

DEPARTMENT OF THE INTERIOR
BUREAU OF EDUCATION

BULLETIN, 1921, No. 11

PHARMACEUTICAL EDUCATION

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[Advance Sheets from the Biennial Survey of Education
in the United States, 1918-1920]



WASHINGTON
GOVERNMENT PRINTING OFFICE
1921

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THE BEGINNINGS OF PHARMACEUTICAL EDUCATION.

Any history of pharmaceutical education during the two years 1918 to 1920 would be wholly incomplete without a review of the influences which have brought about the conditions during the period under consideration.

In pharmacy, as in medicine and law, the preceptorial system largely prevailed for the first century of pharmacy in the United States. Previous to 1851 there were but 3 teaching schools of pharmacy in existence; and only one, the Philadelphia College of Pharmacy, had sufficient life to maintain itself as a bona fide educational institution. In 1873 there were 11 teaching institutions in active operation, located in Philadelphia, New York, Cincinnati, Baltimore, St. Louis, Boston, Chicago, Louisville, Washington, Nashville, and San Francisco, with an attendance of approximately 600 students.¹

The organization of these schools was due largely to the educational stimulus disseminated by the American Pharmaceutical Association, which had been organized in 1852, and to the various State pharmaceutical associations, which at that time were beginning to exert considerable influence.

At the twenty-first annual meeting of the American Pharmaceutical Association, Albert E. Ebert, in his presidential address, thus commented upon the organization of pharmaceutical schools:

Although it is by no means desirable to multiply these schools to an unlimited extent, as this would diminish their usefulness by dividing their strength, yet the time is not far distant when it will seem necessary that each State shall possess such an educational organization, as good effects of such institutions can not be questioned in their relation to the public welfare, and therefore should be fostered by the several States where such schools are established.¹

¹Proc. Amer. Pharm. Assoc., 1873, p. 52.

The nature of the work done in these early institutions is summed up by Dr. Edward Kremers, dean of the school of pharmacy of the University of Wisconsin, as follows:²

As a matter of fact, the early history of all these institutions clearly shows that they were "Fortbildungsanstalten" closely affiliated with the daily routine of the drug store. The idea was not so much to give a thorough training in the fundamental sciences as to supplement the unsystematic training of the stores by a course of evening lectures. This truth is particularly emphasized by the fact that the clerk who had served an apprenticeship of two or more years attended the same course of evening lectures at least twice. It was the apprenticeship system improved, but still essentially the apprenticeship system. The time spent in the drug store was, therefore, the prime requisite to a certificate of proficiency. The course or courses of lectures simply served as a kind of superstructure, their prime object being to bring into some system the information and experience irregularly acquired during an apprenticeship and assistancehip of four or more years.

In 1887 the number of teaching institutions had increased from 11, as reported in 1873, to 24, the additional ones in the order of their organization being as follows: Pittsburg, Vanderbilt, Albany, Iowa (Drake University), Cleveland, Wisconsin, Ohio Northern, Purdue, Ohio State, Kansas City, University of Kansas, University of Iowa, Northwestern, and Buffalo.

Dr. H. L. Taylor calls attention to the fact that it required more than half a century to establish half of these institutions, and the other half sprang up within a decade.³

From the best information available we find that in 1887 there was a total of 2,773 students matriculated in the schools then in existence, with 669 graduates that year.⁴

The great majority of these schools were night schools, the students' classes beginning after 4 o'clock in the afternoon and continuing as late as 10.30 p. m.⁵ These were three-day schools, the first year's work coming on Mondays, Wednesdays, and Fridays, the second year's work on Tuesdays, Thursdays, and Saturdays. The school year began about the first of October and closed early in March.

More than half of the students attended college for the first year only, being able to meet the legal requirements for the practice of pharmacy without completing the prescribed college course.

