INFORMATION TO USERS

This dissertation was produced from a microfilm copy of the original document. While the most advanced technological means to photograph and reproduce this document have been used, the quality is heavily dependent upon the quality of the original submitted.

The following explanation of techniques is provided to help you understand markings or patterns which may appear on this reproduction.

1. The sign or "target" for pages apparently lacking from the document photographed is "Missing Page(s)". If it was possible to obtain the missing page(s) or section, they are spliced into the film along with adjacent pages. This may have necessitated cutting thru an image and duplicating adjacent pages to insure you complete continuity.

2. When an image on the film is obliterated with a large round black mark, it is an indication that the photographer suspected that the copy may have moved during exposure and thus cause a blurred image. You will find a good image of the page in the adjacent frame.

3. When a map, drawing or chart, etc., was part of the material being photographed the photographer followed a definite method in "sectioning" the material. It is customary to begin photoing at the upper left hand corner of a large sheet and to continue photoing from left to right in equal sections with a small overlap. If necessary, sectioning is continued again — beginning below the first row and continuing on until complete.

4. The majority of users indicate that the textual content is of greatest value, however, a somewhat higher quality reproduction could be made from "photographs" if essential to the understanding of the dissertation. Silver prints of "photographs" may be ordered at additional charge by writing the Order Department, giving the catalog number, title, author and specific pages you wish reproduced.

University Microfilms
300 North Zeeb Road
Ann Arbor, Michigan 48106
A Xerox Education Company
BUERKI, Robert Armin, 1939-
HISTORICAL DEVELOPMENT OF CONTINUING
PHARMACEUTICAL EDUCATION IN AMERICAN
UNIVERSITIES.

The Ohio State University, Ph.D., 1972
Education, history

University Microfilms, A XEROX Company, Ann Arbor, Michigan

© Copyright by
Robert Armin Buerki
1972

THIS DISSERTATION HAS BEEN MICROFILMED EXACTLY AS RECEIVED.
HISTORICAL DEVELOPMENT OF
CONTINUING PHARMACEUTICAL EDUCATION IN AMERICAN UNIVERSITIES

DISSERTATION
Presented in Partial Fulfillment of the Requirements for
the Degree Doctor of Philosophy in the Graduate
School of The Ohio State University

By
Robert Armin Buerki, B.S., M.S.

The Ohio State University
1972

Approved by

[Signature]
Adviser
College of Education
PLEASE NOTE:

Some pages may have
indistinct print.
Filmed as received.

University Microfilms, A Xerox Education Company
Dr. Glenn Sonnedecker, Professor of History of Pharmacy, University of Wisconsin School of Pharmacy, and Executive Director of the American Institute of the History of Pharmacy, Madison, Wisconsin, for his inspiration and invaluable assistance during the early stages of this investigation;

My wife, Sally, and my parents for their love, encouragement, and help throughout the course of my graduate education; and

Lynne Letson Lavelle for typing this dissertation.
ACKNOWLEDGMENTS

The author would like to thank the following individuals without whose assistance this project would have been impossible:

Dr. William D. Dowling for his advice and counsel, not only in regard to this investigation, but throughout the doctoral program;

Dr. John C. Burnham and Dr. Robert B. Sutton for their helpful suggestions regarding the dissertation manuscript;

Mr. George B. Griffenhagen, Director of the Division of Communications, American Pharmaceutical Association, Washington, D.C., for his assistance in making materials in the Archives of the Association available for study;

Mr. Fred T. Mahaffey, Executive Secretary of the National Association of Boards of Pharmacy, Chicago, for his cooperation in loaning archival material for investigation;

Miss Dolores Nemec, Head Librarian of the Frederick B. Power Pharmaceutical Library, University of Wisconsin School of Pharmacy, Madison, for her assistance in locating unusual materials and for making the archival materials in the Edward Kremers Historical Reference Files available for study;

Dr. Lloyd M. Parks, Dean of The Ohio State University College of Pharmacy, for his understanding and support throughout the course of the doctoral program;
VITA

November 15, 1939 . . . Born - Madison, Wisconsin

1963 . . . . . . . B.S. in Pharmacy, University of Wisconsin, Madison, Wisconsin

1964 . . . . . . . Research Fellow, School of Pharmacy, University of Wisconsin, Madison, Wisconsin

1965-1972 . . . . Instructor and Director of Pharmacy Extension Services, College of Pharmacy, The Ohio State University, Columbus, Ohio

1967 . . . . . . . M.S. in Social Studies in Pharmacy, University of Wisconsin, Madison, Wisconsin

PUBLICATIONS


Robert A. Buerki, "Continuing Education: For Fun or Profit?" CIC Continuing Pharmaceutical Education Newsletter 1:1 (September, 1968), pp. 3-5.


FIELDS OF STUDY

Major Field: Adult Education

Studies in Adult Education. Professors William D. Dowling and John F. Ohliger

Studies in Educational Media and Development. Professor Gregory L. Trzebiatowski

Studies in History of Science. Professor John C. Burnham

v
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ACKNOWLEDGEMENTS</strong></td>
<td>ii</td>
</tr>
<tr>
<td><strong>VITA</strong></td>
<td>iv</td>
</tr>
<tr>
<td><strong>INTRODUCTION</strong></td>
<td>1</td>
</tr>
<tr>
<td>Pharmaceutical Education and Continuing Pharmaceutical Education</td>
<td></td>
</tr>
<tr>
<td>The Historical Problem</td>
<td></td>
</tr>
<tr>
<td>Definition of Terms and Assumptions</td>
<td></td>
</tr>
<tr>
<td>Research Scope and Limitations</td>
<td></td>
</tr>
<tr>
<td>Implications for Practice and Theory Development</td>
<td></td>
</tr>
<tr>
<td><strong>Chapter</strong></td>
<td></td>
</tr>
<tr>
<td><strong>I. PROLEGOMENON TO CONTINUING PHARMACEUTICAL EDUCATION,</strong></td>
<td>7</td>
</tr>
<tr>
<td>1821-1892</td>
<td></td>
</tr>
<tr>
<td>Pharmaceutical Education in Colonial America</td>
<td></td>
</tr>
<tr>
<td>Founding of the Philadelphia College of Pharmacy</td>
<td></td>
</tr>
<tr>
<td>Other Early Colleges of Pharmacy, 1823-1865</td>
<td></td>
</tr>
<tr>
<td>University Training in Pharmacy, 1866-1892</td>
<td></td>
</tr>
<tr>
<td><strong>II. THE BEGINNING OF CONTINUING PHARMACEUTICAL EDUCATION,</strong></td>
<td>24</td>
</tr>
<tr>
<td>1885-1915</td>
<td></td>
</tr>
<tr>
<td>Instruction by Correspondence</td>
<td></td>
</tr>
<tr>
<td>Journal Articles Written for Home Study</td>
<td></td>
</tr>
<tr>
<td>Books Prepared for Home Study</td>
<td></td>
</tr>
<tr>
<td><strong>III. EXPERIMENTAL CONTINUING PHARMACEUTICAL EDUCATION,</strong></td>
<td>50</td>
</tr>
<tr>
<td>1885-1909</td>
<td></td>
</tr>
<tr>
<td>Early Development of University Extension</td>
<td></td>
</tr>
<tr>
<td>Early Organization of University Extension</td>
<td></td>
</tr>
<tr>
<td>Soliciting Help from Schools and Colleges of Pharmacy</td>
<td></td>
</tr>
<tr>
<td>University Extension at Northwestern, Kansas, and Wisconsin</td>
<td></td>
</tr>
<tr>
<td>University Extension Lies Fallow, 1891-1906</td>
<td></td>
</tr>
<tr>
<td>Continuing Education and the Minnesota State Pharmaceutical Association</td>
<td></td>
</tr>
<tr>
<td>Continuing Education and the American Pharmaceutical Association</td>
<td>vi</td>
</tr>
</tbody>
</table>
IV. UNIVERSITY-DIRECTED CONTINUING PHARMACEUTICAL EDUCATION, 1906-1929 .............................................. 87

University Extension at Wisconsin, 1906-1915
Continuing Pharmaceutical Education at Wisconsin, 1901-1909
University Extension Comes of Age, 1915-1929
Continuing Pharmaceutical Education, 1909-1929

V. UNIVERSITY-DIRECTED CONTINUING PHARMACEUTICAL EDUCATION, 1930-1939 .............................................. 149

University Extension and the Great Depression, 1930-1939
Attitudes Toward Continuing Pharmaceutical Education, 1930-1934
The Pharmacy Extension Department of Purdue University, 1930-1943
Other Continuing Pharmaceutical Education Programs, 1932-1939
The Pharmaceutical Institute of the University of Minnesota
The Drug Merchandising Short Course of the University of Oklahoma
The "Back-to-Pharmacy" Movement, 1934-1940
Attitudes Toward Continuing Pharmaceutical Education, 1935-1939
The George-Deen Act of 1936 and Continuing Pharmaceutical Education
The George-Deen Act of 1936 and the "Wisconsin Plan"
Reactions Among Pharmaceutical Educators, 1935-1939

VI. UNIVERSITY-DIRECTED CONTINUING PHARMACEUTICAL EDUCATION, 1940-1949 .............................................. 233

General University Extension and World War II, 1940-1945
Attitudes Toward Continuing Pharmaceutical Education, 1940-1944
Continuing Pharmaceutical Education, 1940-1944
The University of Florida Bureau of Professional Relations, 1940-1949
The George-Deen Act and Continuing Pharmaceutical Education, 1940-1946
General University Extension Expands, 1946-1950
Retraining Efforts for Veteran Pharmacists, 1943-1946
Attitudes Toward Continuing Pharmaceutical Education, 1945-1949
Continuing Pharmaceutical Education, 1945-1948
The Findings of The Pharmaceutical Survey and Their Impact, 1948-1949

vii
EPILOGUE ............................................................. 377

Summary of the Historical Evidence
Continuing Pharmaceutical Education Since 1950
Recommendations and Reflections

APPENDIX

A. General and Medico-Pharmaceutical Bibliographic Sources . . . 396
B. Rubric of Headings Used in Literature Search ............... 413
C. Home Study Aids in Pharmacy ......................... 416

BIBLIOGRAPHY

A. Books ....................................................... 432
B. Public Documents ........................................ 449
C. Journal Articles, Newspapers, and Proceedings ................. 454
D. Unpublished and Archival Material .................... 526
<table>
<thead>
<tr>
<th>Table</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Initiation of Continuing Education Activities at American Schools and Colleges of Pharmacy, 1930-1939</td>
<td>162</td>
</tr>
<tr>
<td>2. Initiation and Continuation of Continuing Education Activities at American Schools and Colleges of Pharmacy, 1940-1949</td>
<td>248</td>
</tr>
</tbody>
</table>
INTRODUCTION

Pharmaceutical Education and Continuing Pharmaceutical Education

At the beginning of the twentieth century the preceptor-apprentice system of training pharmacists still prevailed. Although completion of a few years' practical experience was generally required for admission to state board examinations, in many states no such examinations were required and registration could be obtained merely by submitting proof of the required period of experience. In no state was graduation from a college of pharmacy obligatory. With but few exceptions, the forty-nine schools and colleges of pharmacy in existence offered two-year courses of instruction leading to the Graduate in Pharmacy degree. Attendance was limited to three days each week to enable students to work in pharmacies in the interim. By 1950, however, a four-year curriculum leading to the Bachelor of Science degree had been adopted as the minimum requirement in all seventy-four accredited colleges of pharmacy.

The hesitant development of continuing pharmaceutical education paralleled this remarkable progress in formal educational standards for the profession of pharmacy. Colleges of pharmacy were slow to realize their obligation to assist their graduates to continue their professional education. Professional problems created by prohibition in the 1920s, economic problems created by the Great Depression in the 1930s, and manpower problems created by the military draft in the 1940s left little time for administrators of the nation's schools and colleges of
pharmacy to develop continuing education activities for the practicing pharmacist. As late as 1948, only seven of the fifty schools and colleges of pharmacy reporting to The Pharmaceutical Survey had instructional programs in continuing pharmaceutical education.

The Historical Problem

Other than a few monographs tracing the development of continuing education activities at specific colleges of pharmacy, no substantive historical work has been done in the area of continuing pharmaceutical education. Until about 1955, continuing education activities for the practicing pharmacist were mentioned only in passing in the pharmaceutical literature and virtually ignored in the literature of adult education. A wealth of unpublished materials, such as convention papers, surveys, essays, brochures, catalogs, programs, and course descriptions exists, however, which has never been brought together and analyzed in a systematic manner. The author has undertaken a historical analysis of continuing pharmaceutical education by schools and colleges of pharmacy located in the United States during the period 1820 to 1950 in the hope of answering the following questions:

1. Precisely when and where did continuing pharmaceutical education begin and under what conditions did this take place?

2. Which individuals in pharmaceutical education may be identified with this development and what were their major contributions?

3. What were the major identifiable theoretical concerns underlying their educational activities and how do these concerns compare or contrast with contemporary theories of adult education?
4. What forms did early continuing pharmaceutical education take? Did it arise out of an expressed need of the pharmacy practitioner for increased professional recognition? Did it arise as a response to a demand by the pharmacy practitioner for more specialized knowledge and skills to augment his formal education? Or did it arise as a response to the increasing complexity of chemical and biological therapy in the late 1930s and early 1940s?

**Definition of Terms and Assumptions**

For the purposes of this study, continuing pharmaceutical education is defined as consisting of "all activities conducted by schools or colleges of pharmacy in the United States for the educational development of licensed practitioners of pharmacy (registered pharmacists) and for the improvement of their effectiveness in some aspect of their professional occupational role." Many national, state, or local professional associations, scientific societies, and professional fraternities and sororities in pharmacy have sponsored and continue to sponsor a wide variety of continuing education activities for the practicing pharmacist. As these activities are usually not considered central to the purpose of their sponsoring agencies, the author has excluded these activities from his analysis, affording him a more reasonable scope of inquiry for a study of this nature. Postgraduate apprenticeship or internship programs required for professional licensure and the training of subprofessional help are also beyond the scope of continuing professional education as ordinarily defined.
Research Scope and Limitations

The author utilized the following library collections in the compilation of his data: Center for Research Libraries, Chicago; John Crerar Library, Chicago; Lloyd Library and Museum, Cincinnati; The Ohio State University Libraries, Columbus; and the University of Wisconsin Libraries, Madison. In addition, he studied the following archival collections: American Association of Colleges of Pharmacy, Washington, D.C.; American Institute of the History of Pharmacy, Madison, Wisconsin; American Pharmaceutical Association, Washington, D.C.; Edward Kremers Historical Reference Files, University of Wisconsin School of Pharmacy, Madison; and the National Association of Boards of Pharmacy, Chicago.

The author's search of the educational and medico-pharmaceutical literature thought by him to contain information dealing with continuing pharmaceutical education (see Appendix A) yielded a total of approximately 2,000 references chosen with the aid of a comprehensive rubric (see Appendix B). In order to avoid a conscious editorial bias toward the concept of continuing education, the narrative is based upon a representative sampling of pharmaceutical journals in order that commercially oriented as well as professionally oriented views concerning continuing education would be represented.

The most serious limitation of this study appears to be the ephemeral nature of the source materials. Early experimental programs may be "lost" due to the incomplete nature of the surviving committee reports, brochures, advertisements, or news releases which describe them. Moreover, the sources of information which do survive, such as journal arti-
cles, tend to be localized in nature or obscure. These considerations, in part, account for the rather wide search of the literature described above.

Secondly, since continuing education activities planned for pharmacists by professional associations and other non-academic institutions outside of the United States are excluded by definition from consideration in this study, any generalizations about the nature of continuing pharmaceutical education beyond these self-imposed limits may not be made. Future work should be directed toward elucidating the continuing education activities of these agencies and institutions, as well as delineating the area of continuing pharmaceutical education since 1950.

Implications for Practice and Theory Development

A historical study of this nature hopefully will shed light on several questions currently being considered by teachers and administrators of continuing pharmaceutical education: Do teachers and administrators of continuing pharmaceutical education perceive themselves as agents of change in professional practice or as organizers of programs preaching professional platitudes? What motivations induce practitioners of pharmacy to participate in continuing education activities? Do continuing pharmaceutical education activities tend to lead, follow, or retard current professional practice, and if so, to what extent? Does continuing pharmaceutical education merely reflect other forces, such as formal pharmaceutical education or pharmaceutical legislation in effecting professional change? How has the concept of continuing professional education changed over time?
By providing at least partial answers to such questions as these, this study may provide insights for studying both the potential and the limitations of continuing professional education. And, like any history, it is presented in the hope of increasing intelligent borrowing from the past as well as decreasing unintelligent repetition of educational activities which are inappropriate to the culture or the institutions of our time.
Pharmaceutical Education in Colonial America

The development of pharmacy as a profession in America had its roots in English customs and traditions, the colonial practice of pharmacy and medicine differing from that of the mother country only in being more lax and unrestricted and standing on a somewhat lower level. The first English regulations controlling the practice of medicine and pharmacy, issued by Henry VIII in 1511, had vested the faculty of medicine in one body of men who practiced medicine, surgery, and pharmacy.¹ The physicians' assistants, called apothecaries, at first confined to preparing and dispensing medicines under the direction of their superiors, gradually acquired enough information concerning the properties of drugs to transact business on their own account. As the "physicians of the poor," the apothecaries also frequently took a hand in medical practice.² Through selective emigration and adaptation, the race of apothecaries in the English sense flourished in the American colonies until well into the eighteenth century, although the English guild distinctions were not observed in the colonies.

A second consequence of the British laissez-faire attitude toward medical care practitioners is reflected in the type of training available to them in the American colonies during the late eighteenth and
early nineteenth centuries. Medicine and pharmacy were taught in early America only through the apprenticeship system. For decades most of the professions that are now replenished by academic graduates depended largely on preceptors who passed their knowledge on to apprentices, academic study being minimal or entirely optional. Not until the Civil War period was any school of pharmacy founded as a regularly recognized institution or as a part of a more comprehensive educational organization. Furthermore, professional education was not an endeavor to obtain general and comprehensive knowledge; rather, it centered around the kind of people wanting an education and the kind of practical work for which they were to be educated. There were, however, earlier attempts at broadening the education of both practicing and apprentice pharmacists.

As early as 1769, a French physician, Dr. Lewis Mottet, suggested that the colonial commonwealth of South Carolina establish a "botanic garden" and a "chymical Laboratory." Mottet offered to direct the laboratory and to "collect, analyse and read the general System of the Materia Medica" on his own account if the public would favor him with the loan of six thousand pounds currency. The project was found to be too premature, however, and the project died aborning.

More than forty years later, in 1812, James Cutbush, a versatile Philadelphia chemist and apothecary who had published many valuable articles on chemical subjects, advertised "a series of Lectures on the Theory and Practice of Pharmacy, accompanied with the necessary chemical elucidations." Four years later, a Philadelphia physician, Dr. James Mease, received permission from the trustees of the University of Pennsylvania to conduct a course of lectures in pharmacy. Both attempts evidently
were unsuccessful and received little attention, for no further mention was ever made of them.  

That these latter attempts to provide instruction in pharmacy for pharmacists both took place in Philadelphia is by no means coincidental. During this period, Philadelphia, with a population of 137,000, was the principal city in America and continued to be the center of American culture and scientific life throughout the first half of the nineteenth century. It could boast the largest number of well-educated physicians in America and the oldest medical school in the country, the Medical School of the College of Philadelphia, founded in 1765 by Dr. John Morgan. Morgan became a spirited advocate of the separation of the practice of pharmacy from that of medicine, but his recommendations did not meet the approval of his contemporaries who continued to dispense medications on their own behalf until the turn of the century when the practice of writing prescriptions became a general custom in the colonies.

**Founding of the Philadelphia College of Pharmacy**

Pharmacy was included in the curriculum of the Medical School of the College of Philadelphia in 1789, but it was taught as a branch of medicine rather than a distinct discipline. In 1819, the Board of Trustees resolved that a course of lectures should be established for pharmaceutical students; the task fell to Dr. John Redman Coxe, Dean of the medical faculty and an influential figure in the Medical School. Coxe's success in attracting young men to him as students was not great, and March, 1820, in order to establish closer relations with the leaders
in the drug trade, he proposed that the University grant an honorary degree to such apothecaries "as have taken every measure to become perfect masters of their profession," suggesting that

by a close attention for at least three years in a apothecary's shop to the practical part of their duties and after two courses of lectures on the subject of chemistry, materia medica and pharmacy such persons may be subjected to an examination by the professors of those branches in the University, and, if found qualified, may receive a degree under some appropriate denomination which, being publicly known, may ensure them a greater chance of public favor than will be probably granted to those who are neglectful or indifferent to the high responsibility they are invested with.11

Four days after the Board of Trustees published its resolutions adopting Coxe's proposals (February 19, 1821), a group of concerned apothecaries and druggists met and took what pharmacy historian Glenn Sonnedecker describes as "the first united action of members of the calling known in the history of American pharmacy."12 A committee was appointed to determine whether it might not be "preferable to adopt a plan as a substitute, distinct from the one proposed."13 The report of the committee, delivered at a second meeting on March 13, recommended "the establishment of a College of Apothecaries" and, furthermore, a school of pharmacy "in which lectures designed especially for the instruction of druggists and apothecaries should be delivered." The "College of Apothecaries" established after the hearing of the report was incorporated the following year as the "Philadelphia College of Pharmacy," a designation it retains to this day.14

The preamble of the constitution of the College stressed the distinction between the college organization and the school of pharmacy, which was to provide opportunities for a more systematic education of
the young men apprenticed to the members of the College as well as "to incite a spirit of pharmaceutical investigation and research and to diffuse information amongst the members of the profession." Initial courses of three weekly lectures on materia medica and pharmacy by Samuel Jackson, a local physician, and a similar series on pharmaceutical chemistry by Gerard Troost, a Dutch physician and pharmacist, were advertised by the Board of Trustees and were first offered to the public during the winter of 1821-22. Although only a handful of Philadelphia's apprentices completed the requirements for graduation during the first decade of the College's existence, the teaching function of the school gradually assumed greater importance.

In 1846, for example, the Board of Trustees divided the chair of materia medica and pharmacy, establishing the first professorship of pharmacy for the sole purpose of teaching prospective pharmacists and elected William Procter, Jr. to the position. The new chair of pharmacy existed side by side with a private "School of Practical Pharmacy," which had been established three years earlier by another graduate of the College, Edward Parrish. By 1859, master pharmacist John M. Maisch, new "superintendent of the practical department" of Parrish's School, offered "all manipulations required in a pharmaceutical establishment" and announced the opening of "a Laboratory for Practical & Analytical Chemistry, designed in particular for the wants of pharmaceutists."

Other Early Colleges of Pharmacy, 1823-1865

The educational opportunities at Philadelphia were the exception rather than the rule. Between 1823 and 1864, leading pharmacists in
six other major cities established local pharmaceutical associations. While all of these associations undoubtedly were formed with the intent of making the education of apprentices one of their prime concerns, the schools of the early colleges by no means enjoyed continuous prosperity, and in more than one instance the training of apprentices had to be delayed a number years. Pharmacy historian Edward Kremers, writing of this period, observed:

Again, some of the institutions, while anxious to educate better the rising generation of pharmacists, found that they were in advance of the time. Even the large cities in which these colleges were situated did not provide a sufficient number of students to pay the professors a moderate lecture fee. Thus after several attempts in New York, Dr. [Edward R.] Squibb offered his services free and even dragged his lecture equipment from his Brooklyn factory to the lecture room in New York City. In St. Louis the preceptors appear to have been interested more than were their apprentices. Students were few and, in order to have any graduates whatever, the St. Louis college offered honorary degrees to its own members.

The "students" of these early colleges were mostly the apprentices of the members of the colleges; there were no requirements for admission, save possibly apprenticeship with some preceptor. Physicians, and later, master pharmacists, provided instruction in the form of lectures two or three evenings a week during the winter months; the lectures were not graded, and apprentices often attended a series of lectures several times. The lectures not only supplemented the information gathered by the apprentices during their in-service training, but also helped them gather the scattered fragments into a systematic whole; there was little laboratory instruction available.

The requirements for graduation consisted of the apprentices' passing an examination given by the lecturers and an examining committee.
of the college and showing proof of a satisfactory apprenticeship of four years, which included "attendance upon lectures." The trustees of the various colleges soon realized that their graduates were scattering and not joining their colleges. To counteract this, the trustees established alumni associations, thus foreshadowing the development of the colleges along educational rather than professional lines during the next two decades.\textsuperscript{25}

The number of apprentices attending lectures in the six colleges of pharmacy in America before the Civil War was small, and the number who graduated was still smaller; the emerging profession had to depend upon an informal system of apprenticeship, which was neither legally indentured nor an honor-bound obligation. In 1854, a commission organized by the newly formed American Pharmaceutical Association, under the leadership of Procter and Parrish, complained that the country had been deluged with incompetent drug clerks, whose claim to the important position they hold or apply for is based on a year or two's service in the shop, perhaps under circumstances illy calculated to increase their knowledge. These clerks in turn become principals, and have the direction of others--alas! for the progeny that some of them bring forth, as ignorance multiplied by ignorance will produce neither knowledge nor skill.\textsuperscript{26}

It is significant that the Association did not expect the people to whom it appealed, even the beginners, to study at one of the pharmacy schools; it merely admonished both groups to read the pharmaceutical literature "regularly and understandingly and assist [their] reading when necessary by experiment and observation," while the graduates of schools of pharmacy were urged to "act as examples to their less favored brethern."\textsuperscript{27}
The era of the pioneer pharmacy schools ended with the Civil War; from that time on, pharmacy schools were founded as private schools (by groups of pharmacists organized solely for that purpose), as parts of private or denominational universities and colleges, as divisions of medical colleges, or, most importantly, as parts of state universities.

**University Training in Pharmacy, 1866-1892**

The dependency of the schools of the old-line colleges of pharmacy upon the interest and support of their members and—probably to a greater extent—upon the fees paid by their students proved a decided detriment to the educational development of the profession of pharmacy. The foundation for a sound professional training, a common school education, was too often wanting, the schools keeping more or less to the traditional instruction that their sponsors and supporters had received.  

Obviously, schools that were under such influences could not be expected to develop a progressive educational philosophy with regard to the training of pharmacists. With the establishment and growth of the state universities, however, the education of the pharmacist was placed on a different plane, constituting, in Kremers's words, "the principal factor in the onward development of pharmaceutical education during this period."

Being financially independent, the state university schools of pharmacy were in a position to raise their entrance requirements, yet even after they demanded a very modest entrance requirement, the largest and oldest colleges of pharmacy in the East demanded none.

This transformation was exemplified first by the pharmacy curriculum approved at the University of Michigan in 1868. In a bold inno-
vation, physician-chemist Albert B. Prescott introduced extensive labor­
atory instruction coupled with basic sciences, making the academic study
of pharmacy practically a full-time occupation. 31 Prescott's two-year
course consisted of four terms of three months each, and included ample
laboratory work in pharmaceutical chemistry, microscopic botany, and
pharmacy, but required no apprenticeship as a prerequisite to graduation.
Prescott's rejection of the time-honored apprenticeship system, coupled
with the profession's fear of encroaching "state control" of pharmaceu-
tical education, quickly made him an unpopular figure in pharmaceutical
circles. Prescott explained the advantages of a scientific pharmaceuti-
cal education before the 1871 meeting of the American Pharmaceutical
Association with brevity and clarity, 32 but suffered a stinging rebuke:
His school was refused recognition as a college of pharmacy within the
"proper meaning" of the constitution and bylaws of the Association,
it being neither an organization controlled by pharmacists, nor an institution of learning which, by its rules and re-
quirements, insures to its graduates the proper practical training, to place them on a par with the graduates of the
several colleges of pharmacy represented in this Associa-
tion.33

Even the Association's Secretary, John M. Maisch, could argue that it
was "wrong to give a pharmaceutical degree before the graduate has had
pharmaceutical experience":

We grant that as much knowledge in physical and chemical
science, and natural history generally, as a young man may
possibly acquire before he enters a drug store, is extremely
desirable; but we believe that with all his knowledge ... he will not be a pharmacist until he has gone through a
regular system of [practical] training.34

This opinion soon changed, however, a reversal that can be ascrib-
ed to the fact that state institutions soon proved the value of formal
pharmaceutical education: Nearly one-third of the twenty-six schools and colleges of pharmacy founded in this country during this period were established as departments of state universities or colleges. The success of their instruction, according to pharmacy historian George Urdang, "quickly brought about a general realization that a broad scientific education was highly desirable for the American pharmacist." This realization culminated in 1892 when the University of Wisconsin Department of Pharmacy, under the leadership of Edward Kremers, offered the first four-year course in pharmacy in the United States leading to a Bachelor of Science degree, placing pharmaceutical instruction on a par with other academic courses at the university level.

Although pharmaceutical education characteristic of the early nineteenth century closely resembles modern continuing pharmaceutical education in method, if not in content, the educational activities of the schools of the old-line colleges of pharmacy were devised and conducted merely to supplement the practical work of the apprentice. Moreover, although the formal scientific training available at Michigan and Wisconsin was central to the purpose of their sponsoring universities, this training was supplemental to the contemporary apprenticeship and licensure requirements of the profession. Yet academic training in pharmacy in the nineteenth century offers an intriguing parallel to modern continuing pharmaceutical education, since the former supplemented the informal apprenticeship programs of their day and the latter, by definition, supplements formal pharmaceutical education at the university level.


Morgan stated: "The business of Pharmacy is entirely different from either [medicine or surgery]. Free from the cares of both, the
Apothecary is to prepare and compound medicines as the Physician shall direct. . . . The wisdom of ages approved by experience, the most certain test of knowledge, has taught us the necessity and utility of appointing different persons for these different employments, and accordingly, we find them prosecuted separately in every nice and polished country, to the great advantage of each . . . ." John Morgan, A Discourse Upon the Institution of Medical Schools in America; Delivered at a Public Anniversary Commencement, held in the College of Philadelphia, May 30 and 31, 1765, With a Preface Containing, amongst other things, The Author's apology for attempting to introduce the regular mode of practicing Physic in Philadelphia (Philadelphia: William Bradford, 1765), pp. 44-45. Morgan was "undoubtedly the first teacher of the theory and practice of medicine, materia medica, pharmacy and pharmaceutical chemistry in America." Wilbert, "John Morgan," p. 11.

9 George W. Norris, The Early History of Medicine in Philadelphia (Philadelphia: [Collins Printing House], 1886), p. 58. "The course pursued by Dr. Morgan may be said to have given the original impulse to the cultivation of the profession of pharmacy, and sanctioned its independent existence," Carson, op. cit., p. 48.

10 "Pharmacy" was first included in the title of Dr. Samuel Powell Griffits, elected Professor of Materia Medica and Pharmacy of the Medical School of the College of Philadelphia in 1789. Griffits continued in this rank after the consolidation of the Medical School with the Medical Department of the University of Pennsylvania in 1791 until his resignation in 1796. Wilbert, "The Beginnings of Pharmacy in America," p. 406. By 1820, Thacher notes that no less than six of the twenty medical schools in American offered more or less extensive instruction in pharmacy, usually combined with chemistry or materia medica. James Thacher, American Medical Biography: or Memoirs of Eminent Physicians who have Flourished in America. To which is prefixed a Succinct History of Medical Science in the United States, from the First Settlement of the Country (2 vols., 1828; reprint ed., New York: Da Capo Press, 1967), Vol. I, pp. 46-77, passim.

11 Joseph W. England, ed., The First Century of the Philadelphia College of Pharmacy, 1821-1921 (Philadelphia: Philadelphia College of Pharmacy and Science, 1922), pp. 45-46. Sixteen prominent Philadelphia druggists affixed their signatures to Coxe's proposal, which received vehement opposition from the balance of druggists in the City of Brotherly Love. Coxe concluded by remarking that the progress which he had in mind could not be achieved in any other way than by the measure proposed, because "an incorporated association does not exist here." Ibid., p. 46.

12 Sonnedecker, op. cit., p. 172.

13 England, op. cit., p. 54. Coxe and the University trustees proceeded with their plans, however, and on April 5, sixteen men re-
ceived diplomas attesting to their skill in pharmacy without having passed the examination mentioned above, which requirement was dismissed by Coxe as having reference "only to those who have not yet commenced the business." "Notice: The Apothecaries of this city . . .," Poulson's American Daily Advertiser (Philadelphia) 50:13,820 (March 15, 1821), p. 3, cited by England, op. cit., p. 60. Wilbert points out that "not a single student ever attended the lectures in the Medical Department with the view of securing the degree of Master of Pharmacy. . . . and there is but one other record of the degree . . . having been awarded." Wilbert, "The Beginnings of Pharmacy in America," p. 409.

14. England, op. cit., pp. 55 and 68. The designation "College" was obviously chosen with the intent of placing the new corporation on the same footing as the Philadelphia College of Physicians, which had followed English custom in choosing its name. Sonnedecker suggests that the change of wording from "Apothecaries" to "Pharmacy" reveals a greater dependence on the part of the profession upon France and Germany than had been the case formerly. Sonnedecker, op. cit., p. 173.

15."College of Pharmacy: Preamble," Poulson's American Daily Advertiser (Philadelphia) 50:13,845 (April 13, 1821), p. 2, cited by England, op. cit., p. 55. In addition to establishing a school of pharmacy, the Board of Trustees of the College were charged to "provide suitable apparatus, and a library, and appoint one or more lecturers as may be deemed expedient, on materia medica, chemistry, and pharmacy, and on such branches of natural science as may be useful in the instruction of an apothecary."

16."In this country, Pharmacy has been entirely neglected, as a science. Previous instruction has not been considered indispensable, in order to capacitate an Apothecary for pursuing his profession . . . . From this state of things, many evils . . . have flowed urgently requiring correction. Many Apothecaries of this city, have long been sensible of the necessity of taking some efficient measures, by which the irregularities and abuses, that have crept into their business, should be abolished; and that their profession should be placed on that respectable footing to which it is entitled . . . ." "College of Apothecaries," Reif's Philadelphia Gazette and Daily Advertiser 38:10,151 (October 24, 1821), p. 4, quoted in England, op. cit., p. 67. The first lectures marked the beginning of "an era in the medical history of our country." "Introduction," Journal of the Philadelphia College of Pharmacy, o.s. 1: 1 (December, 1825), p. 2. For biographical sketches of Jackson and Troost, see England, op. cit., pp. 396-97.

17. In 1829, a committee appointed to discuss the propriety of obtaining a loan for $1,000 to purchase chemical apparatus with which to illustrate the lectures, reported that they were of the opinion that "the interests of the college are inseparably connected with the respectability of the school of pharmacy, and it is to the influence which it will exert by means of this school, that the college is to
look for the principal sources of its future prosperity and importance."


19 England, op. cit., p. 404. An 1842 graduate of the College, Parrish had purchased a drug store adjoining the University of Pennsylvania which brought him into contact with medical students. Noting that these students would often return to their homes in isolated communities without the knowledge necessary to compound and dispense medicines for their patients, he "gave courses of instruction to those who wished to avail themselves of them" in the rear of his building. In 1850, the School was moved to a better location and instruction was given to pharmaceutical students as well. Sonnedecker considers the School "a parallel of the pioneer instruction in pharmaceutical and chemical laboratory work, given by German pharmacists about 1800, in their capacity as university professors of pharmacy and materia medica, or of pharmaceutical chemistry." Sonnedecker, op. cit., p. 207.


21 The Massachusetts College of Pharmacy was founded in Boston in 1823; the College of Pharmacy of the City and County of New York was founded in 1829; the Maryland College of Pharmacy was founded in Baltimore in 1840; the Cincinnati College of Pharmacy was founded in 1850; the Chicago College of Pharmacy was founded in 1859; the St. Louis College of Pharmacy was founded in 1864. Sonnedecker, op. cit., p. 381.

22 Thus, the Massachusetts College of Pharmacy (1823) did not successfully offer more than one course of lectures on a single subject until 1852 and did not offer regular instruction until 1867. Edward Kremers, "The Teaching of Pharmacy During the Past Fifty Years," The Druggists' Circular 51:1 (January, 1907), p. 67.

The College of Pharmacy of the City and County of New York (1829), dismissing its "school of undergraduates" as "forming merely the teaching department of the institution," was "in a somnolent condition" between 1857 and 1859. Curt P. Wimmer, The College of Pharmacy of the City of New York (New York: Curt P. Wimmer, 1929), pp. 20 and 50.

The Maryland College of Pharmacy (1840) was more or less active until 1847, "but thereafter languished until 1856, when . . . it was


The St. Louis College of Pharmacy (1864) began instructional work in 1865 with sixty-six students, but only one of these was an "applicant for graduation." There were a few years when "no lectures were delivered because there were not a sufficient number of students to form classes." William C. Bohn, "Our Alma Mater and We Her Children," Silver Anniversary Report of the Alumni Association of the St. Louis College of Pharmacy (St. Louis: Nixon-Jones Printing Co., 1901), p. 27; and Otto A. Wall, "The Faculty of the College, Past and Present," ibid., p. 37; both cited by Kremers, op. cit., p. 68.

The Chicago College of Pharmacy (1859) instituted courses of lectures in chemistry, materia medica, and pharmacy immediately, which were suspended upon the outbreak of the Civil War. The College was re-organized in 1867, but the school was not reopened until September, 1870. Albert E. Ebert, "Historical Sketch of the Chicago College of Pharmacy," [Chicago?], n.d., p. 2, American Pharmaceutical Association Archives, American Institute of Pharmacy, Washington, D.C., cited by Kremers, op. cit., p. 67.

Edward Kremers, The Old Northwest Territory and Pharmaceutical Education (Lafayette, Ind.: Purdue University, 1934), p. 7. Although the Philadelphia College of Pharmacy had provided a series of continually improving lectures without interruption since 1821, it, too, had known lean years, graduating a total of only nine students between 1839 and 1841. England, op. cit., p. 463.

The apprentice was expected to receive his practical training in the drug store: "The students . . . were encouraged to read, study and experiment, utilizing the opportunities afforded in the shops. . . . The teachers possessed the equipment necessary for demonstration of the lectures, but there were no laboratories." William B. Day, "The School of Pharmacy," in The Alumni Record of the University of Illinois, ed. by Carl Stephens (Dixon and Chicago: Rogers Printing Company for the University of Illinois, 1921), p. xxvi. Outside of the efforts by Parrish and Maisch in Philadelphia, the only semblance to laboratory instruction during this period were the botanical excursions taken during the spring of 1864 at the St. Louis College of Pharmacy. See Wall, op. cit., p. 36, cited by Kremers, "The Teaching of Pharmacy During the Past Fifty Years," p. 69.

Kremers, "The Teaching of Pharmacy During the Past Fifty Years," p. 72. Kremers has compared the schools of the colleges of pharmacy during this period as Fortbildungsanstalten, "corresponding to the evening schools nowadays provided in the larger industrial centres for the various trades." Edward Kremers, "The Colleges of Pharmacy,"


27. Ibid., pp. 391-92. The Association, however, recognized the "vast importance . . . of good schools of pharmacy, where the sciences pertaining to our art are regularly taught," and expressed its willingness to extend its "countenance and encouragement to those already existing, and to all new efforts." Ibid., p. 392.

28. The old-line schools were dependent upon the number of students for the salaries of professors, for equipment and maintenance, and often for the payment of considerable debts upon their buildings. Kremers points out that the regulation of admission to apprenticeship "was often discussed and recommendations were made, but apparently it was never attempted to make such recommendation a binding rule." Kremers, "The College of Pharmacy," p. 302.

29. Kremers, "The Teaching of Pharmacy During the Past Fifty Years," p. 76.

30. Although the state-supported Medical College of South Carolina had produced graduates in pharmacy in 1867, pharmacy instruction at that institution remained in a precarious state until almost the end of the century. Glenn Allen Sonnedecker, "American Pharmaceutical Education Before 1900" (unpublished Ph.D. dissertation, University of Wisconsin, 1952), vol. 1, p. 115.

31. The positive requirement of laboratory methods of study and the inclusion of pharmacy within the medical curriculum had been recommended by the Committee on Medical Education of the American Medical Association as early as 1849. See [F. Campbell Stewart], "Report of the Committee on Medical Education," Transactions of the American Medical Association 2 (1849), p. 342. In 1860, a laboratory course in
pharmaceutical preparations had been established at the University of Michigan for students of medicine to give them practice in the handling of medicines as part of their general practical training in applied science. Although students of pharmacy could take this course, it was not until the School of Pharmacy was organized that the University undertook to provide a full training for pharmacists. For a comprehensive study of this development, see Albert B. Prescott, "Silas H. Douglas as Professor of Chemistry," Pharmaceutical Review 21:9 (September, 1903), pp. 359-63.


35 George Urdang, "The Way of American Pharmacy to Its Present Stage," in Committee on the Pharmaceutical Survey, The General Report of the Pharmaceutical Survey, 1946-49, Edward C. Elliott, director (Washington, D.C.: American Council on Education, 1950), p. 21. Another agency concerned with the elevation of educational standards and the formulation and maintenance of unified prerequisites and curricula was the Conference of Schools of Pharmacy, founded in 1870. The Conference, however, was ineffectual because the delegates were without real policy-making powers, being limited to making recommendations to their colleges which, in turn, had to be acted upon by the colleges' members, the practitioners. For most of the delegates, the necessity of using all possible means to attract students to keep their schools in existence was stronger than the desire of some professors to elevate the educational standards. In 1884, after thirteen frustrating years, the Conference was dissolved. See Glenn Sonnedecker, "The Conference of Schools of Pharmacy--A Period of Frustration," American Journal of Pharmaceutical Education 18:3 (July, 1954), pp. 389-401.

36 The Department of Pharmacy at the University of Wisconsin was established in 1883 by legislative act upon the request of the pharmacists of the state assembled at the third annual meeting of their new state association. Unlike Prescott, a physician, pharmacist-scientist Frederick B. Power, the first Director of the Department, made practical experience a requirement for a diploma, although not necessarily a prerequisite for admission to the course. See Sonnedecker, History of Pharmacy, p. 211; and England, op. cit., pp. 410-12.
CHAPTER II

THE BEGINNING OF CONTINUING PHARMACEUTICAL EDUCATION, 1885-1915

The founding of full-time pharmacy instruction at the University of Michigan and the University of Wisconsin ushered in the modern era of formal pharmaceutical education at the university level. The stimulus for another type of education, home study, came from another quarter: the advent of licensing examinations controlling entry into the practice of the profession of pharmacy.

Early attempts to regulate pharmacy in America by legislation were largely fruitless, and until the middle of the nineteenth century only a few ineffective acts had been issued. Later attempts at legal regulation, however, met with growing success after the Civil War, and can be attributed to the activities of the burgeoning state pharmaceutical associations and the efforts of the American Pharmaceutical Association through its general secretary, John M. Maisch, and later through another prominent American pharmacist, James H. Beal. The new laws vested the power of examining, licensing, and registering pharmacists in the hands of state boards of pharmacy. The laws requiring practitioners of pharmacy to show evidence of their adequacy of knowledge and reliability by passing a licensing examination thus gave legal standing to the profession of pharmacy in the United States and an official recognition of its social responsibility.

24
The new laws were not retroactive, but merely recognized and registered the pharmacists in practice at the time without an examination. For those entering the profession, the new laws required enough knowledge to pass the licensing examination, but did not state how or where this knowledge was to be obtained. As early as 1858, the American Pharmaceutical Association, through a committee headed by William Procter, Jr., presented suggestions and material encouraging home study among apprentices. Yet by 1870, Procter, then editor of the American Journal of Pharmacy, observed that

It is not to be expected that a large proportion of students of pharmacy can get the tuition they need in college schools, and it is time that some efforts should be directed by disinterested members of our profession toward encouraging this home effort among the present generation of apprentices and assistants.

Procter himself contributed to this aim three years later in an essay titled "Suggestions to Beginners in Pharmacy," which offered practical advice to the isolated apprentice who would become a pharmacist without the advantage of a college education. The idea of home study of pharmacy, however, did not emerge as a systematized, commercialized, consistently promoted venture until the 1880s.

**Instruction by Correspondence**

In view of the modest legal requirements attached to the practice of pharmacy in late nineteenth century America, the importance attached to home study of pharmacy by correspondence rested largely on the assumption that some systematic and guided study was better than none at all, since formal education at the university level was not compulsory. A less charitable motive behind the popularity of instruction by correspon-
dence was rooted in the threat of the examinations now required for li-
censure and was bolstered by means of mass promotion. In any event,
home study by correspondence appears to have produced a constructive col-
laboration between the leading pharmaceutical journals and educators of
the day. 10

The first widely patronized correspondence course in pharmacy was
the National Institute of Pharmacy, begun in 1885 by Carl Svante Nicanor
Hallberg "to afford a systematic course of instruction in pharmacy to
such persons as find attendance at a college impracticable." 11 The in-
troduction to the first set of loose-leaf "lectures" stated that their
purpose was
to present a course of instruction in pharmacy and its col-
lateral branches to those actively engaged in the preparation
and dispensing of drugs and medicines. . . . by rendering
the instruction in the most simple manner possible. . . . in
as condensed a form as practicable, without . . . detracting
from perspicuity, or omitting . . . important facts or obser-
vations. Numerous references will be made throughout the
lectures to such standard textbooks as are recommended for
the course, and which are found in nearly all pharmacies. 12

A complete course in pharmacy, botany, materia medica, physics,
and chemistry could be completed in two "terms" of twelve lectures each,
which were mailed to subscribers twice a month over the period of one
year; the course cost fifteen dollars. At the end of each term, students
answered a series of examination questions, successful completion of
which earned them a "Certificate of Graduation in the Institute." 13 The
lectures were "arranged with the view of being as easily understood as
the subjects treated will admit," and showed a level of seriousness far
beyond many other correspondence courses of their day; the students
studied pharmacy before they studied the more basic disciplines of
botany, physics, and chemistry, a decision apparently based on tactical rather than pedagogical criteria.\textsuperscript{14}

The Institute received strong editorial support from pharmacy journals from the start,\textsuperscript{15} and within eighteen months of its founding, Hallberg was able to put a plan into operation "whereby apprentices and clerks in cities and larger towns may form clubs or associations, and, with the lectures as a basis, have 'quizzes' at stated meetings, thus combining all the advantages of association with pleasant and profitable instruction."\textsuperscript{16} Within another ten months, Hallberg could report that 1,500 students had enrolled in the Institute, although the drop-out rate was high: of the first class of 100, only twenty-five completed the first term, ten of whom also completed the second term.\textsuperscript{17}

In 1890, the Institute lectures were issued in book form; two years later, they were issued in the form of a journal, *The Preceptor*. By 1895, the Institute had become so popular that it invited comparison with university training:

\begin{quote}
The main object of such a course is, of course, the systematizing of home-study. Pursued in the ordinary way study is apt to be objectless, desultory, misdirected. The lectures of the institute, however, are presented serially and systematically, precisely as in a regular college-course.\textsuperscript{18}
\end{quote}

By the mid-1930s, however, the National Institute of Pharmacy bowed to the increasing professional pressure for residential college or university training in pharmacy, yet still could boast truthfully in one of its last advertisements of its "prestige of being not only the first in this field, but in the domain of Pharmacy by far the most successful in all the world."\textsuperscript{19}
Another course that gained prominence in pharmaceutical instruction by correspondence was launched in 1897 by another journal, The Pharmaceutical Era, and conducted along similar lines. The purpose of the monthly, as first conceived, was primarily educational:

Pharmaceutical progress, improvement and discovery are so rapid that the student cannot be well served by text books alone, but must largely depend upon the pharmaceutical journals which keep well abreast of this progress and improvement.

Late in 1894, the Era announced a "series of essays by the foremost teachers of pharmacy in the United States." Titled "The Study of Pharmacy," the essays were printed in a logical sequence and comprised "a complete course of lectures for the home study of those branches which go to make up a sound theoretical and practical training in pharmacy;" the cost for the course was two dollars, the subscription price of the Era. The first weekly installment appeared January 3, 1895; an accompanying editorial included some general study hints to the prospective students, who were urged "to start out by taking copious notes or ab-stracts" as they went along and to read, study, and review in groups of two or three, noting that "education consists not alone in storing our minds with facts of information, but in large degree in the ability and faculty of making use of these facts when desired." The series of sixty-nine essays ran weekly over a period of fourteen months, and featured seventeen renowned pharmaceutical scientists.

The following spring, the editor of the Era, apparently deluged by requests for back issues, announced a more ambitious enterprise, "The Era Course in Pharmacy," styled as
a select course of lectures by eminent pharmaceutical educators upon the several subjects commonly included in the curriculum of the colleges of pharmacy, the course to be so arranged and conducted as to afford a graded, systematic and comprehensive course of study in the theory and practice of pharmacy.26

The Era Course in Pharmacy was a true correspondence course, and mirrored the progress that had been made in the methodology of pharmaceutical home study during the preceding twelve years: In addition to the requisite illustrated lectures, quizzes, written recitations, and examinations, the Era Course featured suggested outside readings and "practical studies," consisting of laboratory experiments "illustrative either of the subject studies, or for the development of the student's powers of observation."27

The Era Course also featured "Special Topics" dealing with business and commercial matters, anticipating commercial instruction in colleges of pharmacy by several years.28 Yet the motives behind the establishment of the Course apparently were not altogether altruistic in nature:

Never before was so much demanded from the dispensing druggist, and never has the struggle for existence and subsistence been as keen and fierce as it is to-day. . . . only a thorough and exhaustive course of study, added to the practical training of the shop, can give the educational equipment necessary to the achievement of success in these crowded times of competition.29

Directed by James H. Beal, the Era Course covered a period of two years, each of which was divided into two sections of about twenty weeks' duration. Successful completion of the several examinations earned the home student a "diploma of the course" and even the opportunity to compete for "prizes;" aside from the subscription price of the Era, the cost of the Course to the student was only ten cents a week "to cover the ex-
The contributors to the Era Course again included over twenty leading pharmaceutical educators and scientists in a venture described by Beal as "university extension applied to pharmacy."

It is the aim of the Era Course to apply the scheme of University Extension to Pharmacy, and to bring to the many who are employed in that occupation some of the advantages of the university. It aims to enlist the sympathies not of a single university, but of all the leading schools and colleges of pharmacy in America. It aims to antagonize no existing institution, but to co-operate with all in the development and extension of pharmaceutical education in its highest and best sense.

So outstanding were the contributors in their specialties in pharmacy that it is not surprising that the Era Course in Pharmacy was subscribed to by literally thousands of students.

Of course, there were other less ambitious correspondence schools. Harry B. Mason, managing editor of the Bulletin of Pharmacy, noted that "perhaps ten" correspondence schools in pharmacy appeared in the two decades between 1885 and 1905, and "at least two or three of them have rendered excellent service." A former secretary of the Missouri Board of Pharmacy, August T. Fleischmann, warned prospective students of the cheap imitation course, which has endeavored to copy the system of the originators, promising to prepare the candidate for any state board examination in from thirty days to three months. These are the rankest frauds, and are designed for one purpose only, viz., to get the student's money and then send him adrift, disgusted with the home study course, utterly unfit for the board of pharmacy examination.

Beal, too, noted "an unfortunate tendency on the part of the authorities of these courses to boldly advocate them as perfect substi-
tutes for attendance upon the regular pharmaceutical curriculum as
presented in a good college of pharmacy," asserting that
the best course of home study ever devised cannot be the
equal of in educational value to the systematic pursuit of
the regular pharmaceutical curriculum as presented at even
a fairly good college. There is no substitute for the
presence and voice of the living teacher, no equivalent
for actual work in the laboratory, no incentive to study
like the stimulus of personal contact with a class of
fellow students; and those who claim that a university
education can be sent in a mail bag are guilty of assert­
ing the thing that is not. . . .

... In so far as these agencies have honestly striven
to raise the standard of education among drug-clerks and
to promote habits of study and self-help, they should have
our commendation; but any proposition or suggestion to the
effect that any course of instruction by mail, is or can
be made to be the equivalent of a residence course of in­
struction at a respectable college of pharmacy is false
absolutely, and stamps those who make such claims as guilty
of misrepresentation and attempted fraud.36

Beal may have been emboldened by the recent enactment of "prerequisite
laws" in New York (1905) and Pennsylvania (1906), which required gradua­
tion from a recognized school or college of pharmacy of all candidates
appearing before their state boards of pharmacy for the licensure exam­
ination.37 In any event, prerequisite legislation in other states after
1915 sounded the death knell for correspondence courses as a substitute
for residential academic education in pharmacy.38

Journal Articles Written For Home Study
The demand for cheap and painless learning also spawned a modified
form of correspondence study, the home-study books, pamphlets, and jour­
nal articles narrowly aimed at preparing drug clerks and apprentices for
the state board examinations. The materials ranged from concise, ency­
clopedic articles and home-study books prepared by learned and respected
faculty members at the various schools and colleges of pharmacy to the "quiz-compends," collections of questions commonly asked in the state board examinations.

The pharmaceutical journals of the 1880s had undergone a remarkable expansion; hence, it is not surprising that the best among them, in their desire to expand their readership, offered series of articles and essays by leading authorities in the pharmaceutical sciences on a wide variety of subject matter. What is unusual, however, is the overwhelming reliance by the pharmaceutical profession upon the various journals for keeping itself up-to-date on current scientific, professional, and commercial matters. The decline in the quality of pharmaceutical journals after 1920, however, would provide a challenge to the burgeoning continuing education programs of the nation's schools and colleges of pharmacy.

By the mid-1890s, several pharmacists, speaking before their state pharmaceutical association meetings, drew their colleagues' attention to the utility of the drug journal. One pharmacist-physician, for example, identified four sources of knowledge available to the pharmacist—the drug store, the college of pharmacy, association meetings, and the reading of textbooks and journals—but dismissed all but the latter as useful in keeping abreast of current developments. Another pharmacist characterized the drug journal as "a constant instructor and guardian of the modern pharmaceutical profession."

Drug journals exhibit a preeminently practical value when they confirm and minutely report such developments resulting from scientific research. Druggists cannot afford to be behind the times, and by placing dependence in these mediums, they are enabled to benefit their patrons by recent progress made in their profession.
Other pharmacists stressed the improvement in public and professional re-
lations which could accrue to the constant reader of the periodical liter-
ature, while still another deftly catalogued the drug journals' virtues:

They have supported and disseminated the views of advanced 
pharmacists, have urged and induced the agitation of the sub-
ject of higher pharmaceutical education, have stimulated at-
tendance at association meetings and spread broadcast infor-
mation respecting the deliberations and scientific proceed-
ings of such bodies, thus contributing, in no small degree, 
to pharmaceutical interest and education. . . .

Pharmaceutical journals largely direct pharmaceutical opin-
ion by presenting a careful analysis of the needs and possi-
bleties of the times. They also provide a medium for the 
interchange of ideas and the transmission of pharmaceutical 
news; a bureau for inquiries on subjects of special or common 
interest. . . .

. . . An incentive and means to higher education is of-
fered by the journals which provide the pharmacist with in-
formation of great immediate value to him, so presented so as 
to claim his interest and induce the employment of the in-
formation. 44

The value of the pharmaceutical journals was not lost upon the 
academic community. Characterizing the periodical literature of pharmacy 
as 'a valuable means of professional improvement for all pharmacists,' 
Albert B. Prescott, Dean of the University of Michigan School of Phar-
macy, urged his readers 'not to neglect constant acquaintance with the 
current literature of pharmacy.' 45 By the turn of the century, local 
groups of pharmacists formed 'journal clubs,' and educational pioneers 
like Frederick J. Wulling, Dean of the University of Minnesota College 
of Pharmacy, established 'journal hours' to assist his students to 'rec-
ognize the necessity of reading the current literature to keep abreast 
with the times.' 46
Books Prepared for Home Study

Prior to the 1880s, attendance by apprentices and drug clerks at schools and colleges of pharmacy was the exception rather than the rule; among those able to attend college the drop-out rate was remarkably high. Although attendance at colleges of pharmacy would dramatically increase by the turn of the century, during the transitional decade of the 1890s, drug clerks not willing or able to secure a college education or to endure the discipline set by the burgeoning correspondence courses were often referred to the standard textbooks of the day, the United States Dispensatory, or Joseph P. Remington's The Practice of Pharmacy.

In response to the implied demand for less formidable study aids, the home-study book was conceived. The best known representative of this type of literature was Oscar Oldberg's A Course of Home Study for Pharmacists, first published in 1891. Oldberg emphasized in his preface that "no course of study at home takes the place of a good college with its experienced teachers and its invaluable laboratory practice," but pointed out that of the 75,000 persons employed in pharmacies in the United States, "only a few thousand have enjoyed the advantages of a college of pharmacy education," and therefore recommended home study as being "of the highest importance to those who are prevented by circumstances from entering colleges." That same year Oldberg's College of Pharmacy offered "courses of preliminary study by correspondence," using his "elementary work" as a textbook and conducting examinations by mail.

While Oldberg's ambitious Course of Home Study and correspondence courses received high praise, their less respectable counterparts, the
quiz-compend and the cram school, received strong condemnation from pharma-
caceutical educators and editors. C. S. N. Hallberg, now editor of The Western Druggist, for example, noted there was "decided objection among teachers to the species of 'cramming' called quiz to which sundry fib-and-a-bit publications and alleged drug clerks' journals are devoted to," pointing out that

Young men, beginners in pharmacy, are easily inveigled into the adroit schemes, by which pharmacy is represented to be mastered parrot-fashion by reading a lot of questions and their answers afterwards, because of the little effort re-
quired. . . . The quiz, query, review, or, as we prefer, inqui-
ry system, is indispensable in pharmacal education, but its prostitution should not be tolerated.

Frederick Hoffmann, editor of the Pharmaceutische Rundschau, characterized the quiz-compends as "an outgrowth of the effete method of 'drill' still largely prevailing in our educational system and . . . contrary to sound principles of solid education."

The great objection to these methods of side-education . . . is that they simply present within the briefest pos-
sible time and compass, a multitude of disconnected garbled facts to be memorized. . . . They mostly ignore the relation-
ship of facts to each other and pay no or insufficient re-
gard to the interdependence of the elements and the organic structure of the correlated branch sciences of pharmacy. . . . To the victims of this kind of pseudo-education, phar-
maceutical and analytical chemistry, botany and pharmacognosy are little more than irrelevant doctrines, their experience in their study a reminiscence of drudgery.

Nevertheless, such slender volumes as Francis E. Stewart's A Com-
pend of Pharmacy, which first appeared in 1886, enjoyed an enormous popularity among apprentices and drug clerks who exhausted the first edition within one year, although its reviewers were less than kind. A review of the second edition (1887) allowed that "a demand for books
like this is sufficient justification, we suppose, for their existence," and sniffed:

For a student . . . whose mental capacity is too limited to master all there is in the larger work [Remington's], such a compend will no doubt serve a useful purpose, enabling him to "pass an examination in a creditable manner." But will such men be any credit to the profession, which seeks to guard itself by these same examinations from the intrusion of the incompetent? The fault we have to find is not with this book, but with the class it represents.57

Purportedly based upon Remington's The Practice of Pharmacy, Stewart's Compend emphasized nomenclature, definitions, and synopses of pharmacopoeial monographs, and eventually went through ten editions, the last of which appeared in 1928 under the pen of Heber W. Youngken.58

The remarkably wide gamut of home study materials in pharmacy continued to flourish until their position was gradually undermined in the twentieth century by laws making formal education at residential schools and colleges compulsory. Sonnedecker concludes that "the most that can be said for home-study endeavors, is that they simplified and systematized the self-education of perhaps thousands of youths in pharmacy who would never enter the doors of a school of pharmacy."59

Although the correspondence courses, journal articles, home-study books, and quiz-compends resemble the methodology of certain modern continuing education activities in American schools and colleges of pharmacy today, the motives employed by the participants differ considerably, from a preparation for licensure examination in the former case, to an updating or expanding of professional competencies in the latter. Similarly, although these home-study materials and activities employed the talents of outstanding teachers in American schools and colleges of pharmacy (pre-
sumably with at least the tacit approval of their administrations), these institutions had not yet assumed the obligation of keeping their alumni in touch with current scientific knowledge, business methods, or trends in professional practice. The hesitant acceptance of this responsibility by schools and colleges of pharmacy through the initial mechanism of university extension and by state and national pharmaceutical associations is the subject of the next chapter.
The early laws established some qualifications for the practice of pharmacy and its practitioners, but often contained no effective controls or were emasculated by later amendments; others were never enforced or were repealed.


The boards also enforce state and federal legislation pertaining to drugs both within and without the field of pharmacy. In most states, the boards are made up of practicing pharmacists appointed by the governor of the state on the basis of recommendations made by the state pharmaceutical association. There is, therefore, a certain degree of self-regulation in the practice of pharmacy in the United States.

The new laws also created a certain amount of animosity between the state boards of pharmacy and the schools and colleges of pharmacy. This arose from the fact that there was no organized connection between the two except the requirement that the candidate applying for examination and registration by the state board be a graduate of a recognized
school or college of pharmacy. Urdang has pointed out that "frequently there was a great deal of suspicion, deep-seated disagreement as to the goals and methods of pharmaceutical education, and mutual misunderstanding between the boards and the schools." George Urdang, "The Way of American Pharmacy to Its Present Stage," in Committee on the Pharmaceutical Survey, The General Report of the Pharmaceutical Survey, 1946-49, directed by Edward C. Elliott (Washington, D.C.: American Council on Education, 1950), pp. 23-24. Misunderstandings and dissention persisted until about 1927 when joint meetings of the boards and the schools' faculties were instituted on a regional basis, which event Sonnedecker has described as "a new channel for regional cooperation . . . that still retains a significant place in American pharmacy." Sonnedecker, op. cit., p. 199.


Instruction in pharmacy by correspondence closely paralleled a similar movement in general adult education. Noffsinger reports that the Society to Encourage Studies at Home, formed in 1873, "sought to stimulate the formation of home study groups, prepared guides to reading and conducted a regular correspondence with members," but soon suspended operations because of its "failure to adapt instruction to the ability and requirements of the students." In 1883, a Correspondence University, consisting of instructors from various colleges and universities, was founded at Ithaca, New York, "to supplement the work of other educational institutions by instructing persons who from any cause were unable to attend them," but also "soon died a natural death." John F. Noffsinger, Correspondence Schools, Lyceums, Chautauquas (New York: The Macmillan Company, 1926), pp. 4-7. The first American institution to establish correspondence instruction on a regular basis was Chautauqua, which flourished from 1879 to 1900. Ibid., pp. 8-11. Also see Rebecca Richmond, Chautauqua: An American Place (New York: Duell, Sloan and Pearce, Inc., 1943).
Sonnedecker has remarked that attempts at home study in pharmacy by correspondence are unusual for two reasons: "first, because of the casual and inherently inadequate method of dealing with a technico-scientific field where ignorance and incompetence suggests grave social consequences; secondly, because of the respectability and even active support gained by such attempts among men of the highest competence and aspirations in pharmacy." Sonndecker, "American Pharmaceutical Education Before 1900," p. 504.

[Carl S. N. Hallberg], "Editorial," The Western Druggist 7:2 (February 16, 1885), p. 42. "For uncollegiate druggists desiring a more thorough knowledge of pharmacy, and for young men preparing for Board of Pharmacy examinations or for entrance to a college course, the Institute appears to be admirably adapted," Hallberg enthused. "The Institute begins its career heartily endorsed by scores of well-known pharmacists, including professors in pharmacy, officers of State Pharmaceutical Associations, and members of Boards of Pharmacy." Ibid.

Hallberg has been described by England as "one of the great men of American Pharmacy in the constructive work he did for ... pharmaceutical education, legislation and journalism." Joseph W. England, ed., The First Century of the Philadelphia College of Pharmacy, 1821-1921 (Philadelphia: Philadelphia College of Pharmacy and Science, 1922), p. 197. In addition to his work with the Institute, Hallberg was editor of The Western Druggist (1882-1890), professor of pharmacy at the Chicago College of Pharmacy (1890-1910), and editor of the Bulletin of the American Pharmaceutical Association (1906-1910). Ibid., p. 196.

[Carl S. N. Hallberg], "Introductory," National Institute of Pharmacy, Term I, Lecture I [November 1, 1886], p. 1. Students were encouraged to master one page of the lecture each day, answer the accompanying questions without referring to the lecture, and return their answer sheets for correction before a new lecture would be sent. Hallberg frankly stated that the correspondence method differed essentially from the simple study of books and cautioned that "best results will attend adherence to the spirit of the plan." Ibid.

The Certificate possessed no legal significance, Hallberg pointed out, "though there can be little doubt that thorough, conscientious work during the course would, with the requisite experience, result in ample qualification for a successful Board of Pharmacy examination." Ibid.

In a comprehensive questionnaire sent to every student at the end of each term, Hallberg asked, "Would the necessary theoretical study of Chemistry and Botany prove uninteresting as compared with Pharmacy, and tend to diminish the enthusiasm of beginners with the first term?" [Carl S. N. Hallberg], "To the Student," National Institute of Pharmacy, Term I, Lecture XII [April 15, 1887], p. 148. Hallberg's supposition proved to be true: "Of all of those who subscribe for the lectures, by far the largest number simply finish the first
term—that is, the lectures on pharmacy. Of these, such as have the necessary experience usually pass the board of pharmacy examinations, and then not infrequently defer further study." [Carl S. N. Hallberg], "The National Institute of Pharmacy," The Western Druggist 20:2 (February, 1898), p. 85.

15 See, for example, [Ferdinand Lascar], "National Institute of Pharmacy," The Southern Pharmacist 1:12 (August, 1885), p. 182. Editor Lascar presaged modern continuing education by correspondence, observing that "the lectures are also welcome to many of the older pharmacists who have become rusty in many branches of pharmaceutical science." Also see: "The National Institute of Pharmacy," The Western Druggist 14:10 (October, 1892), p. 399; and "Queries and Comment: 175. Home Study of Pharmacy," The Western Druggist 16:7 (July, 1894), p. 265.

16 "Home Study for Clerks," The Western Druggist 8:8 (August, 1886), p. 296. The drug clerks' association movement began in the late 1880s in the larger cities in the United States. The aims of these associations were both educational and social in nature. See, for example, [Albert] B. Lyons, "Editorial," The Pharmaceutical Era 1:2 (February, 1887), p. 35; [William] Simonson, Letter to "Editor," Pharmaceutical Era," February 9, 1887, The Pharmaceutical Era 1:3 (March, 1887), p. 78; and John C. Falk, "The St. Louis Drug Clerks' Association," The Pharmaceutical Era 1:5 (May, 1887), p. 92. For a comprehensive study of this movement, see Charles H. Bowersox, "Drug Clerks Organizations," The Pharmaceutical Era 45:3 (March, 1912), pp. 185-88; and ibid. 45:4 (April, 1912), pp. 269-72. On a national scale, the National Drug Clerks Association later served employed pharmacists seeking better salary and hours, but also sought better standards of practice and national reciprocity of licenses. Sonnedecker, History of Pharmacy, p. 190.


19 "Study Pharmacy at Home" [advertisement], Drug Bulletin 55:5 (May, 1933), p. 34. Of the 147,548 students enrolled in the twenty-five correspondence schools in Noffsinger's study, less than ten per
cent were classified as professionals, which category included pharma-

20 Styled as "A Monthly Exponent of Pharmaceutical Science and Practice," the Era had established an educational tone from its incep-
tion in 1887: "The particular purpose of the Era is to serve as a
guide, 1st, to the more advanced student by furnishing him in its Index
Pharmaceuticus with a Key to current pharmaceutical literature; and 2nd;
to the beginner by furnishing matter especially of an educational char-
acter in chemistry, botany, microscopy, and pharmacognosy." A[lbert]
B. Lyons, "Editorial—Saluatory," The Pharmaceutical Era 1:1 (January,

21 "The Pharmaceutical Era: The History of Its Ten Years of Life
and Achievements," The Pharmaceutical Era 16:27 (December 31, 1896),
p. 851. "Page after page was given up to papers from renowned chemists
and scientists that embodied the results of protracted and painstaking
research. Seldom did a live news item creep into those columns con-
secrated to professional, scientific and technical information. When
it did, it wore an air that was almost apologetic." The following
year, however, the Era included trade notes, news, and correspondence
in a supplement which became a "Trade Edition" in 1890, merged into a
joint semimonthly publication in 1891, and was issued weekly in 1895.
Ibid., pp. 851-53.

22 This was not an idle boast; included were such respected phar-
maceutical educators as Albert B. Prescott and Alviso B. Stevens of the
University of Michigan, Joseph P. Remington and Samuel P. Sadtler of
the Philadelphia College of Pharmacy, Oscar Oldberg of the Illinois
College of Pharmacy, Charles O. Curtman of the Missouri Medical Col-
lege, Virgil Coblentz and Henry H. Rusby of the New York College of
Pharmacy, Otto A. Wall of the St. Louis College of Pharmacy, and Lucius
E. Sayre of the University of Kansas. B . C . Haynes Ê Co. , "The Study
of Pharmacy" [brochure, 1894], p. 1.

23 Ibid., pp. 1 and 4. The essays were directed to a wide and
varying audience: "For the drug clerk who cannot attend college; for
him who contemplates a college course; for the pharmacy student in col-
lege, as a supplementary course; for the candidate who is preparing to
go before a board of pharmacy; for the practicing pharmacist and the
alumnus, who wish to review their studies; for the medical student who
wants a good course in pharmacy; for clerks in wholesale stores and
workers in laboratories—in fact, there is no person interested in a
pharmaceutical education who can peruse these essays without benefit to
himself." Ibid., p. 1; emphasis added.

24 [Charles W. Parsons], "Editorial: The Study of Pharmacy," The


Prospectus and Outline of Curriculum," p. 620. Although the experiments were geared to the "resources of the average drug store," the Director of the Era Course apparently recognized the importance of formal laboratory instruction beyond the informal practical training afforded by the typical apprenticeship. For an example of the materials and apparatus used by the students, see J[ames] H. Beal, "The Era Course in Pharmacy: List of Materials and Apparatus Required for the Practical Studies in Chemistry," The Pharmaceutical Era 18:17 (October 21, 1897), p. 589. In addition, pharmaceutical manufacturing firms such as Parke, Davis & Co. soon sold "Materia Medica Cabinets" containing several hundred specimens of crude drugs to aid students in their studies. See, for example, Parke, Davis & Co., "Every Matriculate in The Era Course in Pharmacy . . ." [advertisement], The Pharmaceutical Era 21 (May 19, 1898), p. 7.

"Era Course in Pharmacy: The Business Side of Pharmacy," The Pharmaceutical Era 17:25 (June 24, 1897), p. 768. The "Special Topics" included a consideration of bookkeeping, stocking, trademark and patent law, display techniques, public relations, and the testing of liquor. The classic struggle between professional and commercial orientation in the practice of pharmacy appears to have begun in earnest in the 1890s and continues to this day.


31 J[ames] H. Beal, "The Era Course in Pharmacy: List of Contributors," The Pharmaceutical Era 18:3 (July 15, 1897), p. 69. The contributors included such distinguished educators as Charles F. Heebner of the Ontario College of Pharmacy, George B. Kauffman of The Ohio State University, Edward Kremers of the University of Wisconsin, John Uri Lloyd of the Eclectic Medical Institute of Cincinnati, Oscar Oldberg of Northwestern University, Edsel A. Ruddiman of Vanderbilt University, Lucius E. Sayre of Kansas State University, Wilbur L. Scoville of the Massachusetts College of Pharmacy, Julius W. Sturmer of Purdue University, Otto A. Wall of the St. Louis College of Pharmacy, and Frederick J. Wulling of the University of Minnesota. Ibid.


Sonnedecker, History of Pharmacy, p. 216. The Era Course in Pharmacy prospered over a period of more than three decades under the direction of Beal (1897-1918), Charles H. Stocking (1918-1919), C. Verne Nichols (1919-1921), and Henry Kraemer (1921-1924), finally expiring with the Era itself in July, 1931.

33 Sonnedecker, History of Pharmacy, p. 216. The Era Course in Pharmacy prospered over a period of more than three decades under the direction of Beal (1897-1918), Charles H. Stocking (1918-1919), C. Verne Nichols (1919-1921), and Henry Kraemer (1921-1924), finally expiring with the Era itself in July, 1931.

34 Harry B. Mason, "A Quarter-Century of Pharmaceutical Education," Bulletin of Pharmacy 19:2 (February, 1905), p. 66. "It is true enough that several of our correspondence schools are a disgrace," Mason admitted, "but I am confident that some direct or indirect means will ultimately be found to limit their capacity for doing harm." Ibid. Some of the correspondence courses advertised in the Bulletin of Pharmacy during this period included The Ohio Institute of Pharmacy in Columbus, the Highland Park College of Pharmacy in Des Moines, the Continental Correspondence School of Pharmacy and Allied Sciences in Brooklyn, the Interstate School of Correspondence in Chicago, and the Practical Druggist Institute of New York. See the advertising sections of the Bulletin of Pharmacy 14:12 (December, 1900), p. 9; Ibid. 18:12 (December, 1904), pp. 26 and 29; and Ibid. 20:12 (December, 1906), pp. 34 and 42.

35 August T. Fleischmann, "Why Some Fail and Others Pass the Board of Pharmacy Examinations," The Western Druggist 25:7 (July, 1903), p. 354. Sonnedecker notes that "more than a few" correspondence schools were not above using bait advertising: A Chicago enterprise, the "Lincoln-Jefferson University," offered "ten large lessons forwarded by mail" for one hundred dollars (later marked down to sixty-five dollars "cash in advance"). Prospective students were told that the "Doctor of
Pharmacy" diplomas they would obtain if they successfully completed the examination on the lessons were "large and beautiful, bearing no statement that the work was done by correspondence." This course was not discontinued until 1926, but "others survived still longer in states lacking legal restrictions." Sonnedecker, History of Pharmacy, p. 216. Also see Arthur A. Young, "Illinois Will Clean Out Diploma Mills," The Pharmaceutical Era 58:1 (January 5, 1924), pp. 3-4; "Downing Voids 200 Diploma Mill Degrees," The Pharmaceutical Era 58:3 (January 19, 1924), pp. 49-50; Edward Spease, "The Editor's Correspondence: What Is a Diploma Mill?" The Pharmaceutical Era 58:6 (February 9, 1924), p. 133; Rufus A. Lyman, "The Editor's Correspondence: What is a 'Diploma Mill'?" The Pharmaceutical Era 58:10 (March 8, 1924), pp. 229-30; and ""Teacher of Pharmacy"" [Irving Isadore Jacobs], Journal of the American Pharmaceutical Association (Practical Pharmacy Edition) 7:5 (May, 1946), pp. 196-202.

James H. Beal, "Correspondence Courses in Pharmacy," Proceedings of the American Pharmaceutical Association 54 (1906), p. 201. Beal pointed out that in a regular college of pharmacy "probably 90 per cent. of matriculants are successful in graduating, while in the case of a correspondence course, unless it be nearly a pure farce, probably less than 20 per cent. persevere to the end." Ibid.


Eli H. Long has noted that "during the fifty years from 1829 to 1879 there were established in the United States four pharmaceutical journals, or an average of one in twelve and one-half years, [whereas] during the sixteen years from 1880 to 1895 inclusive there were established twenty, or an average of one every ten months." Eli H. Long, "The Present State of Pharmacy and Its Possible Improvement," Bulletin of Pharmacy 13:4 (April, 1899), pp. 141-42. Most of these journals did not survive the 1930s. For a comprehensive overview of the development of American pharmaceutical journals, see Sonnedecker, History of Pharmacy, pp. 257-62. Also see Frederick Hoffmann, "A Century of American Pharmaceutical Literature and Journalism," American Druggist and Pharmaceutical Record 36:6 (March 25, 1900), pp. 154-65; Minnie Marie Meyer,


placed himself in position to reap a large and rich return for such investments, and to fully become what he should be, a competent, informed, and progressive pharmacist." Ibid.

45 Albert B. Prescott, "The Study of Pharmacy: IX. The Professional Situation in Pharmacy," The Pharmaceutical Era 13:5 (January 31, 1895), p. 136. Prescott suggested that a "library, consisting chiefly of the continuous publications, the sets of scientific and purely pharmaceutical journals, if well chosen and collected," would be "a most suitable undertaking for the local pharmaceutical society of any city." Ibid. Also see Albert B. Prescott, "What Course of Reading and Plan of Study are Advisory for the Assistant in Pharmacy?" The Pharmaceutical Era 1:1 (January, 1887), pp. 7-11.

46 [Joseph Helfman], "The Month," Bulletin of Pharmacy 17:4 (April, 1903), p. 140; and Frederick J. Wulling, "A Journal Hour at Colleges," The Druggists' Circular and Chemical Gazette 43:4 (April, 1899), p. 74. Characterizing the journals as "the living literature of the day," Henry M. Whelpley admonished his readers to "always continue as students and learn something more than you find in text or reference books or were given in lectures or in laboratory exercises at a college of pharmacy. The erudite pharmacist of to-day keeps in touch with his profession by reading regularly more than one good pharmaceutical journal." H[enry] M. Whelpley, "The Pharmacist of To-Day," The Western Druggist 25:2 (February, 1903), p. 69.

47 Peter W. Bedford, a professor at the New York College of Pharmacy, noted that "in the past the number of students who have attended lectures have been three times as many as the graduates . . . During the past few years, the number of graduates is much larger . . . about one-half." P[eter] W. Bedford, "Self-Education for Young Pharmacists," New Remedies 11:8 (August, 1882), p. 229.

48 In 1878 there were thirteen schools of pharmacy with 1,187 students; in 1899 there were fifty-two schools of pharmacy with 3,563 students, an increase of 200 per cent in twenty-one years. Henry L. Taylor and James Russell Parsons, Jr., "Professional Education in the United States: Pharmacy," University of the State of New York College Department Report 2:10 (March, 1900), p. 956.


50 Oscar Oldberg, A Course of Home Study for Pharmacists: First Lessons in the Study of Pharmacy (Chicago: The Apothecaries' Company, 1891), 523 pp. Oldberg's Course had been preceded by his An Outline of a Course of Study in Practical Pharmacy (Chicago: By the Author, 1885), 104 pp., in which a special order was recommended for "students who are
reading pharmacy without the aid of a teacher," and his Pharmaceutical and Chemical Problems and Exercises in Metrology, Chemistry, Pharmacy and Pharmaceutical Nomenclature (Chicago: W. T. Keener, 1887), which a reviewer said differed from the ordinary quiz-compend "in that the student is left to solve for himself the problems it presents. It is an exercise book, with nothing to learn by rote or cram." "Book Reviews: Oldberg's Pharmaceutical Problems and Exercises," The Pharmaceutical Era 1:11 (November, 1887), p. 416. Like Hallberg, the founder of the National Institute of Pharmacy, Oldberg was of Swedish origin and had preceded Hallberg as a teacher at the Chicago College of Pharmacy. In 1886, he left with a group of dissenting faculty members to organize the Illinois College of Pharmacy at Northwestern University, of which he became dean. Sonnedecker, History of Pharmacy, p. 217. Also see H[enry] K[raemer], "Obituaries: Oscar Oldberg," American Journal of Pharmacy 85:6 (June, 1913), pp. 272-75.

51 Oldberg, A Course of Home Study for Pharmacists, p. v. The ambitious Course received enthusiastic reviews: "The entire work is prepared with the end in view that the student be enabled to clearly understand what he reads, and not merely memorize facts and theories. . . . We can honestly give cordial approbation of the work and its purpose . . . ." "Book Reviews: Home Study in Pharmacy," The Pharmaceutical Era 6:1 (July 15, 1891), p. 62.

52 "Courses of Home Study in Pharmacy," The Apothecary 1 (1891), pp. 28-30, cited by Sonnedecker, "American Pharmaceutical Education Before 1900," p. 511. The several courses mentioned "usually suggested preliminary reading in standard texts and encouraged or helped students to conduct simple chemical experiments in the drug store and use specimens in connection with the readings on botany and materia medica." Ibid.

53 A consideration of the cram schools, or diploma mills, which required some time in residence, is beyond the scope of this study. The interested reader is referred to Sonnedecker, "American Pharmaceutical Education Before 1900," pp. 513-14; and his History of Pharmacy, p. 217.

54 [Carl S. N. Hallberg], "Editorial," The Western Druggist 11:8 (August, 1889), p. 273. Harry B. Mason, associate editor of the Bulletin of Pharmacy, added that "those who have to do with 'home' pharmacy students know that not more than three in every ten will begin such a course of study, and that two of these three will give it up after a few weeks or months and resort to the cross-cut of the quiz compend system of preparation . . . ." H[arry] B. M[ason], "Editorial: The Necessity of the Step," Bulletin of Pharmacy 13:8 (August, 1889), p. 310. Although many editors voiced their disapproval of the quiz-compends, cram courses, and patently inadequate correspondence courses, few hesitated to accept their advertising.
Fr[ederick] Hoffmann, "Editoriell: Short Cuts to Knowledge and Proficiency," Pharmaceutische Rundschau 11:5 (May, 1893), pp. 108-9. Also see Fred[erick] B. Power, "The Mission of Pharmaceutical Schools," Pharmaceutische Rundschau 11:11 (November, 1893), p. 259. Power admitted that "a student may and indeed often does attain the desired end, which is to slip through an examination," but noted that "the knowledge thus acquired is, however, not the true grain, but chaff, which soon vanishes, leaving him who possessed it empty minded and at a great disadvantage in the competition of life." Ibid.


Even the doughty Practice of Pharmacy was affected by the quiz-compends' success. "The value of the method of proving progress in knowledge by answering questions has been recognized in this edition, and a series of questions on the subjects embraced has been appended to each chapter. It is believed that these will afford the student the needed facilities for self-examination . . . ." Joseph P. Remington, "Preface to the Second Edition," The Practice of Pharmacy (2d ed., enl. and rev.; Philadelphia: J. B. Lippincott Company, 1889), pp. iii-iv. For a reasonably comprehensive bibliography of quiz-compends and other home study aids in pharmacy, see Appendix C.

Sonnedecker, History of Pharmacy, p. 218. In contrast, Sonnedecker characterizes the goal of extension work of the twentieth century as an effort "to simplify and systematize a continuing education for practitioners who already have a sound academic education." Ibid.
CHAPTER III

EXPERIMENTAL CONTINUING PHARMACEUTICAL EDUCATION, 1885-1909

The remarkable growth in the number and the quality of university-based schools and colleges of pharmacy in the United States during the last fifteen years of the nineteenth century corresponds to an impressive if somewhat painful struggle to raise the standards of higher pharmaceutical education during the first three decades of the twentieth century. The activities which brought about this development—the press for legislation requiring a high school education as a prerequisite to admission to a school or college of pharmacy, the adoption of minimal admission requirements and a forty-week, 1,100-hour curriculum, and the pleas for state legislation demanding graduation from a school or college of pharmacy prior to examination for licensure—consumed vast quantities of faculty time and administrative talent and left little time for the development of continuing education activities for the practicing pharmacist. Isolated examples of continuing education activities occurred during this period, notably at the University of Minnesota, but further development of the concept of continuing pharmaceutical education would hinge upon the concomitant development of university extension in the following period.

