooled down as low as -30 degrees C. by a current of oil, so that a remarkably heavy current can be put into the coil without burning it; for instance, it will stand a current density of 1800 amperes per square millimetre, using a 0.2 millimetre strip. Such a coil is put on a Weiss electro-magnet which carries the usual coils, and gives 41,000 gauss for the magnetic field strength. Putting on the 30,000 ampere-turns of the new coil, this brought the field strength up to 51,000 gauss, and it was only lack of current supply that prevented running as high as probably 60,000 gauss, so that a most powerful field can be thus obtained.—*Boston Transcript*.