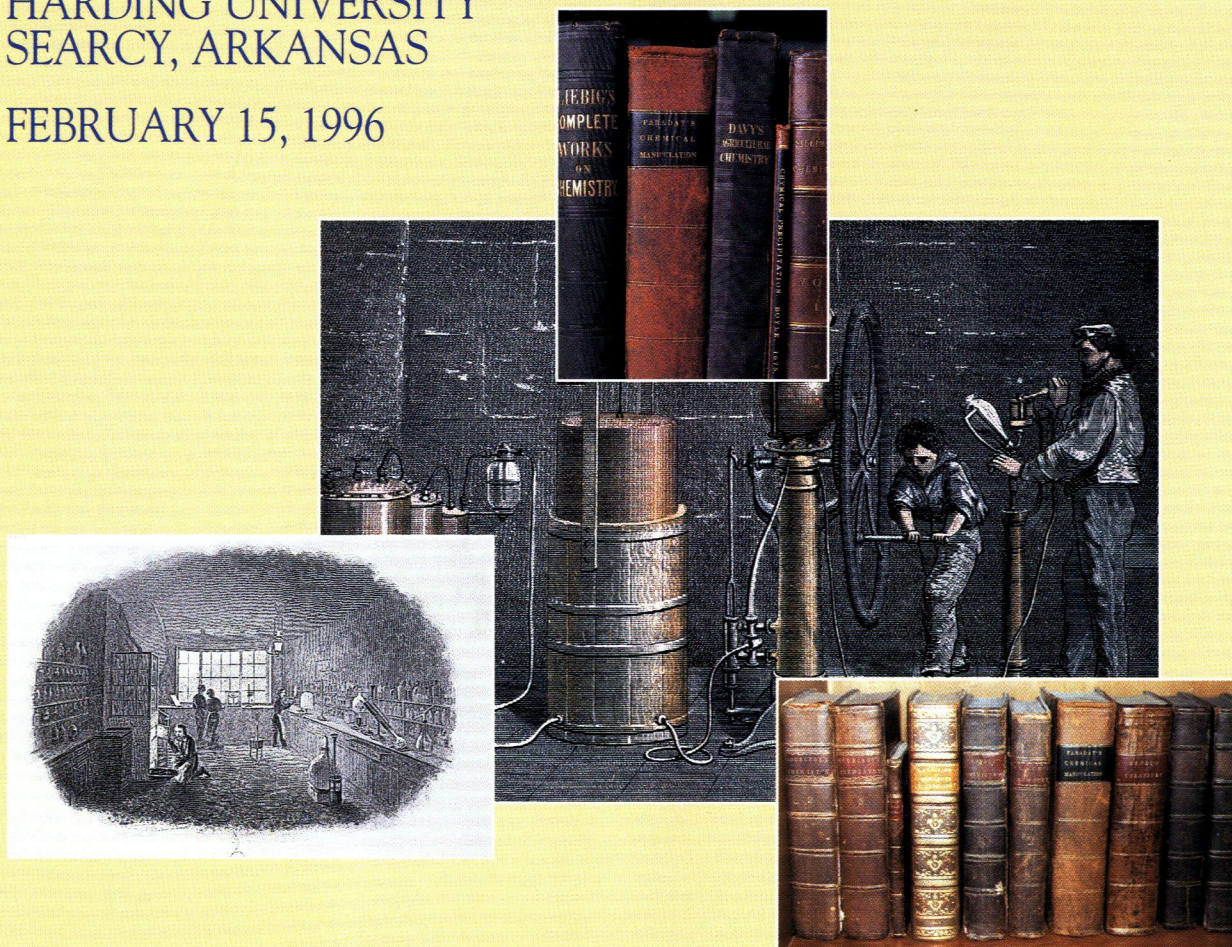


A NATIONAL HISTORIC  
CHEMICAL LANDMARK

# THE WILLIAMS-MILES HISTORY OF CHEMISTRY COLLECTION

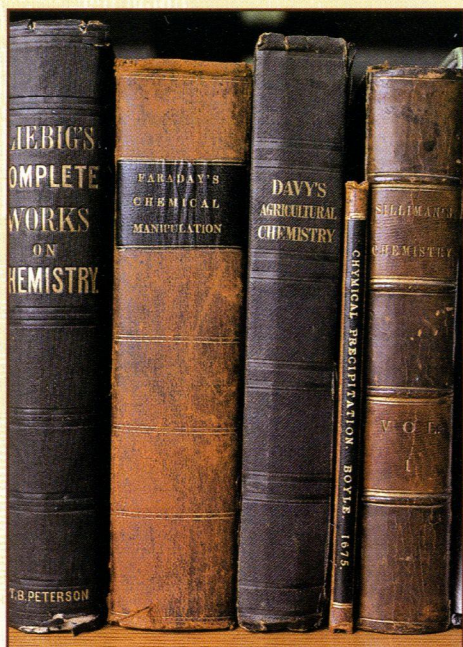
HARDING UNIVERSITY  
SEARCY, ARKANSAS

FEBRUARY 15, 1996



AMERICAN CHEMICAL SOCIETY

Division of the History of Chemistry and  
The Office of Public Outreach



This booklet commemorates the designation of the Williams–Miles History of Chemistry Collection as a National Historic Chemical Landmark. The designation was conferred by the American Chemical Society, a nonprofit scientific and educational organization of nearly 150,000 chemists and chemical engineers.

The Williams–Miles Collection is located in the Brackett Library of Harding University in Searcy, Arkansas. Harding University is a four-year, Christian, coeducational, liberal arts institution with a School of Nursing and graduate programs in education and religion.

A plaque marking the ACS designation was presented to the university on February 15, 1996. The inscription reads: “The Williams–Miles History of Chemistry Collection, established in 1992, is one of the leading historical collections of chemistry books in the southern United States. It represents a combined 70 years of scholarly collecting by Wyndham D. Miles, National Institutes of Health, Bethesda, Maryland, and