Early Development of University Extension

The concept of "university extension" originated in England; its
origins may be traced to William Sewell, a fellow of Exeter College, who in 1859 recommended that English universities, with the aid of local societies, offer instruction to all classes of society. Five years later, Lord Arthur Harvey urged that the universities at Oxford and Cambridge appoint circuit-riding professors so that a literary, a scientific, or a mechanics' society anywhere in Great Britain or Ireland might contract with a university for a series of six related lectures. In 1873, Cambridge became the first university to create an extramural organization for this purpose, the Society for Local Lectures, under the guidance of a fellow of Trinity College, James Stuart. The English system of extension teaching by lectures deeply influenced American visitors who transplanted the idea to the United States, where it took root in the late 1870s.

For example, President Daniel Coit Gilman initiated systematic courses of lectures for the "educated public" and made them an integral part of the system of instruction at Johns Hopkins University from its very beginning in 1876. Eleven years later, Herbert Baxter Adams, professor of history at Johns Hopkins, first vigorously advocated the English system of extension lectures at the annual meeting of the American Library Association. The following year, Melvil Dewey, chief librarian of Columbia University, urged the extension plan before the Regents of the University of the State of New York; in 1891, at the Regents' request, the New York State Legislature appropriated $10,000 to defray the expense of organizing an extension office as one of five divisions of a state system.
Early Organization of University Extension

As public libraries took up extension lecture work, popular societies were formed. The American Society for the Extension of University Teaching, organized in 1890 primarily to develop extension centers in the Philadelphia area, was perhaps the most successful of the independent societies. The Society was set up on the English university extension system and went so far as to send its secretary, George Henderson, to England to make a careful study of university extension on its home ground. Henderson attempted to draw upon universities for teaching personnel, but proposed to carry out the actual teaching as a highly decentralized private enterprise. The Society flourished during its first decade and featured a distinguished roll of lecturers, but did not cater to vocational needs or interests.

The Society sponsored the first national meeting of people engaged in extension work in Philadelphia on December 29-31, 1891. The speeches at the conference were given over largely to expressing enthusiasm for the new movement, discussing technical problems, and presenting visions as to its future. Reports from the delegates indicated that by this time some kind of extension work had been started in twenty-nine states and territories. The delegates also voiced the need for forming a national organization of university extension programs and explored plans for forming a permanent organization, but twenty-four years passed before another national meeting of this kind was held. Adult education historian Malcolm S. Knowles maintains that popular pressure in other states upon universities to provide help in dealing with real problems grew to the point where it could not be resisted. In response to
these various forces, formal university extension divisions began being organized, first at the University of Wisconsin and the University of Kansas in 1891, and next, and more importantly, at the University of Chicago in 1892.

President William Rainey Harper viewed extension education not as a sideline or an afterthought, but as an integral part of his new university. His comprehensive Division of University Extension had equal status with four other university divisions, and included lecture-studies, classwork, correspondence teaching, examinations, libraries and publications, and district organization and training. This pattern of university extension was new; it differed fundamentally from English extension work by including standard university and college courses lifted bodily from the regular curricula, credit and all. "The effect of these innovations at Chicago can hardly be overestimated," state adult educators Theodore J. Shannon and Clarence A. Schoenfeld, "for they gave the concept of university public service its first secure home and its first coherent philosophy."}

Soliciting Help from Schools and Colleges of Pharmacy

It was not until the mid-1880s that pharmacists began to solicit their burgeoning schools and colleges of pharmacy for help--first to extend their services to students and apprentices in outlying areas, later to provide postgraduate training in commercial and scientific subjects which had been neglected or given short shrift in the undergraduate curriculum. At the 1886 meeting of the Massachusetts Pharmaceutical Association, for example, Joseph W. Colcord called his listeners' attention
to the fact that of the 3,000 to 4,000 assistants located in the New England area, fewer than 500 were located near enough to Boston to benefit from the instruction provided at the Massachusetts College of Pharmacy. Colcord had a solution to this dilemma, however:

To reach this class referred to an additional course should be provided, which should present to the regular course what the evening school does to the regular day school, a substitute and not a supplanter. It should not confer the coveted degree of the regular course, but possibly a minor degree. . . .

The method I propose is a modification of the Chautauqua, or perhaps I should say an extension of that now being prosecuted by Mr. C. S. [N.] Hallberg, of Chicago. . . . the students should agree to devote not less than one hour per day during the term to study, and . . . attend a two weeks series of lectures at the college of six hours per day in the fall, and the same in the spring, the former to be devoted to laboratory work, and the latter to reviews, corrections, and examinations. . . .

. . . In cities or towns where there is a sufficient number of pharmacists, quiz classes could be formed and help obtained from the better educated proprietors, and an occasional lecture given on chemistry, pharmacognosy, etc. In the interim between the fall and spring lectures, each student should receive bi-weekly printed instructions and suggestions, lectures, etc., and be permitted to propose questions to be answered in subsequent numbers.17

Colcord supposed that "the faculty will not care to add to their labors, being already overburdened, but will doubtless without demurring undertake the task if the need was presented sufficiently strong." He also requested that the Association appoint a committee to select a method to "forward the education of clerks living at a distance from a college of pharmacy" and circularize the pharmacists in New England to ascertain the feasibility of forming such classes. Colcord concluded by envisioning a broader scope for his plan:
If it proved a success, other teaching colleges could be asked to join in the movement, broadening the field and lessening the expenses of publishing the periodical, and securing the ablest talent in the country, each college to attend to the students solely in its proper territory. Gentlemen of the college, shall this step be taken by you, the proper directors of such a movement, or shall it be done by others? for done it will be, rest assured.  

The gauntlet thrown down by Colcord evidently was not picked up by the Massachusetts College of Pharmacy faculty, for three years later another New England pharmacist laid a similar plan before the Connecticut Pharmaceutical Association. Dwight G. Stoughton envisioned a centrally located college of pharmacy which would "issue printed lectures, as does the National Institute of Pharmacy, with the further demand that students should go to the college building for term examinations and graduations, thus obviating the weak point of answer being made from other sources than the student's acquired knowledge." Stoughton hoped that his idea would "claim more than passing attention" from his listeners: "Surely something must soon be done to aid our associates in the acquisition of a knowledge the standard of which is being raised more and more each year." There is no record that either Stoughton's or Colcord's plan received support from the colleges of pharmacy.

The pressure applied by the profession upon their colleges of pharmacy increased. In an editorial entitled "What Ought to be the Character of Schools of Pharmacy?" Charles W. Parsons stated that "the school of pharmacy should hold its doors wide open to any practicing pharmacist to study any branch of the profession to any extent he may desire, with libraries, lectures, museums, and living authorities at hand." With the establishment of formal university extension divi-
sions at Northwestern University, the University of Kansas, and the University of Wisconsin in 1891, experiments in extending the influence of schools and colleges of pharmacy began in earnest.

**University Extension at Northwestern, Kansas, and Wisconsin**

"When the principles of University Extension shall have been put into practice in the field of pharmaceutical study," Oscar Oldberg predicted in 1891, "the proportion of graduates of pharmacy pursuing postgraduate courses under this system will be far greater than the proportion of beginners pursuing preparatory courses." In the same year in which the first edition of his *Course of Home Study for Pharmacists* was published, Oldberg, the new Dean of the Department of Pharmacy at Northwestern University, took up "the work of applying the principles of University Extension by conducting an elementary or preparatory course of home-reading in physics, chemistry, materia medica and pharmacy." Although Oldberg's plan was merely another attempt to prepare future students by correspondence work for a residential college course, it does appear to be the first attempt of this nature made under the auspices of an individual college of pharmacy.

Professor Lucien I. Blake of the University of Kansas Department of Pharmacy initiated general extension work in science at Topeka in 1891. Blake's course of twelve biweekly lectures on electricity and magnetism attracted a class of 125, "many of the best people of Topeka." At about the same time, interested townspeople, also looking to the University of Kansas for guidance, formed a university extension society at Kansas City. It is significant that all five members of the University's
Department of Pharmacy were listed as offering at least one extension course: "The Chemistry of Every-Day Life" by Edgar H. S. Bailey, "Electricity and its Modern Applications" by Blake, "Roman Poetry" by David H. Robinson, "Physical Geology" by Samuel W. Williston, and "Medical Chemistry and Sanitary Science" by Dean Lucius E. Sayre.26

Spurred by public interest and demand for university extension, the University of Kansas organized for the work, sent out a prospectus of the conditions on which extension work would be offered, and established a system of credits for students in nine prescribed courses.27 Yet Frank W. Blackmer, a member of the University faculty and early chronicler of the movement at Kansas, had no administrative pretensions concerning the real thrust behind the extension movement:

It would seem that as the work has sprung up of itself, unaided by any systematic urging, it has a fair prospect of becoming permanent. The University of Kansas has not urged the movement in any degree. It has endeavored to supply the demands, and to give such information as has been sought for in the formation of local associations. The instructors take up the work somewhat reluctantly, owing to the fact that they have plenty of work at home, yet they feel it a duty to respond to such calls when they can do so without interfering seriously with their regular work.28

The situation at the University of Wisconsin was somewhat different. As early as 1887, a "summer school for teachers" had been maintained at the University under the auspices of the Wisconsin State Teachers' Association, "aided generously by the Boards of Regents of the Normal Schools and University." The following year, a special act of the Wisconsin Legislature gave the school a "permanent official organization" and an annual appropriation for its maintenance.29 William W. Daniells and Charles R. Barnes, two of the four faculty members associ-
ated with the University's Department of Pharmacy, participated in the 1889 summer school, offering four-week courses in chemistry and botany. By 1891, the pharmacy faculty numbered eleven; that summer Edward A. Birge expanded the Department's summer school offerings by adding zoology to the University's list of courses. Although President Thomas C. Chamberlin regarded the summer schools as essentially extension work, the excursion into the field of teacher training was looked upon with suspicion by the normal schools with which the University seemed to be competing for students and influence.

The popular history lectures initiated by University professors William F. Allen and Frederick Jackson Turner between 1888 and 1891 were well received, but the value of these programs as indices of interest in adult education was limited. Although reading lists and syllabi similar to those used in English university extension accompanied these lectures, there was no way of determining the extent of their use. The fact that audiences did turn out at least to listen, however, led President Chamberlin to believe that off-campus work could be added successfully to the major function of the University.

In June, 1891, the University's Board of Regents acted favorably upon a faculty recommendation for a limited extension program. Though no funds or full-time administrators were provided, the future "held promise." That same year, four members of the School of Pharmacy's faculty presented four of the first six-lecture courses offered as true extension work. By 1892, Wisconsin's university extension offerings had increased to twenty-nine, seven of which were presented by members of the School's twenty-four-man "corps of instruction," including the
Director of the School of Pharmacy, Edward Kremers, who offered extension courses on the "Chemistry of the Alkaloids and Ptomaines" and the "Chemistry of Camphors and Terpines." Each presentation was complete in itself, while remaining an integral part of a six-lecture unit.

University extension historian Frederick M. Rosentreter notes that extension lecturers found it necessary to break further and further from their classroom methods. Technical terms and references were abandoned in conscious efforts to present the thoughts of the academicians in the vernacular of the layman.

In the long run, it was a losing struggle. A few students attended for the University credit available upon completion of certain additional requirements. Not many more, the professors found, were sufficiently interested to do other than listen politely. Efforts to promote class discussion were fruitless . . . . Members were eager and voluble concerning personal experiences or current events, but silent on the major issues at hand.

During the first year of the extension program 8,500 persons attended the lectures; of these, 4,500 participated to some extent in class work, but a mere 127 took final examinations. Of the latter, only ninety-three received credit should they ever enroll at the University. The number of lecture courses reached a peak of fifty-nine in 1895-96, although Rosentreter points out that important centers like La Crosse reported that the popularity of the program had been decreasing steadily for the previous three years.

In line with President Chamberlin's original plans, correspondence courses were finally offered in 1896. These courses, too, could be taken for University credit, and were expected to attract more serious students than the lectures, for even work toward the Ph.D. was
available. Yet the faculty members who had been cajoled or badgered into presenting such courses in addition to their campus duties were often remiss about correcting and commenting upon submitted lessons. The extension office was virtually helpless in the matter, and was forced to concede failure; its quick withdrawal of the work, according to Rosentreter, was "entirely warranted."39

Once the novelty of university extension had worn off, so did attendance. Yet the reasons underlying Wisconsin's initial failure with university extension lay deeper than any organizational or promotional shortcomings of its originators; after 1895, English-type extension lectures fell from popularity not only in Wisconsin, but throughout the entire nation.

University Extension Lies Fallow, 1891-1906

The energy and enthusiasm that was generated for university extension in the late 1880s and early 1890s disappeared as suddenly as it appeared. In 1891, Melvil Dewey was almost alone in sounding a note of caution in an atmosphere of almost unbridled optimism:

In lighting a hard-coal fire there is a great blaze and roar, and not a little heat as the shavings and kindlings blaze fiercely up. We are now in just this period of University Extension, and it is altogether probable that after a little the blaze and roar and heat will die down, and the casual observer will say, "That is ended," and turn to the next new fad; but as with the fire, if we handle it properly it will mean only that the coal is just kindling. After a little will come the strong heat, and we shall be in an era of real University Extension.40

Dewey's observation foreshadowed what was to follow. More than half of the local university extension societies continued their experiments for two or three years with waning enthusiasm on the part of both lecturers
and audiences. In 1899-1900, the American Society for the Extension of University Teaching reported that 22,794 persons attended lectures, but only 381 wrote papers and only twenty-nine qualified for certificates. \(^41\) Chautauqua itself dropped its title of university, surrendered its right to award degrees, gave up most of its correspondence work, and resigned extension lecturing to the universities. \(^42\)

Within the universities as well there was a decline in interest in university extension. By 1895, many universities had abandoned the work entirely or continued it in a feeble fashion only. Extension work had not created the large body of serious students that had been predicted for it. "To a considerable degree university extension lectures have replaced lyceum lectures and have attracted audiences who were accustomed to attend lectures of a somewhat different type," the University of Chicago's George E. Vincent reported in 1903. "This has led to the popularizing of lectures, the increased use of stereopticon illustrations and other devices adapted to competition with prevailing entertainment." \(^43\)

Several explanations have been given for the fifteen lean years of university extension which preceded its restoration at the University of Wisconsin in 1906. Herbert Baxter Adams, not long before his death, attributed the situation to

(1) Lack of suitable extension lecturers; (2) lack of financial support; (3) the vast distances to be traversed by university men, already overworked; (4) the necessity and greater importance of academic service on college and university premises; and (5) the recognition of better and less expensive instrumentalities for popular education. \(^44\)
Richard R. Price, Director of University Extension at the University of Minnesota, added that

It is probable that many of these efforts were in the experimental stage and were undertaken without adequate financial provision or understanding of the real meaning of the movement. The universities also contributed to the unfavorable issue by inflexibility of their organization and by their unwillingness to adapt their methods to the needs and previous training of these adult students.45

Perhaps the fundamental reason behind the decline of university extension work in the United States was that "the initial enthusiasm was not accompanied by the thorough planning which experience has proved is necessary to initiate and carry on any Extension programme."46 Yet the clamor by pharmacists and pharmaceutical educators for additional study beyond the college course continued to be heard, as typified by Gordon L. Curry of the Louisville College of Pharmacy faculty:

For years past the various current journals have agitated and discussed the question of "What shall constitute the curriculum of our colleges of pharmacy?" etc., and directed but meager attention to what may be termed post-graduate study. . . . all realize that a fuller application of the systematic knowledge gained in a collegiate education is principally obtained by the student, who continues his investigations conscientiously after graduation.47

As has been noted above, the members of the pharmacy faculties at the University of Kansas and the University of Wisconsin, aided by their university extension divisions, presented a modest number of popular science lectures on a wide variety of subjects while touring on the early extension circuits. Yet their audiences consisted of school teachers, culture-seeking housewives, a handful of business and professional men, and students from small colleges who took the work for credit; only incidently were these pioneers at Kansas and Wisconsin reaching
the practicing pharmacist. Clearly, a new and different approach to continuing education was needed.

**Continuing Education and the Minnesota State Pharmaceutical Association**

Although the University of Minnesota had experimented with university extension as early as 1881, it was not until ten years later that the Board of Regents appropriated funds for the purpose. Moreover, another twenty-two years would pass before a General Extension Division would be created in 1913, under the aegis of President George E. Vincent, son of the founder of Chautauqua. Unaided and unencumbered by a central administrative structure for university extension, the College of Pharmacy at the University of Minnesota could take a direct approach to the problem of keeping the practicing pharmacist up-to-date.

Instruction in pharmacy at the University of Minnesota began October 5, 1892. From its inception, the new College of Pharmacy took special pains to attempt to meet the educational needs of Minnesota's practicing pharmacists. An early bulletin of the College stated that "practicing pharmacists, who may be desirous of taking certain branches of study, may avail themselves of any of the college facilities, but their studies and time will be subject to regulations as special students."

The College was particularly solicitous toward the Minnesota State Pharmaceutical Association; indeed, the Association, formed a scant eight years prior, had been the prime force behind the creation of the College and had taken a hand in attracting the respected
Frederick J. Wulling as its first dean. Wulling was quick to repay the compliment.

As early as June, 1894, Wulling offered to present to the pharmacists of the state a series of twelve free lectures on "New Remedies" and other subjects of importance . . . which relate to our every-day business in pharmacy." Accordingly, Association President Justin E. Stiles named a committee "to canvass the two cities [Minneapolis and St. Paul] and ascertain how many druggists will avail themselves of the opportunity of listening to these lectures." Its preliminary work done, the committee seemed sanguine enough in its initial announcement to the pharmacists of the state the following October:

The enclosed announcement of the program cannot fail to interest all who are fortunate enough to be able to attend these instructive and entertaining lectures, many of which will be illustrated by interesting experiments.

You are invited to bring a friend, or your wife, as these lectures may be made a social feature, and will give the pharmacists an opportunity to meet each other.

. . . It is hoped that the pharmacists will show their appreciation of Prof. Wulling's efforts in their behalf, and that every seat in the laboratory will be filled. The first two or three lectures were well attended, but afterward attendance became so small that Wulling decided not to deliver the last three lectures of the series. The following spring the committee expressed its disappointment in the response to its plan, deeply regretting "that lack of interest on the part of druggists should have made it necessary to abandon these lectures. It seems to us that the effort made should have been better appreciated. . . . if we are to remain in the business our success depends upon our proficiency in it, and we
cannot afford to let slip an opportunity to better acquaint ourselves with it."

Nevertheless, it would be another three years before Nulling would broach the subject again; this time, however, his plan involved the Association to a far greater extent than his earlier proposal. Nulling recommended extending the length of the Association's annual meeting from two to six days, and devoting the latter four days to matters that would "directly stimulate the professional interests of the pharmacists" in a sequence of related lectures and demonstrations. Nulling volunteered his own services for the project and those of other "appropriate lecturers" which he felt he was in a position to secure:

I do not know of another Pharmaceutical Association that has undertaken anything of the kind, but I believe some one should take the initiative to make the state meeting something of value to every member; to make it of a nature that those who are not members will find it advantageous to become members and help further the interests of the entire profession. . . . We should call it our post-graduate course.

Nulling's proposal received hearty approbation, and he retired to develop his plan.

The following morning, Nulling outlined several topics on which he would be willing to lecture, including the chemistry of pharmaeo- poeial preparations, aniline and coal tar products, prescriptions, and clinical microscopy. In addition, he offered the facilities of the College of Pharmacy to house the course. After some discussion, the matter was referred to the Executive Committee of the Association for action. Such action was not forthcoming, however, for the chairman of the 1898-99 Committee forgot about arranging for the course "until it was too
late to do anything" about it, but hoped that the failure of his Commi-
tee would not result in the subject being dropped by the Association.57

Notwithstanding this admonition, six more years passed before
Wulling presented his next plan to bring scientific information to the
practicing pharmacist. At the 1905 meeting in Duluth, Wulling proposed
that two Association sections be created, "one in scientific and practi-
cal pharmacy and one in commercial pharmacy."58 This time, Wulling's
plan did not miscarry, and Wulling chaired the first meeting of the
Scientific Section of the Association on June 27, 1906. He called his
listeners' attention to the original aim of the Association, "the uniting
of the educated and reputable pharmacists for the improvement of the
science and art of pharmacy," and continued:

The chief object for which the association was formed was
soon lost sight of in the large amount of routine and some
useless business annually transacted . . . . It grew to be a
fact that authors of papers, though never in large numbers,
sometimes found no place or time in the program for the read-
ing of their papers.

. . . [The Section shall] develop the professional work of
the association, by preparing and carrying out annually a pro-
gram of papers, addresses, symposiums and discussion on mat-
ters of practical, scientific and educational interest relat-
ing to pharmacy and associated sciences and arts.

While not much enthusiasm was shown at the time, I am con-
vinced that the creation of the section will prove to have
been one of the noteworthy and important steps taken by the
association. . . . So far as I know no other state association
has a similar section. . . . We are leading in this matter
of scientific sections and others are watching us critically.
We must not fail and I earnestly urge all members of the as-
sociation to co-operate with its officers to make this sec-
tion not merely a passable success but a very decided one.59

Under the vigorous leadership of Wulling, who remained Chairman until
well into the 1920s, the Scientific Section of the Minnesota State Phar-
Continuing Education and the American Pharmaceutical Association

At about the same time that the Minnesota State Pharmaceutical Association was enjoying its success with its new Scientific Section, the American Pharmaceutical Association, on a national level, began establishing local branches of itself with much the same educational purpose in mind. The continuing education activities of these new branches would have a profound effect upon the burgeoning efforts by the schools and college of pharmacy to keep the pharmacists in their areas abreast of the times.

The American Pharmaceutical Association, as has been mentioned above, had taken a deep interest in maintaining and improving educational standards in pharmacy since its inception in 1852. Yet outside of its annual meetings and subsequent Proceedings, the Association did not conceive of itself as having an "outreach" function until 1905. Prior to this time, however, at least two incidents may be cited which are indicative of the Association's policy concerning this matter.

In 1898, Wilbur L. Scoville of the Massachusetts College of Pharmacy, on behalf of the Section on Scientific Papers of the Association, circularized a letter to the leading pharmaceutical journals in the United States and Canada, requesting that it be published. Scoville suggested that many questions of a practical nature arise in the daily life of a pharmacist which might be answered by a series of experiments, "but which for lack of time, of suitable apparatus, or of other facili-
ties, remain unsolved." Scoville had an answer to this dilemma:

The colleges of pharmacy of the United States and Canada are in a position to work out many of these problems, without cost to the druggist, and would doubtless be glad to show their interest in practical matters by undertaking such investigations and presenting their results in papers at the next meeting of the American Pharmaceutical Association.

The Association is in sympathy with the druggists in these matters, and will undertake to find investigators for such questions as may be submitted. To this end all druggists, whether members of the Association or not, are invited to send questions, or descriptions of difficulties concerning any branch of practical pharmacy, improvement desired in specified formulas (wherein a difficulty is described), etc., as early as possible.61

At the 1899 meeting of the Section, however, Chairman Henry H. Rusby reported that only one "very commonplace" query which could be answered by correspondence had been received by the committee, and he recommended that the practice be abandoned in lieu of "liberal researches in the sciences allied to pharmacy . . . by the individual activity and influence of our members in stimulating interest in such subjects, rather than by an official action by this Section."62

Six years later, a "prescription clinic"—an open forum on compounding problems—constituted a significant portion of the program of the Association's Section on Practical Pharmacy and Dispensing and received praise from Bulletin of Pharmacy editor Joseph Helfman as being "most useful and profitable." Helfman also suggested that the Section on Commercial Interests could "do work in its own field" of the same practical nature and "should constitute itself a post graduate school in business practice."63 The Section, however, did not act on Helfman's suggestion.
The first acknowledgment of the American Pharmaceutical Association's intention to expand its responsibilities and influence came during James H. Beal's presidential address in 1905. Pointing out that "the first and chief intent of the fathers of this Association was to make it an institution for the educational betterment of American pharmacy," Beal stated that "the mission of the American Pharmaceutical Association is to be, in the widest and fullest sense, the great postgraduate school of American pharmacy." Beal continued:

It is the particular business of the ordinary colleges of pharmacy to give the student the information which concerns the narrow round of his daily duties; it is ours to teach him the broader and not less important knowledge that comes from a survey of the whole field of pharmacy. . . 

The chief end of the college training is the good of the particular individual, and to make him a safe and capable pharmacist; the prime object of our curriculum is to make him an active member of the pharmaceutical community, to the benefit of the whole profession, and the good of society to which he renders his professional services.64

To carry out this mission, Beal recommended that the Association create local affiliates of itself; the Association heartily endorsed this proposal, and Beal appointed a committee to study the matter.65 Four days later, the committee recommended that "a scheme of local A.Ph.A. organizations be started by authorizing the colleges and schools belonging to the American Conference of Pharmaceutical Faculties to act as local branches." The branches were to propagandize, solicit new members, and otherwise further the interest of their parent Association "in any legitimate way." By September, 1906, six branches were created; three more would be formed in the coming six months.66
At about the same time, C. S. N. Hallberg, former Director of the National Institute of Pharmacy and now editor of the Association's new Bulletin, continued Beal's line of reasoning and berated the pharmacist for not taking more interest in continuing his professional education. Using the physician, the lawyer, the clergyman, and the journalist as examples of professionals who he felt were taking pains to keep themselves abreast of the latest developments in their professions, Hallberg stated that the pharmacist appeared to have shown "but little interest" in postgraduate education:

His education often is equal to that of any of these . . . . his environments are the same, his opportunities almost equally great yet with few exceptions . . . the principle has not been applied.\textsuperscript{67}

Hallberg argued that it was "only because no definite plan, no systematic effort concentrated and concerted has been invoked that so little has been done by the retail pharmacist," and added that all new movements "must have some central governing body which may through research and through collective efforts assemble facts and through their systematic presentation initiate certain work and direct it along scientific lines toward the desired end." Such an organization, Hallberg suggested, was the American Pharmaceutical Association.\textsuperscript{68} Yet it soon became clear that both Beal and Hallberg viewed the local Association branches chiefly as outposts from which the pharmacists could bring to the attention of the physician the advantages of the now "official" preparations over their proprietary counterparts; rather than bureaus for the continuing education of the practicing pharmacist, the branches were to be propaganda depots.\textsuperscript{69}
A renegade from the Association's semiofficial endorsement of their branches as propaganda vehicles was Martin I. Wilbert, newly appointed assistant in the Division of Pharmacy of the U.S. Public Health Service Hygienic Laboratory. Wilbert had little patience with those who looked upon the pharmacist with his meager fund of knowledge as the savior of the poor physician:

It is the absence of a thorough grounding in the knowledge of the normal functions of the animal organism and the influence of drugs on these functions that has . . . contributed so largely to the self-conceit that is so frequently evidenced in the present day propaganda in which we pharmacists essay to teach physicians Materia Medica and Therapeutics.

There can be no mistaking the fact that in what we have been pleased to call propaganda, the popularization of the U. S. P. and N. F., we have entered upon a very laudable undertaking in the wrong way. We have undertaken to criticize physicians without taking into consideration our own faults and shortcomings, we are preaching in place of practicing, we are attempting to teach without ourselves being properly fitted to the task.

To live up to the best that is in us, to live up to the ideals of the founders of American pharmacy, to live up to what may be rightfully expected of us by the community at large, we must earnestly and honestly strive to attain the knowledge that is needed for us to comply with the various requirements made of us in the routine of our daily occupation. 70

On an individual basis, however, a few branches took Beal and Hallberg at their word and made attempts to provide a postgraduate course for their memberships. The most noteworthy attempt took place at Philadelphia, which at that time boasted three colleges of pharmacy. 71 The first lecture-demonstration took place at the Philadelphia College of Pharmacy on the evening of November 17, 1908. Henry Kraemer, Professor of Botany and Pharmacognosy at the College, spoke on "The Microscope and the Examination of Crude Drugs," and demonstrated its use in
the detection of common adulterants. Following a series of laboratory exercises in which the pharmacists in attendance could participate, the president of the Philadelphia Branch expressed the hope that the series would continue to be successful, and that "if the pharmacist of to-day would enlarge on his field of knowledge in the sciences relating to his calling he would be not alone a better but also a more successful pharmacist." During the next five months, Kraemer, Henry H. Rusby, Professor of Botany at the New York College of Pharmacy, Edwin D. Reed of the H. K. Mulford Company of Philadelphia (a biologicals manufacturer), H. Evert Kendig, Professor of Pharmacy at Temple University, and George H. Meeker, Professor of Pharmacy at the Medico-Chirurgical College of Philadelphia, discussed such topics as "Clinical Laboratory Work--A Possibility for Future Pharmacists," "Pharmaco-Dynamics--Practical Tests for the Efficiency of Drugs," "A Transformation of Elements and Modern Theories of Matter," "Assay Processes, Their Uses and Practical Value," and "Botany as a Hobby and a Useful Science for Pharmacists." 

Editorial reaction to the series of lectures was immediate and enthusiastic. Describing the series as "a unique departure," Hallberg accurately predicted that the lectures were "prophetic of the requirements of the future pharmacist." William O. Allison, editor of The Druggists' Circular, agreed and attempted to shake the aura of smug self-sufficiency that was characteristic of the period. Drawing the inevitable parallel between the Philadelphia Branch lectures and the continuing education activities of the American Medical Association, Allison asked:
Can a pharmacist keep abreast of the best in his profession by simply reading his books and journals, attending his association meetings, and pursuing a routine course behind his prescription counter or in his laboratory? Physicians have answered this query for themselves, and in the negative...

... we would suggest... that maybe physicians and the public will soon learn to expect [pharmacists] to pursue a systematic course of post-graduate study in order to become and keep thoroughly qualified to do the work which is entrusted to them. We may expect to hear the question asked: Doctors do, why not druggists?

Harry B. Mason, editor of the Bulletin of Pharmacy, went so far as to predict that the Philadelphia example would "doubtless be followed by other branches of the A. Ph. A. throughout the country. It is all of a piece with one of the great functions of the A. Ph. A., which has well been termed a postgraduate school of American pharmacy." Mason's prediction, however, fell quite short of its mark.

The Philadelphia Branch formed a "Scientific Section" to consider the more esoteric aspects of pharmaceutical science, and otherwise continued to prosper in its educational work for several years. The records of the other branches, however, reveal the usual spate of monthly business meetings and occasional lectures of a professional or scientific nature. No other branches professed to provide for the continuing education of the pharmacy practitioner or made concerted efforts in that direction; indeed, such activities were beyond their scope and ability.

The most that can be said for the "outreach" functions of the branches of the American Pharmaceutical Association is that they may have stimulated the initiation of extension activities at the schools and colleges of pharmacy in their surrounding areas.
Prior to the turn of the century, educational matters had been considered by the Conference of Teaching Colleges of Pharmacy (1870-1884) and after 1887 in the Sections on Education and Legislation of the American Pharmaceutical Association. In 1900, representatives of twenty-one of the then fifty-three schools and colleges of pharmacy formed the American Conference of Pharmaceutical Faculties, the first standardizing body for schools and colleges of pharmacy in the United States. In 1904, the Conference stipulated that (1) prospective students be at least seventeen years of age and have a "common school education, entitling the student to enter high school" and (2) candidates for graduation complete at least 500 hours of lectures and recitations and at least 600 hours of laboratory work over a period of not less than forty weeks. At its meeting in 1906, the Conference amended its minimum entrance requirements to include the "satisfactory completion of at least one year of work in an accredited high school or its equivalent," the requirement to take effect with the 1908-9 session in all but thirteen named states and the Indian Territory. The following year, the Conference expanded the 1,100-hour minimal curriculum to fifty weeks, to be given over a period of not less than two full years. During this period only two states, New York and Pennsylvania, enacted legislation requiring graduation from a recognized school or college of pharmacy as a prerequisite for all candidates appearing before their state boards of pharmacy for the licensure examination. Lloyd E. Blauch and George L. Webster, The Pharmaceutical Curriculum (Washington, D.C.: American Council on Education, 1952), pp. 13-15; and Joseph W. England, "The Status of Prerequisite Laws and Pharmaceutical Licensure," American Journal of Pharmacy 93:8 (August, 1921), p. 539. Also see Glenn Sonnedecker, "The Conference of Schools of Pharmacy--A Period of Frustration," American Journal of Pharmaceutical Education 18:3 (July, 1954), pp. 389-401; and his "The Section of Education and Legislation of the American Pharmaceutical Association," American Journal of Pharmaceutical Education 17:3 (July, 1953), pp. 362-83.

James Creese, The Extension of University Teaching (New York: American Association for Adult Education, 1941), pp. 32-33. The early conception of "university extension"--an English coinage--was broader in scope than its later institutionalization. The original movement was not principally concerned with the extension of university teaching to part-time students, but rather with enabling categories of students hitherto excluded from the universities to be admitted to them. See Sidney G. Raybould, "University Extra-Mural Education in Great Britain," in Universities in Adult Education (Paris: UNESCO, 1952), pp. 27-28.

C. Hartley Grattan, In Quest of Knowledge: A Historical Perspective on Adult Education (New York: Association Press, 1955), pp. 103-4. In 1867, Stuart had conceived the idea of establishing "a sort of peripatetic university" of circuit lectures, with syllabi, classes, written exercises and final examinations, and promoted and experimented with the concept until 1875, but not thereafter. See his Reminiscences.
Stuart hoped that his lectures would be attended by audiences of working men, yet the readiest response to his courses—and to many of those later provided by other British universities—came from middle-class women, for whom at that time little provision for higher education existed. Raybould explains that universities began to cater their extension classes to middle-class students because of their early association with organizations concerned with the higher education of women and because of an absence of public financial support. Raybould, op. cit., pp. 28-29.

Grattan notes that American college teachers had been making their knowledge available directly to the people at large, chiefly in the form of single lectures, for a long time before they heard of university extension. "As early as 1816, a professor at what is now Rutgers in New Jersey had offered lectures in science . . . and Columbia in the 1830's, Harvard as early as 1840, Michigan State in 1855, Kansas State in 1858, Minnesota in 1881, and Wisconsin in 1885 had begun experiments along the same general lines, not always with much success." Grattan, op. cit., p. 185. The popular-science lectures of Yale's Benjamin Silliman as early as 1808 and on a regular basis after 1834, also may be mentioned in this regard. See John F. Fulton and Elizabeth H. Thomson, Benjamin Silliman, 1779-1864: Pathfinder in American Science (New York: Henry Schuman, Inc., 1947), p. 78 and pp. 173-95.

Creese, op. cit., p. 37. As many as twenty lectures were given in a single course for which syllabi and reading lists were provided. Courses also were provided for art students, teachers, lawyers, physicians, clergymen, bankers, and businessmen. Ibid.

Herbert B. Adams, Seminary Libraries and University Extension (Baltimore: N. Murray, publication agent, Johns Hopkins University, 1887). "What Adams saw in university extension was an escape from the fragmentariness and discontinuity of subject-matter inherent in any scheme of single lectures unaccompanied by any other discipline than voluntary attendance," Grattan notes. "University extension provided for lectures in series on a single subject-matter and gave opportunity to impose disciplines like occasional essays and reports and final examinations." Grattan, loc. cit. Adams's plan was adopted promptly in several city libraries, notably at Buffalo, St. Louis, and Canton, Ohio. See Herbert B. Adams, "University Extension in America," The Forum 11:5 (July, 1891), pp. 510-13. For an account of the Buffalo experience, see Josephus] N. Larned, "An Experiment in 'University Extension,'" The Library Journal 13:3-4 (March-April, 1888), pp. 75-76.


Baldwin M. Woods and Helen V. Hammarberg, "University Extension Education in the United States of America," in Universities in Adult Education (Paris: UNESCO, 1952), p. 130. Philadelphia had a service called the University Lecture Association (ULA) as early as 1887, which
arranged for afternoon lectures by the teaching personnel of the University of Pennsylvania. Grattan states that a motive for establishing the American Society for the Extension of University Teaching (ASEUT) was dissatisfaction with the isolated lectures sponsored by the ULA. "These faults the ASEUT aimed to escape by giving the lectures in integrated series and relating the series one to another, thus aiming to achieve intensity of impact." In the end, the ASEUT absorbed the work of the ULA. Grattan, op. cit., p. 187.


10 Of the 954 lectures presented during this period, only sixty-seven (about 7 per cent) dealt with science. See Grattan, op. cit., p. 188.


13 Knowles, loc. cit. Morton gives several examples of the actual beginnings of some extension programs that illustrate this phenomenon and notes that most universities carried on extension services for a trial period of some years before officially establishing a university extension division. See John R. Morton, University Extension in the United States (Birmingham: University of Alabama Press, 1953), pp. 9-13.
William Rainey Harper in University of Chicago Official Bulletin No. 6 (June, 1891), p. 7. Harper's five university divisions included "the University Proper, the University Extension, the University Press, the University Libraries, Laboratories, and Museums, and the University Affiliations." University of Chicago, Annual Register, July 1, 1892-July 1, 1893 (Chicago: University of Chicago Press, 1893), p. 5. Harper had had a long and successful experience in the management of summer schools and in instruction by correspondence, first at the Baptist Union Theological Seminary of Chicago (1881-1883), and later at Chautauqua (1883-1891). See Creese, op. cit., pp. 41-42.

Theodore J. Shannon and Clarence A. Schoenfeld, University Extension (New York: The Center for Applied Research in Education, Inc., 1965), p. 13. Harper defined the purpose of university extension in the following terms: "To provide instruction for those who, for social or economic reasons, cannot attend its classrooms is a legitimate and necessary part of the work of every university. . . . It is conceded by all that certain intellectual work among the people at large is desirable; those who believe in the wide dissemination of knowledge regard it as necessary." William Rainey Harper in University of Chicago Official Bulletin No. 6 (June, 1891), p. 2.

Joseph W. Colcord, "Pharmaceutical Education," Pharmaceutical Record 5:12 (June 15, 1886), p. 189. Colcord also pointed out that since the reorganization of the Massachusetts College of Pharmacy in 1867, some 1,500 students had enrolled, but only 203 graduated.

Ibid. Colcord suggested that the course "would extend over two, three or four years as thought best."

Ibid. Colcord noted that the need for such a committee had been foreseen at the 1885 meeting of the Association in Pittsfield, but that "by some oversight no committee was appointed."


Ibid. "I am free to admit that such a course should not compensate for the loss of knowledge that the student of a regular college of pharmacy gains by the demonstration of his teacher," Stoughton admitted, "but . . . it is so far superior to any facility that I know of now open to the great majority of our young men, that it leaves little to be hoped for."


23. Ibid., p. 4. Oldberg also remarked that the prospect of "more advanced courses, including special and post-graduate courses" was "entirely practicable," for it was apparent to him that "many proprietors of drug stores, licentiates in pharmacy, and graduates in pharmacy, would gladly utilize at least a small portion of their time for self-improvement, with the help that this form of University Extension affords." Ibid., p. 5.


26. Ibid., pp. 209-10. The courses were given at Topeka, Kansas City, Olathe, and Wichita, and consisted of from six to twelve lectures each; Blake's presentations attracted over 300 persons, "the largest class yet formed." Ibid., p. 212. Also see [Oscar Oldberg], "The American Pharmaceutical Schools and Their Facilities, Courses and Requirements in 1893-'94," The Apothecary 3:4 (April, 1894), p. 161.

27. Blackmar, op. cit., p. 211. Persons who held a bachelor's degree could earn a Master of Arts degree upon the satisfactory completion of nine university extension courses of twelve lectures each. The same amount of work could earn a non-baccalaureate student a "University Extension diploma" or could be accepted as equivalent to a full year's work at the University.

28. Ibid., p. 214. Blackmar noted that "such institutions as the University of Missouri, William Jewell, Park, Baker University, Manhattan Agricultural College, Washburn College, and the Emporia Normal School have furnished many lectures to the people, but the University of Kansas has taken the most complete and radical departure in this respect of all the institutions of the Southwest." Ibid., p. 215.

"School of Pharmacy: Faculty," in ibid., p. 176; and University of Wisconsin, "School of Pharmacy: Faculty" and "Wisconsin Summer School," Catalogue of the University of Wisconsin, 1891-1892 (Madison: State Journal Printing Company, 1892), pp. 193 and 204.

Frederick M. Rosentreter, The Boundaries of the Campus: A History of the University of Wisconsin Extension Division, 1885-1945 (Madison: University of Wisconsin Press, 1957), p. 29. "Even before it was formally organized as a branch of the University," Rosentreter comments, "extension work served as the University's field representative and provoked the hostility of those whose positions it appeared to jeopardize."


Rosentreter, op. cit., p. 31.


38. Rosentreter, op. cit., p. 39. Even the mainstay of Wisconsin's extension work, the summer school, was affected. No summer school was offered in 1893, and the following year's Catalogue sounded a note of quiet desperation when it pointed out that "while established originally for the assistance of teachers and those preparing to teach in grammar and high school grades, the Summer School is by no means exclusively for such. It is open to any one wishing to pursue any of the branches of study specified." See University of Wisconsin, "Wisconsin Summer School," Catalogue of the University of Wisconsin for 1892-1893 (Madison: State Journal Printing Company, 1893), p. 147; and "Wisconsin Summer School," Catalogue of the University of Wisconsin for 1894-95 (Milwaukee: The Evening Wisconsin Press, 1895), p. 217.

39. Rosentreter, op. cit., p. 34. Also see Curti and Carstensen, op. cit., Vol. I, p. 727. Lecture courses were correspondingly decreased with the advent of correspondence work. Only Harry L. Russell's course in bacteriology remained as a representative of the contributions of the School of Pharmacy. University of Wisconsin, "University Extension Department: I. University Extension Lectures," Catalogue of the University of Wisconsin for 1896-97 (Milwaukee: Swain & Tate Co., 1897), p. 263.


41. Vincent, op. cit., p. 859. Vincent compiled attendance statistics for the period 1890 to 1903, but admitted that the figures were "incomplete, and in some measure, misleading." See pp. 856-58.

42. Creese, op. cit., p. 48.

43. Vincent, loc. cit. Grattan points out that during the thirteen-year period between 1895 and 1908, only three institutions--Indiana University (1895), the University of Kentucky (1899), and Columbia University (1904)--ventured into the field of university extension. Grattan, op. cit., p. 189. Even the comprehensive Division of University Extension at the University of Chicago suffered, for by 1915, only the correspondence department remained. Woods and Hammarberg, op. cit.,
p. 131. One exception occurred at the University of Iowa. Beginning in 1892, extension lectures were offered on a modest scale, and the work gained momentum during the following decade. See William C. Lang, "A History of the State University of Iowa: The Collegiate Department from 1879 to 1900" (unpublished Ph.D. dissertation, University of Iowa, 1941), pp. 224-27.

41 Herbert B. Adams, "Summer Schools and University Extension," in Monographs on Education in the United States, ed. by Nicholas Murray Butler (Albany, N.Y.: J. B. Lyon Company, 1900), p. 849. Creese also suggests that with the phenomenal increase in college enrollments at that time there may have been less need for evening and off-campus education. Creese, op. cit., p. 50.

45 Quoted by Creese, op. cit., p. 50. By the same token, Hall-Quest attributed the long depression in university extension to the insistence of the universities that adult students "adapt themselves to university standards, without opportunity for the gradual adjustment to university modes of thought difficult enough even for those constantly studying within its walls." Alfred Lawrence Hall-Quest, The University Afield (New York: The Macmillan Company, 1926), p. 17.

46 Woods and Hammarberg, op. cit., p. 131. In his analysis of the situation at Wisconsin at this time, Rosentreter agreed that "efforts designed to be of lasting significance must be based upon premises that distinguished fad from sustained interest. One of the greatest weaknesses of the extension program had stemmed from the assumption that with but minor changes the campus could be made to embrace the state. The University could not remake public taste through casual off-campus contacts .... if the University wanted to popularize, it could not disdain the popularizer." Rosentreter, op. cit., p. 42.

47 [gordon] L. Curry, "Post-Graduate Study," Merck's Report 5:12 (December 1, 1896), p. 625. Curry recommended that newly graduated pharmacists study therapeutics, physiology, microscopy, histology, bacteriology, and blood and urine analysis on their own with the aid of standard textbooks. The idea of student self-reliance after graduation was a popular theme. In discussing a college course in botany, for example, David M. R. Culbreth stated the "above all else one thing is paramount, viz.: That the course should be sufficiently comprehensive to equip the student, if he desires at its conclusion to pursue further investigations of the study by himself, that is, without all assistance other than books, such as manuals, class books, floras, etc." D[avid] M. R. Culbreth, "To What Extent Should the Study of Botany Be Compulsory in Colleges of Pharmacy, and What Are the Best Methods of Giving Instruction in That Branch, so as to Make It Interesting to the Student?" Bulletin of Pharmacy 5:9 (September, 1891), p. 406. Also see [James] W. T. Knox, "A College Course Is Not An Education," The Leucocyte 5:4 (January 15, 1899), pp. 28-29.
and Harry P. Judson, "Reports: Minnesota," in The Proceedings of the First Annual Meeting of the National Conference on University Extension, comp. by George Francis James (Philadelphia: J. B. Lippincott Company, 1892), p. 203. "Until recently," Judson reported, "the Regents of the State University have refrained from any official connection with the Extension movement. They have not felt warranted, in the absence of a special appropriation, in incurring expense. And it has seemed better, on the whole, to wait until it should appear plain that there is an actual call for authoritative direction." Judson also felt that the evening high school appeared to be "the element of greatest promise bearing on a permanent Extension of University Teaching." Ibid., p. 205.

Willard L. Thompson, "University of Minnesota General Extension Division," in Expanding Horizons . . . University Extension, ed. by Stanley J. Drazek, et al. (Washington, D.C.: North Washington Press, 1965), p. 64. "When Vincent came to Minnesota," Thompson remarks, "education for all the people was foremost in his mind. Vincent knew that the chief obstacle to a workable extension program was hostility within the institution, many of whose faculty felt that opportunity should be reserved for the elect." Vincent chose Richard R. Price as the Division's first director, and Price "launched a program immediately successful, even to convincing first-rate faculty to teach in it." Ibid., pp. 64-65.

University of Minnesota, "The College of Pharmacy: Calendar, 1892-3," The College of Pharmacy Announcement for 1892-93 (Minneapolis: By the University, 1892), p. 13; and "The College of Pharmacy: Announcement," Catalogue and Announcement of the College of Pharmacy, 1895-1896 (Minneapolis: By the University, 1896), p. 6.

An agitator for the betterment and broadening of American pharmaceutical education, Wulling was dean of the College of Pharmacy at the University of Minnesota from 1892 until 1936. See the autobiographical Pharmacy Forward, edited by his son, Emerson G. Wulling (La Crosse, Wis.: By the Editor, 1948), pp. 33-58; and "Frederick J. Wulling," Journal of the American Pharmaceutical Association 23:3 (March, 1934), pp. 177-78.


H. G[ordon] Webster, "Report of Committee Appointed to Arrange for the Course of Lectures on Pharmacy by Prof. Wulling of the State University," Proceedings of the Minnesota State Pharmaceutical Association 11 (1895), pp. 32-33. "There were doubtless, however, good excuses
on the part of some for not attending, especially from the older men," Webster continued. "The few hours in a week which the druggist of today can be absent from his store are very precious to him as an opportunity to make the acquaintance of his family or occasionally to spend an evening out in social enjoyment."


57. J[ohn] F. Danek, "Supplementary Report of the Executive Committee," Proceedings of the Minnesota State Pharmaceutical Association 15 (1899), pp. 113-14. Danek explained that he "had not posted himself upon this extra duty devolving upon him; and not being present at that meeting or having his attention called to the matter in any way he remained in blissful ignorance."


Henry H. Rusby, "Chairman's Address," Proceedings of the American Pharmaceutical Association 47 (1899), p. 147. Rusby noted that a similar theme by the Section on Commercial Interests that same year "received little better encouragement."

Joseph Helfman, "Editorial: Rehabilitate It--Don't Destroy It," Bulletin of Pharmacy 19:10 (October, 1905), p. 399. Charging that the Section had "traditionally occupied itself ever since its creation with what might be termed academic or argumentative subjects," Helfman suggested that "papers, exhibits, and off-hand discussions should be had on such helpful and important subjects as bookkeeping, window displays, advertising of various kinds, credits and collections, buying and selling, drug store arithmetic, the calculation of profits, and a great number of similarly practical topics." Ibid., pp. 399-400. Also see W[illiam] F. Kaemmerer, "Twenty Prescriptions," Proceedings of the American Pharmaceutical Association 53 (1905), pp. 421-26.


This was not a unique conceit on the part of Hallberg: American schools and colleges of pharmacy at this time were more than willing to allow the American Pharmaceutical Association to assume a leadership posture in regard to continuing education activities. Henry M. Whelpley, Dean of the St. Louis College of Pharmacy, in his presidential address before the 1906 meeting of the American Conference of Pharmaceutical Faculties stated that the Conference was "at least indirectly indebted" to the A.Ph.A. for its life and maintenance: "We are a specialized organ of the parent body with functions restricted to matters purely educational. . . . We can do much in the way of placing our graduates in line for post-graduate educational work by bringing them under the influence of A.Ph.A. membership." Henry M. Whelpley, "President's Address," Proceedings of the American Conference of Pharmaceutical Faculties 7 (1906), pp. 25-26.

The impetus behind this movement was the passage of the Pure Food and Drug Act of 1906, which gave the standards contained within the United States Pharmacopoeia and the National Formulary force of law. See Section 7, "Adulteration Defined," in U.S. Department of Agriculture, Bureau of Chemistry, Drug Legislation in the United States, by Lyman F. Kebler, Bulletin No. 98 (Washington, D.C.: Government Printing Office, 1906), p. 22. At this time, Hallberg urged the pharmacist to "resume his old position as a preparer and compounder of drugs and medicines, to resurrect the lost art, to come back to his own, to be a hand maiden (Hygeia) to the physician (Esculapius) instead of continuing to be the hand-me-down-purveyor of ready-made mysterious, polypharmacal, compounds." Hallberg, "The American Pharmaceutical Association—The Post-Graduate Course for the Retail Pharmacist," pp. 313-14. Curiously, despite the enormous strides in production made by the American pharmaceutical industry during the first quarter of the twentieth century, "propaganda" work for the U.S.P. and N.F. and insistence upon the pharmacist's obligation to compound as many of these products as possible continued to be popular—even dominant—themes in American pharmacy until well into the 1940s.


and friends" of the Branch attended the lecture-demonstration, which was "somewhat in the nature of a 'Conversatione'" and was "profusely illustrated by means of a microscope attachment to the projecting lantern."


74 [Carl] S. N. Hallberg, "Editorial Comment," Bulletin of the American Pharmaceutical Association 4:2 (February, 1909), p. 36. At the conclusion of the series, Hallberg remarked that the experiment "was one of the brightest ideas in the whole movement and it is hoped that they begin early and continue late next year," adding wistfully, "if only more localities had the resources pharmaceutical, that has 'the cradle of Pharmacy.'" [Carl] S. N. Hallberg, "Editorial Comment: Post-Graduate Courses," Bulletin of the American Pharmaceutical Association 4:6 (June, 1909), p. 164.

75 [William O. Allison], "Editorial: Post-Graduate Study for Pharmacists," The Druggists' Circular 53:3 (March, 1909), pp. 105-6. Allison added that pharmacists were probably in greater need of such training because "practically all" physicians were graduates of medical colleges, while "the majority of pharmacists are not graduates of any other college than that of 'hard knocks.'"

76 [Harry B. Hason], "This Month's History: Postgraduate Instruction for Pharmacists," Bulletin of Pharmacy 22:11 (November, 1908), p. 444.

CHAPTER IV

UNIVERSITY-DIRECTED CONTINUING PHARMACEUTICAL EDUCATION, 1906-1929

The first three decades of the twentieth century witnessed a remarkable shift in the attitudes of the American people, who were jolted from the comfortable complacency of the 1890s into an era of emerging world power and responsibility, culminating in the First World War, and a subsequent era of hope, confidence, and prosperity, culminating in the Great Depression. Within these wide fluctuations in national character, university extension reorganized, grew, and prospered, notably at the University of Wisconsin after 1906, and as a nationally organized movement after 1915.

American schools and colleges of pharmacy during this period embarked upon the most ambitious program of upgrading undergraduate educational standards attempted in the history of the profession—and succeeded. From a voluntary minimum of one year of high school preparation and the 1,100-hour course of study offered by most schools and colleges of pharmacy in 1906, the prospective pharmacist of 1932 faced a four-year Bachelor of Science curriculum based upon four years of high school and enforced by the passage of "prerequisite legislation" in thirty-seven states by 1929, which made college graduation a condition for licensure.

The committee meetings, debates, curricular revisions, and lobbying activities of college of pharmacy faculty members which accompanied
these changes naturally left little time for the consideration of the
development of continuing education activities for the practicing phar­
macist. Nevertheless, a handful of schools and colleges, notably the
University of Wisconsin Course in Pharmacy after 1907 and the University
of Minnesota College of Pharmacy and others after 1915 began to set a
pattern for extension work in pharmacy that persists to this day.

University Extension at Wisconsin, 1906-1915

The turning point in American university extension came with the
reorganization of the then moribund Extension Division at the University
of Wisconsin in 1906-1907 as a service agency with responsibility for
helping to meet the needs of government, agriculture, industry, and the
adult public. President Charles R. Van Hise had set the stage for this
new era in 1904 in his inaugural address by proposing that the Univer­
sity "should extend its scope until the field was covered from agricul­
ture to fine arts."¹ Van Hise made no mention of university extension
in his address, but rather service to the state through research into
and advice on the state's problems.

The demand for a new university extension service came from the
Free Library Commission, which at the time was experiencing difficulties
in satisfying the demands it received for information. Although Van
Hise at first apparently was not enthusiastic about the proposal, by
1905 he was converted to the possible value of reviving extension work.²
In an address before the Association of State Universities in November,
1905, Van Hise told his fellow university presidents that Wisconsin was
planning "to enlarge the scope of the regular University extension."
Although Van Hise spoke only in general terms about what university extension was to accomplish, he stated that "a state university should not be above meeting the needs of the people, however elementary the instruction necessary to accomplish this." That same month, the University's Board of Regents stepped gingerly into the picture by voting $250 to be used in reviving extension work; the following April, at Van Hise's request, the Regents approved an additional $2,500 appropriation for university extension. Finally, in 1907, the Wisconsin Legislature amended the statutes to authorize the University to carry on education by extension and correspondence teaching and provided an annual appropriation of $20,000 for the support of this work. With these additional funds available, plans to establish a large extension organization could go forward.

The task of reshaping Wisconsin's extension program to Van Hise's service orientation fell to Louis E. Reber that same year. As "Director of University Extension," Reber translated Van Hise's vague aspirations and the enthusiastic hopes of others into a powerful organization. In his first formal report, Reber described the organization which he had created. "For convenience, expedition, and efficiency," the work had been divided into four departments: Correspondence-Study, Instruction by Lectures, Debating and Public Discussion, and General Information and Welfare. Reber also demanded a special staff to carry on the work of the Extension Division, first, because the University faculty, which had contributed so much in the beginning, had its own work to do, and second, because he felt that extension workers should possess special qualifications and a "proper viewpoint." In addition, Reber
sought to establish a field organization in which the state would be divided into eleven districts, and such teachers and field workers as might be necessary. Moreover, Reber felt that most of the correspondence-study subjects ought to have special textbooks written by men engaged in the profession and revised by teachers acquainted with pedagogical methods. Subsequent years would see the concepts set forth in Reber's first report realized along virtually all lines.

Yet Reber was not content merely to make available the fruits of the University to the people of the state:

It should be understood that it is the desire of the university to reach not only those who feel the need of assistance but also those who, not realizing a need, may upon learning the possibilities for self-improvement open to them through the several departments of extension be led to avail themselves of the opportunities thus offered.

In short, Reber wanted to use the Extension Division as an agency which could transmit any knowledge not only to those who sought it but also to those who ought to have it; moreover, Reber was not constrained by the notion that certain activities were beneath the dignity of the Division.

Reber placed his major emphasis upon the correspondence work, which was available for University credit and covered a wide range of intentionally utilitarian courses. Thirty-five departments of the University prepared over 200 courses; by September, 1908, the Correspondence-Study Department claimed almost 1,200 registrations, over half of them in the special vocational branches. Although the courses were conducted along lines followed by commercial correspondence schools, Reber introduced an important new feature by providing for itinerant instructors who would meet classes of correspondence students at regular
intervals to give assistance and encouragement to continue. The Correspondence-Study Department enjoyed a rapid growth: by July 1, 1912, the total number of registrations was 9,492; by the end of the 1915-16 biennium, this total had increased to almost 25,000.

The other extension departments enjoyed equally rapid growth. Because it was self-consciously devoted to supplying factual information on topics of current interest, the Department of Debating and Public Discussion could claim "an active though impalpable contribution to adult education" as the darling of many of Wisconsin's reformers. The lecture department organized a summer Chautauqua and lyceum courses and likewise showed great gains. The Department of General Information and Welfare performed a bewildering variety of functions: it published a series of informational bulletins, organized various institutes, assembled and circulated educational slides, and established bureaus of municipal reference and of civic and social center development.

The quick success of the Extension Division was registered in the rapid increase in the funds allotted to the work. The state appropriation was increased in 1909 to $50,000 annually and to $75,000 annually the following year; for the fiscal year 1914-15 the amount contributed to the Extension Division by the Wisconsin Legislature reached $225,000. The relatively large sums available for extension work not only show the willingness of the Legislature to support the venture, but also explain the prominence of Wisconsin in this work, particularly before the First World War. In 1915, Van Hise pointed out that during the previous fiscal year, Wisconsin devoted almost twice as much money to extension activities as any other institution in the country.
That same year, at the first meeting of the National University Extension Association, Reber declared:

Right or wrong, you find here a type of University Extension that does not disdain the simplest form of service. Literally carrying the University to the homes of the people, it attempts to give them what they need--be it the last word in expert advice; courses of study carrying University credit; or easy lessons in cooking and sewing. University Extension in Wisconsin endeavors to interpret the phraseology of the expert and offers the benefits of research to the household and the work shop, as well as to municipalities and state.16

As the Extension Division developed, its activities became more diverse and it no longer was concerned primarily with providing utilitarian services, although it never completely abandoned this object. Moreover, the success of the Division encouraged the creation of other agencies to take over some of the work begun by the Division. In 1911, for example, Wisconsin's new vocational education law required all cities with a population of five thousand or more to establish vocational or continuation schools.17 Likewise, industry soon began to institute its own training programs. With a large segment of its first clientele provided for by these new educational agencies, the Extension Division began to develop more fully the courses offered for University credit, and this trend has continued.18 The University of Wisconsin had set a pattern for university extension from which other institutions have made only superficial variations to this day.

Continuing Pharmaceutical Education at Wisconsin, 1901-1909

There was not much to satisfy the professional man's requirements for continuing professional study in the programs of education originally offered by university extension. Except for teachers, the
studies encouraged by directors of university extension were not of
direct professional or vocational value. When the Extension Division
was revived at the University of Wisconsin in 1906 there was a distinct
shift of emphasis. It is not surprising, therefore, that the School of
Pharmacy at Wisconsin shared in this revivification process.

As early as 1901, the School of Pharmacy had held a six-week
summer session, upon the recommendation of the Wisconsin State Board of
Pharmacy. Its special object was "to give those apprentices and clerks
who have neither the time nor the means to attend the regular sessions
of the University an opportunity for a short course in systematic labo­
ratory instruction in the pharmaceutical sciences." That same year
the newly created University summer session featured eight courses in
chemistry by William W. Daniells and Homer W. Hillyer, five courses in
botany by Robert L. Harper, two courses in physics by Benjamin W. Snow,
and one course in zoology by Edward A. Birge; that all five men were
affiliated with the School of Pharmacy attests to the School's impact
upon summer instruction for credit in the physical and biological sci­
ences as well as noncredit summer instruction designed to assist ap­
prentices and drug clerks to prepare for their state board examina­
tions.

The educational intent of the summer session of the School of
Pharmacy, however, was far removed from that of the cram courses of
earlier decades; rather, it was a serious attempt to provide firm aca­
demic training for those apprentices and clerks who could not or would
not pursue a regular residential course. The description of the summer
session noted that
Inasmuch as those seeking admission will have spent one or several years in drug stores, it is presumed that their training as apprentices has prepared them sufficiently to pursue the most elementary courses offered. If the student's capacity for such work has been demonstrated, he can take up some of the more advanced courses another year.

Finally, the summer session gives druggists an opportunity to combine study with an outing. Special courses in drug assaying, in new synthetic remedies, in water or urine analysis, in sanitary bacteriology, in photography, etc., can be taken.21

The description admitted that "so long as a regular collegiate education in pharmacy is not a prerequisite to candidacy for the examination of the Board, most prospective pharmacists will pursue the old course of apprenticeship."22 It was this factor which, no doubt, led to the demise of the summer session after 1902.

In 1909, however, the reorganized "Course in Pharmacy" expanded its extension offerings considerably, featuring extension lectures on communicable diseases by Frost, lectures on chemistry by Louis Kahlenberg, and lectures on pharmaceutical chemistry by the director of the Course, Edward Kremers.23 Moreover, the Course now offered a series of thirteen correspondence courses on a wide variety of pharmaceutical topics, taught by Kahlenberg, Kremers, Harold C. Bradley, Rollin H. Denniston, Richard Fischer, Andrew G. DuMez, William E. Grove, and Alonzo S. McDaniels.24 Each course consisted of forty weekly lessons, and was available for five semester-credits, upon the satisfactory completion of a final examination. Although admittedly directed to students who were preparing to enter the University, the correspondence courses also served an adult education function, providing "advanced courses" to "graduates and others, in professional or practical life to keep in
touch with certain conditions of science and knowledge" and "vocational courses" which supplied "knowledge and training that have a direct bearing upon advancement and efficiency in a given occupation." Bulletin of Pharmacy editor Harry B. Mason described an entire spectrum of potential students for the courses:

They are severally meant for clerks who desire to become registered assistants; for clerks who desire to become full registered men; for clerks and proprietors who desire to specialize in some one branch of study or work; for registered men who, planning to move into another State, are anxious to take a "review" course; and for pharmacists who are ambitious to remain abreast of the later developments in their profession. Thus practically every requirement will be met and the clerk or proprietor may do work at home under skilled guidance . .

The Course in Pharmacy made another bold educational departure by offering special postgraduate correspondence courses in business administration to "those who have just finished the regular pharmaceutical course, or . . . former graduates or practicing pharmacists who may feel the need of thorough commercial instruction." The announcement of the courses noted that "the demand for a better commercial training of the pharmacist is becoming greater with each year," adding:

While the college student or the clerk preparing for the State State Board examination is kept more than busy with his professional studies, the pharmaceutical graduate and the registered pharmacist may well give attention to this important subject. The courses offered comprise something more than mere instructions in the writing of business papers.

A strong advocate of commercial training for undergraduate pharmacy students, Mason praised Wisconsin's venture into postgraduate commercial training, alluding to the controversy which raged at the time among faculty and practitioners with regard to the proper emphasis for a pharmacy curriculum:
The faculty understands that the modern pharmacist is quite as much a business as a professional man, and that he needs instruction in one direction as thoroughly as in the other, but it holds that the regular pharmaceutical course is already overcrowded, that there is no room in it for proper commercial instruction, that the usual short commercial course in colleges of pharmacy is inadequate, and that the problem can at least for the present be fairly well solved by providing special and postgraduate work which can be attended by the [undergraduate] student or the pharmacist at his option.29

This early appearance of postgraduate commercial training at Wisconsin was consistent with the educational philosophy of Kremers, who felt that such training ought to be obtained in the shop, based on university-level coursework in classical economics.30 The division between the advocates of a practical, commercial training for pharmacists and progressive pharmaceutical educators, such as Kremers, who offered a theoretical and scientific professional education, continues to this day, albeit in a subdued form. The early reluctance of most schools and colleges of pharmacy to include a significant amount of commercial training in their curricula, however, would have a profound effect upon the development of not only undergraduate pharmaceutical education, but continuing pharmaceutical education as well.

University Extension Comes of Age, 1915-1929

In 1912, Theodore Roosevelt declared that "all through the Union we need to learn the Wisconsin lesson of scientific self-help."31 The lesson was soon learned. The concept of university extension as public service quickly spread from the University of Wisconsin to other universities; by 1910, thirty-two state universities had organized full-fledged
extension divisions, and twenty-six independent agricultural and mechanical colleges were actively engaged in extension work.\textsuperscript{32}

From its earliest stages, the programs of university extension were highly heterogeneous and unintegrated. The first services to be established were extension classes, correspondence courses, and conference activities, presumably the most readily understood and, consequently, the easiest for which to obtain support and patronage.\textsuperscript{33} Gradually, however, in response to particular educational needs of adults and off-campus students, university extension divisions in various institutions added such other "nonacademic" activities as short-term courses and institutes; traveling libraries and library bureaus that circulated packets of books and clippings; visual aid bureaus that distributed stereopticon slides and, later, moving pictures; lecture and forum bureaus; state-wide contests of all kinds for school children; publication services; specialized services for individuals, state officers, and social organizations; and lecture series and classes at distant points by peripatetic professors.\textsuperscript{34} These activities gradually became known as "general extension," to distinguish them from "agricultural extension" or "cooperative extension" and the adult education activities of evening colleges, urban universities, independent liberal arts colleges, and technological institutions.

The typical general extension division followed Wisconsin's example and consisted of four departments: correspondence study, instruction by lectures, debating and public discussion, and general information and welfare. The new divisions divided their states into districts, created field organizations, and published textbooks written to meet the specific
needs of the artisans who made up the bulk of the enrollments. At its best, general extension became a "people's university," offering utilitarian information at virtually any level. This early period of unrestrained optimism and fervor has been captured by Theodore J. Shannon and Clarence A. Schoenfeld of the University of Wisconsin Extension Division:

Consciously patterned as much after public and private action-agencies as after "English" extension, aimed at being all things to all men, evangelical in outlook, unreservedly committed to the assumption that one sure way to earthly salvation was through education, university extension developed quickly, energetically, and conspicuously.\textsuperscript{35}

Yet the early development of general extension depended more upon the devotion of a few inspired individuals than upon any real educational commitment on the part of most other universities. After visiting a number of American universities in 1908, Literary Editor Edwin E. Slosson, in a series of articles written for The Independent, remarked:

It must not be supposed that this third or utilitarian function was voluntarily adopted by the universities because it completes their educational effectiveness. On the contrary, it was forced upon them by the outside world, and many universities yet pride themselves on the degree with which they have resisted that pressure and maintained "the old-fashioned college in all its purity." The utilitarian departments were generally added from the most utilitarian of motives, because it brought more money to the support of the university.\textsuperscript{36}

John R. Morton, Director of Continuation Education at the University of Alabama, noted in his comprehensive 1953 study of university extension that during this period general extension activities frequently were regarded with suspicion by the residential faculty, who charged that the directors of extension were "pretending to carry on study of college grade without the necessary facilities and with inadequate leadership,
and the high standards, hard won over the years . . . were thus being prostituted. Moreover, extension's many setbacks in the early years suggest that the institutional commitment did not go so far as to provide the resources needed to design new curricula and teaching methods suitable to adult audiences.

The founding of the National University Extension Association at Madison, Wisconsin, in 1915 symbolized the establishment of general extension as a permanent element in the American system of higher education. In 1913, several directors of extension had expressed a need for a conference which would consider the problems facing them at that time, such as the matter of transferring correspondence study credits from one school to another, the instruction of special groups, and the fight against unscrupulous private correspondence schools. In a letter to Wisconsin's Louis E. Reber, John J. Pettijohn, Director of University Extension at the University of North Dakota, suggested that Reber spark such a movement. Arguing that Reber was "the logical person to call a national conference," Pettijohn stated that "it would be a big thing for the University of Wisconsin . . . as you have so much to give and so little to receive." Pettijohn added that interest in the conference was so strong that he believed that it should last for at least three days. Finally, after prodding Reber for a year, William H. Lighty, Secretary of Wisconsin's Correspondence-Study Department, issued invitations to interested institutions, explaining that "other matters had prevented the planning committee from giving attention to the conference" until then. The dates finally established were March 10-12, 1915.
In his keynote address, "The University Extension Function in the Modern University," Wisconsin's President Van Hise emphasized the opportunities awaiting extension and the special obligation of the state universities to investigate all questions of concern to the people of the state who supported it:

If a university is to have as its ideal, service on the broadest basis, it cannot escape taking on the function of carrying knowledge to the people. This is but another phraseology for University Extension, if this be defined as extension of knowledge to the masses rather than extension of the scope of the university along traditional lines. Van Hise did not imply that the university was the only instrument which could perform public service. He perceived that the role of the university was to supplement the work of regularly organized institutions and all agencies concerned with adult education. He recognized that knowledge was advancing far too rapidly for people to assimilate it all in their period of formal schooling, and noted that a large amount of useful knowledge had been accumulated since men and women of middle age had left school. Van Hise wanted to provide educational facilities for these adults and also for that proportion of the adult population which had not had the opportunities of formal schooling. In his opinion, the university was the institution most advantageously organized to carry on extension work.

The second day, Reber spoke on the scope of university extension, its organization, and subdivisions. The delegates discussed other selected topics and their relation to extension, including general education and the humanities, engineering education, agricultural education, and commercial education. Later in the conference the delegates discussed
such common concerns as field work, correspondence study teaching, extension class lecture instruction, the possibility of cooperation in lectures, entertainment programs and visual instruction, the University Chautauqua, cooperation with state medical societies, and extension work in social medicine, health, religion, and recreation.

Near the close of the fourth session, Chairman Ira W. Howerth of the University of California suggested that it might be appropriate "to organize the interest that has been manifested in the conference and to make some arrangement, if possible, for the continuation and development of that interest, and perhaps to organize the ideas and suggestions that have been made, and the principles that have been presented." The delegates voiced no opposition to Howerth's suggestion; accordingly, Howerth named a five-man committee "to report on the ways and means of perpetuating the forces we have all felt here and adopting plans for conserving these." The following morning, Howerth reported the committee's recommendations:

That before the conclusion of this conference we form a permanent organization to be known as the National University Extension Association, that the membership in this Association be institutional and limited to colleges of university grade, and that the membership fee be $25 per institution.

After a good deal of discussion the following afternoon, the recommendations carried; membership in the new Association consisted of twenty-two colleges and universities. The following year, with Reber as its first president, the Association adopted its first constitution and by-laws, stating as its purpose the establishment of an official and authorized organization through which colleges and universities and individuals engaged in educational Extension work may confer for their
mutual advantage and for the development and promotion of the best ideals, methods, and standards for the interpr­
tation and dissemination of the accumulated knowledge of the race to all who desire to share in its benefits.47

America's sudden plunge into World War I in 1917 gave workers in divisions of general university extension a new raison d'être, causing them to drop their parochial orientation and join the national war ef­
fort. Faculty members devised special correspondence courses for ser­vicemen: extension divisions offered Red Cross home nursing classes and taught industrial techniques for women workers; postgraduate medi­cal refresher training entered extension's curriculum in a significant fashion for the first time.48 Placing its popularizing and distributing techniques at the disposal of government officials, Wisconsin's Exten­sion Division reprinted official proclamations and published bulletins on such diverse topics as food conservation, gardening, the efficient use of fuel, and the utilization of garbage. For those who wondered about the causes of the war, the Division assembled and distributed special package libraries, thus contributing to the anti-German propa­ganda effort.49

Despite these achievements, the war took its toll of fledgling extension programs. Many universities lost their extension staffs to Washington: Reber left Wisconsin to work in the U.S. Department of Labor; Pettijohn left Indiana University to work in the U.S. Bureau of Education and drew almost the entire extension staff to assist him.50 Extension staffs at other institutions also participated in the war ef­fort: extension leaders went on leave to supervise special training schools set up by the Emergency Fleet Corporation and to take charge of
the American Expeditionary Force University in France; the entire extension staff of Pennsylvania State University enlisted in the armed forces.

After the Armistice, Pettijohn secured an allotment from President Wilson's Emergency Fund and, with the help of his Washington staff and a number of extension workers from other universities, set up an office to promote a program of education extension for the entire country. At the 1919 meeting of the National University Extension Association in Chicago, Pettijohn related his efforts to get a university extension clearing agency in Washington that would be supported by federal funds. Reber, too, reported on his efforts to establish a national commission on university extension through the Department of Labor, and Frederick W. Reynolds of the University of Utah, also in the Bureau of Education during the war, referring to the extensive use made of visual training aids during the war, hoped that a large plant would be established in Washington in which educational visual aids could be produced for all extension divisions in the country. Although ultimately unsuccessful in their initial efforts to secure federal aid for university extension, Pettijohn's activities did lead to the establishment of a Division of Educational Extension in the Bureau of Education in 1919 and a Washington office for the Association the following year.

When the First World War ended, people spoke of returning to "normalcy," but if they meant the unruffled days of the early part of the century, that kind of normality had vanished forever. Americans tended to be tired, irritable, disputatious, prone to let their responsibilities go, prone to show their pent-up annoyance with people with
whom they had to work cheerfully in wartime, and prone to indulge in feverish relaxations.\textsuperscript{54} This was a far cry from the American temper that had fostered university extension.

Adult education found its widest application in university extension. As programs developed, however, directors treated ephemeral--and sometimes imaginary--problems. Faced with an inhospitable climate, general extension turned inward on itself in a number of ways. "It became less a movement and more a cult, and like all cults it became more concerned with how it did things than what it did."\textsuperscript{55} The "cult" of university extension was particularly evident in the activities of the National University Extension Association. For example, Richard R. Price of the University of Minnesota and his committee labored for some years on a "official nomenclature" for university extension, spelling out in minute detail the differences between an extension "bureau," a "department," a "section," and a "service," and the proper hierarchical relationship that should exist between a "dean" of extension and a "director." Again, William D. Henderson of the University of Michigan devoted much time to the "standardization" of university extension courses for credit. In 1920, Henderson reported that some 42,800 persons were registered for extension instruction for credit in American universities, and called for the "utmost care" in employing nonfaculty instructors to teach such courses.\textsuperscript{56}

Yet the Association reflected an awareness of and a responsibility toward the general field of adult education that Boston University's Malcolm S. Knowles terms "unique among segmental organizations."\textsuperscript{57} In 1922, the Association members discussed cooperating with the agricul-
tural extension movement; the following year, delegates considered collaborating with local community organizations, the National Academy of Visual Instruction, and the Workers' Education Bureau; indeed, the subject of workers' education received major attention at every Association conference during the 1920s. In 1925, the Association discussed working with public and state libraries and the U.S. Bureau of Education. The following year, however, found the delegates approving a resolution limiting Association membership to those institutions belonging to the Association of American Universities and State Universities, although many directors opposed such limitations, prophesying the formation of rival associations.

By the mid-1920s, directors of university extension began to assume a responsibility not only to provide opportunities to all classes of citizens desiring university instruction, but also to cooperate with individuals and communities in the solution of problems that do not depend necessarily on systematic instruction. University of Wisconsin President Edward A. Birge, echoing his predecessors, Chamberlin and Van Hise, clearly distinguished the two philosophies of university extension at the 1924 meeting of the National University Extension Association:

On the one hand you are giving correspondence and class instruction to persons who are very definitely university students. In other ways, . . . you are taking out into the world of affairs the knowledge which has accumulated at the University; you are setting it at work there by means of men who are not university students, but men who are administering affairs in the larger world and who are taking these ideas and applying them. . . .

. . . The university is the one agent of the state, which can and which does so embody the combined intellectual life of the community that it can apply that life on any level for the betterment of the community. The university can work wherever need appears.
Louis E. Reber, in his farewell address at the same conference, speculated on the partial freedom from academic tradition that had characterized the development of university extension and presented an organization chart of extension activity with three broad divisions—formal instruction, informal instruction, and field organization. Finally, Association President Richard R. Price crystallized this new attitude by characterizing three possible objects to be attained through the medium of university extension: A desire to acquire "vocational or professional skill, training or proficiency" leading to economic improvement, professional advancement, or increased social or vocational status; a "sublimated curiosity," reflected in a craving to know and an interest in things in general; and a "desire for culture... the spiritual exaltation and satisfaction which comes with the expansion of powers."62

By 1927, however, Chautauqua and lyceum-type programs had faded from most university extension programs. Extension Director Harold G. Ingham of the University of Kansas spoke of a significant change that was taking place in extension programming: emphasis on the lecture technique was giving way to other more effective instructional strata-gems. A few universities utilized radio to a limited extent as an extension medium; the Association's Committee on Education by Radio expressed its concern over the control of this new medium by commercial interests, but the membership failed to organize cooperatively to meet the challenge. Other than this, Indiana University's Walton S. Bittner observed, there was "nothing significantly new" in university extension.63 The 1920s came to a close with university extension greatly
strengthened, however. Extension divisions had survived financial problems and the distractions of the war; their directors had made efforts to achieve quality in their programming and had broadened their services to meet the wider needs of their ever-expanding publics.

**Continuing Pharmaceutical Education, 1909-1929**

Despite the pioneering efforts made by the Course in Pharmacy at the University of Wisconsin during the first decade of the new century to provide a variety of continuing education experiences for practicing pharmacists, little progress would be made in this activity by other schools and colleges of pharmacy during the next twenty years. During this period, the American Conference of Pharmaceutical Faculties concerned itself almost exclusively with problems associated with preliminary educational requirements, curricular expansion and degree nomenclature, curricular revision and standardization, so-called "prerequisite legislation," and a general upgrading of faculty and teaching facilities, achieving an unparalleled improvement in the standards of pharmaceutical education over so short a period of time.

Although faculty members at the annual meetings of the Conference devoted some time to the consideration of alumni affairs—a task which later would develop into a consideration of educational activities for alumni—formal extension activities by schools and colleges of pharmacy generally were considered either as a threat to the residential programs in pharmacy or were lumped together with technical high school programs in pharmacy, "cram school" courses, and the activities of the "diploma mills," which at the time were riding on the crest of their popularity.
In a 1909 address entitled "The Need for Post-Graduate Instruction," Martin I. Wilbert noted that with the rapid expansion of knowledge the physician could no longer be expected to be as familiar with the latest developments in botany, pharmacognosy, and medicinal chemistry as he once was. He added the familiar invocation of the pharmacist as the logical person to provide this information to the practicing physician, but provided his listeners with a different conclusion than they had come to expect over the years: "Unfortunately," Wilbert stated, "the foundation of our general knowledge has not been laid sufficiently wide and deep nor has the superstructure of special training in pharmacy that we have received been sufficiently thorough to insure the possibility of commanding the undivided respect of those whom we are designed to serve." Wilbert continued:

Before essaying to pose as the assistant, instructor, or collaborator of the physician . . . we must, individually, recognize our own shortcomings and endeavor to enlarge upon and to perfect our own fund of knowledge. . . .

We must also realize that the subjects now taught in our colleges of Pharmacy are most rudimentary and are but inadequately fitted to supply the necessary foundation for future elaboration and that there is, as yet, no evidence that pharmaceutical schools are pointing out, as they should, to their students the need for elaborating on the meagre foundation of learning that is being furnished them.69

Wilbert praised the postgraduate lectures and demonstrations of the Philadelphia Branch of the American Pharmaceutical Association and the postgraduate courses of the University of Wisconsin Course in Pharmacy which served, he said, "to illustrate the lines along which pharmaceutical education in this country must be elaborated and developed if the pharmacist is to continue, as he should, in the capacity of assistant
Despite this challenge, outside of the handful of postgraduate programs for practicing pharmacists described above, the vast majority of America's schools and colleges of pharmacy provided few, if any, activities for their alumni which could be identified as continuing professional education.

The first consideration of extension work for practicing pharmacists by the American Conference of Pharmaceutical Faculties took place three years later in 1912. A furor had been created by the University of Kansas School of Pharmacy, which in 1909 had instituted a correspondence course leading to the degree Graduate in Pharmacy. The course, which could be completed in about two years, according to Professor L D Havenhill, required twelve weeks' instruction in residence, but did not demand high school graduation as a prerequisite for entrance.  

Dean Lucius E. Sayre stated that his School "seemed obliged under the present conditions that exist in the state of Kansas to do something for the apprentice . . . . It is an experiment to assist the apprentices, and it was brought about by a demand on the part of certain members of the board of pharmacy, and to satisfy those who are trying to educate themselves."  

The members of the Conference, however, whose bylaws specifically excluded institutions which offered "work in absentia," were not disposed to excuse Sayre's transgression lightly. Several delegates objected vigorously to a course which, they felt, cheapened the degree they had struggled so long to shore up and improve. Sayre was obliged to admit that in 1909 "certain pressure was brought to bear upon the University of Kansas to give extension courses," and that Richard R.
Price, director of the newly formed Extension Division, had convinced him that the School ought to offer correspondence courses in the various pharmaceutical sciences, arguing that once the correspondence students "got a taste of education and saw what a real course in pharmacy meant, they would be induced to go to the University School of Pharmacy to obtain a proper education." Sayre had responded by outlining a ten-unit, noncredit course of study in materia medica, pharmacy, and pharmaceutical chemistry, which eventually attracted one student in the state penitentiary. Later, reacting to a demand for "a more satisfactory course," Sayre and Havenhill had visited the University of Wisconsin to study first-hand the correspondence courses which the Course in Pharmacy offered for credit. As a result, Havenhill had drawn up "a very satisfactory course," which, upon inspection, compared favorably with the majority of available residential courses leading to the degree of Graduate in Pharmacy. In order not to endanger the University's recognition by the Carnegie Foundation, however, the degree was to be offered by the Extension Division rather than by the School of Pharmacy. After a lengthy and heated discussion, the Conference finally voted that "no degrees shall be conferred by an institution holding membership in the Conference upon a course of instruction that does not meet the requirements of the Conference and provisions of its Constitution and By-Laws." Moreover, the secretary of the Conference was instructed to communicate with Price to inquire whether or not he intended to continue to make this course available for a degree, noting that such continuation would disqualify the School of Pharmacy from membership in the Conference.
Two days later, however, the delegates to the Conference returned to the topic, but obscured the issue by considering credit and noncredit extension courses, quiz courses preparatory to licensure examinations, and journal-sponsored correspondence courses simultaneously. Dean William B. Day of the University of Illinois School of Pharmacy noted, for example, that the Conference was in an "unfortunate situation":

We find a number of these correspondence courses started ostensibly to give a pharmaceutical education to young men who could not attend regular schools of pharmacy, and we find that these correspondence schools become so powerful that they are able, with some success, to oppose the efforts of the other recognized schools in endeavoring to secure graduation requirements. . . . university extension courses are not harmful to us, I believe, if conducted with proper discretion in the way of degrees, but these schools which advertise that they prepare students for board examination, finally succeed in enrolling a great many young men, they, of course, have to fight for their existence and have to fight against the graduation requirement.  