Preliminary educational requirements were limited to a grammar school certificate or an examination that required a knowledge of arithmetic, geography, and grammar, as far as was taught in the grammar schools.⁶

² Proc. Amer. Conf. Phar. Faculties, 4th ann. meeting, 1903, p. 5.

³ Pharmaceutical Era, Mar., 1912, p. 178.

⁴ Ibid., May, 1912, p. 333.

⁵ Ibid., May, 1912, p. 334.

⁶ Ibid., Apr., 1912, p. 204.

THE ENACTMENT OF NEEDED LAWS.

The conditions that existed at that time led pharmaceutical educators to realize that proper advancement in pharmacy was impossible without legislative enactment covering both preliminary requirements and college training as prerequisites for examination as registered pharmacists.

Naturally such a movement was met with bitter opposition on the part of those who saw in this a curtailment in the supply of registered clerks, and, second, by those who honestly believed that students should be allowed to acquire a knowledge of pharmacy by the methods most available to them.

Unfortunately, from the very beginning to the present time the same opposition has existed and has done more to retard advancement in pharmaceutical education than any other single factor.

Between January 1, 1887, and January 1, 1900, 30 colleges of pharmacy were established and three went out of existence.

CLASSES OF PHARMACY SCHOOLS.

The department of pharmacy of Tulane University of Louisiana⁸ may properly claim the honor of being the oldest of the schools of pharmacy connected with a university. Between 1834 and 1887 diplomas were conferred upon 165 graduates in pharmacy from that institution.

Although Tulane did not at that time have a coordinate school of pharmacy, the graduates were given courses in materia medica, therapeutics, chemistry, and chemistry laboratory by the staff of the medical department; and before the degree of graduate in pharmacy was conferred, the applicant furnished evidence of having two years of practical experience under a competent pharmacist.

While this school was not a university school of pharmacy in the present acceptance of the term, yet its influence stimulated the development of university education as it now exists.

In 1868 the University of Michigan established the first coordinate school of pharmacy, as a university unit.

The following statement, from the address of Dr. Edward Kremers furnishes a clear exposition of the divergent educational ideals which have been confronting pharmaceutical education from its very beginning:⁹

There are two distinct tendencies which manifest themselves to the student of pharmaceutical education in this country: the first found its highest expression in the establishment of the older colleges of pharmacy, the outcome of the ambitions and ideals of the apothecary guilds of several of our larger

⁸ Ibid., June, 1912, p. 389.

⁹ Ibid., March, 1912, p. 180.

¹⁰ Proc. Amer. Conf. Phar. Faculties, 4th Ann. Meeting, 1905, p. 4.

eastern cities, a product of English ideas, traditions, and influences; the second found its expression in the establishment of departments and schools of pharmacy at our State universities, at a time when American educational ideas generally were undergoing marked changes due to the influence of German educational ideas and methods.

It is noteworthy that the educational bulwarks of the Colonies, now the pride of the respective Eastern States, have never given any serious attention to teaching pharmacy. For many years, it is true, medicines were largely dispensed by the colonial physician, and later the druggist evidently did not aspire to be more than a tradesman with the qualifications of a tradesman. The condition was not unlike that in England, where the pharmacist, whether he was termed apothecary, or chemist and druggist, as was later the case, gradually made himself independent from a position of subserviency to the physician. But, instead of strongly developing his own position, he followed the path of his former master. The result was a calling that was neither purely mercantile nor belonged to the learned professions: a profession that commanded little or no respect, but became the butt of ridicule on every hand as is clearly shown in English fiction.

With English traditions as a guide, it was but natural, therefore, that Harvard and Yale, Columbia and Pennsylvania, although they made provision not only for the traditional college course, but also for theology, law, and medicine, paid no attention to the needs of pharmacy.

The introduction of university standards into the field of pharmaceutical education, as brought about by the University of Michigan, is an outstanding event in the history of American pharmacy.

This change in the old order was followed by other State universities as follows: Wisconsin in 1883, Kansas and Iowa in 1885, Minnesota in 1892, etc.