William D. Williams, Professor of Chemistry at Harding University. More than 2,000 volumes published between 1600 and 1900 are preserved here; the collection is particularly strong in 19th-century works. The Williams–Miles Collection, housed in the Brackett Library, is a rich resource for understanding the development of chemistry and its effect on American life during a formative period of our national history.”

*Acknowledgments:*

The American Chemical Society gratefully acknowledges the assistance of those who helped prepare this booklet, including: William D. Williams, Harding University; David J. Rhees, Bakken Library and Museum; and Jeffrey L. Sturchio, Merck & Co., Inc.

This booklet was produced by the ACS Office of Public Outreach. Layout: Dahlman/Middour Design. Photographs courtesy of Jeff Montgomery, Harding University.

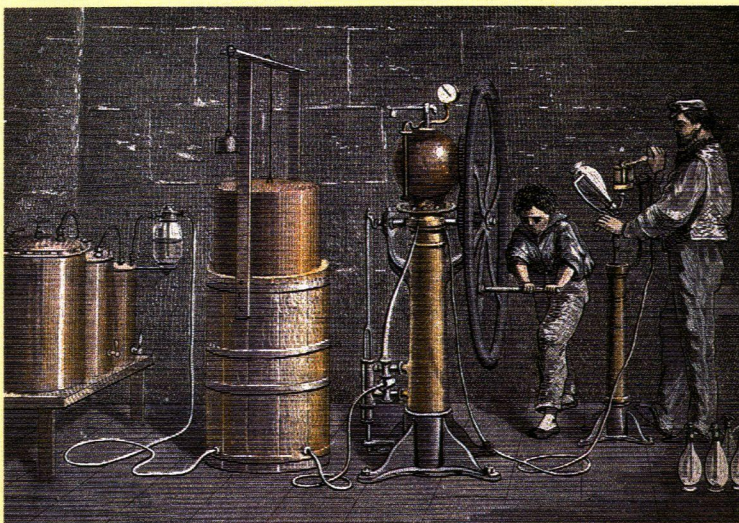
# BOOK COLLECTIONS AS ACTIVE RESEARCH TOOLS

One antique chemistry book is like one fossilized bone — an interesting artifact. A library of rare books, however, is like a complete dinosaur skeleton — an awe-inspiring view of the past. Just as the archaeologist can reconstruct the muscles and flesh needed to cover a skeleton, a chemical historian can use old books to reconstruct the development of chemistry as a science.