As the discussion lengthened, tempers shortened; Albert Schneider of the California College of Pharmacy offered a resolution that the Conference "go on record as disapproving correspondence courses in pharmacy and quiz preparation courses for board of pharmacy examinations conducted by any teacher connected with a college represented in this Conference," declaring that if the Conference were to encourage the conducting of "correspondence courses and quiz courses and things of that sort California is going to resign. What is the use of fussing around here if we are going to do things which will cheapen us constantly?" Charles W. Patterson of Northwestern University School of Pharmacy, an institution which had pioneered in the home study of pharmacy in 1891, was not in favor of the resolution if it meant that schools and colleges of pharmacy were not to be allowed to conduct university extension courses:
I think we have here really two questions, one is, work of this character which ... everyone can endorse, university extension work, which has a definite aim and is of value, distinct from such quiz courses as at least we in Chicago know about, that are mainly for the financial benefit of those who conduct them. They are nothing more than quiz courses that embrace consideration of state board questions, ... [without] the element of education in pharmacy.80

At this point, a vote revealed a slim majority of the delegates were in favor of the resolution which, according to a ruling by President Albert H. Clark, encompassed "all sorts of correspondence courses under any circumstances whatever," including the profitable Era Course in Pharmacy. Sayre pleaded for reconsideration of the resolution:

I think we are acting hastily. I do wish that you would allow an extension man to come here and show you the good of these extension courses. They are not a hindrance to pharmacy, they are helping pharmacy in every particular. They are sending students to schools and they are helping to build up your institutions, not particularly one institution, but sending students all over the country. Instead of depriving the students of educational work they are helping them and also helping the college.82

The Conference moved to reconsider the matter, and tabled the resolution, which was allowed to expire quietly.

Despite the equivocal stand on extracurricular educational activities taken by the Conference, and the hesitancy of its members to undertake the extension burden in the face of other issues judged more pressing, the small, but persistent clamor by practicing pharmacists and journal editors for assistance from the schools and colleges of pharmacy continued. These entreaties were intensified by the legal recognition in the 1906 Federal Food and Drug Act of the standards contained within the United States Pharmacopoeia and the pharmacist's obligation to maintain these standards in the official pharmaceutical
products he prepared and sold. "Thus the decennial revision of the Pharmacopoeia becomes a compelling power on the pharmacist to keep abreast of the times, for punishment is in store for him for failure to comply with the changed requirements," wrote New York pharmacist Joseph Weinstein in 1915. Weinstein delineated the dilemma and then offered a solution:

I am inclined to ask, whether the rank and file of the pharmacists are sufficiently prepared to take up the advanced methods prescribed by the Pharmacopoeia. . . . could one, to whom no laboratory training was given, be expected to apply chemical tests and to perform assay processes for determining the alkaloidal strength of some of his galenical preparations? Or could one who has never seen a compound microscope be expected to examine his drugs microscopically? . . .

. . . facilities of additional learning [should] be granted, by the establishment of special pharmacopoeia courses.

Let the schools of pharmacy throw their doors wide open for all those who desire to get information on everything pertaining to the Pharmacopoeia, without any preliminary requirements and at hours convenient for the retail druggist. The courses should be conducted on practical lines only, such as testing for impurities, assay processes, etc., entirely eliminating theoretical instruction. Courses of that kind would be productive of great good, and they would help to do away with the anomalous state of affairs where ever-increasing knowledge is required of the pharmacist without giving him an opportunity to acquire the same.®

This time, however, at least a few schools and colleges of pharmacy in the United States began to respond to requests such as Weinstein's. Indeed, the year 1914 may be regarded as a year of spiritual rebirth of the extension concept in American schools and colleges of pharmacy, much as general university extension had experienced in 1906.

Characteristically, the resurgence took place at the University of Wisconsin. In 1914, a reluctant Edward Kremers revived the summer
session which had quietly expired a decade earlier. This time, however, the summer session was aimed primarily at prospective students for the residential undergraduate course in pharmacy, although drug clerks and apprentices preparing for their state board examinations were not discouraged from participating. The correspondence courses in pharmacy, which had been offered in cooperation with the Correspondence-Study Department of the University's Extension Division since 1906, continued to attract a small, yet respectable number of prospective students and practicing pharmacists, although the percentage who completed the courses—even in a group setting—was disappointing.

As is often the case with educational innovations, the correspondence courses offered at Wisconsin may have been ahead of their time. In his 1924-26 study of forty-seven university extension divisions, Alfred L. Hall-Quest indicated that for the period 1921-24, the correspondence courses at Wisconsin had the highest enrollment mortality of any courses offered (85 per cent). Although Hall-Quest did not offer a detailed analysis of these data, the similar enrollment mortality in the offerings in chemistry (84 per cent), a subject of comparable difficulty, suggests that the correspondence courses in pharmacy were either too rigorous or, what is more likely, that the correspondence technique was not appropriate for the subject. In contrast, virtually 100 per cent of the physicians enrolled in the offerings in postgraduate medicine at Wisconsin during the same period completed them.

By 1917, other schools and colleges of pharmacy had begun to follow Wisconsin's lead, exemplified by the University of Iowa College of Pharmacy's short course in pharmacopoeial procedures and the University
of Tennessee School of Pharmacy's extension-like consultant service on prescription problems. Directed by Dean Robert L. Crowe, this latter effort was described as the "result of numerous suggestions for conducting work of this character." The School invited Tennessee pharmacists to "send all prescriptions which present difficulties to the new department, where investigation will be made and the result announced to the druggist as soon as possible." In addition, the department also endeavored to "acquaint druggists of the State with synthetic preparations and furnish information concerning the same." This educational departure received high praise from Ezra J. Kennedy, editor of The Pharmaceutical Era. "There was a time . . . when the tendency of such institutions was to hold aloof from general educational work relating to the drug trade as a whole, and to confine their labors to those who might elect to go to the college," Kennedy observed. "But that day has passed, and the acute observer of events has no difficulty in discovering that a broadening influence has been at work." Elaborating on this theme Kennedy continued:

This movement of colleges of pharmacy is but one phase of the educational tendency of the present time. . . . So far as this tendency relates to pharmaceutical work, the field is large and promising of a fruitful harvest. Pharmacy as actually practiced should have the benefit of all the resources of intellect and study that the college can bring to it, and the idea of carrying such information to the druggist, and of giving him the benefit of a scientific solution of his difficulties, is sufficient to fire the imagination and betoken a better day for American pharmacy.

. . . Educational advancement is to be a most important factor in the further progress of pharmacy during the next quarter of a century, and in the fierce competitive warfare that is bound to be waged for the commercial supremacy of the future, there must be a mobilization and a correlation of all the agencies and forces that have anything to do with successful accomplishment.
In a carefully prepared report to the American Conference of Pharmaceutical Faculties the following year, Zada M. Cooper described the extent of short-term, correspondence, summer, and other extracurricular courses in schools and colleges of pharmacy across the United States. Miss Cooper reported that only eight of the forty-four Conference schools and colleges gave any sort of short course: four colleges conducted summer sessions "the same as or similar to regular courses"; three others conducted correspondence courses through their extension departments "to help students prepare for a pharmacy course" or "technical courses" which "under certain conditions" might count toward a degree; and one western school offered a two-year "Vocational Course, requiring two years of high school work for entrance and not leading to a degree." Sixteen of the twenty non-Conference institutions also offered short courses, varying in length from six weeks to nine months, the greater number lasting about three months. These short courses were unabashedly aimed at preparing students to pass the state board of pharmacy examinations. That the dean of a Conference college conducted one of these profitable short courses is less remarkable than Miss Cooper's failure to mention extension activities for the practicing pharmacist in her otherwise comprehensive report.

The year 1915 also marked the beginning of the faculties' interest in pharmacy alumni. Conference President Frederick J. Wulling felt that "alumni should be cultivated to afford the reciprocal advantage of continuing faculty interest and influence upon former students and of creation and maintenance of helpful and cooperative influence by the alumni upon the colleges." Despite a hesitant beginning, a standing
committee on activities of students and alumni was appointed in 1917, but progressed little beyond platitudes during the balance of this period. By the 1940s, however, the committee would become a strong, positive influence which encouraged and even sanctioned extension activities for pharmacy alumni.

Outside of conducting an occasional short course or establishing an often short-lived consultant service, American schools and colleges of pharmacy provided few opportunities during this period for the continuing professional education of the practicing pharmacist. A noteworthy exception, however, was the University of Minnesota College of Pharmacy, which provided wide-ranging yet informal services which could be likened to modern university extension activities: identification of drug specimens and preparations sent in by pharmacists; discussion of medicinal plants with high school students; formulation of the program of the annual meeting of the Scientific and Practical Section of the Minnesota State Pharmaceutical Association and the correction and editing of the text constituting the published Proceedings; exhibition of medicinal plants and products prepared in the College's pharmaceutical laboratories at meetings of the American Medical Association and various national, state, and local pharmaceutical associations; presentation of lectures dealing with pure foods and drugs throughout the state as part of the General Extension Division's "university weeks" program; testing of pharmaceutical chemicals and preparations for purity and strength for the Minnesota State Pharmaceutical Association and the Minnesota State Board of Pharmacy; inspection of pharmacies and general stores for the State Board of Pharmacy and instruction of the pharmacists in
these establishments; offering advice and suggestions on medicinal plant
culture and difficult prescriptions and formulae; editing of the Northwestern Druggist; and participation as solicitors in the second and
third Liberty Loan campaigns. 95

Yet even Wulling's unique and highly praised work with the Scientific and Practical Section of the Minnesota State Pharmaceutical Association did not escape the effects of a shift occurring within pharmacy which became marked during the 1920s—the shift from a scientific-professional orientation to one of a business-merchantile nature. In 1929, Wulling reminded his Association that

... as early as 1905 this state was leading in the matter of providing assured places for scientific and practical programs at the annual meetings [and] it is still leading today in that respect, as many pharmacists from elsewhere have declared. While such an evaluation of the work of the Section is, of course, gratifying, a comparison brings out the fact that relatively the Section does not occupy a leading, important and quantitative a position as it did twenty or more years ago. 96

The burgeoning continuing education programs of American schools and colleges of pharmacy reflected this shift in philosophy as early as 1921. The Massachusetts College of Pharmacy inaugurated a postgraduate course in commercial pharmacy "open to registered pharmacists and to graduates of recognized colleges of pharmacy." Interestingly, no undergraduate students were to be admitted to the lectures, "as the officers of the school felt that the professional side of pharmacy should not be slighted by giving up to commercial phases any of the time now devoted to the technical programme." The course endeavored to meet a specific need, and boasted a remarkable faculty:
The course is designed primarily for the large number of druggists who are interested in the broad business aspects of pharmacy and who wish to be thoroughly equipped to conduct the retail business in an efficient manner and to meet the competition of chain and department stores.

In order to make the course as practical as possible, the cooperation of the Harvard Graduate School of Business Administration has been secured, and arrangements have been made to have expert business men and practical druggists assist in the work. The scope of the course is broad, embracing such subjects as accounting, advertising, business correspondence, business organization, law, selling, and store management.

The intensity of purpose and the presumably high quality of this instruction foreshadowed the development of the first permanent university extension service for practicing pharmacists at Purdue University nearly a decade later. Moreover, there is at least one indication that the pharmacist of the 1920s sought continuing education in night school when it was not available from his school or college of pharmacy.

The more promising of the embryonic outreach functions with which American schools and colleges of pharmacy experimented during the 1920s, however, took place in the public sector. The most ambitious and enduring of these activities was sponsored by the Philadelphia College of Pharmacy, which in 1921 inaugurated a series of fourteen popular science lectures for the public "to contribute to the educational welfare of the community at large." Over the next twenty-one years, the lectures were broadcast from several Philadelphia radio stations, published in the American Journal of Pharmacy, and eventually gathered into a series of fourteen volumes of Popular Science Lectures, the last of which appeared in 1942. The St. Louis College of Pharmacy soon followed suit with a series of three free public lectures and the University of
Minnesota College of Pharmacy later produced a series of twelve twenty-minute radio broadcasts on the relationship between the pharmacist and the public; however, neither college was able to muster the interest and support to continue the effort.¹⁰⁰

Two tangential activities initiated in the 1920s were to exert a marked effect upon the development of continuing pharmaceutical education during the following two decades. The Commonwealth Study of Pharmacy, begun in 1923 under the direction of Werrett W. Charters, Asa B. Lemon, and Leon M. Monell and published in 1927 under the title Basic Material for a Pharmaceutical Curriculum, set forth in detail the knowledge the community pharmacist should possess.¹⁰¹ More importantly, the report not only concluded that pharmacy is a profession, an affirmation that had "a profound influence on many persons outside the field of pharmacy, such as college and university presidents and governing boards in the attitudes toward colleges of pharmacy,"¹⁰² but also stressed the necessity of professional self-renewal for the practicing pharmacist:

The pharmacist owes it to himself, his profession, and his community to continue to study and grow in information and skill after he is graduated from college. It is his duty to read professional journals with alert attention to new ideas. He should actively participate in the cooperative enterprises and association meetings of the craft. He should recruit young men of character to the profession, and in so far as he has the time and ability should carry on professional research.

In connection with the group of activities, the staff has collected methods by which the colleges of pharmacy develop in their students facility and interest in reading current periodicals and authoritative texts.¹⁰³

It is particularly significant that Charters and his advisory committee concentrated on developing reading skills in the undergraduate pharmacy
student as a satisfactory solution to the problem of keeping abreast in
the profession rather than placing their emphasis upon assisting prac­
ticing pharmacists in the field to maintain and update their knowledge,
much as Wulling had suggested in 1899.\(^\text{104}\)

In 1927, at the invitation of the National Wholesale Druggists' Association, representatives of the National Association of Retail Drug­
gists, the American Association of Colleges of Pharmacy, and several pharmaceutical manufacturers met in New York "to discuss plans for orga­
nizing the drug trade into a cooperative effort for the benefit of all the factors engaged in it."\(^\text{105}\) The result of these deliberations was the establishment of the Druggists' Research Bureau, which by 1928 served as a clearinghouse for financial information of interest to the community pharmacist:

The Bureau has been in receipt of numerous inquiries from retail druggists during the year about special and individual problems. Frequently these druggists enclosed for confidential analysis, their profit and loss statements. Each one of these requests was answered personally and confidentially. Many of the problems upon which information and assistance were requested appeared to be of such general interest that the significant facts were formulated into news items without revealing, of course, the source from which the facts came. These items were widely published in the drug trade press and, it is believed, attracted considerable attention and favorable comment.\(^\text{106}\)

Although not directly connected with any school or college of pharmacy, through its publication and distribution of case studies, its nationwide speaking engagements, and its counsel on individual financial problems, the Bureau performed an extension function that would become even more important during the following decade.
The onset of the Great Depression would stimulate a few schools and colleges of pharmacy to create outstanding extension activities and services to relieve the economic plight of the independent community pharmacist; however, the uncertain financial stability of many schools and colleges which depended for their support upon a large undergraduate student body would allow many other nascent extension programs to expire quietly. By the same token, the year-round undergraduate instruction imposed by the severe shortage of pharmacists during World War II would further delay the development of mature continuing professional education programs for the practicing pharmacists of the United States.
Charles R. Van Hise, "Inaugural Address of Charles Richard Van Hise, Ph.D., LL.D. as President of the University of Wisconsin, Madison, June 7, 1904," p. 29, Papers of the Presidents of the University of Wisconsin, President's Office, University of Wisconsin, Madison, Wisconsin [hereinafter referred to as "Presidents' Papers"], cited by Frederick M. Rosentreter, The Boundaries of the Campus: A History of the University of Wisconsin Extension Division, 1885-1945 (Madison: University of Wisconsin Press, 1957), n. 11, p. 187. Van Hise was a Wisconsin alumnus and a geologist of national repute who had served on the University's faculty since 1879 and had been an extension professor at the University of Chicago from 1892 to 1903.


An honors graduate of Pennsylvania State College, Reber had done advanced work at the Massachusetts Institute of Technology and had returned to his undergraduate school to head the Department of Mechanic Arts, which during his tenure became the School of Engineering. Reber served as director of Wisconsin's Extension Division until 1926. See Rosentreter, op. cit., p. 52; and Curti and Carstensen, op. cit., vol. II, pp. 561-62.

Louis E. Reber, "Report of the University Extension Division," in University of Wisconsin, Biennial Report of the Board of Regents for the Years 1906-7 and 1907-8 (Madison: Democrat Printing Company, State Printer, 1908), p. 174. The Department of Debating and Public Discussion was "to arouse and stimulate among all classes of people an intelligent and active interest in important social and political questions"; the Department of Instruction by Lectures was to supply speakers for various groups and lecture courses, both informational and entertaining; the Department of General Information and Welfare was "to act as a me-
dium between the great federal and state departments, national societies and state universities, on the one hand, and the people of the state, on the other, in the dissemination of results of investigation and research." Ibid., pp. 186-91.

7 Ibid., p. 183.

8 Ibid., pp. 184-85. Reber particularly emphasized the need for adequate courses in business administration, home economics, highway building, agriculture, and nature study.

9 Ibid., p. 194.

10 Ibid., pp. 174-75. The correspondence courses at the outset were divided into five general classifications: regular university work, special advanced work, high school and preparatory work, elementary school branches, and special vocational branches.

11 Ibid., p. 176.

12 Louis E. Reber, "Report of the Dean of the Extension Division," in University of Wisconsin, Biennial Report of the Board of Regents for the Years 1910-11 and 1911-12 (Madison: Democrat Printing Company, State Printer, 1912), p. 159; and his "Report of the Dean of the University Extension Division," in University of Wisconsin, Biennial Report of the Board of Regents for the Years 1914-15 and 1915-16 (Madison: n.p., 1916), p. 187. According to Curti and Carstensen, a partial explanation of the rapid expansion is to be found in the publicity which attended this work, the effectiveness of the field representatives in interesting individuals as well as industrial and other groups in the work, and the willingness of the Department to prepare virtually any kind of correspondence course for which there was a demand. Curti and Carstensen, op. cit., vol. II, p. 573.


17 Conrad E. Patzer, Public Education in Wisconsin (Madison: Wisconsin Department of Public Instruction, 1924), pp. 121 and 207-10.

18 In 1919, a permanent extension center was established at Milwaukee, which by 1923 had acquired many of the attributes of a junior college. See Rosentreter, op. cit., pp. 93-95.


20 University of Wisconsin, "The Summer Session: Departments of Study," Catalogue of the University of Wisconsin for 1899-1900 (Milwaukee: The Evening Wisconsin Co., 1900), pp. 162-65. The first summer school held at the University was a private venture by Leo A. Stager in 1885, but it was not successful enough to be tried again until two years later, this time under the auspices of the Wisconsin State Teachers' Association. Goodnight suggests that the impulse for this action probably came from Birge and Professor of Education John W. Stearns. The School of Pharmacy was well-represented in the five-man staff for the four-week session: Birge taught physiology and zoology and Daniells taught chemistry. Although no credit was given for the courses, which were aimed at both grade-school and high-school teachers, the moderate success of the 1887 and 1888 sessions led the 1889 Wisconsin Legislature to appropriate $1,000 annually "to aid in maintaining a summer school of science, literature, language and pedagogy, in connection with the University of Wisconsin." That same year, under the direction of Stearns, the "Summer School for Teachers" granted University credit to anyone who had adequate prerequisites to enter a course and who satisfactorily passed a final examination. In 1895, the summer school term was lengthened to six weeks, and by 1897, the Legislature, rather than making a special appropriation, allocated $2,000 of the University's appropriation to the summer school. Finally, in March, 1899, a faculty committee reached the conclusion that the University should hold a regu-
lar summer session of at least six weeks' duration and that at least one-half of the regular University faculty should teach in it; the following month, the Board of Regents adopted the recommendations and named Birge director of the summer session. The first announcement of the new summer session noted that "while the summer session of the University will include the Summer School for Teachers, . . . it is not an enlargement of that school, but has a different purpose. This additional term . . . will provide elementary, advanced, and graduate instruction throughout the range of subjects ordinarily covered by the Faculty of Letters and Science." The first regular summer session attracted 341 students; by 1908, over 1,000 were in attendance. Scott H. Goodnight, "Organized Summer Study at The University of Wisconsin: The Story of the Origins and Growth of the Summer School and the Summer Session, 1885-1940," Madison, Wisconsin, 1940, pp. 2-9, 18, 22, 31-36, and 93. (Mimeographed.); Wisconsin, The Laws of Wisconsin, Except City Charters and Their Amendments, Passed at the Biennial Session of the Legislature of 1889, Together with the Joint Resolutions and Memorials (2 vols.; Madison: Democrat Printing Company, State Printers, 1889), vol. I, chap. 458, p. 648; Wisconsin, The Laws of Wisconsin, Joint Resolutions and Memorials, Passed at the Biennial Session of the Legislature, 1897 (Madison: Democrat Printing Company, State Printer, 1897), chap. 284, pp. 559-60, and chap. 380, sec. 392a, p. 997; University of Wisconsin, "The Summer Session: General Statement," Catalogue of the University of Wisconsin for 1898-99 (Madison: By the University, 1899), p. 151; and Curti and Carstensen, op. cit., vol. I, pp. 731-39.

21 University of Wisconsin, "Summer Session of the University and Summer Schools: Summer Session of the School of Pharmacy," p. 168. The general fee for the course was fifteen dollars; the University also allowed the pharmacy summer session students to attend lectures in the summer session of the College of Letters and Science at no additional charge. Ibid., p. 169.

22 Ibid., p. 168. Also see University of Wisconsin, "Summer Session of the University and Summer Schools: Summer Session of the School of Pharmacy," Catalogue of the University of Wisconsin for 1901-1902 (Madison: By the University, 1902), p. 185; and "Summer Session of the School of Pharmacy" in University of Wisconsin, "College of Letters and Science: Summer Session for 1902," University of Wisconsin Bulletin No. 53, General Series No. 10, Part 1 (April, 1902), p. 43. The University of Michigan College of Pharmacy inaugurated a similar short course in the summer of 1905 whose expressed purpose was "to assist candidates for examination before the Michigan Board of Pharmacy." [Joseph Halfman], "The Month," Bulletin of Pharmacy 19:6 (June, 1905), p. 228.


The courses included pharmacy, general chemistry, inorganic preparations, qualitative analysis, morphology and classification of flowering plants, plant histology, drug assaying, physiological chemistry, pharmaceutical chemical analysis, botany, microscopical examination of food products, microscopical examination of drugs, pharmacology, and toxicology. University of Wisconsin, University Extension Division, "Courses in Pharmacy," Correspondence-Study Courses in Pharmacy (Madison: By the University, 1909), pp. 6-16. At the time, Fischer served as assistant professor of pharmacy, Bradley as assistant professor of physiological chemistry, Denniston as assistant professor of botany, DuMez as assistant in pharmacy, Grove (a physician) as instructor in pharmacology and toxicology, and McDaniel as instructor in chemistry. Ibid., p. 3.


[Harry B. Mason], "The Month's History: Novel Educational Methods," Bulletin of Pharmacy 23:5 (May, 1909), p. 179. Mason added that "the University of Wisconsin is now . . . doing for pharmacists what several universities have for years been doing for other classes of men by means of what has been termed 'university-extension' activities."


University of Wisconsin, University Extension Division, "Courses in Pharmacy," Correspondence-Study Courses in Pharmacy, pp. 16-17. The Alumni Association of the Chicago College of Pharmacy (University of
Illinois) had provided a similar, less pretentious service as early as 1900. The Association "arranged for a series of lectures on various business topics to be given at the college." The lectures were "free to students and alumni," and embraced "a consideration of business forms and methods, window displays, electro-medical instruments, photographic apparatus, store furniture, show cases, soda-water apparatus, etc." The lectures were given by "experts in the various lines," and were held in the evening "so that alumni as well as [undergraduate] students may attend them." [Joseph Helfmen], "Editorial: Commercial Training in the College," Bulletin of Pharmacy 14:9 (September, 1900), p. 360.

As Chairman of the Section on Commercial Interests of the American Pharmaceutical Association, Mason felt that the Section could serve as "a clearing house for ideas and methods evolved by shrewd pharmacists here and there throughout the country. It can be in a limited sense a sort of post-graduate school of business practice just as the Association as a whole has so successfully been a post-graduate school of scientific and professional pharmacy." H[arry] B. Mason, "The Chairman's Address," Proceedings of the American Pharmaceutical Association 57 (1909), p. 557. There is no evidence to suggest that Mason's suggestion ever was acted upon, however.

Shortly before such coursework became available to undergraduate students at Wisconsin, Kremers explained his philosophy. Characterizing the times as "an age of commercial expansion," Kremers stated that "the recent clamor for 'business training' in the colleges and schools of pharmacy" was "merely another manifestation of the same movement." In order to meet the demand for such training, however, in 1898 Kremers had instituted a course titled "The Economic Functions of the State," consisting of a series of historical and critical lectures on the state in its relations to industry, the trades, and the professions, with special reference to pharmacy. In 1901, Kremers proposed a new course "along more strictly commercial lines . . . . similar to courses given at present at several of the European schools of commerce." He added that "a knowledge of political economy, of finance, of business methods can be acquired at college, but the 'training' should follow under the direct guidance of business men in actual business." Professor [Edward] Kremers, "The Philosophy of Commercial Training in the College of Pharmacy," Bulletin of Pharmacy 15:6 (June, 1901), p. 245. Frank G. Ryan, an assistant of Joseph P. Remington, introduced the first course in commercial training for pharmacy students at the Philadelphia College of Pharmacy in 1899 and taught the course for several years. See Frank G. Ryan, "A Commercial Course in a College of Pharmacy," Proceedings of the American Pharmaceutical Association 48 (1900), pp. 99-103; and G[eorge] M. B[eringer], "Frank G. Ryan," American Journal of Pharmacy 92:6 (June, 1920), pp. 372-73.


33 Morton, op. cit., pp. 13-14. Morton states that "there seems to be little question but that the real vitality of this movement stems from the fact that its life blood is the assistance of people with the problems they actually have, problems about which they are enough concerned to be trying to do something themselves and with which they want help."


35 Theodore J. Shannon and Clarence A. Schoenfeld, University Extension (New York: The Center for Applied Research in Education, 1955), p. 15. At the time, Shannon and Schoenfeld were serving as Dean of the Extension Division and Associate Director of Summer Sessions at the University of Wisconsin.

36 Edwin E. Slosson, Great American Universities (New York: The Macmillan Company, 1910), p. 217. Writing of Wisconsin's burgeoning extension activities during this period, Slosson added, "What will come of this rural free delivery system of education no one can tell yet. It looks like a big idea. At any rate, it is a logical development of the Wisconsin principles of breaking down the barriers which separate the life within the college from the life without, and of getting all the public agencies to working together." Ibid., p. 241.

37 Morton, op. cit., p. 13. "Some of these accusations can still be heard from time to time," Morton continues. "Occasionally they were, and still are, true, just as some educational services on university campuses are at times of low quality. In general, however, responsible institutions, then as now, provided in the university extension programs substantial educational services."

Company, 1970), p. 193. Haygood suggests that although educational ac­tivities for adults are among the fastest growing programs at colleges and universities, the increase in the number of programs does not neces­sarily indicate that these institutions have a major commitment to the education of adults. "Colleges and universities often did not establish adult programs; they were instead the work of a few persons who sensed particular educational needs or responded to new forces at work in soci­ety."


40"Pyle, loc. cit. From 1916 to 1920, Lighty served as secretary­treasurer of the Association, playing a leading role in its discussions of radio in education, instruction of veterans, academic standards, and unethical advertising of correspondence courses. In 1926, he was elect­ed president of the Association, the first man who was not head of a di­vision to be elected to the post. Rosentreter notes that Wisconsin's contributions to the Association's conferences were so marked during these years that "care had to be exercised lest the Division seem to dominate them." Rosentreter, loc. cit.


42Woods and Hammarberg point out that the principles espoused by Van Hise in 1915 still are applied today by state universities. In con­trast, privately endowed institutions seem to follow the pattern begun at the University of Chicago. "Though privately endowed institutions vary in their conception of what should be done in adult education, in general, their Extension Divisions serve specialized needs in terms of curricula and clientele. Their emphasis seems to be upon academic and cultural subjects and the shaping of adult curricula at the highest uni­versity level. Many of their programmes are intended for a select cli­entele. Many experiment with leadership training projects and with pro­grammes to improve instructional materials and teaching techniques." Baldwin M. Woods and Helen V. Hammarberg, "University Extension Educa­tion in the United States of America," in Universities in Adult Educa­tion (Paris: UNESCO, 1952), p. 132.

44 Ibid., p. 153. The committee members included Reber, Howeth, Loran D. Osborne (University of Colorado), Charles E. Ferris (University of Tennessee), and Hervey D. Mallory (University of Chicago).

45 "Fifth Session," Proceedings of the First National University Extension Conference (1915), p. 196. Other recommendations included the publication of the proceedings of the conference and the publication of a quarterly journal, the latter of which received almost as much consideration as the question of forming a national university extension association. See pp. 196-99.


48 Morton indicates that 4 of the 16 general extension divisions offering instruction in medical science and 4 of the 29 divisions offering instruction in nursing (up to 1953) initiated this instruction in the five-year period from 1916 to 1920, accounting for nearly one-fifth (8/41) of the total programs initiated during this period. Morton, op. cit., p. 21.

49 Shannon and Schoenfeld, op. cit., p. 23; and Rosentreter, op. cit., pp. 111-12. Rosentreter notes that America's entrance into the war against Germany "helped Extension to find another raison d'être. The Division marched to war by remaining the Extension Division... Division field men who had been aiding correspondence students to understand slide rules and ledger books proved equally adept at demonstrating techniques of bandaging and splint application."

50 Pettijohn had been appointed director of the educational division of the Indiana State Council of Defense, which promoted county and regional "war councils" to bring the latest news from the war zone to the people and to give the information to help them to do their part on the home front. His speakers' bureau scheduled nearly 2,000 lectures on topics associated with the war effort. See Robert E. Cavanaugh, Indiana University Extension--Its Origin, Progress, Pitfalls, and Personalities (Bloomington: Indiana University, 1961), p. 7.

51 Ibid., pp. 7-8.

53 J[ohn] J. Pettijohn, "Educational Extension Service," Proceedings of the National University Extension Association 4 (1919), p. 96; and Pyle, op. cit., p. 13. Knowles has remarked that a number of leaders in university extension at this time "believed that university extension could not make the impact on society of which it was capable until it had received the same kind of cooperative state and federal support that had been provided to agricultural extension [through the Smith-Lever Act] since 1914. Bills providing for this kind of support were introduced into Congress repeatedly but unsuccessfully." Malcolm S. Knowles, The Adult Education Movement in the United States (New York: Holt, Rinehart and Winston, Inc., 1962), p. 87.


58 See, for example, James C. Egbert, "University Extension for Organized Workers," Proceedings of the National University Extension Association 7 (1922), pp. 53-61.

59 Knowles notes that while the NUEA was not officially represented at the founding of the American Association for Adult Education in 1926, Leon J. Richardson, extension director of the University of California, was chairman of the National Executive Committee and presided at the founding meetings. Knowles, loc. cit.

60 E[dward] A. Birge, "Address," Proceedings of the National University Extension Association 9 (1924), pp. 156 and 164. Birge also remarked that most extension work was criticized as not being of university grade. That Birge himself agreed with this sentiment is reflected in his attitude toward his extension faculty. Recommended promotions for extension faculty did not receive favorable action, and the apparent discrimination, especially against women, drew the ire of Regent Zona Gale. Birge replied simply that the nature of much extension work did not qualify those who handled it for the highest faculty status. Letter, Zona Gale to Miss Waters, April 23, 1925, Papers of Zona Gale, State Historical Society of Wisconsin, Madison, Wisconsin; and Letter, Edward

61 Louis E. Reber, "The Field and Scope of University Extension," Proceedings of the National University Extension Association 9 (1924), p. 27. Hall-Quest, who completed his study of forty-seven university extension divisions about this time, summarized a similar philosophy from his findings: "It is believed by some of the directors . . . that education outside of the university will bring to the adult vocational skill, intellectual outlets and outlook, wider knowledge and those intangible outcomes called cultural values, each or all of these benefits possibly arousing sufficient interest to lead the student to become a member of the campus university and enjoy the advantages of prolonged study in an atmosphere of research and reflection." Hall-Quest, op. cit., p. 25.

62 Richard R. Price, "President's Address," Proceedings of the National University Extension Association 9 (1924), p. 10. Price caustically added that "It is no longer necessary in most institutions to persuade reluctant members of the faculty and administrative officers that people who work for a living and cannot devote their whole time to education, may also be endowed with brains, capacity, and a taste for knowledge." Ibid., p. 7.


64 In 1914, the American Conference of Pharmaceutical Faculties increased its minimum entrance requirement from the "satisfactory completion of at least one year of work in an accredited high school or its equivalent" to at least two years of accredited high school work or its equivalent, the requirement to take effect with the 1917-18 session. The four-year high school requirement, by Conference action in 1917, became binding upon schools and colleges of pharmacy holding membership in the Conference in September, 1923. In establishing these higher requirements for the study of pharmacy, the Conference moved much more rapidly than did state legislatures and state boards of pharmacy. As late as 1912, twenty-four states had no preliminary educational requirement whatsoever, twelve required a grammar school education only, seven required one year or more of high school, and two required high school graduation. In seven states, the state boards of pharmacy were given authority to fix preliminary educational requirements. Bleauch and Webster suggest that the failure of American pharmacists to receive professional recognition in the U.S. Army and Navy during World War I was a result of the delay in establishing graduation from high school as the minimum entrance requirement. "The armed services considered graduation from high school or its equivalent a necessary entrance require-
ment for colleges of all kinds and refused to recognize degrees from colleges with lower requirements. This stinging blow to an awakening professional consciousness caused much comment in pharmaceutical circles, and it resulted in some action. It became apparent that the profession had suffered from a too-conservative educational philosophy."

In 1912, the Conference expanded the minimum number of hours of instruction required for graduation from 1,100 to 1,200 hours, to be given over a period of two full twenty-five-week school years; the following year, the Conference voted that the degree of Graduate in Pharmacy was appropriate for this course. In 1917-18, the Conference recommended that the degree of Pharmaceutical Chemist was appropriate for completion of a three-year course in a college of pharmacy, and that the minimum requirement for the degree of Doctor of Pharmacy should be at least a four-year course in a college of pharmacy, both of which courses were to be based upon completion of a four-year high school course. By 1918, a jumble of six different pharmacy degrees in a dozen combinations requiring from two to seven years for completion presented a bewildering range of choice to the prospective pharmacy student. In 1920, however, the Conference adopted a three-year course of instruction as a minimum, to become effective in September, 1925. In 1922-23, the Conference again expanded the minimum number of hours of instruction required for graduation from 1,200 to 1,500 hours and extended the length of the school year from a minimum of twenty-five weeks to a minimum of thirty weeks. In 1924, the Conference voted that the degree of Graduate of Pharmacy was appropriate for the three-year course and that the minimum requirement for the degree of Doctor of Pharmacy was at least a four-year course in a college of pharmacy. The following year, however, the Conference (now called the American Association of Colleges of Pharmacy) added that the degree of Doctor of Pharmacy might be given upon the completion of not less than three years of graduate study. In 1928, the Association adopted a four-year course of instruction as a minimum, to become effective on July 1, 1932. This requirement was amplified in 1930 to include (1) a five-day-week schedule, (2) 3,000 hours of instruction, and (3) four school years of thirty-two weeks each. The Association also recommended that the degree of Bachelor of Science in Pharmacy was the most suitable for the four-year course. Finally, in 1934, the Association increased the minimum number of hours of instruction to 3,200, consisting of at least 1,300 hours of lectures and recitations and at least 1,300 hours of laboratory work, and approved the conferring of the degrees Bachelor of Science and Bachelor of Science in Pharmacy upon students who completed the four-year program. In addition, because of the way it had been abused by some colleges of pharmacy, the Association refused to adopt the Doctor of Pharmacy degree, ruling that it should not be conferred after July 1, 1938. These provisions remained in effect until 1954, when the Association

During the early years of the twentieth century there was no general agreement as to what qualifications a pharmacist should possess. In 1914, the New York Legislature enacted a law which provided that after January 1, 1905, a candidate for licensure as a pharmacist had to present to the New York State Board of Pharmacy the diploma of a university which, among other things, maintained a "proper pharmacy standard" in its pharmacy curriculum. A committee of three representing the State Board of Pharmacy, the four colleges of pharmacy in the state, and the State Department of Education was appointed to determine what constituted a "proper pharmacy standard" for the state of New York. The problem soon proved to be of a national character, however, and in 1906, a National Syllabus Committee was organized, consisting of the three New York representatives and representatives from the National Association of Boards of Pharmacy and the American Conference of Pharmaceutical Faculties. In its publication, The Pharmaceutical Syllabus (1910), the Committee outlined a general two-year curriculum, including the proportion and the character of its constituent subjects, and recommended its adoption as "a minimum course of study and a syllabus for the guidance of pharmacy schools in the preparation of students for admission to the boards' licensing examinations." By July, 1912, twenty-seven examining boards and sixty-two of the eighty-three existing schools and colleges of pharmacy had approved the idea and adopted the Syllabus in whole or in part. In subsequent editions (1913, 1922, and 1932), the compilers of the Syllabus endeavored to leave the schools freedom in their methods and curricular decisions, and the Syllabus generally had a salutary influence; however, it was not closely followed by schools and colleges of pharmacy until the American Council of Pharmaceutical Education (f. 1932) adopted its contents as a standard for accreditation in 1937. Blauch and Webster, op. cit., pp. 18-26; Committee on the Pharmaceutical Survey, "The Undergraduate Curriculum," in The General Report of the Pharmaceutical Survey, 1946-49, dir. by Edward C. Elliott (Washington, D.C.: American Council on Education, 1950), p. 99; National [Pharmaceutical Syllabus] Committee, "Preface," The Pharmaceutical Syllabus ([Albany]: New York State Board of Pharmacy, 1910), p. 7; and National [Pharmaceutical Syllabus] Committee, The Pharmaceutical Syllabus (2d ed.; n.p.: By the Committee, 1913), p. 19.

The "prerequisite laws," which require graduation from a recognized school or college of pharmacy as a prerequisite of all candidates appearing before their state boards of pharmacy for their licensure examination and their subsequent registration as pharmacists, were but slowly enacted. The first state to enact a prerequisite law was New York (1905) followed by Pennsylvania one year later. The other states
remained inactive until 1915, when North Dakota and Washington enacted prerequisite laws, followed by Illinois and Ohio in 1917. Between 1917 and 1921, eleven additional states enacted prerequisite legislation (Indiana, Iowa, Kentucky, Maryland, Minnesota, Mississippi, New Jersey, Oklahoma, Rhode Island, South Carolina, and Virginia); by 1929, the only twelve states which had no college requirements were Arizona, Delaware, Georgia, Massachusetts, Missouri, Nebraska, Nevada, New Hampshire, New Mexico, South Dakota, Tennessee, and Vermont. Joseph W. England, "The Status of Prerequisite Laws and Pharmaceutical Literature," American Journal of Pharmacy 93:8 (August, 1921), pp. 539-40; and William R. Acheson, "Report of N.A.B.P. Committee on Prerequisite Legislation," Proceedings of the National Association of Boards of Pharmacy 26 (1929), p. 107.


69. [Martin] I. Wilbert, "The Need for Post-Graduate Instruction," Proceedings of the American Pharmaceutical Association 57 (1909), pp. 670-71. Wilbert added that "one of the more potent reasons why the apothecary of to-day stands no higher in the esteem of the community is because he has enlarged on the business side of his occupation at the expense of its professional aspect." Ibid., p. 671.

70. Ibid., p. 672. As a result of the Pure Food and Drug Act of 1906, the standards contained within the United States Pharmacopoeia and the National Formulary had become official guidelines for the pharmaceutical industry and the individual pharmacist. Wilbert felt that the pharmacist should be held responsible for the identity and purity of the substances sold in his pharmacy and should be able to perform the intricate pharmacopoeial tests which were required, citing Switzerland as an example: "Despite the fact that the Swiss Pharmacopoeia is by no means as technical as our own, and despite the fact that the Swiss pharmacist is much better prepared for complying with the several requirements than is the average pharmacist of this country, the Swiss
universities have arranged and successfully conducted courses of postgraduate instruction for pharmacists, to fit them to comply fully with all of the requirements of their National Pharmacopoeia." The Branches of the American Pharmaceutical Association continued to provide a limited amount of postgraduate education of a scientific nature during the following decade, yet there were many pharmacists who apparently failed to appreciate the possibilities of this plan of organizational work. "Not all of the branches . . . can boast of an equally glorious history, but in the main the record has been a meritorious one. The papers and discussions . . . have been in a high degree informative, a majority of them dealing directly with the live topics of the day. . . . As a medium for disseminating general scientific information, the branches offer unusual educational opportunities. . . . and there is no reason why the number of branches should not be greatly extended." [Ezra J. Kennedy], "Editorial: War Work of the A.Ph.A. Branches," The Pharmaceutical Era 51:3 (March, 1918), pp. 59-60. Seven years later, Kennedy again surveyed the Branches and found that in scope, "the papers read, the addresses made, and the discussions held represent widely separated subjects and problems, yet all coming within the field traversed by the present-day American pharmacist. . . . if the pharmacist is to retain his principal claim to his profession, he must use every opportunity to keep himself posted in all the advances that are being made along the professional side of his business. It seems to us that the A.Ph.A. branches are furnishing such opportunities." [Ezra J. Kennedy], "Editorial: Work of the A.Ph.A. Branches," The Pharmaceutical Era 60:13 (March 28, 1925), p. 401.


72 Ibid., pp. 43-44.

73 A typical comment was offered by the redoubtable Joseph P. Remington of the Philadelphia College of Pharmacy: "It places not only the institutions represented here in a bad light, but it places the young men who get that degree in a very bad light, the worst light. . . . give these men the instruction just as the correspondence schools do . . . give them a certificate of attendance, if you want, . . . but I do not think that a degree of any kind should be given." Remington may have had an ulterior motive, for he added that "giving these men [correspondence] instruction is the best possible means of getting the best students into colleges who give degrees." Ibid., pp. 45-46.

74 Ibid., p. 46. The faculty of the University of Kansas had presented noncredit extension lectures throughout the state on an informal basis from 1879 to 1892; the School of Pharmacy, as noted in Chapter III, had experimented with extension lectures as early as 1891. "The non-credit lectures and other off-campus programs proved so successful that the faculty and administration began to organize credit courses through extension," notes Howard Walker, current director of university

75 "Miscellaneous Business," p. 47.

76 Ibid., pp. 47-48. At this point, three years later, the course had attracted only four students, none of which had graduated.

77 Ibid., pp. 53-55. The students already enrolled in the course apparently were to be allowed to complete it and receive their degrees.

78 "New Business," Proceedings of the American Conference of Pharmaceutical Faculties 13 (1912), p. 78. Dean Eugene G. Eberle of Baylor University School of Pharmacy felt that "extension courses in training of all kinds" had its benefits. "I do not believe that pharmacy can be taught altogether through these extension courses, but undoubtedly they have a good influence and if the young man who is unable to go to school takes advantage of a short course, provided it is conducted with some degree of efficiency, I believe he is getting some benefit and he is a better man for it, and . . . I am not opposed to it." Charles E. Vanderkleer of the Department of Pharmacy of the Medico-Chirurgical College of Philadelphia added that as the various states passed prerequisite legislation "the harmfulness that lies in the correspondence course and the harm that these courses do will be obliviated." Ibid., pp. 78-79.

79 Ibid., pp. 80-81. When asked what he thought should be done with the extension courses of the universities, Schneider replied, "Let the universities conduct them, don't fool with them, let them alone." As president of the Conference two years later, Schneider continued to scold his colleagues: "Not only have we refrained from placing ourselves on record as favoring and urging the college prerequisite, but we have not even had the moral courage to condemn cram-quiz courses, board of pharmacy cram courses, correspondence courses, quiz compend reading courses and other makeshifts for a college course. We should go on record as condemning these makeshifts for a pharmaceutical education." Albert Schneider, "President's Address," Proceedings of the American Conference of Pharmaceutical Faculties 15 (1914), p. 16.


81 Ibid., p. 82. At this juncture, both Remington and Henry H. Rusby denied having had anything to do with the Era Course, in contradiction to the fact of the matter. See D. O. Haynes & Co., "The Study of Pharmacy" (brochure, 1894), p. 1; and Chapter II, n. 22.

Joseph Weinstein, "The New Pharmacopoeia as an Educational Problem for the Practical Pharmacist," Journal of the American Pharmaceutical Association 4:10 (October, 1915), pp. 1181-82. "This is a great promising field for our educators," Weinstein added, offering a Mosaic comparison. "When Moses legislated for the Israelities . . . he clearly perceived the unpreparedness of his contemporaries to adopt his laws . . . but he proceeded with his work, having in mind the fact, that his own generation would die off, and aiming at their descendants and at generations to come who would be more fit for his teachings. Let us hope our members of the [U.S.P.] Revision Committee have not aimed that far, for the thousands of pharmacists who are not fully up to the present day requirements are not quite ready to die; they wish to live and to compete with us and they can, through the agency of additional work taken up at special courses, become good and useful members of our great pharmaceutical fraternity." As early as 1911, however, food and drug officials in Kentucky had conducted a ten-day "school of instruction" for practicing pharmacists dealing with state and federal drug legislation, labeling, and the preparation, storage, and deterioration of drug products. Later that same year, American Pharmaceutical Association President Eugene G. Eberle urged America's schools and colleges of pharmacy to provide assistance "otherwise than in the education of young pharmacists only. The druggists should be prevailed upon to make full use of the facilities of the schools . . . . The schools could well afford to make assays of the galenicals, prepare standardized solutions and in restricted instances some of the galenicals and other preparations when it is desired to perfect processes of manipulation or formula." See [Harry B. Mason], "The Month's History; Instructing the Druggists," Bulletin of Pharmacy 25:6 (June, 1911), p. 224; and Eugene G. Eberle, "Address of the President, Eugene G. Eberle," Bulletin of the American Pharmaceutical Association 6:9 (September, 1911), p. 386.

"At a recent conference with the director of the summer, the question was discussed whether it would be worth while to re-attempt summer work in pharmacy," Kremers wrote Wisconsin State Board of Pharmacy member Edward Williams early in 1914. "While my previous experience in this direction does not lead me to encourage such a proposition, I do not desire to stand in the way of giving a summer session in pharmacy another opportunity at the University." Letter, Edward Kremers to Edward Williams, January 7, 1914, Kremers Reference Files, F. B. Power Pharmaceutical Library, University of Wisconsin School of Pharmacy, Madison, Wisconsin [hereinafter referred to as "Kremers Reference Files"]. Also see "Drug Clerks' Course Started by University," The Daily Cardinal (Madison, Wisconsin) 24:170 (May 5, 1914), p. 4. Under the direction of Henry A. Langenhan, the new summer session offered courses in prescription practice, advanced prescription practice, and pharmaceutical technology initially, adding courses in alkaloidal assaying and elementary prescription practice in 1916 and 1918. University of Wis-
consin, "The Summer Session," The University of Wisconsin Catalogue, 1913-1914 (Madison: By the University, 1914), pp. 561-62; and "The Summer Session: Pharmacy," ibid., p. 574; University of Wisconsin, "The Summer Session: Pharmacy," The University of Wisconsin Catalogue, 1915-1916 (Madison: By the University, 1916), p. 444; and University of Wisconsin, "Summer Session: Pharmacy," The University of Wisconsin Announcements, 1917-1918 (Madison: By the University, 1918), p. 485. "It is Dr. Kremers' plan to adjust this work so that the students who come for pharmacy instruction could correlate with correspondence-study courses," William H. Lighty, director of Wisconsin's Correspondence-Study Department, wrote to one of his field men. "The students that have pursued part of the correspondence-study work . . . could come for the Summer Session and work in residence during that period, or students who come to the Summer Session could continue in correspondence with studies they thus began in residence." Letter, W[illiam] H. Lighty to A[ndrew] H. Melville, April 15, 1914, Kremers Reference Files. Kremers felt that the new summer session would reduce the dropout rate in correspondence courses: "It has been our experience that it is very difficult indeed to start pharmacy students in extension work without some such preparation as this which is now going to be offered to them." Letter, Edward Kremers to J[esse] H. Ames, May 2, 1914, Kremers Reference Files. The University had relinquished its prerogative to prepare drug clerks and apprentices specifically for the state board examination in 1913, when the Wisconsin Board of Industrial Education inaugurated a half-day-a-week class in pharmacy in its continuation school in Milwaukee, one of several industrial schools which had been created around the state after 1911. A member of the Wisconsin State Board of Pharmacy, Henry S. Ruenzel, and Edward A. Raeuber, general manager of the Wisconsin Pharmaceutical Company of Milwaukee, were engaged as instructors for the class.


The impressions of the field representatives, however, are more revealing than enrollment statistics: "The young men who were enrolled in our class here [Oshkosh] were, from an educational point of view, a mediocre group, but two of the entire group had ever had any high school work. . . . the course as prepared was very much too difficult, indeed, for the great majority of the class, and not adapted to their needs or degree of advancement. . . . our pupils did not do the necessary studying outside of the class in order to profit as they should by the work. . . . the average drug store of to-day is not only a drug store, but a store for the sale of cigars, stationery, toilet articles, brie a brie [sic], camera goods, and everything else under the sun, so that the average clerk's time is greatly taken up with waiting on customers and in delivering goods around about town. . . . I really feel that it is almost a hopeless task to project a class in Pharmacy in this district or any other district, and get any results that would be satisfactory . . . the solution of the whole matter would be a short course conducted at Madison." Letter, Andrew H. Melville to Edward Kremers, October 14, 1913, Kremers Reference Files. The field representative from Superior agreed: "The results have been unsatisfactory. . . . Many of those who are employed in drug stores do not place great emphasis upon the pharmacy part of the work. They tell me that the prescription work is a very small percent of their entire sales and they can hold positions with very small knowledge of pharmacy. . . . Some who do contemplate securing papers as registered pharmacists are not looking for a laboratory course. They want a course that will enable them to answer the questions of the State Board even though it may not equip them to handle prescriptions." Letter, J[ohn] P. O'Connor to Edward Kremers, October 15, 1913, Kremers Reference Files. Also see "Extension Courses in Wisconsin," The Pharmaceutical Era 48:2 (February, 1915), p. 79; and [Harry B. Mason], "The Month's History: Two Educational Departures," Bulletin of Pharmacy 29:3 (March, 1915), p. 98.

Hall-Quest, op. cit., p. 159. Only 13 of the 88 students enrolled in the pharmacy courses during this period completed them. Similarly, only 17 of the 110 students enrolled in the chemistry courses offered during this period completed them. The average mortality rate for all correspondence work taken at Wisconsin during this period was 56 per cent (19,579/34,012). In contrast, only 1 of 242 physicians failed to complete their courses in postgraduate medicine during this same period. Established in 1907, the College of Medicine at Wisconsin endeavored "to aid physicians and others in the state to keep up with the rapid advances in the application of science to medicine" as one of its four aims as early as 1908, when it sponsored a traveling exhibit on tuberculosis. See C[harles] R. Bardeen, "Report of the Dean of the College of Medicine," in University of Wisconsin, Biennial Report of

Correspondence study in pharmacy at Wisconsin reached its peak of popularity between 1915 and 1922, during which period twenty-three different courses were offered, surviving another two decades before quietly expiring in May, 1943. During the preceding thirty-seven years, faculty members in the School of Pharmacy had taught thirty different courses by correspondence to nearly 500 students, although this represented less than 0.3 per cent of the 166,036 students who had enrolled for University correspondence courses during this period. Several of the correspondence courses in pharmacy were remarkably durable: Pharmacy 1A and 1B, "Pharmacy" (later, "Pharmaceutical Technology"), was taught by correspondence for the entire forty-three-year period; Pharmacy 20A, "Elementary Prescription Practice," Pharmacy 20B, "Prescription Practice, Liquid Preparations," Pharmacy 21A and 21B (later, "121A" and "121B"), "Advanced Prescription Practice," and Pharmacy 22A (later, "30" and "128"), "Pharmaceutical Technology, Liquid Preparations," were taught by correspondence for twenty-six years. All but four courses were offered for University credit. Pharmacy 3, "Pharmaceutical Arithmetic," Pharmacy 6, "Pharmaceutical Latin," Pharmacy 122, "Vitamins," and Pharmacy 123, "Biologicales," were offered between August, 1938 and May, 1943 without University credit, presumably as a response to the demand for continuing professional education by the pharmacists of Wisconsin during the late 1930s. See University of Wisconsin, Extension Division, "Correspondence-Study Courses in Pharmacy," Bulletin of the University of Wisconsin Serial No. 701, General Series No. 553 (December, 1914), pp. 6-16; University of Wisconsin, Extension Division, Correspondence-Study Department, "Cost of Courses in Correspondence," Bulletin of the University of Wisconsin Serial No. 113 [sic; 1113], General Series No. 916 (September, 1921), pp. 18-19; "Cost of Courses in Correspondence," ibid. Serial No. 1424, General Series No. 1200 (February, 1927), p. 20; University of Wisconsin, University Extension Division, Department of Extension Teaching, Correspondence Teaching, "Courses in Pharmacy," Bulletin of the University of Wisconsin Serial No. 1798, General Series No. 1882 (November, 1931), p. 6; "Courses in Pharmacy," ibid. Serial No. 2092, General Series No. 1876 (September, 1935), p. 13; "Correspondence-Study Courses," ibid. Serial No. 2345, General Series No. 2119 (August, 1938), p. 24; "Correspondence-Study Courses," ibid. Serial No. 2655, General Series No. 2439 (May, 1943), p. 25; "Correspondence-Study Courses," ibid. Serial No. 2741, General Series No. 2525 (February, 1945), p. 25; [Rank] O. Holt, "Report of the University Extension Division, University of Wisconsin: Annual Period Ending June 30, 1938, with Reference to Trends for the Decade," Madison, 1938, p. 32. (Typewritten.); [Rank] O. Holt, "Report of the University Extension Division, University of Wisconsin: Biennial Period Ending June 30, 1942," Madison, 1942, p. 64. (Typewritten.); and [George S. Beery], "Annual Report, Recorder's Office, 1949-50, University Extension Division, University of Wisconsin," Madison, 1950, pp. 4-5. (Typewritten.), University Archives, Memorial Library, University of Wisconsin, Madison, Wisconsin.
[Harry B. Mason], "The Month's History: Summer Courses," Bulletin of Pharmacy 31:8 (August, 1917), p. 311. The four-week course was devoted "almost entirely to the changes registered in the new Pharmacopoeia. The purpose, of course, is to enable pharmacists and drug clerks to bring their information of pharmacopoeial and pharmaceutical matters up to the minute."

"Schools and Colleges: University of Tennessee," The Pharmaceutical Era 50:2 (February, 1917), p. 71. A similar plan was offered in 1925 by Dean Wortley F. Rudd of the Virginia Medical College School of Pharmacy, who had secured the services of a practicing pharmacist as a clinical instructor. See [Wortley F. Rudd], "Virginia School of Pharmacy Ready to Answer Druggists' Queries," The Pharmaceutical Era 60:8 (February 21, 1925), p. 244.

[Ezra J. Kennedy], "Editorial: College of Pharmacy Activities," The Pharmaceutical Era 50:2 (February, 1917), pp. 41-42. Two years later, Kennedy continued his argument: "In the dissemination of all kinds of knowledge, the colleges of pharmacy have great opportunities and responsibilities. As a rule, these institutions are in possession or are in touch with the storehouses of the general information which should be made available for the advancement of pharmacy. The problem which confronts them ... is to find the way to pass this knowledge around and do what they can to make it help do the work of the world." In 1924, Dean Jacob Diner of the Fordham University College of Pharmacy urged that pharmacists take courses "so that they may keep up with the progress of pharmacy and the new researches," yet offered no mechanism by which this could be accomplished. [Ezra J. Kennedy], "Editorial: Putting Knowledge to Work," The Pharmaceutical Era 52:2 (February, 1919), p. 34; and [Jacob Diner], "Higher Educational Requirements Urged," The Pharmaceutical Era 59:20 (November 15, 1924), p. 499.

Zada M. Cooper, "Report of the Committee to Investigate 'Short Term,' Correspondence, Summer and Other Similar Courses in Pharmacy," Proceedings of the American Conference of Pharmaceutical Faculties 19 (1918), p. 139. Columbia University's College of Pharmacy of the City of New York, the University of Michigan College of Pharmacy, the University of Nebraska College of Pharmacy, and the University of Wisconsin Course in Pharmacy conducted summer sessions; the University of Kansas School of Pharmacy, the Highland Park College of Pharmacy and Chemistry, and the University of Wisconsin Course in Pharmacy conducted correspondence courses; the Oregon Agricultural College School of Pharmacy conducted the "Vocational Course." Miss Cooper added, "It goes without saying that the short courses given by the few institutions which give regular courses also are superior in most particulars to the typical short course school." Ibid., p. 140.

Ibid., p. 141. "Some run continuously and students enter at any time, but they are more often timed to have students ready for the periodical Board examinations. The course is then repeated two or three
or four times a year. In many cases, individuals are allowed to continue in attendance until they become registered. That alone is the end sought." Miss Cooper concluded that "enough is known to make it evident that the typical short course schools are doing pharmacy no good. From the standpoint of any particular college they might be ignored, but the profession as a whole can not afford to do that. . . . the good name of our profession is besmirched. How can we expect professional standing while such a condition exists?" Ibid., pp. 141 and 146. For Miss Cooper's later work in this area, see Zada M. Cooper, "Cram Courses in Pharmacy," The Druggists' Circular 64:11 (November, 1920), pp. 401-3; and "'Plugging Schools' as a Menace," The Pharmaceutical Era 62:24 (June 12, 1926), pp. 21-22.

92 It was not until 1924 that the Conference bylaws were interpreted to allow university credit for work completed in absentia. "Fourteen universities having colleges of pharmacy holding membership in this Conference have well established extension divisions through which work by correspondence is given and regular university credit allowed," reported President Charles W. Johnson. "I . . . urge that this Conference recognize present day methods of education and grant its members the right to make use of their extension divisions for such courses as the college believes it can give with absolute justice to a high standard of scholarship." Charles W. Johnson, "Address of the President," Proceedings of the American Conference of Pharmaceutical Faculties 25 (1924), pp. 26-27. Also see Edward H. Kraus, "Report of the Committee on the President's Address," ibid., pp. 98-99.


95 Frederick J. Wulling, "The College of Pharmacy of the University of Minnesota (Historical)," Proceedings of the Minnesota State Pharmaceutical Association 30 (1914), pp. 163-64; ibid. 31 (1915), p. 89; ibid. 33 (1917), pp. 208-9; ibid. 34 (1918), p. 205; and ibid. 35 (1919), pp. 93-94. Wulling appears not to have made use of the General
University Extension Division, which the University's Board of Regents created in 1913, under the direction of Richard R. Price. See Willard L. Thompson, "University of Minnesota General Extension Division," in Expanding Horizons . . . University Extension, ed. by Stanley J. Drazek et al. (Washington, D.C.: North Washington Press, 1965), pp. 64-65; Richard R. Price, "Minnesota's University Weeks," Proceedings of the First National University Extension Conference (1915), pp. 159-64; and Chapter III, n. 49. In 1927, the Oregon Agricultural College School of Pharmacy also inaugurated a laboratory analysis service in cooperation with the Oregon State Board of Pharmacy, providing "the only means of determining the purity of drugs not sold in the original unbroken packages," since Oregon had no pure drug law at that time. By 1934, the number of samples submitted to the laboratory for analysis each year averaged at least 100. "Free Analytical Service Given By Pharmacy School," Drug Topics 20:5 (February 5, 1934), p. 41.

Frederick J. Wulling, "Address of the Chairman of the Scientific and Practical Section, M.S.P.A.," Proceedings of the Minnesota State Pharmaceutical Association 45 (1929), p. 128. "In the past two decades many changes have taken place," Wulling continued. "Pharmacy has developed both professionally and commercially very decidedly. The professional aspect has become much more scientific and complex; the commercial much more trade-like, yet more business-like. The dual nature of the practice of pharmacy naturally has caused the ascendancy of professional pharmacy among those devoted to a much more efficient business basis. These two parallel developments have made it more and more difficult for an individual to keep abreast of both, and as a result we see everywhere evidences of a separation of the two activities." Ibid., pp. 128-29.


[Arthur L. Buzzell], "Editorial: A Broader Vision," Bulletin of Pharmacy 35:11 (November, 1921), pp. 446-47. Buzzell reported that fifteen pharmacists were enrolled in one school, taking up such studies as advertising, psychology, accounting, rhetoric, and public speaking. This was, admittedly, an exception; the crushing twelve- to fourteen-hour business days comprising the typical seven-day week in the average pharmacy left the pharmacist little, if any, time to pursue continuing education. "If the pharmacist had more time at his disposal, he would take the opportunity to study such things as urinalysis, bacteriology (so far as the microscopic examination of blood and sputum is concerned) or, in some localities, commercial analysis," wrote New York pharmacist Edward Swallow. "Study needs time, however, and this leisure is not provided in the drug trade . . . . Undoubtedly, there are thousands of men of superior ability in the retail drug trade in America today who
lack only the opportunity that shorter hours of labor in the store would afford them of making themselves masters of special branches of science that can be applied in the store." Edward Swallow, "Problems of Practical Pharmacy," The Pharmaceutical Era 62:15 (April 10, 1926), p. 20.

Philadelphia College of Pharmacy and Science, "Foreword," Popular Science Lectures 1 (1922-23), p. 3. The lectures were delivered to "large audiences" and were "abundantly illustrated by experiments, lantern slides and specimens." In 1922, a demand arose for the talks in book form, which the College supplied by publishing fourteen paperback volumes which it sold at cost as a part of its educational program. "The volumes have found a ready use in the libraries of teachers, students and persons interested in the scientific phases of everyday life. As an abundant reservoir of interesting information they have proven extremely useful to those called on to make luncheon or club talks." The final series of lectures (1941-42) was devoted to a "war theme" and attracted several thousand persons before the program succumbed to the exigencies of a wartime economy. Philadelphia College of Pharmacy and Science, "Foreword," Popular Science Talks 12 (1940), p. 1; and Ivor Griffith, "Preface," Popular Science Talks 14 (1942), p. 2. Also see [Arthur L. Buzzell], "The Month's History," Bulletin of Pharmacy 35:12 (December, 1921), p. 489; and "Hill Radio Broadcast Science Talks," The Pharmaceutical Era 53:6 (February 9, 1924), p. 134.

100 The St. Louis course (1924) was aimed at the public, pharmacy alumni, and undergraduate students; the Minnesota broadcasts (1927-28) were aimed at the general public and produced through the facilities of the University's radio station, WLB. "St. Louis C.P.'s Free Lecture Course," The Pharmaceutical Era 58:3 (January 19, 1924), p. 62; and Frederick J. Wulling, "Radio Talks as a Means of Creating a Better Understanding Between Pharmacists and the Public," Proceedings of the Minnesota State Pharmaceutical Association 44 (1928), pp. 94-96.

101 The Study was based upon information obtained from an analysis of nearly 54,000 prescriptions, from a survey of 1,200 pharmacies, from questionnaires sent to pharmacists and college of pharmacy faculty members, from inventories of 28 pharmacies, and other sources. W[errett] W. Charters, A[sa] B. Lemon, and Leon M. None11, "List of Contributors," Basic Material for a Pharmaceutical Curriculum (New York: McGraw-Hill Book Company, Inc., 1927), pp. ix-xiii. In 1932, Charters evaluated the utilization of his Study and found that the report had been particularly useful to schools and colleges of pharmacy in revising old courses, organizing new courses, and converting from a three-year to a four-year curriculum. He also found that the report had been influential in the preparation of the fourth edition of The Pharmaceutical Syllabus (1932) and in improving the licensure examinations given by the state boards of pharmacy. See W[errett] W. Charters, "An Evaluation of the Pharmacy Study of 1923-26," Pittsburgh, 1932. (Mimeographed.)

102 Blauch and Webster, op. cit., p. 6. The reception accorded the report was immediate and enthusiastic. Dean David B. R. Johnson of
the University of Oklahoma School of Pharmacy, in his 1927 presidential address before the American Association of Colleges of Pharmacy, stated that the report convinced him "that we must sooner or later come to a four-year course for a degree in pharmacy," and recommended that such a course be adopted "as soon as practical." That same year, Henry C. Christensen, secretary of the National Association of Boards of Pharmacy, called the report "a classic . . . far-reaching in its possibilities for pharmacy." See D[avid] B. R. Johnson, "Address of the President," Proceedings of the American Association of Colleges of Pharmacy 28 (1927), p. 24; and H[enry] C. Christensen, "Dr. Charters' Commonwealth Survey Report," Journal of the American Pharmaceutical Association 16:4 (April, 1927), p. 351. A potentially more far-reaching result of the impact of the report occurred the following year. In an address before the National Association of Boards of Pharmacy, Robert L. Swain, Deputy Food and Drug Commissioner for Maryland, declared that "in the future, members of boards of pharmacy must be in every sense students of pharmacy. They must keep abreast of the times in those sciences embraced in the college of pharmacy curriculum." To accomplish this, Swain suggested that the Association create an "extension educational service, which indeed might be styled a department of postgraduate instruction," to prepare and distribute abstracts, lists of suggested readings, and explanations of pharmacological experiments, physiological and biological assays, bacteriological principles and techniques, and recent advances in chemistry and physics. Robert L. Swain, "Educational Progress and Board of Pharmacy Members," Proceedings of the National Association of Boards of Pharmacy 25 (1928), pp. 53-54. Although Swain's plan was endorsed by the American Association of Colleges of Pharmacy and approved by the National Association of Boards of Pharmacy in 1929, the financial strain created by the Great Depression hamstrung the Association's new "Department of Education," which became quiescent after 1935. See Zada M. Cooper, "Report of the Committee on Relations of Boards and Colleges," Proceedings of the American Association of Colleges of Pharmacy 30 (1929), p. 102; Robert L. Swain, "Educational Progress and Board of Pharmacy Members (A Supplemental Discussion)," Proceedings of the National Association of Boards of Pharmacy 26 (1929), pp. 46-59; M[yron] N. Ford, "Report of Executive Committee," ibid., p. 122; and R[obert] L. Swain, "Report of the Department of Education," ibid. 32 (1935), p. 130. Also see Chapter V.

103 Charters, Lemon, and Monell, op. cit., p. 9. Also see "Professional Reading," pp. 97-99. A typical attitude on the importance of the periodical literature as a means of providing continuing education was voiced by Frederick B. Kilmer: "For the older school of pharmacists pharmaceutical literature was a substitute for the college classroom. For the present-day student it should form the basis of a lifelong postgraduate course." Fred[erick] B. Kilmer, "The Literature of Pharmacy," The Western Druggist 48:8 (August, 1926), p. 41. Immediately after the report was published, the National Association of Boards of Pharmacy, the American Association of Colleges of Pharmacy, and the American Phar-
maceutical Association took steps to initiate a survey on a broader scale, and the American Council on Education promised sponsorship provided sufficient financial support could be secured. With the onset of the Depression, however, support could not be obtained, and the project had to be dropped in 1932. See [Arthur L. Buzzell], "Editorial and Otherwise: A Survey of the Colleges," Bulletin of Pharmacy 42:1 (January, 1928), p. 989; and Glenn Sonnedecker, Kremers and Urdang's History of Pharmacy (3d ed., rev.; Philadelphia: J. B. Lippincott Company, 1963), p. 225. After reflection, the Committee on the Pharmaceutical Survey concluded some two decades later that the report "had a beneficial influence in some quarters, but unfortunately it received only limited recognition. It now seems clear that, had the spirit and recommendations of the report been more widely followed, the development of pharmaceutical education would have been speeded up." Committee on the Pharmaceutical Survey, "The Undergraduate Curriculum," in The General Report of the Pharmaceutical Survey, 1946-49, p. 99.

104 Frederick J. Wulling, "A Journal Hour at Colleges," The Druggists' Circular and Chemical Gazette 43:4 (April, 1899), p. 74. Also see Chapter II, n. 46.


CHAPTER V

UNIVERSITY-DIRECTED CONTINUING PHARMACEUTICAL EDUCATION, 1930-1939

With the collapse of the American economy following the stock market crash of October 29, 1929, the leadership in America's schools and colleges of pharmacy, with few exceptions, turned their attention to their own problems during the first half of the 1930s. Indeed, the development of continuing pharmaceutical education in the 1930s may be divided into two distinct phases: a six-year period of virtual inactivity followed by a sudden flurry of well-meaning if somewhat unimaginative "refresher" or "brush-up" courses for the practicing pharmacist. In contrast to the early quiescence of pharmaceutical educators, workers in general university extension divisions developed emergency extension programs which antedated the New Deal by at least two years.

University Extension and the Great Depression, 1930-1939

As a result of the Depression, a much larger proportion of American families than before found it impossible to send their children away from their home communities for higher education; moreover, even those high school graduates who could afford to continue their education usually were forced to supplement their incomes with whatever part-time employment they could find. Divisions of university extension rose to the occasion, however, developing off-campus classes for high school graduates who could not afford to go away to college, special correspon-
idence courses for the unemployed, and package libraries on limited topics such as refinancing mortgages. In an organizational sense, however, university extension had fallen on hard times, and between 1929 and 1933, the National University Extension Association was relatively inactive.

With the landslide victory of Franklin D. Roosevelt in 1932, university extension once again came into its own, much as it had during the administration of Theodore Roosevelt. The traditional negative policy regarding government's role in economic affairs was reversed in part: The government undertook to restore prices through loans and regulations and to control the credit structure, banking, and currency; the government also sought to stimulate employment, expand purchasing power, provide relief and social security, and improve living conditions; federal funds came to university campuses to stimulate extension activities. For example, the Public Work Administration of 1932 financed new off-campus and on-campus educational facilities, including residential adult education centers. In 1933, the Emergency Education Program provided a comprehensive plan for adult education, and the Civilian Conservation Corps promoted correspondence courses for boys in its camps. The year 1935 brought vocational rehabilitation classes under the Social Security Act, projects in workers' education, adult education, and citizenship education under the Works Progress Administration, projects for unemployed youths under the National Youth Administration, and even pilot training under the Civil Aeronautics Administration. Moreover, since 1917, the Smith-Hughes Act had provided federal aid not only for vocational education in agriculture and home economics, but also for voca-
tional education in the trades and industries. Subsequent federal legis­
lation during this period—the George-Reed Act of 1929, the George-
Ellzey Act of 1934, and the George-Deen Act of 1936—increased federal
appropriations and expanded the programs.\textsuperscript{5}

Under the stimulus of federal funding, it is not surprising that
university extension flourished during the 1930s. Adult education his­
torian Malcolm S. Knowles has discerned several trends in the general
university extension movement which began during this period. The size
of extension and correspondence course enrollments increased, both abso­
lutely and relatively; the scope of services for the education of adults
greatly broadened; there was a tendency toward the development of a
broader and uniquely adult curriculum; the administrative responsibility
for extension activities tended toward centralization; extension staffs
tended to grow in size and stature and began to differentiate into spe­
cialized teaching or administrative roles; universities spent increasing
amounts of money and an increasing proportion of their total budgets on
university extension operations; physical facilities for university
adult education tended to expand and become increasingly differentiated;
and university extension personnel began to develop a methodology geared
to the unique characteristics of adults as learners.\textsuperscript{6}

By 1934, the National University Extension Association had been
resuscitated. In his presidential address, Arthur M. Harding examined
the national image of the Association, outlining a number of ways in
which it might become more influential. Delegates discussed problems
relating to emergency relief in education, such as teaching in Civilian
Conservation Corps camps and in federal emergency relief centers. By
1936, educational programs for emergency relief agencies occupied nearly the complete attention of member institutions. At the annual conference, federal officials discussed participation of university extension personnel in their programs. The director of the educational division of the Works Progress Administration, Lewis R. Alderman, called for classes in literacy, general adult education, vocational education, workers' education, and parent education, and stressed the use of correspondence instruction. At the 1938 conference, there was a discussion of proposed federal legislation for education, the University of Texas's Thomas H. Shelby remarking, "I think the WPA Adult Education Program has done more to interest adults in advancing themselves and studying, than anything that has never happened." The Association also devoted an increasing amount of attention to education by radio, to the use of visual aids, and to the production of sound motion pictures. By 1939, officers of the American Association for Adult Education were participating in NUEA conferences and planning joint research projects and delegates were discussing the role of university extension in the new state programs of adult education.

The National University Extension Association had shown flexibility and adaptability in meeting the swiftly moving socioeconomic changes brought about by the Depression. In contrast, America's schools and colleges of pharmacy virtually ignored continuing pharmaceutical education until a practitioner-based professional renaissance jolted them out of their complacent inactivity.
Attitudes Toward Continuing Pharmaceutical Education, 1930-1934

The economic impact of the Depression was responsible for a large measure of the frustration and the feeling of impotence experienced by all segments of the American public. For the practicing pharmacist, the Depression brought business failures, aggressive price-cutting (and subsequent price controls through so-called "fair trade" legislation), and the meteoric rise of drug store chains. For American schools and colleges of pharmacy, the Depression brought the administrative problems of retaining qualified faculty members and attracting students for the longer and more rigorous baccalaureate programs in pharmacy and the academic problem of gearing up to the demands posed by a four-year curriculum in the face of decreasing enrollment.

Certainly, the oppressive atmosphere engendered by the Depression did not encourage the expansion of continuing education activities by schools and colleges of pharmacy; as a result, much of the momentum that had been built up during the preceding decade simply vanished. Thus, many college of pharmacy deans, while recognizing the importance of the pharmacist keeping up-to-date, often remarked that their responsibility in this regard consisted of imbuing their students with the desire to continue to learn; indeed, if there was any group which really needed continuing education, remarked St. John's University's Dean John L. Dan dreau, it was the faculty.

Similarly, when viewed from the perspective of student and alumni relations, America's schools and colleges of pharmacy remained remarkably quiescent during the first half of the 1930s. In 1930, for example,
C. Leonard O'Connell reported that the activities of students and alumni seemed to be at an ebb:

With but few exceptions there seems to be little disposition at most schools to do much beyond ordinary curricular activity. . . . Some of our Deans seem to feel that any support obtained from the alumni seems to entail more of effort than the results warrant, and believe that the pharmacist is so concerned with his own immediate problem that he has no tendency to be much concerned with his school after graduation. Perhaps it may appear to the alumni that many schools appear to be as indifferent to his problem as he seems to be indifferent to theirs.11

Thus, both the prevailing mood and conditions created by the Great Depression and an insular educational philosophy militated against the creation of formal programs of continuing education for the practicing pharmacist. That a "pharmacy extension department" could be created at Purdue University in 1930 and could prosper under these conditions, therefore, seemed highly unlikely.

The Pharmacy Extension Department of Purdue University, 1930-1943

Since its inception in 1884, the undergraduate program at Purdue University's School of Pharmacy had acquired an enviable reputation, particularly in the areas of prescription practice and commercial pharmacy.12 Although the University did not expand its extension activities beyond the areas of agriculture and engineering until the advent of World War II,13 the establishment of Purdue's Pharmacy Extension Department in 1930 stands as a milestone in the development of continuing pharmaceutical education and as a benchmark against which other American schools and colleges of pharmacy would measure their progress for nearly two decades.
Dean Charles B. Jordan revealed his plan for an extension service specifically aimed toward the practicing pharmacists of Indiana in an address before the annual convention of the Indiana Pharmaceutical Association, June 18, 1929. "Purdue University . . . is in close touch with the citizens of the state," Jordan began, "and the great purpose of the University is to give service to the citizens of the state." Reviewing the progress Purdue had made in the areas of agricultural and engineering extension, Jordan revealed that about five years prior he had conceived the idea that the University could do the same thing for pharmacy. He added that he had explored the matter thoroughly with leaders in business and education, noting that only a lack of space prevented him from inaugurating a department in 1927.\textsuperscript{14} Jordan went on to describe the nature of the extension service he envisioned:

The thought is this: We have some good man, well trained who knows his business, and then if any retailer cares for that man's services to help him find out where the leaks are, to discuss with him buying, selling or any other phase, the man would be available and all the retailer would have to do would be to pay his expenses while doing that.\textsuperscript{15}

The success of the venture, Jordan noted, depended upon securing the proper person to head the new department. "Obviously we could not go into the field and get a man who has been trained as we could not pay his salary. I was advised to take a young man in training." The young man Jordan selected was Joseph L. Weinland, a 1926 graduate of Purdue's School of Pharmacy and an assistant and instructor in the School during the 1926-27 term. Weinland had obtained practical experience as a partner in the Shultz-Weinland Drug Store in Brazil, Indiana, and formal business training at Northwestern University's School of Business Admin-
Weinland would join the Purdue staff in the fall of 1930 and would make his services available to any community pharmacist for the asking, Jordan explained, apparently anticipating some criticism of his plan from his audience, a rather independent and conservative group of storekeepers who traditionally held their business records sacrosanct:

It is nothing that Purdue Univesity is trying to force on anyone, it is a service and if the retail druggists want it they can have it, if they do not the young man will be used in teaching pharmacy . . . If his time is not all taken up along that line he will be doing work along business lines in research. I hope that you will agree with me that this is a feasible thing, it has never been tried before.17

Jordan's conception of the new department, however, also had the advantage of being similar to Purdue's agricultural and engineering extension services which were familiar to many Indiana pharmacists, and his plan was received enthusiastically by the pharmacists in attendance at the convention.18

The following month, a feature article in The Indiana Pharmacist expanded the concept. The article stated that there was "a rapidly increasing need for an organization, impartial in its interests and methods," to present to the community pharmacist, in a practical way, the findings of such agencies as the Druggists' Research Bureau, Harvard University's Graduate School of Business Administration, Indiana University's Bureau of Business Research, and "others who have made extensive surveys and analyses of retail drug conditions throughout the United States":

Much data has [sic] already been collected and more is yet to come, especially from the Indiana University Bureau; but in all cases, to gain any material benefit the individual druggist must spend hours of valuable time to dissect these facts
and apply them to his own business. Furthermore, all these surveys have had a national or sectional scope with very few individual applications.19

The article pointed out that the object of the new Extension Department would be to conduct

state-wide and individual surveys . . . to determine the underlying facts and figures in drug store operation. Then, with the accurate knowledge of these conditions and the experience of the men in this department, to go out over the state and work directly with the retailer to help him correct conditions which he feels is a detriment to his business.

In addition to individual analyses, the new Department would attempt to bring the retailer, wholesaler and manufacturer into closer co-operation; perfect accounting and stock control systems for the independent; keep the retailer in contact with current drug and market conditions; and make this department a practical "clearing house" for ideas to increase profits in the drug business.

All figures and facts will be gathered and kept in a very impartial and confidential manner, ever with the object of being of the greatest assistance to the individual. To do this they must have the co-operation of every druggist in the state, and the druggists should feel that they are having a great service rendered them, rather than considering it a favor to allow Purdue to survey their stores.20

In September, the Department issued a hard-hitting bulletin which outlined some of the managerial problems faced by the community pharmacist in his everyday practice. "Competition steps in and demands some of the profits; merchants become stagnant and try to sell the same old line in the same old way; the store loses money; departments do not pay. The druggist needs help and the Extension Department will furnish it."

The bulletin went on to describe the services the Department offered:

This service will extend even further than giving mere suggestions, as we will be able to send men to the store itself to put into operation such methods as are needed. . . . Problems such as products and sales analysis, merchandising and advertising problems, stimulation and supervision of the sales
force, and sales promotion can be adequately handled by this Extension Service. We will attempt to perfect stock control and accounting systems for the individual store, and put them into operation when desired. . . .

. . . Stores can be bought and sold, an analysis made of them to determine their worth, and the buyer and seller brought together. Clerks desiring positions can register here, and druggists needing additional pharmacists will be assisted.21

By the end of the year, The Indiana Pharmacist noted that national attention had been focused on the new Department.22

On April 8-9, 1931, the Extension Department sponsored the first annual Purdue Druggists' Business Conference "for the purpose of analyzing the general trend of business as it relates to Pharmacy, particularly the retail business," attracting more than 175 community pharmacists. Both Jordan and Weinland had a flair for conference planning based upon an intuitive grasp of adult education principles:

In planning this meeting, the University canvassed the druggists of the state with a questionnaire. The returns . . . indicated the general trend of thought among the druggists of the State. Professor Jordan made up a list of questions in form of a paper introducing what the retail druggists wanted discussed at this conference. Subjects from this paper were taken up and discussed freely by the druggists and representatives of the University and outside speakers. . . .

. . . The morning sessions were given to formal addresses and the afternoon periods were reserved for the druggists to take charge and conduct an open forum where timely subjects and pertinent problems were brought up and discussed by those in attendance.23

At the close of the Conference, Jordan announced that the Extension Department would loan educational window displays to pharmacists upon written request; moreover, the Department would mail another question-
naire to the participants of the Conference to ascertain the value of the meeting and the advisability of continuing the Conferences. In July, Weinland reported that most of his time had been spent in acquainting pharmacists with the new service; however, he had made some educational progress as well. "Many inquiries have been received, a good portion of them being for definite information covering problems in merchandising, advertising, financial statement analysis, marketing, etc. Approximately half have come from outside the state." Weinland added that he hoped to extend his work to include publishing an extension bulletin, arranging district meetings for pharmacists, and developing an accounting system especially for pharmacists.

The second annual Druggists' Business Conference was held February 24-25, 1932, and followed the same successful pattern as the 1931 meeting: speeches by nationally recognized experts in business and industry supplemented by discussions led by prominent Indiana pharmacists; indeed, nearly one-half of the Conference was devoted to these discussions, over which the pharmacists had complete control. The Purdue Druggists' Business Conference continued to be an important—even unique—part of the picture of continuing pharmaceutical education well into the 1940s. In 1934, Weinland resigned from the Purdue staff, returning to manage his pharmacy in Brazil, Indiana. He was succeeded by Henry W. Heine, a pharmacist who had served as instructor of commercial pharmacy in the School of Pharmacy since 1928. Heine not only continued the work that Weinland had initiated, but extended it considerably during the following eight years, adding his own distinctive touch. In addition to
expanding the window display and business analysis services Weinland had begun, Heine published a *Pharmacy Extension Bulletin* and visited Indiana pharmacies on request, offering suggestions and working up possible changes in the use of displays and show cards, arrangement of stock and fixtures, training of sales personnel, and other problems that confronted the community pharmacist. During 1935, Heine analyzed more than 100 profit-and-loss statements sent in by Indiana pharmacists, returning three to four pages of recommendations as well as a financial summary in each case. Heine also devised "The Apothecary Hour," a weekly series of radio broadcasts featuring the School of Pharmacy faculty designed "to impress the public with the important part that pharmacy plays" and organized a professional placement service.