By 1895 the university ideals were so firmly established that we find the following statement in the proceedings of the section on education and legislation of the American Pharmaceutical Association:¹¹

Institutions that were founded by "impractical" university teachers have proven their right of existence to such an extent that those who criticised them in former days, though still ostensibly maintaining their earlier ground, are in reality undermining their own foundation by silently accepting the ground of their supposed opponents.

THE AMERICAN CONFERENCE OF PHARMACEUTICAL FACULTIES.

The beginning of the twentieth century found 56 schools in active operation, with a total attendance of 3,551 students. These 56 schools were working as independent units, with no uniformity in entrance requirements, curricula, or degrees conferred.

As far back as 1870 a conference of delegates from colleges of pharmacy met in Baltimore in answer to a call issued by the Maryland College of Pharmacy.¹²

¹¹ *Pharmaceutical Era*, March, 1912, p. 178; June, 1912, p. 389.

¹² *Proc. Amer. Phar. Assoc.*, 1895, p. 448.

¹³ *Proc. Amer. Conf. Phar. Faculties*, 1906, p. 8.

We have no report of the minutes of this meeting, nor of subsequent ones, except in the minutes of the meetings of the Philadelphia College of Pharmacy, as published in the American Journal of Pharmacy. Joseph Roberts was president and J. Faris Moore secretary of the first meeting. The constitution declared the object to be a uniform standard for the graduation of pharmacy students. Seven recommendations were made at the first meeting for consideration at the second convention. The most important one seems to have been the demanding of four years of practical experience before graduation.

At the 1883 meeting the department of pharmacy of the University of Michigan was refused admission because it did not make this requirement. The degree of doctor of pharmacy was also unanimously voted down. The last reference to work of this organization appears in 1886.

The period from 1886 to 1894 seems barren of organized effort toward unity in pharmaceutical education. Just prior to the 1894 meeting of the American Pharmaceutical Association, James H. Beal and George B. Kauffman issued a circular letter inviting a number of colleges to meet in conference at Asheville, N. C. This effort failed to accomplish the purpose for which it was intended. Six years later Henry P. Hynson, secretary of the Maryland College of Pharmacy, issued a similar call which met with much better success. The preliminary organization of the American Conference of Pharmaceutical Faculties was consummated at Richmond, Va., May 8, 1900.¹³ Representatives were present from the following pharmacy schools:

- Department of Pharmacy, College of Physicians and Surgeons, San Francisco, Calif.
- National College of Pharmacy, Washington, D. C.
- Atlanta College of Pharmacy, Atlanta, Ga.
- Department of Pharmacy, Northwestern University, Chicago, Ill.
- Highland Park College of Pharmacy, Des Moines, Iowa.
- Department of Pharmacy, University of Kansas, Lawrence, Kans.
- Louisville College of Pharmacy, Louisville, Ky.
- Massachusetts College of Pharmacy, Boston, Mass.
- Maryland College of Pharmacy, Baltimore, Md.
- Department of Pharmacy, University of Michigan, Ann Arbor, Mich.
- St. Louis College of Pharmacy, St. Louis, Mo.
- Department of Pharmacy, Union University, Albany, N. Y.
- Brooklyn College of Pharmacy, Brooklyn, N. Y.
- College of Pharmacy of the City of New York, New York, N. Y.
- Ohio State University, Department of Pharmacy, Columbus, Ohio.
- Department of Pharmacy, Seco, Ohio.
- Philadelphia College of Pharmacy, Philadelphia, Pa.
- Department of Pharmacy, Medico-Chirurgical College, Philadelphia, Pa.

¹³ Proc. Amer. Conf. Phar. Faculties, 1900, p. 9.

Department of Pharmacy, Western University of Pennsylvania, Pittsburgh, Pa.

Department of Pharmacy, Vanderbilt University, Nashville, Tenn.

Department of Pharmacy, University of Wisconsin, Madison, Wis.

