



Dibner Library NEWS

Spring 2000
Volume 1, Number 1

A NEWSLETTER FROM THE DIBNER LIBRARY OF THE HISTORY OF SCIENCE AND TECHNOLOGY

Inaugural Issue

This issue of *Dibner Library News* launches a new era at the Smithsonian Institution Libraries' Dibner Library of the History of Science and Technology. We embark on a new adventure and invite you, our readers and supporters, to join us on this journey. Each issue of *Dibner Library News* (or *DLN* for short) will give you the opportunity to learn more about the collections, meet the staff and researchers, find out about new acquisitions, and know all about the activities going on at the Library. We hope that you will enjoy this first issue and look forward to future numbers which will come out twice a year.

Smithsonian Institution Libraries Dibner Library Resident Scholar Program News

Through an increase in support from The Dibner Fund, the Dibner Library Resident Scholar Program has been enlarged. The notable changes are:

- ❖ The monthly stipend has increased to \$2,500
- ❖ The maximum period of residency is now six months
- ❖ There is a new deadline: March 1, 2001 for awards for research during the calendar year 2002

See the box at the right for more details on the program.

Be sure to visit the Dibner Library's website at
www.sil.si.edu/Branches/dibner.htm

Resident Scholar Program 2002

The Smithsonian Institution Libraries Dibner Library Resident Scholar Program awards stipends of \$2,500 per month for up to six months to individuals working on a topic related to collections in the Dibner Library of the History of Science and Technology. Historians, librarians, and pre-doctoral students and postdoctoral scholars interested in the history of science and technology are invited to apply for the calendar year 2002. The deadline for applications is March 1, 2001.

Successful applicants for the Dibner Library Resident Scholar Program must make substantial use of the materials housed in the Dibner Library of the History of Science and Technology. Scholars are expected to be in residence at the Smithsonian Institution in Washington, DC, full-time during their award tenures. Support for the Dibner Library Resident Scholar Program comes from The Dibner Fund.

Three Ways to Obtain an Application Form

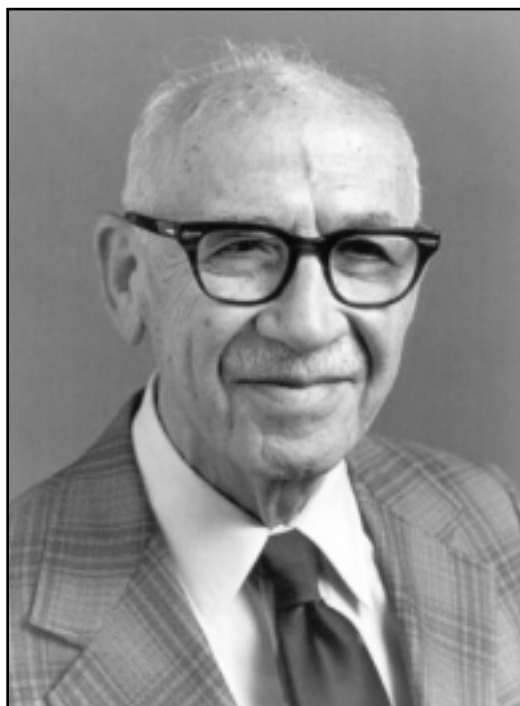
- ❖ **Download** the form from the Libraries' web site (www.sil.si.edu; click "About SI Libraries," then "Research Grants...")
- ❖ **Email** libmail@sil.si.edu to request the form
- ❖ **Mail** a request for the form to:
Smithsonian Institution Libraries
Dibner Library Resident Scholar Program
NMAH 5016
Washington, DC 20560-0630



Smithsonian Institution Libraries

Origins of the Dibner Library

In 1976, the Dibner Library of the History of Science and Technology was established with a gift from the Burndy Library of Norwalk, Connecticut (created by Bern Dibner). The gift provided the Smithsonian Institution Libraries with its first rare book library, located in the National Museum of American History. Bern Dibner made this gift to the people of the United States at the time of the nation's bicentennial as a return for the many gifts he felt the country had bestowed upon him. An immigrant to the United States as a young child, Bern Dibner became a successful businessman and developed an interest in the history of science and technology. He was able to amass a collection of rare books that reflected this interest. He called the gems of his collection the heralds of science, that is, the seminal books in the field. In 1955 he published the *Heralds of Science*, in which he annotated a bibliography of two hundred of these books. The Dibner Library's collection currently consists of 20,000 rare books and 2,000 manuscript groups. Strengths of the Dibner Library collection are in the fields of mathematics, astronomy, classical natural philosophy, theoretical physics (up to the early twentieth century), experimental physics (especially electricity and magnetism), engineering technology (from the Renaissance to the late nineteenth century), and scientific apparatus and instruments. The rare books date from the fifteenth to the twentieth centuries and include numerous works by Aristotle, Euclid, Galileo, Kepler, Newton, Descartes, Euler, Gauss, Galvani, Oersted, and Laplace.



Bern Dibner (1897–1988)

SIL Dibner Library Resident Scholars for 2000

It is our pleasure to announce that Dean Herrin and Victoria Erhart have been selected as the SIL Dibner Library Resident Scholars in 2000.