Perhaps Heine's most unique contribution to continuing pharmaceutical education was his annual Conference for Drug Clerks, a five-day short course for registered and non-registered clerks inaugurated in the summer of 1940. Based upon returns from an elaborate questionnaire, the Conference considered the philosophy of clerk training, the psychological foundations of human behavior, the principles of economics and salesmanship and "other important phases of drug store operation that tend to make salespeople more valuable to themselves, to their employers and to the community in which they live," constituting "a well-balanced program of commercial, professional and cultural subjects with time out for participation in the recreational facilities of the University." The initiation of the Conference was "carried on under the belief that the University has not discharged its duty to students upon graduation, but is the perpetual servant of Indiana druggists," Jordan stated.
The executives of Purdue University fully realize their responsibility to the state and no longer is the University considered to be for high school graduates only. It is reaching out in a helpful manner to every form of activity in the State and every group that can be assisted by it is welcome to partake of the facilities offered by the University.\textsuperscript{32}

Although supported in part by funds provided by the George-Deen Act, the Conference for Drug Clerks did not survive beyond 1941, snuffed out by the exigencies of World War II.\textsuperscript{33}

By September, 1940, the Extension Department was operating on a twelve-month basis; within a few months, Heine expanded his operation to provide continuing education programs for the dentists of Indiana.\textsuperscript{34} By June, 1941, Heine could confidently predict that his Extension Department would "enlarge its scope of activity in an unprecedented fashion":

Due to an increase in the appropriation for extension work, this Department will inaugurate a well organized plan of distributive education and professional training for drug store owners, managers and clerks all over the state. The state will be divided into districts and extension workers will visit these districts at regular intervals during the training period. It will require about thirty-six weeks to cover the state.\textsuperscript{35}

Despite the increase in state and federal appropriations for the Pharmacy Extension Department at Purdue, Jordan's untimely death in 1941 and Heine's appointment to the War Production Board in Washington the following spring removed the strong administrative commitment to continuing pharmaceutical education at the School of Pharmacy as well as the services of a clever and resourceful director. As a result of these two sharp blows, the Pharmacy Extension Department at Purdue University slipped into a somnolent state from which it would not emerge until the early 1950s.\textsuperscript{36}
Other Continuing Pharmaceutical Education Programs, 1932-1939

Outside of the activities of Purdue University's Pharmacy Extension Department and the advice on business problems provided by the Drug-gists' Research Bureau, few opportunities for continuing pharmaceutical education existed in the United States prior to 1936. Beyond the annual Pharmaceutical Conferences sponsored by the University of Michigan College of Pharmacy in cooperation with the Detroit Branch of the American Pharmaceutical Association and a series of evening courses on cosmetics, materia medica, pharmacy, and pharmaceutical chemistry sponsored by the Wayne University College of Pharmacy, no other schools or colleges of pharmacy appear to have taken an interest in providing continuing education activities for the practicing pharmacist (see Table 1).

<table>
<thead>
<tr>
<th>Year</th>
<th>School or College of Pharmacy</th>
<th>Nature of Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1930</td>
<td>Purdue University</td>
<td>Extension service; annual two-day business conference</td>
</tr>
<tr>
<td>1932</td>
<td>University of Michigan</td>
<td>Annual one-day conference</td>
</tr>
<tr>
<td>1935</td>
<td>Wayne University</td>
<td>Evening courses</td>
</tr>
<tr>
<td>1936</td>
<td>Alabama Polytechnic Institute</td>
<td>Annual one- to three-day business conference</td>
</tr>
<tr>
<td></td>
<td>Howard College</td>
<td>Annual one-day conference; consultation bureau; college courses; evening courses; special lectures; bulletins</td>
</tr>
<tr>
<td></td>
<td>Massachusetts College of Pharmacy</td>
<td>Occasional symposia</td>
</tr>
<tr>
<td></td>
<td>Medical College of Virginia</td>
<td>Annual one-half- to two-day pharmaceutical symposia</td>
</tr>
<tr>
<td></td>
<td>Philadelphia College of Pharmacy</td>
<td>Annual one- to three-day pharmaceutical symposia; special courses and lectures</td>
</tr>
</tbody>
</table>

*Intermittent or irregular programs and services.
<table>
<thead>
<tr>
<th>Year</th>
<th>School or College of Pharmacy</th>
<th>Nature of Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1936</td>
<td>University of Florida</td>
<td>Annual three-day short course</td>
</tr>
<tr>
<td></td>
<td>University of Wisconsin</td>
<td>Annual pharmaceutical clinic</td>
</tr>
<tr>
<td>1937</td>
<td>Brooklyn College of Pharmacy</td>
<td>*Evening courses</td>
</tr>
<tr>
<td></td>
<td>Cincinnati College of Pharmacy</td>
<td>Evening courses</td>
</tr>
<tr>
<td></td>
<td>Creighton University</td>
<td>#Pharmaceutical clinic; traveling lectures</td>
</tr>
<tr>
<td></td>
<td>Kansas City College of Pharmacy</td>
<td>*Bimonthly lectures; prescription consultation service</td>
</tr>
<tr>
<td></td>
<td>North Pacific College of Oregon</td>
<td>*Bulletins; occasional lectures</td>
</tr>
<tr>
<td></td>
<td>Pittsburg College of Pharmacy</td>
<td>*Annual one-day conference</td>
</tr>
<tr>
<td></td>
<td>State University of Iowa</td>
<td>Annual two-day symposia; consultation service; bulletins</td>
</tr>
<tr>
<td></td>
<td>State University of Montana</td>
<td>*Radio broadcasts</td>
</tr>
<tr>
<td></td>
<td>University of Oklahoma</td>
<td>Annual three-day institute; evening courses</td>
</tr>
<tr>
<td></td>
<td>Wayne University</td>
<td>Annual five-day business conference</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Evening and extension courses</td>
</tr>
<tr>
<td>1938</td>
<td>Connecticut College of Pharmacy</td>
<td>*Weekly lecture series</td>
</tr>
<tr>
<td></td>
<td>Detroit Institute of Technology</td>
<td>*Special lectures</td>
</tr>
<tr>
<td></td>
<td>Howard University</td>
<td>*Monthly seminars; bulletins</td>
</tr>
<tr>
<td></td>
<td>Loyola University</td>
<td>*Display service; occasional lectures</td>
</tr>
<tr>
<td></td>
<td>Medical College of South Carolina</td>
<td>Consultation service</td>
</tr>
<tr>
<td></td>
<td>Ohio Northern University</td>
<td>*Two-day open house</td>
</tr>
<tr>
<td></td>
<td>Ohio State University</td>
<td>*Occasional lectures and radio broadcasts</td>
</tr>
<tr>
<td></td>
<td>Rhode Island College of Pharmacy</td>
<td>*Two-day open house</td>
</tr>
<tr>
<td></td>
<td>St. John's University</td>
<td>*Extension courses; one-day conference</td>
</tr>
<tr>
<td></td>
<td>South Dakota State College</td>
<td>*Four-day pharmacy conference</td>
</tr>
<tr>
<td></td>
<td>Temple University</td>
<td>*Weekly lecture series; special laboratory course</td>
</tr>
<tr>
<td></td>
<td>University of Buffalo</td>
<td>Annual two-day conference; monthly lectures</td>
</tr>
<tr>
<td></td>
<td>University of Mississippi</td>
<td>*Display service</td>
</tr>
<tr>
<td></td>
<td>University of South Carolina</td>
<td>*Product information</td>
</tr>
<tr>
<td>1939</td>
<td>Columbia University</td>
<td>Weekly lecture series</td>
</tr>
<tr>
<td></td>
<td>Rutgers University</td>
<td>Weekly lecture series</td>
</tr>
<tr>
<td></td>
<td>University of Maryland</td>
<td>Weekly lecture series</td>
</tr>
</tbody>
</table>

†Discontinued school or college of pharmacy.
The situation after 1935, however, stands in vivid contrast: At least thirty-five of the less than sixty accredited schools and colleges of pharmacy in the United States initiated some sort of continuing education activity between 1936 and 1940, although slightly over one-half of these activities were of an intermittent or irregular nature. What characterized the continuing pharmaceutical education programs of this period?

The most popular manifestation of continuing pharmaceutical education in the late 1930s was the "conference," variously styled as a "business conference," "pharmacy institute," "pharmaceutical clinic," or "pharmaceutical symposium." The conferences, which ranged from one to five days in length, consisted of a series of scientific or professional lectures, a succession of merchandising hints or business-oriented talks, or most commonly, an unsettling combination of the two. A smattering of evening or extension courses, weekly, monthly, or bimonthly lecture series, and special lectures rounded out the continuing pharmaceutical education opportunities available to the practicing pharmacist. In addition, a few schools and colleges of pharmacy offered such supplementary educational services as consultation on prescription problems, pharmaceutical product information, occasional bulletins and monographs, and window display loan services.

By far the largest number of these continuing education activities were co-sponsored by state or local pharmaceutical associations, as was the case with the programs of Wayne University, Alabama Polytechnic Institute, the University of Wisconsin, Creighton University, the University of Florida, and the University of Oklahoma. The latter two in-
stitions also had the advantage of the co-sponsorship of their respective university extension divisions. Other schools and colleges of pharmacy, such as those located at the University of Michigan, the University of Buffalo, and Rutgers University, received support from their local branches of the American Pharmaceutical Association. As the demand for continuing pharmaceutical education grew, other associations and institutions both within and outside of the profession of pharmacy began to sponsor their own continuing education activities for the practicing pharmacist, often using lecturers from a nearby school or college of pharmacy.42

One of the more interesting outgrowths of a continuing education program was the organization of the "Iowa Academy of Pharmacy" at the close of the first one-day "Prescription Symposium" sponsored by the State University of Iowa on March 25, 1938. The objectives of the new Academy were "to promote prescription and dispensing service to the public; to promote the ideals and ethics of professional pharmacy; to advance the standards and efficiency of pharmacy; [and] to improve public understanding and appreciation of pharmacy as a branch of public health service." In addition, the Academy awarded fellowships to those Iowa pharmacists who contributed to the programs of the Academy by providing an "eminent service in advancing professional pharmacy or furthering its public appreciation."43 The Iowa Academy of Pharmacy was one of several associations of professionally oriented pharmacists that were created in the late 1930s, but it appears to have been the only one whose creation was initially stimulated by a program of continuing pharmaceutical education.
The educational content chosen for the continuing pharmaceutical education conferences of the late 1930s was remarkably constant from institution to institution, as was the underlying educational philosophy of allowing the practicing pharmacist to "brush up" his knowledge of recent developments in the fields of pharmacy, chemistry, business administration, public health, and legislation affecting pharmacy. The continuing education programs of the University of Minnesota College of Pharmacy and the University of Oklahoma School of Pharmacy, however, deserve to be singled out for special mention.

The Pharmaceutical Institute of the University of Minnesota

The three-day "Pharmaceutical Institute" first sponsored by the University of Minnesota College of Pharmacy in 1937 was another link in a chain of continuing education activities dating back to 1894 and the pioneering efforts of the College's first dean, Frederick J. Wulling. Under the energetic leadership of Wulling, the College had provided a wide-ranging, if informal, selection of educational services for the practicing pharmacist and the lay public throughout the first three-and-one-half decades of the new century.44

In 1936, on the eve of his retirement, Wulling could point with pride to his accomplishments in continuing education,45 yet, characteristically, he remained unsatisfied. In his final report to the University's president, Lotus D. Coffman, Wulling stated that his College could be made "much more complete and ideal" by offering pharmaceutical clinics or seminar courses for pharmaceutical practitioners; . . . providing seminar laboratories where practitioners could work out problems as they arise.
in practice, under the instruction of respective faculty members; . . . establishing a theoretical seminar including library research; . . . restoring the service we at one time gave gratis, on a fee basis, to meet the demands of pharmacists, physicians, and the public for the analysis and assay of preparations of many kinds; . . . creating means for giving expert advice and aid for a fee to those who want to establish modernly equipped pharmaceutical laboratories, dispensing departments, etc., or who want to remodel their old laboratories, etc.; . . . [and] publishing reports of our research, and articles and papers by the faculty periodically in pamphlet or booklet form.

These and similar suggestions and recommendations I made before. On one occasion when I presented them to President Northrop, he said he was obliged to remind me that the University's interest is only pedagogical. That of course is no longer true; it has not been true for a long time.

If the College were expanded in accordance with these recommendations, it would only have caught up with what the present should afford.46

Wulling's successor, Charles H. Rogers, fulfilled at least one of Wulling's dreams by organizing and directing the first Pharmaceutical Institute, which was held at the University's new Center for Continuation Study on February 15-17, 1937.47 Taught by faculty members of the College of Pharmacy, the School of Medicine, and the School of Business Administration, the curriculum of the Institute included lectures, demonstrations, and motion pictures on a variety of scientific and professional topics intended "to supplement the regular college work and 'refresh' the minds of those in attendance upon the more advanced undergraduate work offered in the regular college course."48 Enrollment in the Institute was restricted to fifty registered pharmacists, a number of whom had no college training. "Although one might suppose that these individuals due to lack of basic training would be handicapped in their ability to understand the subject matter offered, they appeared to be
just as interested and receptive to the work as those with better fundamental qualifications," remarked program chairman Charles V. Netz.

"Those in attendance were enthusiastic in their praise and appreciation of the Institute as a whole and all expressed a desire for future repetition." The praise from practitioners who had attended the Institute was no less enthusiastic:

A remarkable thing about the course was the interest taken in every topic presented. Some of the lectures were a bit technical but because of their method of presentation, and the eagerness to learn on the part of the students, seemed to overcome every handicap of variation of basic training. No one visited in the halls during class period and over 96% of those enrolled were in attendance at all sessions. They seemed not to be content with that, but gathered in the halls during rest periods, and in the lounge and their rooms after sessions to discuss some interesting parts of the course.

The college faculty is to be congratulated on the success of the program. Courses like this will help the pharmacist so he will not find it necessary to fight with his back to the wall in order to hold his place in the professional end of pharmacy as he has done in merchandising.

Enrollments in subsequent Pharmaceutical Institutes continued to be rather small, yet Rogers stubbornly defended their continued existence. "The enthusiastic reception accorded these institutes by the pharmacists of Minnesota, together with the conviction that they will contribute materially to a better pharmaceutical service to the physicians and to the people of the state of Minnesota, indicate clearly that the University of Minnesota should continue to offer them annually," Rogers asserted in 1938. "It is my opinion that, as soon as practicable, the length of the course of study should be increased from three days to at least one week."
Although Rogers's opinion was never implemented, by the end of the decade the College of Pharmacy at the University of Minnesota had expanded its continuing pharmaceutical education activities to include not only the annual Pharmaceutical Institutes, but also a series of evening extension courses in retail store management and in vitamins and biological products. "That practitioners of pharmacy are interested more than ever in rendering up-to-date pharmaceutical service to their clients is evidenced by the fact that they took the initiative in requesting extension work," Rogers concluded.\textsuperscript{52}

The Drug Merchandising Short Course of the University of Oklahoma

In contrast, although the University of Oklahoma had displayed a deep concern for adult learning since its founding in 1892,\textsuperscript{53} the five-day "Drug Merchandising Short Course" first conducted by its School of Pharmacy on January 17-21, 1938 appears to have been a response to a series of events dating back only about five years. In 1934, for example, the Oklahoma University Pharmaceutical Association, an alumni organization, held the first in a long series of one-day conventions which consisted of "a schedule of one-hour programs" in the Association's scientific, practical pharmacy and dispensing, commercial interest, and historical pharmacy sections. By 1937, the School of Pharmacy was presenting a portion of the program at the annual conventions of the Oklahoma Pharmaceutical Association, and the Oklahoma City Chamber of Commerce was conducting a series of merchandising clinics "in a vigorous campaign to stimulate better merchandising methods, display, advertising and selling for retailers."\textsuperscript{54}
Apparently drawing heavily upon the experience of the Oklahoma City Chamber of Commerce and the precedent of Purdue University's Drug-gists' Business Conferences, Ralph A. Beegle, associate professor of commercial pharmacy at the School of Pharmacy, developed a continuing education program that he felt was "one of the most comprehensive of its kind ever held in the United States." The content of the first Short Course as outlined by Beegle, was completely commercial in nature:

Subjects for discussion . . . included special records for tax purposes, merchandising candy, a bookkeeping system for the retail drug stores, balance sheets, merchandising cosmetics, training sales people, problems of buying and selling, merchandising the front end of a drug store, merchandising rubber goods and sundries, productive advertising for the fountain, producing fountain products at increased sales, and merchandising the fountain.

The Short Course attracted over 400 pharmacists from Colorado, Illinois, Kansas, Missouri, Ohio, Oklahoma, and Texas who were unanimous in requesting that the Course "be made an annual affair" and who, according to their statements, went home with "note books full of ideas," with "the cobwebs swept out of their heads," and with "the determination to begin at once to put these newly acquired ideas to work." The Course also attracted comment from the national pharmacy press. Jerry McQuade, editor of Drug Topics, characterizing the program as "a step . . . that should be repeated in every centre in the United States," described Beegle's educational techniques in detail:

After each address, Professor Beegle held an open forum. For an hour or longer, questions were asked from the floor . . . Thus much valuable information was brought into the open. As each speaker discussed his subject, notes were made by retailers of important statements of facts, in note books provided for that purpose. Everybody took these notes. It was like going to school again. Nothing like this has ever been
done before in this country. It marks the beginning of a forward-going new era in American pharmacy. Oklahoma University blazed the trail and deserves great credit for its enterprise.

We salute Oklahoma for its fine job! If we expect to preserve our place in business under the heat and pressure of modern competition, clinics of this kind are indispensible and must be held annually to keep us abreast of changing conditions.57

Pharmacy Editor Robert L. Swain added that the increased number of adult education programs for the practicing pharmacist was "one of the most gratifying trends of our times," noting that

There is a real need for these brush-up courses. . . . Nothing short of an organized education program will fill the bill. Our colleges are to be congratulated on their enlightened attitude. They are doing their part in meeting the situation in a helpful, practical manner.

Pharmacists should cooperate in every way to make these brief educational programs as valuable as possible. The colleges need encouragement and help if the movement is to develop as it should.58

By the end of the year, the University of Oklahoma's Drug Merchandising Short Course had attracted such favorable comment that Beegle was invited to conduct a similar series of clinics for the Drug Travelers' Association of Texas and the West Texas Retail Drug Association.59

The gradual evolution of continuing pharmaceutical education activities at the University of Minnesota College of Pharmacy and their precipitous development at the University of Oklahoma School of Pharmacy provide a vivid contrast; however, most schools and colleges of pharmacy that offered continuing education programs during this period drew upon the stimulus-response experience at Oklahoma, creating a pattern that repeated itself with amazing rapidity after 1936. In January, 1939, less than eighteen months after he had pointed out the "inadequacy of
education to reach those who have left the halls of learning" and stated that "pharmacists find too-little means of keeping abreast of their profession," John N. McDonnell, editor of the American Professional Pharmacist, could observe:

"It is indeed gratifying to observe the increasingly greater number of lecture series and intensive short courses being presented throughout the nation by many of the Colleges and under the sponsorship of vocational and association groups and by state boards of Pharmacy. The endeavor to bring the technical knowledge of the practicing pharmacist up to the standard required by the demands of Professional Pharmacy today, is evidence of an awakening of spirit,—an indication that Pharmacy is striving at long last to return to its rightful respected position."

What factors could account for this sudden shift in attitude after 1935 with regard to continuing pharmaceutical education?

Certainly, pharmaceutical educators, association executives, and practicing pharmacists alike had followed closely the success of Purdue University's Pharmacy Extension Department and the Druggists' Research Bureau in the area of continuing business education and doubtless wished to see activities of this nature expanded. Secondly, a practitioner-based "back-to-pharmacy" movement created an intellectual atmosphere in which programs of continuing professional education could survive and even thrive. Thirdly, the pressure placed upon pharmaceutical educators by professional associations, journal editors, and practitioners to provide both types of continuing pharmaceutical education mounted to a point where any response on the part of America's schools and colleges of pharmacy, no matter how makeshift, became inevitable. Finally, a framework of social legislation, typified by the George-Deen Act of 1936, provided federal sources of funds to support programs of continuing
distributive education. All of these factors are so interrelated that any proposed causal relationship among them becomes artificial and meaningless; yet each factor is important enough in its own right to merit separate consideration.

The "Back-to-Pharmacy" Movement, 1934-1940

After the turn of the century, America's practitioners of pharmacy became increasingly segmented under the growing influences of their professional specialization and subsequent differentiation of functions, as well as their divergent educational backgrounds and socioeconomic circumstances. In 1914, Henry V. Arny, Dean of the New York College of Pharmacy, proposed the creation of a so-called "American Institute of Prescriptionists." The following year, a special study committee of the American Pharmaceutical Association, headed by Henry P. Hynson, suggested that a more logical way to upgrade pharmacy would be to "make pharmaceutical trading more scientific, more ethical, more aesthetic," rather than divorce the commercial side of pharmacy from its professional side, an alternative which Arny accepted at the time.

By the early 1930s, however, a feeling gradually began growing within the profession that a clear need did exist for associations of pharmacists whose primary activity was compounding and dispensing prescriptions or other health-related professional work. Pharmacy historian Ernst W. Stieb calls attention to the Philadelphia-based "Guild of Pharmacists" organized early in the decade by Ambrose Hunsberger, a prominent Philadelphia pharmacist. With a membership open only by invitation, the Guild entered into an ambitious program of public and
professions in the year 1880. He provided support and encouragement to the newly founded independent professional journal, the *American Professional Pharmacist*, and eventually became the nucleus of the Philadelphia Chapter of the American College of Apothecaries. Later in the decade there emerged such local groups as the New York "Association for the Advancement of Professional Pharmacy," the Indiana-Illinois-based "American College of Pharmacists," the "Oklahoma Association of Graduate Pharmacists," the "Buffalo Academy of Pharmacy," the "Apothecary Society of New Jersey," and the "Iowa Academy of Pharmacy." On the national scene, E. Fullerton Cook, Chairman of the Committee of Revision of the United States Pharmacopoeia, obtained permission from the Council of the American Pharmaceutical Association in 1934 to develop a plan for a "National Council on Pharmaceutical Practice," which he presented in detail at the May, 1934 meeting of the Association. Cook envisioned a voluntary organization within the national Association which would establish certain minimum standards for pharmacies and the means for their periodic reinspection. By 1939, however, the special committee which had been established to foster the development of the Council found that its function had been supplanted by other committees and conferences, notably the "Conference of Professional Pharmacists," which first met during the 1939 meeting of the national Association at the call of Purdue University's Dean Charles B. Jordan. Prompted by the enthusiasm engendered among those who participated in the Conference, Jordan appointed a committee to study the possibility of forming a permanent organization of professional pharmacists and report back to the next gathering of the Conference in Richmond on May 9,
1940. After "lengthy debate, which at times grew bitter," the delegates to the Conference founded the American College of Apothecaries, a small but doughty band of owners of predominantly prescription pharmacies.

What combination of factors in the late 1930s brought to fruition such professionally oriented organizations as the American College of Apothecaries? Stieb suggests that the "negative influence" of the Volstead Act that prompted "a tremendous increase in the number of soda fountains and turned some pharmacies into little better than thinly disguised gin mills" during the flamboyant 1920s must be considered as a motivating factor, as well as the move toward mass merchandising and price-cutting. Charles V. Selby, the American College of Apothecaries' first secretary-treasurer, has implied that the pharmacists who survived the Depression rededicated themselves to professional pharmacy, stimulated by the creation of the Federal Emergency Relief Administration in 1932. Moreover, to foster lower prices, individual pharmacists and state associations began vigorously promoting to physicians the preparations of the United States Pharmacopoeia and the National Formulary, rather than their proprietary counterparts, under the pretext of "professional relations." In any event, the professional renaissance of the late 1930s appears to have provided a strong motivating influence for the sudden emergence of continuing pharmaceutical education programs in America's schools and colleges of pharmacy after 1935.

Attitudes Toward Continuing Pharmaceutical Education, 1935-1939

As is often the case, the impetus to provide continuing pharmaceutical education to the practicing pharmacist came from a handful of
individuals, many of whom, significantly, were not only outside of pharmaceutical education but also outside of the profession of pharmacy itself. In 1934, for example, Huntington Williams, a physician and Commissioner of Health for the City of Baltimore, speaking before a district meeting of college faculty and board of pharmacy members, presented an implied challenge to the pharmaceutical educators in his audience by quoting from the introduction to the 1927 classic, *Basic Material for a Pharmaceutical Curriculum*:

"Pharmacists are . . . more strategically situated than any other group of individuals to give personal advice upon matters of health on which they are informed. . . . A well-informed pharmacist is the best single individual to disseminate information about public health."

Certainly if this be true a tremendous responsibility rests upon those persons who are charged with the training and licensure of future pharmacists and the post-graduate instruction, such as there may be, of those now in the field. 71

Four years later, James E. Cutler, Dean of the School of Applied Social Sciences at Western Reserve University, threw down the gauntlet to educators in professional colleges in a terse article titled "Professional Education":

It is a fair presumption that an obligation rests upon the professional school to afford an opportunity for the experienced practitioner to keep up to date in his practice. The programs often arranged for this purpose by professional organizations, even the consistently planned programs of the Academies of Medicine, presumably need to be supplemented in any rapidly advancing field by systematized effort on the part of the schools. An equivalent of what has been done for teachers-in-service is perhaps highly desirable for other professional groups. Haphazard efforts to supplement the initial preparation of the practitioner would no doubt be more effective, and in the end more constructive and helpful, if made in the light of a wider perspective. 72
Other pleas for continuing pharmaceutical education came from local and state pharmaceutical associations. As early as 1931, for example, the Committee on Pharmaceutical Education and Standards of the New Jersey Pharmaceutical Association observed that "Post-Graduate education, whether self-administered or acquired through the influence of teachers, is a part of the obligation which the members of a profession must assume. Pharmacy should be no exception to this requirement." By resolution, the Association instructed the Committee "to make a study of possible methods of keeping pharmacists of New Jersey abreast of the advances in the sciences underlying the practice of pharmacy." In 1933, Leahmar M. Kantner, in his address as president of the Maryland Pharmaceutical Association, added:

If scientific and professional demands have piled up so as to require a four-year period of study for graduation, it would seem reasonable to suppose that some thought would be given to providing an opportunity for pharmacists themselves to brush up a bit. It seems to me pharmaceutical education has not met this phase of its obligation as it should be met.

Finally, in a report to the 1935 meeting of the Virginia Pharmaceutical Association, the Committee on the School of Pharmacy at the Medical College of Virginia favored "establishing a pharmacy clinic, to be conducted by the school . . . to acquaint those of us who have been for some time out of school with the recent developments in the pharmaceutical field."

National attention was focused upon the need for continuing pharmaceutical education by Robert P. Fischelis in his address as president of the American Pharmaceutical Association in 1935. Apparently realizing that this need was not being met by the nation's schools and colleges
of pharmacy, Fischelis proposed that the Association "assume some responsibility for the continuance of the education of those who are actively engaged in the practice of pharmacy. This can be done by planning for extension courses in cooperation with schools of pharmacy and schools of medicine. A start in this direction should be made even if the response, at first, is not too gratifying." Not content with merely espousing the cause of continuing pharmaceutical education, Fischelis followed up his proposal with a formal recommendation:

It is recommended that the committee on study of pharmacy be instructed to explore the possibilities of extension courses for practicing pharmacists to the end that formal lectures and demonstrations in connection with newer materia medica may be arranged at suitable points and that such instruction be confined to fundamental scientific progress in the field rather than to commercial preparations.

During the next three years, Fischelis's recommendation bore fruit in the form of a series of brilliant committee reports which crystallized the state of the art in continuing pharmaceutical education in schools and colleges of pharmacy across the country. Although the American Pharmaceutical Association never achieved Fischelis's ultimate goal of actually coordinating and conducting continuing education experiences for pharmacists on a nationwide basis (beyond the spate of programs organized through its local branches), the committee reports provided a national forum from which the need for continuing pharmaceutical education could be stressed.

Another indefatigable crusader for continuing pharmaceutical education in the late 1930s was Robert L. Swain, pharmacy editor of Drug Topics, a widely read and respected independent pharmacy tabloid. As early as 1928, Swain already had achieved national prominence in phar-
macy circles as a staunch supporter of continuing education for state board of pharmacy members. After gaining valuable experience as director of the National Association of Boards of Pharmacy's ill-fated "Department of Education," Swain continued his campaign for continuing pharmaceutical education in a series of hard-hitting editorial features in his column, "Your Pharmacy and Mine."

"Pharmacy occupies an important place in the social scene," Swain wrote in 1934. "It is absolutely necessary for the pharmacist to be informed regarding the many products he is called upon to prepare and supply." Warming to his subject, he continued:

A pharmacist who really seeks a professional practice must keep abreast of the times. The sciences upon which pharmacy rests are expanding rapidly. New vistas of knowledge are opening up. New conceptions are being worked out, and new conclusions adopted. Unless some real effort is made to march with the procession one soon becomes out of date, out of step, and stale. . . .

The professional pharmacist must of necessity be an educated pharmacist. He must be able to meet the members of the public health professions on their level and converse with them in their own tongue. He must be familiar with modern scientific points of view. He must move in line with prevailing educational trends. . . .

There's more to professional pharmacy than turning out pharmacists professionally trained. Their training must be continuous. Pharmacy demands that vitality which comes from knowledge continually and persistently replenished and refreshed.

In 1936, Swain again examined the question of continuing pharmaceutical education, focusing upon pharmaceutical education's seeming reluctance to meet its obligation to the nation's practicing pharmacists. Using Bradford Junior College's new "Alumnae College" as a springboard, Swain stated: "If there is any one profession that should take its cue from
Bradford College it is the profession of pharmacy. In no field are greater changes taking place. In no field are there fewer opportunities for keeping up-to-date. Swain went on to chastise the leadership in pharmaceutical education for not providing such opportunities:

Obviously, some means should be provided for keeping practicing pharmacists up-to-date. Some workable procedure should be devised. This is one duty which squats squarely in the lap of pharmaceutical education. With a few notable exceptions, pharmaceutical educators have shown but scant interest in the subject. Pharmacy does not appear to possess those particular qualities which make Bradford College so mentally and intellectually alert. . . . The torch of knowledge is burning with a new brilliancy, but, of course, one must open his eyes to appreciate just how bright its glow has become.

I have discussed the advisability of "brush up courses" with several pharmacy deans. As a rule they express the opinion that pharmacists are not interested. The mere fact that pharmacists are not interested is reason enough why the deans should be. Leadership seems to be lacking. Wouldn't it be better to throw the doors wide open before deciding that none will come in?

The following year, Swain admitted that the "back-to-pharmacy" movement had by no means captured the imagination of the majority of America's practicing pharmacists. "Pharmacists . . . are vastly more expert in forgetting the classroom than they are in giving it a chance to make them make good," he fumed, charging that pharmacists "spend 90 per cent of their time trying to do things they have never been trained to do, and give only the remaining mite to the things they really know about. . . . Even the colleges of pharmacy are helpless in the face of disinterested inertia." Swain went on to quote from the 1937 report of the Committee on Education of the Pennsylvania Pharmaceutical Association:
"Unless a greater number of the practicing pharmacists recently graduated show a deeper interest in the business of continuing their intellectual progress by keeping abreast of the time and by acquainting themselves with scientific advancement in the field, much of the value of their college training will be lost." . . .

The report makes it clear that pharmacy has not been on its toes, and that "in too many cases zeal for learning, if any, ceased for the majority at graduation." Colleges of pharmacy are called to task for not inculcating in the students "an honest desire to continue their mental development" and for not providing "some means whereby interested practitioners of pharmacy can keep their knowledge of the field of pharmacy alive and growing." 84

As late as 1938, physician-pharmacist Frank B. Kirby also called upon state and local pharmaceutical associations to assume the obligation for continuing the education of America's practicing pharmacists, an obligation which the nation's schools and colleges of pharmacy had yet to meet in a satisfactory manner. Kirby wrote that he had observed "a healthy recognition by pharmacists as a group of a great opportunity to get (or keep) in line with the progress in science and the rapid advances of Pharmacy," and carefully built his argument:

Our personal need is measured in part by the tremendous advances in materia medica evidenced since we left college. To properly serve the dental and veterinary professions and the medical group intelligently, we need a large fund of knowledge. That which we once learned is not enough. And the physician has come to depend upon the pharmacist for the advance knowledge of new medicaments, therapeutic agents, new techniques in treatment and a comparative analysis of varied types of the same material.

... an increasing number of pharmaceutical groups are sensing this need for a bit of post-graduate study even if gained only by listening to a limited list of speakers discussing selected topics of modern pharmacy and medical science. 85

Kirby then reviewed the progress in continuing pharmaceutical education that had been achieved by the schools and colleges of pharmacy in Florida,
Iowa, Michigan, Minnesota, New York, Oklahoma, South Dakota, and Wisconsin, but concluded that these efforts were not enough:

While most of these conferences, symposiums, short courses or extension courses originated in our colleges of pharmacy, such a sponsorship, while presenting many advantages, is not absolutely necessary. . . .

Association secretaries and program chairmen . . . will do well to consider the service rendered to interested practicing pharmacists by just such post-graduate instruction as has been presented in these cited instances. . . . Pharmacy will benefit materially, if the colleges also assumed their duty of carrying on the pharmacist's education past the day of graduation, and the associations considered other than commercial programs.86

Certainly, the clamor for continuing pharmaceutical education programs by professional association executives, journal editors, and practitioners both within and outside of the profession of pharmacy must be seen as a strong motivating factor for pharmaceutical educators to provide such educational experiences.

The George-Deen Act of 1936 and Continuing Pharmaceutical Education

Since 1917, programs of vocational and technical education have been developed on the basis of federal grants-in-aid to the states to encourage and support vocational training, although state laws providing vocational education at public expense date to 1906.87 The original federal legislation, the Smith-Hughes Act, signed into law by President Woodrow Wilson in 1917, specified agriculture, home economics, and trades and industries as the occupational categories for which state and local training costs and other expenses would be eligible for partial reimbursements by federal funds. Subsequent enactments continued this pattern by designating other occupational categories in which training
could be supported by federal funds. The George-Deen Act of 1936 added the distributive occupations, which included pharmacy.

The George-Deen Act met a need in distributive education that had existed for at least two decades. Nathanael H. Engle, Assistant Director of the Bureau of Foreign and Domestic Commerce of the U.S. Department of Commerce, speaking before the 1935 convention of the American Vocational Association in Chicago, felt that serious consideration should be given to a national program of vocational education:

While I believe that a few of the larger and financially stronger distributive establishments may profitably set up their own training programs, I am convinced that such efforts, laudable as they are, can never solve the major problem of training for all of the distributive occupations.

Speaking specifically to the problem of training drug clerks, Columbia University Professor of Marketing Paul H. Nystrom added that the demand for such a training program must come from pharmacists at the local level. "Their first point of contact should be their local boards of education," Nystrom stated. "If these boards lack funds to start such programs—as they probably will—the state boards of education should be approached. In addition, however, support will have to be given to federal legislation which will be essential if the program is to be put over on a nation-wide basis." The reactions among pharmacists at the local level to Nystrom's initial suggestions were predictably cool; as the possibility that federal funds might be used to support distributive education became less remote, however, the concept became more attractive.

Briefly, the provisions of the George-Deen Act, which was signed into law by President Franklin D. Roosevelt on June 8, 1936, authorized
an annual appropriation of $1,200,000 to be allotted to the several states and territories on the basis of their populations for a period of ten years beginning July 1, 1937; the states and territories were required to match fifty per cent of their appropriations with state or local funds until June 30, 1942, and an additional ten per cent each year thereafter until June 30, 1946, at which time the states and territories would be required to match federal appropriations at the 100 per cent level. The funds were to be used for salaries, travel expenses, and maintenance training of teachers, supervisors, and directors of distributive occupational subjects; an additional annual appropriation of $1,000,000 was set aside for preparing teachers, supervisors, and directors of agricultural, trade, industrial, and home economics subjects. Vocational education classes for the distributive trades would be sponsored by state and local boards of education upon the request of local citizens. The program was administered by the U.S. Office of Education, which also had supervised the Smith-Hughes and George-Ellzey Acts.93

Within a few months, every state but Maine, New Mexico, Vermont, and Washington had applied for the federal funds, but political intrigue over a proposed increase in appropriation delayed the actual allocation of the funds until July 1, 1938.94 Among the first agencies to apply for federal funding under the George-Deen Act was the New York City Board of Education, which planned to operate ten retail establishments, including a pharmacy, for the purpose of training clerks and retailers in management and salesmanship.95 The plan was an outgrowth of a "sales laboratory" conducted by students enrolled in the Central Commercial High School in New York City.96 Another venture, a nine-week evening course
under the joint sponsorship of the Salt Lake City Associated Druggists and the Salt Lake City Board of Education, had been in operation since January, 1937, attracting federal funding by the end of 1938. Outside of these two activities, however, few pharmaceutical associations expressed interest in the concept of continuing distributive education prior to 1939. That year, at least four distributive education classes were established under the provisions of the George-Deen Act in Kansas, Missouri, New Jersey, and Oklahoma, in cooperation with a state or local pharmaceutical association.

The George-Deen Act of 1936 and the "Wisconsin Plan"

Perhaps the most imaginative and far-reaching distributive education program for practicing pharmacists administered under the provisions of the George-Deen Act was the "Wisconsin Plan for Instruction to Pharmacists under the Vocational Education System." Developed in 1937 by Sylvester H. Dretzka, Secretary of the Wisconsin State Board of Pharmacy, under the direction of the Wisconsin State Board of Vocational and Adult Education with the cooperation of the Wisconsin Pharmaceutical Association, the so-called "Wisconsin Plan" became the model upon which many subsequent state programs were based after 1938.

The Wisconsin Plan had its roots in an address by John E. Tepoorten, Coordinator of Vocational Education for the Wisconsin State Board of Vocational and Adult Education. Speaking before the June, 1937, convention of the Wisconsin Pharmaceutical Association, Tepoorten proposed that his agency establish a series of biweekly evening classes for practicing pharmacists. The classes, Tepoorten suggested, could be conducted
by a "circuit instructor" in vocational schools across the state.  
Tepoorten noted that approximately $5,000 had been set aside to support the program on an experimental basis, adding that the concept would be extended to other vocations if successful. The Association and the Wisconsin State Board of Pharmacy quickly endorsed the plan: By August, Edwin J. Boberg, a pharmacist and member of the State Board of Pharmacy, had been selected as circuit instructor and was busy conducting a survey to determine the best locations for the classes; by September, classes had been established in eight Wisconsin cities.

Boberg emphasized that the evening classes were neither a "cram course" nor a "preparatory school for credits in pharmaceutical studies," but rather a "supplementary education service for those who are already engaged in the practice of pharmacy."

In substance, the plan is to provide the average retail pharmacist with a program of continuation-study so that he may be enabled in measure to keep abreast of advances in his profession. The prime objects of the movement are to increase the efficiency and widen the outlook of the pharmacist, and to raise the standards of the profession to a higher plane.

In order to attract a sufficient number of those who stand most in need of such a service, some attention will be given to the commercial aspects of pharmacy. The major emphasis, however, will be on professional pharmacy. It is our aim to develop in the retail pharmacist a sense of his responsibility in society and a feeling of pride in his profession.

The unique experiment drew praise from Arthur H. Uhl, Director of the Course in Pharmacy at the University of Wisconsin:

It has always occurred to me that pharmacy has been lax in offering pharmacists anything in the way of an education program after they had completed their training and were registered. In a changing profession as pharmacy is, it seems next to impossible to keep abreast with current happenings.
With this in mind it seems that through a program like the one you have outlined, much can be done to bring to the pharmacist valuable information and do for him a real service.¹⁰⁴

A feature story in the Wisconsin Druggist underlined the experimental nature of the classes and noted that "future possibilities ... appear to be unlimited," predicting that "other pharmacists throughout the whole United States will look on with interest." By January, 1938, the editor of the journal was able to report that the "idea which originated in Wisconsin is now being used in New York state and being closely watched by a number of other states."¹⁰⁵ In March, Boberg expanded his service to include the district meetings of the Wisconsin Pharmaceutical Association that were beyond the reach of his eight-city circuit.¹⁰⁶

By September, the Wisconsin Plan had attracted federal funding via the George-Deen Act and achieved national recognition. Much of the attention naturally was focused upon Boberg, who modestly credited Dretzka with spearheading the proposal three years earlier.¹⁰⁷ Dretzka explained that the rationale behind his original suggestion was based upon his realization that many pharmacists in Wisconsin had received a "practical rather than a theoretical training":

The educational gap between the recent graduates and the men who did not have the advantages of our modern education is too great.

... The developments in the pharmaceutical field are so rapid that to stand still—even for a year—means to slip back professionally. The thought was to keep pharmacists moving forward apace with these developments.

... the "up-to-the-minute" pharmacist wishes to put himself "up front" in pharmaceutical knowledge. Not to be informed along the lines of the latest developments is a mistake, because physicians are now asking the pharmacist for first hand professional information.¹⁰⁸
Tepoorten added that the most encouraging aspect of the Wisconsin Plan was the keen interest in the classes displayed by the pharmacists:

No one would have dreamed a year ago that you could have groups meet between the hours of ten and twelve p.m. and have anyone present. Still, that is exactly the time when these groups have their most successful attendance. . . .

It is hoped that conditions in the retail drug business will be improved considerably by helping the pharmacist to become a better business and professional man. In fact, the only aim of a course of this kind can be to increase the efficiency of the retail pharmacist so that he can better serve the public.\textsuperscript{109}

Robert L. Swain, by that time editor of Drug Topics, stressed in his editorial column that in inaugurating and administering the Wisconsin Plan, the Wisconsin State Board of Pharmacy had gone far beyond its statutory duties of passing upon the competency of those seeking to enter the practice of pharmacy and administering the provisions of the state pharmacy laws.\textsuperscript{110} Moreover, the educational philosophy underlying the Wisconsin Plan, as articulated by Boberg in 1939, relied less on professional self-aggrandizement and more on the basic principles of adult education than did any of the contemporary programs of continuing pharmaceutical education in the late 1930s. Boberg's "guiding principles" were stated simply:

(1) The theory that education is a life-long process.

(2) That consequently the furnishing of educational opportunities to all the people, regardless of age, class, or condition is as much a matter of public concern as the education of children.

(3) That all education is self-education, but that a publicly supported program of education is needed to provide equal opportunities for all, young and old alike.

(4) The problems of the "out-of-school" differ so greatly from those of the "in school" group, that a separate administrative agency is desirable to deal with adult education.
"Many of these principles are becoming generally accepted, but it is not always a simple matter to break with tradition and introduce changes over night," Boberg added. "These theories of education often represent aspirations, faiths, and wishful thinking rather than working programs."

The significant thing about Wisconsin, however, is that our educational leaders have taken off their coats, rolled up their sleeves, and actually made a beginning toward putting these principles into practice. . . .

The progress made to date . . . encourages them to believe that they are groping their way toward a gleam of light that perhaps marks the dawn of a brighter, better day in the education of the future.111

Surprisingly, the funds available under the George-Deen Act did not create much of a stir within the academic community of pharmacy, presumably because professional education and subjects of college grade acceptable toward an undergraduate or graduate degree were specifically excluded from the provisions of the Act. A wait-and-see attitude was exemplified by Rufus A. Lyman in an editorial in the American Journal of Pharmaceutical Education:

. . . It is most fitting that this type of education should be sponsored and carried out by the boards of pharmacy in cooperation with state and local groups in the respective states. The faculties of the schools of pharmacy stand ready to give assistance in any way where those in charge of vocational work feel they can render assistance.112

Why America's schools and colleges of pharmacy never took full advantage of the provisions of the George-Deen Act with regard to continuing distributive education, however, remains somewhat of a mystery. The traditional penchant among pharmaceutical educators to consign the commercial and economic aspects of the profession to a minor role in
probably centers about the fact that few schools and colleges of phar-
macy in the nation possessed enough qualified instructors to mount the
effective program in distributive education that the George-Deen Act
specified. As late as 1945, Joseph H. Goodness of the Massachusetts
College of Pharmacy faculty could characterize the teaching in pharmacy
administration courses as "the poorest and most degraded instruction,
usually from teachers whose interest lies elsewhere or who are but one
step advanced above student status." Goodness added that

In no school or college is there a professor of pharmaceuti-
cal economics or a person with equivalent title. In very
c few schools will you find a department or a segregation of
business courses, instead business courses are relegated to
part time activity of some science instructors, and frequent-
ly with the onus of "dirty work" that beginners have to do
until it can be transferred to the next new man. In short,
the business course falls to the level of the untrained in-
structor rather than acquiring the rightful dignity of a
college grade course.\textsuperscript{114}

Nevertheless, the unwillingness (or inability) of America's phar-
maceutical educators to assist in the development of continuing dis-
tributive education programs for the nation's practitioners of pharmacy
during the late 1930s remains a serious indictment of pharmaceutical
education and marks another stage in the long, often bitter, debate be-
tween the practicing pharmacist and the academic community over the pri-
macy of business or professional motives in the delivery of pharmaceuti-
tical services to the general public. How did America's pharmaceutical
educators react to these criticisms?
Reactions Among Pharmaceutical Educators, 1935-1939

The success of the "back-to-pharmacy" movement in crystallizing a professional spirit among a significant segment of practicing pharmacists, the clamor for continuing education programs by opinion leaders within the profession, and the availability of federal funds to support certain programs of continuing pharmaceutical education had set the stage. What remained, then, was for pharmaceutical educators to fit these pieces together into a comprehensive program of continuing professional and business education for the nation's practicing pharmacists. How did America's pharmaceutical educators meet this challenge?

Certainly, the meteoric increase in the number of continuing education conferences, short courses, traveling lecture series, and consultation services sponsored by the nation's schools and colleges of pharmacy after 1935 offers one gauge of the effectiveness of the above factors in securing programs of continuing pharmaceutical education, although many of these programs were ill-conceived and short-lived. Placed on the defensive, pharmaceutical educators often appeared arrogant and condescending when writing of their motives behind sponsoring continuing education programs. In 1937, for example, Notre Dame's Lawrence H. Baldinger stated:

While a professional interest in pharmacy on the part of the druggist is to [be] preferred as a result of these contacts, it is often necessary to resort to inducements of a social or commercial nature as wedges for the introduction of professional viewpoints.

... No matter how much we should like to discard all vestiges of commercialism in the profession today and to place our graduates in strictly professional stores we must admit that the average drug stores are absorbing a large pro-
portion of our graduates and are furnishing incoming fresh-
men to replace the graduates. . . . For the good of all con-
cerned, the educator must get down to the level of the aver-
age druggist, see and investigate his problems, and then in-
telligently formulate plans to lead him, not drive him, to
true professionalism.115

Baldinger also felt that an "open house" might serve to justify the sci-
entifically oriented four-year pharmacy curriculum to the practicing
pharmacist. "The average druggist has a very hazy idea of the nature of
these changes and, as long as he is not seriously inconvenienced by
them, is perfectly agreeable to added courses or new requirements," he
noted, adding:

Should these academic changes . . . infringe upon his own
personal comfort by requiring more time and energy from his
clerks, . . . he will very quickly develop an unfriendly
attitude . . . toward the schools . . . . It would be an
important step if we could instill into or impress upon our
druggists a true appreciation of those factors which aid in
the development of a professional point of view. . . . It is
the duty of the schools, therefore, to contact these drug-
gists in some manner to acquaint them with changing academic
standards and to ask for cooperation and patience in complet-
ing the training of the young men in their employ.116

A second, and perhaps more reliable, indicator of the changing
mental attitude of America's pharmaceutical educators toward continuing
pharmaceutical education during the late 1930s is reflected by the in-
creased activity of the American Association of Colleges of Pharmacy
Committee on Activities of Students and Alumni, which had lain dormant
during the first half of the decade. The first hint of renewed vigor
occurred in 1936 when the Committee, through Chairman Edward J. Ireland,
recommended that the colleges "make a study of the various short courses
which are being successfully offered by several of the colleges in order
to arouse both the interest of the alumni and other pharmacists in the
professional progress which has been made in pharmacy." The following year, Chairman Adolph Ziefle reported on the results of a questionnaire dealing with alumni activities which he had sent to fifty-three "member colleges" and fourteen institutions which were not affiliated with the Association. Of the fifty-four institutions which responded to the questionnaire, Ziefle found that only six colleges conducted "continuation courses" although twelve institutions held an annual "drug-gists' conference." In contrast, one-half of the colleges reporting presented radio programs for the general public, sixty per cent prepared pharmacy exhibits, drug shows, or science nights, and seventy-four per cent held some special functions to observe National Pharmacy Week. Ziefle's Committee, however, merely recommended that the dean of each member college "organize at least one new worthy undergraduate and alumni activity during the coming school year."118

By the end of the decade, the Committee began to feel that it had accomplished its objectives, at least with regard to the promotion of student activities, and suggested that its scope ought to be limited to the fostering of alumni relations. The 1939 Committee, through Chairman Ralph E. Terry, formalized this feeling in a series of four recommendations. A "Committee on Activities for Alumni" should be formed, the Committee suggested, "as a central clearing house for such material as concerns alumni activities other than purely social functions." To accomplish this the chairman of the new committee would receive an annual budget of twenty-five dollars and would be "charged with such programs and other printed or mimeographed material and outlines of the various alumni meetings as they are held" and would "prepare a com-
posite report of these meetings, making them available to member colleges of the Association, along with suggestions and comments to those desiring such service.\textsuperscript{121} The powerful Committee on Resolutions, however, while approving the first two recommendations, rejected the budgeted reporting mechanism as "cumbersome and burdensome."\textsuperscript{122}

Because they had only a hazy understanding of what constituted true continuing education activity, neither the Committee on Professional Relations nor the Committee on Activities of Students and Alumni could deal effectively with the problem, which, admittedly, was beyond their scope, by definition. Thus the Association's implied responsibility to promote and coordinate programs of continuing pharmaceutical education among its member schools and colleges remained unmet and would continued to be unresolved throughout the following decade.
Theodore J. Shannon and Clarence A. Schoenfeld, University Extension (New York: The Center for Applied Research in Education, Inc., 1965), p. 24. During this period several universities began to establish off-campus centers or community "freshman colleges" for studies at the baccalaureate level. Many of these activities were funded by the Carnegie Corporation, which made more than $4,500,000 available for adult education grants between 1924 and 1941. Examples include the "Urban Extension Service" at the University of Minnesota, which received a $10,000 grant to allow Herbert Sorenson to test the abilities of extension students and the supervised correspondence courses for small high schools developed by Knute Broady of the University of Nebraska, which received a $5,000 grant. See Paul L. Essert, "Foundations and Adult Education," in Handbook of Adult Education in the United States, ed. by Malcolm S. Knowles (Washington, D.C.: Adult Education Association of the U.S.A., 1960), p. 232; Herbert Sorenson, "The Abilities of Extension Students," Proceedings of the National University Extension Association 16 (1933), pp. 35-40; and Knute O. Broady, "The Nebraska Plan of Enriching the Curriculums of Small High Schools," ibid., pp. 80-84.

In this period there is little overt evidence that NUEA made efforts to meet conditions which were to ensue," Hugh G. Pyle has pointed out. "Recognition of these conditions and of measures taken to meet them did not appear in Association proceedings until the 1933 meeting." Hugh G. Pyle, "History of the National University Extension Association," in Expanding Horizons . . . University Extension, ed. by Stanley J. Drazek et al. (Washington, D.C.: North Washington Press, 1965), p. 18.

Malcolm S. Knowles, The Adult Education Movement in the United States (New York: Holt, Rinehart and Winston, Inc., 1962), p. 77. "The notion that the federal government has a responsibility to take initiative in providing for the minimum welfare of all the people became so firmly rooted during the Roosevelt era that it became accepted in the later platforms of both parties," Knowles adds.

Originally all university extension activities were conducted in space also used for activities of regular students, but as university extension gained in size and stature, an increasing amount of space was set aside exclusively for the use of adults. One of the most notable developments was the erection of buildings specifically designed to enable groups of adults to live and study together for extended periods of time, exemplified by the University of Minnesota's Center for Continuation Study, built in 1936. The new Center "set patterns for all later centers--patterns that are still educationally valid." The Center's first director was Julius M. Nolte, "an educator widely known and respected for his imagination and his sound execution of extension ideas." Willard L. Thompson, "University of Minnesota General Extension Division," in Expanding Horizons . . . University Extension, ed. by Stanley J. Drazek et al. (Washington, D.C.: North Washington Press, 1965), p. 65. Between 1930 and 1940 many business and industrial establishments also collaborated with universities in the building of research facilities,


6 Knowles, op. cit., pp. 84-90. During the 1930s university enrollments in the United States increased nearly thirty-six per cent, from 1,100,737 to 1,494,203. During this same period, enrollments in "extension" and "correspondence" courses increased about twenty-seven per cent, from 283,966 to 362,381. Moreover, in 1930, sixty-five per cent (15/23) of America's university extension departments received at least five per cent of their parent universities' budgets; a decade later, nearly eighty per cent (23/29) of these departments received similar support. The percentage of extension budgets between $10,000 and $100,000 remained about sixty-five per cent during this period (1930: 19/29; 1940: 24/37). Badger, loc. cit.; U.S. Department of Interior, Office of Education, Biennial Survey of Education in the United States, 1928-1930, vol. II, chap. IV, "Statistics of Universities, Colleges, and Professional Schools," by Emory M. Foster and Frederick J. Kelly (Washington, D.C.: Government Printing Office, 1932), pp. 330-31; U.S. Department of Interior, Office of Education, Biennial Survey of Education in the United States, 1939-40 and 1941-42, vol. II, chap. IV, "Statistics of Higher Education, 1939-40 and 1941-42," by Henry G. Badger, Frederick J. Kelly, and Lloyd E. Blauch (Washington, D.C.: Government Printing Office, 1944), p. 46; and Morton, op. cit., p. 97. Knowles suggests that the universities' need to broaden their base of financial support to meet rising enrollments and costs led to vastly increased linkages with the outside world. "Their research facilities were used more and more, under contract, by industry and government; their faculties were increasingly called on to provide consultation and 'brain trusts' for government, industry, labor, and community organizations; and their publication departments increasingly moved from strictly academic to commercial markets. . . . the effect of these developments was to bring the university into closer relationship with the people." Knowles, op. cit., p. 83.

The rapid development of chain drug stores in America largely resulted from the work of two men: Charles R. Walgreen, who opened the first unit of the present Walgreen chain in 1901, and Louis K. Liggett, who initiated the founding of the United Drug Company (after 1933, the Rexall Drug and Chemical Company) in 1907. Walgreen's chain grew from 9 stores in 1916 to 116 in 1927; Liggett's chain grew from 45 stores in 1916 to 672 in 1930. By 1935, over sixty-four per cent of chain drug stores did an annual business of over $50,000; in contrast, less than four per cent of independent pharmacies achieved the same volume. Moreover, between 1930 and 1947, such factors as the Depression, increased educational standards for pharmacists, and the impact of World War II combined to increase the ratio of pharmacies in relation to the public from roughly 1:2,000 to about 1:3,000. Glenn Sonnedecker, Kremers and Urdang's History of Pharmacy (3d ed., rev.; Philadelphia: J. B. Lippincott Company, 1963), pp. 268-69, 272, and 275. Also see Frank A. Delgado, "The Chain and Independent Drug Store Situation as Revealed by the Census of American Business," Journal of the American Pharmaceutical Association 26:10 (October, 1937), p. 931; and George H. Frates, "At the Nation's Capital: Chains, 8.8% of Drug Stores, Cover 54% of Population," N.A.R.D. Journal 69:15 (August 4, 1947), p. 1424.


In 1930, Townes R. Leigh, Dean of the University of Florida College of Pharmacy, remarked that his educational policy included giv-
ing the student "the basic training so that he can not only render the community in which he goes to live and practice his profession intelligent and constructive pharmaceutical service, but will be prepared by his training to so develop and improve himself when he is out of college that he can satisfactorily meet the changing demands that are sure to occur throughout this service." Hugh C. Muldoon, Dean of Duquesne University's School of Pharmacy agreed: "We want pharmacists to be well enough educated that they will be intellectually independent. . . . pharmacy students [must] come to realize that schooling is only a part of the whole and continuing process of education, and that in college they are really educating themselves under teacher stimulation and assistance and guidance." Townes R. Leigh, "The Report of the Committee on Curriculum and Teaching Methods," Proceedings of the American Association of Colleges of Pharmacy 31 (1930), pp. 59-60; and Hugh C. Muldoon, "Address of the Faculty Chairman," Proceedings, Joint Meeting of Members of State Boards of Pharmacy and Delegates of the Faculties of Colleges of Pharmacy in N.A.B.P. District No. 2 (1933), p. 8. Also see John L. Dandreau, "What Steps Should Be Taken by Pharmacy College Faculties to Keep Abreast of Changes in the Practice of Pharmacy?" Proceedings, Joint Meeting of Members of State Boards of Pharmacy and Delegates of the Faculties of Colleges of Pharmacy in N.A.B.P. District No. 2 (1932), pp. 47-50; and Willis G. Gregory, "What Can Be Done to Stimulate the Practice of Professional Pharmacy?" Minutes of Joint Conference, Boards and Colleges of District 2 (1930), pp. 17-18.


12 The Board of Trustees of Purdue University established the School of Pharmacy in 1884 "in response to an earnest and growing demand for a thorough and practical training in pharmacy and pharmaceutical chemistry. . . . by Indiana pharmacists." John N. Hurty, an outstanding Indianapolis pharmacist, had convinced Purdue's President John H. Smart of the need for a school of pharmacy for the state of Indiana. In turn, Smart convinced Hurty to serve as professor of pharmacy in the School for at least two years. Hurty came to Lafayette twice each week and gave practical instruction in pharmacy and in the art of dispensing medi-
cines and filling prescriptions, which culminated in 1889 with the development of the first course in dispensing pharmacy taught in the United States. By 1900, undergraduate students were treated to special lectures in jurisprudence and different commercial topics "of practical value." George Spitzer, "History of Purdue University School of Pharmacy," (unpublished manuscript, Lafayette, Indiana, [1929]), pp. 1-2, 5, 7, and 10. (Typewritten.), Kremers Reference Files, F. B. Power Pharmaceutical Library, University of Wisconsin School of Pharmacy, Madison, Wisconsin [hereinafter referred to as "Kremers Reference Files"]). Purdue's initial two-year, forty-week undergraduate pharmacy curriculum rapidly expanded to fifty-six weeks by 1895; two years later, the School of Pharmacy became one of the first in the country to offer the four-year baccalaureate degree in pharmacy in addition to its two-year degrees. Moreover, in 1928, the School became one of the first in the country to abolish the obsolescent three-year course in pharmacy. [Robert W. Babcock], A Brief Account of the First Fifty Years of Pharmacy Education at Purdue, 1884-1934 (Lafayette, Ind.: By the University, 1934), pp. 8-9 and 12-13; and H. [Henry] W. Heine, "Purdue University School of Pharmacy: Elimination of the Three-Year Course in Pharmacy," The Indiana Pharmacist 10:12 (December, 1928), p. 8.

13 Purdue's responsibility for extension services was formally recognized in 1911 when the University administration established the Agricultural Extension Service, a direct outgrowth of the Agricultural Experiment Station formed several years prior. Similarly, the Engineering Experiment Station was followed in a few years by the Engineering Extension Service, established in 1921 to "carry the benefits of engineering and research to persons, industries, and governmental agencies of the state." Charles H. Lawshe, Dean of University Extension Administration at Purdue, 1884-1934 (Lafayette, Ind.: By the University, 1934), pp. 8-9 and 12-13; and H. [Henry] W. Heine, "Purdue University School of Pharmacy: Elimination of the Three-Year Course in Pharmacy," The Indiana Pharmacist 10:12 (December, 1928), p. 8. Jordan wryly remarked that "since no other
college of pharmacy has ever done this sort of thing I felt that I should go at it rather carefully," adding that he had conferred with Edward C. Elliott, President of Purdue University, Wallace B. Donham, Dean of the Harvard University Graduate School of Business Administration, Emory R. Johnson, Dean of the University of Pennsylvania's Wharton School of Finance and Commerce, Philadelphia, George W. Starr, Director of the Indiana University Bureau of Business Research, Harry S. Noel of the sales force of Eli Lilly & Company, the Executive Committee of the Indiana Pharmaceutical Association, and Dean Frederick J. Wulling of the University of Minnesota College of Pharmacy, an earlier pioneer in continuing pharmaceutical education. Jordan's remarkable career in pharmaceutical education is outlined in C[harles] A. Behrens et al., "Miscellaneous Items of Interest: Memorials. Charles Bernard Jordan," American Journal of Pharmaceutical Education 5:3 (July, 1941), pp. 399-401.

15 Jordan, loc. cit.

16 Ibid. Weinland spent the summer of 1930 conducting a survey of 100 Indiana pharmacists under the auspices of George W. Starr, Director of the Indiana University Bureau of Business Research, later receiving his Master of Business Administration degree from Northwestern University. Jordan later remarked that Weinland's success as Director of the Pharmacy Extension Department "grew with his years of experience," but emphasized that "an individual has to be trained for such a new and difficult job." C[harles] B. Jordan, "Highlights of J. L. Weinland's Activities at Purdue," The Indiana Pharmacist 21:12 (December, 1939), p. 354. Also see "J. L. Weinland," The Indiana Pharmacist 11:7 (July, 1929), p. 10; and [Charles B. Jordan], "Extension Work in Commercial Pharmacy" [abstract], Proceedings of the American Association of Colleges of Pharmacy 31 (1930), p. 158.

17 Jordan, "Address," loc. cit. Jordan later revealed that his cautious approach had been well-warranted: "The first visits that Mr. Weinland made to the retail stores of the State were often misinterpreted because the retailer felt that the purpose of the Extension Department was to get private information. It took some time to break down this barrier, but it was accomplished through the use of Joe's tact and good judgment." Jordan, "Highlights of J. L. Weinland's Activities at Purdue," p. 354.

18 At the conclusion of Jordan's remarks, pharmacist Fred W. Hennis, Jr. stated: "I think this is a most wonderful proposition that has been made to us and I hope the young pharmacists who are now entering the field will take full advantage of that. It is a service that we older pharmacists have never had opportunity to have. . . . I am glad to hear our university is doing something with this branch of the profession." Association President Lawrence B. Upton added: "I believe that everyone will feel that we should give it serious consideration and
when Prof. Starr or his field men come around that we co-operate with them and give them the data they request." Jordan, "Address," loc. cit.


20"Purdue Pharmacy Extension [sic] Department," loc. cit. The author of the article took pains to point out that the service was free "to those men who have enough interest in their own business and the profession of Pharmacy as a whole to call on and co-operate with Purdue. Never, in any case, will this service be forced on anyone, but when the retailer asks for help he may be assured that Purdue will do everything within their knowledge to correct his trouble."

21"Official Opening of Purdue Pharmacy Extension Dept.," The Indiana Pharmacist 12:9 (September, 1930), p. 8. The bulletin stated that the Department also would provide information to the drug wholesaler concerning "the advisability of certain methods of marketing products, the effect of price changes, credit situation over the territory, amount of good-will erected by their policies of doing business, or information of the condition of the retail trade in general. He may want to know the general attitude of all retailers toward certain trends in business, good and bad conditions existing throughout the state, or the advisability of making changes in policies." To the pharmaceutical manufacturer, the Department would provide information concerning "the marketing of products, the effect of present products on the market, the need of additional items or markets, or existing conditions throughout the trade."

A full-page advertisement by the Kiefer-Stewart Company, an Indianapolis wholesaler, congratulated Purdue on the "facilities thus afforded for training druggists in the fundamental principles of business, as well as in the exact science of pharmacy. This Extension Department is in line with the modern trend for more research--and still more research. Facts instead of guess work. Know where you are going before you start. In harmony with this policy of charting your business course, we trust that Indiana drug retailers will avail themselves of this Extension Department to the fullest extent possible." Kiefer-Stewart Co., "Use This New Service" [advertisement], The Indiana Pharmacist 12:12 (December, 1930), n.p.

22"Purdue's Pharmacy Extension Department," The Indiana Pharmacist 12:12 (December, 1930), p. 9. "Leading Pharmaceutical publications have given considerable space and much favorable comment to the forward step taken by this well known Pharmacy School. . . . Editorial writers have expressed their belief that there is a field for service of such a department and will watch with keen interest its progress. They agree that, in this, Purdue is establishing a new contact with retail druggists that
should reflect more efficient business management among retail druggists. They point out that its accomplishments will depend largely upon the extent druggists avail themselves of the service." At this time, inquiries already had been received from pharmacists in Alabama, Illinois, Missouri, New Jersey, New York, North Carolina, Oklahoma, Texas, and Wyoming.


24 "Purdue Business Conference Success," p. 5. The window displays featured certain aspects of professional pharmacy or products and preparations of certain chemicals and drugs, and included such themes as "Medicinal Products Obtained from the Cow," "Iodine, its Source and Preparation," "Crude Drugs of Indiana," and "Requirements of Pharmacy." No manufacturers' names appeared on any of the displays; pharmacists were allowed to keep the displays for a week to ten days and were expected to assume shipping expenses. "Pharmacy Extension Creates Unique Service for Retail Druggists," *The Indiana Pharmacist* 13:9 (September, 1931), p. 10. Also see "Societies and Colleges: New Service Offered Retail Druggists of Indiana," *Journal of the American Pharmaceutical Association* 20:5 (May, 1931), p. 518.


Heine's extension activities reflected his undergraduate teaching responsibilities. Babcock notes that undergraduate students at Purdue were taught the art of dressing show windows, of lettering showcards, and of appealing through ethical advertising to the prospective customer. The Purdue School had been very active in developing the commercial phases of pharmacy, and especially in display work. Babcock, op. cit., p. 22. By the same token, all analyses, reports, surveys, and case studies made as a part of the extension service were "presented for discussion to the undergraduate courses in commercial pharmacy." "School of Pharmacy at Purdue Over Fifty Years Old," The Indiana Pharmacist 21:2 (February, 1939), p. 45.


"Purdue Offers Short Course for Drug Clerks," Journal of the American Pharmaceutical Association (Practical Pharmacy Edition) 1:5 (May, 1940), p. 202. The questionnaire was used to determine not only the time and length of the course, but its content as well: "By filling out the questionnaire and promptly returning it to the Extension Department, druggists can assist the school officials in preparing a course that will fit the needs of all. Comments and suggestions from druggist employers are especially welcomed." "Purdue Plans Short Course For Clerks," The Indiana Pharmacist 22:2 (February, 1940), p. 57.

[Charles B. Jordan], "Purdue School of Pharmacy Ends Fifty-Fifth Year," The Indiana Pharmacist 22:6 (June, 1940), p. 184. The Conference attracted thirty-eight drug clerks from Illinois, Indiana, Kentucky, and Ohio. For a detailed outline of the Conference content, see Henry W. Heine, "Drug Clerks Hear Prominent Speakers At Purdue Short Course," The Indiana Pharmacist 22:7 (July, 1940), pp. 223-24; and "Clerk Course Is Given By Purdue," Drug Topics 56:31 (July 29, 1940), p. 11.
In 1938, Heine reported that he had succeeded in convincing the Director of the Division of Education at Purdue that "drug clerks needed special training and that we were equipped to administer it." Under the arrangement, Heine's Extension Department served Indiana's drug clerks while Indiana University offered continuing education to clerks and sales people in other fields. Heine, "Extra-curricular Activities of Pharmacy Schools," p. 27. For a description of the second Conference, see "Short Course for Drug Clerks to be held at Purdue July 7, 8, 9, 10, 11," The Indiana Pharmacist 23:6 (June, 1941), p. 202; and "Purdue Short Course Set For July," Drug Topics 85:25 (June 23, 1941), p. 10.

"College Activities: Purdue School Notes," The Indiana Pharmacist 22:9 (September, 1940), p. 272. In December, 1940, Heine reported that he had been called upon to furnish the program for a meeting of the West Central Dental Society. "The unusual display of interest on the part of the dental practitioners in the material presented and the discussion that followed prompted us to offer this service to other component societies of the Indiana Dental Association. . . . Similar sessions will probably be conducted in every section of the State within the next year. This type of project is carrying professional relations work directly into the various communities where you operate your stores." Henry W. Heine, "Professional Preparedness," The Indiana Pharmacist 22:12 (December, 1940), p. 346. The programs, which included discussions of dental prescribing, dental formulae, and professional relationships, were well-received by the dentists. See Henry W. Heine, "Professional Preparedness," The Indiana Pharmacist 23:1 (January, 1941), pp. 5-6.

"Summary of the Fifty-sixth Year of the Purdue University School of Pharmacy," The Indiana Pharmacist 23:6 (June, 1941), p. 182. "The financing of a project of this kind is a real problem in most of our schools and probably always will be," Heine accurately predicted in 1938. "It so happens that in our case Dean Jordan has been successful in selling his idea to the officials of the University and, in addition to the appropriation of a salary for a full-time worker, a certain sum for incidental expenses has been allotted. . . . Each year we ask for a larger appropriation so that we may expand our services, and some day we may get it, I hope." Heine added that transportation expense for his insecticide conferences were absorbed by Purdue's Department of Entomology, "since their worker is doing field work most of the time and is paid for the use of his automobile," and that hotel accommodations for speakers and other incidental expenses that arose in conducting his annual Druggists' Business Conferences were "paid out of a 'sur-tax' derived from the price of each meal served at the annual dinner." Heine, "Extra-curricular Activities of Pharmacy Schools," p. 26.

Robert L. Swain, editor of Drug Topics, credited Jordan with a pioneering role in the development, promotion, and support of continuing pharmaceutical education. "He was aware of the great changes taking place in the pharmaceutical and medical sciences and visualized that some plan should be worked out to permit pharmacists to keep in step with the
times. The mere fact that similar courses are now being offered by many other universities is elegant proof that in his building Dean Jordan built solidly and well." Robert L. Swain, "Your Pharmacy and Mine: Charles B. Jordan, Nov. 7, 1878 - April 22, 1941," Drug Topics 85:18 (May 4, 1941), p. 15. Heine was appointed Senior Planning Specialist to the War Production Board in March, 1942. His duty as Assistant to the Chief of the Medical and Health Supplies Section, Civilian Supply Division, was "to help map out a broad program for civilian needs of drugs, medicines, toilet foods, cosmetics, and hospital and sanitary supplies of all kinds." Heine later served as Assistant Chief and, later, Chief of the Chemicals and Biological Unit of the Drugs and Cosmetics Section of the War Production Board. See "Heine Called to Washington," The Indiana Pharmacist 24: 4 (April, 1942), p. 124; and "Receives Promotion," The Indiana Pharmacist 25:10 (October, 1943), p. 397.

In 1930, George C. Shicks reported that "more than twice as many inquiries have been received this year [by the Bureau] as in the corresponding period for 1929. In 1929, in turn, the number of inquiries was four times that of 1928 . . . Two years ago druggists who desired to receive each and every one of the Bureau's publications by mail as soon as issued were offered this opportunity on the payment of $2.00 which covers the cost of postage and mailing and some part of the printing cost. About 1,000 druggists availed themselves of this opportunity during the first year, although no organized campaign was undertaken to bring this . . . to their attention. During the past few months . . . the Bureau has undertaken by mail to bring this Subscription Mailing Service to the attention of retail druggists. It is gratifying to report that the . . . Service now has been ordered by nearly 2,000 retail druggists." George C. Schicks, "Report on the Work of the Druggists' Research Bureau," Proceedings of the American Association of Colleges of Pharmacy 31 (1930), pp. 101-2. The following year, Alfred W. Pauley was able to report that the Bureau "has continued to make available its services, without cost, in the analysis of operating statements of retail druggists and in sending them, in response to their requests, other information about the business problems of pharmacy. Individual reports have been sent to these druggists telling them what they had to do in order to increase the profitableness of their businesses." Alfred W. Pauley, George C. Schicks, and Paul C. Olsen, "Report Regarding the Progress of the Druggists' Research Bureau," Proceedings of the American Association of Colleges of Pharmacy 32 (1931), p. 85. Also see Alfred W. Pauley, George C. Schicks, and Paul C. Olsen, "Report of the Progress of the Druggists' Research Bureau," Proceedings of the American Association of Colleges of Pharmacy 33 (1932), pp. 93-94; and Paul C. Olsen, "Report of the Druggists' Research Bureau," Proceedings of the American Association of Colleges of Pharmacy 35 (1934), p. 95.

For detailed descriptions of the continuing education activities of these schools and colleges of pharmacy during this period, see the following references. Present names of the institutions are in parentheses.

Purdue University: See above.


Medical College of Virginia (Virginia Commonwealth University): Fischelis (1936), p. 1043; "Va. Rx Symposium Is To Be Held In May," Drug


Kansas City College of Pharmacy (University of Missouri at Kansas City): Fischelis (1937), p. 1088.


Detroit Institute of Technology: Fischelis (1938), p. 1070.


Ohio Northern University: Fischelis (1938), p. 1070.

Ohio State University: Fischelis (1938), p. 1070.


St. John's University: Fischelis (1938), p. 1070.


University of Mississippi: Fischelis (1938), p. 1070.


In 1938, Fischelis reported that four additional colleges of pharmacy contemplated sponsoring continuing education activities in the near future: the Indianapolis College of Pharmacy (Butler University), the Louisville College of Pharmacy (University of Kentucky), the University of Georgia, and the University of Washington. See Fischelis (1938), pp. 1070-71.

The American Council on Pharmaceutical Education (ACPE) was organized in 1932 as an accrediting agency for schools and colleges of pharmacy, its membership consisting of representatives from the American Association of Colleges of Pharmacy, the American Pharmaceutical Association, the National Association of Boards of Pharmacy, and the American Council on Education. The ACPE adopted its first set of accreditation standards in 1937; in 1940, it published its first list of accredited schools and colleges of pharmacy. Prior to that time, the qualifications for membership contained in the bylaws of the American Association of Colleges of Pharmacy, enforced through official inspections after 1929, had the effect of an accreditation system. See Lloyd E. Blauch and George L. Webster, The Pharmaceutical Curriculum (Washington, D.C.: American Council on Education, 1952), p. 25; and Sonnedecker, op. cit.,
p. 223. The level of participation in continuing pharmaceutical education activities among schools and colleges which were members of the American Association of Colleges of Pharmacy tripled between 1935 and 1936 (from 5.5 per cent to 18.1 per cent, or from 3/55 to 10/55), doubled between 1936 and 1937 (from 18.1 per cent to 34.5 per cent, or from 10/55 to 19/55), and nearly doubled again by 1939 (from 34.5 per cent to 60.0 per cent, or from 19/55 to 35/59). At the time, the Cincinnati College of Pharmacy, the Medical College of South Carolina, and St. John's University were not members of the Association; the Brooklyn College of Pharmacy and the University of Buffalo were not members of the Association between 1924 and 1939.

41*For condensed programs of the most noteworthy continuing pharmaceutical education programs during the period 1936 through 1938, see Fischelis, "Report of the Committee on the Study of Pharmacy," pp. 1040-44; [Robert P.] Fischelis, "Report of the Committee on the Study of Pharmacy," Journal of the American Pharmaceutical Association 26:11 (November, 1937), pp. 1088-95; and [Robert P. Fischelis, "Report of the Committee on the Study of Pharmacy," Journal of the American Pharmaceutical Association 27:11 (November, 1938), pp. 1068-71. At the conclusion of his 1936 Report, Fischelis remarked that it was gratifying "to note the response of some Colleges of Pharmacy to the needs of the pharmacist in practice. There is a considerable gap in the training and preparation of pharmacists now in practice and those who are being graduated to-day. The bridging of this gap is a part of our responsibility to the profession and the public, and extension education activities should therefore be encouraged." Fischelis, "Report of the [1936] Committee on the Study of Pharmacy," pp. 1043-44.

42 The myriad of associations and institutions included the business administration units of university extension departments (Columbia University; University of Richmond); extension divisions of state departments of education (Massachusetts); local chambers of commerce (Oklahoma City); local branches of the American Pharmaceutical Association (New York); local pharmaceutical associations (Bayonne, New Jersey); state drug travelers' associations (Arkansas); pharmacy alumni associations (University of Oklahoma; University of Buffalo); and the Druggists' Research Bureau. See n. 39 above and "Columbia Offers Drug Sales Course," Drug Topics 50:37 (September 17, 1934), p. 31; "Dr. Olsen To Give Drug Sales Course," Drug Topics 52:38 (September 21, 1936), p. 29; "Retail Course At U. Of Richmond," Drug Topics 53:39 (September 27, 1937), p. 12; "Merchandising Course Offered," Drug Topics 52:1 (January 6, 1936), p. 29; "Merchandising Clinics Planned In Oklahoma," Drug Topics 53:18 (May 3, 1937), p. 19; "New Yorkers Plan Science Lectures," ibid., p. 33; "Bayonne Men Plan Educational Talks," Drug Topics 53:10 (March 8, 1937), p. 46; "Arkansas Drug Course To Be Held This Week," Drug Topics 55:3 (January 16, 1939), p. 34; "Arkansans Plan 2nd Sales Clinic," Drug Topics 55:46 (November 13, 1939), p. 9; "Oklahoma School Meeting Theme Is 'Noble Profession,'" Drug Topics 54:11 (March 14, 1938), p. 33; "Buffalo U. Plans Rx Business Talks," Drug Topics 55:48 (November 27, 1939), p.


44 See Chapter III, p. 62; Chapter IV, pp. 117-20 and nn. 95, 96, and 100; and Frederick J. Wulling, "The Service the College of Pharmacy of the University of Minnesota is Giving to the State," Proceedings of the Minnesota State Pharmaceutical Association 47 (1931), pp. 193-96. During the early 1930s, instructor Charles V. Netz "projected some of the College influence into the drug stores of the state" by visiting over 500 stores as a representative of the Minnesota State Pharmaceutical Association "with the idea of being helpful to pharmacists and to pharmacy." The College also was active in an impressive interprofessional relations program that embraced the dental, medical, and pharmaceutical associations of Iowa, Minnesota, North Dakota, and South Dakota. Supported morally and financially by the Northwest Pharmaceutical Bureau, the Association's Committee on Interprofessional Relations sponsored a "Prescription Review Course" for pharmacists and physicians as early as 1932, in which Netz took part. See Peter Vadheim, "Report of College of Pharmacy Committee," ibid., p. 97; and John O. Taft, "Report of the Committee on Interprofessional Relationships," Proceedings of the Minnesota State Pharmaceutical Association 49 (1933), pp. 51-53.


46 Quoted by Wulling in his chairman's address before the joint session of the Scientific and Practical Section of the Minnesota State Pharmaceutical Association and the Northwestern Branch of the American Pharmaceutical Association, St. Paul, Minnesota, April 5, 1937. See Frederick J. Wulling, "Chairman's Address," Proceedings of the Minnesota State Pharmaceutical Association 53 (1937), pp. 39-40. In addition to a dozen other suggestions, Wulling recommended that the undergraduate curriculum be expanded "to cover five years, making it basic for the first three or four years and providing specialized work for the last year or two," thus anticipating by over a decade Ohio State University's pioneering five-year curriculum, inaugurated in 1948, and the adoption of a five-year curriculum by all American schools and colleges of pharmacy in 1960 by nearly a quarter of a century. See Sonnedecker, op. cit., p. 213.

47 Conceived by Coffman in 1936 and funded by the Kellogg Foundation, the Center for Continuation Study at the University of Minnesota drew high praise as the first residential center for university exten-


Charles H. Rogers], "Pharmaceutical Institutes," in Biennial Report of the College of Pharmacy, 1936-1938 (Minneapolis: By the University, 1939), p. 6. Two years later, Rogers noted that inspectors for the Minnesota State Board of Pharmacy advised him that pharmacists throughout the state were "enthusiastic about this type of postgraduation study" and that they were "putting into practice the information and newer methods presented to them at the institutes." [Charles H. Rogers], "Postgraduation Study," in Biennial Report of the College of Pharmacy, 1938-1940 (Minneapolis: By the University, 1941), p. 9.

[Rogers], "Postgraduation Study," p. 9.

In August, 1892, a month before the University of Oklahoma opened its doors to students for the first time, President David Ross Boyd conducted a Teachers' Normal Institute in Norman; the following year, the University established its Department of Pharmacy. In 1904, the
University formed a lecture bureau to serve a wider area; nine years later, the Oklahoma Legislature appropriated $10,000 for the creation of a Division of Extension and Public Service, directed by Joseph W. Scroggs, one of the principal organizers of the National University Extension Association. The New Division was closely modeled after the Extension Division of the University of Wisconsin, and consisted of six departments: public discussion and debate, correspondence study, public information and welfare, extension lectures, extension classes, and high school debating. Thurman J. White, "The University of Oklahoma Division of Extension and Public Services," in Expanding Horizons . . . University Extension, ed. by Stanley J. Drazek et al. (Washington, D.C.: North Washington Press, 1965), p. 70.

54 See "Oklahoma School Meeting Theme Is 'Noble Profession,'" p. 33; "Oklahoma School on Convention Program," Drug Topics 53:8 (February 22, 1937), p. 27; and "Merchandising Clinics Planned In Oklahoma," p. 19.

55 "Merchandisers To Lead Short Course," Drug Topics 53:46 (November 15, 1937), p. 3. The Short Course was taught by a wide variety of businessmen, described as "national authorities in their field." For a complete outline of the program, see "Merchandising Clinic Is Lined Up For Southwest," Drug Topics 54:1 (January 3, 1938), p. 14; for excerpts from the program, see "Merchandising X-Rayed At New 'Clinic': Retail Druggists From 7 States At Oklahoma Seminar," Drug Topics 54:6 (February 7, 1938), p. 45.

56 "Merchandising X-Rayed At New 'Clinic,'" p. 45. The Short Course was co-sponsored by the University's Extension Division and the Oklahoma Pharmaceutical Association, and received cooperation from such varied agencies as the Fox-Vliet Wholesale Drug Company, the Alexander Wholesale Drug Company, the Oklahoma Drug Travelers' Association, the Oklahoma Ice Cream Manufacturers' Association, the Oklahoma City Chamber of Commerce Division of Wholesalers and Manufacturers, the Oklahoma State Chamber of Commerce, the Oklahoma City Advertising Club, and the Carpenter Paper Company.


American Professional Pharmacist 5:1 (January, 1939), p. 13. "To pharmacists, this movement is a valuable opportunity for 'brushing up' on technical practice, and to gain helpful and profitable information about what's new," McDonnell added. "Too long has Pharmacy been asleep to the demand of Science that its servants keep abreast."

61 Sonnedecker, op. cit., p. 190. The deeply probing Pharmaceutical Survey of 1946-49 stated that "the conservation of the essential interests of a profession and the direction and promotion of its progress depend chiefly on the activities of voluntary, cooperative associations. . . . These associations should be organized and operated to develop professional policies, to secure common actions, and to bring about proper public relations." The Survey concluded that "American pharmacy is represented by a wide range of professional and commercial organization . . . However, their aims and activities are uncoordinated, oftentimes in conflict, and therefore tend to produce a low rate and quantity of professional accomplishment. . . . due to the absence of any one recognized agency to speak and to act upon matters of fundamental policy. . . . Unity of purpose requires a unified utilization of power. This requirement pharmacy has not yet met." Committee on the Pharmaceutical Survey, "National Pharmaceutical Organizations," in The General Report of the Pharmaceutical Survey, 1946-49, p. 39.

62 Arny suggested that the Institute should be made up of registered graduate pharmacists who owned the major share of prescription-oriented pharmacies, which were to be equipped at a certain minimum specified level. H[enry] V. Arny, "The American Institute of Prescriptionists," Journal of the American Pharmaceutical Association 3:11 (November, 1914), pp. 1542-45, cited by Ernst W. Stieb, American College of Apothecaries: The First Quarter Century, 1940-1965 ([Washington, D.C.]: American College of Apothecaries, 1970), p. 12, from which much of the background material in this section is drawn.