A rare chemistry collection, therefore, is not an untouchable museum; it is an active research tool. It can supply surprisingly complete information for the dedicated investigator on such topics as the sequences of development of chemical concepts, biographies of chemists, pictures of apparatus used in the past, library catalogs of past chemistry publications, or general interest stories from chemical history.

A book collection often begins as a hobby. When the size and quality reach a certain level, however, the collection takes on an importance beyond the personal enjoyment of the bibliophile. It becomes a mission to preserve a valuable history resource for future generations.

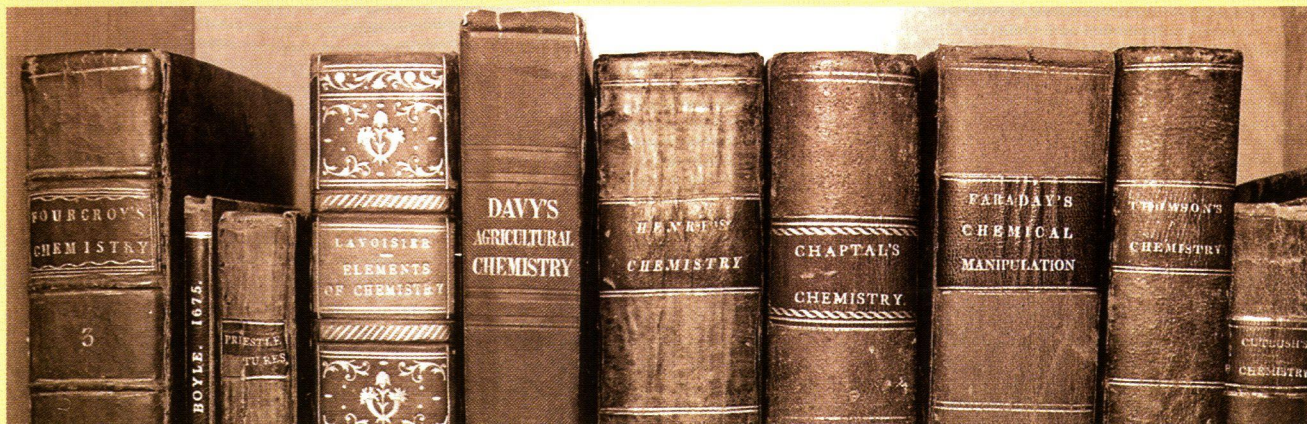
Modern chemistry, some scholars claim, had its beginning in the 1790s with the demise of the phlogiston concept and the adoption of the “new nomenclature” as well as the theory of oxygen combustion introduced by Antoine Lavoisier and his French colleagues. This “chemical revolution” coincided roughly with the birth of the United States as a nation. The country’s subsequent



Workers pump carbon dioxide into bottles to make “effervescing beverages.” (from *Chemistry*, John H. Appleton, 1884)

economic growth may be attributed in part to the many applications of chemical knowledge. A collection of early American chemistry books is both a permanent record of the development of modern chemistry and a mirror of American history.

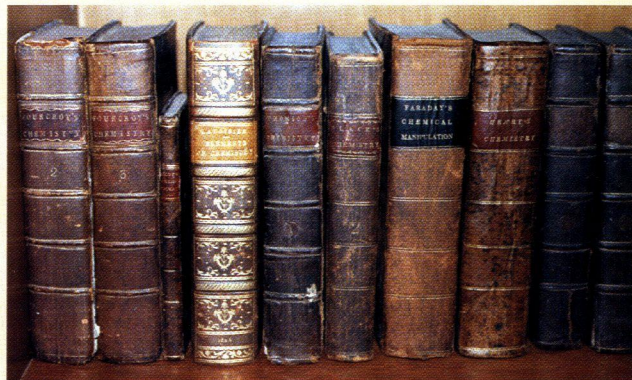
The Williams–Miles History of Chemistry Collection is an example of such a research tool. In a single location, it preserves more than 2,000 volumes on early chemistry and related sciences. It is particularly rich in 19th-century American works — many in almost all of their variant editions. Although similar collections exist, the Williams–Miles Collection is a significant resource in the southern United States.



