

THE DEPARTMENT OF THE AMERICAN ASSOCIATION OF COLLEGES OF PHARMACY

During last month, two schools dedicated buildings for the teaching of pharmacy; the principal addresses of the occasions follow. The first by Dr. Edward Kremers of the University of Wisconsin at the ceremonies of the University of Maryland School of Pharmacy, on May 10th, and the other by Dean Edward H. Kraus as part of the dedication program of Purdue University School of Pharmacy on May 20th. In both instances pharmacists and State Pharmaceutical Associations, by their encouragement, contributed largely to the success of the undertakings, and in one instance if not in both, the Governor of the state exhibited a deep interest, because of the importance of pharmacy in public health.—E. G. E.

ADDRESS BY DR. EDWARD KREMERS.*

WHEN Peter Lehmann in 1821 told his fellow druggist, Henry Troth, of Philadelphia: "Henry, this won't do, the University has no right to be taking our boys away at noon to make them M.P.'s"¹ he sounded the note of independence of the apothecary from the physician so far as the education of his apprentices was concerned. But he seems also to have struck the death knell of a pharmaceutical curriculum by the old colleges of the east. In 1893 the late President Elliot visited Wisconsin. Doctor Adams introduced your speaker to the veteran educator of Harvard as the "Dean of Pharmacy," a compliment that was cheaper than a corresponding salary. "As yet we have not undertaken to teach that subject" was Elliot's reply. To speculate on how different the history of pharmaceutical education in this country might have been, had Harvard, Yale, Princeton, not to include Johns Hopkins of more recent date, taken upon themselves to teach pharmacy, may be useless at the present time.

This much, however, we know: the druggists of Philadelphia, who had declared home rule in 1821, as soon as they began to look about for lecturers, realized their dependence upon medical men as teachers. We also know that for half a century, the "school" was but a "Fortbildungsanstalt," a continuation school. What the apprentice and clerk had learned behind the prescription counter and in the laboratory during the day, the lecturer attempted to systematize for them in several evening lectures during the winter months. To the credit of the Philadelphia College of Pharmacy be it said that it always took its "school" seriously, whereas some of the other colleges accomplished but little in this direction, or nothing at all.

For half a century the lecture system was about the only means of instruction used. It certainly was the cheapest. Moreover, it was justified by those who employed it because the student's real school was the drug store. The lecture summarized and supplemented the knowledge and experience there acquired. Whatever may be said about the classics and the humanities generally during this period scientific education and with it, the professional education of the engineer, the chemist, the physician, did not stand still. The shop of the engineer and the office of the physician had been replaced in large part by college laboratories.

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¹ *Am. J. Pharm.*, 41, page 98.

Pharmacy was reluctant to follow. The drug store was still looked upon as the essential means of instruction. Moreover, laboratory instruction was costly and the old line colleges, being without endowment, were dependent almost entirely upon students' fees. It was Michigan that took the first step to substitute systematic laboratory instruction for the apprenticeship system which, for the most part, never had any great educational value for the simple reason that the average druggist of this country has never been an educated pharmacist. There were a few preceptors with whom an apprenticeship meant a liberal education, but they were few and far between.

When Michigan made application to membership in the old Conference of Colleges, she was refused admission because she did not demand drug store experience for graduation. Nevertheless, the example of Michigan was followed by other state universities. Moreover, the trend away from apprenticeship became more marked with each year. When, therefore, in 1900 the second Conference was organized, not one of college organizations, but of pharmaceutical faculties, the stone that had been rejected in the seventies was made the cornerstone, and Prescott was elected the first President of the Conference.

But even before this another step had been taken, which, so far as it did not remain unnoticed, received little else than ridicule. Thus the Dean of Northwestern, who, in the name of efficiency, had concentrated the former so-called two-year course into one calendar year, suggested that someone might be crazy enough—though he did not use this word—to offer an eight-year course. This criticism amused. But it did hurt when Professor Prescott replied to a question as to what he thought of the step: "It will do no harm." The young innovator had looked up to his venerable colleague for encouragement and had received a shrug of the shoulder. This was in 1893. Soon thereafter, President James, then of Northwestern, left his Evanston Campus to address the pharmacy students in Chicago. He told them that every boy and girl aspiring to become a pharmacist should take a four-year course at college. It was also a few years later that Professor Prescott wrote: "We are contemplating giving a four-year course. Upon looking over the catalogues we find that you are already giving such a course. What has been your experience?" When, in 1892, President Chamberlin asked me how many students I expected in the proposed four-year course, I replied: "Mr. President, I am not concerned with numbers, but with an ideal." To-day this ideal has become the practical. Georgia, Iowa, Minnesota, Michigan, Washington, and possibly others, have gone Wisconsin one better by making it the only undergraduate course. In a few years it will be the only course offered by the members of the American Association of Colleges of Pharmacy.