64 Stieb, op. cit., p. 4; and letter, John N. McDonnell to Ernst W. Stieb, American College of Apothecaries Records, American Institute of the History of Pharmacy Archives, State Historical Society of Wisconsin, Madison, Wisconsin [hereinafter referred to as "American College of Apothecaries Records"], and cited by Stieb, op. cit., p. 13. The executive secretary of the Guild, John N. McDonnell, also served as the first editor of the American Professional Pharmacist, which initially appeared in April, 1934. Described by Sonnedecker as "an exponent of the movement toward more strictly professional activity," the
American Professional Pharmacist stressed documented review articles on a variety of classes of drugs and became an early and consistent supporter of continuing pharmaceutical education. "It has been the aim of the A. P. P. to bring to its readers modern pharmacy in all of its manifold phases," editor McDonnell wrote in 1937. "Many of our readers have called our journal a 'post-graduate course in pharmacy' because it reviews in brief, complete, timely, and authoritative articles, together with special features, the progress of pharmacy and related sciences." Some time later, McDonnell added, "We have been happy to add our own contribution to the cause of 'post-graduate pharmaceutical education' through the twelve months of the year. The policy of this journal was--and always will be: 'to interpret and record accurately the most significant and interesting advances in the fields of Pharmacy, Medicine, and the sciences allied to Public Health.'" Sonnedecker, op. cit., p. 261; McDonnell, "From the Editorial Desk: Post Graduate Course," p. 13; and McDonnell, "Editorial Comment: Post-Graduate Education," p. 13.


Stieb, op. cit., pp. 5 and 8. Also see "Conference of Professional Pharmacists: Abstract of the Proceedings," p. 939; and Charles B. Jordan, "Minutes of Conference of Professional Pharmacists, May 9, 1940, Richmond Va.," p. 1, American College of Apothecaries Records, both cited by Stieb, op. cit., p. 14. Stieb points out that "the most striking characteristic of the ACA among the organizations of American pharmacy was the stringent set of membership requirements it set for acceptance into and maintenance of fellowship. Such requirements were, however, the very raison d'être of the ACA, to the end that they encouraged promotion of professionalism in pharmacy. . . . showing that the cobwebs of pharmaceutical complacency and passivity could be dispelled by the fresh breezes of constructive criticism and objective introspection." Stieb, op. cit., p. 90.

Stieb, op. cit., p. 4. From 1919 to 1929, soda fountain installations averaged $19,500,000 a year. By 1929, 31,813 of the nation's 54,745 independent pharmacies had fountains; of the 3,513 drug chain units, 3,031 had fountains. In 1935, pharmacies took in $121,000,000 from fountains, accounting for 6.8 per cent of the nation's total meal sales. See "Youth of the Fountain," American Druggist 88:4 (October, 1933), p. 214; and Delgado, op. cit., p. 929; both cited by Sonnedecker, op. cit., p. 277.

Charles V. Selby, "The American College of Apothecaries as I See It," ACA Bulletin 3:5 (May 18, 1943), p. 4; cited by Stieb, op. cit., p. 13. Selby considered the state pharmaceutical associations of Mary-
In 1935, the American Association of Colleges of Pharmacy also recognized the need for interprofessional relations. In his presidential address of that year, Rutgers University's Dean Ernest Little declared that "the present status of retail pharmacy established the fact that our past efforts along this line have proved largely ineffective. . . . It is imperative that we acknowledge our failure and rededicate ourselves to this most important obligation . . . . The responsibility rests squarely on our shoulders. The problem can be solved, but colleges of pharmacy must assume the leadership and play the leading role." Little went on to recommend the appointment of a professional relations committee "to bring before our members the ways and means which are being employed in the various states, of increasing the professional services and relationships with physicians and dentists. The efficient functioning of such a committee should make it possible for our colleges of pharmacy to more effectively cooperate in increasing the professional services of our present and future retail pharmacists." By 1936, twenty-four schools and colleges of pharmacy reported activity in the area of professional relations; by the following year, the Committee was reestablished on a "long-time" basis "to organize a national plan for professional relations work" in cooperation with the American Pharmaceutical Association. Ernest Little, "Address of the President," Proceedings of the American Association of Colleges of Pharmacy 36 (1935), pp. 25 and 36; George C. Schicks, "Report of the Committee on Professional Relations," American Journal of Pharmaceutical Education 1:2 (April, 1937), pp. 169-70; George C. Schicks, "Report of the Committee on Professional Relations," American Journal of Pharmaceutical Education 2:2 (April, 1938), p. 235; and Charles B. Jordan, "Report of the Committee on Resolutions," American Journal of Pharmaceutical Education 1:4 (October, 1937), p. 451.


Robert P. Fischelis, "Report of the Committee on Pharmaceutical Education and Standards," The New Jersey Journal of Pharmacy 4:10 (October, 1931), pp. 30-31. Pharmacy historian David L. Cowen notes that "occasional expressions of approval for such a program" followed. In 1938, the Association passed a resolution requesting a "permanent program of lectures and demonstrations intended to keep pharmacists up to date in the newer developments of medical and pharmaceutical sciences," a challenge that was met by Rutgers University's College of Pharmacy with the

74 Quoted by Robert L. Swain, "Your Pharmacy and Mine: Keeping In Step—An Obligation," Drug Topics 52:6 (February 10, 1936), p. 27. After several years of prodding by the Maryland Pharmaceutical Association and the Baltimore Retail Druggists Association, the University of Maryland finally inaugurated a series of eight weekly two-hour lectures in October, 1939. See "University of Maryland," n. 39 above.

75 Quoted by Swain, "Your Pharmacy and Mine: Keeping In Step—An Obligation," p. 27. The five- to seven-year time lag between the initial requests for continuing education programs by pharmacy practitioners and the responses to these requests by schools and colleges of pharmacy, as evidenced in New Jersey and Maryland, did not occur in Virginia. The Medical College of Virginia School of Pharmacy began its popular series of two-day "pharmaceutical symposia" the following spring. See "Virginians Arrange Pharmacy Program," Drug Topics 51:16 (April 20, 1936), p. 23; and "Medical College of Virginia," n. 39 above.

76 Robert P. Fischelis, "Address of the President of the American Pharmaceutical Association," Journal of the American Pharmaceutical Association 24:8 (August, 1935), p. 646. At the time, Fischelis already had a distinguished career in pharmacy behind him, having served as Dean of the New Jersey College of Pharmacy (1921-25), as Secretary and Chief Chemist of the New Jersey State Board of Pharmacy (1926-44) and Secretary of the New Jersey Pharmaceutical Association (1926-29), as editor of Charters's Basic Material for a Pharmaceutical Curriculum (1927) and the New Jersey Journal of Pharmacy (1927-45), and as a member of the Council of the American Pharmaceutical Association (1923-26). Following his term as President, Fischelis continued to serve the Association as a member of the Council (1933-62; Chairman, 1941-45), as Secretary and General Manager (1945-59), and as Editor and Editorial Director of the Journal of the American Pharmaceutical Association (Practical Pharmacy Edition, 1945-59). For a complete biographical sketch of Fischelis, see Cowen, op. cit., pp. 163-64.

78 See Fischelis, "Report of the [1936] Committee on the Study of Pharmacy," pp. 1040-44; Fischelis, "Report of the [1937] Committee on the Study of Pharmacy," pp. 1088-90; Fischelis, "Report of the [1938] Committee on the Study of Pharmacy," pp. 1068-71; and n. 41 above. At the conclusion of his 1936 Report, Fischelis pointed out that "many colleges complain that their efforts to provide review courses or 'clinics' have not met with a favorable response in the past. It is therefore pleasing to note that the demand for such supplementary education is coming in increasing volume from pharmacists and pharmaceutical associations themselves." Fischelis, "Report of the [1938] Committee on the Study of Pharmacy," p. 1044. In 1938, the Committee on the Study of Pharmacy was expended in title and scope to become the Committee on Social and Economic Relations. The resulting change in emphasis consigned the consideration of continuing pharmaceutical education to a relatively minor portion of the Committee's overall responsibilities.

79 Feeling that "the educational status of members of examining boards should be on a par with college of pharmacy graduates," Swain recommended that the National Association of Boards of Pharmacy create an "extension educational service, which indeed might be styled a department of post graduate instruction," and was requested to supply the Association with a "detailed plan for putting these suggestions into effect." Robert L. Swain, "Educational Progress and Board of Pharmacy Members," Proceedings of the National Association of Boards of Pharmacy 25 (1928), pp. 53-54; John Cully, "Report of Committee on President's Address," ibid., p. 135; and Chapter IV, n. 102.

In 1929, Swain recommended that the Association's Executive Committee set aside $3,500 for the first year's work and appoint a director with the authority to "develop the work along the lines best suited to the purposes which it is designed to serve" and to consult with experts in pharmacology, bacteriology, bioassaying, chemistry, pharmaceutical chemistry, and pharmaceutical research. "The work should be developed with the view of presenting in a practical manner the educational and informational data of a pharmaceutico-scientific character in language as non-technical as the subjects permit. Its objective should be to bring members of the boards of pharmacy in close touch with present-day scientific trend and development." Swain felt that monthly bulletins might serve this purpose, supplemented by quarterly bulletins dealing with "research projects of a pharmaceutical interest and covering new products, together with a description of their chemical, pharmaceutical and therapeutic properties." After some discussion, Swain's report was referred to the Executive Committee of the Association, which promptly adopted Swain's proposals and appointed him director of the new Department. Robert L. Swain, "Educational Progress and Board of Phar-


Swain gained a wide variety of experiences as a community practitioner of pharmacy, as a member of the Maryland Board of Pharmacy, as
Deputy Food and Drug Commissioner for the state of Maryland, and as Editor of The Maryland Pharmacist, prior to becoming Pharmacy Editor of Drug Topics in 1933. In 1939, he became Vice-President of Topics Publishing Company and Editor-in-Chief of both Drug Topics and Drug Trade News until his retirement in 1960. He also served the American Pharmaceutical Association as Chairman of the House of Delegates (1929-30), as President (1933-34), and as a member of the Council (1933-31; 1953-59). "Robert Lee Swain: 1887-1963," Journal of the American Pharmaceutical Association NS3:3 (March, 1963), p. 153.


82. Ibid. Swain added that this situation seemed strange to him, considering the plight of pharmacy at the time. "If pharmacists could be brought face to face with the splendid headway being made in medical research, if the curtain could be pulled aside to make clear what is going on in many branches of public health, there is some clear chance that a sense of professional pride might be stirred in the body pharmacutic. It is possible, too, that this sense of professional pride might actually save the drug store from itself."


84. Ibid. Swain added that the report ended on an optimistic note: "Educational conferences, sponsored by colleges and other groups for the practicing pharmacist, are growing in number and influence, and it is to be sincerely hoped that pharmacists as a class will support fully such programs as have for their intent the advancement of professional pharmacy." At the time, pharmacists in Pennsylvania could choose between the continuing education offerings of the Philadelphia College of Pharmacy and the Pittsburgh College of Pharmacy. The following year, Temple University's School of Pharmacy also began to respond to the demand for continuing pharmaceutical education. See Table 1, pp. 162-63, and n. 39 above.

85. Frank B. Kirby, "Post-Graduate Pharmacy," American Professional Pharmacist 4:5 (May, 1938), p. 19. "Very little can you or your assistants learn by a few short interrupted minutes with the visiting detail man," Kirby wrote, considering the alternative to formal continuing education programs. "Much less are you (and they) inclined to attempt any extensive library book-work after closing time. No wonder the growing appeal of concise, condensed authoritative programs and papers such as we shall indicate." Ibid., p. 20. Kirby's contention is supported by what may have been the first nationwide opinion poll on continuing pharmaceutical education. When asked by Drug Topics's inquiring reporter whether they thought it would be "profitable for druggists all over the country to attend post graduate extension courses similar to that recent-
ly given in the University of Oklahoma," five pharmacists from Indiana,
Kansas, Minnesota, Pennsylvania, and Texas answered enthusiastically in
the affirmative. See "You Tell 'Em," Drug Topics 54:35 (August 29,

Kirby, op. cit., pp. 20 and 22. In his "intimate study of a
score of more of such courses of post-graduate review," Kirby found the
word "study" used only once in describing the programs, alluding to the
hesitant approach taken by schools and colleges of pharmacy toward con­
tinuing pharmaceutical education which was characteristic of the period.
In contrast, Kirby pointed to the "hundreds of study clubs" in dentistry
and the "hundreds of symposia, clinics, seminars and similar sessions"
in medicine with which he was familiar. "They have had them for years,
and frequently fees are charged for attendance." Ibid., pp. 19-20.

C. Hartley Grattan, In Quest of Knowledge: A Historical Perspec­
Grattan states that by 1906 "sentiment favorable to the principle that
vocational education of all kinds at less than college grade should be
widely supplied at public expense was rapidly developing." The idea was
taken up and made the basis of a national campaign by the National Soci­
ety for the Promotion of Industrial Education, formed that same year.
On this Society fell the burden of securing the needed state and federal
legislation. Massachusetts passed the first significant vocational edu­
cation law in 1906, followed by Connecticut in 1907, New Jersey in 1909,
New York in 1910, and Wisconsin in 1911. For a brief history of the de­
velopment of vocational education in the United States since colonial
times, see Grattan, op. cit., pp. 207-16.

Grant Venn, "Vocational-Technical Education," in Handbook of
Adult Education, ed. by Robert M. Smith et al. (New York: The Macmillan
Company, 1970), p. 476. Also see U.S. Congress, An Act to Provide for
the Promotion of Vocational Education; to Provide for Cooperation with
the States in the Promotion of Such Education in Agriculture and the
Trades and Industries; to Provide for Cooperation with the States in the
Preparation of Teachers of Vocational Subjects; and to Appropriate Money
and Regulate its Expenditure, Public Law 64-347, 84th Congress, 2d ses­sion,
S. 703, Statutes at Large, Vol. XXXIX, Part 1, Chap. 114, (1917),
p. 929-36. Grattan notes that work for a law making funds for voca­tional education available to the states began in 1908, but was shunted
aside until a Federal Commission on National Aid to Vocational Educa­
tion, headed by Georgia Senator Hoke Smith, could report. The Smith-
Hughes Act of 1917 reflects the studies and recommendations made by the
Commission. Grattan adds that Smith should be "something of a hero to
the partisans of vocational education," but could find "no very heart­
213-14.

U.S. Congress, An Act to Provide for the Further Development of
Vocational Education in the Several States and Territories (George-Deen


90 "Joint Action Is Seen Big Need In Clerk Training," Drug Topics 51:50 (December 16, 1935), p. 2. Engle stated that in 1930 over 7,700,000 persons were occupied in the wholesale and retail trades; in 1910, the comparable figure was 6,000,000 persons. Engle added that the increase in the number of persons gainfully employed in the distributive trades was both absolute and relative: an absolute increase of some 5,000,000 sales personnel between 1910 and 1930 and a relative increase in sales personnel from 15.8 per cent of all those gainfully employed in the United States in 1910 to 22.5 per cent of all those gainfully employed in 1930. By contrast, the number of pharmacists in the United States increased from 54,000 in 1910 to 84,000 in 1930; however, the ratio of pharmacies to population remained surprisingly constant: 1 to 2,020. See Edward Kremers and George Urdang, History of Pharmacy: A Guide and a Survey (Philadelphia: J. B. Lippincott Company, 1940), p.


For example, Carlo Basch, President-elect of the Northern California Retail Druggists' Association, felt that such instruction should be given in schools and colleges of pharmacy; Charles E. Parsons, President of the San Francisco Retail Druggists' Association, doubted that employer associations were the ones to initiate such training. "The suggestion to start a training school of clerks is a good one," stated Waldemar Gnerick, Secretary of the Northern California Retail Druggists' Association. "We in California will not attempt to lead the way on this proposition," he added. "Coast Leaders Favor School," Drug Topics 51:50 (December 16, 1935), pp. 2 and 12. With the advent of federal funding for distributive education a few months later, the mood of pharmacy association spokesmen had shifted and the concept of clerk training had gained support in such disparate areas of the country as California, Colorado, Georgia, Kansas, Michigan, Missouri, Nebraska, Ohio, Texas, Utah, and Wisconsin. In Salt Lake City, local pharmacists organized a local association specifically for the purpose of training drug clerks. In San Francisco, the American Pharmacists' Association reorganized as the Professional Pharmacists' Association and projected an ambitious forty-eight-week training session for its drug clerks including principles of selling, store management, buying and selling, stock control, advertising, display, service, prescription work, new materia medica, and recent discoveries in medicine and pharmacy. The pharmacists themselves were to carry on the instruction, the cost of which would be subsidized by the Association. "May Launch Clerk School In Salt Lake," Drug Topics 52:1 (January 6, 1936), pp. 3 and 29; and "Group Is Revived To Train Clerks," Drug Topics 52:10 (March 9, 1936), p. 17. Also see "Denver Group Had School," "Cunningham-Economical School," "Says Classes Would Aid Owners," and "Says Dayton Men Pioneered," Drug Topics 52:1 (January 6, 1936), p. 29; "Newmark For Training," "Says Work Is Required," "Chain Man Urges Action," and "Suggests School For Lincoln," Drug Topics 52:10 (March 9, 1936), p. 17; "Atlantans Urge Training," "Favors Training Idea," and "Clerks Continue Studies," Drug Topics 52:39 (September 27, 1937), p. 12; and "Need Scientific Training," and "Cites Manufacturers' Helps," Drug Topics 54:3 (January 17, 1938), p. 19.

For a contemporary view of the events leading up to the passage of the George-Deen Act from the perspective of the drug trade, see "Bills For Clerk Training By U.S. And States Gain," Drug Topics 52:19 (May 11, 1936), p. 4; "Clerk Training Bill Wins Its Way To Conference Group," Drug Topics 52:23 (June 8, 1936), p. 4; and "FDR Signs Law To Aid Clerk Training," Drug Topics 52:26 (June 29, 1936), p. 3.

"To Train Clerks, U.S. To Spend $1,298,000," Drug Topics 53:28 (July 12, 1937), p. 3; "Roosevelt Holds Up Clerk Training Fund," Drug Topics 53:45 (November 8, 1937), pp. 3 and 8; "Plan Course For Teachers of Retailing," Drug Topics 54:35 (August 29, 1938), p. 8; and "Clerks' Training Manual Prepared," Drug Topics 54:37 (September 12, 1938), pp. 3 and 21. The Office of Education had the difficult task of determining the qualifications and outlining the general type of training needed by teachers and supervisors who would conduct the distributive education classes, although state and local departments of education would carry out the actual selection of teaching and supervisory personnel.

"N.Y. Board of Education May Open Training School," Drug Topics 54:24 (June 13, 1938), pp. 2 and 14. The stores were to be open to the public and adjacent to each other, each with a classroom directly above and accessible from within to facilitate the coordination of theoretical and practical training. According to Jacques C. Rosenblum, supervisor for the project, the pharmacists and clerks who enrolled in the course would be given "complete training in store management, covering subjects generally not stressed in pharmacy schools and which are learned only after years of costly experience." Students were to be taught "all phases of window display and interior display, accounting, choosing a store location, opening a store, purchasing, and salesmanship," and would have an opportunity to operate the pharmacy, "putting their education to the test of actual practice in observing consumer reaction."

Ibid., p. 14. The preceding autumn, the same School had pioneered by offering a free evening course in drug store retailing, under the joint sponsorship of the Works Progress Administration and the New York City Board of Education. The instructor was a pharmacist, "who has had legal training in addition to his drug store experience," "New Free Course In Retailing Opens Tuesday In New York City," Drug Topics 54:5 (January 31, 1938), p. 4.

The instructor for the course was A. Allen Coombs, a local pharmacist who had also received a degree in business administration from Stanford University. Subjects discussed included: "The Psychology of Speed in Selling," "Types of Customers and Their Treatment," "Knowledge of Stock and How to Avoid Incomplete Stocks," "Lost Sales and Their Remedies," "How to Meet Objections with Merchandising Facts," "What Every Salesperson Should Know About Everything New," "Ways to Move Slow Selling Merchandise," "Making People Want to Trade With You," "Advertising, Display and Demonstration," "Suggestion Selling and Increasing the Average Sale," "The Value of a Good Appearance and Personality,"
"How to Build a Sales Vocabulary," "Finding the Talking Point of Merchandise," "The Motives Behind All Buying," and "Color and Its Relation to Selling." "Salt Lake Druggists Plan Courses On Store Problems," Drug Topics 52:46 (November 16, 1936), p. 4; "Utah Merchandising School Teaches Selling Technique," Drug Topics 53:8 (February 22, 1937), pp. 2 and 27; and "20 Clerks Finish Night Course Run By Store Owners," Drug Topics 53:14 (April 5, 1937), p. 59. The following spring, the classes were continued, partly financed by George-Deen funds. "This educational movement has been a great stimulant to the druggists of Salt Lake County and has resulted in increased efficiency, fewer markdowns, and increased profits, due to scientific methods of merchandising," stated Charles King, president of the Salt Lake City Associated Druggists. "All states and cities should accept the George-Deen educational advantages because the worst competitor is the ignorant competitor--the competitor who sells below cost." "City To Expand Clerk Training," Drug Topics 53:38 (September 20, 1937), p. 2; "Utah Druggists Go To School," Drug Topics 54:26 (June 27, 1938), p. 2; and "Salt Lake Opens 2nd Clerk School; Training Praised," Drug Topics 54:50 (December 12, 1938), p. 23.

B. Frank Kyker, Special Agent for Research in Commercial Education of the U.S. Office of Education, emphasized that initial requests for distributive trade classes should come directly from pharmacists and other interested retailers to their local or state boards of education. The Office of Education would assist in organizing the classes requested, Kyker stated, but local boards would decide what trades to assist and what subjects to teach. "Retail Training Must Be Demanded If It's Wanted," Drug Topics 54:41 (October 10, 1938), pp. 3 and 43. Also see "D. of C. Retailers Get Clerk Course If They Demand It," Drug Topics 54:39 (September 26, 1938), p. 4; and "Lack Of Demand Deprives Stores Of Clerk School," Drug Topics 54:47 (November 21, 1938), p. 18.


As a service to the nation's schools and colleges of pharmacy, state pharmaceutical associations, and state boards of pharmacy, Evander F. Kelly, Secretary of the American Pharmaceutical Association, and Henry C. Christensen, Secretary of the National Association of Boards of Pharmacy, distributed a fifteen-page bulletin outlining the objectives of the George-Deen Act, the type of education covered by the Act, the amount and allotment of funds, and suggested methods of organization and administration, based upon the Wisconsin Plan. Editor Rufus A. Lyman characterized the Plan as "well done" and "invaluable to any group desiring to undertake the work since every detail from the individual to approach in setting up the plan to the organization of subject matter and conduct of classes is given. . . . Local desires and needs call for

The administration of vocational education in Wisconsin is fairly unique: All vocational school instruction is under the supervision of the State Board of Vocational and Adult Education, which operates independently of the State Department of Public Instruction, which directs the work of the state's public schools. The idea of "circuit instruction" in vocational and adult education was not new to Wisconsin, a system having been inaugurated as early as 1926. See Edwin J. Boberg, "Post Graduate Education for Practicing Pharmacists: The Wisconsin Board Plan," Proceedings of the Meeting of District No. 4 of the American Association of Colleges of Pharmacy and the National Association of Boards of Pharmacy (1938), p. 21.


Edwin J. Boberg, "Toward Higher Standards in Pharmacy," Eau Claire, Wisconsin, [August, 1937]. (Mimeographed.), Kremers Reference Files. In his survey, Boberg collected the following topics for discussion: interprofessional relations, vitamins, laws and regulations, sulfanilamide, knowledge of merchandise, allergy, newer remedies, public health studies, drug store advertising, and recent trends in therapy. "Many pharmacists are probably totally unaware of the considerable body of high-minded leaders in the profession who care something about ideas and higher standards," Boberg added. "In order to encourage thinking on a somewhat higher level, we believe that occasional quotations from such leaders will serve a useful purpose. With this thought in mind, we shall regularly devote five or ten minutes of each class period to a review of current thought under the heading 'What the Leaders are Thinking.'"

Letter, Arthur H. Uhl to Edwin J. Boberg, September 24, 1937, Kremers Reference Files. Uhl added, "If we here at the University can be of any service to you in any way, I hope you will not hesitate to call on us."


Board of Pharmacy Secretary Sylvester H. Dretzka and Board member Edwin S. Schweger served as advisors to Boberg, who was assisted by local pharmaceutical association officers as well as by guest speakers.


107 Boberg referred to a recommendation made by Dretzka during his term of office as President of the Wisconsin Pharmaceutical Association in 1935. Boberg also acknowledged the assistance and advice of Edward Kremers and Arthur H. Uhl (University of Wisconsin), Ralph E. Terry (University of Illinois), Charles O. Lee (Purdue University), Bernard V. Christensen (University of Florida), Evander F. Kelly (American Pharmaceutical Association), and Henry C. Christensen (National Association of Boards of Pharmacy). "Our problem here is one of selling ideas, particularly to the group who are not in attendance at conventions and meetings," Boberg remarked. "We want to reach the great body of pharmacists throughout the state. We do not feel that this program is in conflict with any of the other agencies. No credits are given; no degrees. [It is] simply an attempt to offer an educational service to the out-of-school group. The program can be used to develop professional pride, higher standards." Boberg, "Post Graduate Education for Practicing Pharmacists," p. 22.

108 "Wisconsin School for Pharmacists Nationally Recognized," Wisconsin Druggist 6:9 (September, 1938), p. 5. Earlier that year, Boberg had called attention to the problem of educational disparity among Wisconsin's pharmacists: "We have a large proportion of pharmacists in the state who are not graduates. An unusually large number are not beyond the high school stage. Our prerequisite law is comparatively recent. Naturally there are difficulties in teaching classes of such different educational levels... As time goes on, this condition will be remedied." Boberg, "Post Graduate Education for Practicing Pharmacists," p. 22.
"Governor LaFollette Lauds Pharmacists: Pharmacy Study Course Is Praised By Wisconsin's Chief Executive," Wisconsin Druggist 6:10 (October, 1938), p. 8. Tepoorten noted that the instructional material used with the several groups was "the result of conferences with druggists and officers of their various associations as well as with the members of the State Board of Pharmacy."

Robert L. Swain, "Your Pharmacy and Mine: Congratulations To Wisconsin!" Drug Topics 55:4 (January 23, 1939), p. 17. "These activities would seem a sufficient burden, but many boards have gone beyond these statutory duties and assumed leadership in all matters pertaining to pharmaceutical advance. Such a board is the Wisconsin Board of Pharmacy. Recognizing that certain work was needed to be done, it rolled up its sleeves and proceeded to get it done. . . . Good news pharmaceutically has been coming from Wisconsin for sometime, and good news will continue so long as the present board of pharmacy sees things as clearly as it obviously does now."


Lyman, op. cit., pp. 146-47.

The total number of clock hours of instruction in pharmacy administration required by the various editions of The Pharmaceutical Syllabus crept from 55 in 1910 to 150 in 1925, then dropped to 128 in 1932, gradually increasing to 144 clock hours in the 1945 edition. Although Blauch and Webster recommended increasing this total to 240 clock hours (15 semester hours) in 1952, pharmacy administration courses still accounted for less than ten per cent of the suggested curriculum (15/160 semester hours). At the time, barely one-half of the schools and colleges of pharmacy in the country offered more than eight semester hours of administrative instruction. Blauch and Webster, op. cit., pp. 172 and 191.

J[oseph] H. Goodness, "Post War Plans for Courses in Pharmaceutical Economics in Colleges of Pharmacy," American Journal of Pharmaceutical Education 9:1 (January, 1945), pp. 45-46. The need for commercial and economic instruction for pharmacists had been dramatically demonstrated by the National Retail Drug Store Survey of 1932, which investigated the causes of failure among thirty pharmacies. "Most of the owners had training in drug stores, but they were so lacking in business ability that success in their undertaking could hardly be expected. . . . Only 2 of the 30 failed druggists had ever attempted to prepare statements of profit and loss and balance sheets from the accounting records maintained in their business. Three kept no records whatsoever; the others had only notebook ledgers in which they recorded merely purchases and sales. Most of the failed druggists, for many months on the road to ruin, were not aware of their ultimate failure until it arrived." U.S. Department of Commerce, Bureau of Foreign and Domestic Commerce, Causes


116 Ibid., pp. 161-62. "Older pharmacists and even some educators in the profession are often caustic or, at best, apathetic in their remarks concerning courses in physics, mathematics, philosophy, foreign language, history, and other subjects which have been placed in the curricula of some schools to more clearly differentiate between a technically trained clerk and an educated pharmacist," Baldinger added.

117 Edward J. Ireland, "Report of the Committee on Activities of Students and Alumni," American Journal of Pharmaceutical Education 1:1 (January, 1937), p. 92. The Committee on Resolutions suggested that the colleges act in accordance with the recommendation "in so far as conditions in the various districts make such procedure advisable," adding that the project "be given further study and consideration" by the Committee on Activities of Students and Alumni, both of which recommendations were adopted. [Ernest Little], "Report of the Committee on Resolutions," Ibid., p. 55.

118 A[dolph] Ziefle, "Report of the Committee on Activities of Students and Alumni," American Journal of Pharmaceutical Education 2:2 (April, 1938), pp. 226-27. Ziefle explained that since "continuation courses" constituted "rather a new type of education, it is not surprising that only six institutions offered such courses during the past year. Several institutions reported that they are perfecting plans for continuation courses and within the next year several of these courses may be established." Ziefle added that he regretted the lack of college participation in "druggists' conferences" because "reports indicate that these conferences are highly successful. If a small institution in a thinly populated area can hold successful annual druggists' conferences, there is no reason why the larger school in the thickly populated areas should not hold similar conferences." Ibid., p. 227.

119 Ibid., pp. 228-29. The use of radio as a medium for public relations and education dates to Frederick J. Wulling's pioneering broadcasts from the University of Minnesota in 1927 (see Chapter IV, n. 100). For an example of one of Wulling's addresses, see Frederick J. Wulling, "The Service the College of Pharmacy of the University of Minnesota is Giving to the State," pp. 293-96. For details on the use of radio by the University of Oklahoma, the State University of Montana, Loyola University, Ohio State University, and Oregon State College, see "Oklahoma School Gives Radio Series," Drug Topics 52:47 (November 23, 1936), p. 25; "Radio Program at the University of Oklahoma for 1937," American Journal of Pharmaceutical Education 1:1 (January, 1937), pp. 118-19; Fischelis, "Report of the [1937] Committee on the Study of Pharmacy,"

120 Ziefle, op. cit., p. 231. The Committee on Resolutions, however, through Chairman Charles B. Jordan, diluted this modest proposal to simply endorse the general principle of undergraduate and alumni activity and to recommend to member colleges that "such activities be instituted and maintained." Jordan, "Report of the Committee on Resolutions," p. 451. Interestingly enough, that same year, a recommendation by the Committee on Professional Relations to the effect that "a committee should be organized to study the desirability of obtaining review courses or special courses for the pharmacist so that he may better keep abreast of the time and increase his professional services" was not accorded action by the Association. Schicks, "Report of the [1938] Committee on Professional Relations," p. 234.


122 [James M.] Dille, "Report of the Committee on Resolutions," American Journal of Pharmaceutical Education 3:4 (October, 1939), p. 487. The Committee expressed the opinion that the Committee on Activities of Students and Alumni "had outlived its usefulness and could be discontinued," regretting it did not have the power to originate such a proposal.
CHAPTER VI

UNIVERSITY-DIRECTED CONTINUING PHARMACEUTICAL EDUCATION, 1940-1949

On September 1, 1939, Germany invaded Poland; World War II had begun. On September 5, President Franklin D. Roosevelt proclaimed the neutrality laws in effect; three days later, he declared a "limited national emergency" to safeguard American neutrality and to strengthen national defense. The interval between these events and those of December 7, 1941, represented a period of mounting concern with regard to national defense.

In 1917, federal officials concerned with public education and war production failed to recognize the importance of general university extension to the war effort; as a result, many university extension organizations collapsed. In contrast, during World War II, the federal support provided to administrators of general university extension produced programs of lasting significance.1

General University Extension and World War II, 1940-1945

As early as 1939, many university extension divisions had responsibility for programs of flight instruction under regulations approved by the Civil Aeronautics Authority.2 In June, 1940, administrators of university extension helped secure a $15,000,000 appropriation under Public Law No. 668 for defense training courses in industrial production "of less than college grade";3 by the following July, 888,144 men and
women from all walks of life had received training in these courses, thus restoring some of the human potential lost during the Depression.  

Pearl Harbor turned the university into more of a camp than a campus, and university presidents and army generals called upon university extension for know-how in operating special training programs for uniformed personnel and in promoting home-front drives; administrators of adult education marched off to man the mushrooming bureaus at Washington. "Preparation for war," remarked adult educator James Creese at the time, "is 'ad-hocness' with a vengeance." Two activities in particular, the Engineering, Science, and Management War Training program (ESMWT) and the U.S. Armed Forces Institute, deserve special mention.  

The inauguration of the ESMWT programs introduced a new element: Supported by federal appropriations eventually totalling $59,957,040, individual schools and colleges of engineering provided "short engineering courses of college grade . . . designed to meet the shortage of engineers with specialized training in fields essential to the national defense" under direct contracts with the U.S. Office of Education, avoiding the usual intermediary bureaucracy. Instruction at a few places began as early as December, 1940; by the end of June, 1941, 143 institutions in forty-seven states, the District of Columbia, and Puerto Rico had enrolled 120,802 students in 2,182 courses on a tuition-free, non-credit, non-degree basis. Subjects ranged from basic courses in physics, mathematics, engineering drawing, and strength of materials to advanced courses in aerodynamics, meteorology, and geometrical optics; by June 30, 1945, 1,795,716 students had received training in 42,568 courses at a total of 227 institutions.
The U.S. Armed Forces Institute (USAFI), a mammoth correspondence-study college for military personnel also drew on university extension experience and added to its prestige. On December 24, 1941, the Secretary of War revealed plans for a correspondence school to be called the "United States Army Institute." The Board of Regents of the University of Wisconsin contracted with the federal government to provide the instruction. Extension pioneer Cyril M. Jansky, an excellent program organizer, built an instructional staff from the existing University force; on May 27, 1942, the first nine students enrolled for university extension courses. In September, the new Institute became the USAFI with Colonel William R. Young, former head of correspondence instruction at Pennsylvania State University, the first commandant; by March, 1943, 639 servicemen were actively enrolled. An Institute survey reported that 80 per cent of the instruction was rated as "excellent" by the students, although some inexperienced correspondence teachers found it difficult to convert the marking of papers into a teaching technique.

Besides its instructional service, the Institute also purchased courses from Wisconsin's Extension Division and prepared paperbound editions of standard textbooks for use by its correspondence students. "In every theater of the war," declared extension historian Frederick M. Rosenstreter, "USAFI came to stand for home and hope for the future." Unlike the ESMWT programs, the USAFI did not collapse with the end of the war; USAFI continues to provide a variety of services to the military and civilian personnel in the armed forces, including correspondence courses, group study guides, resident center programs, tests of general education development, achievement tests, and educational and vocational advice.
In 1970, USAFI offered about 200 correspondence courses to over 300,000 military personnel on active duty; nearly one-half of these courses are offered at the collegiate level.12

The dislocation of World War II had great significance for university extension: resident faculty members lacking students were trained to teach newly developed courses of instruction to adults in off-campus centers under unusual time schedules; universities developed new relationships with industry and government and many large research projects were centered in universities; essential and desirable staff services such as testing and counseling, job placement, course and visual aid production, promotion and publicity, and teacher training, hitherto considered as luxuries, became available under federal funding. As a result of these activities, the experience and competence of university faculties were substantially increased, and extensive physical resources developed on or adjacent to university campuses subsequently became part of university properties. Finally, a variety of war service programs for agencies and organizations other than industry and government served to acquaint millions of Americans with university extension for the first time, resulting in further expansion of university extension programs, particularly with respect to residential centers located away from university campuses. Thus, the war experience provided a broadening effect, preparing administrators of university extension to cope with the next emergency training program presented by veterans returning from war to begin or resume their university education.

Attitudes Toward Continuing Pharmaceutical Education, 1940-1944

As the gathering clouds of war became increasingly ominous, the
faculty and administration of America's colleges and universities found it difficult to determine exactly what measures they should pursue. Most of them felt that they could make their best contribution to the critical national situation by going ahead with their regular tasks in the most effective manner possible.\(^{13}\)

The deans of America's schools and colleges of pharmacy reflected this attitude with regard to their burgeoning programs of continuing pharmaceutical education. Stimulated by a suggestion by Sylvester H. Dretzka, retiring president of the National Association of Boards of Pharmacy, the representatives of state boards of pharmacy and schools and colleges of pharmacy included the topic of "continuation study for our practitioners" in the 1941 programs of their annual district conferences.\(^{14}\) The suggestion prompted at least some academicians to survey the condition of the profession in their states. Thus, Leon W. Richards of the University of Montana School of Pharmacy, reporting on his visits to 225 pharmacies in Montana, pointed out that

36 per cent had the U.S.P. XI, while 52 per cent had none of the last revisions. So many are doing present-day pharmacy out of old books. Some could not even find their poison register. Some kept biologicals without refrigeration. We have a heterogeneous assortment of good and bad pharmacists in the state, and we should try to educate them.\(^{15}\)

Dean Adolph Ziefle of the Oregon State College School of Pharmacy agreed: "It is well known that the average druggist does not dispense to the best of his ability, nor does he usually take advantage of the aids and methods which should be known to him," he stated. "Let us try to promote advancement in technique for the rank and file of pharmacists."\(^{16}\)
Clearly, a need for continuing pharmaceutical education existed in the early 1940s. How did the deans of America's schools and colleges of pharmacy propose to react to this need? Many simply voiced platitudes, identifying continuing education with public relations rather than with public health.\textsuperscript{17} It was C. Leonard O'Connell, Dean of the University of Pittsburgh College of Pharmacy, however, who identified the crux of the matter:

\begin{quote}
Do pharmacists, as a group have the capacity to keep abreast of current pharmaceutic advances, and, further even granted that they do have the capacity, is there actually a strong desire on their part to avoid the opportunity of present college programs in this regard? . . .
\end{quote}

Programs now being offered by various schools have not, as a rule, grown out of a real desire on the part of the individuals for whom they have been intended, but rather have grown out of the conviction of many pharmaceutical educators that schools of pharmacy have an obligation to provide training for practicing pharmacists, in addition to graduate programs for advanced degrees.\textsuperscript{18}

O'Connell pointed out that the "practical success" of continuing education programs hinged on the desires of the practicing pharmacists, and that such programs must be preceded by "a more careful study" of the factors involved:

\begin{quote}
We must seek to discover what, if any, compelling desires the pharmacists may have in these matters. Such a study may disclose that more pharmacists are wishful than wantful in their not too clearly defined notions in reference to advanced programs of study.
\end{quote}

For really effective results the one, two and three day programs must attract enough support to warrant extension of the work over a longer period of time such as the semester. As such programs develop there should be less and less of the fairly common notion that people can be kept abreast of scientific advances by taking a few lectures annually. Such notions are certainly of little value to our field, and if we continue our fairly desultory attempts to offer so called advanced work to practitioners more harm than good may result from them.\textsuperscript{19}
At that same meeting, John J. Debus of the New Jersey Board of Pharmacy pointed out that the profession of pharmacy was confronted with the problem brought about as the result of the rapid advances being made in the pharmaceutical sciences. "Unless pharmacists keep abreast of the advances being made, they will not be able to perform their services in a safe and efficient manner," Debus stated. "I doubt whether the average pharmacist whose formal education, if any, stopped fifteen or more years ago is competent to keep abreast of modern advances without the aid of continued formal education." Debus, however, had a novel solution to the problem which raised the level of his discussion above mere exhortation:

It is my opinion that the only effective method of meeting these conditions and to preserve for the American public a safe and adequate professional pharmaceutical service, is to require registered pharmacists to show evidence to the Board of Pharmacy, when the proper renewal of registration period is due, that they have completed an approved course of not less than twenty-four hours of instruction in certain phases of pharmaceutical progress at least once each five years.

Debus's suggestion was warmly debated by the resolutions committee of the meeting, which eventually approved a modest version of the proposal and referred it to the Committee on Reciprocal Plan and District Examination for further consideration and study. As is the case with most ideas born ahead of their time, Debus's suggestion languished in committee and eventually expired, only to be reincarnated a quarter of a century later in the mandatory continuing pharmaceutical education requirements of Kansas and Florida.

The activities of the members of state boards of pharmacy and faculty members of schools and colleges of pharmacy at the district level
were not lost to the editors of America's pharmaceutical journals, who continued to press for more and varied continuing education experiences for the nation's practicing pharmacists. Thus, Evander F. Kelly, in his initial editorial in the new Practical Pharmacy Edition of the *Journal of the American Pharmaceutical Association*, could point out that "the developments in Pharmacy are now so extensive and so rapid that pharmacists cannot keep up with them unless they are assisted." Noting that "refresher courses of one kind or another" were being carried on in several states, Kelly urged that the movement be extended. "In meeting this need the schools and colleges of Pharmacy can make themselves of assistance to the pharmacist directly and personally."

Robert L. Swain, editor of *Drug Topics*, characterized the "brush-up" courses offered by America's schools and colleges of pharmacy as "a movement which has attained a permanent place in our pharmaceutical scheme." Remarking that "even the 'fertilest ground must be manured' from time to time," Swain urged his pharmacist readers to "support these brush-up courses as a practical means of keeping in step with the times":

> Drug Topics warmly commends the colleges of pharmacy for their sustaining interest in the welfare of the retailer. Organized pharmacy should be encouraged to continue its cooperation so that, from the combined efforts of all, pharmacy may be the profession we desire it to be, and pharmacists may be equipped to cope satisfactorily with their professional and economic problems.

In a guest editorial in the *American Druggist*, Joseph A. Ortolan, an instructor in economics and pharmacal jurisprudence at Brooklyn College of Pharmacy, agreed with Swain, yet reflected his personal perspective:

"It is our responsibility as teachers to inculcate into the minds of embryo pharmacists the imperative need for continuing their studies after
graduation. While colleges of pharmacy are doing their part in this work, every licensed pharmacist has a responsibility to help attain this desideratum."\(^{27}\)

It was John N. McDonnell, however, editor of the *American Professional Pharmacist*, who gave the greatest boost to continuing education in pharmacy in the early 1940s: "Daily, more is demanded of the pharmacist. In considerable extent (in many cases even in spite of himself) he is becoming the supply depot for information," McDonnell wrote. "The colleges must recognize that their duty and services to Pharmacy and the pharmacists ceases not with graduation day."\(^{28}\) In another editorial, McDonnell pointed out that with the rapid progress in medicine, physicians would be turning to the pharmacist more and more for aid in choosing the best therapeutic agent, route, and means of administration, since the pharmacist is a specialist in drugs. This concept, McDonnell believed, "is bringing a definite demand upon Pharmacy. It requires that the pharmacist increase his comprehension of pharmacology, of chemistry, of physiology, and anatomy. This very complexity is making of today's and tomorrow's pharmacist a scientist as well as a professional man."\(^{29}\) In a subsequent issue, McDonnell again looked down from his editorial aerie:

The demand by pharmacists (not all pharmacists; not half the number of pharmacists; but enough to guarantee the future progress and advancement of Pharmacy) has brought into being the newest of movements in Pharmacy. The extension lectures, the postgraduate clinics, the seminars on modern pharmaceutical practice, all are the spontaneous answer to a need of today. From coast to coast, Pharmacy colleges and associations have developed such plans for the assistance of those practicing pharmacists who are intelligent enough to attend. This is a healthy sign of a growing profession.\(^{30}\)
Finally, near the end of the war, McDonnell expressed concern for the pharmacists in the Armed Forces who would be returning to civilian practice:

Great advances have been made in their absence. They will have forgotten much that they learned in college and in practice. They must be re-educated through the medium of refresher courses of some substance. Pharmacy as a whole, through its associations and its colleges, must now plan for early adoption such training periods to be offered at cost (or without it) to those men who return to practice, in a new world of Pharmacy.  

At the national level, the leaders of the American Association of Colleges of Pharmacy continued to poke gingerly at the problem of providing continuing education experiences for the practicing pharmacist by consigning it to committees, rather than attempting to deal with the problem in a direct manner. In his presidential address before the Association in 1943, Dean Howard C. Newton of the Massachusetts College of Pharmacy stated that it was the duty of schools and colleges of pharmacy to make it easier for the practicing pharmacist to keep abreast of the times so that he might "more readily render optimum service." Newton recommended that the Committee on Activities for Alumni "undertake as a major project a survey of ways and means to insure that our Association will aid in the further development of continuation study facilities in our colleges."  

In point of fact, the Committee on Activities for Alumni had been working quietly on the problem of continuing pharmaceutical education since the late 1930s, but its efforts had been diluted by the broad scope of its assignment as well as by the very nature of committee work in an
Association that met but once a year. In 1940, for example, Chairman George W. Hargreaves urged that "the subject of short courses be more intensely investigated next year" by his Committee, noting that "much detailed information could be gathered and made available to schools that are contemplating beginning this type of activity." The following year, Hargreaves could report that the number of short courses and refresher courses presented by the nation's schools and colleges of pharmacy was increasing, noting that although the courses were well distributed geographically, they appeared to be more intensely developed in the East and the Middle West. He recommended that continuing education of practicing pharmacists "should be a part of the educational policy of every school of pharmacy" for a number of reasons:

There is an increasing desire for additional knowledge on the part of pharmacists themselves and this should be encouraged. Under our present system of "apprenticeship," . . . the practicing pharmacists are an integral part of our educational system and as such should be kept abreast with recent developments in pharmaceutical education. . . . These courses can likewise be of value in developing better personnel for our examining boards. Most state association meetings have become primarily social and political in their nature so the practicing pharmacists must look to the schools for additional education and inspiration along professional lines.

Hargreaves suggested that more cooperation among schools and colleges of pharmacy would "work for the mutual improvement of these courses," adding that the exchange of faculty members for the courses "should be encouraged."

The 1942 Committee, under the chairmanship of Charles W. Bauer, struggled to clear up the confusion which apparently existed concerning the functions of the Committee. "It appears that many of our deans are still thinking of this committee in terms of its predecessor suggested
by F. J. Wulling in his presidential address in 1915," Bauer complained. "May we emphasize the fact that this committee is no longer concerned with student activities or social affairs of either the students or alumni." Bauer noted that the proposed exchange of faculty members for refresher courses had proved unsuccessful, and recommended the exchange of annotated refresher course programs in its stead. "We feel that such programs would be very helpful to all and be appreciated especially by those schools who have hesitated to introduce such a course." Yet by the following year, the exigencies of the war had nearly decimated the modest number of continuing education programs for practicing pharmacists which had shown such promise at the beginning of the decade. What was the nature of continuing pharmaceutical education activities during this period?

Continuing Pharmaceutical Education, 1940-1944

The economic plight produced by the Depression of the 1930s had seriously affected enrollments in America's schools and colleges of pharmacy. Although some institutions had recovered their pre-Depression enrollment levels by 1941, the Selective Service policies brought about by World War II proved detrimental to those institutions and to their ability to meet the nation's needs for pharmaceutical personnel. Moreover, the accelerated program adopted by most American schools and colleges of pharmacy during the war years, which allowed undergraduate students to earn the baccalaureate degree in pharmacy upon the completion of three twelve-month academic years, placed extraordinary teaching loads upon the faculties of these institutions. Both these factors are re-
flected in the nature of the continuing pharmaceutical education offerings of the early 1940s.

The modest progress in continuing pharmaceutical education which America's schools and colleges of pharmacy had achieved during the late 1930s suffered a reversal in 1940. Replies to a questionnaire sent to the nation's pharmacy deans by Drug Topics editor Robert L. Swain revealed that thirty-four schools and colleges of pharmacy presented "brush-up courses" in 1939. "The colleges reported that attendance was good and that retailers were showing a greater interest in some means or organized or systematic contact with the major developments in the pharmaceutical field," Swain reported.

Some deans . . . pointed out that pharmacists feel the need for brush-up contacts with the medical and pharmaceutical sciences because of the new research products they are called upon to handle, and also to answer consumer questions which the public is asking in ever-increasing numbers. Swain indicated that the subject matter embraced by the brush-up courses showed a "wide diversification," but that in most cases the subjects were "fairly well selected so as to cover both professional and commercial problems."

It is interesting to note, however, that the combined programs show a pronounced concentration in the professional group, thus supporting the contention frequently advanced that pharmacists are becoming more professional in their point of view. Swain added that "in most of the instances, the brush-up idea originated with the college of pharmacy itself," noting that "in practically every case, the project has the active cooperation and support of the state pharmaceutical association concerned."
By mid-1940, however, the situation had deteriorated considerably. According to George C. Schicks, Chairman of the American Association of Colleges of Pharmacy's Professional Relations Committee, only seventeen of the fifty-eight schools and colleges within the Association sponsored continuing education activities for the practicing pharmacist covering "practically every phase of commercial, scientific, and professional pharmacy." Schicks pointed out that the subject content of the "refresher courses" was usually arrived at by one of three methods: joint recommendations of practicing pharmacists and representatives of the schools or colleges, recommendations of professional relations committees within the states, or recommendations sent directly to schools or colleges of pharmacy by practicing pharmacists. The following year, Schicks could report nineteen institutions were engaged in sponsoring continuing pharmaceutical education activities. "We suggest that your state pharmaceutical association appoint a committee on extension courses, made up of practicing pharmacists, and thus have the request come from the profession itself rather than through the initiative of the college," Schicks stated. "Experience has shown this to be a good method."

By 1942, however, the continuing education activities of America's schools and colleges of pharmacy showed definite signs of being affected by the war. Schicks's Committee developed a four-point program for these institutions, the latter half of which was directly related to the war effort:

Colleges of pharmacy were asked to make contacts with groups of practicing physicians to arrange for one or more lectures on modern medication and prescription writing. . . .
An effort was made to increase the number of pharmacy colleges giving refresher courses to practicing pharmacists.

An effort was made to have colleges of pharmacy schedule standard Red Cross first aid courses for their students and for practicing pharmacists wherever such courses are not given.

An effort was made to have colleges of pharmacy communicate with local defense groups so that they may have a part in the war effort in their state or in their community.

Schicks noted that the nation's schools and colleges of pharmacy had been able to maintain the previous year's level of continuing education activity, but had not been able to expand beyond that level. "The difficulties in transportation have made it impossible for certain groups to meet, which, under more favorable conditions, would have done so," Schicks explained. "It would appear to be encouraging that the figure has not been reduced." Schicks's optimism appears to have been unfounded, for by 1943, continuing pharmaceutical education had become a casualty of the war. That year, Thomas D. Rowe, Chairman of the Association's Committee on Activities for Alumni, reported that only six schools and colleges of pharmacy offered continuing education courses for the practicing pharmacist and that most of these institutions experienced a twenty per cent drop in attendance:

Twenty-six colleges which have given such classes have dropped them within the past few years. In one section of the country, ten of twelve schools gave courses in 1942. Of these, only one continued the work in 1943.

The reasons for discontinuing this activity were many. The majority of the schools stopped their courses because of the two following factors: (1) Inability of pharmacists to leave their stores because of lack of help. (2) Inadequate transportation.

At least thirty-five of the sixty-five accredited schools and colleges of pharmacy in the United States provided some sort of contin-
uing education activities for the practicing pharmacist between 1940 and 1945, thirteen of these institutions (about 37 per cent) initiating such activities for the first time (see Table 2).

### Table 2

**INITIATION AND CONTINUATION OF CONTINUING EDUCATION ACTIVITIES AT AMERICAN SCHOOLS AND COLLEGES OF PHARMACY, 1940-1949**

<table>
<thead>
<tr>
<th>Year</th>
<th>School or College of Pharmacy</th>
<th>Nature of Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1940</td>
<td><em>Columbia University</em></td>
<td><strong>Weekly lecture series; two-day seminar; first aid courses; perfume seminar</strong></td>
</tr>
<tr>
<td></td>
<td><em>Connecticut College of Pharmacy</em></td>
<td><strong>One- to two-day pharmaceutical clinic; refresher courses</strong></td>
</tr>
<tr>
<td></td>
<td><em>Duquesne University</em></td>
<td><strong>One-day traveling pharmacy clinic</strong></td>
</tr>
<tr>
<td></td>
<td><em>Massachusetts College of Pharmacy</em></td>
<td><strong>Annual one- to four-day refresher course; first aid courses; prescription clinic</strong></td>
</tr>
<tr>
<td></td>
<td><em>Philadelphia College of Pharmacy and Science</em></td>
<td><strong>Annual three-day seminar on modern pharmaceutical practice; first aid courses; veteran refresher course</strong></td>
</tr>
<tr>
<td></td>
<td><em>Purdue University</em></td>
<td><strong>Extension service; annual two-day business conference; five-day short course for clerks; radio broadcasts; exhibits; interprofessional relations; first aid courses</strong></td>
</tr>
<tr>
<td></td>
<td><em>Rutgers University</em></td>
<td>Eight- to twelve-week refresher courses; first aid courses; civil defense courses; four- to five-week lecture series</td>
</tr>
<tr>
<td></td>
<td><em>Temple University</em></td>
<td><strong>One-day traveling refresher course</strong></td>
</tr>
<tr>
<td></td>
<td><em>University of Buffalo</em></td>
<td><strong>Two-day spring clinic; refresher courses; weekly seminars; first aid courses</strong></td>
</tr>
<tr>
<td></td>
<td><em>University of Florida</em></td>
<td>Bureau of professional relations; bulletins; exhibits; formulary service; detailing physicians; USP-NF propaganda; refresher courses</td>
</tr>
</tbody>
</table>

*Continuation of program from 1930s; see Table 1, Chapter V.*

**Intermittent or irregular programs and services.**
<table>
<thead>
<tr>
<th>Year</th>
<th>School or College of Pharmacy</th>
<th>Nature of Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1936</td>
<td>*University of Maryland</td>
<td>**Eight-week brush-up course; first aid courses</td>
</tr>
<tr>
<td></td>
<td>*University of Michigan</td>
<td>**Annual one-day pharmaceutical conferences</td>
</tr>
<tr>
<td></td>
<td>*University of Minnesota</td>
<td>Annual three-day pharmaceutical institute; extension courses;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>first aid courses</td>
</tr>
<tr>
<td></td>
<td>*University of Oklahoma</td>
<td>**Annual three-day merchandising clinic; radio broadcasts</td>
</tr>
<tr>
<td></td>
<td>*University of Pittsburgh</td>
<td>**One-day pharmaceutical conference; lecture series; first aid</td>
</tr>
<tr>
<td></td>
<td></td>
<td>courses</td>
</tr>
<tr>
<td></td>
<td>*University of South Carolina</td>
<td>**Serviced by university extension division; USP-NF propaganda</td>
</tr>
<tr>
<td></td>
<td>*University of Southern California</td>
<td>**One-day alumni conference; first aid courses</td>
</tr>
<tr>
<td></td>
<td>*University of Wisconsin</td>
<td>**Symposium on professional pharmacy</td>
</tr>
<tr>
<td>1941</td>
<td>†Fordham University</td>
<td>**Monthly lectures; first aid courses; veteran refresher courses</td>
</tr>
<tr>
<td></td>
<td>Indianapolis College of Pharmacy</td>
<td>**Alumni relations</td>
</tr>
<tr>
<td></td>
<td>Oregon State College</td>
<td>**Radio broadcasts; two-day seminar; first aid courses</td>
</tr>
<tr>
<td></td>
<td>*South Dakota State College</td>
<td>**Annual three-day pharmaceutical institute; first aid courses</td>
</tr>
<tr>
<td></td>
<td>University of Illinois</td>
<td>**Three-day conference on modern pharmacy; first aid courses</td>
</tr>
<tr>
<td></td>
<td>†Western Reserve University</td>
<td>**Extension courses; two-day pharmacy institute; eight-week</td>
</tr>
<tr>
<td></td>
<td></td>
<td>displaced pharmacist course; first aid courses</td>
</tr>
<tr>
<td></td>
<td>*Ohio State University</td>
<td>**One-day pharmacy conference; first aid courses</td>
</tr>
<tr>
<td>1942</td>
<td>Brooklyn College of Pharmacy</td>
<td>**First aid courses</td>
</tr>
<tr>
<td></td>
<td>*Creighton University</td>
<td>**First aid courses</td>
</tr>
<tr>
<td></td>
<td>†Detroit Institute of Technology</td>
<td>**First aid courses</td>
</tr>
<tr>
<td></td>
<td>Drake University</td>
<td>**Five- to ten-week refresher course</td>
</tr>
<tr>
<td></td>
<td>Ferris Institute</td>
<td>**Refresher courses; first aid courses</td>
</tr>
</tbody>
</table>

†Discontinued school or college of pharmacy.
<table>
<thead>
<tr>
<th>Year</th>
<th>School or College of Pharmacy</th>
<th>Nature of Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1942</td>
<td>*Medical College of Virginia</td>
<td>**Refresher courses; first aid courses</td>
</tr>
<tr>
<td></td>
<td>*Rhode Island College of Pharmacy</td>
<td>**Refresher courses; first aid courses</td>
</tr>
<tr>
<td></td>
<td>St. Louis College of Pharmacy</td>
<td>**First aid courses; five-day animal health short course; prescription seminar</td>
</tr>
<tr>
<td></td>
<td>University of Washington</td>
<td>**Refresher courses; first aid courses</td>
</tr>
<tr>
<td>1944</td>
<td>*Albany College of Pharmacy</td>
<td>**Prescription clinic</td>
</tr>
<tr>
<td>1945</td>
<td>*State University of Iowa</td>
<td>**Proposes extension division</td>
</tr>
<tr>
<td></td>
<td>University of California</td>
<td>**Veteran refresher courses; one-day seminar; bulletins</td>
</tr>
<tr>
<td></td>
<td>University of Kansas</td>
<td>One- to two-day seminar</td>
</tr>
<tr>
<td></td>
<td>*University of Kansas City</td>
<td>**One-year hospital pharmacy course; four-day seminar on pharmaceutical practice</td>
</tr>
<tr>
<td></td>
<td>University of North Carolina</td>
<td></td>
</tr>
<tr>
<td>1946</td>
<td>*Ohio Northern University</td>
<td>**One-day refresher lectures</td>
</tr>
<tr>
<td></td>
<td>*Wayne University</td>
<td>**Veteran refresher course</td>
</tr>
<tr>
<td>1948</td>
<td>University of Texas</td>
<td>Pharmacy extension service; two-day hospital pharmacy seminar</td>
</tr>
<tr>
<td>1949</td>
<td>*Alabama Polytechnic Institute</td>
<td>One-day symposium</td>
</tr>
<tr>
<td></td>
<td>*Howard College</td>
<td>One-day symposium; hospital pharmacy course</td>
</tr>
<tr>
<td></td>
<td>University of Georgia</td>
<td>Two-day pharmacy seminar</td>
</tr>
</tbody>
</table>

Although the exigencies of the war interrupted the continuing education programs of every school and college of pharmacy, all but four institutions provided continuing education activities on an intermittent or irregular basis. In general, the continuing pharmaceutical education activities of the early 1940s resembled those of the late 1930s: the "conference" format was dominant, the lecture technique being employed in nearly every instance. The content of most programs included both professional and business-oriented presentations, presumably to
attract the interests of a wide range of pharmacists. The conferences ranged from one to five days in length; several schools and colleges continued to experiment with the five- to twelve-week "brush-up" courses, series of one- or two-hour lectures on a weekly, biweekly, or monthly basis. The educational content of such conferences and courses, as noted above, was unremarkable, and few instructional innovations took place during this period. In addition, a few schools and colleges of pharmacy offered such supplementary educational services as pharmaceutical product information, occasional bulletins and monographs, traveling educational exhibits, radio broadcasts directed to the general public, and a flurry of first aid courses for the practicing pharmacist.

The role of the pharmacist in civil defense was delineated by Robert W. Rodman as early as July, 1941, in an editorial in the Journal of the American Pharmaceutical Association. "Although his pharmacy is not suited for use as a first aid station, the pharmacist himself would make an excellent first aid warden," Rodman wrote.

Those pharmacists who have been graduated during the past few years have had instruction in first aid and all pharmacists, through their knowledge of drugs and medicines and their years of experience in working hand-in-hand with physicians in saving lives, have acquired a calmness and stability under the pressure of responsibility that is a necessary qualification of one who is to render first aid in an emergency. It is advisable that pharmacists, as well as physicians, refresh their knowledge of first aid techniques, however, and in this need the colleges of pharmacy can serve by offering suitable extension courses.

The first organizations to respond to Rodman's plea were the Alumni Association of Columbia University's College of Pharmacy and the New York State Pharmaceutical Association, under the auspices of Leonard J. Piccoli of the Fordham University College of Pharmacy, both of which
launched a first aid course in November. By the following October, at least twenty-four schools and colleges of pharmacy across the nation were offering basic and advanced first aid courses to permit pharmacists to qualify as Red Cross first aid instructors who, in turn, could assist in conducting classes in their own communities. Although the Philadelphia College of Pharmacy and Science included lectures on pharmaceutical economics in wartime and the pharmacist's role in war gas defense procedures in its regular continuing education program, and Rutgers University's Richard A. Deno lectured to housewives on nutrition, first aid courses were the mainstay of the defense efforts of the nation's schools and colleges of pharmacy, yet once a sufficient number of pharmacists had been trained to meet projected civil defense needs, the courses quickly disappeared.

Many "refresher" and "brush-up" courses continued to be co-sponsored by state and local pharmaceutical associations during the early 1940s, as exemplified by the continuing education activities of the Albany College of Pharmacy, Duquesne University School of Pharmacy, the Massachusetts College of Pharmacy, Ohio State University College of Pharmacy, Rutgers University College of Pharmacy, Temple University School of Pharmacy, the University of Wisconsin School of Pharmacy, and Western Reserve University School of Pharmacy. The extension divisions of the University of Minnesota and the University of South Carolina assisted in the organization and administration of the continuing education programs of their respective colleges of pharmacy. Other schools and colleges of pharmacy, such as those located at Columbia University and at the University of Buffalo, received support from their alumni associations; the
University of Michigan College of Pharmacy relied upon the Michigan Branch of the American Pharmaceutical Association to help boost attendance at its annual Pharmaceutical Conference. In the case of the Connecticut College of Pharmacy, the University of Florida College of Pharmacy, the University of Maryland School of Pharmacy, and the continuing education activities of the University of Oklahoma School of Pharmacy, a variety of agencies provided support. In addition, a handful of state and local pharmaceutical associations and local branches of the American Pharmaceutical Association continued to sponsor their own continuing education activities for their memberships, often using lecturers from a nearby school or college of pharmacy.

The "back-to-pharmacy" movement of the late 1930s continued to manifest itself in the creation of local pharmaceutical associations established specifically to provide continuing education experiences for their memberships. Thus, in 1942, the Connecticut Association for the Advancement of Professional Pharmacy, under the chairmanship of John J. Dugan, organized "war classes for the purpose of enabling pharmacists to further aid public health by offering a greater and more varied service to the physicians remaining at home." The Michigan Branch of the American Pharmaceutical Association founded the Michigan Academy of Pharmacy "for the prime purpose of offering 'refresher' type courses for pharmacists." President Ernest R. Jones stated that "our charter is broad and permits us to engage in any activities benefiting professional pharmacy. This will be done by means of lectures, short seminars, printed articles, or whatever other interests may be considered expedient by the Directors." By May, 1943, the new Academy could boast a membership of 173,
160 of which participated in the Academy's first one-day conference. The Michigan Academy of Pharmacy continued to provide high-quality continuing education experiences for its membership throughout the war years. The establishment of professional associations such as the Connecticut Association for the Advancement of Professional Pharmacy and the Michigan Academy of Pharmacy indicates that professionally inclined pharmacists wished to control their own educational destiny; more importantly, it suggests that the schools and colleges of pharmacy in the vicinity were not meeting the educational needs of the practicing pharmacists in these areas.

The philosophy underlying continuing pharmaceutical education in the early 1940s, as reflected by the activities of America's schools and colleges of pharmacy and pharmaceutical associations, differed slightly from the educational philosophy of the late 1930s: provide the practicing pharmacist with sporadic opportunities to "brush-up" his knowledge of recent developments in the fields of medicinal chemistry and chemotherapy, biological products, prescription compounding techniques, state and federal drug legislation, and drug merchandising. Two educational activities of this period, the development of the University of Florida's Bureau of Professional Relations and the increased utilization of the funding mechanism provided by the George-Deen Act of 1936 for programs of distributive education for the practicing pharmacist, deserve to be singled out for special mention.

The University of Florida Bureau of Professional Relations, 1940-1949

In 1939, the Florida Legislature passed a bill enabling the Florida
State Board of Pharmacy to increase the renewal fee for pharmacists' licenses from one to five dollars, stipulating that this money should be used "for the advance of the arts and science of pharmacy" within the state of Florida. Subsequently, the State Board of Pharmacy voted to appropriate $5,000 per year for a program of professional relations to be administrated by the University of Florida College of Pharmacy. Accordingly, on July 1, 1940, a Bureau of Professional Relations was established at the College under a contract agreement between the State Board of Pharmacy and the Board of Control of the University of Florida. According to Perry A. Foote, Dean of the College of Pharmacy and first Director of the Bureau, the State Board of Pharmacy considered the colleges of pharmacy the "logical place" for the Bureau for the following reasons:

1. The program is primarily educational. Inasmuch as the University is looked on as the educational center of the state and inasmuch as the School of Pharmacy bears the same relation to the profession of pharmacy in the state, it was deemed logical to place the Bureau in the School of Pharmacy.

2. The program would carry the name of the University, which would immediately stamp it as educational rather than commercial.

3. A trust fund handled by the Board of Control would naturally be held out of reach of political aspirations, more especially since all expenditures are open to public inspection. Semi-annually the business manager of the University submits a list of vouchers and expenditures to the chairman of the Advisory Committee for transmittal to the Board of Pharmacy.

4. The resources and educational facilities of the state university would reinforce materially the work of the Bureau. Such facilities include a large reference library, stenographic help, printing department, photographic department, art department, radio station, student health service and a faculty to assist in the writing of bulletins, answering questions, and perhaps research on compounding problems.
5. The students in the School would benefit by the Bureau being placed there. . . . What could be better than to have them observe the program at first hand and perhaps assist, as they are now doing, in getting out literature, compounding prescriptions, filling and labeling sample bottles.\textsuperscript{67}

The initial thrust of the new Bureau was directed toward encouraging physicians to prescribe the official preparations included in the \textit{United States Pharmacopoeia} and the \textit{National Formulary}, a procedure which presumably would reduce pharmacists' inventories, lower prescription prices, and discourage self-medication. Later that same year, the House of Delegates of the Florida Medical Association approved the plan and appointed a committee of eight physicians to compile an "Accepted Florida Formulary," which was distributed to all physicians and pharmacists in the state.\textsuperscript{68} The following January, Charles R. Jordan, Associate Director of the Bureau, traveled throughout the state contacting pharmacists and physicians to gain their cooperation in the Formulary program, an activity reminiscent of the travels of Purdue University's Joseph L. Weinland a decade prior.\textsuperscript{69} By April, the program had progressed to the point where Foote could speculate on the future activities of his Bureau, which included contacting dentists, speaking at pharmaceutical, medical, and dental conventions and preparing exhibits for these conventions, publishing professional articles and advertising in medical and pharmaceutical journals, broadcasting radio programs on public health, establishing a bureau of information on drug therapy for pharmacists and physicians, attracting prospective pharmacy students, and sponsoring "trade conferences or refresher courses . . . at which time instruction could be given in professional relations and detailing U.S.P. and N.F. products."\textsuperscript{70}
The advent of World War II, with its accompanying travel restrictions and limitations on supplies, sharply curtailed many of the activities that Foote had proposed for the new Bureau. In 1942, however, Jordan was able to inaugurate a new monthly publication, the "Bureau Series," which brought the "practical current pharmaceutical and medical literature" to the pharmacists and physicians of the state "in the most concise manner possible." The following year, the Bureau suffered a serious blow when Jordan was called into military service, and Foote was forced to rely solely upon mailings to keep the program going.

In 1947, the Bureau's contract was revised and the University's Board of Control provided an additional $5,000 to supplement the Bureau's meager budget. The expanded budget permitted the Bureau to operate on a full-time basis; by September, Foote was able to hire a new associate director, pharmacist Lee W. Harrell. Two years later, Foote and Harrell discussed the programs and activities of the Bureau as part of a "Symposium on Interprofessional Relations" sponsored by the American Pharmaceutical Association at its annual convention. "Our College of Pharmacy has benefited both directly and indirectly as a result of the program of the Bureau," Foote reflected. "We are perhaps closer to the practicing members of our profession than any school or college on our campus." Harrell outlined eight specific objectives of the Bureau, reviewed its program, the emphasis of which had not changed: "We hope to increase interest in official drugs and chemicals, and at the same time we hope to discourage the use of higher priced proprietary equivalents," Harrell stated.
For the sake of the future of pharmacy and medicine, something must be done to curtail the multiplicity and duplication of some of the more elementary proprietaries. We feel that there are numerous instances in which official drugs and chemicals could be compounded by the pharmacist at much less cost to the patient. This would also result in a material reduction of inventory in most prescription departments.\textsuperscript{75}

Harrell called attention to the Bureau's convention exhibits, its Formulary revisions, and its monthly bulletins, the annual circulation of which totaled over 225,000. "There is also a great deal of personal correspondence that must be taken care of," Harrell added.

We are obliged to do some research work, both in the laboratory and the library, in order to answer some of the inquiries. We attempt to answer any and all questions, and in this manner we are serving more or less in the capacity of an extension school.\textsuperscript{76}

Although not quite an "extension school," the "notable success" of the University of Florida College of Pharmacy's Bureau of Professional Relations "stimulated interest among other groups throughout the country," according to the Committee on The Pharmaceutical Survey of 1946-49.\textsuperscript{77}

More importantly, however, the Bureau provided a model for the "divisions of pharmaceutical extension" which were to develop at schools and colleges of pharmacy across the nation in the early 1950s and paved the way for their acceptance by the profession.

The George-Deen Act and Continuing Pharmaceutical Education, 1940-1946

The George-Deen Act of 1936 provided the first federal aid to the states for vocational training of distributive workers, which included community pharmacists and their employees. Under the Act, which was administered by the U.S. Office of Education, state boards for vocational education sponsored training programs upon the request of local citizens.
With the exception of the "Wisconsin Plan," described in the last chapter, few schools and colleges of pharmacy or state and local pharmaceutical associations took advantage of the provisions of the Act during the late 1930s. For the fiscal year ending June 30, 1939, twenty-one distributive education classes for pharmacists and their employees had been organized in eight states and the District of Columbia. The attendance at these classes, however, totaled only 422. In March of the following year, B. Frank Kyker, Chief of the Business Education Service of the U.S. Office of Education, stated that there was "both the opportunity and the need for a considerable development of the distributive education program in the retail drug field." Clearly, for the program to succeed, a new approach to the pharmaceutical community would have to be formulated.

In its initial stages, the new approach wisely involved recognized leaders in the four major national pharmaceutical organizations. On September 20-21, representatives of the American Association of Colleges of Pharmacy, the American Pharmaceutical Association, the National Association of Boards of Pharmacy, and the National Association of Retail Druggists met in Washington with Kyker, John C. Wright, Assistant Commissioner for Vocational Education, regional agents of the Office of Education, and officials from several state boards of vocational education. The purpose of the conference, according to Kyker, was "to consider broadly the problems involved in building a nationwide training program for the owners and employees of retail drug stores, the scope of such a program, and the means of bringing it about."
H. Evert Kendig, President of the American Association of Colleges of Pharmacy at the time, suggested that the conference might just have been a matter of form. He recalled that when he and Executive Committee Chairman Ernest Little arrived at the conference "we learned that the Office of Education intended proceeding with a program of distributive education for druggists on a nationwide scale with or without our approval." Governmental presumptuousness notwithstanding, the Association officials found themselves faced with a basic educational conflict: under the terms and interpretations of the George-Deen Act, scientific and professional courses were not considered as coming under its provisions and could not be listed. The advisory committee was quick to react, according to Kendig:

The committee pointed out that courses designed for this field, in which a sound education in science was prerequisite for practice, should be determined on a different basis from that employed in outlining courses for an industry in which there was no particular educational requirement. The committee's point of view prevailed, and by the end of the conference "it was the general opinion that the provision of the George-Deen Act should be taken advantage of to the fullest extent" and that it was necessary to include subjects in the field of professional pharmacy, "since this type of information was necessary to more effective distribution and use." The committee developed an outline for a program which would serve pharmacy owners, employee pharmacists, and unregistered employees:

(1) In the field of professional pharmacy, a "refresher" course covering recent developments of interest to the owner pharmacist and to employee pharmacists.
(2) In the field of store management and control, including modernization, subjects of interest to owner, to employee pharmacists and to some unregistered employees.

(3) In the field of merchandising subjects which would appeal most strongly to the unregistered employees in perfecting their methods of selling.84

Following the conference, a joint committee on subject matter in retail drug training was established to prepare a comprehensive outline for distributive education courses in pharmacy.85 The committee met in Chicago several times; finally, on January 29-30, 1941, the committee thoroughly revised a draft of the outline, endorsed it, and forwarded it to Washington for final approval. Upon approval, the outline was distributed to officials of state and local pharmaceutical associations and to directors of state boards of vocational education for further suggestions.86 The outlines were divided into three general divisions: "Selling Pharmaceutical Service," "Store Management, Operation and Sales Direction," and "Merchandising by Departments."87 In May, upon recommendation of the committee, the Office of Education employed Wisconsin's Edwin J. Boberg as a subject matter specialist to develop teachers' outlines for the subject matter contained in the first division in order to provide itinerant or part-time teachers with factual information from which they could develop individual class lectures. Sensing that the subject matter of the second and third divisions was of a "distinctly different character," the committee later recommended the appointment of the University of Oklahoma School of Pharmacy's Ralph A. Beegle to develop teachers' outlines for these divisions.88

By the time of the annual meetings of the national pharmaceutical associations in Detroit in August, therefore, a considerable amount of
excitement had been generated concerning the possibilities of a full-blown program of distributive education for the community pharmacist. In an address before a joint session of the American Association of Colleges of Pharmacy, the American Pharmaceutical Association, and the National Association of Boards of Pharmacy, Kyker outlined the development of the new program and the federal government's stake in the community pharmacist. "There are thousands of small, individual establishments in the retail drug field that do not have the money, the staff, or the teaching ability to provide their own training," Kyker stated. "It is clear that this lack of training is contrary to public interest. It will be one of the purposes of the program in Distributive Education to serve this large group of small distributors." Kyker stressed the cooperative nature of the planning that had already taken place and the practical nature of the proposed training, as well as the necessary qualifications for distributive education teachers:

The success of a Distributive Education program for the retail drug business is determined to a large extent by the ability of the persons employed to teach the classes. The teacher determines the nature of the courses and the effectiveness of the instruction. He cannot teach that which he does not know, and to know he must have had successful experience in the field in which he is to teach. . . . Classes organized for the retail drug business will be taught by successful and experienced persons from the drug field. Moreover, in those states and local communities where a teacher is employed, an advisory committee of pharmacists advise in the selection of the teacher.

Wisconsin State Board of Pharmacy Secretary Sylvester H. Dretzka, a tireless crusader for continuing pharmaceutical education since the late 1930s, stated he was "considerably encouraged" by the enthusiasm shown by the community pharmacist toward the new program:
It may well be regarded as a "new day in pharmacy" since more informed pharmacists will mean a more enlightened profession, and a more enlightened profession will produce a more articulate pharmacist. That is all pharmacy needs for its emancipation; its own people must sell its virtues as a profession.91

Dretzka, who also served as President of the National Association of Boards of Pharmacy that year, went on to describe an elaborate system for issuing "diploma-certificates" to pharmacists who participated in continuing education classes over a period of five years and who passed an examination based on the material taught during these classes.92 Although Dretzka's system of "diploma-certificates" was judged premature by his peers, both the National Association of Boards of Pharmacy and the American Pharmaceutical Association approved resolutions which strongly supported continuing pharmaceutical education;93 more importantly, the actions taken at the Detroit meetings stimulated to a considerable extent the expansion of educational activities sponsored by schools and colleges of pharmacy, state boards of pharmacy, and local and state pharmaceutical associations, and funded under the provisions of the George-Deen Act.94

America's entry into World War II affected distributive pharmaceutical education almost as seriously as it had affected the continuing pharmaceutical education activities of the nation's schools and colleges of pharmacy. In 1942, the committee on subject matter made four recommendations concerning its future activities:

1. The Curriculum Committee recommends that each of the parent organizations, which this Committee represents, approve in principle the program as thus far recommended.
2. We recommend that the Committee be continued and that as rapidly as subject matter is compiled, it be prepared for publication and distributed to state and local supervisors of distributive education, and to state and local pharmaceutical organizations.

3. We recommend that proper steps be taken to emphasize the importance of publication of the teaching outlines for the retail drug field to the proper authorities in the Federal Government, in order that the completion of this program may be expedited and that it may take its proper place in equipping the retail druggist for his part in the war program.

4. We recommend that the agencies of organized pharmacy of the several states give serious consideration to the advancement of an active program in retail drug training under the provisions of the George-Deen Act, and in accordance with the curricula material prepared by this Committee, and the subject matter specialists, in collaboration, with C. Henry Richert, Regional Agent for Distributive Education, under the direction of B. Frank Kyker, Chief, Business Education, U.S. Office of Education.

Although the committee's recommendations were approved by their parent organizations, the complete fulfillment of these recommendations would never be completely realized, due to the reordering of priorities caused by the war. Boberg's teachers' outlines for the first twelve units of the first division, "Selling Pharmaceutical Service," appeared in January, 1942; the outlines for the final twelve units of "Selling Pharmaceutical Service" did not appear until November, 1943, "owing to the severe curtailment of funds for this type of work by the federal government, and because of the acute shortage of paper with which to complete the mimeographed outlines." The committee on subject matter directed Beegle to "first develop those units from the topical outlines which have a special bearing upon retail practices as they are influenced by the present war emergency," and although Beegle was able to complete "a major portion of the teaching outlines for the second and third di-
visions," the material was never published.\textsuperscript{97} Thereafter, the committee limited its recommendations to its own self-perpetuation.

In 1946, the American Association of Colleges of Pharmacy's Committee on Distributive Education reported no activity "due largely to the fact that the federal program supported by George-Deen monies has confined its activities to those fields of education which were established prior to the war."\textsuperscript{99} The Vocational Education Act of 1946, commonly known as the George-Barden Act, although an amendment of the George-Deen Act, actually made federal money available to the states on a matching basis in much the same manner as that provided in the Smith-Hughes Act of 1917. This legislative retrogression on the part of the federal government proved a blow to the slowly recovering programs of continuing distributive education in America's schools and colleges of pharmacy because the new funds could be used only for education which is "less than college grade." Moreover, even the distributive education phase of the Act was intended for pharmacy personnel exclusive of the practicing pharmacist; therefore, the George-Barden Act was not of direct concern to the nation's schools and colleges of pharmacy.\textsuperscript{100} During October, 1946, the Director of The Pharmaceutical Survey, Edward C. Elliott, made an inquiry through several state departments of vocational education, relative to distributive education under the George-Deen Act:

Replies were received from 38 states. Thirty indicated that no program was in operation. Eight states reported programs in operation; of these programs, three were for pharmacists and five were for merchandising managers or employees. Programs had been established but discontinued in 8 states.\textsuperscript{101}

Elliott went on to remark that "Wisconsin appeared as the one state where
the State Board for Vocational Education had continued to carry out an active program. The "Wisconsin Plan," in fact, had flourished since its inception in 1937, and would continue to prosper throughout the remainder of the 1940s. Recently, Elliott added, "through the cooperation of the state university, the State Board for Vocational Education, and the State Pharmaceutical Association, a program for drug store owners and employees has been successfully inaugurated in the state of Texas."

By 1947, the distributive education program in pharmacy had virtually vanished. In a feature article in *American Druggist*, G. Henry Richert, Program Planning Specialist of the Office of Education's Business Education Service, speculated on the reasons behind the program's demise:

Back in 1937-38, when the distributive trades program was just getting under way, a lot of publicity was given to the possibilities it offered the drug trade and there was considerable enthusiasm. Frankly, we weren't ready for it. Classes were organized for retail pharmacists, but that wasn't enough. We had to have something to teach them, and at that time we just didn't have very much to offer them.

Richert went on to describe the development of the program up to 1941 and its disintegration during the war years. "During that period it was impossible to get the druggists and their employees out to classes," Richert said. "I suppose they just had too much to do and couldn't attend." Richert had a more difficult time explaining the postwar disinterest:

Toward the end of the war there was a revival of interest. The Office of Education was interested. Officials wrote to the various State Departments of Education . . . asking their reaction to the suggestion that courses be established for the drug trade. Favorable replies were received from more than two-thirds of the states.
This information was communicated to pharmacy leaders throughout the country but so far . . . they have made no effort to revive the program when it fell apart in 1941. . . .

We don't go out on a local basis and sell the idea of a program to individuals. That has to be done by the industry itself. In order for a program to be a success, there has to be a training course drawn up, complete with training materials and manuals. Then there has to be a functioning organization at the top and there has to be sufficient advertising of the program by trade leaders in the states to get individuals interested in it.105

In a report to the National Association of Boards of Pharmacy, Dretzka agreed with Richert's analysis. "The primary barrier in providing such service to practicing pharmacists is not a lack of money, but rather a lack of interest on the part of pharmaceutical leaders to organize such a program and keep it functioning properly for their members in the respective states," Dretzka declared. "It is fitting that State Boards of Pharmacy take the leadership in this essential movement for a better informed pharmaceutical practitioner."106

Neither the National Association of Boards of Pharmacy nor the American Association of Colleges of Pharmacy responded to Dretzka's plea; the latter organization discontinuing its Committee on Distributive Education in 1947, upon recommendation of the Committee itself.107 Since that time, the Association's Executive Committee has not appointed another Committee on Distributive Education, indicating no further interest on the part of the Association in the use of the resources of the George-Deen Act.108

General University Extension Expands, 1946-1950

The marriage between university extension and national defense had profound implications for the postwar years. The involvement of
administrators of university extension and directors of residential fa­
cilities for adult education in the war training programs led naturally
to other extension services designed for veterans after the war. Second­
ly, the flood of veterans to the campus in 1946-47 placed greatly in­
creased demands for educational opportunities at the university level.
Finally, the increasing pace of exploration in science hammered home the
fact that change is not only a permanent feature of man's existence but
probably its most characteristic feature. All of these factors were
symptomatic of a deep-seated belief in the efficacy of higher learning
on the part of the American public and a national conviction that knowl­
gedge is power. That belief and conviction were to provide the stimulus
for a new flourishing of functional university extension in the postwar
years.