# THE COLLECTION

The Williams–Miles History of Chemistry Collection was gathered over many years by scholarly searching on limited budgets. The books were purchased, usually one volume at a time, from book dealers all over the United States. The objective was not to acquire rarities, although some are present, but rather to document the progress of chemistry. Emphasis was placed on American chemical imprints published before 1900. Twentieth-century books were not collected systematically, but some unusual works are included. The 2,000 volumes in the collection provide a remarkably complete coverage of 19th-century chemistry.

The collection contains a smaller number of works in other sciences, medicine, and pharmacy, as well as early journals and nonscience books by noted chemists. There are unique items associated with early chemists: autographed letters, medals, medallions, bookplates, engravings, and photographs. Also present are postage stamps about chemistry or chemists, advertising trade cards distributed by early chemical firms, some



antique laboratory apparatus, and a 1925 children's chemistry set.

Eight books in the collection date from the 1600s, including five by the noted British chemist Robert Boyle. The oldest volume is a 1609 edition of *Basilica Chymica* by Oswald Croll.

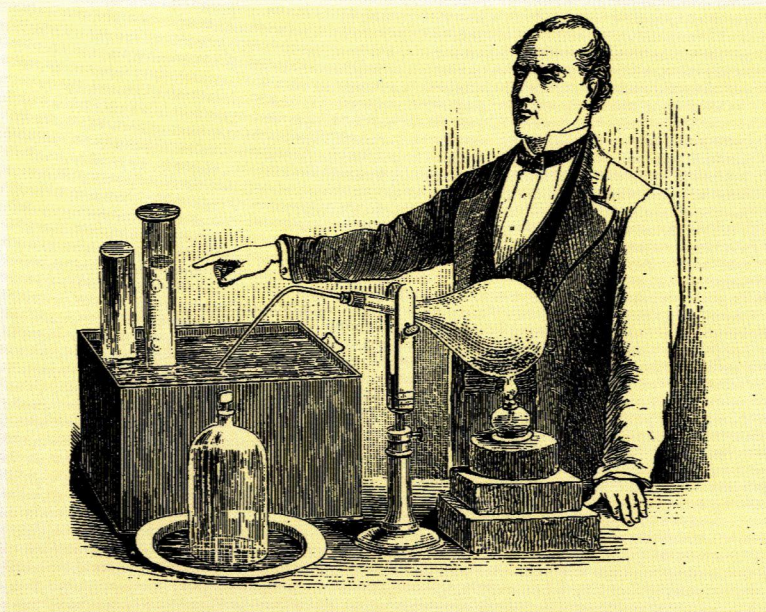
Among the 30 volumes printed in the 1700s are 3 of the earliest chemistry books published in the United States. *Introduction to Natural Philosophy* (Philadelphia, 1788) was a textbook of physics and chemistry by the British chemist William Nicholson. It and an earlier British edition were studied in both England and the United States from 1782 to 1805. *Chemical and Economic Essays* (Philadelphia, 1790) presented aspects of industrial chemistry in early America. It was written by an American, John Pennington, who was president of the first chemical society in the United States. *A System of Chemistry* (Philadelphia, 1791), a separate printing of the "Chemistry" article from the first American edition of the *Encyclopedia Britannica*, was the first American imprint to introduce the "new chemistry" of Lavoisier.



An early 19th-century laboratory. (from *Chemistry, Theoretical, Practical and Analytical*, Sheridan Muspratt, 1860)

The collection is particularly rich in 19th-century volumes. Works by prominent foreign chemists are well represented, and there are multiple editions by American and European publishers. For example, the collection contains 15 different American editions of Jane Marcet's *Conversations on Chemistry*, the most widely used introductory chemistry text in America from 1809 to the 1830s. Some 19th-century books by American chemists are present in almost all of their editions. The collection holds 29 copies of John Comstock's *Elements of Chemistry*, which was America's most popular chemistry text from 1831 to 1859. Another best-selling chemistry text was *Fourteen Weeks in Chemistry*, by J. Dorman Steele, which dominated the market from 1868 to 1890. Twenty-five copies of Steele's chemistry text are in the collection.