If Wisconsin allowed some of her sister institutions to take this final step first, for reasons that were local and need not be discussed here, she did not rest content with this beginning that placed pharmacy on a par with the other college courses on the campus. For it was but a first step to place the pharmacy course on the same academic footing with other courses leading to the A.B. and B.S. degrees. The graduate of the pharmacy course was no more to be looked upon as a full-fledged pharmacist than the graduate of the engineering course was accepted as an experienced engineer. As Dean Johnson put it so aptly: "Our graduates are not engineers, but men with a capacity to become engineers." So our graduates

were not turned out as pharmacists, but as men and women with a capacity to become pharmaceutical practitioners.

If we had succeeded in laying a foundation, broad and strong, the next step was the erection of the superstructure. This meant graduate, not post-graduate work. Graduate, not post-graduate study, implied the capacity to do independent work. This could best be taught by research. At first we were permitted to give the degree of Doctor of Philosophy with Pharmaceutical Chemistry as major. Pharmaceutical Botany under Dr. True, a recent disciple of Pfeffer, the noted plant physiologist at Leipzig, followed. When, however, we offered Pharmacy as major, a battle was on, a battle of which your present Dean can tell a story. Pharmaceutical chemistry, after all, was chemistry, and pharmaceutical botany was botany, but pharmacy, God forbid! If his colleagues of the Philosophical Faculty at Giessen had accused Liebig of introducing the methods of the kitchen into academic procedure, we were accused of doing something equally abhorrent or even worse. Had not a few years before a superintendent of public instruction, in his biennial report to the Governor, made the statement that the University would be justified in teaching how to make boots and shoes if she persisted in giving instruction in butter making and pharmacy. Well, strange things have happened educationally since the days of Liebig a hundred years ago. Not only did we win the fight but in 1926 the Department of Pharmacy had six successful candidates for the doctorate, five of whom took it with pharmacy as major.

Thus the highest degree given in course by any university is now being given without question to students who have pursued the graduate triennium in pharmacy.

But what of the practical results of this academic achievement? Without going into details, let us consider a few typical cases.

1. A Maisch could wait on the customers of his drug store during the day and lecture on botany and materia medica in the evening. During the winter months he attended to his duties as Dean of the Philadelphia College of Pharmacy and during the summer months to those as Secretary of the AMERICAN PHARMACEUTICAL ASSOCIATION. In addition, as editor, he published monthly issues of the *American Journal of Pharmacy*. To-day these offices are filled by five men. Not that the capacity of these five men had deteriorated. The offices call for different types of specialization. The good old times when a well-posted retail pharmacist with an itch to teach could be made a college professor by his friends have passed. The practice of pharmacy calls for one kind of training; the duties of the teacher demand a different kind of experience as well as a deeper and broader education.

2. There exists in this broad country of ours a college of pharmacy in a large industrial community. The pharmaceutical industries of that area have innumerable problems to be solved. However, the directors of these industries do not, for the most part, go to their college of pharmacy with their scientific difficulties. They go to the chemical laboratories of local and even distant universities for solutions of their larger research problems. Needless to state, that particular institution is still continuing exclusively along the older lines of undergraduate instruction.

3. The third attainment, if such it may be called, is even more negative in character. At the Indianapolis meeting in 1917 the perennial question of the status of the pharmacist in the Army and Navy was up for consideration. I

ventured to suggest that, in order to give pharmacists in Government service a status before the Civil Service Commission, an educational requirement of a four-year course leading to one of the accepted bachelor's degrees be demanded as prerequisite. Unfortunately for my suggestion, none of the eastern colleges at that time offered such a course, yet they were most interested in supplying prospective candidates for these positions. To-day the higher ranks of Navy pharmacists are again up for discussion before Congress. Interested as I am in advancing the position of the pharmacist in the Government, be it in its civil or military branches, I can but express my regret that those who are most ardently seeking to bring about this advancement, did not see fit to go a step farther. The pharmacist in Government service cannot expect full recognition until he presents himself with an educational background equal or superior to that of professional men in medicine, engineering, chemistry, botany. Your own dean, when in the Hygienic Laboratory doing the duties of pharmacist, not in the official but in the real sense, was listed in the civil service as pharmacologist. The official pharmacists were store keepers and, I am told, are such to-day. So long as this condition lasts, pharmacists in Government service will not receive that recognition which we so much desire. To our Government we must offer the very best educated of our young men and none else.