As noted above, the war-training programs of the early 1940s made
available considerable amounts of federal funds for the expansion of edu­
cation and training in the physical and engineering sciences and in busi­
ness administration. The resulting acceleration of war production, dem­
onstrated the effectiveness of continuing education, allowed the employ­
ment of a large number of competent persons as teachers, and enrolled
thousands of students who were able not only to improve their productiv­
ity, but to become acquainted--many for the first time--with this type
of educational service.\textsuperscript{109}

Between 1946 and 1950 over 8,000,000 veterans utilized the educa­
tional services of the universities of the United States, receiving fi­
nancial assistance through the various provisions of the so-called G.I.
Bill of Rights.\textsuperscript{110} This group of returning servicemen represented a
large segment of the American population that had never before utilized university facilities, and services to veterans resulted in further expansion of university extension programs: approximately one out of every five veterans used services not involving residence on a university campus, but provided through a university extension organization; this led to a particularly significant development of residential centers located away from university campuses.

This great growth in enrollments not only made possible but necessitated the building up of extension physical plants and greatly expanded faculties at almost all American universities: between 1940 and 1950, resident student enrollment nearly doubled, from 1,494,203 to 2,659,021 (178 per cent); the value of the universities' physical property increased by the same factor, from $2,753,780,000 to $5,272,590,000 (191 per cent); and the number of full-time faculty increased from 131,552 to 210,349 (160 per cent). During this same period, enrollment in extension and correspondence courses increased by a factor of nearly two-and-one-half, from 362,381 to 848,695 (234 per cent).

The late 1940s was a time of high optimism for adult educators. Recognition of the importance of adult education was more wide-spread than ever before, not only among professional adult educators but also among educational statesmen taking a broad view of the whole field of education. What caused this sudden surge of optimism? Adult education historian C. Hartley Grattan has suggested that upsurges of interest in adult education "have historically been associated with periods of acute social disturbance, including aftermaths of major wars." Grattan identi-
fied the social disturbance of World War II and succeeding cold war, and continued:

There was, too, a challenge of major dimensions: the challenge of Soviet communism. The response was, of course, the resolution to defend the country and its democracy. Since the best defence-in-depth was considered to be education, and since the choices at any level would obviously be made by adults, the most immediately useful variety of education was argued to be adult education.\textsuperscript{113}

The general thinking among educators in the late 1940s with regard to adult education, therefore, was characterized by their recognition of the need for Americans to seek democracy deliberately through adult education. Moreover, the extensive experiments in adult education on a mass basis made by the armed forces during World War II had made an enormous impression on adult educators and provoked a resolution to see to it that something of the same sort was available to all citizens in peacetime.\textsuperscript{114}

Given this social milieu, therefore, it is not surprising that the famous Harvard report of 1945, \textit{General Education in a Free Society}, urged adult educators to "keep the break in learning between school and adult life as brief as possible," and to reconstitute the university as "the civic center for adult education."\textsuperscript{115} A more specific approach to the question, at least in terms of where the chief responsibility for adult education should rest, appeared in \textit{Higher Education for American Democracy}, the report of the President's Commission on Higher Education, published in 1947.

The Commission devoted considerable attention to adult education as a function of colleges and universities and stated decisively that these institutions were "the best equipped of all the agencies, from the
standpoint of resources, to undertake the major part of the job." The Commission, however, stressed that "an expanded program of adult education must be added to the task of the colleges," and explained its rationale:

This is a vital and immediate need, because the critical decisions of our time may have to be made in the near future. Education for action that is to be taken, for attitudes that are to be effective, in the next few years must be mainly adult education. . . .

The present status of university extension services makes it painfully clear that colleges and universities do not recognize adult education as their potentially greatest service to democratic society. It is pushed aside as something quite extraneous to the real business of the university. . . .

This state of affairs cannot be permitted to continue. The colleges and universities should elevate adult education to a position of equal importance with any other of their functions. The extension department should be charged with the task of channeling the resources of every teaching unit of the institution into the adult program.116

Finally, the Commission argued that the suggested ends of adult education should be accepted by colleges and universities as a justification of their support in a democratic society. Although the Commission could not find exact figures for the cost of such education, it reasoned from a U.S. Office of Education estimate of a $35,300,000 expenditure for "extension" in 1939-40 that American colleges and universities should plan to spend $100,000,000 a year in the future on adult education.117 To help finance such an expanded program of adult education, the Commission recommended that federal money be distributed through the Office of Education.118

In terms of legislative action, however, it is apparent that the far-sighted educational policies recommended by the President's Commission on Higher Education struck only a glancing blow upon Congress, for
little federal support was forthcoming. Many of the other recommenda-
tions of the Commission with regard to discriminatory admissions poli-
cies, public sponsorship of the first two years of college, and in-
service education of college faculty members also remain unattained to
this day. "Committees of citizens at any level almost invariably call
upon education, and obviously adult education, to do something about
such problems as housing, juvenile delinquency, human relations, and
lack of skilled manpower," reflected adult educator Wilmer V. Bell in
1960. "However, appropriations of private as well as of public bodies
provide little or no monetary support for their demands."\textsuperscript{119}

The late 1940s also heralded a new era of cooperation among
the many organizations associated with adult education. The National
University Extension Association (NUEA) in particular developed a num-
ber of institutional relationships with other agencies of adult educa-
tion or education in general. It was one of five national organizations
which co-sponsored a national conference on adult education in Detroit
on April 23-26, 1946, which set in motion the forces that resulted in
the founding of the Adult Education Association of the U.S.A. in 1951.\textsuperscript{120}

During this same period, the NUEA became a member of the American Coun-
cil on Education, the Joint Commission for the Study of Adult Education,
and the Council of National Organizations of the Adult Education Associ-
aton of the U.S.A., and appointed a representative to the U.S. Commis-
sion to UNESCO.\textsuperscript{121}

Association historian Hugh G. Pyle suggests that the programs of
NUEA's member institutions in the postwar years showed a tendency to de-
part from the more practical subjects and to be concerned with world af-
fairs and with the social sciences and humanities: "Many institutions experimented with programs of community development and promoted projects designed to acquaint the public with potential peaceful uses of atomic energy. The cultural, technical and educational climate became more positive toward continued learning generally." Moreover, a subtle change was taking place in the organizational structure of some extension divisions which emphasized a more closely integrated intra-institutional structure:

This change was recognition that there cannot be university extension without a university; obviously extension operations were assuming greater importance in college and university administration. ... For all of these reasons university extension and NUEA began to assume a strengthened position in the nation's educational structure.122

The developments in university extension in the late 1940s, in certain respects, represented the dawn of a new day for university extension in many institutions. The developments stimulated public interest in continuing education to a considerable extent; this interest, in turn, helped provide a financial base which enabled many extension organizations to make improvements in facilities and add the faculty and staff necessary to maintain an appropriate variety of high-quality services. Finally, the overflow of students on college and university campuses tended to make faculty members more interested in and sympathetic to continuing education than ever before. All these factors resulted in university extension organizations commanding a respect and consideration not enjoyed before, both inside their own institutional frameworks and in their supporting communities. How did America's pharmaceutical educators react to these developments with respect to the retraining of the veteran pharmacists of World War II?
Retraining Efforts for Veteran Pharmacists, 1943-1946

Interest in educationally rehabilitating the pharmacists called into active service during World War II began as early as 1943. That year, a Committee on Long-Range Program of District No. 4 of the American Association of Colleges of Pharmacy and National Association of Boards of Pharmacy recommended "a program of 'Post-Graduate' education for pharmacists, including the rehabilitation of service men returning to pharmacy," to commence in 1944. "This subject was placed first on the list and therefore designated as most in need of immediate action," Chairman Sylvester H. Dretzka reported. "This subject is of vital importance to Boards and Colleges alike and should be a cooperative undertaking between Colleges, Boards and Associations."123

On the national scene, the Committee on Activities for Alumni of the American Association of Colleges of Pharmacy anticipated that the problems of postwar reeducation of graduates and former pharmacy students would be of such magnitude and importance that it recommended that

The A.A.C.P. give special attention to the needs of pharmacists and pharmacy students returning to civilian life. To this end either a new committee should be appointed, or the Committee on Activities for Alumni instructed to determine these needs and how they may be effectively met.124

In December, the Council of the American Pharmaceutical Association and the Executive Committee of the National Association of Retail Druggists added further moral suasion to these requests for action on the part of the nation's schools and colleges of pharmacy by issuing a joint resolution recommending that these institutions offer "refresher or other courses for pharmacists returning from service in the armed forces of the nation."125
By the following year, the pressure upon the nation's schools and colleges of pharmacy to provide training for the returning servicemen had intensified: Glenn Sonnedecker, editor of the Practical Pharmacy Edition of the Journal of the American Pharmaceutical Association, reported that the mail he was receiving from pharmacists in the armed forces indicated that they expected "definite plans to be laid for providing 'refresher' courses"; the membership of the Wisconsin Pharmaceutical Association adopted a resolution calling upon the University of Wisconsin School of Pharmacy to introduce such a course; and the Committee on Continuation Study of the American Pharmaceutical Association concluded that "in view of the fact that many pharmacists returning from the armed forces will want an opportunity to review fundamentals and learn of new drugs and pharmaceutical techniques . . . it would seem that we can expect an unprecedented demand for continuation study courses as soon as the war is over."126

The problems inherent in presenting such continuation study courses were compounded by the variety of educational backgrounds and objectives the returning servicemen presented to the nation's schools and colleges of pharmacy. Ohio State University's College of Pharmacy Dean Bernard V. Christensen identified four distinct groups of prospective students and an appropriate educational program for each group:

1. Professional--A program of instruction for those men and women who entered the armed forces before they had completed their undergraduate training. . . .

2. Sub-professional--A program of instruction for men and women who entered the armed forces before completing high school and who, because of their maturity, will not care to re-enter high school. . . .
3. Postgraduate—A program of graduate studies for men and women who have completed their undergraduate training and who planned to take up graduate studies but entered the armed forces instead.

4. Refresher Courses—A program of instruction providing professional training for those men and women who entered the armed forces immediately after graduation from pharmacy and thus did not enter upon practice of the profession.

Christensen went on to speculate that the men and women in the latter group would need "a survey covering the branches of pharmacy such as pharmaceutical chemistry, pharmacology, pharmacognosy, etc., to be brought up to date on developments and to review the theoretical and practical applications as required in civilian practice," and offered a suggestion:

The courses should include both didactic and laboratory instruction and could be efficiently carried out in one term consisting of three to four and one-half months.

Since the duties of pharmacists in the Army and Navy differ widely from those required of the civilian pharmacist, it is our opinion that all pharmacy graduates, who were in the armed forces, would profit from such survey or refresher courses.

The armed forces were slow to accept the pharmacist as a professional man: the traditional compounding and dispensing of medicines was often turned over to enlisted men especially trained for the job, while pharmacists were assigned to administrative duties in the Medical Department to release the physician from such nonprofessional activities.

Opinions concerning the advisability of the nation's schools and colleges of pharmacy providing "refresher" courses for returning service-men were by no means unanimous. Rufus A. Lyman, editor of the American
Journal of Pharmaceutical Education, took issue with the idealistic post-war plans of the day:

There seems to be a belief infiltrating the educational group that we have a great problem ahead of us educating or rather re-educating pharmacists and former pharmacy students who have been in the service. If I understand human nature I am convinced that the pharmacist who has served in the armed forces, when he gets back will not be thinking of going to school and taking a cram course for three or six months to "bring himself up to date." He will be thinking of getting back to his job, or his store and his family and friends.129

In the next issue of the Journal, Lyman returned to the same theme:

Already there is a sizable number of discharged men returning home from the battle fronts and there is no indication that these men are rushing to the college centers for "refresher" courses. . . . The question yet remains to be settled as to whether these men will, in any considerable number, want these "refresher" (which is a synonym for "cram") courses. . . . Already there are signs that the "refresher" course idea is a concoction of our own imaginations and not a demand of the ex-service man and already in our own imaginations the length of such courses is dwindling from a few months to a few weeks and in many cases to a few days.130

Dean Charles W. Ballard of Columbia University's College of Pharmacy agreed in part with Lyman.

"In dealing with the graduate groups we must recognize that any return to college study will be voluntary," Ballard pointed out. Although there was no doubt in his mind regarding the advisability of better fitting the returning serviceman to resume the practice of pharmacy, Ballard was quick to stress the probable postwar employment conditions in the profession. "The returning service man will be faced with a combination of high salaries for store employees, lack of personal financial reserves and if he is a family man, the necessity of re-establishing his
family life," Ballard stated. "Any one of these factors or the combination may materially influence his ideas about resuming education."\(^{131}\)

The responsibility for establishing an official policy concerning refresher courses for returning servicemen fell to the American Association of Colleges of Pharmacy's Committee on Activities for Alumni, which sidestepped the issue:

> The question concerning refresher courses for graduate registered pharmacists returning from the armed services to civilian pharmaceutical activities resolves itself into an individual plan for each school. Some colleges are planning programs lasting for three or four months; others for six weeks, and still others for two or three weeks. We do not feel that this committee can make any recommendations concerning these courses.

The Committee proposed and the Association adopted a bland resolution requesting that the Association "urge the member colleges to give short review courses if needed, concurrently with the regular courses," adding that "no passing requirements should be established for this work."\(^{132}\)

The response of the deans of the nation's schools and colleges of pharmacy in the supercharged atmosphere of wartime America was predictable. Robert C. Wilson, Chairman of the Association's Committee on Post-War Planning, reported on the results of a questionnaire he had sent out to all schools and colleges of pharmacy on January 27, 1944, results which indicated "no uniformity of opinion on any of the problems--with the possible exception of the accelerated program, refresher courses and placement of graduates."\(^{133}\) The verbatim replies to Wilson's questionnaire which appeared in the January, 1945 issue of the American Journal of Pharmaceutical Education indicated overwhelming support of "the planning for refresher courses for our graduates following their discharge
from the service"; indeed, only four of the forty-five responses were either negative or noncommittal. Thomas D. Rowe of the Medical College of Virginia School of Pharmacy wrestled with the length and nature of refresher courses for returning servicemen in the same issue. "I do not think we can completely answer either of these questions until the servicemen have returned," Rowe stated. "We shall have to be guided to a large extent by their requests." Rowe went on to offer his own opinions on the matter:

From the information given in the various pharmacy journals, it seems that each school is going to develop its own plans for refresher courses. The time element in each of them will be markedly different. . . . Perhaps this multiplicity of types will be a good thing. It would permit a man to go to the school which was giving the particular type he wanted. The question of time would then be automatically eliminated.

I do not believe any of us pretend to know exactly what amount of time will be needed. In my opinion, any period over two weeks is entirely too long. Perhaps one week will be sufficient. However, I am inclined to believe that two weeks will be necessary.

Rowe also outlined a suggested curriculum for a two-week refresher course in dispensing pharmacy, which included four main topics: a "general review" of "some of the work presented in theoretical, galenical and dispensing pharmacy," "new developments" in prescription incompatibilities and state and federal regulations, "general trends" in pricing prescriptions and the availability of certain drugs, and "laboratory work" consisting "mainly of re-learning handwork" and problem prescriptions. Rowe's approach, of course, was purely speculative in nature. How many of America's schools and colleges of pharmacy actually engaged in sponsoring special refresher courses for veteran pharmacists of World War II?
Considering the enthusiasm of the nation's pharmacy deans in the project and the number of detailed plans that had been elaborated, the number of refresher programs for veterans that were actually presented was embarrassingly small. Only five schools and colleges of pharmacy appear to have presented any programs at all: Rutgers University College of Pharmacy, Philadelphia College of Pharmacy and Science, the University of Iowa College of Pharmacy, the University of Buffalo School of Pharmacy, and Columbia University College of Pharmacy.  

Rutgers had revived its continuing education program as early as January, 1945, with "a series of graduate seminars designed to serve ultimately as a refresher course for pharmacists returning from military service"; the following spring, based upon the results of a survey of its alumni, the College presented a series of five two-hour lectures under the sponsorship of the Northern New Jersey Branch of the American Pharmaceutical Association. The Philadelphia college program varied according to the time that had expired since the students' graduation and according to the type of duties they had performed in the service:  

For those who have been in fairly close contact with their profession, special lecture and laboratory classes will be held. These will run for six to eight weeks and will be supplemented by field and plant trips. After the completion of one course of instruction, another group will begin as soon as a minimum number of students matriculates.  

The University of Iowa program included special instruction for veterans in a wide variety of subject matter, but the refresher courses at the University of Buffalo and Columbia University appeared to be merely regular continuing pharmaceutical education programs to which returning veterans were invited.
The complete story of the educational efforts of America's schools and colleges of pharmacy during World War II and their contribution to the war effort remains to be written. Their meager response to the veteran pharmacists' need for educational rehabilitation in the late 1940s reflects the effects of a booming postwar economy upon the perceived need for continuing pharmaceutical education: To the pharmacist, the boom brought an unprecedented demand for pharmaceutical services which did not appear to require updated skills and the accompanying financial success that seemed to obviate the need for such skills; to the nation's schools and colleges of pharmacy, the boom brought overcrowded classrooms, overworked faculties, and the frustration of trying to build new curricula to encompass the ever-increasing complexity of modern pharmaceutical science. Something had to give; the demand for continuing pharmaceutical education and the source of its supply—America's pharmaceutical educators—gave first.

Attitudes Toward Continuing Pharmaceutical Education, 1945-1949

During the postwar years, scientific progress and economic changes served both to expand and to rearrange the structure of pharmacy. Specialization in various phases of pharmacy increased as did specialization in many other technical and professional activities. The scope of scientific knowledge required by the pharmacist expanded, and his potential as an expert advisor on pharmaceutical products to other health practitioners and the public became well defined, yet a disturbing countertextrend had also taken place. The distinctive and historic professional responsibility of the individual practitioner of pharmacy—that of compounding
medicines from the physician's prescriptions—had been diminished by the
development of large-scale industrial production of hundreds of new,
more potent pharmaceuticals since the 1920s, yet only in rare instances
was the commerce in prescriptions sufficient for the successful mainten­
ance of a strictly professional establishment. In consequence, by the
late 1930s, the typical American "drug store" had evolved under condi­
tions of a free enterprise trade economy, and the range of its commercial
undertakings had expanded greatly. This countertrend constituted a haz­
ard to the professional nature of pharmacy and its standing among the
scientific professions. Pharmacy appeared to be, and indeed was, on the
defensive. The renewed support for continuing pharmaceutical education
in the postwar years reflects this defensive posture.

Much of this support for continuing pharmaceutical education came
from practicing pharmacists themselves, just as Sonnedecker and others
had predicted. "I think that a postgraduate course given by pharmacy
colleges to streamline some of us would come in mighty handy," Pennsyl­
vanian pharmacist Richard M. Bitner wrote to Drug Topics editor Swain in
1943. "Certainly we should get ready for a lot of changes."
Frank J. Steele, Chief Pharmacist at Greenwich Hospital, Greenwich, Connecti­
cut, urged his colleagues to enroll in courses offered by general uni­
versity extension divisions to supplement their college educations and
"to keep abreast of the vital scientific, economic, and social changes
in our modern civilization." Steele went on to explain that

This kind of work is intended to be utilized by the seri­
ous-minded student who is unable to take work in residence
but who is interested in the mastery of a subject, and in
this interest lies the real purpose of college credit or
self-improvement.
The course of study will help one utilize one's leisure time more efficiently through the process of gaining new knowledge. It involves skill in encompassing the ideas of the study material, and teaches one to think logically and to express one's self capably. These advantages stimulate initiative, self-reliance, accuracy, and perseverance. This plan satisfies special interests, prepares one for special occupations, aids him in accumulating credits, and improves the mental or cultural growth of the individual.144

By the late 1940s, the changes which Bitner had predicted came to pass; the postwar practice of pharmacy was different, and more professionally oriented. "From all over the country comes the information that pharmacists are so busy practicing pharmacy . . . that they have less and less time available for the extraneous merchandising activities," Robert P. Fischelis stated in his Remington Medal address in 1944. Nelson A. Miller, Chief of the Distribution Management Unit of the U.S. Bureau of Foreign and Domestic Commerce agreed. "Prescription business . . . [has] shown substantial increases. This has pleased the retail drug trade because, essentially, the average pharmacist is much more interested in his professional service than he is in the sale of miscellaneous consumer goods." By 1948, the number of prescriptions had almost doubled and the dollar volume of prescriptions nearly tripled.145 The "back-to-pharmacy" movement of the late 1930s and early 1940s had finally borne economic fruit.

Moreover, the development of specific chemotherapeutic agents and the so-called "wonder drugs" which became available to the public in the postwar years and the publicity they received through the lay press and radio also proved to be a boon for the profession of pharmacy. In 1948, Malcolm W. Forte, a member of the Georgia State Board of Pharmacy, speak-
ing before his district meeting of representatives of pharmacy boards and schools and colleges of pharmacy, noted that the first supplement to the twelfth revision of the United States Pharmacopoeia (1943) "contained over 160 new drugs and preparations. This fact along foresees the necessity for the pharmacist to study and keep on his toes if he is to keep [in] step during this definite trend." Predicting that the pharmacist who handled these "wonder drugs" would "command an ever increasing respect from the public in general," Forte stated:

I would like to see this group go on record as endorsing a movement among the colleges to institute plans for a "refresher course" for the older men of the profession who have had their hands so full since leaving school. 146

Another pharmacist, Minnesota State Board of Pharmacy member Victor Feit, also gave serious consideration to the problem of continuing pharmaceutical education:

Every pharmacist is interested or should be in new and useful drugs. If he subscribes to a number of useful journals and uses them he gains much knowledge along these lines. However, the average pharmacist can not be expected to subscribe to enough of these journals to be of value to him, and the length of hours in the drug store do not permit him to make these surveys . . . .

. . . Continuation study would and should do much to alleviate this situation. It therefore becomes necessary that new and useful drugs be reviewed by those active in the field and such information passed on to the pharmacist at these studies. 147

Feit went on to describe what he felt the differences should be between a continuing education program designed to acquaint the pharmacist with "new and useful drugs with which he is unfamiliar" and a refresher course "pertaining to subject matter which has been previously taught," concluding:
In the continuation and refresher courses, the lectures should be of such nature as to be comprehended by the average registered pharmacist, not too highly theoretical and scientific, and should always avoid the convention type of address.148

By the end of the decade, even the notion of requiring continuing education prior to the renewal of a pharmacist's license to practice had been revived by Aaron A. Paulson, a pharmacist in Washington, D.C.149

The renewed interest in continuing pharmaceutical education among America's practicing pharmacists did not go unnoticed by the leaders of their national pharmaceutical associations, notably Wisconsin's Sylvester H. Dretzka. As chairman of the American Pharmaceutical Association's House of Delegates and, later, as president of the Association, Dretzka continued to direct his membership's attention to his pet project, continuing pharmaceutical education. "There should be an amplification of this program," Chairman Dretzka declared in 1945. "It has been carried out with maximum success to the satisfaction of many pharmacists in too few states up to the present time. With a reasonable expenditure of time and money, this program can be extended to all areas of the United States."150 Although his 1947 recommendation as president-elect that the Association "take the lead in the completion of the basic teaching outlines for classes in distributive education" and "assist state associations, boards, and colleges of pharmacy to utilize the federal funds available under the George-Deen Act for the conduct of such classes" was rejected by the Association.151 Dretzka's enthusiasm prompted President Earl R. Serles to institute a short-lived series of district meetings initiated in Omaha on April 23, 1947, in response to "the growing demand for a more general distribution of the services of the Association and
for more intimate contact with its officers and activities." Although the district meeting concept of the leaders of the American Pharmaceutical Association did not survive the decade, the idea appears to have stimulated the Association's branches to reconstitute their own continuing education programs, particularly the Pittsburgh Branch and the North Pacific Branch, located in Portland, Oregon.

In 1948, President Dretzka stated, "Our alert pharmacists want to keep up to date in their principles and practices. Recognizing their great responsibility to the public they are asking for some practical help on this problem." Dretzka, of course, had a solution:

As the parent pharmaceutical organization it is our responsibility to supply this help. . . . Only a few of our Colleges now offer these facilities. More such courses should be made available. In addition, the nature of pharmacists' work, and state laws and regulations, make it impossible for all to leave their place of practice to attend refresher courses at a center of learning, which indicates a need for an extension type of education.

This being the case, it seems important that our Association back all programs of continuation study that will make it possible for pharmacists to keep up to date professionally under conditions as they exist. . . . Let us encourage our colleges, boards and associations to foster such "refreshers." Dretzka's successors, Ernest Little, Dean of Rutgers University College of Pharmacy, and Glenn L. Jenkins, Dean of Purdue University School of Pharmacy, were also strong advocates of continuing pharmaceutical education. Beyond a smattering of local or regional continuing education activities, such as those sponsored by the Philadelphia Association of Retail Druggists and the California-based American College of Pharmacists, few other pharmaceutical associations took an active interest in sponsoring programs of continuing pharmaceutical education, with the
The expanded scope of pharmaceutical services in the postwar years, the revival of the "back-to-pharmacy" movement, the increased emphasis upon professional activities, and the grass-roots support for continuing pharmaceutical education among pharmacists and association leaders combined to create an unprecedented pressure upon pharmaceutical educators to provide continuing education experiences for the practicing pharmacist. How did America's pharmaceutical educators react to this pressure?

Continuing Pharmaceutical Education, 1945-1948

Prior to the publication of the Findings and Recommendations of the Pharmaceutical Survey, 1948, published in November of that year, few pharmaceutical educators appear to have paid much attention to the problem of providing continuing education experiences for the nation's practicing pharmacists. There were good reasons behind this ostensible lack of interest in continuing pharmaceutical education.

The very overflow of students on colleges and university campuses that stimulated interest in continuing education among the faculty members of the general university community during the postwar years proved to be an almost overwhelming burden to the faculties and administrators of America's understaffed schools and colleges of pharmacy. Moreover, during this same period, the leaders in pharmaceutical education were
embroiled in a bitter debate over whether the four-year pharmacy curriculum should be retained or lengthened to six years. Consequently, with the exception of the retraining programs for veteran pharmacists of World War II, continuing pharmaceutical education assumed a low priority among the problems presented to America's pharmaceutical educators during the postwar years. Nevertheless, a few educators during this period expressed support for the notion that the nation's schools and colleges of pharmacy were responsible for the continuing education of the practicing pharmacist.

In 1944, Elmer L. Hammond, Dean of the University of Mississippi School of Pharmacy, remarked that the profession of pharmacy had come a long way educationally in recent years, but added that "we still have much to do to put our house in order and to keep it that way." Hammond went on to explain what he felt pharmaceutical education needed:

We must continue to advance and to keep in step with advances in biology, chemistry, chemotherapy, medicine, and methods of treatment of disease. Pharmacy can no more be isolated or remain aloof from the scientific advances being made in medicine than can the United States afford to be isolated from the rest of the world. We must endeavor to continually advance and to strive for a position nearer the head of the parade. The advancement of pharmacy and of pharmaceutical education is fundamental to the quality of service which pharmacy can render. We should strive for higher standards in pharmaceutical education and pharmaceutical practice.

The following year, Linwood F. Tice, Assistant Dean of the Philadelphia College of Pharmacy and Science, wrote that the greater emphasis on the professional aspects of pharmacy had "stimulated a number of colleges of pharmacy to offer to retail pharmacists and others the so-called 'refresher courses' or seminars," and proceeded to describe the plight of the community pharmacist:
No one can deny that the average retail pharmacist finds it extremely difficult to keep up-to-date on the plethora of medicinal and technical products that are constantly being released as the result of an ever-increasing tempo of scientific research.

... the average pharmacist can hardly be expected to have more than a high state of mental confusion when he tries to comprehend the chemistry, pharmacology, and pharmacy of dozens of new preparations. Even in matters of store organization, stock arrangement and control, etc., he finds himself in competition with experts employed by large operations so that he is definitely handicapped unless equally well-informed. So much for his need of help. Few pharmacists, indeed, will deny it!\textsuperscript{161}

Tice felt that a college's duties and obligations to its students did not end upon their graduation: "It is equally important that the practitioners of the profession be assisted by the educational facilities of the institution in maintaining their professional and technical working knowledge," Tice stated. "It is an obligation on the part of pharmaceutical educators to assist those in practice in their efforts to be better pharmacists in every sense of the word."\textsuperscript{162} Tice went on to describe the burgeoning continuing education efforts of his College, comparing the advantages and disadvantages of various methods of presentation,\textsuperscript{163} and offered three suggestions for the improvement of continuing education programs for the practicing pharmacist:

First, it is exceedingly important that the registrants be impressed with the seriousness of the work and with the fact that they are expected to conform to all the rules governing the conduct of other classes in the college. Once the program becomes mere entertainment and not education, not only is its objective gone but, strangely enough, so is the interest of the participants.

Second, the lecturers should be competent teachers, preferably on the college faculty, and not so-called experts who, although they may know the subject well, do not know how to explain it to others.
Third, and last, the program should be sufficiently broad in its appeal to interest everyone and be presented on a high level. . . . it must not be too far above the registrant's understanding but yet high enough so that he both learns and is challenged to seek more information by self-study. . . . It is exceedingly important that the lecturer should not "talk down" to his audience as this soon produces lack of interest and attention.164

Tice concluded that by providing such courses the colleges "not only fulfill their obligations to do so as educational institutions, but they provide a positive approach to the frequent criticism that retail pharmacists are not sufficiently professional minded."165 Beyond Tice's penetrating analysis of the contemporary situation in continuing pharmaceutical education, little appears in the pharmaceutical literature of the immediate postwar years to indicate that America's pharmaceutical educators were interested in the educational welfare of the practicing pharmacist.166 That task fell to the Committee on Alumni Activities of the American Association of Colleges of Pharmacy.

In 1946, Committee Chairman Thomas D. Rowe sent a questionnaire to the deans of each of the nation's schools and colleges of pharmacy. The returns indicated that only ten of these institutions had presented programs of continuing pharmaceutical education for the practicing pharmacist. "We were surprised that so few colleges presented these programs," Rowe remarked. "From the comments made on the questionnaires, it is evident that the colleges are not entirely at fault for the limited number of programs given." Rowe went on to explain that in some instances "plans had been made to present refresher courses but they were not carried through because of lack of interest on the part of the pharmacists." In other cases, the shortage of help "was still an important factor be-
cause many of the pharmacists could not leave their stores for one or more days." In still other situations, pharmacy deans had been disappointed in the attendance at the programs that they had sponsored,\textsuperscript{167} despite the apparent interest among practicing pharmacists in continuing education noted above. Rowe concluded:

Perhaps the situation will improve when the stores are able to employ more registered pharmacists. However, we believe that this factor is not the main cause for the lack of interest shown in refresher work. Even in normal times no great amount of enthusiasm was manifested in this work by retail pharmacists. Apparently the pharmacists must, in some way, be taught the value and need for continuation study. Herein lies the responsibility of the colleges.\textsuperscript{168}

The following year, in an effort to explain the apparent lack of interest in continuing education activities on the part of the practicing pharmacist, a new Committee, under the chairmanship of Tice, sent a questionnaire to approximately 125 "outstanding alumni" having "at least a Bachelor's degree."\textsuperscript{169} The questionnaire asked whether "the so-called seminar programs should be encouraged and given by more colleges," and, if so, how the seminars could be planned "to provide maximum benefit." The replies, perhaps reflecting a biased sample, indicated "an almost unanimous endorsement of seminar programs" and "seemed to disprove the contention of some pharmaceutical educators that seminar programs are not of interest to pharmacists." Tice also recommended that subject matter be carefully considered and the lecturers selected with the same care. "Students must perforce adapt themselves to the course prescribed in the college curriculum and endure the idiosyncracies of certain teachers but this is expecting a little too much from the seasoned pharmacist attending a seminar," Tice concluded, rediscovering a principle of adult education.\textsuperscript{170}
In 1948, in view of the abundance of questionnaires required by The Pharmaceutical Survey, Association President Arthur H. Uhl requested the Committee on Activities for Alumni to refrain from sending its usual questionnaire and to review its work over the preceding decade to determine whether it should continue in the same direction or use some new approach in accomplishing its objectives. After giving some thought to the matter, Tice suggested that the Committee's future activities should be "less passive" in nature, and might include the publication of a mimeographed bulletin:

The bulletin would present the details of seminar programs planned or given by various colleges. This might serve as a means of stimulating and helping other colleges to institute similar activities. . . .

By such a program, it is believed that the committee might serve a more constructive and useful purpose since it will be supplying information rather than simply requesting it.171

That same year, Association President J. Lester Hayman recommended that the Committee on Professional Relations "study the need for a pharmaceutical extension service, the benefits to be derived and the function that our colleges may play in such a program," but Hayman's conception of an "extension service" was limited to its role in interprofessional relations.172 Both Tice's and Hayman's plans, however, were to be overshadowed by the Findings and Recommendations of the Pharmaceutical Survey, 1948, published that November.

The Findings of The Pharmaceutical Survey and Their Impact, 1948-1949

The Pharmaceutical Survey of 1946-49 was a unique undertaking in the history of American pharmacy. The stated task of the Survey was "to assemble, as far as the available resources and means would permit, the
important facts relating to pharmaceutical education, practices, services, and trade; to interpret those facts; and to develop proposals for the betterment of pharmacy as a profession and as a public service. The Survey originated as the result of the persistent, united efforts of the National Association of Boards of Pharmacy, the American Association of Colleges of Pharmacy, and the American Pharmaceutical Association. It was conducted under the auspices of the American Council on Education and was supported by funds provided by the American Foundation for Pharmaceutical Education in an effort to "provide a full knowledge of the basic facts and fundamentals for a well-planned program for the future development of the profession." The Survey was initiated on April 15, 1946, under the direction of Edward C. Elliott, President Emeritus of Purdue University. The Council appointed an advisory committee of fifteen members designated as the "Committee on the Pharmaceutical Survey," which represented the various branches of the profession and the lay public. Werrett W. Charters, who had figured prominently in the 1927 study, Basic Material for a Pharmaceutical Curriculum, then Director of the Research Service of Stephens College, was appointed chairman of this Committee.

On February 25, 1948, Elliott sent a letter to all deans of the nation's schools and colleges of pharmacy asking them to "indicate whether your institution is now carrying on any program of in-service and off-campus training for the pharmacists of the State," and requesting descriptive material of any such programs. Elliott received replies from fifty institutions; forty-three deans indicated that their school or college of pharmacy did not provide continuing education activities.
for the practicing pharmacist, the most frequently cited reason being lack of faculty manpower and physical space to support such activities.\textsuperscript{177} The seven institutions that reported some continuing education activity were the University of Connecticut College of Pharmacy, the University of Florida School of Pharmacy, the Massachusetts College of Pharmacy, the University of Minnesota College of Pharmacy, Rutgers University College of Pharmacy, South Dakota State College Division of Pharmacy, and the University of Texas College of Pharmacy.\textsuperscript{178} Most of the programs reported to Elliott were not noteworthy;\textsuperscript{179} in fact, only the continuing education activities at Minnesota and Texas deserve further mention.

Charles H. Rogers, Dean of the University of Minnesota College of Pharmacy, described the three-day residential Continuation Courses in Pharmacy which his College had inaugurated in 1937 at the new Center for Continuation Study on the University campus. With the exception of 1944, Rogers reported, a Continuation Course in Pharmacy had been held each year since 1937. "Only licensed pharmacists are eligible to attend and the average yearly registrations have been between fifty and sixty," Rogers stated. "The attendance upon this course has been encouraged during the past five or six years by the establishment of scholarships awarded to a limited number of retail pharmacists by three wholesale drug firms in Minnesota." Rogers noted that the faculty for the Courses was made up of members of the faculty of his College and from other faculties of the University, particularly from the health science group, and guest lecturers from other universities. Rogers added that every effort was made to keep the cost of the courses at a minimum.
In fact, it is not the object of the Center for Continuation Study to make money on these projects and even though every effort has been made to have the many courses break even financially, not infrequently the cost has exceeded the income. Despite this fact, the University considers it one of its most progressive moves.180

Henry M. Burlage, Dean of the University of Texas College of Pharmacy, reported that a full-time specialist, Clark C. Cramer, had recently been hired by the University's Division of Extension and the Texas Pharmaceutical Association, and hoped that with this direction, in-service training in Texas would develop into "an extensive and worthwhile program."181 The Texas program consisted of five ten-hour distributive education courses directed to pharmacy owners and managers, department heads, and sales personnel, dealing with such topics as selling drug store merchandise, training and supervising drug store employees, training fountain employees, and modern drug store operation, which included discussion of merchandising, advertising, display, fountain operation, and control. "Our plan is to follow up these programs with two more courses, one which will help the pharmacist keep up-to-date with latest rules, regulations, and laws affecting them, and a second which will be concerned with new drugs," Association Secretary Robert G. Dillard wrote Elliott. "At present, we are in the process of assembling information; building miniature displays; and building up a library. We look forward to learning and profiting from the experience as we move along."182

In summarizing the evidence it had gathered, the Committee on the Pharmaceutical Survey pointed out that most of the institutions for professional training in pharmacy owed their origin to activities of local groups of practicing pharmacists. "In the case of the early institutions
two needs were clearly recognized: first to secure a sufficient number of apprentices with at least a minimum of practical knowledge of pharmacy; and, second, to provide opportunity for the further instruction of these apprentices in scientific pharmacy during their service," the Committee remarked. "Essentially these needs continue today. The first need is being met. The second has developed problems not yet solved."183

The Committee went on to state the problems it had observed:

The continuing changes taking place and the character, number, and form of medicinal substances have placed upon the competent pharmacist the obligation of continuing his serious professional study. In this connection it is to be noted that the current records contain 600 new drug items appearing during 1946 and 1947.

This obligation must be met if he is to regard himself fit for his responsibilities to the members of the other health professions and to the cause of public health. Under existing conditions the great number of pharmacists are not provided with ready means and methods whereby the newer scientific information may be acquired systematically and economically.

What pharmacy needs today is an effective mechanism designed to furnish those practicing on the all-important retail level with new pharmaceutical knowledge in a systematic and continuous manner, properly organized and digested. A live profession of pharmacy lives on the live knowledge constantly appearing from the modern scientific laboratories. The organization and communication of this new knowledge are tasks to be assumed by professional training institutions.

The Survey recognizes the importance of the vocational merchandising instruction contemplated under the provisions of the George-Deen Act. Such instruction, however effective, does not and cannot take place on a level required by the modern profession of pharmacy.184

The Committee then stated its conclusion in three short paragraphs that would change forever the nature of continuing pharmaceutical education in America's schools and colleges of pharmacy:
1. It is recommended that each of the accredited colleges and schools of pharmacy recognize and assume responsibility for providing organized programs of in-service professional instruction of the practicing pharmacists within the area normally served by the institution, and to this end set up, under competent, professional direction, an operation unit to be known as the "division of pharmaceutical extension."

2. It is recommended that the duties of such division of pharmaceutical extension include the development of refresher courses conducted at the institution, programs of reading, correspondence study courses, and the systematic visitation and personal counseling of pharmacists.

3. It is recommended, in order to insure the maximum cooperative effort, that the state boards of pharmacy of each state take the initiative for the creation in the state of a Pharmaceutical Extension Council consisting of the dean of the college(s) or school(s) of pharmacy, the director(s) of the division(s) of pharmaceutical extension, and representatives of the state pharmaceutical association and the state department of public instruction.

During the following two decades, these recommendations would be quoted again and again by the nation's pharmaceutical educators to justify the initiation or expansion of their institution's program of continuing education for the practicing pharmacist; to this day (1972), the recommendations have not been fully realized by any school or college of pharmacy in the country.

The reactions to the recommendations of the Committee on the Pharmaceutical Survey with regard to continuing pharmaceutical education were quick in coming and predictable. "Brush-up courses should be planned by every college of pharmacy," declared Drug Topics' editor Robert L. Swain. "Our profession is a part of a fast-moving, rapidly expanding, dynamic health field. Keeping up-to-date is the professional obligation of every pharmacist who knows the true meaning of the vast changes now shaping up through the whole broad field of drugs and medi-
College of Pharmacy Dean Francis J. O'Brien returned to a familiar theme as he urged pharmacists to spend "an average of four hours a week" reading and studying the professional journals. "The real test of a pharmacist's ability and knowledge is how much he reads and studies after he leaves college," O'Brien declared. "It is imperative that he realize this, and realizing it, puts the plan into practice. Unfortunately a considerable percentage of graduates spend little time reading professional journals." Inspirational discussions of the newly discovered need for continuing pharmaceutical education crowded the agendas of the 1949 district meetings of the National Association of Boards of Pharmacy and the American Association of Colleges of Pharmacy, as pharmacy board members and pharmacy faculty members alternately wrestled with the problems inherent in implementing the Survey's recommendations, praised their past continuing education efforts, and blamed the practicing pharmacists for their lack of interest in continuing pharmaceutical education programs. Even the normally staid Elliott foresaw in the days "immediately ahead . . . the fashioning of effective machinery to give an ever-increasing number of practicing pharmacists opportunity for continuous study as a means for qualifying, day by day, as modern pharmacists."

On the national scene, Ohio State University's Bernard V. Christensen, incoming president of the American Association of Colleges of Pharmacy urged that the Association "give careful study and consideration to the planning and implementation of 'organized programs of in-service professional instruction of practicing pharmacists,'" described
in the *Findings and Recommendations of the Pharmaceutical Survey, 1948,* "Many colleges already have done something along this line by means of conferences or short courses," Christensen remarked. "These, however, have been intermittent and spasmodic and consequently inadequate for in-service instruction." Christensen offered a solution to the problem:

What is needed is articulated educational programs that run consistently through a period of years so well-rounded courses of instruction may be offered to practicing pharmacists. It must be kept in mind in the planning of such courses that whereas youth can adapt itself to a long-time program, adults must rapidly adapt themselves to new ideas and new procedures and act quickly in their utilization and applications in practice. The colleges must direct the ideas and application of ideas.¹⁹⁰

Christensen went on to recommend that a committee of the Association be appointed "to study and outline suggestive courses and programs for in-service professional instruction of practicing pharmacists and make these available to the member colleges as early as possible"; the Association adopted Christensen's recommendation.¹⁹¹

Even the Committee on Activities for Alumni seemed reenergized. Chairman Linwood F. Tice found "a definite increase in the number of seminars being held" as compared with the number determined in 1948 by the Committee on the Pharmaceutical Survey. "This is indeed commendable," Tice stated. "Pharmaceutical educators have become increasingly aware of their obligations to pharmacists as well as to students and consider it a part of the educational program of pharmacy to provide some sort of in-service training or extension work."¹⁹² Tice noted that the progress made was laudable, but "not as extensive a program as that found desirable by The Survey" in its recommendations:
The implementation of The Survey's recommendations in this direction will be a difficult undertaking for it involves considerable time and expense to set up in each college a "division of pharmaceutical extension" under "competent professional direction." That this objective is the ideal is not debatable and everything possible should be done to establish such a program in every college where it is feasible. In the meantime, seminar programs, with all their limitations, are believed by the Committee to deserve continued attention and support by member colleges and every college not having such a program should consider its early adoption.193

Did The Pharmaceutical Survey stimulate the development of continuing education programs in America's schools and colleges of pharmacy? From the available data, it appears that at least 22 of the nation's 74 accredited schools and colleges of pharmacy (29.7 per cent, including the seven mentioned in the Survey) presented some sort of continuing education program between 1945 and 1949, including the retraining programs offered to veteran pharmacists of World War II.194 In 1949 alone, at least eight additional schools and colleges of pharmacy inaugurated or reinstituted their programs of continuing education for the practicing pharmacist, and seven more had definite plans for doing so, an increase of over 20 per cent (37/74, or 50.0 per cent).195 The following year, Rutgers University College of Pharmacy instituted its Pharmaceutical Extension Service;196 that same year, the University of Wisconsin School of Pharmacy inaugurated its Extension Services in Pharmacy.197 Continuing pharmaceutical education in the United States had come of age.

"Flying Training," National University Extension Association Bulletin 5:2 (October, 1939), p. [3]. At the time, flying training was underway at the University of Wisconsin and the University of Kansas.


6U.S. Congress, An Act Making Supplemental Appropriations for the Support of the Government for the Fiscal Year Ending June 30, 1941, and for Other Purposes, p. 1034; and U.S. Office of Education, Federal Security Agency, Engineering, Science, and Management War Training: Final Report, by Henry H. Armsby, Bulletin No. 9 (Washington, D.C.: Government Printing Office, 1946), p. 115. "A fundamental policy underlying ESMWT was that it should be a program of the institutions in which the Office of Education assisted, rather than a program of the Office in which the institutions assisted," Armsby emphasized. "Each participating institution was to be given the responsibility of ascertaining local training needs and of developing courses to meet these needs." Armsby added that it was considered extremely important that "the greatest possible degree of autonomy be allowed each college" and that each institution be given "the greatest possible latitude in working out its own program in accordance with its established policies and procedures, with a minimum of Federal control." The provisions of the ESMWT program were well calculated to dispel any fear of excessive interference and control from Washington on the part of the academic community: even the board of review to which proposals were submitted for approval was made up largely of university faculty members. Ibid., pp. 4-5 and 17-18. "In almost every respect the organization for engineering defense training was new," Creese noted at the time. "It established a new kind of relationship between the higher technical schools and the Federal Government; it called for a new kind of cooperation between industry itself and the schools if the new schooling was actually to meet the varying local needs of industries; it gave opportunity for specialized education, on all college levels, even to the highest, at government expense; it required that standard college courses be rewritten to fit the needs of young men entering employment for the first time and for older men already at work in industry for whom refresher courses and re-education were a first move to greater or changed responsibilities; and— not least important— it offered a new opportunity for regional study of the relationships between schooling and work, between technical theory and industrial practice." Creese, op. cit., p. 89.
Ibid. Of the 62 institutions holding membership in the National University Extension Association at the time, 58 conducted ESMWT courses. Fifty of these institutions conducted courses off-campus and at least 26 of the programs were administered by extension divisions. Eight institutions through their extension divisions trained about 34 per cent of the total number of trainees; the extension divisions of the University of California and Pennsylvania State University alone trained 16 per cent of this total (292,190/1,795,716). U.S. Office of Education, Federal Security Agency, Engineering, Science, and Management War Training: Final Report, pp. 66, 106, and 109. The governmentally sponsored, college administered, regionally organized ESMWT system of higher adult education encouraged Creese to speculate about the future: "Modified to suit peacetime conditions, it may have a permanent place in the school system of the country—a complete system of 'industrial extension' serving industrial communities in much the same way as agricultural extension has served the rural and farm population in every state and in almost every country." Funds for this purpose were not appropriated after the war, however, and the programs of adult training and education in technical fields continued as part of the engineering programs and technical institutes of university extension divisions and through the vocational, subprofessional, and semiprofessional programs of junior colleges. Creese, loc. cit.; and Baldwin M. Woods and Helen V. Hammarberg, "University Extension Education in the United States of America," in Universities in Adult Education (Paris: UNESCO, 1952), p. 113.

Rosentreter, op. cit., pp. 159-60; and Pyle, op. cit., p. 25.


Rosentreter, op. cit., p. 160.


George F. Zook, "How the Colleges Went to War," The Annals of the American Academy of Political and Social Science 231 (January, 1944),
p. 1. Zook called attention to a statement issued in June, 1940 by the American Council on Education titled "Education and the National Defense," which accurately reflected the feelings of college and university officials during this period: "All the agencies of education must be utilized for the most effective meeting of any national emergency. . . . Adequate consideration must be given to the conservation of educational values, resources, and personnel. . . . Emergency programs should not interfere unduly with the regular work of the schools and higher institutions." Ibid.

Sylvester H. Dretzka, "A Message from the Retiring President of the National Association of Boards of Pharmacy," American Journal of Pharmaceutical Education 5:4 (October, 1941), p. 447. "The time is ripe to raise the level of pharmaceutical education to higher and wider growth and further our service to the profession by cooperating in organizing this program of study based on current needs," Dretzka stated. "College men and practitioners cannot go about their business unmindful of each other. . . . Until current pharmaceutical education is fused with every day pharmaceutical practice, we will not accomplish our aims for an ultimately better public service." Ibid., pp. 446-47. Dretzka, who also served as Secretary of the Wisconsin State Board of Pharmacy at the time, contributed to these district programs himself. See, for example, Sylvester H. Dretzka, "The Need of Continuation Study for Pharmacists," Proceedings of the Annual Meeting of District No. 4 of the National Association of Boards of Pharmacy and the American Association of Colleges of Pharmacy for 1939-40 (1940), pp. 21-24; Sylvester H. Dretzka, "Address," Proceedings of the Joint Meeting of District No. 8 of the National Association of Boards of Pharmacy and the American Association of Colleges of Pharmacy (1941) p. 6; and Sylvester H. Dretzka, "Pharmacists Need Continuation Study," Proceedings of the Meeting of District No. 4 of the American Association of Colleges of Pharmacy and the National Association of Boards of Pharmacy (1943), pp. 25-28. The practice of annual joint meetings between faculty members of schools and colleges of pharmacy and members of boards of pharmacy had been a distinctive part of the picture of American pharmacy since 1928. The concept of joint district meetings was the product of the fertile brain of Purdue University's Dean Charles B. Jordan, who recommended the practice in 1926 "for the purpose of coordinating the work of such boards and such schools or colleges, to the end that there may be closer cooperation between these bodies, and that the standards of pharmacy may be further elevated." Charles J. Clayton and Charles B. Jordan, "Report of the Committee on Relations of Boards and Colleges," Proceedings of the American Association of Colleges of Pharmacy 27 (1926), p. 116.

Leon W. Richards, in "Reports by Each College on Work Offered and Conditions Pertaining to the Respective Schools, Led by Dean F. J. Goodrich," Proceedings of the Joint Meeting of District No. 7 of the National Association of Boards of Pharmacy and the American Association of Colleges of Pharmacy (1940), p. 17.

Crowe's remark that "if we had some scientific sections in our meetings, I am sure that the publicity would be very good and it would educate the public as well." In the ensuing discussion, Dean Perry A. Foote of the University of Florida agreed: "I rather believe that we could have a refresher course as part of our meetings. It would help to keep the pharmacists up to date on the new products and problems as well. Also it would give us good and much needed publicity." R[obert] L. Crowe, "Raising the General Level of Pharmaceutical Practice in This District," Proceedings, Joint Meeting of Boards and Colleges of Pharmacy, District #3 (1941), p. 26; and P[erry] A. Foote, "Raising the General Level of Pharmaceutical Practice in This District," ibid., p. 28. Also see [Eu]gene [B.] Cook, "How the College Can Do More to Help the Profession of Pharmacy," Proceedings, Fourteenth Annual Meeting, National Association of Boards of Pharmacy and the American Association of Colleges of Pharmacy of the Sixth District (1940), p. 27; and Henry S. Johnson, "What Can the Boards Do Further to Raise the General Level of Pharmaceutical Practice in New England?" Proceedings, Joint Meeting of Boards of Colleges of Pharmacy, District #1 (1941), p. 10.

Leonard O'Connell, "What Can the Colleges Do to Keep Practicing Pharmacists Abreast of the Rapid Advances in Pharmacutic Sciences?" Proceedings, Joint Meeting of Boards and Colleges, District No. 2 (1941), p. 43-44. O'Connell characterized the continuing education task of pharmaceutical educators as "somewhat unique," considering the rather abridged nature of the formal educational background of the great majority of practicing pharmacists: "When one considers the great disparity in the educational backgrounds of practicing pharmacists, some non college men, many graduated from two and three year courses and a lesser number graduated from standard four year courses, it is at once apparent that the what, how and why of advanced programs of study appears somewhat complex. Couple this factor with the diverse activities of the pharmacist in his everyday work the vast majority of which activity is fairly remote from the so called pharmaceutic sciences and one begins to see the problem in clearer outline." Ibid., p. 44.

Ibid., p. 44. O'Connell concluded that "granted the desire, the type of program, the proper time element, we must rule out of con-
sideration the numbers attracted to the courses and focus our attention on the quality of results obtained through such courses." Ibid., p. 45. O'Connell's strong words may have produced some effect. Later in this period, Ernest Little, Dean of Rutgers University College of Pharmacy, remarked that he had replaced his College's "inspirational" refresher courses with extension courses in physiology and in modern dispensing pharmacy of a "somewhat more profound nature," which included laboratory work. Dean William A. Prout of the Medical College of South Carolina School of Pharmacy, noting the infrequency of most refresher courses, suggested that a "clearing house" might be created to disseminate abstracts of new drug information on file cards to the practicing pharmacist. See Ernest Little, "Pharmaceutical Education from the Standpoint of Colleges of Pharmacy," American Journal of Pharmaceutical Education 7:1 (January, 1943), pp. 80-81; and William A. Prout, "What Can Be Done to Aid the Pharmacist in Keeping Posted on the Progress of Pharmacy and New Preparations?" 1944 Meeting, District No. 3, National Association of Boards of Pharmacy and American Association of Colleges of Pharmacy (1944), pp. 1-2.

John J. Debus, "Address of the Chairman, N.A.B.P. District No. 2," Proceedings, Joint Meeting of Boards and Colleges, District No. 2 (1941), p. 5. Debus also pointed out a steady decline in the use of "official" pharmaceutical preparations in prescriptions and a marked increase in the use of "non-official" preparations which he attributed to the practicing pharmacists "whose formal education if any, stopped fifteen or more years ago, and whose efforts since assuming their public responsibilities have leaned toward 'corner-cutting,' with the result that whatever correct pharmaceutical techniques they may ever have known have long since been forgotten . . . . Is it any wonder that official preparations differ too greatly in uniformity and that physicians have accepted the line of least resistance by increasing their use of medicines to non-official substances which are uniform in character?"

Ibid. "I realize that this is a radical step," Debus admitted. "Nevertheless, in order to determine whether or not my suggestion . . . has merit, I suggest that the Resolutions Committee give it their consideration and that if they find it worthy of further consideration or study, it be referred to the Committee on District Examination and Reciprocity for such further study and consideration." Ibid., pp. 5-6.

Robert P. Fischelis, "Report of Resolutions Committee," Proceedings, Joint Meeting of Boards and Colleges, District No. 2 (1941), pp. 113-15. The resolution finally adopted read: "We agree in principle with the desirability of continuation study for practicing pharmacists, and we believe that the present effort of colleges of pharmacy and pharmaceutical associations to meet this need should be encouraged and extended, and that an effort be made to devise a program which would be universally acceptable. To this end we approve the recommendation of Chairman Debus that this proposal be referred to the Committee on Reciprocal Plan and District Examination for further consideration and
study." Ibid., p. 115. For other reactions to Debus's suggestion, see "Urges Pharmacy 'Refreshers' Be Made Compulsory," Drug Topics 85:12 (March 24, 1941), pp. 2 and 13; and "What's New in Professional Pharmacy: Compulsory Refreshers," American Druggist 103:5 (May, 1941), p. 34.


The Florida act states that "no annual renewal certificate shall be issued by the board for the 1968 and any following year until such time as the applicant submits proof satisfactory to the board that subsequent to the issuance of his certificate of registration or last renewal thereof, he has completed at least fifteen (15) hours of continuing professional education, including post graduate studies, institutes, seminars, lectures, conferences, workshops, extension studies, approved correspondence courses or such other form of continuing professional education as may be approved by the board. . . . Provided, however, that any applicant for a renewal certificate who is age sixty-five or older shall be exempt from the continuing professional education requirements of this subsection." Florida, General Acts and Resolutions Adopted by the Legislature of Florida at its Forty-First Regular Session, April 4th to July 14th, 1967, under the Constitution of A.D. 1885 (3 vols.; Tallahassee: Tom Adams, Secretary of State, 1967), vol. I, part 1, chap. 67-519, sec. 1, pp. 1563-64. In 1970, the Florida Legislature deleted the "grandfather clause" and expanded considerably the nature of approved continuing pharmaceutical education experiences. Florida, Acts and Resolutions Adopted by the First Legislature of Florida under the Constitution as Revised in 1968 at its Second Regular Session, April 7 to June 5, 1970 and at an Extraordinary Session on June 10, 1970 (2 vols.; Tallahassee: Florida Legislative Printing Committee, 1970), vol. I, chap. 70-236, sec. 2, pp. 689-90. Also see: "Fla. Puts Mandatory Continuing Education Into New Reciprocity Law," American Druggist 156:6 (September 11, 1967), p. 31; "Reading A.D. Is 1 Way To Meet Fla. Continuing Education Requirements," American Druggist 157:6 (September 11, 1967), p. 87; and "Florida's New Mandate: Take the Requisite Number of Hours of Continuing Education," American Druggist 157:11 (November 13, 1967), p. 13.


Robert L. Swain, "Your Pharmacy and Mine: Keeping In Step With The Times," *Drug Topics 56*:5 (January 29, 1940), p. 16. Swain recalled the pioneering efforts of Purdue University's Pharmacy Extension Department a decade prior: "It was recognized, at the outset, that the retailer needed some organized means of keeping in touch with the major scientific, professional, and economic developments in his field, if he was to meet the demands made upon him. . . . Faced with demands of new products, new information and new points of view on the part of medicine and the general public, the retailer found himself greatly handicapped by a lack of knowledge of what was going on. New competitive problems had shown up, and the old ones had become more acute. It was the day of volume and turnover, and the retailer was in need of new facts, information, processes, and techniques. He needed merchandising aids, guidance in store planning, assistance in his promotional efforts, and in many other phases of store operation. It was to meet these peculiar needs of the retailer that the School of Pharmacy, Purdue University, established 'brush-up' courses in our field. So sound was this project that, today, many of our leading colleges of pharmacy are offering short courses in professional and commercial subjects."

Ibid. In another editorial later that same year, Swain again pursued the topic of continuing pharmaceutical education, but in a less expansive tone: "I want to see the retail drug store pull itself up to the level of modern pharmaceutical education, but I doubt if this can be done if the colleges and the stores go about their business more or less unmindful of each other." Robert L. Swain, "Your Pharmacy and Mine: What Do You Think?" *Drug Topics 56*:39 (September 23, 1940), p. 13.

Joseph A. Ortolan, "An Answer to Dr. Kirby: Suggestions for the Improvement of Economic Conditions of the Pharmacist of Tomorrow," *Amer-
ican Druggist 103:1 (January, 1941), p. 123. "I am sorry to relate that far too many pharmacists feel that their education is complete after graduation, instead of taking courses which would enhance their value to the physician, dentist, and public as a source of professional information," Ortolan scolded. "Pharmacists must face the facts."

28 [John N. McDonnell], "Editorials: Cooperation," American Professional Pharmacist 6:3 (March, 1940), p. 151. "It is difficult for today's pharmacist, no matter how well-equipped he may be with ability, experience, and material, to cope at all times with the demands for scientific, professional, and public health information, from the professions and the public. While some few pharmacists have at hand assembled reference materials, literature files, etc., even these are sometimes inadequate," McDonnell added. "Can there not be established in selected cities, in every State, or nationally, practical professional clinics or service depots where pharmacists may turn for better dispensing information, for answers to specific questions, for general assistance or specific advice?"

29 John N. McDonnell, "Editorial Comment: A Solution in Complexity," American Professional Pharmacist 6:8 (August, 1940), p. 487. "Of course, it places in turn a definite burden and handicap upon him who has had but an average technical background, or who finds it impossible to devote the necessary time to literature coverage, or whose practice is not remunerative enough to properly compensate for alert and progressive advancement," McDonnell sniffed. "The pharmacist cannot be static. He must now appreciate this new position he occupies, and adequately equip and maintain himself in it. He must learn, broaden, advance! It is apparent that in this demand has come the solution the Pharmacy's present problem,—and an indication of its destiny!"

30 John N. McDonnell, "Editorial Comment: Extension Pharmacy," American Professional Pharmacist 7:5 (May, 1941), p. 291. "We believe that the duty of pharmaceutical journals is to 'keep the pharmacist abreast of the times,'" McDonnell added. "We try to do just that, as best we can. Our contemporaries are precious few."

31 [John N. McDonnell], "Editorials: Retraining of Veterans," American Professional Pharmacist 9:12 (December, 1943), p. 783. "We hope that Pharmacy is cognizant of the need for proper care of the pharmaceutically-trained personnel who may now be decommissioned or demobilized, and for those who in the months to come will in increasing numbers return to their normal calling," McDonnell added.

32 Howard C. Newton, "The President's Address," American Journal of Pharmaceutical Education 7:4 (October, 1943), p. 442. Newton added that "it is not easy for the practicing pharmacist to acquire up-to-the-minute information. It is more difficult for him, I believe, than for those in some other professional fields at the present time because of the nature of the available literature of pharmacy as well as the varied educational background of the practitioners." Newton's recommendation was approved
by the Committee on Resolutions and adopted by the Association. See [L. David] Hiner, "Report of the Committee on Resolutions," ibid., p. 460.

33. George W. Hargreaves, "Report of the Committee on Activities for Alumni," American Journal of Pharmaceutical Education 4:3 (July, 1940), p. 468. "In most cases, such courses, while intended primarily for the alumni, are also open to any practicing pharmacist of the state," reported Hargreaves, calling attention to the parochial nature of most continuing pharmaceutical education activities of the time. "While these courses or lectures are generally given at the school, Temple University School of Pharmacy offers refresher courses in the county seats and other centers of population in order to reach more of the alumni." Hargreaves's recommendation was approved and adopted by the Association. See [Charles B.] Jordan, "Report of the Committee on Resolutions," ibid., p. 401.

34. George W. Hargreaves, "Report of the Committee on Activities for Alumni," American Journal of Pharmaceutical Education 5:4 (October, 1941), p. 564. Hargreaves added that "arrangement of the dates of such courses in several neighboring schools will make it possible to secure more representatives from the various pharmaceutical houses."

35. Ibid. Hargreaves's final suggestion, that "some type of certificate should be given in recognition of attendance at these courses" to encourage greater attendance and raise the professional morale of the pharmacists was not approved by the cautious Committee on Resolutions, which "did not believe that certificates should ever be awarded to participants in short-term refresher courses." See [Ivor] Griffith, "Report of the Committee on Resolutions," ibid., p. 508.

36. Charles W. Bauer, "Report of the Committee on Activities for Alumni," American Journal of Pharmaceutical Education 6:4 (October, 1942), p. 541. "The committee which grew out of that suggestion functioned under the title of the Committee on Activities of Students and Alumni," Bauer explained. "In due time that committee accomplished its objectives, and terminated its existence in 1939. . . . the written reports the committee received this year clearly indicate the necessity of bringing this historical background to your attention." Also see Chapter IV, pp. 116-17; and Chapter V, pp. 193-94.

37. Ibid., p. 542. Bauer noted that the courses were "well attended wherever they have been held--even in those areas where tire and gasoline rationing have been considered a distinct disadvantage. We feel that greater cooperation among the schools in this field of education should be encouraged." Bauer regretted that he was "unable to present a true picture of alumni activities either by districts or for the country as a whole," due to "those members who were asked to serve on this committee but were unable to do so, yet failed to signify that inability." Bauer added that this situation seemed to be an annual occurrence and asked for the privilege of choosing his own committee. "This would expedite the replacement of non-working members, and should result in securing a
more comprehensive report. . . . since this committee can not bring in a true picture of alumni activities as a whole unless it receives representative reports from all of its districts." Ibid., pp. 542-43. Bauer's suggestions were approved and adopted by the Association. See [Arthur H.] Uhl, "Report of the Committee on Resolutions," ibid., p. 487.

Thomas D. Rowe, "Report of the Committee on Activities for Alumni," American Journal of Pharmaceutical Education 7:4 (October, 1943), p. 529. After 1943, the Committee shifted its attention to the problems of postwar re-education of graduate pharmacists and former pharmacy students (see below). During this same period, detailed reports on the continuing education activities of the Association's schools and colleges of pharmacy were also provided by the Committee on Professional Relations. See Chapter V, n. 70; and George C. Schicks, "Report of the Professional Relations Committee," American Journal of Pharmaceutical Education 4:3 (July, 1940), pp. 450-55; George C. Schicks, "Report of the Professional Relations Committee: College Activities," American Journal of Pharmaceutical Education 5:4 (October, 1941), pp. 586-90; and George C. Schicks, "Report of the Professional Relations Committee," American Journal of Pharmaceutical Education 6:4 (October, 1942), pp. 523-25. The confusion among "alumni activities," "professional relations," and "extension services" continued until the early 1950s, reflecting not only the Association's apparent disinclination to deal with the problems of continuing pharmaceutical education on their own terms, but also the extreme fluidity of the burgeoning educational specialty. In 1944, for example, Chairman Perry A. Foote questioned the nature of professional relations work. "Differences of opinion throughout the profession are widespread," he reported, noting that "refresher courses for pharmacists" were included in some definitions of professional relations work. See Perry A. Foote, "Report of the Committee on Professional Relations," American Journal of Pharmaceutical Education 6:4 (October, 1944), p. 584. Also see Perry A. Foote, "Report of the Committee on Professional Relations," American Journal of Pharmaceutical Education 10:1 (January, 1946), pp. 74-75. Eight years later, Foote requested that the Committee be discontinued "unless it is needed for a specific task," noting that "since the year 1943-44 assignments were given to this Committee during one year only, 1949-50." Perry A. Foote, "Report of the Committee on Professional Relations," American Journal of Pharmaceutical Education 16:1 (January, 1952), p. 89. Continuing pharmaceutical education would continue to share an uncomfortable berth with professional relations and alumni activities until the creation of a special "Committee on Continuation Study" in 1955. See Lloyd M. Parks, "Report of the Committee on Curriculum," American Journal of Pharmaceutical Education 19:3 (Summer, 1955), pp. 533-36; and Richard A. Deno, "Report of the Committee on Resolutions and Resolutions from the Executive Committee," ibid., p. 559.

During the academic year 1940-41, the enrollment of the fifty-four accredited schools and colleges of pharmacy totalled 8,858 students, of which 1,646 received degrees; by 1944-45, there were but 4,144 students and 604 graduates. At the time, The Pharmaceutical Survey estimated that

On January 3-4, 1942, the National Conference of College and University Presidents on Higher Education and the War met in Baltimore under the sponsorship of the Committee of Military Affairs of the National Committee on Education and Defense and the U.S. Office of Education. Among the many recommendations which came out of the meeting was the suggestion that professional schools accelerate their curricula. Accordingly, on March 27, the American Council on Pharmaceutical Education recommended that "college of pharmacy give serious consideration at this time to the acceleration of their respective programs for the education of pharmacy students in order that the armed forces of the country, as well as the civilian population, may be adequately served," and provided a mechanism for pharmacy students to complete the normal four-year, 3200-hour curriculum in three calendar years. The decision as to whether or not an accelerated program would be adopted was left to the individual school or college. Andrew G. DuMez, Secretary-Treasurer of the Council, did not feel strongly in favor of the accelerated program, however, and stated that as many as 50,000 of the 105,000 pharmacists in the nation could be taken into the armed forces without endangering the public health, "provided, of course, that the remainder would devote all of their time to pharmaceutical service rather than to merchandising, serving lunches, beverages, etc." The following March, a 3200-hour, twenty-four-month program was approved by the Council; however, several state boards of pharmacy refused to recognize the twenty-four-month graduates, and the new program was dropped. The three-year accelerated program would remain in effect for the duration of World War II. Rufus A. Lyman, "The Editor's Page," American Journal of Pharmaceutical Education 6:1 (January, 1942), p. 122; Andrew G. DuMez, "The Policy of the American Council on Pharmaceutical Education with Regard to the Acceleration of the Course in Pharmacy for the Duration of the War Emergency," American Journal of Pharmaceutical Education 6:2 (April, 1942), pp. 290-91; Andrew G. DuMez, "Gleanings from the Editor's Mail," ibid., pp. 273-75; Andrew G. DuMez, "The American Council on Pharmaceutical Education: Notice of Further Changes in Policy and Standards with Respect to the Accelerated Programs of Instruction Inaugurated Since March 27, 1942," in "Miscellaneous Items of Interest," American Journal of Pharmaceutical Education 7:4 (October, 1943), pp. 587-88; National Association of Boards of Pharmacy, Executive


Robert L. Swain, "Vitamins Won Top Interest In 1939 Brush-up Courses," Drug Topics 56:4 (January 22, 1940), pp. 2 and 14. Swain noted that the composition and uses of vitamins constituted "the most inter-
esting subject for discussion" in 17 of the 34 courses. "The other leading subjects, in order of the importance, were food, drug and cosmetic legislation and socialization of medicine." "Perhaps no effective modern medication has been so perverted by a few unscrupulous advertisers as the vitamins," Glenn Sonnedecker wrote a few years later in an editorial in the Journal of the American Pharmaceutical Association. Sonnedecker had reference to a garishly promoted series of "professional" clinics offered to pharmacists and physicians across the country which were "backed by certain vitamin manufacturers" and which, according to Sonnedecker, were symptomatic of the heavy promotional tactics used by proprietary medicine manufacturers during the early 1940s. "Vitamins promiscuously merchandised are pitch-hitting for less modern nostrums which delay correct diagnosis and alienate both the pharmacist's patrons and his physicians," Sonnedecker complained. Glenn Sonnedecker, "The Way It Looks To Us," Journal of the American Pharmaceutical Association (Practical Pharmacy Edition) 5:5 (May, 1944), p. 129.

Swain, "Vitamins Won Top Interest In 1939 Brush-up Courses," pp. 2 and 14. Swain listed the following "professional" subjects which constituted the continuing pharmaceutical education offerings of the nation's schools and colleges in 1939: sickroom supplies, rubber goods, building prescription business, pharmacist-physician relations, venereal disease, prescription pricing, new and non-official remedies, pharmacy and public health, prescription incompatibilities, discussion of United States Pharmacopoeia (U.S.P.) terminology and supplements, professional pharmacy, advances in pharmaceutical chemistry, selling insecticides, bacteriology and the pharmacist, difficult prescriptions, trends in pharmacy and medicine, merchandising the prescription department, changes in the U.S.P. and in the National Formulary (N.F.), the Narcotic Drug Act, antiseptics, hormones, clinical diagnosis, pharmacology of sulfanilamide and the barbiturates, and proprietary medicines. Under the heading of "commercial" topics, Swain listed: fair trade laws and the pharmacist, fair trade laws and the price level of drugs and cosmetics, retail advertising, air conditioning, ice cream and its manufacture, window decorating, selling problems, brushes and bristle goods, merchandising display, departmentalizing the drug store, drug store merchandising, and salesmanship. Swain added that some programs "included a discussion of the function of pharmaceutical organizations," while others "went so far as to include social security and unemployment compensation in their lists of subjects." Ibid., p. 14.

Ibid., p. 14. Swain added that several of the deans at schools and colleges of pharmacy at which no "brush-up" work had been done "contemplated such work in 1940."

Schicks, "Report of the [1940] Professional Relations Committee," pp. 451-52. "Two colleges have definite plans for inaugurating one [refresher course] in a few months," Schicks added. "Two colleges, in sparsely settled areas, find it difficult to get a group together. Four feel that they cannot have such a course until they are able to increase their
teaching staff. Eighteen of the 35 schools not offering refresher courses said they would make an effort to start one in the fall." Ibid., p. 451. Financing continuing pharmaceutical education programs was a chronic problem for schools and colleges of pharmacy. In an address before the 1940 convention of the National Wholesale Druggists' Association, Dean Robert C. Wilson of the University of Georgia School of Pharmacy noted that the expense of maintaining an extension worker with proper training and experience would be beyond the budgetary scope of most schools and colleges of pharmacy. "Might it not be to the financial advantage of the wholesaler and manufacturers of America to provide some adequate amount of money so that, in cooperation with the schools or colleges of pharmacy, an extension program might be put into effect thus identifying the college of pharmacy, the retailer, the wholesaler and the manufacturer as a cooperative unit for the further advancement of pharmaceutical knowledge?" he inquired. "In the last analysis, it is their responsibility to make the professional trained pharmacist a good business man." Robert C. Wilson, "A Continuing Program of Education for Pharmacists," Proceedings of the National Wholesale Druggists' Association 66 (1940), pp. 158 and 160.

Schicks, "Report of the [1940] Professional Relations Committee," p. 452. Schicks listed the following topics which were presented by three or more schools or colleges of pharmacy: commercial pharmacy (buying and selling problems, prescription pricing, merchandising, displays, equipment, and supplies), vitamins, glands and hormones, detailing and dispensing prescriptions, official and non-official preparations, biologicals, pharmacy laws and regulations, the Food, Drug, and Cosmetic Act of 1938, diseases, ophthalmic preparations (pH, isotonic solutions and their sterilization), materia medica, and chemistry. He also noted that the courses ranged from one day to six months in length, averaging about twelve weeks of two-hour lectures on a weekly, biweekly, or monthly basis.

Schicks, "Report of the [1941] Professional Relations Committee: College Activities," p. 586. "Five additional colleges offered a course, but received no response from pharmacists. One western college considered giving a course, but gave it up since they were too far removed from cities and transportation was difficult," Schicks added. "Two have courses available through the George-Deen Act, and one through the auspices of the state board of pharmacy and the state pharmaceutical association, bringing the total number of courses offered through colleges or otherwise to twenty-two, an increase of five over last year," Schicks reported, encouraging those institutions which did not receive a response to try again, perhaps through a different approach, such as a correspondence courses. Schicks also noted that the subject matter selected for continuing pharmaceutical education courses met with the approval of all state pharmaceutical associations except the Wisconsin Pharmaceutical Association, which regarded the content of the courses as "a very controversial matter." Ibid., pp. 586 and 588.
Ibid., pp. 586-87. Schicks noted, however, that only eight of the nineteen schools and colleges of pharmacy providing continuing education courses had done so at the request of the pharmacists in their states, whereas eleven of the courses were developed by the faculty in these institutions. The length of continuing pharmaceutical education courses in 1941 ranged from one to thirty days, the average being two days of meetings; the number of hours of instruction varied from one to 102 hours, the average being about twenty-five hours per year. Only Rutgers University provided laboratory instruction in conjunction with its continuing education courses. Attendance ranged from ten to 600 pharmacists, and averaged about 120 for each continuing education activity. Schicks listed a broad array of topics which had made up the continuing pharmaceutical education programs of 1941: vitamins, hormones, chemotherapy, dental prescriptions, diabetic services, pharmaceutical economics, pharmaceutical equipment, law, business administration, pharmacy, pharmacology, chemistry, cosmetics, glandular products, sickroom supplies, narcotic records and regulations, photo supplies, biological products, dental use of barbiturates, sulfa drugs, new emulsifying agents, isotonic and buffer solutions, enteric capsules, tablet making, dental preparations, physiology, ampoules, water absorption bases, capsules, new organic compounds, pH concentrations, public health service, and bookkeeping. Ibid., pp. 587-88.

Schicks, "Report of the [1942] Professional Relations Committee," pp. 523-24. Eight institutions reported that they were participating in all four points of the Committee's program: Purdue University, Rutgers University, the Medical College of Virginia, the University of Buffalo, the University of Illinois, the University of Maryland, the University of Minnesota, and the University of Pittsburgh. Three colleges participated in the first, second, and third points (Massachusetts College of Pharmacy, Rhode Island College of Pharmacy and Allied Science, and Western Reserve University), and four colleges participated in the second, third, and fourth points (South Dakota State College, Ferris Institute, The Ohio State University, and the University of Washington), making a total of fifteen institutions which provided both continuing pharmaceutical education programs and first aid training for the practicing pharmacist. Four other colleges provided first aid training, but no other continuing education activities for the practicing pharmacist (Creighton University, Oregon State College, St. Louis College of Pharmacy, and the University of Washington). Ibid., pp. 524-25.

Rowe, op. cit., p. 529. "It is hoped the schools will show increased interest in their alumni when times become normal," he added. Rowe's report marks the last compilation of statistical information on the continuing education activities of America's schools and colleges of pharmacy in the 1940s. The next such compilation appeared a decade later in the annual reports of the American Council on Pharmaceutical Education, the accrediting agency for the nation's schools and colleges of pharmacy since 1932. See Chapter III, n. 66; and Patricia H. Costello, "Annual
For detailed descriptions of the continuing education activities of these schools and colleges of pharmacy during this period, see the following references. Present names of the institutions are in parentheses.


Massachusetts College of Pharmacy: Hugh P. Beirne, "Committee


Purdue University: Schicks (1942), p. 525; and Chapter V, n. 27.


Medical College of Virginia: Schicks (1942), p. 525.
Rhode Island College of Pharmacy (University of Rhode Island): Schicks (1942), p. 525.


The continuing education programs of the Massachusetts College of Pharmacy and the University of Minnesota College of Pharmacy were interrupted in 1944; the programs of Rutgers University College of Pharmacy were interrupted in 1943 and 1944; the Bureau of Professional Relations of the University of Florida College of Pharmacy was in a quiescent state between 1943 and 1947. See n. 51 above for details of the continuing education activities of these institutions during this period.

A refreshing change was offered by Rutgers University College of Pharmacy in 1941. During the early months of 1939 and 1940, the College had offered a series of seven to eight lectures on a variety of topics of "a somewhat inspirational nature," yet only "partly fulfilled the purposes for which they were designed," according to the Committee on Education and Standards of the New Jersey Pharmaceutical Association. The topics "lacked satisfactory effectiveness" because they "had to be treated in synopsis form, and because the teacher rather than the pupils did the work." In 1941, the College offered two twelve-week extension courses of "a somewhat more profound nature," one on physiology for pharmacists and another on modern dispensing pharmacy. Each three-and-one-half-hour period included both lecture and laboratory work, emulating the best educational practices of the day, yet the combined registration for the two courses totaled only forty-nine pharmacists. Sensing that the war situation was at least partly responsible for the low attendance, the Committee recommended that refresher courses be discontinued for the time being. "Modern Dispensing Course Is Planned," Drug Topics 56:41 (October 7, 1940), p. 27; Little, "Pharmaceutical Education from the Standpoint of Colleges of Pharmacy," p. 80; Schicks, "Report of the [1941] Professional Relations Committee: College Activities," p. 587;

^54 Several of the innovations took place at the University of Minnesota College of Pharmacy. At the request of pharmacists in and around the Twin Cities, two extension courses were offered by the University's Extension Division during the 1939-40 academic year. Earl B. Fischer and Ole Gisvold collaborated in offering a course in vitamins and biological products, and A. Hamilton Chute taught a course in retail store management. Two-hour classes were held weekly in the College of Pharmacy. Fifteen pharmacists enrolled in each group. "The attendance was gratifying for a few weeks and decreased to a point where the average attendance amounted to only three or four pharmacists," Dean Charles H. Rogers reported to Pharmaceutical Survey Director Edward C. Elliott a few years later. "Every effort was made in scheduling these classes to fit the time suitable for those registered in the courses but this did not stimulate the attendance." Letter, Charles H. Rogers to Edward C. Elliott, March 4, 1948, American Pharmaceutical Association Archives, American Institute of Pharmacy, Washington, D.C. [hereafter referred to as "A.Ph.A. Archives"]; and [Charles H. Rogers], "Postgraduation Study," in Biennial Report of the College of Pharmacy, 1938-1940 (Minneapolis: By the University, 1941), p. 9.

The following year, Chute developed a sixteen-lesson correspondence course on retail store management, under the auspices of the Correspondence Study Department of the University's Extension Division. The topics included: the pharmacist in the marketing process; the pharmacy among retail institutions; organizing, locating, and financing a drug store; drug store layout, equipment, and lighting; risks facing the pharmacist; merchandising and stock turnover; purchasing for the drug store; pricing policies and methods; minimum resale price maintenance; sales planning and sales promotion; promotional media available to the pharmacist; display and advertising for the drug store; promotional opportunities in the prescription department; selling techniques; store services and personnel; costs, expenses, and records in the drug store; and government regulation and public relations. The course included a one-hour midterm quiz and a three-hour final examination, both of which were to be taken under supervision. "Home Study Store Course Developed," Drug Topics 85:43 (October 27, 1941), pp. 2 and 23.

In 1941, three wholesale drug companies in Minnesota—McKesson & Robbins, the Northwestern Drug Company, and the Northern Drug Company of Duluth—established twenty-five fifteen-dollar "postgraduate scholarships" to cover the cost of tuition and room and board of registrants for the annual Pharmaceutical Institute sponsored by the College. All
Minnesota pharmacists were eligible for these scholarships, which were awarded by the Regents of the University. Charles H. Rogers, "Right Pharmaceutical Thinking," *American Journal of Pharmaceutical Education* 5:3 (July, 1941), p. 318; "Pharmaceutical Education on the March," *Ibid.*, p. 376; and Letter, Charles H. Rogers to Edward C. Elliott, February 17, 1948, A.Ph.A. Archives.

55 Robert W. Rodman, "Editorial: The Pharmacist in Civilian Defense," *Journal of the American Pharmaceutical Association (Practical Pharmacy Edition)* 2:7 (July, 1941), p. 282. Rodman suggested that the pharmacist could also serve the civil defense effort by making his pharmacy a supplementary source of supply of such drugs and medicines as would be required in an emergency and by helping to maintain public morale. "The pharmacist is a highly respected individual in his community. His success in the practice of his profession is a measure of the public's confidence in his knowledge and ability," Rodman wrote. "Thus he is a key man in every city, town, and hamlet to dispel false rumors and disseminate truthful information which will inspire confidence." *Ibid.*, pp. 282-83.

56 The Columbia course was open not only to College of Pharmacy alumni but to laymen as well. See "Gives First Aid Course," *Drug Topics* 85:40 (October 6, 1941), p. 23; and "Columbia Provides First Aid Course," *Drug Topics* 85:49 (December 8, 1941), p. 10. Piccoli said that "several hundred pharmacists from throughout the state have indicated their desire to enroll in the refresher course," adding that plans were being formulated "to have every college of pharmacy in the state offer these refresher courses to interested pharmacists." Yet even Piccoli's first aid course had a tinge of commercialism about it: To accomplish its objectives, Piccoli's committee planned "to review all of the important standard American first aid methods, to introduce new methods used in various emergencies; to prepare typical first aid window display backgrounds to be used throughout the program; to arrange for free distribution of first aid manuals to laymen; to make the pharmacy the main center for information on standard first aid equipment; to arrange a series of talks on first aid by pharmacists on the radio, before parent groups, high school groups, luncheon clubs, etc.; and to educate the public to be prepared with first aid equipment in the home, in automobiles, at places of business and, in case of emergency, to carry pocket first aid kits." See "Defense First Aid Refresher Course Launched In N.Y.," *Drug Topics* 85:45 (November 10, 1941), p. 25.

57 The twenty-four schools and colleges of pharmacy were: the Brooklyn College of Pharmacy, Columbia University College of Pharmacy, Creighton University College of Pharmacy, Detroit Institute of Technology College of Pharmacy and Chemistry, Ferris Institute College of Pharmacy, Fordham University College of Pharmacy, Massachusetts College of Pharmacy, Medical College of Virginia School of Pharmacy, The Ohio State University College of Pharmacy, Oregon State College School of Pharmacy, Philadelphia College of Pharmacy and Science, Purdue University School
of Pharmacy, Rhode Island College of Pharmacy and Allied Science, Rutgers University College of Pharmacy, St. Louis College of Pharmacy, South Dakota State College Division of Pharmacy, University of Buffalo School of Pharmacy, University of Illinois College of Pharmacy, University of Maryland School of Pharmacy, University of Minnesota College of Pharmacy, University of Pittsburgh College of Pharmacy, University of Southern California College of Pharmacy, University of Washington College of Pharmacy, and Western Reserve University School of Pharmacy. By July, 1942, a representative of Fordham University's College of Pharmacy could report that over 1,000 students and alumni had taken the Red Cross courses in first aid. See "Notes and News," American Journal of Pharmaceutical Education 6:2 (April, 1942), pp. 276, 278, and 282; "Notes and News," American Journal of Pharmaceutical Education 6:3 (July, 1942), p. 389; and Schicks, "Report of the [1942] Professional Relations Committee," pp. 524-25. In areas of the country not serviced by schools and colleges of pharmacy, pharmacists often organized their own first aid classes under the auspices of their state or local pharmaceutical associations. See "Rx Men Will Teach First Aid," Drug Topics 86:12 (March 23, 1942), p. 3.