The collection includes several unique groups of books from the 20th century: 42 volumes for chemistry courses offered by mail from 1900 to 1940 by the International Correspondence Schools of Scranton, Pennsylvania;

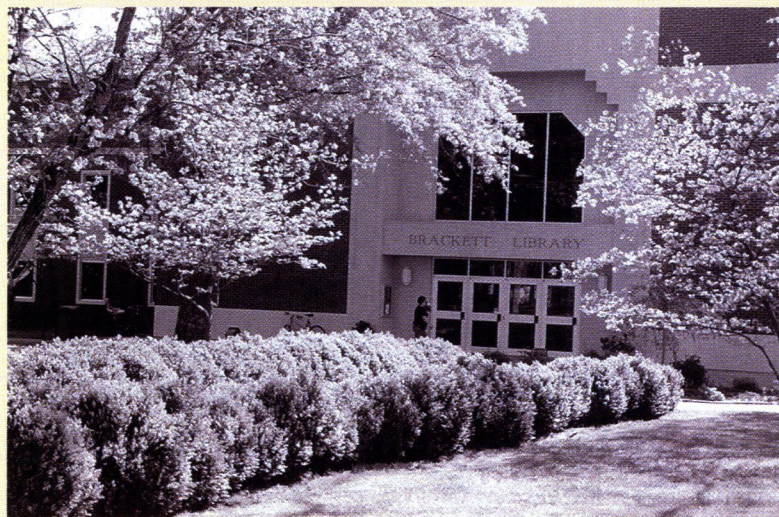


A teacher demonstrates the preparation of oxygen. (from *Fourteen Weeks in Chemistry*, J. Dorman Steele, 1873)

20 editions (2nd to 50th, 1914 to 1969) of the widely used reference work, *Handbook of Chemistry and Physics*; and a diverse selection of books from the early days of radioactivity, including the rare August 1945 Washington, D.C., edition of Henry D. Smyth's history of the Manhattan Project and the development of the atomic bomb.

Some of the books contain inscriptions by the author or signatures or bookplates of noted chemists who once owned them.

The Williams–Miles Collection is located in the Brackett Library, Harding University, Searcy, Arkansas. Volumes are not loaned but are available for on-site research under the usual library regulations for rare books.



Brackett Library, Harding University, Searcy, Arkansas

# THE COLLECTORS



## Wyndham Davies Miles

Miles was educated at the Philadelphia College of Pharmacy and Science, Pennsylvania State University, and Harvard University. After teaching college chemistry and working in industry, he was a science historian for the Army Chemical Corps, the National Archives, the U.S. Navy, and the National Institutes of Health. He edited two volumes of *American Chemists and Chemical Engineers*, wrote *A History of the National Library of Medicine*, coauthored *The Chemical Warfare Service: From Laboratory to Field*, and published more than 100 articles and biographies about the history of chemistry. He served as chairman of the ACS Division of History of Chemistry and received its Dexter Award in the History of Chemistry in 1971. Miles has collected rare chemistry books for 50 years and provided two-thirds of the total volumes in the Williams–Miles Collection.



## William Donald Williams

Williams was professor of chemistry at Harding University from 1954 until 1993. He was educated at Harding University and the University of Kentucky. He worked for six summers in rocket propellant chemistry at Marshall Space Flight Center, Huntsville, Alabama. The author of 25 articles on chemical history, chemical biography, and Arkansas history, he writes the “Old Chemistries” series for the *Bulletin for the History of Chemistry*. He has been collecting rare chemistry books for nearly 20 years and provided about one-third of the volumes in the Williams–Miles Collection.

Because of their common interests, Miles and Williams became good friends. As they reached retirement age, each donated his collection to Harding University to be preserved for research in historical chemistry. Both men continue to add volumes to the collection.

