

As speedy disintegration of all tablets is considered essential, a disintegrating agent must be used. Doubtless, known to many, potato starch is the disintegrating agent par excellence as it swells very rapidly and ruptures a tablet very quickly when it is introduced into aqueous solution.

The following criticisms in general might be based on the aspirin tablets at present supplied by all except one or two manufacturers: that many of them are off color, some having unquestionably been subjected to contamination. Corn starch has been used by many in preference to potato starch; the excipient used by some is also too heavy and too slow drying.

The nature of engraving used on such monogram punches as have been operated in making aspirin tablets is not of a proper make to use on tablets of such dusty physical appearance. Others through not using a proper disintegrating agent have compressed the tablets too hard which makes them too brittle for carrying. In other cases, to permit of speedy disintegration, insufficient pressure has been applied.

In behalf of the tablets examined, however, the writer would like to state that the disintegration in general has been exceptionally good, the discoloration only moderately bad, and that while the appearance of most of the tablets is poor, it is undoubtedly preferable to sacrifice physical appearance for efficacy in all cases and when all is said and done it is quite probable, too, that though these matters are of considerable importance to manufacturers, the retail druggist may be in a position to inform us that the public are not sufficiently educated in such details, and may prove to us that the poorest looking tablet is the best seller of all.

WHAT IS THE MEANING OF A DEGREE IN PHARMACY?*

BY L. E. SAYRE.

It will not be the aim of this paper to extol pharmaceutical degrees, or make a plea for their standardization or unification, but rather to suggest for consideration the importance of some questions indirectly associated with degrees.

The desirability of unification and standardization of degrees in pharmacy has been ably presented at former meetings of this Association by prominent members and instructors in pharmacy. Professor McGill, of Nashville in 1904¹ very ably set forth what was then considered as needed to bring about greater uniformity. It may be in place to review briefly his paper. His statistics were gleaned from 48 schools and colleges of pharmacy. He found among these institutions the following degrees conferred: Graduate in Pharmacy, Bachelor of Pharmacy, Master of Pharmacy, Doctor of (or in) Pharmacy, Bachelor of Science in Pharmacy and Master of Science in Pharmacy. To show the lack of uniformity he cited statistics to show that the degree of Ph.G. was conferred for work ranging from 40 to 72 weeks. Greater uniformity was found to exist in the requirements leading to the degree of Ph.C., but in the Bachelor of Pharmacy, Master of Pharmacy and Doctor of Pharmacy much incongruity existed. For

*Read before Section on Education and Legislation, A. Ph. A., Chicago Meeting, 1918.

¹ Proceedings A. Ph. A., 1904, p. 115.

example, the title of Doctor of Pharmacy in two cases required five years' study and presentation of satisfactory thesis and one case where 2 years' work was required after taking Ph.C. degree, or one year after taking the Ph.M. degree, while the title of Doctor of Pharmacy was conferred by two schools as their only degree, presumably for the regular two years' course.

Doctor McGill remarks "It will not be many years before no reputable college will dare to confer the degree of Bachelor or Doctor upon a candidate who has not taken the baccalaureate degree," or its equivalent.

Last winter, at a meeting of the Association, representing the institutions of higher learning, a motion was offered to be acted on at a later meeting—which, in substance, is intended to discourage and even prevent the recognition of academic degrees for work below that generally recognized as requisite for the baccalaureate degree. Doctor McGill, thirteen years ago at the annual meeting of this Association, deplored the fact that these degrees in pharmacy were sometimes conferred upon some who had not even a high school education and when professional training was limited to a short course in a few branches of science pertaining to pharmacy. He asks: "How does the world regard this practice?" The answer of the academic world seems to be fairly well crystallized in the action proposed to be taken by the association referred to.

Twenty years ago there was some agitation favoring the title of Doctor for the pharmacist but making this worthy of recognition by adequate training through a proper curriculum. H. R. Slack¹ suggested that this would elevate the standing of the pharmacist as well as the teaching of the profession. Mrs. Mallory Taylor aptly says that the old proverb: "People will live up to their clothes" is applicable; their mental and moral barometer will rise and fall accordingly. She advocates a professional suit for the pharmacist. She gave her impression of her professional status when she said, speaking as a druggist: "We belong to the threadbare class." These sentiments expressed twenty years ago by one from the ranks of the practical druggists, are considered by some of the same class of to-day, as sentiments characteristic of the "theoretical harp stringers" or "the scientific flute players"—otherwise called "professors." Be this as it may we are thankful for the many who have still high respect for the calling and have the courage, against odds, to make every effort to elevate it.

College degrees have an important bearing and meaning to the student, his instructors and others interested in him and his calling. Some eminent educators have said that it would be a good thing if we could abolish college degrees altogether; if we could have knowledge and training sought for its own sake rather than the prize supposed to be embodied, or inherent in prize, but it appears that we have to take human nature as we find it. In student life there are at least two incentives—the knowledge itself and the prize which we name the degree conferred. Of the two incentives the former, to the ideal student, is the chief incentive, the latter quite subordinate. The magic influence enveloped in the idea of degree may be accounted for partly in its historical connection. Academic scholarship as early as the 13th century, was rewarded by the conferring of honorary degrees. A body of statutes was adopted for the University of Paris wherein the term Bachelor,

¹ Proc. Am. Pharm. Assoc., 1897, p. 356.