The chairman of the organization committee, Jos. R. Remington, presented a provisional constitution, which was read and approved, the most pertinent paragraph of which was as follows:

The object of this conference shall be to promote the interests of pharmaceutical education.

The birth of the organization marks the first successful effort toward proper standardization of pharmaceutical education and is, therefore, the most important event in its history.

The problems which the conference faced in its inception and to which it has continuously given attention during its 20 years of existence are: Preliminary education, curricula, degrees, facilities, faculties, and prerequisite legislation. As has been stated before, the completion of an ordinary grammar school education was the sole requirement for matriculation in the majority of pharmacy schools.

The effort to raise these requirements originated with the schools having organic connection with State universities. The independent schools, having no other source of income than tuition fees, naturally viewed with concern any step that would tend to curtail their enrollment. The attitude of the State examining boards and the existence of numerous correspondence schools and "quiz" schools made the situation a most difficult one.

As late as 1912 we find the following conditions obtaining with regard to preliminary education¹¹ necessary for examination by licensing boards: 24 States make no requirement whatever, 12 require a grammar school education only, 7 in which the board is given authority to fix requirements, 7 require one year or more of high-school work, and 2 require high-school graduation.

From a close study of the conditions as indicated by the above data, it is apparent that had the independent schools raised their entrance requirements much above those prescribed by the licensing boards in the various States, they would undoubtedly have been faced with the problem of having a large proportion of their prospective students turned to quiz schools and correspondence schools.

Not until 1904, when the National Association Boards of Pharmacy was organized,¹² was there any attempt on the part of the State boards to bring about better conditions in regard to preliminary educational requirements for registration.

¹¹ Pharmaceutical Era, Jan., 1912, pp. 21-24.

¹² This includes Alaska, Hawaii, the Philippines, and Porto Rico.

¹³ Pharmaceutical Era, June, 1912, p. 393.

In 1905 requirements for entrance into conference schools was raised to a minimum of one year of high-school work. The first State prerequisite law became effective at the same time in New York.

Coincident with the latter event, the board of regents of New York set about to determine what should be the proper standards for the registration of schools of pharmacy in that State.¹⁷ A conference was, therefore, held and a committee appointed to outline a course for the schools of pharmacy and a syllabus to govern both the schools registered by the regents and the examinations set by the State board of pharmacy. This committee conceived the idea of giving the work a national character. In September, 1906, an invitation was extended to the National Association Boards of Pharmacy and the American Conference of Pharmaceutical Faculties, each to elect a representative on the committee.

Through correspondence and occasional meetings the committee continued its work, and the first edition of the pharmaceutical syllabus was issued in 1910. This was approved by the organizations represented and was adopted to cover the syllabus period, August 1, 1910, to July 31, 1915.

Thus was brought to a successful issue the effort to bring together the teaching institutions and the examining boards in a comprehensive and permanent agreement regarding the powers and obligations of each. By July, 1912, 27 examining boards had approved the idea and adopted the syllabus in whole or in part, and 62 of the 83 then existing schools had taken the same action.

THE UNITED STATES PHARMACOPŒIA AND THE NATIONAL FORMULARY.

The passage of the Food and Drugs Act in 1906, and the subsequent adoption of the United States Pharmacopœia and the National Formulary as the official Federal standards, gave them a legal standing, which they had not heretofore been accorded. This legal recognition has had a marked influence upon the scientific character of later editions and is reflected in more scientific methods in pharmaceutical education.

JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION.

Prior to 1912 the proceedings of the American Pharmaceutical Association had been published annually as a single volume. Beginning with January of that year the Journal of the American Pharmaceutical Association was established and has been issued monthly since that time.¹⁸ While the prime object of this publica-

¹⁷ *Ibid.*, Sept., 1912, p. 570.