## FOR FURTHER READING

Henry C. Bolton. *A Select Bibliography of Chemistry, 1492-1892*. Washington, D.C.: Smithsonian Institution, 1893 (or Millwood, N.Y.: Kraus Reprint Co., 1973); *First Supplement*, 1899; *Second Supplement*, 1904.

*Catalog of the Edgar Fahs Smith Memorial Collection*. Boston: G. K. Hall and Co., 1960.

William A. Cole. *Chemical Literature 1700-1860. A Bibliography*. London and New York: Mansell Publishing, 1988.

Mary B. Cutler. "American Patterns in General Chemistry Texts, 1800-1850." Ph.D. dissertation, Columbia University, 1962.

William B. Jensen. "The Secondary Chemistry Textbook...1820-1960." Master's Thesis, University of Wisconsin, 1972.

Peter G. Mahaffy. "Breathing Life into Chemists. Resuscitating Chemistry with Insights from 19th Century Textbooks." *Journal of Chemical Education* 72 (1995): 767-773.

Peter W. Mangery. "An Analysis of Chemistry Textbooks in American Secondary Schools before 1890." Ph.D. dissertation, University of Pittsburgh, 1959.

Wyndham D. Miles. "Books on Chemistry Printed in the United States, 1755-1900." *Library Chronicle* 18 (1952): 51-62.

Roger W. Moss, Jr. *The Morgan Collection in the History of Chemistry: A Checklist*. Athens, OH: Ohio University Library, 1965.

John A. Nietz. *The Evolution of American Secondary Textbooks*. Rutland, VT: Charles E. Tuttle Co., 1966.

Moshe Ron. *Catalog of the Sidney M. Edelstein Collection*. Jerusalem, Israel: Jewish National and University Library, 1981.

Edgar F. Smith. *Chemistry in America*. New York: D. Appleton, 1914.

Edgar F. Smith. *Old Chemistries*. New York: McGraw-Hill Book Co., 1927.

William D. Williams. "John Penington's Chemical and Economic Essays." *Bulletin of the History of Chemistry* 8 (1990): 18-22.

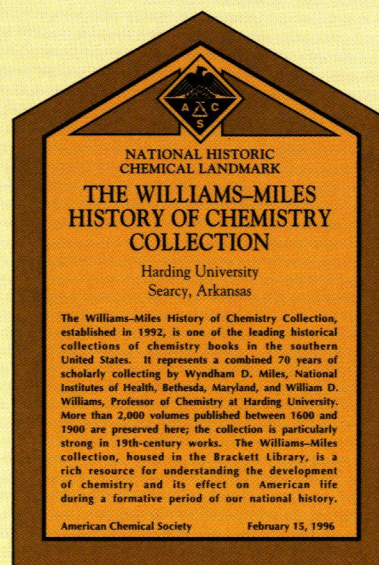
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## THE NATIONAL HISTORIC CHEMICAL LANDMARKS PROGRAM OF THE AMERICAN CHEMICAL SOCIETY

The ACS National Historic Chemical Landmarks Program recognizes our scientific and technical heritage and encourages the preservation of historically important achievements and artifacts in chemistry, chemical engineering, and the chemical process industries. It provides an annotated roster to remind chemists, chemical engineers, students, educators, historians, and travelers of an inspiring heritage that illuminates both where we have been and where we might go when traveling the diverse paths to discovery.

ACS Historic Chemical Landmarks represent or are closely linked to seminal achievements in the chemical sciences and technologies. A site designation marks the location of an artifact, event, or other development of clear historical importance to chemists and chemical engineers. An historic collection designation marks the contributions of a number of objects with special significance to the historical development of chemistry and chemical engineering.

This program began in 1992, when the Division of the History of Chemistry of the ACS formed an international Advisory Committee. The committee, composed of chemists, chemical engineers, and historians of science and technology, works with the ACS Office of Public Outreach and is assisted by the Chemical Heritage Foundation. Together, these organizations provide a public service by examining, noting, recording, and acknowledging particularly significant achievements in chemistry and chemical engineering. For further information, please contact the ACS Office of Public Outreach, 1155 Sixteenth Street, N.W., Washington, D.C. 20036, 800-ACS-5558, Press 954.



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