59The Connecticut College of Pharmacy received support from the Connecticut Pharmaceutical Association and the Board of Pharmacy Commissioners; the University of Florida College of Pharmacy received support from the Florida State Board of Pharmacy, the Florida State Pharmaceutical Association, and the Florida Medical Association; the University of Maryland School of Pharmacy received support from the Maryland Pharmaceutical Association, the Baltimore Retail Druggists' Association, and the Baltimore Schools' Division of Vocational Education; the University of Oklahoma College of Pharmacy received support from its University's Extension Division, the Oklahoma Board of Pharmacy, the Oklahoma Pharmaceutical Association, the Oklahoma Drug Travelers' Institute, and two wholesale drug concerns, the Alexander Drug Company and the Fox-Vliet Drug Company.


"Group Founded In Michigan Will Offer Rx Courses," Drug Topics 87:2 (January 11, 1943), p. 14; and "A.Ph.A. Branch Sponsors Michigan Academy of Pharmacy," Journal of the American Pharmaceutical Association (Practical Pharmacy Edition) 4:5 (May, 1943), p. 153. "If the pharmacist of today is to maintain or improve his place in useful service, he must take advantage of every opportunity to improve his present education lest he be left standing on the curb when the parade has passed," Jones added. "We feel that we have begun a rather novel and unique experiment which . . . might be emulated by other branches or organizations which need something to 'pep-up' the interest of their members." Ibid., p. 152.


66. Perry A. Foote, "Organization of the Bureau of Professional Relations," Journal of the American Pharmaceutical Association (Practical Pharmacy Edition) 10:7 (July, 1949), p. 404. The contract called for the employment of a full-time associate director and established an advisory committee consisting of a member of the State Board of Pharmacy as chairman, the president of the Florida State Pharmaceutical Association, and the director of the Bureau. Policy and budgetary decisions relating to the work of the Bureau were to be approved by the advisory committee and the University's Board of Control. The plan was unanimously approved by the Florida State Pharmaceutical Association. Perry A. Foote, "The Florida Program of Professional Relations," Proceedings, Joint Meeting of Boards and Colleges of Pharmacy, District #3 (1941), p. 43.


68. Ibid., p. 64. The Formulary consisted of approximately 160 formulas printed on three-by-five-inch cards and indexed according to therapeutic use. "Our formulary contains about 98% U.S.P. and N.F. drugs," Foote pointed out. "We recognize that specialties have a place. Even the U.S.P. XII will include approximately 50 of them. As you know, we do decry mere mixtures of U.S.P. and N.F. drugs sold under coined names at fancy prices."

69. Jordan, in fact, was the son of Charles B. Jordan, Dean of the Purdue University School of Pharmacy, and a 1935 graduate of that institution. "Florida Highlights Its 'Relations' Bureau," Drug Topics 85:5 (February 3, 1941), p. 32. Jordan's efforts included distributing a list of Formulary ingredients to pharmacists, ascertaining the names of the "leading prescribing physicians" from local pharmacists, calling upon these physicians to explain the program of the Bureau and to distribute the Formulary and sample preparations, and distributing a suggested schedule of maximum prescription prices for Formulary items. See Foote, "The Florida Program of Professional Relations," pp. 44-46 and pp. 47-54 for examples of the literature distributed to all Florida physicians and pharmacists. The Florida program of professional relations quickly became the bellwether for similar programs across the nation. West Virginia University's Dean J. Lester Hayman remarked that "colleges of pharmacy and the state boards of pharmacy have not partic-
ipated in the professional relations programs to the extent that is possible or desirable." Describing the Florida program, Hayman suggested that "wherever possible, similar programs should be incorporated as an extension service of our colleges of pharmacy, supplemented perhaps financially, if possible, by contributions from the state boards of pharmacy and the state pharmaceutical associations." At the time, Hayman was carrying out a program of professional relations in cooperation with the West Virginia State Pharmaceutical Association and the West Virginia Medical Association and had even convinced his University's President and Board of Governors of the practicability of providing for a "director of pharmaceutical extension and professional relations." Funds were provided for a director, but the war intervened and Hayman was not able to locate an individual whom he felt was qualified for the position; the funds were not continued in subsequent biennial allotments. The situation was further complicated by a new University administration. "I have not as yet approached Dr. Stewart in regard to this project," Hayman wrote Pharmaceutical Survey Director Edward C. Elliott in 1948, "but I suspect that he would take the attitude that we should further develop our faculty for our increased student enrollment before attempting such a project again." J. Lester Hayman, "Address of the Chairman, A.A.C.P. District No. 2," Proceedings, Joint Meeting of Boards and Colleges, District No. 2 (1941), p. 8; and Letter, J. Lester Hayman to Edward C. Elliott, March 4, 1948, A.Ph.A. Archives.

"Courses in distributive education under the George-Deen Act offer possibilities which we are now investigating," Foote noted. A similar program was inaugurated by the Extension Division of the University of South Carolina in 1938, but failed to gain the support of the pharmacists of the state. See W[alter] D. Strother, "U.S.P. and N.F. Extension in South Carolina," Proceedings, Joint Meeting of Boards and Colleges of Pharmacy, District #3 (1941), pp. 32-35. William H. Ward, Director of the Extension Division, was enthusiastic about the project, despite its cool reception. In a letter to Charles B. Jordan, Chairman of the American Pharmaceutical Association's Committee on Professional Relations, Ward wrote, "If the state is justified in providing a pharmaceutical education or any portion of such education, by doing so it also in a measure assumes an obligation to keep the members of the profession informed as to new developments in the field. . . . If funds were available, the Extension Division in cooperation with the School of Pharmacy, should have a man in the field to work with the pharmacists and assist them in their profession, thereby increasing their usefulness to their various communities. This seems to me to be in line with the idea that the state is interested in the welfare of the professionally trained people and in the services which they can render to the other people of the state." Quoted by C[harles] B. Jordan, "Progress in Professional Relations," Journal of the American Pharmaceutical Association (Practical Pharmacy Edition) 2:3 (March, 1941), pp. 117-18. Also see Nicholas P. Mitchell, "University of South Carolina School of General Studies," in Expanding Horizons . . . Continuing Education, ed. by Stanley J.


"Notes and News," American Journal of Pharmaceutical Education 7:1 (January, 1943), p. 121. Before leaving, Jordan planned and wrote much of the literature to be mailed out in 1943. "The personal contact work that he carried out will necessarily be omitted for some time to come," the news release stated. "However, the activities of the Bureau will be continued by improving the quality and content of the literature." An example of the improved literature, a series of six bulletins dealing with hormone preparations and their functions, appeared the following year. See "Fla. Bulletins Review Subject Of Hormones," Drug Topics 88:5 (March 6, 1944), p. 15.


"I have seen our Bureau grow from an idea into a leader in the field of professional relations," Foote added. "I believe that the results obtained have justified the confidence placed in it at the time of its organization." J. Hillis Miller, President of the University of Florida, agreed with Foote's observation. "In Florida we have enjoyed splendid cooperation between the College of Pharmacy and the pharmacists of the State," he remarked in an address before the American Pharmaceutical Association that same year. "The value of the work of this Bureau is attested to by hundreds of persons." J. Hillis Miller, "The Profession of Pharmacy as Viewed by an Educator," American Journal of Pharmaceutical Education 13:2 (April, 1949), p. 277.

Lee W. Harrell, "Program and Activities of the Bureau of Professional Relations," Journal of the American Pharmaceutical Association (Practical Pharmacy Edition) 10:7 (July, 1949), pp. 404-5. Harrell's eight objectives were: to promote a better understanding between the physicians and the pharmacist; to promote better ethical pharmaceutical practices; to increase interest in the official chemicals and drugs of the U.S.P. and N.F., "which will materially reduce the cost of prescriptions"; to encourage rational prescription writing; to discourage self-medication and mass medication; to discourage counter-prescribing by pharmacists; to discourage the use of higher-priced drug equivalents; and to discourage unnecessary dispensing and the use of samples by physicians. Ibid., pp. 402 and 404.

"By constant promotion of high standards of ethics of pharmaceutical practice, a program of this kind cannot help
but contribute materially to the advancement of the great profession of pharmacy," Harrell concluded. Ibid., p. 407.

77"Committee on the Pharmaceutical Survey, "In-Service Training of Pharmacists," in The General Report of the Pharmaceutical Survey, 1946-49, p. 163. "The concept of a national council on professional relations to aid in the installation of similar projects throughout the country has been approved by the American Association of Colleges of Pharmacy, the National Association of Boards of Pharmacy, and the American Pharmaceutical Association," the Committee added. "The obstacle, however, is lack of funds." Also see Committee on the Pharmaceutical Survey, "Interprofessional Relations," in ibid., pp. 107-91.


In 1948, Charles H. Rogers, Dean of the University of Minnesota College of Pharmacy, wrote Pharmaceutical Survey Director Edward C. Elliott about his state's unsuccessful experience with distributive pharmaceutical education. "It was either during the winter of 1938-39 or 1939-40 that the Minnesota State Pharmaceutical Association attempted to organize classes for drug clerks in Minneapolis and St. Paul . . . with the cooperation of the Vocational Department of Public Schools of the Minnesota State Department of Health," Rogers wrote. "At that time there was a Pharmacy Clerks Union in the City of Minneapolis and two members of this Union were appointed on the Advisory Committee. A complete program was mapped out and classes scheduled for the entire winter." Rogers went on to note that the attendance was "gratifyingly large at first but rapidly decreased so that after three or four meetings some classes were discontinued," a situation which Rogers partly blamed on the difficulty the Association had in securing an instructor. "In St.
Paul the project did not even get started. There was a lot of opposition to the program by some of the local officers, some of whom insisted that new Union representatives be appointed to the Advisory Committee, this despite the fact that there was no St. Paul Union of Drug Clerks. The difficulties facing the project were so great that the Association abandoned its efforts." Rogers wistfully pointed to the Wisconsin program of continuing distributive education, describing it as "a remarkable success, particularly in rural districts," but noted that "some technicality prevented us from following the Wisconsin plan here in Minnesota." Letter, Charles H. Rogers to Edward C. Elliott, March 4, 1948, A.Ph.A. Archives.

79."Rx Men Slow To Use Funds For Training," p. 27. Kyker may have been influenced by a paper by Wisconsin's Edwin J. Boberg titled "The Retail Drug Business as a Distributive Occupation," portions of which appeared in the Practical Pharmacy Edition of the Journal of the American Pharmaceutical Association in January, 1940. When measured by volume of total sales in dollars, more than half of the business (50.7%) in the typical drug store is in the drug prescriptions, biologicals, first-aid material, proprietaries, rubber goods, surgical and hospital supplies and other products associated with the professions of Medicine and Pharmacy and the preservation of public health," Boberg wrote. "All other departments combined produce 49.3% of the total volume of business (toiletries, sundries, fountain, candy, tobacco, stationery). By its nature the drug business must be classified as a distributive occupation. ... Because of the rapid advances made in many fields of knowledge related to Pharmacy, a program of continuation-study would seem desirable. Such a program would permit the pharmacist to increase his knowledge and efficiency through organized study and directed discussion." Edwin J. Boberg, "The Retail Drug Business as a Distributive Occupation," quoted by Sylvester H. Dretzka, "Continuation Study for Pharmacists in Wisconsin Under the George Deen Act," Journal of the American Pharmaceutical Association (Practical Pharmacy Edition) 1:1 (January, 1940), p. 17.

80."Drug Store Training Shaped," Drug Topics 85:37 (September 15, 1941), p. 2. The American Association of Colleges of Pharmacy was represented by President H. Evert Kendig and Executive Committee Chairman Ernest Little; the American Pharmaceutical Association was represented by Secretary Evander F. Kelly and Leahmer M. Kantner, a community pharmacist from Baltimore; the National Association of Retail Druggists was represented by N.A.R.D. Journal editor George A. Bender, who also represented the National Association of Boards of Pharmacy by proxy. "National Program for Distributive Education for Pharmacists," Journal of the American Pharmaceutical Association (Practical Pharmacy Edition) 1:10 (October, 1940), p. 384.

in this undertaking was submitted to the Executive Committee of the Association, which voted affirmatively.

82 Ibid., p. 456. "Last winter I heard a leader in pharmacy question the propriety of the colleges participating in this movement," Kendig noted, adding that he had written immediately to Purdue University's Dean Charles B. Jordan and the University of Illinois's Dean Earl R. Serles for their opinion. "I think you will see from the outline that the professional part of pharmacy is well taken care of and I am convinced that the American Association of Colleges of Pharmacy should, by all means, participate in this work," Jordan replied. "In fact, I think we would make a serious mistake if we did not participate in this work." Serles "was equally emphatic and submitted a lucid and strong statement in favor of our participation," Kendig added.

83 "National Program for Distributive Education for Pharmacists," p. 384. The Committee also decided that the proposed distributive education program "need not conflict with refresher courses now being conducted by colleges of pharmacy." On the contrary, the committee felt that "these two programs might be combined, in certain instances, to advantage."

84 Ibid.

85 The committee consisted of Earl R. Serles and Charles B. Jordan, representing the American Association of Colleges of Pharmacy; Joseph J. Shine, Secretary of the Illinois Pharmaceutical Association, and J. Harry Lindahl, a community pharmacist from Chicago, representing the American Pharmaceutical Association; Sylvester H. Dretzka, Secretary of the Wisconsin State Board of Pharmacy, and Henry C. Christensen, Secretary of the National Association of Boards of Pharmacy, representing the National Association of Boards of Pharmacy; and N.A.R.D. Journal editor and public relations counselor Theodore Christenson, representing the National Association of Retail Druggists. The committee was chaired by Bender; upon Jordan's untimely death, A. Hamilton Chute of the University of Minnesota College of Pharmacy was appointed to fill the unexpired term. E[arl] R. Serles and A. H[amilton] Chute, "Joint Report of the George-Deen Subject Matter Committee," American Journal of Pharmaceutical Education 6:4 (October, 1942), p. 571.

"Selling Pharmaceutical Service" consisted of thirty-four sections: The Prescription Department; Prescription Packaging; Limited Laboratory Service; Pharmacist's Laboratory; Prescription Pricing; Prescription Records; Sanitation and Cleanliness in the Prescription Department; Developments Affecting Pharmaceutical Practice; Aids to Extemporaneous Compounding; New Remedial Agents; Vitamins; Hormones; Allergens, Anti-Asthmatic, and Anti-Hay Fever Products; Diagnostic Reagents; Biologicals; Professional Relationships; Professional Interviews; Promotion of U.S.P., N.F., and N.N.R. [New and Nonofficial Remedies] Products; Professional Products; Professional Ethics; Opportunities for Supplementary Sales; Household Medicines; Household Chemicals; Store-prepared Products; Pharmaceutical Specialties; Restricted Sale Preparations; Veterinary and Poultry Preparations; Insecticides; Narcotic Laws and Regulations; Alcohol Control Laws and Regulations; Food, Drug, and Cosmetic Laws and Regulations; Prescription Service Displays; and Prescription Service Advertising.

"Store Management, Operation and Sales Direction" consisted of two sections: The Drug Store Location (Analysis of the Various Types of Trading Areas; How to Analyze the Particular Trading Area; the Status of the Store; Structure of the Building; and Rent, Lease, and Insurance) and The Drug Store's Plan and Equipment (The Store Front; Display Windows; The Drug Store Lighting; Refrigeration; Air Conditioning; Heating and Ventilation; Interior Finishing; Fixtures and Store Arrangement; Soda Fountain; Special Equipment; Customer Relationships; Utilizing the Opportunities of the Trading Area; Store Personnel; Methods for Profitable Merchandising; Simplified Recording Systems; Personnel Training for Salesmanship; Window and Interior Displays; and Advertising).

"Merchandising by Departments" consisted of twenty-two sections: General Elements of Selling; Department Advertising of the Drug Store; Knowing What Each Department is Doing; Bread and Butter Merchandising; Drug Sundries; Responsibility for Departments; General Formula for Analysis of Any Department, Its Merchandise and Selling Technics; Cosmetic Department; First Aid Department; Infant Supplies Department; Surgical Supplies Department; Dental Supplies Department; Bristle Goods Department; Pet [Supplies] Department; Photographic Department; Confectionary Department; Tobacco Department; Magazine Department; Book Department; Gift Goods Department; Men's Department; and Fountain Department.

R[obert] P. Fischelis, "What Can Boards and Colleges Do to Keep Practicing Pharmacists Abreast of the Rapid Advances in Pharmaceutical Sciences?" Proceedings, Joint Meeting of Boards and Colleges, District No. 2 (1941), pp. 40-42. Also see U.S. Office of Education, Federal Security Agency, Suggested Outline of the Distributive Phases of Retail Drugstore Operation, Miscellaneous Bulletin No. 2562 (Washington, D.C.: Government Printing Office, 1940). "In preparing these outlines the subject-matter committee has assumed that the persons who will attend these courses will have had some basic sales training and experience; or that provisions for such training will have been made through courses in retail salesmanship," Dretzka reported to the American Pharmaceutical Association's House of Delegates in 1941. Describing the outlines as "all inclusive as is practically possible," Dretzka stressed that the
outlines were "only suggestive," and could be used in their entirety or in part depending upon the needs of the group of pharmacists being served. "Each State or local community may want to determine through a canvass of its retail pharmacists the relative emphasis that should be placed on the various divisions and topics contained in the outlines." Dretzka estimated that the outline had a range of "at least five hundred topics" which would take a class "not less than five years" to complete. Dretzka, "Continuation Study for Pharmacists," p. 530.

Serles and Chute, op. cit., p. 572. Beegle, an associate professor of commercial pharmacy at the University of Oklahoma School of Pharmacy, had successfully conducted an annual five-day "Drug Merchandising Short Course" at the University since 1938, and was described by the committee as a "subject matter specialist whose training and experience had been gained from long years of experience in methods of merchandising as they relate to retail pharmacy." Boberg, a pharmacist and former member of the Wisconsin State Board of Pharmacy, as well as a licensed teacher, had served as circuit instructor in pharmacy for the "Wisconsin Plan" since 1937, and had successfully organized, promoted, and conducted distributive education classes in more than twenty vocational schools across the state. "As a lecturer, conference leader, and radio speaker he has sought to bring about better relations between pharmacists and physicians, and between pharmacists and the general public," remarked Kyker soon after Boberg's appointment. "The success of his work in Wisconsin he attributes largely to the cooperation he has received from physicians, educators, law enforcement officials, and other specialists in various fields, who have volunteered their services as guest lecturers." B. Frank Kyker, "Distributive Education as Applied to the Drug Business," American Journal of Pharmaceutical Education 5:4 (October, 1941), p. 488. Also see "Boberg Goes to Washington," Wisconsin Druggist 9:7 (July, 1941), p. 14; "Drug Store Training Shaped," loc. cit.; and Chapter V, pp. 170-71 and 185-89.

Kyker, op. cit., p. 485. Kyker went on to describe how the program would benefit not only the distributive worker, but the producer and the consumer as well. "The improvement of retailing which will result from better trained store managers and more efficient store workers will benefit the producer through the increased stability, permanency, and dependability of the individual store through which his products are sold. The high cost of distribution, due to labor turnover, business failures, and inefficient management, falls largely on the consumer. Any reduction in this cost would be shared by the consumer and thereby increases his purchasing power and standards of living." Ibid., pp. 485-86.

Ibid., pp. 489-90. "The persons in charge of the state program--that is, the State Director of Vocational Education and the State Supervisor of Distributive Education--will be most anxious to cooperate with you individually or as a group in organizing classes for the retail drug group," Kyker concluded. "When you return to your home state
and to your local community, may I suggest that you get in touch with your local and state people in vocational education. They will welcome your cooperation and will make their services available in developing a practical and effective vocational training program for retail pharmacy." Ibid., p. 491.

Dretzka, "Continuation Study for Pharmacists," loc. cit. Dretzka had already provided a step-by-step procedure for participation in the George-Deen Act in January, 1940, and had delivered a stirring address before the House of Delegates of the American Pharmaceutical Association the following May. "Never before has the pharmacist, as a professional man and as a practical man, been confronted with such ... exacting responsibilities as to-day. Never has the pharmacist found himself in a professional or business world of such rapid changes, of such confusion of activity and onrushing progress. Hence, never were the demands on his educational training as great and the consequent necessity for continued study," exclaimed Dretzka. "Developments in the Pharmaceutical field are so rapid, in fact, that to stand still—even for a single year—means to slip back professionally, with perhaps dire results." Dretzka stated that an enlightened public expects the pharmacist to continue his study just as the physician does. "If the layman is ever given a choice between a pharmacist who continues his studies from year to year, and one who does not—we know where his patronage will go."

Dretzka also identified four reasons which he felt lay behind this change in public opinion: first, the "social conscience" of the nation had been aroused to demand competent professional service; second, the profession of pharmacy had begun to take steps to meet the challenge of this growing social conscience by organizing programs of continuing professional education; third, the public was beginning to rely upon the pharmacist for reliable information about drugs to offset advertising claims; and fourth, the social conscience had found expression in legislative acts concerning pharmacy in particular, and public welfare generally. "To meet these fundamental changes the need and obligation of pharmacists is continued study. It is the only way," Dretzka declared. Sylvester H. Dretzka, "The Need for Continuation Study for Pharmacists," Journal of the American Pharmaceutical Association (Scientific Edition) 30:11 (November, 1941), pp. 400-401. Also see Dretzka, "Continuation Study for Pharmacists in Wisconsin Under the George Deen Act," pp. 17-18.


The national Association of Boards of Pharmacy's resolution read: "RESOLVED: 'That we agree with the desirability of continuation study for practicing pharmacists, and we believe that the present effort of boards of pharmacy, colleges of pharmacy, and pharmaceutical associations to meet his need should be encouraged and extended, and that an effort be made to devise a program that would be universally acceptable."
The American Pharmaceutical Association's resolution read: "Resolved, that the Association highly commend those institutions and organizations which have been serving the interests of our profession by offering 'refresher courses' and that it strongly encourage the continuation and further extension of this educational service." Augustus C. Taylor, "Report of Resolutions Committee," Proceedings of the National Association of Boards of Pharmacy 38 (1940), p. 159; and [C. Leonard] O'Connell, "Committee on Resolutions," Journal of the American Pharmaceutical Association (Scientific Edition) 30:11 (November, 1941), p. 548. Also see Charles H. Evans, "President's Address," ibid., p. 458.

94 C. Henry Richert, Regional Agent for Distributive Education in the Central Region, reported to Dretzka that "in addition to Wisconsin, the states of Michigan, Missouri, North Carolina, and South Dakota had already employed full-time circuit instructors, and that Illinois and Texas were contemplating such a move. Dretzka, "Continuation Study for Pharmacists," p. 530.


Also see "Lack Of A Qualified Director Defers Illinois Retail Courses," Drug Topics 85:47 (November 24, 1941), p. 4. "It is not easy to find one person with all the necessary qualifications," the article stated. "The director must be a registered pharmacist, an able public speaker, one who thoroughly understands merchandising, advertising and the other commercial phases of the drug store, and above all one with an agreeable and likable personality, who will immediately win the good will and respect of those before whom he is to appear."


There were no national pharmaceutical association meetings held in 1945, although executive sessions were held, which endorsed the program of distributive education authorized under the George-Deen Act. See "Resolutions of Joint Conference: Education and Standards," Journal of the American Pharmaceutical Association (Practical Pharmacy Edition) 8:12 (December, 1945), p. 373. That same year, Joseph J. Shine, new chairman of the Association's Committee on Continuation Study for Pharmacists made a series of five recommendations regarding the George-Deen Act: That the U.S. Office of Education renew their interest in the
pharmacy continuation program which should be synchronized with the general program of the American Foundation of Pharmaceutical Education; that the American Foundation of Pharmaceutical Education assume the responsibility for the completion of the lecture outlines; that the American Pharmaceutical Association contact the nation's schools and colleges of pharmacy, urging them to convince their state legislatures to provide matching funds for distributive education in pharmacy; that the Association advise the administrative heads of the armed forces that distributive education would be valuable to returning veterans; and that the Association itself, though the nation's schools and colleges of pharmacy, utilize the distributive education opportunities offered through the provisions of the George-Deen Act. Because no meeting was held in 1945, no action was taken on Shine's suggestions. The following year, a thoroughly disenchanted Shine made a final report. Noting that the officials from the Office of Education were "anxiously waiting for action from state and local pharmaceutical associations," Shine remarked that "because of returning veterans, pharmacists who have been confined to their stores more than ever, and the general shortage of personnel, now would be the time that more good could be obtained than ever in the history of vocational education" by a program of distributive pharmaceutical education. "There is a need but, unfortunately, there is a severe handicap to the program because of the scarcity of teaching personnel," Shine concluded. "It seems rather unfortunate that a perfect picture has been set up for vocational education only to find that there is no one to execute it." Joseph J. Shine, "Report of the Committee on Continuation Study for Pharmacists," Journal of the American Pharmaceutical Association (Scientific Edition) 34:12 (December, 1945), pp. 384-85; and Joseph J. Shine, "Report of the Committee on Continuation Study for Pharmacists," Chicago, [1946], pp. 1-2. (Typewritten.), A.Ph.A. Archives.

"[arl] R. Serles, "Report of the Committee on Distributive Education," American Journal of Pharmaceutical Education 10:4 (October, 1946), p. 521. "Your chairman offers an apology to you, and to the other members of my committee, for having failed to keep alive our own interest in this phase of education," Serles wrote. "The only plausible excuse for the neglect on my part is centered in the limited number of hours in the day with which to properly take care of the variety of demands incident to the readjustment of the veteran to his regular college courses." Serles added that the American Council on Education's Pharmaceutical Survey "may well emphasize our short-comings in the development of this type of educational training in each of the several states," and suggested that his committee be continued.


By 1944, the "Wisconsin Plan" had expanded to include laboratory work in the compounding of pills, ointments, emulsions, suppositories, mixtures, and isotonic solutions, as well as ten- to fifteen-minute quizzes on the materials. Boberg stated that the "refresher courses" of the "Wisconsin Plan" were "concerned largely with the new, and yet the need for review work in chemistry and the basic sciences is recognized . . . The regular lectures and conferences are therefore supplemented so far as possible with review work, laboratory projects, movie presentations, and guest lectures. . . . Class discussion touches upon developments in pharmacy, medicine, drug store practice, chemistry, merchandise information, and manufacturing processes." Boberg went on to describe the procedure for organizing distributive education classes for pharmacists in Wisconsin. "A number of local pharmacists join in making a request to the vocational school authorities in their city. These requests are usually granted so far as instructional facilities and other conditions
permit. The group then enrolls as a class for a series of class meetings to be held at regular intervals every other week for a definite period, usually one or more school semesters. The vocational school then employs a circuit instructor in pharmacy, who also serves a number of other schools in the same capacity." Boberg also stressed the participatory nature of planning the classes. "The pharmacy group selects its own committees to work with the vocational school in organizing and carrying on the educational program. Where local pharmaceutical associations exist these committees may form standing committees of the association[s].

The vocational school communicates with the pharmaceutical group through the advisory committee on questions such as those relating to the formation and continuance or discontinuance of classes, proposed changes in the content of the course of type of instruction considered, or in general, whenever it is desirable for the school to learn the views of the pharmacy group with respect to any phase of the vocational education activities as they affect pharmacy. . . . Another important committee is the education program committee, which is concerned with planning and arranging ahead of time for all meetings that require special preparation in advance of the meeting." Wisconsin Schools of Vocational and Adult Education, Occupational Extension Service, "Bulletin for Committee Members," by Edwin J. Boberg, Informational Outline Series, Pharmacy Refresher Notes, Madison, [1944], pp. 4-6. (Typewritten.), Kremers Reference Files, F. B. Power Pharmaceutical Library, University of Wisconsin School of Pharmacy, Madison, Wisconsin [hereafter referred to as "Kremers Reference Files"]. For Boberg's recommendations concerning the advisory committees and the educational program committees, see ibid., pp. 9-12. Also see Wisconsin State Board of Vocational and Adult Education, City Division, "Minutes of the Meeting of the State Board of Pharmacy Acting as Advisory Committee to the State Distributive Education Staff," by Roy Fairbrother, Distributive Educational Series, Bulletin No. 16, Madison, 1944, pp. [3-4]. (Mimeographed.), Kremers Reference Files.


103[Committee on the Pharmaceutical Survey], "In-Service Training for Pharmacists," loc. cit. Also see "San Angelo Sales Courses Train Drug Store Help," Drug Topics 90:12 (June 10, 1946), p. 44; and Robert G.


105 Ibid., p. 116. "Whether druggists will ever get together on a real program officials were unable to predict," the article concluded. "Local programs are now being carried in some states where sufficient interest has been expressed to justify the undertaking, but if there is any real interest in reviving the druggist training program on a national basis, the Office of Education hasn't heard of it yet." Ibid., p. 118. For a somewhat more optimistic view, see Roy Fairbrother, "Distributive Education," Journal of the American Pharmaceutical Association (Practical Pharmacy Edition) 10:1 (January, 1949), pp. 40-41, a paper presented before the Association's Section on Pharmaceutical Economics in August, 1948. At the time, Fairbrother served as Supervisor of Distributive Education for the Wisconsin State Board of Vocational and Adult Education.

106 Sylvester H. Dretzka, "Report of Committee on Distributive Education," American Journal of Pharmaceutical Education 11:4 (October, 1947), pp. 779-80. "A few pharmacy schools have conducted two or three-day clinics once or several times a year. While these attempts are commendable, they do little more than take care of a very minimum need," Dretzka added. "In all states, there is a pertinent need for a program which enables us to reach a greater number of those who are unable to go to a center of learning, namely, the one-man drug store owner. . . . The retail druggist having several employees can usually find time to attend the educational clinics offered by our pharmacy colleges, but this represents only a limited number. He can keep up with modern trends and new drug discoveries but the one-man drug store owner is in danger of being by-passed by progress in the field unless the refresher course and the instructor in modern methods can be brought directly to him." Ibid., p. 780.

108 Roy A. Bowers, Dean of Rutgers University College of Pharmacy, has speculated that the conservative attitude of the deans of America's schools and colleges of pharmacy toward the use of federal funds might have contributed to the demise of the George-Deen program of distributive pharmaceutical education. In 1955, Bowers conducted a survey of the nation's pharmacy deans. Of the 51 deans replying, 32 favored the use of federal funds for continuing pharmaceutical education programs, while 19, or 37.3 per cent, were opposed to the use of such funds. Of the 32 deans who approved the use of such federal grants, eight indicated they would do so provided "there were no strings attached." "Most typical of the statements of those who opposed the idea was that pharmacy itself should promote and finance programs for the improvement of its professional personnel," Bowers commented. "Not a few colleges also expressed their concern over the prospect of the Federal Government's having anything to do with pharmacy that would enable it to make any claims whatsoever on the profession." The deans also were asked if they had any experience with the use of federal funds: 39 gave an unqualified "no" to this question, while nine indicated that they had had experience, most of whom participated in projects supported under the provisions of the George-Deen Act. Roy A. Bowers, "Report of the Subcommittee on Extension Education," American Journal of Pharmaceutical Education 19:4 (Fall, 1955), p. 734. "Although . . . selling and merchandising are important areas in pharmacy extension work, colleges should be aware that funds derived from governmental sources . . . preclude the introduction of professional courses," Bowers remarked four years later. "These limitations are obviously not desirable." Roy A. Bowers, "Postgraduate Education," American Journal of Pharmaceutical Education 23:1 (Winter, 1959), p. 5.


111 Morton estimated that approximately 18 per cent (1,459,964/8,141,961) of the total veteran enrollment between 1946 and 1950 was served by university extension divisions. Ibid.
In the first study in depth of the adult education role of a federal agency, University of Chicago Professor Cyril O. Houle surveyed and evaluated the activities of the Information and Education Division of the Army Services Forces, the Educational Services Section, Training Activity of the Bureau of Naval Personnel, and the Education Section, Welfare Division, Special Services Branch of the Marine Corps. The types of activities sponsored by these agencies included correspondence courses, direct individual and group instruction, library services, literacy training, orientation and information activities, university centers (ad hoc universities in foreign countries in the postwar period), and guidance and counseling services. Houle concluded that: 1) interest in education on the part of adults was very widespread; 2) a large number of service people were introduced to education as a part of their adult experience and would want to continue learning if opportunities were present for
them to do so; 3) adult education activities should be introduced into the primary associations and institutions to which people belong; 4) the more education mature people acquire, the more they are likely to want; 5) adult educational programs are especially successful where opportunities for recreation are limited; 6) participation in adult educational activities would be increased if they are located geographically close to the students; and 7) adult educational activities may provide for marked increases in racial, religious, and social tolerance. See Cyril O. Houle et al., The Armed Services and Adult Education (Washington, D.C.: American Council on Education, 1947), pp. 230-32. Also see: Malcolm M. Willey, "The College Training Programs of the Armed Forces," The Annals of the American Academy of Political and Social Science 231 (January, 1944), pp. 14-28; Schuyler C. Wallace, "The Naval School of Military Government and Administration," ibid., pp. 29-33; Francis J. Brown, "Off-Duty Educational Services in the Armed Forces," ibid., pp. 47-52; Ralph W. Tyler, "Sound Credit for Military Experience," ibid., pp. 58-64; and Donald J. Shank, "Postwar Education of Service Personnel," ibid., pp. 65-73.

115. Harvard University, Committee on the Objectives of a General Education in a Free Society, General Education in a Free Society (Cambridge: Harvard University Press, 1945), p. 256. The Committee stressed the "adult education, even more than school education, needs the most considerate planning human beings are capable of. Its delicacy reflects the sound instinct, as well as the acquired inertia, of the adult student. In the school, moreover, we have better chances of retrieving our mistakes." Ibid., p. 258.


117. Ibid., vol. V: Financing Higher Education, p. 17. To assist the expanded program, the Commission recommended that new organizational machinery be set up at the campus, community, state, and national levels. At the campus level, the Commission urged that colleges and universities provide centers for evening classes, prepare adult education teachers and leaders, and develop background materials. At the community level, the Commission recommended coordination of the activities of local agencies providing adult education. At the state level, the Commission suggested establishing state councils of adult education which would study educational needs and interests of adults, prepare adult education teachers and leaders, prepare instructional materials, evaluate adult education programs, stimulate experimentation with educational media, and expand all other aspects of the program. At the national level the Commission recommended the creation of a "strong division of adult education" within the U.S. Office of Education "to provide leadership, inspiration, and cooperation" at the other three levels, the establishment of a national council on adult education "to enlist the cooperation and resources of all the interested national agencies in planning," and the


Wilmer F. Bell, "Finance, Legislation, and Public Policy for Adult Education," in Handbook of Adult Education in the United States, ed. by Malcolm S. Knowles (Washington, D.C.: Adult Education Association of the U.S.A., 1960), p. 153. In 1944, Utah Senator Elbert D. Thomas introduced Senate bill 1670 "to promote the welfare of the people by establishing a publicly supported adult education program stemming from the State universities and land-grant colleges, by setting up a college and university adult education extension program separate from but supplemental to the cooperative agricultural extension service authorized by previous acts, thus making broadly available to community groups and individuals the full educational resources and research findings of these public institutions," which was read by title and referred to the Committee on Education and Labor. In 1948, Pennsylvania Senator Edward Martin and New Jersey Senator H. Alexander Smith introduced Senate bill 2156, "to authorize the appropriation of funds to assist the States and Territories in the further development of their programs of general university extension education of college grade," which was referred to the Committee on Labor and Public Welfare. In 1950, Senator Thomas introduced Senate bill 4009, "to authorize the Secretary of Labor to promote the development and adoption of plans and programs for the improvement of the skills of the Nation's work force, and for other purposes," which was referred to the Committee on Labor and Public Welfare; North Carolina Representative Graham A. Barden introduced an identical House of Representatives bill 9428, which was referred to the Committee on Education and Labor. None of these bills were ever reported out of committee. See U.S. Congress, Senate, Senator Thomas introducing Senate bill 1670, 78th Congress, 2d Session, January 26, 1944, Congressional Record, vol. 90, part 1 (January 10 to February 8, 1944), pp. 705-6; U.S. Congress, Senate, Senators Martin and Smith introducing Senate bill 2156, 80th Congress, 2d Session, February 13, 1948, Congressional Record, vol. 94, part 1 (January 8 to February 19, 1948), p. 1303; U.S. Congress, Senate, Senator Thomas introducing Senate bill 4009, 81st Congress, 2d Session, August 3, 1950, Congressional Record, vol. 96, part 9 (August 1 to August 18, 1950), pp. 11724-25; and U.S. Congress, House of Representatives, Representative Barden introducing House of Representatives bill 9428, 81st Congress, 2d Session, August 14, 1950, Ibid., p. 12477. Since 1960, the picture has brightened considerably. Through allocations to states for special training institutes, federal legislation has stimulated a number of areas of adult education, particularly adult basic education. Title I of the Higher Education Act of 1965 has provided approximately $10,000,000 per year for continuing education and community service programs. See U.S. Congress, An Act to Strengthen the Educational Resources of Our Colleges

Besides federal allocations, state subsidies, tuition, and fees, higher adult education today relies on foundation grants for financing. Since 1950, however, the major foundations have tended to direct their resources into particular channels. Examples include the Ford Foundation (urban extension), the Carnegie Corporation (surveys of adult education, correspondence study, education of women, and special degree programs for adults), the Kellogg Foundation (capital funds for residential centers and research and training in residential adult education), and the now-defunct Fund for Adult Education (educational television and liberal education). See Kenneth Haygood, "Colleges and Universities," in Handbook of Adult Education, ed. by Robert M. Smith et al. (New York: The Macmillan Company, 1970), pp. 209-10.

The other four organizations were the American Association for Adult Education, the Department of Adult Education of the National Education Association, the Board on the Library and Adult Education of the American Library Association, and the Education Film Library Association. The major outcome of the Detroit meeting was the formation of a Joint Committee for the Study of Adult Education Policies, Principles, and Practices (after 1948, the Joint Commission for the Study of Adult Education) composed of representatives of the five organizations. In October, the Joint Committee held its first meeting and identified the needs of the field to which a national coordinative organization should address itself. For a detailed account of the formation of the Adult Education Association of the U.S.A., see Malcolm S. Knowles, The Adult Education Movement in the United States (New York: Holt, Rinehart and Winston, Inc., 1962), pp. 214-17. The NUEA also gave strong leadership in the founding of the Council of National Organizations of the Adult Education Association of the U.S.A. in 1952, and its delegate was elected as the first chairman of the Council. Ibid., p. 161.

Pyle, op. cit., p. 30. NUEA members were also active in the Film Council of America and in the Educational Film Library Association. Pyle notes that NUEA officers discussed the possibility of a closer relationship with the Association for University Evening Colleges at this time but took no definite action.

Ibid., pp. 31 and 33. Pyle adds that "nearly every member institution had an expanded program of residential education in the form of seminars, conferences and institutes. Postgraduate offerings in medicine, dentistry, engineering, law, education and science increased many-fold." Ibid., p. 32. Also see Creese, op. cit., pp. 117-28; and Morton, op. cit., Table 14, p. 21.
The committee might also be delegated to prepare suggestions for review courses which could be given by the member colleges," Rowe added. The Committee on Resolutions, however, feeling that the matter had been covered in Recommendation No. 2 of President Howard C. Newton's address, endorsed the recommendation in principle, but recommended no action. The Association adopted the recommendation of the Committee on Resolutions. Miner, "Report of the Committee on Resolutions," p. 461. Newton had suggested that the Committee on Activities for Alumni or another appropriate committee "undertake as a major project a survey of ways and means to insure that our Association will aid in the further development of continuation study facilities in our colleges." Newton, "The President's Address," p. 442.

The resolution added that proposals for financial aid, under a state or federal educational program for returning servicemen who had or had not completed their formal pharmaceutical education, "be used to full advantage by colleges of pharmacy in the interest of such returning servicemen," and that such programs "be carried out in regularly established colleges of pharmacy with full freedom of selection by the returning service men." Ivor Griffith, President of the Philadelphia College of Pharmacy and Science, reported that a faculty committee at his institution was already engaged in planning a series of postwar seminars "as an extension course" to help returning servicemen resume civilian practice. "It is proposed that both lecture and laboratory work will be given over a period of several weeks with class work five days each week," Griffith stated. "In this manner, . . . a thorough review of basic pharmacy can be given as well as lectures on new developments."


Bernard V. Christensen, "Major Issues Confronting Post-War Pharmaceutical Education," American Journal of Pharmaceutical Education 8:2 (April, 1944), pp. 183-84. Massachusetts College of Pharmacy's Howard C. Newton identified two additional groups: graduates of high schools "who intended to enter the colleges of pharmacy but instead
entered the armed forces or went into war work of some kind," and "a considerable number who are being attracted to pharmacy as a civilian career through their contact with it in military service." Howard C. Newton, "Editorials: Post-War Programs for Pharmaceutical Education," ibid., p. 231.

128 Christensen, op. cit., pp. 184-85. In reporting on a meeting between the Executive Committee of the American Association of Colleges of Pharmacy and the officers of the American Foundation for Pharmaceutical Education, Dean Forest J. Goodrich of the University of Washington College of Pharmacy remarked that "it was definitely pointed out that refresher courses would be needed to rehabilitate these men. A number of schools already have their plans worked out to embark on this plan immediately on the return of the veterans. Whether the courses should be three months or nine months was debatable. All agreed that some form of refresher course would be needed irrespective of the length of time required." F[orest] J. Goodrich, "Report on Meeting of Executive Committee of A.A.C.P. and Officers of A.F.P.E.," Proceedings of the Joint Meeting of District No. 7 of the National Association of Boards of Pharmacy and the American Association of Colleges of Pharmacy (1944), pp. 40-41. For an example of the wide variation of opinion on this matter at the regional level, see the discussion following Allen I. White, "The Thomas Bill and Its Effects on Post-War Pharmacy," ibid., pp. 36-37; C[harles] V. Netz, "Rehabilitation of Registered Pharmacists Now in Service: Shall This Be Done with Refresher Courses and, If So, with Courses of What Type?" National Association of Colleges of Pharmacy and American Association of Colleges of Pharmacy Annual Meeting, District No. 5 (1944), p. [8]; and L[auren] R. Henderson, "Plans for Post-War Education of All Pharmacists in the Armed Forces and Men Whose Pharmaceutical Education Was Interrupted by Call to Service," ibid., p. [10].

129 Rufus A. Lyman, "The Editor's Page," American Journal of Pharmaceutical Education 8:3 (July, 1944), p. 372. "After he is at home again and life has taken on its usual routine then he may be interested in a refresher course of a few days or a week at most," Lyman added. "It seems to me that inspiration should be the chief objective of such a course. That is what this group needs and that might better be the purpose of all annual short courses for mature pharmacists." Ibid., pp. 372-73.

130 Rufus A. Lyman, "The Editor's Page," American Journal of Pharmaceutical Education 8:4 (October, 1944), p. 651. "Rather than to dilly dally along with 'refresher' courses we better devote our attention to stressing the basic sciences and revamping our professional curriculum in a way that will keep pharmaceutical education and practice abreast of the practices in the other health professions," Lyman fumed. "Here is a job that challenges our ability and capacity to attain. If this objective can be reached we can well afford to forget 'refresher' (how I dislike the word) courses."
Charles W. Ballard, "Post-War Education for Pharmacists and Students Now in Military Service," Proceedings, Joint Meeting of Boards and Colleges, District No. 2 (1944), p. 56. "Manifestly any program for this postgraduate study must center about the studies of the upper half of our normal four-year curriculum," Ballard added. "As the object is an overall review with the inclusion of recent material, a special program appears necessary." Ballard felt that a twelve-week, fifteen-hour-a-week course "would probably be adequate for the purpose." Ibid., pp. 58-59. Massachusetts College of Pharmacy's Howard C. Newton concurred: "They will not, I believe, want to go back to colleges. After they are in their jobs they may, and probably will, want refresher courses made available to them. The colleges should be prepared to offer these courses." Newton, "Editorials: Post-War Programs for Pharmaceutical Education," p. 232.

Thomas D. Rowe, "Report of the Committee on Activities for Alumni," American Journal of Pharmaceutical Education 8:4 (October, 1944), p. 508; and Kuever, "Report of the Committee on Resolutions," p. 455. Washington State University's Allen I. White agreed. "In this field I believe it is not necessary that the schools of pharmacy present an united front. Individual schools should be allowed to function in this field in any way they deem desirable," White stated. "Some may wish to give a course of one week's duration; others may wish to give a refresher course of six months' duration. This condition will be of advantage to the veteran in that he can choose whatever type of refresher course he feels [is] suited to his needs." Allen I. White, "Pharmacy and the Returning Veteran," Proceedings of the Joint Meeting of District No. 7 of the National Association of Boards of Pharmacy and the American Association of Colleges of Pharmacy (1945), p. 19.

Robert C. Wilson, "Report of the Committee on Post-War Planning," American Journal of Pharmaceutical Education 8:4 (October, 1944), p. 624. Wilson hesitated to make any recommendation concerning refresher courses for veteran pharmacists "since it has come to the attention of this committee that the standing committee of the A.A.C.P. on Alumni Affairs is considering these problems, we recommend that A.A.C.P. be guided by the recommendations of the standing committee." Ibid., p. 625.

Robert C. Wilson, "A Study of the Post-War Problems Confronting Pharmaceutical Education by the Committee on Post-War Planning," American Journal of Pharmaceutical Education 9:1 (January, 1945), pp. 61-129, passim. The negative replies came from Eugene O. Leonard (University of Idaho, Southern Branch, College of Pharmacy) and from Earl R. Series (University of Illinois College of Pharmacy); noncommittal replies came from Howard B. Lewis (University of Michigan College of Pharmacy) and from Arthur F. Schlichting (St. Louis College of Pharmacy). Ibid., pp. 85, 87, and 94-95.

Thomas D. Rowe, "Refresher Courses in Dispensing Pharmacy for Returning Registered Pharmacists," American Journal of Pharmaceutical
"This situation does not mean that we should postpone our plans," Rowe explained. "On the contrary, it means we must give more thought to them so that they will be flexible enough to meet the exigencies which may arise." Rowe quoted Wilbur C. Davison, Dean of the Duke University School of Medicine, with reference to his solution to the problem of postwar postgraduate medical education. "The solution is simple. The only really effective postgraduate education is that given to house officers in our hospitals, and every medical officer should return to his own or some other medical school of hospital for from six months to two years of intensive work." Significantly, Rowe dismissed Davison's plan: "Perhaps this idea may be feasible in a few medical schools, but we have no such easy road in the schools of pharmacy. Even if we did, I do not think a plan such as mentioned would be practical." Ibid. Also see Wilbur C. Davison, "Postwar Planning for Medical Education," Journal of the Association of American Medical Colleges 19:2 (March, 1944), p. 92.

Rowe, "Refresher Courses in Dispensing Pharmacy for Returning Registered Pharmacists," pp. 23-24. "To me, one of the most important contributions of these refresher courses should be to aid readjustment from soldier to civilian life. . . . The longer periods do not appeal to me for many reasons," Rowe stated. "First, they will be too expensive for the student and second, I do not believe the former serviceman will be willing to spend from one to four and a half months in school. He has learned from his army training that much can be accomplished in a short time. He has also learned that many of the college 'frills' are not needed. He will want the most he can get in the minimum amount of time." Ibid., p. 24.

Ibid., pp. 24-26. "During the two weeks there should be 10-12 lectures and four two-hour laboratory periods," Rowe suggested. Ibid., p. 24.

Two other institutions—Wayne University College of Pharmacy and the Loyola University College of Pharmacy—had definite plans for returning veteran pharmacists, but there is no record that these plans ever materialized. See "Wayne University Pharmacy College Now Plans Postwar Refresher Courses," Drug Topics 88:5 (March 6, 1944), p. 16; "Notes and News," American Journal of Pharmaceutical Education 10:1 (January, 1946), p. 146; and Letter, John F. McCloskey [Loyola University] to George Urdang, May 8, 1946, Kremers Reference Files. Fordham University's College of Pharmacy also planned refresher courses for returning veteran pharmacists, but "no special classes were held as not enough applied for them." Returning veterans were given the opportunity to "sit in on any [undergraduate] classes in which they were interested," a policy which the University of California College of Pharmacy and Purdue University School of Pharmacy also adopted. See "Notes and News" [Fordham University], American Journal of Pharmaceutical Education 9:4 (October, 1945), p. 583; Letter, Charles J. Deane [Regent, Fordham University] to George Urdang, September 16, 1946; Letter, Marjorie Robbins
[Secretary to Dean Troy C. Daniels, University of California] to George Urdang, May 17, 1946; and Letter, [Charles H. Rogers?], Purdue University School of Pharmacy to George Urdang, postmarked May 15, 1946, Kremers Reference Files.

"Rutgers Begins Seminars For Pharmacy Graduates," Drug Topics 89:2 (January 22, 1945), p. 22; "Lectures Sponsored By N. J. Branch Of APhA," Drug Topics 50:5 (March 4, 1946), p. 36; and "Veterans Surveyed by Rutgers," Journal of the American Pharmaceutical Association (Practical Pharmacy Edition) 7:1 (January, 1946), p. 28. The survey revealed that "approximately 57% want some kind of refresher course. Of these, a little more than three-fifths want to review courses previously taken in college, while two-fifths especially want to be brought up to date on newer developments in the field." In 1949, Martin S. Ulan, assistant professor of pharmacology at Rutgers, and Albert M. Mattocks, associate professor of pharmaceutical chemistry at Western Reserve University School of Pharmacy, were sent to Germany to conduct an eight-week refresher course for displaced pharmacists at the University of Munich School of Pharmacy under the auspices of the Unitarian Service Committee. See "Profs. Mattocks And Ulan Will Teach Refresher Courses To 60 In Germany," Drug Topics 93:12 (June 6, 1949), p. 28.


In March, 1946, pharmacy historian George Urdang sent out a "rather comprehensive" questionnaire to the deans of the nation's schools and colleges of pharmacy. By August, he had received only twelve replies. "The reasons for this slowness are obvious," declared Urdang. "Our schools have been crammed suddenly and are hardly able to meet all the problems connected with this fact." Urdang added that "we are still too much in the aftermath of war and too far from what one may rightfully call peace, to have the correct perspective for a history of the contributions of American pharmacy to the war effort," concluding that "there may some day be presented a composite picture of this period which makes exact data of the pharmaceutical part necessary in order to
avoid misrepresentation." George Urdang, "Report of the Historian: History of War-time Activities of the American Association of Colleges of Pharmacy," American Journal of Pharmaceutical Education 10:4 (October, 1946), p. 597. Unfortunately, the data were never collected; the fifteen replies which Urdang received are available in the Kremers Reference Files.

143 "Plan For Postwar Pharmacy" [letter to editor], Drug Topics 87:29 (July 26, 1943), p. 26. Other letters appeared in the columns of the Practical Pharmacy Edition of the Journal of the American Pharmaceutical Association. "The solution to this problem partly lies in the schools," Cleveland pharmacist Milton Dawson wrote. "Even after graduation I think we should spend several hours a week meeting with professors and other retail pharmacists in each area, discussing trends of pharmacy and methods of manufacturing various preparations." Wallace G. Dempster, a pharmacist from Langdon, North Dakota, agreed: "Rather than waste our time in manufacturing those compounds that the pharmaceutical houses can make much better and more cheaply than we can, let us improve our spare time by reading and study. Then we will be able to talk intelligently and be of real service." Milton Dawson, "As the Reader Sees It: Practicing What We Preach," Journal of the American Pharmaceutical Association (Practical Pharmacy Edition) 6:8 (June, 1945), p. 158; and Wallace G. Dempster, "As the Reader Sees It: Pharmacy—Manual or Mental?" Journal of the American Pharmaceutical Association (Practical Pharmacy Edition) 6:8 (August, 1945), p. 207.

144 Frank J. Steele, "University Extension Departments Offer Opportunity for Self-Improvement," Bulletin of the American Society of Hospital Pharmacists 2:3 (May-June, 1945), p. 87. "Courses offered in various fields by the universities in which pharmacists may be interested are accounting, economics, chemistry, health, insurance, journalism, mathematics, psychology, and speech," Steele added. "I believe that the pharmacist can obtain valuable information through courses offered by these universities, and information that will aid him in maintaining his professional status both competently and confidently." Ibid., p. 100.


146 Forte, op. cit., pp. 10, 8, and 9. "Now I do not believe that this should be done immediately, since there is such an acute shortage of trained teachers in the already overcrowded colleges," Forte added.
"However, I do feel that such an opportunity would enable our profession to keep [in] step with the new 'specialized medicine' trend, and most of all enable us to effectively shoulder the responsibilities that are ever mounting with the trend." Ibid., p. 9.

147 Victor Feit, "Refresher Courses," Joint Meeting of District No. 5, the National Association of Boards of Pharmacy and the American Association of Colleges of Pharmacy (1946), p. 5. "Fortunately, many of the journals give excellent reviews and information, and much can be gained by the pharmacist," Feit admitted. "But this does not solve the problem."

148 Ibid., p. 7. Feit's outline for new materials included ten points: brief historical development of the drug, composition, chemical or other source, chemical properties (stability, incompatibility), pharmacological problems and mode of action, toxicity, modes of administration, dosage, where the drug might be obtained, and how to compound it in a prescription. Review courses would include metrology, calculations, review of pharmaceutical preparations, review of pharmacology, review of bacteriologicals, and review of chemotherapeutic agents. "The length of the course and its frequency could be determined by the amount of the subject matter to be discussed," Feit added. Ibid., p. 6.

149 "D.C. Man Suggests Refresher Course Be Required Of All," Drug Topics 93:2 (January 17, 1949), p. 54. Pharmacist Paulson made his suggestion in a letter to the National Capital Pharmacist, a publication of the District of Columbia Pharmaceutical Association. He pointed out that District pharmacists' licenses were renewed at three-year intervals and that "many advances can be made in science in that time," yet "many pharmacists make no conscientious effort to keep abreast of these changes."

150 Sylvester H. Dretzka, "House of Delegates, American Pharmaceutical Association: Report of the Chairman," Journal of the American Pharmaceutical Association (Scientific Edition) 34:12 (December, 1945), p. 376. "Let us avail ourselves of every facility that will keep practitioners up to date and well informed on the spectacular developments in the scientific field of medication," Dretzka stated. "Science and medicine are in a state of flux with startling discoveries being brought to light constantly. We are dealing with an informed and alert public. We, as professional men, cannot remain static. We must develop and progress personally in proportion to the advancement and innovations developing all the while within the field of science."

151 [Sylvester H. Dretzka], "At the 93rd A.Ph.A. Convention: Address of the President-Elect," Journal of the American Pharmaceutical Association (Practical Pharmacy Edition) 8:10 (October, 1947), p. 494; and [Harold V. Darnell], "Your Association's Resolutions at the 93rd Meeting," ibid., pp. 513-14. "The Committee believes that the American Pharmaceutical Association is not in a position to take the lead in a matter of this kind because the funds for distributive education supplied by the federal government are available only to the respective
states, and each state is expected to work out a program which best suits its purpose," Darnell reported. "Accordingly it is recommended that the A.Ph.A. continue to supply essential information on this subject through its regularly constituted Committee on Continuation Study for Pharmacists." The House of Delegates adopted the Committee's recommendation.

152 Robert P. Fischelis, "Editorial: Continuation Study," American Journal of Pharmaceutical Education 11:3 (July, 1947), p. 543. "Medicine is making such rapid strides these days that pharmacists can keep pace only by setting aside some time for systematic reading and study of modern medical and pharmaceutical literature and occasional discussion of these advances with experts in the field," Fischelis stated. "The American Pharmaceutical Association is supplying the necessary reading matter through its monthly journals. By bringing groups of pharmacists together in the proposed district meetings, continuation study will be facilitated. In this program we will, of course, need the cooperation of college faculties located in the various districts. It is an opportunity for service in which the A.Ph.A. and the A.A.C.P. may well join forces." Ibid., p. 545.


155 In 1948, President-elect Little urged that the Association's Committee on Continuation Study for Pharmacists be continued and, if necessary, increased in size "in order that adequate consideration may be given to the problem as to how supplemental courses can best be organized and presented to retail pharmacists in order to assist them in keeping abreast of continuing developments in the medical and pharmaceutical sciences," and that the Committee "explore the possibility of cooperative action with a similar committee of the American Association of Colleges of Pharmacy," both of which recommendations were approved by the Association. The following year, President-elect Jenkins remarked that the maintenance of a continuing high educational level by our professional practitioners presented "diverse, difficult and challenging problems." Although he noted that "the schools of pharmacy by institutes, refresher courses, and other means may render valuable service," Jenkins felt that

156 See "Philadelphia Holds Jointly Sponsored Pharmacy Seminar," Drug Topics 89:7 (April 2, 1945), p. 27; and Rufus A. Lyman, "The Editor's Page," American Journal of Pharmaceutical Education 9:3 (July, 1945), pp. 422-23. The purpose of the American College of Pharmacists, according to its first president, Alvah C. Hall, Dean of the University of Southern California College of Pharmacy, was to "promote the professional aspects of pharmacy above today's practice." In addition, the new association expected to assist its membership in keeping up-to-date on scientific literature and pharmaceutical practices, as well as to present scientific programs for their improvement in practice, institute a program of refresher coursework, and "encourage the establishment of ethical practice benefitting the entire profession." Ibid.

157 Increasingly dissatisfied with the limited status and sphere of activities provided by a Sub-Section on Hospital Pharmacy within the American Pharmaceutical Association, the nation's professionally ambitious hospital pharmacists struck out on their own during the 1942 meeting of the Association as the American Society of Hospital Pharmacists. Like the American College of Apothecaries, established a year prior, the hospital pharmacists made membership in the parent Association a prerequisite to membership in their own Society. See Donald E. Francke, "The Hospital Pharmacist: Editorial," Journal of the American Pharmaceutical Association (Practical Pharmacy Edition) 5:3 (March, 1945), pp. 77-78; and Glenn Sonnedecker, Kremer and Urdang's History of Pharmacy (3d ed., rev.; Philadelphia: J. B. Lippincott Company, 1963), pp. 189-90 [hereinafter referred to as "History of Pharmacy"].

In 1945, Society President Donald E. Francke conceived the idea of some type of refresher course for hospital pharmacists to be sponsored by the American Hospital Association in cooperation with the American Pharmaceutical Association and the Society. The American Hospital Association was agreeable to the suggestion, and the first Institute was held at the University of Michigan, July 15-19, 1946. "Especially commendable is the collaboration of the three national associations having in common--although from different viewpoints--a vital interest in the practice of pharmacy in hospitals," Francke wrote at the time. "Such cooperation will undoubtedly lead to a far greater degree of success than could be attained by any one or two of the organizations working alone." Subsequent Institutes during this period were held in Chicago (1947), Princeton (1948), Berkeley, and Chicago (1949). In 1949, the Catholic Hospital Association inaugurated a second series of Institutes in cooperation with the American Pharmaceutical Association and the Society. In 1952, Francke
reflected, "The Institutes on Hospital Pharmacy have now become an institution at which practicing hospital pharmacists may annually review current progress in their specialty and receive and give that mutual stimulation which is vital to the advancement of any profession."

Francke went on to state that the Society's role in initiating the Institutes illustrated "the farsightedness of its leaders, as well as their firm grasp of important basic values . . . . Education after graduation has been an important factor in the rapid emergence of hospital pharmacy. In this the Institutes on Hospital Pharmacy have played a prominent role." See Don[a]ld E. Francke, "The Hospital Pharmacist: Institute on Hospital Pharmacy," Journal of the American Pharmaceutical Association (Practical Pharmacy Edition) 7:5 (May, 1946), p. 221; and Don[a]ld E. Francke, "Evaluations and Interpretations," in "Ten Years of the American Society of Hospital Pharmacists, 1942-1952," Bulletin of the American Society of Hospital Pharmacists 9:4 (July-August, 1952), p. 386. For an overview of the development of the Institutes, see Gloria Niemeyer, "Education and Training," in "Ten Years of the American Society of Hospital Pharmacists, 1942-1952," ibid., pp. 369-75; and Michael R. Kneifl, "Advancement of Pharmacy in Catholic Hospitals," ibid., pp. 253-55.


In the four-year period between 1944-45 and 1948-49, student enrollments in the nation's schools and colleges of pharmacy nearly quadrupled, from 4,144 to 19,728. Robert J. Myers and Eugene A. Rasor, chief actuary and actuarial mathematician, respectively, for the Social Security Administration, projected that undergraduate enrollment would increase to more than 21,500 in 1949-50 and thereafter, which was about double the immediate prewar enrollment of about 8,900, and that the number of degrees granted would increase to more than 4,300 in 1949-50 and thereafter, which was about two-and-one-half times the prewar number. "Total undergraduate enrollment will in a few years be almost 50 percent higher than now, which will create further burdens on already overtaxed staff and physical facilities," Myers and Rasor predicted. "The number
of undergraduate degrees will be in excess of 4,000 per year, or almost
double the 'normal replacements' required to maintain a constant phar-
macist population (on the basis of an annual attrition rate of 3.1 per-
cent applied to a pharmacist population of 80,000 yielding 2,500 replace-
ments per year). Conversely, it may be said that, on the basis of this
number of degrees each year (4,300) and this attrition rate, the phar-
macist population would eventually (in perhaps fifty years) increase by
75 percent, reaching a size of about 140,000, assuming that all who re-
ceived degrees went into the pharmaceutical profession." Myers and
Rasor concluded that the erratic pattern of graduating students, varying
from the derth in the war years to the abundance in 1949-50 would "pose
many problems to the pharmaceutical profession" in the years ahead.
"Even more serious, though less immediate, is the future level of under-
graduate enrollment in pharmacy schools, which obviously affects the
end-product--the pharmacy degree-holders," they warned. "Also of funda-
mental importance is the long-range trend of the use of the pharmaceuti-
cal profession and its services by the nation." In their discussion of
withdrawal and acquisition rates of pharmacists, Myers and Rasor remarked
that if the immediate postwar enrollments in the nation's schools and
colleges of pharmacy were maintained, the number of graduates in 1950
and thereafter would be "some 20 percent in excess of the probably de-
sirable number of annual acquisitions. On a long range basis, this means
that enrollments should be at a somewhat lower level than they are cur-
rently--but appreciably above what they were prewar--to produce only
enough graduates to act as replacements in the pharmacist population."
In 1960, the Bureau of the Census estimated that there were 90,000 phar-
macists in the United States, an increase of 7,000 over the figure for
1940. Committee on the Pharmaceutical Survey, "Student Enrollment and
1946-49, Table 8, facing p. 73; Robert J. Myers and Eugene A. Rasor,
"Projection of Pharmacy Enrollment and Graduates," in ibid., pp. 79-80;
Robert J. Myers and Eugene A. Rasor, "Withdrawal and Acquisition Rates
of Pharmacists," in ibid., p. 146; and U.S. Department of Commerce,
Bureau of the Census, Historical Statistics of the United States, Colo-
p. 75. Also see President's Commission on Higher Education, Higher Edu-
cation for American Democracy, vol. I: Establishing the Goals, p. 79.
A collateral problem concerned the quality, number, and compen-
sation for teachers in the nation's schools and colleges of pharmacy.
"An undue proportion of the existing teaching staffs is lacking the
thorough scientific preparation that is essential if the training for
the profession of pharmacy is to be maintained on a level comparable to
other professions," the Committee on The Pharmaceutical Survey reported.
"Approximately 45 percent of those of professorial rank have only the
master's degree or less. Furthermore, there are no available trained
reserves from which to meet the immediate teaching needs due to the
greatly enlarged enrollment of students." On the basis of reports made
by 54 institutions, 99 teachers were needed in October, 1947. These in-
stitutions estimated that an additional 152 teachers would be required
during the following three years. The Committee also stated that the
prevailing salary scales for teachers of professional subjects, in the majority of cases, were "entirely too low to attract and to afford a satisfactory career for men of superior ability and to meet the competition from industry." For full professors the median annual salary for 1947-48 was in the $5,000-5,499 range; for associate professors, $4,500-4,999; for assistant professors, $4,000-4,499; and for instructors, $2,500-2,999. "Pharmaceutical education is stalemated by the inadequate compensation of those who teach," the Committee concluded. [Committee on the Pharmaceutical Survey], "The Teaching Staffs," in Findings and Recommendations of the Pharmaceutical Survey, 1948, p. 22. Also see Committee on the Pharmaceutical Survey, "The Teaching Staffs," in The General Report of the Pharmaceutical Survey, 1946-49, pp. 63-67.

As early as 1937, the American Association of Colleges of Pharmacy-National Association of Boards of Pharmacy Joint Committee on Degrees in Pharmacy had recommended that the nation's schools and colleges of pharmacy "be permitted and urged to offer a carefully planned curriculum of five or more collegiate years' duration and that the degree of Doctor of Pharmacy be granted for the successful completion of such a curriculum." The matter was to lay dormant until 1944, when the new president of the American Association of Colleges of Pharmacy, Purdue University's School of Pharmacy Dean Glenn L. Jenkins appointed a new special "Committee on Five Year Curriculum." "The pharmaceutical curriculum has been the apple of discord thrown regularly into the midst of every pharmacy faculty and every other group interested in pharmaceutical education," Jenkins wrote at the time. "The curriculum in a pharmacy school should be fluid, responsive, progressive, and always ahead of the present. For the most part it is static, inflexible, and full of antique methods, ideas, and procedures. Its futility is disclosed by the continuous attempts to legislate or require specific courses as well as their content and the number of hours that shall be devoted to them." In November, 1945, the Association's Executive Committee adopted a resolution that the Association "encourage its member colleges" to establish, on an alternate basis, curriculums designed to extend and develop pharmaceutical education as a higher level with special consideration being devoted to new areas inadequately presented in the present curriculum" and "to experiment with (a) a prepharmacy year or years; (b) a post-year or years; and (c) an integrated program of studies covering a period of five or more years." An opposing point of view found expression in an action by the Third Annual Joint Conference of the Executive Committee of the National Association of Retail Druggists and the Council of the American Pharmaceutical Association. That same month, the Conference resolved that the inauguration of a five-year course in pharmacy "should be deferred until the need can be more definitely shown and until the opportunities open to pharmacists more clearly justify such an extension of the course," and that the schools and colleges of pharmacy "be urged to critically examine the present curriculum for the purpose of detecting obsolete material so that more time can be given to courses necessary to an understanding of modern therapeutic agents and so that the curriculum will be more suited to the needs of modern pharmacy as it reflects current medical practice." [Charles B.] Jordan, "Report of the Committee

The organization of The Pharmaceutical Survey in 1946 also gave stimulus to the study of the pharmacy curriculum, for it was expected at the time that the investigation would deal with educational problems, including a plan for a new pharmaceutical curriculum. That year, the Committee on Five-Year Curriculum reported that in its judgment the situation was not ripe for an extension of the curriculum, and it recommended that the Association devote its attention to revising and strengthening the four-year curriculum, which recommendation was adopted by the Association. Finally, the Association dissolved the National Pharmaceutical Syllabus Committee and established a Committee on Curriculum, under the chairmanship of George L. Webster of the University of Illinois College of Pharmacy. The following year, the Committee on Five-Year Curriculum recommended that the Association "should not take specific action on the extension of the number of years of the curriculum until the relevant factual information from the Pharmaceutical Survey is available," which recommendation was adopted by the Association. At the time, the Committee on Curriculum also favored a four-year curriculum. Ivor Griffith, "Report of the Committee on Five-Year Curriculum," American Journal of Pharmaceutical Education 10:4 (October, 1946), p. 552; Clark T. Eidsmoe, "The 1946 Meeting of the American Association of Colleges of Pharmacy," ibid., pp. 631 and 637-38; "Committee Appointments for 1946-1947," ibid., p. 402; Howard C. Newton, "Report of the Committee on Five-Year Curriculum," American Journal of Pharmaceutical Education 11:3 (July, 1947), p. 516; Howard C. Newton, "Report of the Committee on Resolutions," American Journal of Pharmaceutical Education 11:4 (October, 1947), p. 806; George L. Webster, "Report of the Committee on Curriculum: Preface," ibid., pp. 752-62; and George L. Webster, "Report of the Committee on Curriculum of the American Association of Colleges of Pharmacy to the Joint Meeting of the American Association of Colleges of Pharmacy, The National Association of Boards of Pharmacy and The Council of the American Pharmaceutical Association," ibid., pp. 763-67.

By 1948, the preliminary findings and recommendations of The Pharmaceutical Survey were available. In part, the Committee on the Pharmaceutical Survey stated that for pharmacy to achieve a professional standing commensurate with that of other health professions, the nation's schools and colleges of pharmacy "must develop and establish a program of education and training on a level comparable to preparation for those professions," and recommended that the Association and the American Council on Pharmaceutical Education "continue their efforts for the constructive betterment of the existing four-year program of education and train-
"ing" and "take the necessary initial steps for the development and establishment of a six-year program of education and training leading to the professional degree of Doctor of Pharmacy." The Association's Committee on Curriculum reversed its position of the previous year, and now favored a program of education consisting of two prepharmacy years and a four-year professional curriculum, and it presented a carefully prepared analysis to support its position. The Association approved in principle the "proposed optional six-year program in pharmacy as outlined," and urged all schools and colleges of pharmacy to "test these programs by trial with the understanding that the curricula are tentative, and the autonomy of each school in the construction of its curriculum shall be maintained." [Committee on the Pharmaceutical Survey], "The Pharmaceutical Curriculum," in Findings and Recommendations of the Pharmaceutical Survey, 1948, p. 46; George L. Webster, "Report of the Committee on Curriculum," American Journal of Pharmaceutical Education 12:4 (October, 1948), pp. 765-82; and George E. Crossen, "Report of the Committee on Resolutions," ibid., p. 813.

When the Association met in Jacksonville, Florida, in April, 1949, the time seemed auspicious for action. In his presidential address, West Virginia University's College of Pharmacy Dean J. Lester Hayman stated, "The path to be followed is quite clear: the establishment of a six-year program for pharmaceutical education as soon as may be expedient." The Association's Committee on Curriculum reported that it had explored the possibility of achieving the accepted objectives of a professional education in pharmacy within the limits of four collegiate years and had been forced to the conclusion that "the scope of pharmaceutical education at the level of the professional is beyond the physical capacity of that time limitation." Its three recommendations were in the direction of placing the nation's schools and colleges of pharmacy on a six-year plan of education beginning in the fall of 1956. President-elect Bernard V. Christensen, Dean of The Ohio State University College of Pharmacy, presented a more moderate view. Noting the interest of a few colleges of pharmacy in five-year plans, he recommended that the Committee on Curriculum be requested to study the possible advantages and disadvantages of the several variations of a five-year plan and to make such information available to member colleges as early as possible.

Christensen's recommendation was finally referred to the Committee on Curriculum. By the autumn of 1949, The Ohio State University College of Pharmacy had adopted a 2-3 plan of education, and others were considering such a step; moreover, the University of Southern California College of Pharmacy announced that, beginning in September, 1950, it would offer a six-year curriculum leading to the degree of Doctor of Pharmacy and that the degree of Bachelor of Pharmacy would not be awarded after June, 1954. National Association of Retail Druggists' President Edgar S. Bellis voiced strong opposition to a course of training of more than four years, and his Association adopted a resolution strongly advocating a "thorough study of present curricula of four-year duration with the object of revising them to meet present needs and . . . the preparation and the making available of annual refresher courses, which would present the latest available information on pharmaceutical progress." J.
In 1950, for various reasons, it seemed inadvisable for the American Association of Colleges of Pharmacy to take action on the 1949 proposals of the Committee on Curriculum. The report of the Committee on Constitution and Bylaws, which had been dealing with the matter, was tabled by a vote of 40 to 11; the Committee on Curriculum reviewed its history and findings, discussed various five-year plans of education, presented two 1-4 plans, one 2-3 plan, and three 2-4 plans, and again urged the adoption of a 2-4 plan as the next step to be taken by the Association, but presented no resolution for action. The following year, the Association acted on the proposals submitted to it in 1950. The proposals were the subject of vigorous debate, but they failed to receive a two-thirds majority vote of the member colleges voting. President-elect J. Allen Reese of the University of Kansas School of Pharmacy, in a last-ditch attempt to salvage the situation, submitted a resolution to amend the Association Bylaws so as to permit the awarding of a Bachelor of Pharmacy degree for the completion of a five-year course in pharmacy. This resolution was approved and referred to the Executive Committee for further study and for preparation for a vote by the Association, but it would take until August 24, 1954, before the compromise five-year curriculum would be approved as the minimum requirement in accredited schools and colleges of pharmacy for students entering college after the spring of 1960. Hugo H. Schaefer, "Report of the Committee on Constitution and By-Laws," American Journal of Pharmaceutical Education 14:4 (October, 1950), p. 657; George L. Webster, "Report of the Committee on Curriculum," American Journal of Pharmaceutical Education 14:3 (July, 1950), pp. 438-49; J. Allen Reese, "Installation Address," American Journal of Pharmaceutical Education 15:4 (October, 1951), p. 499; Lloyd M. Parks, "Report of the Committee on Constitution and By-Laws," American Journal of Pharmaceutical Education 16:1 (January, 1952), p. 71; Lloyd M. Parks, "Interim Report of Committee on Constitution and By-Laws as of March 29, 1952," American Journal of Pharmaceutical Education 16:2 (April, 1952), pp. 291-92; Stephen Wilson, "Report of the Committee on Curriculum," American Journal of Pharmaceutical Education 17:4 (October, 1953), p. 545; L[inwood] F. Tice and R[ichard] A. Deno, "Report of the Committee on Resolutions," ibid., pp. 691-92; and American Association of Colleges of Pharmacy, "Constitution and By-Laws of the American Association of Colleges of Pharmacy," American Journal of Pharmaceutical Education 18:4 (October, 1954), p. 752. For a complete account of the development of the current five-year curriculum in pharmacy, see Blauch and Webster, op. cit., pp. 31-44.
"Where it is possible and practical, 'refresher' courses are advisable and should be made available," Hammond added. Ibid., p. 5.

"Even the college teacher finds that a great deal of his time must be spent in reading the current literature if he is to keep his lectures abreast of modern developments," Tice admitted.

"There are those who argue that the post-graduate service of a college faculty is unnecessary, that after all there are any number of books and periodicals from which the pharmacist may obtain all the information needed," Tice stated. "We do not minimize the importance of the pharmacist's library but this same argument could be used as the basis for eliminating teachers from the public schools and even ministers from the pulpit. ... A teacher can condense, interpret, and emphasize as no printed page can; and those persons sitting for a few hours under the tutelage of a good teacher, who knows his subject well, can accomplish what it would require many weeks to master alone." Tice added that there was also "a certain moral obligation and persuasion to pay attention during a lecture which is so noticeably lacking in self-study. Too often, an evening that is to be devoted to reading and study is, at the last moment, devoted to some more entertaining program and this is even more likely for a pharmacist already tired by a long day at work." Ibid., pp. 102 and 128.

"Night lectures make it possible for almost any pharmacist in the geographical area around the colleges to attend, but it is quite difficult to obtain a comprehensive attendance by all registrants for every night in the program. There is also the disadvantage that the attending pharmacist, having worked all day, is too tired mentally and physically to assimilate the new material presented in the lecture," Tice wrote, and went on to explain the advantages of the intensive continuing education program covering a period of three or four days. "The registrant ... actually gets the feeling that he is back in school and his attitude toward the work is serious. Since his entire time is devoted to classwork his mind is more receptive to new facts and theories," Tice stated. "This method has but one weakness and that is the difficulty some pharmacists have in getting away for three or four successive days."

"With refresher courses properly planned and given, pharmacists will need but little encouragement to enroll in an effort to improve their professional knowledge and skill," Tice added.
"To criticize without offering some means of improvement is neither effective nor constructive," Tice remarked. "Much can be achieved by cooperation."

"Prior consideration has been given to the formulation of a refresher-training program," a correspondent for the University of California College of Pharmacy reported in 1945. "The thinking along this line is to be put into action shortly in the form of an 'Extension Division' program offering refresher training in the several divisions of pharmaceutical education. It is proposed that such a program will become a regular part of the teaching activities, and, as such, will function in post 'post-war' days as a means of helping pharmacists to keep abreast of recent developments." That same year, University of Illinois College of Pharmacy Dean Earl R. Serles urged his University to develop an extension staff to assist the 6,000 practicing pharmacists in his state who he felt were "in dire need of postgraduate training in the basic sciences which support their professional practice." In 1946, some interest was also expressed in postgraduate courses in animal health, stimulated by a one-week course on the topic presented by the St. Louis College of Pharmacy and Allied Sciences. "Notes and News," American Journal of Pharmaceutical Education 9:4 (October, 1945), p. 582; "Extension Staff Is Urged By Illinois Pharmacy Dean," Drug Topics 90:17 (August 19, 1946), p. 201; and "Pharmacy Educators Favor Animal Health Courses," American Druggist 114:3 (September, 1946), pp. 102-3 and 194. Also see "St. Louis Provides Refresher Courses On Animal Health," Drug Topics 90:10 (May 13, 1946), pp. 15 and 39; "Druggists Enjoy Course On Veterinary Supplies," Drug Topics 90:15 (July 22, 1946), p. 34; and Augustus A. Maier, "Can the Colleges Offer Anything Further to Aid the Practice of Pharmacy in Rural Areas?" National Association of Boards of Pharmacy and American Association of Colleges of Pharmacy Annual Meeting, District No. 1 (1948), pp. 8-11.

"Two colleges which had gone to considerable trouble to arrange outstanding programs had attendances of 12 and 30, respectively," Rowe noted. Ibid., pp. 489-90.

"This committee does not feel it is able to make recommendations at the present time as to how the pharmacist can be made to realize the importance of refresher courses," Rowe concluded. "It would be advisable for the committee to consider this problem for its work next year." The powerful Committee on Committees, however, under the chairmanship of Glenn L. Jenkins, had other plans for the Committee on Activities for Alumni. "The function of this committee has never been clearly defined," Jenkins complained, recommending that the Committee on Activities for Alumni study the means whereby alumni may be made more useful in promoting the welfare of each school; that it study the activities, particularly the fields of work into which alumni go after graduation and recommend educational programs that will prepare...
graduates for specialized work; and ... give consideration to the study of the economic status of graduates of schools of pharmacy." Jenkins added that "possibly these studies should be carried out in conjunction with a similar committee appointed from other pharmaceutical associations and The Pharmaceutical Survey." Glenn L. Jenkins, "Report of the Committee on Committees," ibid., p. 501.

Linwood] F. Tice, "Report of the Committee on Activities for Alumni," American Journal of Pharmaceutical Education 11:3 (July, 1947), p. 461. The Committee had been directed to determine "whether it might cooperate with Dr. Elliott in the work of the [Pharmaceutical] Survey and to avoid any work that might be duplicate effort," however, upon consultation with Survey Director Edward C. Elliott, it was decided that the services of the Committee "could not be utilized to advantage in the work of The Survey." Ibid., p. 460.

Ibid., pp. 463-64. Tice also found "a preponderance of sentiment in favor of having such seminars in the college, although a few suggested that in large states they might be given at different locations throughout the state so that all might attend. The spring season was favored over others and evening meetings were preferred by the majority. ... It is essential, however, that they be arranged at a time and place convenient for those for whom they are given rather than those by whom they are given." Ibid., p. 463. The Resolutions Committee approved a resolution submitted by Tice's Committee "that seminar programs be encouraged and more care be given to the time, place, scope of work covered, and quality of lecturers presenting such work." Newton, "Report of the Committee on Resolutions," p. 798.

Linwood] F. Tice, "Report of the Committee on Activities for Alumni," American Journal of Pharmaceutical Education 12:4 (October, 1948), p. 798-99. "It is the opinion of the committee that the colleges can and should adopt a more active alumni program," Tice added. "The committee sincerely hopes that its future efforts will be of some small help in accomplishing this objective."

J. Lester Hayman, "Address of the Incoming President," American Journal of Pharmaceutical Education 12:4 (October, 1948), pp. 661-62. "With the rapid advances being made in the medical sciences and the ever increasing development of antibiotic and chemotherapy it is at present almost impossible for the average practitioner of medicine and dentistry to keep adequately informed in regard to the essential information concerning the hundreds of new medicinal agents that have been and will continue to be developed in ever increasing numbers as a result of research," Hayman declared. Arguing that the physician depends upon the pharmacist "more and more" as a scientific consultant for drug information, Hayman stated his belief that there was a "real need for a pharmaceutical extension service in the interest of the public health" which "could supply the much needed information to the practitioners of the health professions, and at the same time develop a much needed relationship." Such a program,
Hayman continued, should be provided "as an extension service through our colleges of pharmacy, with the active support and cooperation of the medical, dental and pharmaceutical associations of the state." Ibid., p. 661. Hayman's recommendation was approved by the Association. See Crossen, "Report of the Committee on Resolutions," p. 805. Also see n. 69, above.


174 In 1927, the National Association of Boards of Pharmacy took steps to initiate a "comprehensive survey of pharmacy for the purpose of obtaining information which might be used as the basis for establishing standards for colleges of pharmacy." The following year, the Association issued an invitation to the American Association of Colleges of Pharmacy to join in developing the project, and a committee was organized to investigate and report on the proposal. In 1930, the committee reported that their associations and the American Pharmaceutical Association had each pledged $15,000 toward the expense of a survey and that, contingent upon the receipt of an equal amount from other sources, the American Council on Education would sponsor the survey. The economic conditions resulting from the Depression, however, made it impossible to raise the necessary funds, and pursuant to reports of the committee in 1931 and 1932, representatives of the associations concluded that further efforts to obtain the funds were inadvisable.