Please do not misunderstand me. The so-called self-made man, though he be not as common to-day as he was in the past, is still a man to be respected if not always admired. As the late President Roosevelt once put it: "The college graduate is not necessarily better than the non-graduate. He should, however, be better than he would have been without his four years of undergraduate experience on the college campus." The doctor of philosophy, as a German professor once put it, at least in a story told by the late President Ira Remsen of your Johns Hopkins University, may be nothing but an "Esel." Nevertheless, the bachelor and the doctor of our American colleges and universities have captured for themselves places, not only in our social fabric, but in industry, even in commerce. Medicine, law, engineering, journalism, chemistry, teaching, are no longer satisfied with the education and training characterized by the bachelor's degree, but demand that which is the equivalent of the master's degree and in not a few instances that which is the equivalent of the doctor's degree.

If there are "asses" among our doctors of philosophy, this fact has not changed the trend of the times. Pharmacy, it must be confessed, has not kept fully abreast with this change. However, the endowments which some of our older colleges have acquired, or the support which some of them, like your own, are now receiving from the state, are making possible this important change so far as our educational institutions are concerned. When once this change has become general, it will be translated into universal practice, though that may require a generation and more before it can be fully accomplished.

In this transition stage, the old Maryland College of Pharmacy with its fine traditions of a Caspari, a Simon, a Culbreth, and with its present status as an integral part of the University of Maryland, endowed with two millions of tax payers—to borrow a phrase of the late Governor Peck of Wisconsin, better known to most people as author of Peck's Bad Boy—is bound to play an important rôle. The fine building, the dedication of which we have come to celebrate, will afford

an admirable physical background for the work it is to accomplish. Its faculty is full of promise of the right spirit to bring to a successful accomplishment the new undertaking. Its alumni and friends, while true to the memory of the past, will, no doubt, enter into this new spirit with enthusiasm. I am convinced that this new institution, the cornerstone of which, figuratively speaking, we have laid today, will develop into an educational structure the influence of which will be felt not only in this good city of Baltimore, not only in this great commonwealth of Maryland, but throughout the length and breadth of this our native land.

THE DEVELOPMENT OF PHARMACEUTICAL EDUCATION.*

BY EDWARD H. KRAUS.¹

The dedication of a new building by an educational institution is always the occasion of great rejoicing for long cherished hopes and plans have finally been realized. Purdue University and the pharmacists and citizens of the State of Indiana are all to be congratulated upon the completion of this beautiful and unusually well-equipped structure, devoted entirely to the profession of pharmacy. Additional floor space and improved facilities generally bring, however, the responsibility of serving the state and the nation in an enlarged way. Knowing rather intimately, as I do, the important contributions of Purdue University and of the pharmacists of the state to the advancement of the profession, I am confident that this new responsibility will be fully met and that in Indiana Pharmacy will now be able to function in a much more effective way as one of the great agencies in the conservation of health.

The story of the development of pharmaceutical education in the United States is strikingly similar to that of the other disciplines concerned with the conservation of health, medicine and dentistry. In all of these fields the preceptorial or apprenticeship system first prevailed, which in each case was slowly, and only by overcoming much persistent opposition, replaced by systematic instruction.

Although the first American College of liberal arts was established in 1636, more than a century and a quarter passed before the first medical school was founded. This was in Philadelphia in 1765. During the following one hundred years there was a rapid increase in the number of medical schools for it is reported that there were fifty in 1870.

There is abundant evidence that the practice of pharmacy flourished during the colonial period but systematic training in this subject lagged behind medicine for it was not until 1821 that the Philadelphia College of Pharmacy was organized. The opening of this institution, the oldest of the colleges of pharmacy in the United States, stimulated interest in pharmaceutical education in Boston and New York and, in 1823, the Massachusetts College of Pharmacy was founded in the former place while a little later the New York College of Pharmacy opened its doors. These were the only three institutions giving instruction in pharmacy in this country in 1850.

* Delivered May 20, 1930, at the dedication of the new building of the School of Pharmacy of Purdue University.

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