¹⁸ *Amer. Jour. of Pharm.*, Mar., 1912, p. 130.

tion originally was to furnish a more direct and speedy means of communication between the association and its members, it has, however, in the last few years become a scientific publication which has proved a strong stabilizing force in American pharmacy. Coincident with the inauguration of the Journal, plans were perfected whereby all pharmaceutical literature should be abstracted, published annually, and distributed to all members of the American Pharmaceutical Association as the yearbook of the association. Those forces in pharmaceutical education with which this paper has dealt heretofore began to exert their most potent influence in the period from 1912 to 1918.

Beginning in 1915, prerequisite legislation made rapid progress. During the next three years more States adopted prerequisite laws than had taken this step in all the previous years. The American Conference of Pharmaceutical Faculties had increased entrance requirements to two years of high-school work or its equivalent. Two States, Ohio and Illinois, by legislative enactment and ruling of the department of education respectively, raised their requirements for the practice of pharmacy to four years of high-school work, and in addition graduation from a recognized school of pharmacy. The educational ideals of the universities of the Western States gained ground rapidly, and it began to be apparent that their influence in pharmaceutical education must ultimately dominate the whole country.

The National Association of Boards of Pharmacy and the American Conference of Pharmaceutical Faculties had committed themselves to both a high-school requirement and graduation in pharmacy not later than 1923. A number of the schools of the conference were voluntarily increasing their requirements to four years of high school. More than half of the students entering all conference schools were high-school graduates. The outlook for much more rapid progress was, therefore, very bright when America entered the World War.

THE PERIOD OF 1918-1920.

This review of pharmaceutical education prior to 1918 serves as a necessary background for the study of the most crucial period in its history.

Although the above is, as a whole, a record of progress, nevertheless this progress had not been sufficiently uniform in all parts of the country to give to American pharmacists the professional status which many within its ranks believed should be accorded them.

That the ultimate standard in pharmacy was no higher than the lowest State and school requirement had been evident to the leaders in pharmacy from the organization of the conference. The points of

view of the university schools and the independent schools had been so divergent at times that a division in the conference ranks seemed imminent. Fortunately, however, such schism was averted by a few far-seeing men who recognized the conference as the one organization through which the whole status of pharmacy could be advanced.

The failure of American pharmacists to receive professional recognition in the Army and Navy when we entered the World War demonstrated that, in spite of the advancement already made, much remained to be accomplished in order that pharmacy might attain a status comparable with dentistry and medicine. It became evident that, had the university ideals prevailed in pharmaceutical education, pharmacy would have been spared the embarrassment and chagrin occasioned by such failure.

The Government, in its published requirements for organization of the Student Army Training Corps, made it very clear that it considered graduation from a high school or its equivalent a necessary entrance requirement for colleges of all kinds, and it refused to recognize colleges with less requirements.¹⁹

This announcement naturally created widespread concern and even alarm among the schools that were not requiring as much as four years of high-school work for entrance. The very existence of some of the oldest and most influential pharmaceutical schools in the country, which had no organic connection with any other college or university as a parent institution and which were maintaining only the minimum conference requirement for entrance, was therefore in jeopardy should the war continue.

At the 1918 joint meeting of the American Pharmaceutical Association and of the Conference of Pharmaceutical Faculties, held in Chicago, this subject had a prominent place in the public discussions and was clearly the thought uppermost in the minds of the majority of those present.

In a paper read at this meeting Prof. Wulling²⁰ made the following statement:

It should be said that the entire body pharmaceutical is partly, even largely, at fault in the matter, because it has not been sufficiently interested and aggressive in the very element fundamental to the welfare of the profession, and therefore fundamental to the welfare of those whom the calling serves. The Government has practically said that we pharmacists as a class are not sufficiently educated and intelligent to be recognized as among the agencies qualified to be called upon to help prosecute this terrible war. This is in substance an indictment not pleasant to contemplate. We ought forthwith to create such standards that this blot on our escutcheon would be forever removed. Talking and commiserating about the matter will not remedy the situation. A true courage and determined, united action are the remedy.