Twelve years later, in April, 1944, as a result of a resolution adopted at the 1943 meeting of the American Association of Colleges of Pharmacy, the Association's Executive Committee met in New York to study the possibility of undertaking a pharmacy survey. The importance of such a survey agreed upon, the Committee prepared a detailed outline, which was adopted in September. On November 8, 1945, the Committee met in Washington with George F. Zook and Aaron J. Brumbaugh of the American Council on Education. As a result of this conference and a subsequent meeting with the Council of the American Pharmaceutical Association and the American Council on Pharmaceutical Education, a request was sent to the American Foundation for Pharmaceutical Education to "endorse and underwrite a comprehensive study of pharmacy, pharmaceutical practices, and new areas of pharmaceutical specialization." On January 23, 1946, the Board of Directors of the Foundation approved the proposed survey and made a grant of $95,650 to cover the estimated cost. A supplementary grant of $39,000 was approved in 1947 for the work of the first stage of the survey, and an additional grant of $27,600 was approved the following year for implementation activities during 1948-49. [Committee on the Pharmaceutical Survey], "Origin and Aims of the Survey," in Findings and Recommendations of the Pharmaceutical Survey, 1948, pp. 5-6.
The Survey staff consisted of Director Elliott, J. Solon Mor- dell, Assistant Director (formerly Chief Pharmacist, Syracuse University Hospital and Chief of Drugs and Chemical Section, Office of Civilian Requirements, War Production Board); Lloyd E. Blauch, Assistant Director in Charge of Curriculum Studies (Chief for Education in the Health Sciences, Federal Security Agency, U.S. Office of Education); Herman H. Remmers, Assistant Director of Student Personnel Studies (Director of the Division of Educational Reference and Professor of Education and Psychology, Purdue University); Nathaniel L. Gage, Test Technician (Assistant Professor, Bureau of Research and Service, University of Illinois College of Education and former Assistant Director, Division of Educational Reference, Purdue University); and Alice L. Richards, Executive Assistant (formerly associated with The Ohio State University Bureau of Education Research and the National Advisory Council on Radio in Education). The President Emeritus of Purdue University, Elliott had served as Professor of Education at the University of Wisconsin (1905-16), Chancellor of the University of Montana (1916-22), and as President of Purdue from 1922 to 1945. Charters had served as Dean of the Schools of Education at the University of Missouri and the University of Illinois, as Director of The Ohio State University Bureau of Educational Research, and as Director of the 1927 Commonwealth Study of Pharmacy, Basic Material for a Pharmaceutical Curriculum. Nine persons served as consultants to the Committee on the Pharmaceutical Survey: Patrick H. Costello (Secretary, National Association of Boards of Pharmacy); John W. Dargavel (Executive Secretary, National Association of Retail Druggists); Robert P. Fischelis and Ernest Little (Secretary and President, American Pharmaceutical Association); Fred J. Griffiths (Secretary, National Association of Chain Drug Stores); and Henry S. Johnson, Arthur H. Uhl, and J. Lester Hayman (Presidents, 1946-49, American Association of Colleges of Pharmacy). In addition, a large number of pharmacists and teachers of pharmacy participated in the various undertakings of the Survey. Ibid., pp. [ii-iii]. Also see "The Basic Plan for the Survey" and "Common Understandings of the Committee" in ibid., pp. 8-10 and 11-12; and Committee on the Pharmaceutical Survey, "Procedures of the Survey," in The General Report of the Pharmaceutical Survey, 1946-49, pp. 7-9.

Edward C. Elliott, "To the Deans of the Colleges and Schools of Pharmacy;," Washington, D.C., February 25, 1948. (Mimeographed.), A.Ph.A. Archives. "Last year the Pharmaceutical Survey made inquiry of the several State Directors of Vocational Education relative to the extent in-service training of pharmacists was being carried on. The inquiry had special reference to the utilization of the George-Deen funds available for distributive education," Elliott explained. "Somewhat later, record was made of the extension activities in pharmacy being carried on by certain of the colleges and schools of pharmacy. In order that the report upon this whole matter may be conclusive, I am asking you to indicate to me whether your institution is now carrying on any program of in-service and off-campus training for the pharmacists of the State. If so, perhaps you would send me material descriptive of this
program." Elliott's choice of wording for the letter was perhaps unfortunate: sixteen of the fifty replies made some reference to the George-Deen Act.


Several of the deans who reported no activity did have plans for the future, however: Troy C. Daniels of the University of California hoped "to provide for special instruction for the pharmacists of the State through the University Extension. This work had been started prior to the war and because of a shortage of manpower, we have not been able to resume it." Charles F. Poe of the University of Colorado contemplated that "we shall institute a refresher course for pharmacists during the summer after the completion of our new building." Glenn L. Jenkins of Purdue University stated, "In due time we hope to undertake a resumption of our extension activities." Elmer L. Hammond of the University of Mississippi recommended to his University Dean and Chancellor that a provision should be made in the next biennial budget for "a University extension worker who would, among other University extension duties, become interested in making such instruction available to pharmacists in Mississippi under the George Deen Act." Curtis H. Waldon of Montana State University reported "This spring we are holding a pharmacy seminar during the Montana State Pharmaceutical meeting in Great Falls. As soon as our heavy G.I. load has been taken care of, we anticipate being able to offer extension work to those graduates who are interested." Bernard V. Christensen of The Ohio State University stated that the annual refresher course conducted between 1940 and 1942 in cooperation with the Pharmacy Alumni Association was discontinued during the war and had not been resumed. "We have not reactivated this work due to the heavy teaching loads carried by the members of our faculty, occasioned by the large increase in students," he stated, however, "we are adding to our teaching staff as rapidly as we can secure qualified personnel. It is our plan to resume these refresher courses as soon as conditions will permit." Forest J. Goodrich of the University of Washington reported that his faculty's "very heavy duties at the College have made it impossible to utilize the George-Deen funds or to conduct refresher courses. We are hoping that in the near future we can initiate some of this work."


178 [Committee on the Pharmaceutical Survey], "In-Service Training for Pharmacists," in Findings and Recommendations of the Pharmaceutical Survey, 1948, p. 48. "The recent reports of the American Pharmaceutical Association Committee on Continuation Study for Pharmacists clearly indicate little, if any, progress for the development of in-service programs," the Committee added.

179 Harold G. Hewitt, Dean of the University of Connecticut College of Pharmacy reported that in 1947 his College, in conjunction with the Connecticut Pharmaceutical Association, offered "the first in a series of annual Refresher Course[s]," consisting of six weekly two-hour lectures on "new and timely information," and that he proposed to repeat the program in March to the first ninety pharmacists who subscribed to the series. "We do propose, next year, to offer an extended 'traveling clinical' to appear at each of the six local association meetings, twice during the school year," Hewitt added. Letter, H[arold] G. Hewitt to Edward C. Elliott, March 3, 1948, A.Ph.A. Archives. Also see n. 51 above.

Perry A. Foote, Director of the University of Florida School of Pharmacy, reported that his School was "not carrying on any program of in-service or off-campus training to pharmacists of the State," but added "of course, we are carrying on the work of our Bureau of Professional Relations of which you were informed a few years ago." Letter, P[erry] A. Foote to Edward C. Elliott, March 2, 1948, A.Ph.A. Archives; emphasis added. Also see n. 51 above and pp. 254-58.

Howard C. Newton, Dean of the Massachusetts College of Pharmacy, remarked that the program of "so-called in-service training" at his institution was "limited to lectures and demonstrations by members of the faculty and to our refresher courses," a five- or six-week series of two-hour lectures held at the College. Letter, H[oward] C. Newton to Edward C. Elliott, March 4, 1948, A.Ph.A. Archives. The continuing education program of the Massachusetts College of Pharmacy was one of the few that sustained the shock of World War II: attendance increased from 170 in 1940 to 258 in 1947. Letter, H[oward] C. Newton to Edward C. Elliott, March 9, 1948, A.Ph.A. Archives. Also see n. 51 above.

Thomas D. Rowe, Dean of Rutgers University College of Pharmacy, stated that his College was "not carrying on any program of off-campus training for pharmacists of the state," but added that "we do, as you know, conduct a seminar at the College of Pharmacy for pharmacists in service," a series of five two-hour lectures which the College had sponsored in cooperation with the Northern New Jersey Branch of the American Pharmaceutical Association since 1945. Letter, T[homas] D. Rowe to Edward C. Elliott, March 5, 1948, A.Ph.A. Archives.

Floyd J. LeBlanc, Dean of the South Dakota State College Division of Pharmacy, simply enclosed a program of a refresher course his institution held on April 5-7, 1948. Letter, Floyd J. LeBlanc to Edward C. Elliott, March 5, 1948, A.Ph.A. Archives.

Letter, Henry N. Burlage to Edward C. Elliott, March 18, 1948, A.Ph.A. Archives. "We have been fortunate in being able to acquire such a man, who is not only a registered pharmacist but has had years of experience in the management of retail pharmacies—both on the independent and chain levels," Association Secretary Robert G. Dillard wrote Elliott. "It would have been difficult to have found a man with better qualifications for the work we wanted to do." Letter, Robert G. Dillard to Edward C. Elliott, March 30, 1948, A.Ph.A. Archives. Cramer’s salary was $5,000 a year, plus a $6.00 per diem and five cents a mile for automobile travel. The Association contributed $1,000 per year to the University, which was applied to his salary. The Texas State Board of Vocational Education reimbursed the University for 75 per cent of the remaining $4,000. "In the larger towns, Mr. Cramer will confine his work to that specific town until he has exhausted the potentialities," Dillard later reported to Elliott. "In the smaller cities we plan to schedule him on a round-robin basis." Dillard explained that Cramer would conduct as many as five courses in each center. "Some of the courses will be held during the working hours in each center. Some of the courses will be held during the working hours of the employers and employees, while others will be held during the evening. During the day the instructor will spend full time coordinating the classroom work with the work of the students," Dillard continued. "He will counsel with drug store management in the various operational phases in the drug field. He will help in arranging displays, in recommending certain control measures for merchandising and stockkeeping, and he will consult with management on the remodeling of drug stores or in the setting up of special departments." Robert G. Dillard, "University of Texas Drug Store Training Program," in Committee on the Pharmaceutical Survey, The General Report of the Pharmaceutical Survey, 1946-49, pp. 163-64.

Letter, Robert G. Dillard to Edward C. Elliott, March 30, 1948, A.Ph.A. Archives. The fees for the courses ranged from $1.00 to $1.50 per enrollee and were retained by the University to cover the cost of the instructional material and other incidental expenses. "There has been a widespread need for this type of training in Texas for many years, and the full cooperation and interest of the University of Texas has enabled us, at last, to launch this program, and we firmly believe it will do more good for drug store operators in this state than any other single educational effort made to date," Dillard added. Dillard, "University of Texas Drug Store Training Program," loc. cit. Also see James R. D. Eddy, "The University of Texas Division of Extension," in Expanding Horizons . . . Continuing Education, ed. by Stanley J. Drazek et al., pp. 90-91, and n. 51, above.

"I can speak of the value of these continuation courses from first hand knowledge," Swain added. "All in all, I have participated in them at Michigan, Purdue, Western Reserve, Minnesota and Florida universities. The basic worth of the papers presented and the great interest shown by retail pharmacists have been most impressive."

"A pharmacy graduate who does not read the professional journals regularly and carefully is bound to become passe," O'Brien remarked. "We could keep him in college for 10 years, and if he read no professional papers for the next 10 years, he would be hopelessly outdated and uninformed."

"It is obvious that we in New England have been doing more than has been done in most parts of the country," Howard L. Reed of the Massachusetts College of Pharmacy remarked. "The responsibility for providing extension services definitely rests with the colleges but the practicing pharmacist also has a responsibility in making known his needs so that the colleges may most effectively plan courses and services," he continued. "We are giving considerable thought to an expansion of our extension services with the viewpoint of making them more valuable, more frequent, and available to an even greater number of practicing pharmacists." Ralph W. Emerson of the Maine State Board of Pharmacy mentioned journal articles and refresher courses, but questioned the latter's success in reaching the pharmacist in the "one-man" pharmacy, and so urged an expansion of the undergraduate curriculum instead. W. Henry Rivard of the Rhode Island College of Pharmacy and Allied Science, felt that lectures by manufacturers' representatives, motion pictures, undergraduate course lectures, and exhibits could be used to good advantage in continuing pharmaceutical education. Gordon K. Ashley of the Idaho State Board of Pharmacy listed one- to two-week refresher courses, correspondence courses for university credit, and card files of new drug information in the extension service he visualized for Idaho State College. Earl P. Guth of The Ohio State University College of Pharmacy suggested clinics of at least five days in length to permit a college of pharmacy "to explore at considerable length subject matter that would be of importance to the practicing pharmacist" and felt that the members of a pharmacy faculty should take turns conducting "series of lectures to local pharmaceutical groups in addition to personal visits with each alumnus." Howard L. Reed, "What Can the Colleges Do To Provide In-Service Training for Pharmacists?" National Association of Boards of Pharmacy and American Association of Colleges of Pharmacy Annual Meeting, District No. 1 (1949), pp. 61-62; Ralph W. Emerson, "What Can the Colleges Do To Provide In-Service Training for Pharmacists?" ibid., pp. 64-65; W. Henry Rivard, "What Can the Colleges Do To Provide


191 Ibid., p. 447. Also see Hugo H. Schaefer, "Report of the Committee on Resolutions," ibid., pp. 537-38. The Committee on Resolutions also received a report from the Committee on Professional Relations recommending "a series of follow-up programs among the graduates of the colleges." Schaefer's Committee believed that Christensen's recommendation adequately covered the subject, but suggested that the Report of the Committee on Professional Relations be "transmitted to the Executive Committee for further study." Ibid., p. 538. Also see "Outline of Suggested Courses and Programs for In-Service Professional Instruction of Practicing Pharmacists" in Perry A. Foote, "Report of the Committee on Professional Relations," American Journal of Pharmaceutical Education 14:4 (October, 1950), pp. 647-48.

192 "Linwood] F. Tice," Report of the Committee on Activities for Alumni," American Journal of Pharmaceutical Education 13:4 (October, 1949), p. 657. "A number of problems are faced by those attempting to arrange seminar programs in certain areas," Tice reported. "In some of the large states it is difficult, if not impossible, for pharmacists to travel the great distance to the college. Some colleges have solved this problem, by arranging sectional meetings held in different parts of the state than at one place." Tice added that other colleges had experienced "great difficulty" in arousing the interest of the practicing pharmacist in their continuing education programs. "The solution to this problem seems to lie in the nature of the program offered and also in gaining the endorsement and support for the program by local pharmaceutical organizations," Tice suggested. "Some of the most successful seminars are sponsored jointly by a college and a county, regional, or state organization."

193 Ibid., pp. 657-58. "In summary," concluded Tice, "it appears that the colleges are giving increasing attention to their alumni and
that this interest is bringing to the colleges greater esteem and regard."
Ibid., p. 658.

194. The institutions conducting continuing pharmaceutical educa-
tion programs between 1945 and 1949 were: Columbia University College
of Pharmacy; Creighton University College of Pharmacy, Duquesne Univer-
sity School of Pharmacy, Fordham University College of Pharmacy, Massa-
chusetts College of Pharmacy, Ohio Northern University College of Phar-
macy, Oregon State College School of Pharmacy, Rutgers University College
of Pharmacy, St. Louis College of Pharmacy and Allied Sciences, South
Dakota State College Division of Pharmacy, State University of Iowa Col-
lege of Pharmacy, University of Buffalo School of Pharmacy, University of
Connecticut College of Pharmacy, University of Florida School of Phar-
macy, University of Kansas City School of Pharmacy, University of Kansas
School of Pharmacy, University of Michigan College of Pharmacy, Univer-
sity of Minnesota College of Pharmacy, University of North Carolina
School of Pharmacy, University of Oklahoma School of Pharmacy, University
of Pittsburgh School of Pharmacy, and University of Texas College of
Pharmacy. For details concerning the continuing education programs con-
ducted by these institutions during this period, see the references in
n. 51 above.

195. The eight institutions which inaugurated or reinstituted con-
tinuing pharmaceutical education programs in 1949 were: Alabama Poly-
technic Institute School of Pharmacy, Howard College Division of Phar-
macy, The Ohio State University College of Pharmacy, Philadelphia College
of Pharmacy and Science, University of California College of Pharmacy,
University of Georgia School of Pharmacy, University of Washington School
of Pharmacy, and Western Reserve University School of Pharmacy. Tice
has described some of these programs. See L[inwood] F. Tice, "Informa-
tion Bulletin on Seminars or Refresher Courses in Member Colleges," Amer-
ican Journal of Pharmaceutical Education 13:4 (October, 1949), pp. 661-
68. The seven institutions which planned to inaugurate or reinstitute
continuing pharmaceutical education were: Ferris Institute College of
Pharmacy, North Dakota Agricultural College School of Pharmacy, Purdue
University School of Pharmacy, Rhode Island College of Pharmacy and Al-
lied Science, State University of Montana School of Pharmacy, University
of Cincinnati College of Pharmacy, and University of Toledo College of
Pharmacy. Ibid., p. 668, and n. 51 above for earlier continuing educa-
tion activities of these institutions.

196. Encouraged by the New Jersey Pharmaceutical Association, the
Pharmaceutical Extension Service of Rutgers University College of Phar-
macy came into existence on February 1, 1950. For descriptions of the
proposed activities of the Service and the pharmaceutical community's
reaction to them, see: Wilbur E. Powers, "Committee on College of Phar-
macy," The New Jersey Journal of Pharmacy 22:6 (June, 1949), p. 12; and
John J. Debus, "79th Annual Convention: Resolutions," The New Jersey
cit.; "Pharmaceutical Extension Service Is Instituted By Rutgers College,"
In 1947, Arthur H. Uhl, Director of the University of Wisconsin, School of Pharmacy, wrote a revealing letter to Elliott outlining "some idea of the possibilities in this area of adult education in the profession." Uhl did not believe that pharmacy had a place in the vocational educational system, despite the success of the "Wisconsin Plan." "If we are to continue as a professional group then our educational endeavors must follow the prescribed routine," Uhl stated, noting that "the other so-called health professions" did not foster or take part in a vocational program. "We must follow an accepted pattern if we desire to be placed on the same professional level," he said. "The money made available by the Federal Government through the George-Deen Act must be used for a very definite and well outlined purpose which is not inclusive enough to satisfy the needs of the profession." Uhl continued: "I would like to see adult education, and I prefer this term, carried on by and be the responsibility of the schools and colleges of pharmacy now established in the various states. To do the job, the schools must accept this work as part of their program and it must be given the same weight as any other division of the school," he declared. "If we are going to do a worthwhile job we must not accept a less rigorous and courageous attack." Uhl enclosed a preliminary outline of the activities he felt should be included in such an adult education program for pharmacists: on- and off-campus conferences, monthly bulletins, personal contact work with pharmacists and prospective students, speaking engagements at civic clubs, interprofessional relations work, contact work with students in arranging practical experience and with graduates in arranging for employment, contact work between the School's faculty and the practicing pharmacist, between the faculty and the citizens of the state, and contact work with state and national pharmaceutical associations. Uhl added, "We have been assured the backing of our Univeristy Extension Division in the development of an extension program for this state. We have been unable to find the proper individual to direct the work and as a result very little headway has been made. It is obvious that work of this type requires a well trained man not only in the professional
area but one who has special ability to work with and carry out contact
among pharmacists and people of the state." Describing the program as
"rather ambitious," Uhl stated that one person could not and would not
be expected to carry out all of the suggestions, but "to point out to
you that such a program is a very broad one and should cover all phases
of the profession. This can only be done by our colleges and schools of
1947, A.Ph.A. Archives.

For descriptions of Wisconsin's first extension programs, see
"Notes and News," American Journal of Pharmaceutical Education 14:4
(October, 1950), p. 679; "Pharmaceutical Economics Discussed At Annual
U. Of Wisconsin Institute," Drug Topics 94:23 (November 6, 1950), p. 28;
"Wisconsin Rx Institute Hears Panels On Pricing, Remodeling," Drug
Topics 94:24 (November 20, 1950), p. 30; and "Briefly Noted: Colleges,
Journal of the American Pharmaceutical Association (Practical Pharmacy
Edition) 11:12 (December, 1950), p. 768. Also see Theodore J. Shannon,
"University of Wisconsin: University Extension Division," in Expanding
Horizons . . . Continuing Education, ed. by Stanley J. Drazek et al.,
pp. 82-83.
The tortuous development of continuing education programs for practicing pharmacists by America's schools and colleges of pharmacy prior to 1950 is characterized by grandiose educational plans, false starts, and unkept promises and by enormously successful continuing education programs and dismal failures. It is also characterized by erratic fluctuations in interest by the nation's pharmaceutical educators and its practicing pharmacists in providing and participating in programs of continuing pharmaceutical education.

Summary of the Historical Evidence

During the first two-thirds of the nineteenth century, pharmaceutical education served merely to supplement a rather haphazard system of apprenticeship. Controlled by local associations of pharmacists, the voluntary educational programs of the local pharmaceutical associations resembled modern continuing pharmaceutical education in spirit, if not in form. During the final third of the century, the responsibility for educating pharmacists gradually shifted from the local associations, or "colleges of pharmacy," to private or public colleges and universities, but the education was still entirely voluntary in nature. During this same period, particularly in the decade after 1885, pharmacists in nearly every state in the union organized state pharmaceutical associations. In their wake came state legislation to protect the public by restricting
the practice of pharmacy to registered pharmacists and insuring their competency through a mechanism of examinations administered by state boards of pharmacy made up of practicing pharmacists.

Since proof of some apprenticeship was the only prerequisite for taking such examinations, lengthy study was inappropriate; another type of preparation, restricted to mastering questions commonly asked in the examinations, promised easier success. As a result, correspondence courses through pharmaceutical journals and special institutions and books and articles especially written for the home study of pharmacy flourished during this period, and were often prepared by the most outstanding pharmaceutical educators of the day. While not continuing education in the modern sense, these home-study endeavors simplified and systematized the self-education of thousands of pharmacists who either could not or would not take advantage of formal education in pharmacy schools and colleges.

During this same period, general university extension, a transplantation from England, grew vigorously for a while in a new and militant phase of the perpetual American war on ignorance as adults, often without schooling, zealously sought self-betterment in the form of culture. Pharmaceutical educators, notably at Northwestern University, the University of Kansas, and the University of Wisconsin, took part in this movement, but few extension lectures were directed to the practicing pharmacist. The English form of university extension was not entirely suited to American tastes, however, and the energy and enthusiasm that had been generated disappeared almost as suddenly as it had appeared. These experiments in self-improvement were emulated by a few pharmaceu-
tical educators acting in cooperation with a state pharmaceutical association, such as took place in Minnesota, or under the auspices of a local branch of the American Pharmaceutical Association. Both forms of educational activity would later develop into continuing education programs for the practicing pharmacist.

During the first three decades of the twentieth century, American life was characterized by idealistic hopes, enormous self-confidence, and comfortable prosperity. General university extension, which had lain fallow since the 1890s, reorganized, grew, and prospered, notably at the University of Wisconsin after 1906, and as a nationally organized movement after 1915. During this period America's schools and colleges of pharmacy ventured into education at the graduate level for the first time and succeeded in implementing the most ambitious program of upgrading undergraduate educational standards in the history of the profession. Supported by "prerequisite legislation" which made graduation from an approved school or college of pharmacy mandatory as a prerequisite for the state board of pharmacy examinations, a standard four-year baccalaureate program in pharmacy would be required after 1932. These activities left little time for the consideration of education at the postgraduate level; nevertheless, pharmaceutical educators at the University of Wisconsin successfully experimented with summer sessions and correspondence courses designed not only for prospective undergraduate students, but for practicing pharmacists as well. In addition, the University of Minnesota College of Pharmacy offered an informal, yet wide-ranging series of educational activities which could be likened to modern pharmacy extension activities. Beyond these progressive steps, however, few schools
and colleges of pharmacy provided continuing education experiences for
the practicing pharmacist, despite a small, but persistent clamor for
such activities on the part of a few far-sighted pharmaceutical journal
editors and practitioners of the profession.

By the early 1930s, however, the need for continuing education in
pharmacy, particularly in the commercial and business aspects of the pro-
fession, was recognized not only by the practitioners but by teachers
and administrators in the nation's schools and colleges of pharmacy as
well, a need that was first met by the Pharmacy Extension Department of
Purdue University's School of Pharmacy in 1930. With the notable excep-
tion of Purdue's Pharmacy Extension Department, the prevailing mood and
conditions created by the Depression militated against the creation of
formal programs of continuing pharmaceutical education by America's
schools and colleges of pharmacy until a practitioner-based professional
renaissance during the second half of the decade jolted them out of their
complacent inactivity. Between 1936 and 1940 at least thirty-five of
the nation's schools and colleges of pharmacy initiated some sort of
continuing education activity, although slightly over one-half of these
activities were of an intermittent or irregular nature. The profession-
ally and scientifically oriented Pharmaceutical Institutes presented by
the University of Minnesota College of Pharmacy after 1937 and the busi-
ness and commercially oriented Drug Merchandising Short Courses conducted
by the University of Oklahoma School of Pharmacy the following year are
outstanding examples of continuing pharmaceutical education programs of
this latter period. In addition, the George-Deen Act of 1936 provided
federal support of education for the distributive occupations, which was
interpreted to include the profession of pharmacy, however, only the state of Wisconsin utilized the funds to any appreciable extent during this period, reflecting an unwillingness or inability of America's pharmaceutical educators to assist in the development of an educational program they believed was beneath their professional dignity.

The burgeoning continuing pharmaceutical education programs initiated by the nation's schools and colleges of pharmacy during the late 1930s were interrupted by World War II and the accelerated programs of undergraduate education introduced to offset the number of pharmacists called into military service. Interprofessional relations programs, typified by the Bureau of Professional Relations of the University of Florida College of Pharmacy, and the distributive education programs of the George-Deen Act, which had begun to attract serious attention within the pharmaceutical community after 1940, were also seriously affected by the War and never regained their former vigor. Moreover, although America's pharmaceutical educators were intensely interested in providing retraining programs for the veteran pharmacists of World War II, the overwhelming number of veterans seeking undergraduate degrees in pharmacy caught the faculty and administrators of the nation's schools and colleges of pharmacy exhausted from their accelerated wartime schedules, understaffed, and unprepared, and few retraining programs for veterans actually materialized. The booming postwar economy bought an unprecedented demand for pharmaceutical services which did not appear to require updated skills on the part of the typical community pharmacist, and his accompanying financial success seemed to obviate the need for continuing pharmaceutical education. Certain segments of the profession,
however, notably the pharmacists practicing in hospitals, recognized the need for continuing education, and developed their own programs through their professional associations. The development of specific chemotherapeutic agents, antibiotics, hormones, and other so-called "wonder drugs" made available to the public in the postwar years and the ever-increasing complexity of modern pharmaceutical science indicated to many pharmaceutical educators the need for lengthening the four-year curriculum to six years, rather than the need for providing continuing education experiences for the practicing pharmacist, and the latter need was temporarily lost in the bitter debates which ensued.

The advisory committee of the deeply-probing Pharmaceutical Survey of 1946-49 recognized the need for continuing pharmaceutical education and its potential value to the public health of the nation, but was able to identify only seven institutions in the nation which were providing some sort of continuing education experiences for the practicing pharmacist. The committee charged the nation's schools and colleges of pharmacy with the responsibility of providing a wide-ranging, organized program of continuing pharmaceutical education within each state through a "division of pharmaceutical extension" with the cooperation of a state "Pharmaceutical Extension Council" consisting of representatives from the schools and colleges of pharmacy in the state, the state board of pharmacy, and the state pharmaceutical association. The recommendations of The Pharmaceutical Survey had immediate and positive impact upon the pharmaceutical community: By the end of 1949, at least one-half of the schools and colleges of pharmacy in the nation had reinstituted or inaugurated programs of continuing pharmaceutical education, or had definite
plans for doing so; the following year, Rutgers University College of Pharmacy and the University of Wisconsin School of Pharmacy instituted the first modern pharmaceutical extension services.

Continuing Pharmaceutical Education Since 1950

The extent to which the recommendations of The Pharmaceutical Survey of 1946-49 have been realized cannot be determined until a systematic analysis of the continuing education efforts of the profession as a whole since 1950 has been made. It seems safe to venture, however, that the impact of The Pharmaceutical Survey upon pharmaceutical education has been no less phenomenal than the effect of Abraham Flexner's study, Medical Education in the United States and Canada, published in 1910 under the auspices of the Carnegie Foundation for the Advancement of Teaching.¹

By 1955, the American Association of Colleges of Pharmacy had created a Committee on Continuation Studies, under the instigation of Ohio State University's Dean Lloyd M. Parks, chairman of the Association's Committee on Curriculum.² Two years later, the Committee on Continuation Studies proposed that funds be obtained from a suitable foundation "for a comprehensive study, the object being to furnish the colleges with assistance in developing a continuing education program."³ Although the study remains unfunded, the work of the Committee culminated in the first formal gathering of pharmacy faculty members and administrators concerned with continuing pharmaceutical education as their primary job responsibility or as a strong area of interest.⁴ This meeting led to the development of a formal group within the Association's Conference
of Teachers, the Section of Teachers of Continuing Education, organized officially in 1964. By 1960, Patrick H. Costello, in his annual report for the American Council on Pharmaceutical Education, could report that fifty-seven of the seventy-six accredited schools and colleges of pharmacy in the nation had presented eighty-eight days of continuing pharmaceutical education programming, and that five institutions had employed "full-time extension officers to operate the extension program" and that six more institutions reported the employment of part-time persons for such a program. Moreover, both the American Journal of Pharmaceutical Education and the Practical Pharmacy Edition of the Journal of the American Pharmaceutical Association began devoting occasional feature sections to the new educational speciality.

By the mid-1960s, the potential value of continuing pharmaceutical education programs had motivated sufficient cooperation between organized practitioners of pharmacy and the nation's schools and colleges of pharmacy to give a national trend to the movement. In 1963, the Philadelphia College of Pharmacy pioneered in the use of broadcast television in continuing pharmaceutical education; the following year, the St. Louis College of Pharmacy launched a series of successful correspondence courses in pharmacology which were subscribed to by pharmacists from the entire nation. Moreover, a series of studies began to appear in the pharmaceutical literature suggesting that continuing pharmaceutical education was beginning to receive academic respectability as a discipline within its own right. This movement culminated in 1966 with the announcement that the University of Wisconsin School of Pharmacy had developed a graduate program in continuation studies in pharmacy to
prepare specialists for teaching, research, and administration in the area of continuing pharmaceutical education. In some areas, however, limited success with the "Pharmaceutical Extension Council" that had been proposed for each state by the Committee on the Pharmaceutical Survey, a lack of predominantly professional character in the postgraduate instruction, and emphasis on the traditional brief "refresher courses" that reach relatively few practitioners left room for further improvement and expansion of programs of continuing pharmaceutical education. The solution to this dilemma, in the minds of some leaders in pharmacy at least, was mandatory continuing education as a prerequisite for renewal of a pharmacist's license to practice, a concept that emerged on a national scale in 1964. Carrying the pharmacist's obligation to continue to learn one step further, Dean Harold G. Hewitt of the University of Connecticut School of Pharmacy concluded that "it would be well to have compulsory periodic examinations of all public health practitioners, physicians and pharmacists included." By 1967, two states, Kansas and Florida, required at least a minimal continuing education experience prior to the renewal of their pharmacists' licenses; in 1971, California and Ohio adopted similar legislation, and it appears that other states will soon follow suit.

The reaction to this legislative challenge among the extension divisions of the nation's schools and colleges of pharmacy was immediate and predictable, as institutions developed programmed-instructional units, two-way closed-circuit television, amplified telephone, and FM radio broadcasts to reach pharmacists who ordinarily would be unable to participate in ordinary continuing pharmaceutical education experiences;
research in continuing education for pharmacists became more sophisticated and less descriptive in nature;\textsuperscript{16} programs directed to the public and to the urban disadvantaged reflected the expanded scope of the most progressive divisions of pharmacy extension;\textsuperscript{17} and plans for cooperation and coordination of continuing pharmaceutical education activities on state, regional, and national levels began to emerge,\textsuperscript{18} culminating in July, 1969, when the American Association of Colleges of Pharmacy sponsored the first teachers' seminar on continuing pharmaceutical education.\textsuperscript{19}

The events in pharmacy since 1967 suggest that continuing pharmaceutical education may someday no longer be an expression of the pharmacist's individual will. Should that day ever come, American schools and colleges of pharmacy, professional associations, and state boards of pharmacy will probably team up in a cooperative, coordinated continuing education venture on a scale never before possible.

Recommendations and Reflections

The development of continuing pharmaceutical education since 1950 deserves careful consideration and study beyond the progress outlined above. Moreover, similar studies of continuing education in the other health professions, perhaps on an international scale, are necessary in order to provide the basis for useful comparative evaluations and, hopefully, a core of knowledge that will allow the development of continuing professional education as a distinct area of the adult education curriculum.

The development and provision of continuing education programs for the nation's practicing pharmacists prior to 1950 must certainly be
viewed as a marginal concern on the part of the educators in America's schools and colleges of pharmacy. The marginal professional status currently occupied by American pharmacy is a more serious underlying issue. During the past half century, pharmacy has been in a state of flux: The mass manufacture of medicinals has caused an almost complete disappearance of the pharmacist's traditional central function of preparing prescriptions from individual components and has caused him to act more and more as a distributor of medicines with which he has no creative identification. Furthermore, the American pharmacist endeavors to fulfill a second, traditional, and self-assumed responsibility to provide "convenience" goods and services often unrelated to public health, which tends to depreciate the average practitioner's valuation of the function for which he was educated and on which his claim as an independent professional largely depends.

At least a portion of the blame for this situation appears to rest with the American system of pharmaceutical education which has been conservative in its outlook, glacial in its progress, and quixotic in its curricula. For several decades, America's schools and colleges of pharmacy have been educating pharmacy students far beyond the level required by both the typical community practice of pharmacy and by the public. Moreover, the curricula rarely taught the pharmacy student how to apply this knowledge to assume the role projected for him by pharmaceutical educators as an expert advisor on pharmaceutical products to other health practitioners and, in a different sense, to the general public. Many frustrated young pharmacists, faced with this dilemma, have either practiced their profession at the minimal level that was expected
of them or left the profession entirely; the "credibility gap" between the practicing pharmacist and the academic community in pharmacy was never wider.

Recently, however, two trends in pharmaceutical education have appeared which may eventually rectify this unfortunate situation: The development of a clinical component in pharmacy curricula, providing the pharmacy student with patient contact in either an institutional or a community setting, using outstanding practicing pharmacists as clinical instructors; and the development of programs of practical experience controlled by the schools and colleges of pharmacy rather than by the state boards of pharmacy, which should tend to make the pharmacy student's internship a more educational and, hence, a more meaningful experience than it is at present. As pharmaceutical education develops along these lines, it will become more cosmopolitan and less insular, and the distinction between the undergraduate student and the postgraduate student will become less real and more arbitrary. At this point, the adult educator specializing in continuing professional education becomes an even more important part of the educational team of a school or college of pharmacy.

The content, organization, and administration of programs of professional training and education at the undergraduate, graduate, and postgraduate levels are highly complex matters. They are the results of long evolution and of firmly established practices, and are not easily or radically changed by platitudes, projections, or pronouncements, for educational traditions, administrators, and teachers change slowly. Instructional reforms such as those mentioned above will involve the re-
training of the pharmaceutical educator as much as they will involve the education of the pharmacy student; this can only be done through long, continued, and organized efforts. In this, the adult educator specializing in continuing professional education may find his most important and challenging role.
Flexner also had strong opinions on the emerging profession of pharmacy. In an address before the National Conference of Charities and Correction in Baltimore, May 17, 1915, Flexner asked: "Is pharmacy a profession? . . . The pharmacist compounds the physician's prescription, for which task he requires a considerable degree of expertise, a knowledge of certain sciences—especially chemistry—and a high degree of caution, since neither the slightest error on his part, or inability to detect an error on the part of the physician, whether due to ignorance or carelessness, may have very serious consequences." Flexner went on to list the criteria of a profession, testing pharmacy against them. "Pharmacy has definiteness of purpose, possesses a communicable technique, and derives at least part of its essential material from science. On the other hand, the activity is not predominantly intellectual in character and the responsibility is not original or primary. The physician thinks, decides, and orders; the pharmacist obeys—obeys, of course, with discretion, intelligence, and skill—yet in the end obeys and does not originate." Flexner concluded that pharmacy was "an arm added to the medical profession, a special and distinctly higher form of handicraft, not a profession. Nor is this distinction merely a verbal quibble, for it has an important bearing on the solution of all educational questions pertaining to pharmacy." Abraham Flexner, "Is Social Work a Profession?" Proceedings of the National Conference of Charities and Correction 42 (1915), p. 582. "Perhaps we school men should not be willing to agree entirely with Dr. Flexner, but as the thoughtful opinion an educational expert we must take it seriously," the Medical College of Virginia's Albert Bolenaugh remarked, reflecting on Flexner's statement. "I somehow feel that the Boards are prepared to accept Dr. Flexner's definition more readily. Perhaps this difference in the evaluation of pharmacy by the schools and the Boards has made for delays in reforms." Albert Bolenaugh, "The Influence of Boards of Pharmacy on Schools of Pharmacy," Proceedings of the American Conference of Pharmaceutical Faculties 18 (1917), p. 225. It is ironic to note that Flexner's medical education at Johns Hopkins University was made possible by the proceeds from his brother Jacob's pharmacy. See Abraham Flexner, I Remember: The Autobiography of Abraham Flexner (New York: Simon and Schuster, 1940), p. 44.


could report that sixty-six of the seventy-four accredited schools and colleges of pharmacy had presented between 139 and 214 days of continuing education programming, and that "only four colleges reported no activity in this area this year." Eight institutions reported having a "full-time staff member in continuing education and extension, and 23 reported part-time directors in this important area." In addition, five institutions reported the use of television in continuing pharmaceutical education, and three reported having a correspondence course for practitioners. Fred T. Mahaffey, "Report of the American Council on Pharmaceutical Education, Inc.,” American Journal of Pharmaceutical Education 34:3 (August, 1970), p. 374. Mahaffey's report covered the period January 15, 1969 to January 23, 1970.


9See "St. Louis Offers Continuing Education--By Mail," American Druggist 151:2 (January 18, 1863), p. 21; "St. Louis Rx College Offers Course in Pharmacology By Correspondence," Drug Topics 109:2 (January..."


14 See Chapter VI, n. 23; and Kirk and Weinswig, op. cit.


18 See, for example, Robert A. Buergi, "The Council of Ohio Colleges of Pharmacy: A Year of Progress" (paper presented to the American Association of Colleges of Pharmacy Conference of Teachers, Section of Teachers of Continuing Education, Miami Beach, Fla., May 4-6, 1968); William L. Blockstein, "Health Sciences--A Total Thrust in Continuing Education," American Journal of Pharmaceutical Education 34:4 (November,

APPENDIX A

GENERAL AND MEDICO-PHARMACEUTICAL BIBLIOGRAPHIC SOURCES

General Bibliographic Sources: Books


Kelly, James, comp. The American Catalog of Books, (originals and reprints), published in the United States from January, 1861, to January, 1866, with date of publication, size, price, and publisher's name. 1866. Reprint ed. New York: Peter Smith, 1898.


Potter, Marion E., ed. The United States Catalog, books in print, 1902. 2d ed. Minneapolis: H. W. Wilson, 1903.


General Bibliographic Sources: Periodicals


---


---


---


---


---


---


---


---


---


---


---


---


General Bibliographic Sources: Dissertations


Medico-Pharmaceutical Bibliographic Sources: Periodicals


Griffenhagen, George B. "Bibliography of Papers Published by the American Pharmaceutical Association That Were Presented Before the Association's Section on Historical Pharmacy 1904-1957." Madison, Wis: American Institute of the History of Pharmacy, [1958]. (Mimeographed.)


______, and Berman, Alex. "Some Bibliographic Aids for Historical Writers in Pharmacy." Madison, Wis.: American Institute of the History of Pharmacy, 1958. (Mimeographed.)

______, and Stieb, Ernst W. "Classification Scheme for Pharmaceutical Reference Files at the University of Wisconsin School of Pharmacy." Rev. ed. Madison, Wis.: American Institute of the History of Pharmacy, 1960. (Mimeographed.)


Pharmaceutical Education Sources: Books


Pharmaceutical Education Sources: Periodicals


See American Conference of Pharmaceutical Faculties.


Proceedings of the Annual Meeting. 1st-59th (1852-1911).


Formed by the merger of the Bulletin of Pharmacy and The Western Druggist, assuming the numbering of the latter: vol. 50:6-55:10 (June, 1928-October, 1933).


_____. Proceedings. District No. 6 (1926-1969).

_____. Proceedings. District No. 7 (1940-1969).


Title varies: vol. 1:1-5:4 (January, 1913-April, 1918), National Drug Clerk; incorporated Drug Store Merchandising, April, 1918; vol. 5:5-37:2 (May, 1918-May/August, 1949), Drug Store Merchandising.


Title varies: vol. 1:1-3:6 (September, 1882-June, 1884), St. Louis Druggist; vol. 3:7-66:2 (July, 1884-February, 1936), National Druggist.


Title varies: vol. 1:1-2:12 (January, 1881-December, 1882),
Martin's Chemists' and Druggists' Bulletin; vol. 3:1-15:15 (January, 1883-April 13, 1893), Pharmaceutical Record; merged with American Druggist to form American Druggist and Pharmaceutical Record, April 21, 1893.


Vol. 1:1-31:9 (January, 1894-September, 1925); merged with Practical Druggist and Pharmaceutical Review of Reviews to form Practical Druggist and Spatula, January, 1926.

APPENDIX B

RUBRIC OF HEADINGS USED IN LITERATURE SEARCH*

Adult Education (a,c,d,e,g,j,k,l) _____, Federal Aid for (d)
Adulthood, Education in (h) Continuation Schools (d,i)
Apothecaries (j,m) Continuing Education (b,e,f,j)
Apprentices (j) Commercial Education (k)
Biological Sciences (e) Correspondence Education (a,b,d,e,f)
Business Education, U.S.A. (e) _____, Schools and Courses (c,i)

*Key:  
  a = Library of Congress Catalog
  b = Bibliographic Index
  c = Business Periodical Index
  d = Education Index
  e = Historical Abstracts
  f = Industrial Arts Index; Applied Science and Technology Index
  g = International Index; Social Sciences and Humanities Index
  h = Psychological Abstracts
  i = Public Affairs Information Service Bulletin
  j = Nineteenth Century Readers' Guide to Periodical Literature; Readers' Guide to Periodical Literature
  k = Social Science Abstracts
  l = Sociological Abstracts
  m = Index-Catalog of the Library of the Surgeon-General's Office
Distributive Education (d,e)
Drug; Drugs (e,l,k)
Druggists (d,f,j)
Drug Industry, Salesmen (c,f)
Drug Stores (a,c,f)
Drug Trade (a,b,d,f,i,j)
Education, Adult (h,i,k,l)
____, Extension (j)
____, Higher, U.S. (j)
____, Medical and Schools (m)
____,____, by Localities, U.S. (m)
____, Pharmaceutical (h)
____, Professional (h)
____, University and College, U.S. (e)
Employees, Training of (f)
Evening and Continuation Schools (a,b,g)
Evening Schools (d,e)
Extension Education (d,e,f,g,i)
History of Ideas (e)
Hospital Pharmacies (a)
Medical Science (e)
Motion Pictures in Education, Adult (d,f)
Part-Time Education (g)
Pharmaceuticals (c)
Pharmacists (a,c,h,i,j,l)
Pharmacy (a,b,c,e,h,i,j,k,l)
____, Education in and Schools (m)
____,____, by Localities, U.S. (m)
____, History and Condition of (m)
____, Legislation, U.S. (m)
____, Study and Training for (d)
____, Systems and Manuals of (m)
Physical Sciences (e)
Professionals; Professions (e,j,k,l)
Professional Education (a,b,g,i,j)
Programmed Teaching in Education, Adult (d)
Radio in Education, Adult (d,f)
Retail Selling (d)
Salesmanship, Teaching (d,f)
Science and Technology (e)
____, and the Social Sciences (a)
Scientific Education (b,c,e,j)
Technical Education (b,c,d,f,j)
Television in Education, Adult (d,f)
Universities, Colleges, Institutes, Learned Societies, and Their Activities, U.S. (e)
University Extension (a,b,d,f,g,j)
United States, Armed Forces, Education in (d)
Army, Education in (d) Vocational Education (b,c,d,f,j,k)
Education, College (e) Federal Aid for (d)
Medical Science (e) Vocational Guidance (k)
Navy, Education in (d) Workers' Education (k)
Science (e)
APPENDIX C

HOME STUDY AIDS IN PHARMACY


--- Notes on Equation Writing and Chemical Arithmetic. Columbus, Ohio: Nitschke Brothers, 1893.

---. Columbus, Ohio: Nitschke Brothers, 1896.


416
Blanchard, John H. Blanchard's Pharmaceutical Quizz [sic] Compend: Designed for the Use of Students Preparing Themselves for Examination Before Any Board of Pharmacy in the United States. Boston: Boston Pharmacy Examination Bureau, [1898].


_______. Outlines of Therapeutic Lectures. Minneapolis: H. W. Wilson, 1902.


Daggett, Charles H. Daggett's Book of Medical Reference, Compiled from Lecture Notes Taken at the Massachusetts College of Pharmacy, Sessions of 1886, '87, '88, '89. [Lynn, Mass.: By the Author, 1891].

Dye, Clair A. Questions on Pharmacy, Materia Medica, Chemistry, and Toxicology, With Questions. Columbus, Ohio: Harold L. Hedrick, [1933-37].


11th ed. Revised to conform with the U.S. Pharmacopoeia of 1890. Chicago: Gray & Bryan, 1894.

12th ed. Revised to conform with the U.S. Pharmacopoeia of 1890. Chicago: Gray & Bryan, 1895.

12th [sic] ed. Revised to conform with the U.S. Pharmacopoeia of 1890. Designed for the use of pharmaceutical students preparing themselves for examination in colleges of pharmacy, and before the pharmaceutical examination boards of the various states. Chicago: M. M. Gray & Co., 1896.


Gray's Prescriptionist. A Treatise on the Art of Reading and Compounding Physicians' Prescriptions. With Tables of Weights and Measures, Antidotes, Abbreviations, etc. Chicago: Gray & Bryan, 1891.


<table>
<thead>
<tr>
<th>Author</th>
<th>Title</th>
<th>Edition</th>
<th>Publisher</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>3d ed.</td>
<td>Springfield, Ohio: Gray &amp; Bryan</td>
<td>1888</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4th ed.</td>
<td>Chicago: Gray &amp; Bryan</td>
<td>1888</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5th ed.</td>
<td>Chicago: Gray &amp; Bryan</td>
<td>1889</td>
</tr>
<tr>
<td></td>
<td></td>
<td>6th ed.</td>
<td>Chicago: Gray &amp; Bryan</td>
<td>1890</td>
</tr>
<tr>
<td></td>
<td></td>
<td>7th ed.</td>
<td>Chicago: Gray &amp; Bryan</td>
<td>1891</td>
</tr>
<tr>
<td></td>
<td></td>
<td>8th ed.</td>
<td>Chicago: Gray &amp; Bryan</td>
<td>1892</td>
</tr>
<tr>
<td></td>
<td></td>
<td>9th ed.</td>
<td>Chicago: Gray &amp; Bryan</td>
<td>1892</td>
</tr>
<tr>
<td>Gray</td>
<td>Elements of Pharmacy. A Treatise on Elementary Pharmacy, Chemistry, and Botany.</td>
<td></td>
<td>Chicago: Gray &amp; Bryan</td>
<td>1889</td>
</tr>
<tr>
<td>Heebner, Charles F.</td>
<td>Manual of Pharmacy and Pharmaceutical Chemistry: Designed Especially for the Use of the</td>
<td>2d ed.</td>
<td>New York: By the Author</td>
<td>1889</td>
</tr>
<tr>
<td></td>
<td>Pharmaceutical Student</td>
<td></td>
<td>(1889)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>and for Pharmacists in General. New York: By the Author</td>
<td></td>
<td>Reviewed in The Druggists' Bulletin 2:4 (April, 1888)</td>
<td>90</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3d ed.</td>
<td>New York: By the Author</td>
<td>1890?</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4th ed.</td>
<td>New York: By the Author</td>
<td>1894</td>
</tr>
<tr>
<td></td>
<td></td>
<td>6th ed.</td>
<td>Toronto: By the Author</td>
<td>1912</td>
</tr>
<tr>
<td>Heinemann, Aaron D.</td>
<td>Heinemann's Don'ts for Pharmacists: A Collection of His Various Notes for Pharmacists and</td>
<td></td>
<td>Memphis, Tenn.: [By the Author?]</td>
<td>1922</td>
</tr>
<tr>
<td></td>
<td>Students of Pharmacy.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pharmacy Are Given. With an introduction by Harry B. Mason.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


Mason, Harry B. How to Become Registered. Designed as a Substitute for Professors and Instructors When Those Important Adjuncts of Pharmaceutical Study Are Beyond the Reach of the Student. North Granville, N.Y.: By the Author, 1895.


Miller, Phillip. Nuggets of Gold for Druggists and Drug-Clerks. [Hanover, Penn.: By the Author, 1898].


Lessons in Pharmacy. A Course of Study for Home Students. Chicago: Interstate School of Correspondence, Northwestern University, [1906].

An Outline of a Course of Study in Practical Pharmacy. Chicago: By the Author, 1885.

2d ed. Chicago: By the Author, 1889.


Co., 1896.

Pharmaceutical and Chemical Problems and Exercises, With an Explanatory Text, Including Pharmaceutical and Chemical Arithmetic, Weights and Measures, Specific Density and Specific Volume, and Chemical Notation and Nomenclature, Chemical Equations, Problems in Oxidation and Reduction, and Stoichiometry. Together with the Elementary, Theoretical Chemistry Necessary to Their Understanding, Intended as an Aid to Students, Teachers, and Examiners. 4th ed., rev. and enl. Chicago: Chicago Medical Book Company, [1907].


, and Miner, Maurice A. Laboratory Manual of Inorganic and Organic Preparations. Chicago: Chicago Medical Book Company, 1911.


Payne, George F. Payne's Dictionary of Pharmacy. For Students, Teachers and Examiners. The Official Drugs and Formulas are Based on the United States Pharmacopoeia, 8th Revision, 1900-1910. Arranged in a Question and Answer Form. Atlanta, Ga.: By the Author, 1912.


Based on the Eighth Revision of the U.S. Pharmacopoeia, including also many unofficial remedies. 7th ed., rev. and enl. (Blakiston's Quiz-Compends?). Philadelphia: P. Blakiston's Son & Co., 1906.


Proctor, Barnard S. Lectures on Practical Pharmacy. Philadelphia: Lindsay & Blakiston, 1873.


Stevens, A. Jay, and Mallory, Charles W. The Star Quizzer on Pharmacy, Chemistry and Materia Medica. (Student Series). Ada, Ohio: By the Authors, [1896].  
______. ______. (Student Series). 2d ed., rev. and enl. Ada, Ohio: By the Authors, [1897?].

______. ______. (Student Series). 3d ed., rev. and enl. Ada, Ohio: By the Authors, [1899?].

______. ______. (Student Series). 4th ed., rev. and enl. Ada, Ohio: By the Authors, [1901?].

______. ______. (Student Series). 5th ed., rev. and enl. Ada, Ohio: By the Authors, [1903].
(Student Series). Carefully rev. and greatly enl. in conformity with the U.S. Pharmacopoeia of 1900, issued in 1905. 6th ed. Ada, Ohio: By the Authors, [1905].

(Student Series). 7th ed., rev. and enl. Ada, Ohio: By the Authors, [1909?].

(Student Series). 8th ed., rev. and enl. Ada, Ohio: By the Authors, [1913?].

(Student Series). Carefully rev. and greatly enl. in conformity with the U.S. Pharmacopoea [sic] IX. 9th ed. Ada, Ohio: By the Authors, [1917].


(Blakiston's ?Quiz-Comends?). 7th ed., rev. in accordance with the additions and corrections made in the U.S.P. to comply with the new Food and Drug Act, 1907. Philadelphia: P. Blakiston's Son & Co., 1908.


Watson, W. H. The Student's Course in Pharmacy, A Series of Lectures for the Use of Drug Clerks and Home Students in Pharmacy. Nashville, Tenn.: F. M. Paul, 1890.


Whelpley, Henry M. Chemical Lecture Notes, Taken from Prof. C[harles] O. Curtman's Lectures at the St. Louis College of Pharmacy. St. Louis: By the Author, 1886.


BIBLIOGRAPHY

A. Books


[Babcock, Robert W.] A Brief Account of the First Fifty Years of Pharmacy Education at Purdue, 1884-1934. Lafayette, Ind: By the University, 1934.


Carson, Joseph. A History of the Medical Department of the University of Pennsylvania, from its Foundation in 1765. Philadelphia: Lindsay and Blakiston, 1869.


Kremers, Edward. The Old Northwest Territory and Pharmaceutical Education. Lafayette, Ind.: Purdue University, 1934.


-. An Outline of a Course of Study in Practical Pharmacy. Chicago: By the Author, 1885.

Patzer, Conrad E. Public Education in Wisconsin. Madison: Wisconsin Department of Public Instruction, 1924.


Webster, H. G[ordon]. "Announcement." Pharmacy Forward. Edited by Emerson G. Wulling. La Crosse, Wis.: By the Editor, 1948.


Wulling, Emerson G., ed. Pharmacy Forward. La Crosse, Wis.: By the Editor, 1948.

B. Public Documents


General Acts and Resolutions Adopted by the Legislature of Florida at its Twenty-seventh Regular Session, April 4 to and Including June 2, 1939, under the Constitution of A.D. 1885. 2 vols. [Tallahassee]: R. A. Gray, Secretary of State, 1939.


An Act to Improve the Health of the People by Assisting in Increasing the Number of Adequately Trained Professional and Practical Nurses and Professional Public Health Personnel, Assisting in the Development of Improved Methods of Care and Treatment in the Field of Mental Health, and for Other Purposes (Health Amendments Act of 1956). Statutes at Large, Vol. LXX (1957).


An Act to Provide for the Promotion of Vocational Educational Education; to Provide for Cooperation with the States in the Promotion of Such Education in Agriculture and the Trades and Industries; to Provide for Cooperation with the States in the Preparation of Teachers of Vocational Subjects; and to Appropriate Money and Regulate its Expenditure. Statutes at Large, Vol. XXXIX, Part 1 (1917).


C. Journal Articles, Newspapers, and Proceedings


"Adult Education Course To Open In Minneapolis." Drug Topics 56:2 (January 8, 1940), p. 6.


"Arkansas Drug Course To Be Held This Week." Drug Topics 55:3 (January 16, 1939), p. 34.


"Are the Doctors Getting Afraid to Trust Us?" American Druggist 78:2 (August, 1928), pp. 24-25, 78, and 80.


"Post-War Education for Pharmacists and Students Now in Military Service." Proceedings, Joint Meeting of Boards and Colleges, District No. 2 (1944), pp. 55-57.


Barnes, Charles Reed. "Outlines of a University Extension Course of Six Lectures on the Physiology of Plants." N.p.: n.p., [1891].


"Bayonne Men Plan Educational Talks." Drug Topics 53:10 (March 8, 1937), p. 46.


"Board of Pharmacy News: Board Publishes Folder on 'Continuation Study for Pharmacists.'" Wisconsin Druggist 6:12 (December, 1938), p. 10.

"Board of Pharmacy News: Fourth Year of Pharmacy Lectures." Wisconsin Druggist 8:10 (October, 1940), pp. 9 and 22.


"Board of Pharmacy News: Pharmacy Board Urges Attendance at Post Graduate Lecture Course." Wisconsin Druggist 8:2 (February, 1940), p. 12.
"Board of Pharmacy News: 'Post Graduate Study' The Sparta Pharmacy Institute." Wisconsin Druggist 8:3 (March, 1940), p. 8.

"Board of Pharmacy Notes: Board of Pharmacy Conducts Afternoon Institute Program at Stevens Point District Meeting." Wisconsin Druggist 6:4 (April, 1938), p. 17.

"Board of Pharmacy Notes: Post Graduate Course For Pharmacists Now at West Allis." Wisconsin Druggist 6:4 (March, 1938), p. 5.


Bridgeman, Louis W. "Board of Pharmacy: State University Offers Home Study Courses For Training in Pharmacy." Wisconsin Druggist 7:2 (February, 1939), p. 11.


"Buffalo U. Plans Spring Rx Clinic As Annual Event." Drug Topics 54:11 (March 14, 1938), p. 36.


"Chain Man Urges Action." Drug Topics 52:10 (March 9, 1936), p. 17.


"Christenson [sic] To Address Fifth Minn. Institute." Drug Topics 85:7 (February 14, 1941), p. 15.


"Clerk Course Is Given By Purdue." Drug Topics 56:31 (July 29, 1940), p. 11.


"Coast Leaders Favor School." Drug Topics 51:50 (December 16, 1935), pp. 2 and 12.


"Columbia Provides First Aid Course." Drug Topics 85:49 (December 8, 1941), p. 10.


"The Conference: Purdue Conference to Include Semicentennial Celebration." The Indiana Pharmacist 16:3 (March 10, 1934), pp. 4-5.


"Conn. Men Learn About New Drugs At Night Class." Drug Topics 87:5 (February 1, 1943), p. 15.


"Continental Correspondence School of Pharmacy and Allied Sciences" [advertisement]. Bulletin of Pharmacy 18:12 (December, 1904), p. 29.


"Plugging Schools' as a Menace." The Pharmaceutical Era 62:24 (June 12, 1926), pp. 21-22.


"Report of the Committee to Investigate 'Short Term,' Correspondence, Summer, and Other Similar Courses in Pharmacy." Proceedings of the American Conference of Pharmaceutical Faculties 19 (1918), pp. 138-47.


Culbreth, D[avid] M. R. "To What Extent Should the Study of Botany Be Compulsory in Colleges of Pharmacy, and What Are the Best Methods of Giving Instruction in That Branch, so as to Make It Interesting to the Student?" Bulletin of Pharmacy 5:9 (September, 1891), pp. 405-8.


Dandreau, John L. "What Steps Should Be Taken by Pharmacy College Faculties to Keep Abreast of Changes in the Practice of Pharmacy?" Proceedings, Joint Meeting of Members of State Boards of Pharmacy and Delegates of the Faculties of Colleges of N.A.B.P. District No. 2 (1932), pp. 47-50.


"D.C. Man Suggests Refresher Course Be Required Of All." Drug Topics 93:2 (January 17, 1949), p. 54.

Debus, John J. "Address of the Chairman, N.A.B.P. District No. 2." Proceedings, Joint Meeting of Boards and Colleges, District No. 2 (1941), pp. 3-6.


"Defense First Aid Refresher Course Launched In N.Y." Drug Topics 85:45 (November 10, 1941), p. 25.


"Pharmacists Need Continuation Study." Proceedings of the Meeting of District No. 4 of the American Association of Colleges of Pharmacy and the National Association of Boards of Pharmacy (1943), pp. 25-28.


"Report of Committee on Long-Range Program." Proceedings of the Meeting of District No. 4 of the American Association of Colleges of Pharmacy and the National Association of Boards of Pharmacy (1943), pp. 41-43.

"Dr. Goodman To Give Cosmetology Course." Drug Topics 53:41 (October 11, 1937), pp. 33.

"Dr. Olsen To Give Drug Sales Course." Drug Topics 52:38 (September 21, 1936), p. 29.


"Druggists Choose Own Refresher Courses." Drug Topics 86:5 (February 2, 1942), p. 16.

"Druggists Enjoy Course on Veterinary Supplies." Drug Topics 90:15 (July 22, 1946), p. 34.

"Druggists Urged To Start Schools To Train Clerks." Drug Topics 51:46 (November 18, 1935), pp. 3 and 21.


"Drug Salesmanship Is Feature Course In City's Program." Drug Topics 55:47 (November 20, 1939), pp. 3 and 12.

"Drug Store Training Shaped." Drug Topics 85:37 (September 15, 1941), pp. 2 and 31.


"Duquesne Offers Review Lectures." Drug Topics 56:50 (December 9, 1940), p. 19.


Emerson, Ralph W. "What Can the Colleges Do To Provide In-Service Training for Pharmacists?" *National Association of Boards of Pharmacy and American Association of Colleges of Pharmacy Annual Meeting, District No. 1* (1949), pp. 63-65.


"Faculty Holds Institute at S.D. State College."  Drug Topics 93:9 (April 25, 1949), p. 34.


"FDR Signs Law To Aid Clerk Training."  Drug Topics 52:26 (June 29, 1936), p. 3.

Feit, Victor.  "Refresher Courses."  Joint Meeting of District No. 5, the National Association of Boards of Pharmacy and the American Association of Colleges of Pharmacy (1946), pp. 5-7.


“50 Pharmacists Win Certificates At Minn. Review.” Drug Topics 85:12 (March 24, 1941), p. 16.


"Special Committee Post Graduate Study." Proceedings of the National Association of Boards of Pharmacy 27 (1930), pp. 95-96.

"What Can Boards and Colleges Do to Keep Practicing Pharmacists Abreast of the Rapid Advances in Pharmaceutic Sciences?" Proceedings, Joint Meeting of Boards and Colleges, District No. 2 (1941), pp. 39-43.

"Fishbein To Discuss Social Medicine At Purdue Meeting." Drug Topics 52:11 (March 16, 1936), pp. 25 and 29.


"Five Day Institute Gives Emphasis To Hospital Pharmacy." Drug Topics 90:13 (July 8, 1946), p. 42.


"Florida Highlights Its 'Relations' Bureau." Drug Topics 85:5 (February 3, 1941), p. 32.

"Floridans Arrange Rx Short Course." Drug Topics 52:14 (April 6, 1936), p. 34.


... "President's Section: A Section of Teachers of Continuation Studies." American Journal of Pharmaceutical Education 27:1 (Winter, 1963), p. 158.
"Raising the General Level of Pharmaceutical Practice in This District." Proceedings, Joint Meeting of Boards and Colleges of Pharmacy, District #3 (1941), pp. 28-30.


"4 Drug Institutes Conducted In N.C." Drug Topics 85:38 (September 22, 1941), p. 4.

"4 Hours Weekly On Archives Urged." Drug Topics 93:16 (August 1, 1949), pp. 13 and 36.

"400 Turn Out For Two-Day Meet." Drug Topics 85:14 (April 7, 1941), p. 10.


"Governor LaFollette Lauds Pharmacists: Pharmacy Study Course Is Praised By Wisconsin's Chief Executive." *Wisconsin Druggist* 6:10 (October, 1938), pp. 7-8.


"Group Is Revived To Train Clerks." *Drug Topics* 52:10 (March 9, 1936), p. 17.


"Introductory." National Institute of Pharmacy, Term I, Lecture I [November 1, 1886], p. 1.


"To the Student." National Institute of Pharmacy, Term I, Lecture XII, [April 15, 1887], p. 148.


----- "Drug Clerks Hear Prominent Speakers At Purdue Short Course." The Indiana Pharmacist 22:7 (July, 1940), pp. 223-24.


"Home Study Store Course Developed." Drug Topics 85:43 (October 27, 1941), pp. 2 and 23.


"Howard College Schedules 4 Hospital Pharmacy Lectures." Drug Topics 93:22 (October 24, 1949), p. 28.


"Iowa Rx Academy To Be Organized." Drug Topics 54:12 (March 21, 1938), p. 17.


"Interstate School of Correspondence" [advertisement]. Bulletin of Pharmacy 20:12 (December, 1906), p. 34.


________. "Purdue School of Pharmacy Ends Fifty-Fifth Year." The Indiana Pharmacist 22:6 (June, 1940), pp. 184-85 and 201.


"Keep 'Refreshers' Going." Drug Topics 87:33 (September 20, 1943), p. 34.


"Keep 'Refreshers' Going." Drug Topics 87:33 (September 20, 1943), p. 34.


"Keep 'Refreshers' Going." Drug Topics 87:33 (September 20, 1943), p. 34.


"Keep 'Refreshers' Going." Drug Topics 87:33 (September 20, 1943), p. 34.


Kiefer-Stewart Co. "Use This New Service" [advertisement]. The Indiana Pharmacist 12:12 (December, 1930), n.p.


_______. "The Teaching of Pharmacy During the Past Fifty Years." Druggists' Circular 51:1 (January, 1907), pp. 61-79.


"Lack Of A Qualified Director Defers Illinois Retail Course." Drug Topics 85:47 (November 24, 1941), p. 4.


Larned, Josephus N. "An Experiment in 'University Extension."' The Library Journal 12:3-4 (March-April, 1888), pp. 75-76.


"Lectures Sponsored By N. J. Branch Of APhA." Drug Topics 90:5 (March 4, 1946), p. 36.


"Little Suggests Programs For Assns." Drug Topics 88:22 (October 30, 1944), p. 22.


Lyman, Rufus A. "The Editor's Correspondence: What is a 'Diploma Mill'?") The Pharmaceutical Era 58:10 (March 8, 1924), pp. 229-30.


Maier, Augustus A. "Can the Colleges Offer Anything Further to Aid the Practice of Pharmacy in Rural Areas?" National Association of Boards of Pharmacy and American Association of Colleges of Pharmacy Annual Meeting District No. 1 (1948), pp. 8-11.


"May Launch Clerk School In Salt Lake." Drug Topics 52:1 (January 6, 1936), pp. 3 and 29.


"M.D.s, Dentists Lecture In Series For Pharmacists." Drug Topics 87:18 (May 3, 1943), p. 30.


"Merchandisers To Lead Short Course." Drug Topics 53:46 (November 15, 1937), p. 3.


"Merchandising Clinics Begin Today In Texas." Drug Topics 54:37 (September 12, 1938), p. 44.

"Merchandising Course Offered." Drug Topics 52:1 (January 6, 1936), p. 29.

"Merchandising Is To Be Featured At Purdue Meeting." Drug Topics 53:12 (March 15, 1937), p. 43.

"Merchandising X-Rayed At New 'Clinic': Retail Druggists From 7 States At Oklahoma Seminar." Drug Topics 54:6 (February 7, 1938), p. 45.


"Michigan Courses Cover All Phases of Drug Retailing." Drug Topics 85:12 (March 24, 1941), pp. 2 and 20.


"Midwest Group Votes To Use Training Fund." Drug Topics 85:29 (July 21, 1941), p. 6.


"Minn. Course Scheduled." Drug Topics 56:2 (January 8, 1940), p. 22.


"Minn. Institute Points Need For 'War' Meets." Drug Topics 87:10 (March 8, 1943), p. 8.


"Modern Dispensing Course Is Planned." Drug Topics 56:41 (October 7, 1940), p. 27.


Muldoon, Hugh C. "Address of the Faculty Chairman." Proceedings, Joint Meeting of Members of State Boards of Pharmacy and Delegates of the Faculties of Colleges of Pharmacy in N.A.B.P. District No. 2 (1933), pp. 4-8.


"'Need Scientific Training.'" Drug Topics 54:3 (January 17, 1938), p. 19.


______. "Rehabilitation of Registered Pharmacists Now in Service: Shall This Be Done with Refresher Courses and, If So, with Courses of What Type?" National Association of Boards of Pharmacy and American Association of Colleges of Pharmacy Annual Meeting, District No. 5 (1944), p. [8].


"New Feature Added to the Service of Purdue Pharmacy Extension Department." The Indiana Pharmacist 16:10 (October, 1934), p. 13.

"New Free Course In Retailing Opens Tuesday In New York City." Drug Topics 54:5 (January 31, 1938), p. 4.


"Newmark For Training." Drug Topics 52:10 (March 9, 1936), p. 17.

"News From Purdue School of Pharmacy." The Indiana Pharmacist 16:9 (September, 1934), p. 12.


"N.Y. Board Of Education May Open Training School." Drug Topics 54:24 (June 13, 1938), pp. 2 and 14.


_______. "What Can the Colleges Do to Keep Practicing Pharmacists Abreast of the Rapid Advances in Pharmaceutic Sciences?" Proceedings, Joint Meeting of Boards and Colleges, District No. 2 (1941), pp. 43-45.


"Ohio Convention To Feature Refresher Clinic." Drug Topics 90:10 (May 13, 1946), p. 46.


"Oklahoma School Meeting Theme Is 'Noble Profession.'" Drug Topics 54:11 (March 14, 1938), p. 33.

"Oklahoma School on Convention Program." Drug Topics 53:8 (February 22, 1937), p. 27.

"Oklahoma Short Course To Show Tested Displays." Drug Topics 85:5 (February 3, 1941), p. 32.


"121 Pharmacists Attend Chicago Hospital Seminar." Drug Topics 93:21 (October 10, 1949), p. 36.


Parke, Davis & Co. "Every Matriculate in The Era Course in Pharmacy.


"PCP&S Continues TV Education Plan." Drug Topics 108:3 (February 10, 1964), pp. 22 and 32.


"Penicillin Symposium To Commence April 13." Drug Topics 89:7 (April 2, 1945), p. 27.


"Pharmacy Board's Training Commended In So. Dakota." Drug Topics 56:29 (July 15, 1940), pp. 3 and 26.

"Pharmacy Clinic' Is Held In Connecticut." Drug Topics 56:15 (April 8, 1940), p. 17.


"Pharmacy Talks Listed By Fordham." Drug Topics 85:16 (February 10, 1941), p. 15.


"Plan Lectures For Detroit Druggists." Drug Topics 53:6 (February 8, 1937), p. 27.


"Plans Refresher Course." Drug Topics 86:22 (June 1, 1942), p. 12.


"Preparedness! Is Theme For Purdue Retail Conference." Drug Topics 86:10 (March 9, 1942), p. 6.


_____. "What Course of Reading and Plan of Study are Advisory for the Assistant in Pharmacy?" The Pharmaceutical Era 1:1 (January, 1887), pp. 7-11.


"Presenting the Colleges of Pharmacy: #63: School of Pharmacy, University of Buffalo." Drug Topics 92:16 (August 2, 1948), p. 28.


_____. "Minnesota's University Weeks." Proceedings of the First National University Extension Conference (1915), pp. 159-64.

_____. "President's Address." Proceedings of the National University Extension Association 9 (1924), pp. 6-15.


"Profs. Mattocks And Ulan Will Teach Refresher Courses To 60 In Germany." Drug Topics 93:12 (June 6, 1949), p. 28.


"Purdue Conference Attracts Many Pharmacists." The Indiana Pharmacist 23:3 (March, 1941), pp. 56-57.


"Purdue Druggists' Business Conference Highly Successful." The Indiana Pharmacist 22:3 (March, 1940), pp. 63-64.


"Purdue Parley Honors 17 For 10-Yr. Records." Drug Topics 56:13 (March 25, 1940), pp. 3 and 7.


"Purdue Plans Short Course For Clerks." The Indiana Pharmacist 22:2 (February, 1940), p. 57.

"Purdue Rx Section Analyzes Business Data In 100 Stores." Drug Topics 52:6 (February 10, 1936), p. 27.

"Purdue Short Course Set For July." Drug Topics 85:25 (June 23, 1941), p. 10.

"Purdue's Pharmacy Extension Department." The Indiana Pharmacist 12:12 (December, 1930), p. 9.


"Receives Promotion." The Indiana Pharmacist 25:10 (October, 1943), p. 397.


Reed, Howard L. "What Can the Colleges Do To Provide In-Service Training for Pharmacists?" National Association of Boards of Pharmacy and American Association of Colleges of Pharmacy Annual Meeting, District No. 1 (1949), pp. 60-62.


"Refresher Course For GIs Is Offered By Philadelphia." Drug Topics 89:10 (May 14, 1945), p. 31.

"Refresher Course Is Cancelled Due To Man Shortage." Drug Topics 86:2 (January 12, 1942), p. 8.


"Retail Course At U. Of Richmond." Drug Topics 53:39 (September 27, 1937), p. 12.

"Retail Training Must Be Demanded If It's Wanted." Drug Topics 54:41 (October 10, 1938), pp. 3 and 43.


Rivard, W. Henry. "What Can the Colleges Do To Provide In-Service Training for Pharmacists?" *National Association of Boards of Pharmacy and American Association of Colleges of Pharmacy Annual Meeting* , District No. 1. (1949), pp. 66-68.


"Roosevelt Holds Up Clerk Training Fund." Drug Topics 53:45 (November 8, 1937), pp. 3 and 8.


"Rowe To Address Columbia Seminar." Drug Topics 90:10 (May 13, 1946), p. 18.

Rudd, Wortley F.] "Virginia School of Pharmacy Ready to Answer Druggists' Queries." The Pharmaceutical Era 60:8 (February 21, 1925), p. 244.


"Rutgers Begins Seminars For Pharmacy Graduates." Drug Topics 89:2 (January 22, 1945), p. 22.


"Rutgers Will Take Pharmacy Seminars To Rx Man In Store." Drug Topics 94:5 (February 27, 1950), pp. 13 and 34.


"Rx Men Slow To Use Funds For Training." Drug Topics 56:11 (March 11, 1940), p. 27.
"Rx Men Will Teach First Aid." Drug Topics 86:12 (March 23, 1942), p. 3.


"St. Louis Seminar Is Attended By 35." Drug Topics 90:13 (July 8, 1946), p. 32.


"Salt Lake Opens 2nd Clerk School; Training Praised." Drug Topics 54:50 (December 12, 1938), p. 23.

"San Angelo Sales Courses Train Drug Store Help." Drug Topics 90:12 (June 10, 1946), p. 44.


"School of Pharmacy at Purdue Over Fifty Years Old." The Indiana Pharmacist 21:2 (February, 1939), p. 45.


"Second Maryland 'Brush-Up' Ready." Drug Topics 56:6 (February 5, 1940), p. 16.


"Seminar Marks Connecticut Pharmacy College's Twenty Years." Drug Topics 89:22 (October 29, 1945), p. 36.


"Short Course for Drug Clerks to be held at Purdue July 7, 8, 9, 10, 11." The Indiana Pharmacist 23:6 (June, 1941), p. 202.


Smith, Harry E. "The Role of the Extension Division in the State Plan for Adult Education with Special Reference to Professional Groups." Proceedings of the National University Extension Association 22 (1939), pp. 95-98.


"Start War Class For Pharmacists." Drug Topics 86:29 (July 20, 1942), pp. 2 and 8.


Steele, Frank J. "University Extension Departments Offer Opportunity for Self-Improvement." Bulletin of the American Society of Hospital Pharmacists 2:3 (May-June, 1945), pp. 87 and 100.


"Suggests School For Lincoln." Drug Topics 52:10 (March 9, 1936), p. 17.

"Summary of the Fifty-sixth Year of the Purdue University School of Pharmacy." The Indiana Pharmacist 23:6 (June, 1941), p. 182.


Swain, Robert L. "Educational Progress and Board of Pharmacy Members." Proceedings of the National Association of Boards of Pharmacy 25 (1928), pp. 49-56.

______. "Educational Progress and Board of Pharmacy Members (A Supplemental Discussion)." Proceedings of the National Association of Boards of Pharmacy 26 (1929), pp. 46-59.


"Vitamins Won Top Interest In 1939 Brush-up Courses." Drug Topics 56:4 (January 22, 1940), pp. 2 and 14.


"Your Pharmacy and Mine: Keeping In Step--An Obligation." Drug Topics 52:6 (February 10, 1938), p. 27.

"Your Pharmacy and Mine: Keeping In Step With The Times." Drug Topics 56:5 (January 29, 1940), p. 16.

"Your Pharmacy and Mine: New Jersey Progress." Drug Topics 94:7 (March 27, 1950), p. 44.


"3rd Oklahoma Retail School Opens Tuesday." Drug Topics 56:7 (February 12, 1940), p. 35.


"3-Day Kansas 'Clinic' Set For Late October." Drug Topics 55:38 (September 18, 1939), p. 6.

"3-Day Refresher Course For Graduates To Be Presented At Philadelphia College." Drug Topics 93:12 (June 6, 1949), p. 38.


"To Train Clerks, U.S. To Spend $1,298,000." Drug Topics 53:28 (July 12, 1937), p. 3.


"The University of Buffalo School of Pharmacy Third Annual Spring Clinic." Journal of the American Pharmaceutical Association (Practical Pharmacy Edition) 1:5 (May, 1940), p. 212.


University of Wisconsin. "Correspondence-Study Courses in Pharmacy." Bulletin of the University of Wisconsin Serial No. 275, General Series No. 151 (January, 1909).


. "School of Pharmacy: Corps of Instruction." Catalogue of the University of Wisconsin for 1892-1893. Madison: By the University, 1893, p. 139.


"Summer Session of the University and Summer Schools: Summer Session of the School of Pharmacy." Catalogue of the University of Wisconsin for 1901-1902. Madison: By the University, 1902, p. 185.

"The Summer Session: Pharmacy." The University of Wisconsin Catalogue, 1913-1914. Madison: By the University, 1914, p. 574.


University Extension Division. "Courses in Pharmacy." Correspondence-Study Courses in Pharmacy. Madison: By the University, 1909.


"Correspondence-Study Courses." Bulletin of the University of Wisconsin Serial No. 2655, General Series No. 2439 (May, 1943), p. 25.

"Correspondence-Study Courses." Bulletin of the University of Wisconsin Serial No. 2741, General Series No. 2535 (February, 1945), p. 25.

"Courses in Pharmacy." Bulletin of the University of Wisconsin Serial No. 1798, General Series No. 1882 (November, 1921), pp. 6-16.

"Courses in Pharmacy." Bulletin of the University of Wisconsin Serial No. 2092, General Series No. 1976 (September, 1935), pp. 6-16.

"University Starts Retailing Course." Drug Topics 53:44 (November 1, 1937), p. 32.


"Urges Pharmacy 'Refreshers' Be Made Compulsory." Drug Topics 85:12 (March 24, 1941), pp. 2 and 13.


"Utah Merchandising School Teaches Selling Technique." Drug Topics 53:8 (February 22, 1937), pp. 2 and 27.


"VA Pharmacists Plan To Attend Institute." Drug Topics 93:12 (June 6, 1949), p. 38.


"Vocational Classes Complete Third Successful Year." Wisconsin Druggist 8:8 (August, 1940), pp. 9 and 14.

"Vocational Pharmacy Classes." Wisconsin Druggist 8:5 (May, 1940), p. 19.


"War Medicine' Is Conference Theme." Drug Topics 88:5 (March 6, 1944), p. 18.


"Wayne University Pharmacy College Now Plans Postwar Refresher Courses." Drug Topics 88:5 (March 6, 1944), p. 16.

"Wayne U. Offers Extension Service." Drug Topics 53:9 (March 1, 1937), p. 34.


"Wisconsin Group Urges Refresher Course For G.I.s." Drug Topics 88:21 (October 16, 1944), pp. 2 and 47.


"Wisconsin School for Pharmacists Nationally Recognized." Wisconsin Druggist 6:9 (September, 1938), pp. 5-6.

"Wisconsin Slates Rx Man Training." Drug Topics 53:32 (August 9, 1937), p. 3.

"Wisconsin's 1940 Symposiums On Pharmacy." Wisconsin Druggist 8:9 (September, 1940), p. 5.


"Wis. Convention Begins Tuesday; Features Clinic." Drug Topics 55:38 (September 18, 1939), p. 6.


"W. Texans To Hold 'Clinic.'" Drug Topics 55:10 (March 6, 1939), p. 14.


"The Service the College of Pharmacy of the University of Minnesota Is Giving to the State: The Eighth of a Series of Radio Talks on 'The Pharmacists' Relation to the Public' Over WLB (University Station)." Proceedings of the Minnesota State Pharmaceutical Association 47 (1931), pp. 293-96.


"Youth of the Fountain." American Druggist 86:4 (October, 1933), pp. 74-75 and 208-14.


D. Unpublished and Archival Material


Ballard, Charles W. Letter to George Urdang, May 31, 1946. Kremers Reference Files, F. B. Power Pharmaceutical Library, University of Wisconsin School of Pharmacy, Madison, Wisconsin. [Hereinafter referred to as "Kremers Reference Files."]


Birge, Edward A. Letter to Louis E. Reber, May 13, 1925. Papers of the Presidents of the University of Wisconsin, President's Office, University of Wisconsin, Madison, Wisconsin. [Hereinafter referred to as "Papers of the Presidents of the University of Wisconsin."]


Boberg, Edwin J. "Continuation Study Program for Registered Pharmacists, School Year 1946-47." Eau Claire, Wisconsin, 1946. (Mimeographed.) A.Ph.A. Archives.


Ebert, Albert E. "Historical Sketch of the Chicago College of Pharmacy." [Chicago?], n.d. A.Ph.A. Archives.


Hall, Alvah G. Letter to Edward C. Elliott, March 9, 1948. A.Ph.A. Archives.


Jenkins, Glenn L. Letter to Edward C. Elliott, March 1, 1948. A.Ph.A. Archives.

Jordan, Charles B. "Minutes of Conference of Professional Pharmacists, May 9, 1940, Richmond, Va." (Typewritten.) American College of Apothecaries Records, American Institute of the History of Pharmacy Archives, State Historical Society of Wisconsin, Madison, Wisconsin. [Hereinafter referred to as "American College of Apothecaries Records."]


Lang, William C. "A History of the State University of Iowa: The Collegiate Department from 1879 to 1900." Unpublished Ph.D. dissertation, University of Iowa, 1941.

LeBlanc, Floyd J. Letter to Edward C. Elliott, March 5, 1948. A.Ph.A. Archives.


Rogers, Charles H. Letter, Purdue University School of Pharmacy to George Urdang, postmarked May 15, 1946. Kremers Reference Files.

Rowe, Thomas D. Letter to Edward C. Elliott, February 27, 1948. A.Ph.A. Archives.


Shine, Joseph J. "Report of the Committee on Continuation Study for Pharmacists." Chicago, [1946]. (Typewritten.) A.Ph.A. Archives.

Smith, Amy Hoyt. Letter to Armed Forces Institute instructor, March 27, 1944. Papers of the Deans of the Extension Division, University Extension Division, University of Wisconsin, Madison, Wisconsin.


Spitzer, George. "History of Purdue University School of Pharmacy." Unpublished manuscript, Lafayette, Indiana, [1929]. Kremers Reference Files.


University of Oklahoma. "Summary of the Fourth Annual School for Retail Pharmacists and Sales Personnel, Feb. 19-21, 1941 University of Oklahoma, Norman, Oklahoma." Norman, Oklahoma: by the University Extension Division, 1941. ( Mimeographed.)

University of Wisconsin. Board of Regents. "Records of the Board of Regents, April 17, 1906." F:404. Papers of the Board of Regents of the University of Wisconsin, State Historical Society of Wisconsin, Madison, Wisconsin. [Hereinafter referred to as "Papers of the Board of Regents of the University of Wisconsin."]

_____. "Regents' Executive Committee Minutes, December 4, 1905." F:104. Papers of the Board of Regents of the University of Wisconsin.


_____. "Inaugural Address of Charles Richard Van Hise, Ph.D., LL.D. as President of the University of Wisconsin, Madison, Wisconsin, June 7, 1904." Papers of the Presidents of the University of Wisconsin.


Wisconsin State Board of Vocational and Adult Education. City Division. "Bacteriology and Biologicals." Informational Bulletin No. 12, Series 1946-47, Madison, Wisconsin, 1946. (Mimeographed.) A.Ph.A. Archives.


"Making the Most of Pharmacy Week." Informational Bulletin No. 1, Series 1946-47, Madison, Wisconsin, 1946. (Mimeographed.) A.Ph.A. Archives.


"Minutes of the Meeting of the State Board of Pharmacy Acting as Advisory Committee to the State Distributive Education Staff," by Roy Fairbrother. Distributive Educational Series, Bulletin No. 16, Madison, Wisconsin, 1944. (Mimeographed.) Kremers Reference Files.


"Some Technical Terms Used in Modern Pharmacy."

"Veterinary Drugs, Insecticides, Household Chemicals."

"Vitamin Developments."
Informational Bulletin No. 8, Series 1946-47, Madison, Wisconsin, 1946. (Mimeographed.) A.Ph.A. Archives.

"Wetting Agents Revolutionize Drug & Cosmetic Industries."
Informational Bulletin No. 4, Series 1946-47, Madison, Wisconsin, 1946. (Mimeographed.) A.Ph.A. Archives.