Master, and Doctor has appropriate recognition, standardization and restriction. The underlying motive in these statutes, succinctly stated, being the upbuilding of civilization through training and scholarship, which were, in a measure, standardized, an effort to accomplish this was stimulated. These motives and these ideas in the 20th century still cling to the meaning as well as the purpose of degrees. Pharmacists have appropriated and practically applied this time-honored method of stimulating scholarship as evidenced in the numerous schools and colleges which have been established through their combined efforts, the vitalizing factor in the whole system being the advancement of scientific pharmacy. The result has been that we have a wide distribution of pharmacists who have been not only well trained but who have the true scientific spirit—pharmacists of whom the professions—medicine and pharmacy, as well as the public, may well be proud.

But it is a fact to be deplored that there has grown up, beside this scientific spirit, an opposing one, one that has been characterized as the modern spirit in pharmacy, the extreme advocates of which would do away with schools, degrees and all restrictions, would even dispense with the drug store itself except for exploitation—merely using its name for trade purposes, as if pharmacy had no rights that should be respected. A gentleman, interested in medicine and in pharmacy as well, said to me that these modern stores, masquerading as pharmacies, would soon put the real pharmacist out of business if the pharmaceutical profession did not protect itself against the invasion. It seems to me that we have come to a time when not only the pharmacist should be standardized but also the drug store. That is, in addition to demanding a definite professional training on the part of the pharmacist, the public, by law should demand a certain minimum of equipment in the way of stock, apparatus and prescribe and define the conditions under which alone the dispensing of drugs can be safe and accurate, such as character and quantity of stock, cleanliness, care of apparatus, etc., etc. In this direction in some countries legislation has gone so far in detail as to require that a licensed drug store must possess, for instance, "a balance that will have a delicacy that would turn by the weight of a milligramme. It was only through some very meager restriction of this sort that Kansas through legislation was able to drive out the saloon keepers masquerading as druggists—the stock of a drug store was defined, to protect the real from the spurious. I do not mean of course that, in order to meet requirements such as to protect the good name of pharmacy the druggist must needs renounce "side-lines" and "sundries"—those in which he may find scope for his business ability and enterprise, but while he may have free scope here let him, if he attempts to perform the service of a pharmacist, do so with a show of equipment, at least, and display some respect due the vocation of pharmacy.

The medical profession, partly through outside pressure, has had new life breathed into it by having a higher professional standard urged upon it. It is needless to say that practitioners of medicine welcomed this outside pressure through the Carnegie Institution, and pharmacy might well invoke this same assistance to bring about a better respect for itself. Our colleges and schools must have the courage to blaze the trail. It would be fine, indeed, if we could broaden our minimum college courses, taking systematic courses in bacteriology and biology for example, which are becoming more and more necessary, adding another year of 40 weeks as Ann Arbor has done to the pharmacy course.

I have pointed out that there are those in our own ranks who would abolish the drug store except for the purpose of exploitation. There lurks in other quarters, without our company to-day a small, influential, honest, but totally misinformed class of medical men who would go so far as to abolish pharmacy altogether. Modern medicine, they claim, has so little of medical therapy in it that the drug store, especially the modern type, is entirely superfluous in our communities. To them pharmacy is synonymous with ignorance and humbuggery. Pharmacy schools give only smatterings in their courses; little value, if any, is attached to the name of pharmacy. This class doubtless is one among those who are opposing the recognition of a pharmaceutical corps in the Army. Of course these medical men forget, if they ever knew, that all that is modern and worth while in therapeutics to-day, even the small part they find themselves compelled to employ in their practice is not the product of medical men themselves, but very largely indeed of pharmacists, chemists, and scientists not connected with the practice of medicine. Who but the pharmacist, directly or indirectly, has evolved the numberless concentrated principles, biological products, the hyperdermic tablet, suppository, the glass pearls, gelatin capsules, the sterile syringe, to say nothing of a host of other remedial agents and their standardizations practitioners employ?

Pharmaceutical research—its direct and indirect bearing upon Medical Science, needs to be put forward! Medical men need to be told that all that belongs to Medicine has not originated with them or the profession they represent. We need young men of high degrees of scholarship to speak for pharmacy. As Mr. Hendrick says of the chemical profession—"It needs to be properly advertised!" We need young men trained to make valuable contributions to the healing art and to show that all creative art and skill does not reside in the one profession. It takes men well trained to do this—to drive the lesson home that we may guard what is justly ours. The college degree is surely one of the means to this end.

One of our prominent pharmacists, in a recent article, seems impatient of our schools that teach so much science, and that they pay so little attention to the fact that the druggist "has to pay his rent" and only once in a while has to figure out the difference between an atom and an atomizer. If such an implied pessimistic view of pharmacy should prevail, pharmacy might wisely agree to abandon degrees, and all restriction, and surrender itself completely to department stores, then there would be no meaning to, nor any more need for a degree for the pharmacist than for the grocer's clerk.

If the aim of this paper, wandering as it is, has not been made quite clear, that aim may be stated in a short closing paragraph.

Nothing portrays more keenly the spirit of pharmacy than those who reflect this spirit in word and deed. What are we doing to create and uphold the proper spirit? Any one who cynically criticizes the profession of pharmacy is doing his bit in chanting what may end in the requiem of that profession. We are thankful for constructive builders, for those who are eager to help in building our time-honored profession. Some do not know how, but do not oppose, nor indulge in the foolish pastime of trying to minimize or even nullify the work of those who are active in constructive effort. May the efforts of the latter grow less and less apparent.