¹⁹ Proc. Amer. Conf. Phar. Faculties, 1919, p. 11.

²⁰ *Ibid.*, 1918, p. 30.

Prof. Jordan, chairman of section on education and legislation, in his address said:²¹

Not until the retail pharmacists of the United States awake to the importance of higher entrance requirements for their profession and demand them will we be able to place pharmaceutical education on a basis that will command the respect of our sister professions and of the public. As long as the retail pharmacists demand cheap registered men and lend their support to diploma factories that turn them out, just so long will pharmaceutical education be at a low ebb.

With a single exception, we find the sentiment of the 1918 meeting overwhelmingly in sympathy with this spirit.²²

Prof. Edward Spense, dean of the school of pharmacy of Western Reserve University, had taken up with the Surgeon General of the Army the matter of establishing Students' Army Training Corps units in those schools of pharmacy able to meet the entrance requirements, etc., referred to in the published program referred to above.

Col. H. D. Arnold, representing the Surgeon General's Office, came to Chicago, and an informal conference was held. Up to that time no provision had been made for keeping pharmacy students in school, as had been done in the case of medical and dental students. While Col. Arnold could give no assurance of what would be done in this regard, he stated that the whole matter would be worked out in connection with the Army educational plan, and a more representative conference be called as soon as possible. This conference was held in Washington, September 30, 1918. The following schools were asked to send representatives: University of Michigan, North Carolina, Minnesota, Nebraska, Western Reserve, Columbia (New York College of Pharmacy), Purdue, Massachusetts College of Pharmacy, and Medical College of Virginia. All of them responded except the University of North Carolina and Massachusetts College of Pharmacy. This meeting, presided over by Dr. R. C. McLaurin, chairman of the whole Government educational plan, proved to be an event of far-reaching importance. For the first time it was made perfectly clear that colleges of pharmacy must demand of their students the same conditions for entrance and the same type of professional work that was demanded in other professional schools. For the first time the Federal Government stepped in and attempted some sort of classification of pharmaceutical schools with reference to their availability as centers for Students' Army Training Corps units.

For the first time the ideals of the university schools of pharmacy were completely vindicated.

²¹ Jour. Amer. Phar. Assoc., Dec., 1918, p. 1002.

²² Proc. Amer. Conf. Phar. Faculties, 1918, p. 78.

Following the published report of the work of this conference, a storm of protest was raised by those institutions which were not maintaining the standards described in it, and which consequently did not receive recognition. Had the war continued through the session 1918-19 and into 1919-20, it is more than probable that very few of the so-called proprietary schools of pharmacy would have survived. Despite the fact of the signing of the armistice in November, 1918, and the almost immediate disbanding of the Student Army Training Corps units, the salutary influence of the classification referred to above became manifest.

Some of the colleges of pharmacy, previously counted as reactionary, at once announced their determination to raise entrance requirements to a full high-school course. Others raised entrance requirements from the conference minimum of two years of high school to three in 1920-21 and four in 1921-22, thus anticipating by one or more years the conference agreement of four years of high school in 1923. It is difficult to estimate the good effects of such an awakening on the part of those schools which heretofore had stood out for a conservative policy in the conference of faculties. The generation of pharmacists now in training will be able to look back on the Washington conference of September 30, 1918, with a feeling of gratitude that from it emanated an advance in pharmaceutical ideals that already is having a marked effect.

With the close of hostilities and the rapid return of 4,000,000 men to civilian life, every pharmacy school in America found its freshman class of 1919-20 filled to capacity. Fresh, as many of these men were from the distractions of Army life, they found great difficulty in adjusting themselves to the demands of academic life.

In many instances men were returning to colleges of pharmacy to complete a course interrupted by the period of the war. It has, therefore, been exceedingly difficult to maintain high standards of scholarship for the past two years. With the entrance classes in 1920, however, this condition has been materially changed, and the colleges are now demanding a grade of work not heretofore attempted.

The rank and file of men engaged in pharmaceutical work, as well as of women, are now beginning to study the status of pharmacy as never before. What are the basic causes which, functioning through the history of American pharmacy, are most responsible for its present condition is the question most frequently asked. The one answer that seems to most nearly cover the ground is that all of pharmaceutical education seem to have been predicated upon the assumption that the public needs more, rather than better, pharmaceutical service. Prior to about 1905, medical education was func-

tioning along these same general lines. The complete overthrow of this conception in medicine is too well known to need very much comment in this article. Fewer doctors, but better doctors, is a slogan that has sounded the death knell of probably half of the medical schools in operation in America in 1900. A farseeing group of medical men gained control of medical education with the result that, with a population of about 25 per cent more than in 1900, the United States is now graduating annually less than half as many doctors as were being graduated at that time. With anything like a just distribution of this smaller number, the public is getting much better medical service than ever before. In spite of all the progress in American pharmacy which has been recorded in this article, it must be admitted that no such farseeing and influential group has been able to gain control in pharmacy. The result has been the licensing of from two to three times as many potential proprietors as the public has needed to render efficient pharmaceutical service.

The number of drug stores in the United States is probably three times as large as is necessary, resulting in a form of competition which is good for neither pharmacy nor the public. Since the laws of all States in the Union require that a pharmacy must be in charge of a licensed pharmacist, the one way to limit the number of stores is to limit the number of potential proprietors. For the first time, it seems to the writer, American pharmacists are beginning to realize the full significance of this fact. It is an omen for good that can be measured only by what the recognition of a similar condition in medicine 20 years ago has done for American medicine.

For a number of years it has been apparent to a majority of the members of the conference of faculties that some standardizing agency should investigate and classify the schools of pharmacy, much as the Carnegie Foundation has done with the medical schools.

By unanimous vote the foundation was requested to undertake this work for pharmacy, but up to the present time they have not been able to do so, due to the pressure of other investigations already in progress. At the 1919 meeting the conference recommitted itself to the policy of having the schools of pharmacy investigated and classified. A special committee of the conference is now at work, with the hope that in the near future the foundation may see its way clear to begin this work.

The advantage of having this investigation undertaken by some competent and disinterested agency is apparent. The result of such an investigation will doubtless reveal the weak spots in our present system and furnish the conference the basis for a thorough house-cleaning.

ATTITUDE OF THE TRADE JOURNALS TOWARD PROGRESS IN PHARMACEUTICAL EDUCATION:

The attitude of a large majority of the trade journals toward progress in pharmaceutical education has been one of whole-hearted support. Despite the fact that advanced educational requirements must inevitably mean fewer potential proprietors and fewer drug stores, these journals, whose very existence is intimately tied up with the distribution and sale of drug products, have been willing to stand for a policy which can mean nothing less than a curtailment in the sale of many of these. It can be denied by no one that such a stand on their part has had a tremendous influence in assisting in bringing about such advancement as has been made so far.

THE 1920 UNITED STATES PHARMACOPŒIAL CONVENTION.

The influence of the university school of pharmacy teacher on American pharmacy manifested itself in the personnel of the committee of revision for the tenth decennial revision of the United States Pharmacopœia. On previous revision committees the number of university school teachers was very small, while on the present committee the number has been more than trebled.

At the 1920 meeting of the American Conference of Pharmaceutical Faculties, the tendencies for progress in pharmaceutical education which have been here enumerated culminated in a pledge that beginning in 1925 all conference school courses be not less than three years and, further, that as soon thereafter, as possible they require a full four-year course in pharmacy and give only the bachelor of science degree.

With the consummation of this pledge on the part of the conference and the appointment of a joint committee from the conference, the National Association Boards of Pharmacy, and the American Pharmaceutical Association to work for prerequisite laws, pharmaceutical education in America seems to be entering upon a period that even the most radical hardly dared hope for before America entered the World War.