Dean Herrin, Ph.D., is a historian with the National Park Service. In this capacity, he develops and supervises projects nation-wide that document historically significant engineering and industrial sites. In his application he proposed work on "Montgomery C. Meigs: The Eclectic Engineer." Dr. Herrin is interested in determining the origins of and the influences on the engineering work of Montgomery C. Meigs. Meigs was a nineteenth-century American engineer, architect, soldier, amateur scientist, and artist. He is perhaps best known in American history for his work as a quartermaster during the Civil War. He is also known for his work on several significant engineering projects in Washington: the extensions of the Capitol building and the new dome, the General Post Office extension, the Pension Building, and the Washington Aqueduct system, which included the Cabin John Bridge, the longest masonry-arch bridge in the world until 1903, and the Rock Creek bridge, only the second iron-arch bridge built in the U.S.

Victoria Erhart is a candidate for a Ph.D. from The Catholic University of America. Ms. Erhart proposes to discern and investigate the tension between science and religion in the thought and writings of Isaac Newton. The project is part of a larger plan to investigate the tension of science and religion in both the pre-modern and modern scientific era. Ms. Erhart's project will have two components. First, she will translate Newton's work on Athanasius of Alexandria, including the extensive Latin references to other patristic writers and texts. This will also entail an examination of Newton's understanding of Athanasius's writings with texts by Athanasius himself. The second part will be a study of those scientific works and experiments mentioned by Newton in the Athanasius text in order to reconstruct the process whereby Newton came to the conclusion that the emerging science of mechanics could not be reconciled with the prevailing notion of Trinitarian orthodoxy.

Spotlighting the Dibner Library's Collections

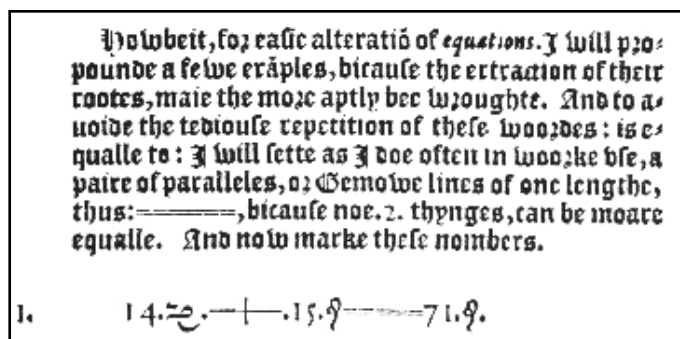
History of Mathematics. Part I

Mathematics rare books make up a significant fraction of the Dibner Library's holdings and are very important in understanding the history of science. Galileo said it best in his *Il saggiatore* of 1623: "Philosophy is written in this grand book, the universe, which stands continually open to our gaze. But the book cannot be understood unless one first learns to comprehend the language and read the letters in which it is composed. It is written in the language of mathematics, and its characters are triangles, circles, and other geometric figures without which it is humanly impossible to understand a single word of it; without these one wanders about in a dark labyrinth."

The Dibner Library currently has over 600 books in the language of mathematics ranging from the 15th to the 19th centuries. A highlight of this collection is one of the first mathematics books ever printed, the Latin edition of Euclid's *Elements* printed by Erhard Ratdolt in Venice in 1482. Not only is it the first math book of significant length to be illustrated by diagrams, it is a beautiful example of the printer's art and set a standard for generations to come. The Library also has several other pre-1601 editions of the *Elements*, including the 1491, 1509, 1537, 1544, 1551, 1572 Latin editions, the first Greek edition of 1533, the Italian edition of 1543, the English edition of 1570, and the first Arabic edition of 1594. The most unusual modern edition in the collection is Oliver Byrne's 1847 edition of the first six books using 4-color diagrams to demonstrate Euclid's theorems and propositions in an entirely new way. Among other early math books are such 15th-century titles as Luca Pacioli's *Summa de arithmetica geometria proportioni et proportionalita* (1494), Jordanus's *Arithmetica* (1496), and Thomas Bradwardine's *Geometria speculativa* (1495).

Besides Euclid, there are other ancient Greek mathematicians who are well represented in the Library's collections. Diophantus of Alexandria's *Arithmeticonum libri sex* (1670) sets out hundreds of arithmetic problems with their solutions. The text is in Latin and Greek and contains a printed commentary by Pierre de Fermat. Apollonius of Perga's classic work, *Conicorum*, is present in editions of 1566, 1661 (with a reconstruction of books 5-7), and 1710 (in Latin & Greek, with Halley's restoration of the lost book 8). The works of Archimedes are represented by the 1543, 1544 (in Latin and Greek), 1558, 1675, and 1807 (French) editions of his "complete" works, along with a number of separate works.

The development of mathematics in the 16th century is well documented in the Dibner Library. The great classics in the collection include Tartaglia's *Nova scientia* (1537), *Quesiti et inventioni diverse* (1546), and *La prima-[sesta] parte del general trattato di numeri et misure* (1551-1560); Cardano's *Artis magna, sive, De regulis algebraicis* (1545), which has the solution for cubic equations taken from Tartaglia, and *Opus novum de proportionibus numerorum* (1570); Record's *The castle of knowledge* (1556) and *The whetstone of witte* (1557), which contains the first use of the "=" sign for equality (see the figure below); and Viete's *Canon mathematicus, seu ad triangula* (1589). Other noteworthy titles are Johannes Werner's *Elementis conicis* (1522), spearheading a revival in the interest of conics, Maurolico's *Opuscula mathematica* (1575), which helped revive interest in Greek mathematics, and Dürer's *Institutionum geometricarum* (1535).



R. Record, *The Whetstone of Witte* (1557)

The beginnings of modern mathematics are apparent in the works of the 17th century in the Dibner Library collection. Of particular note are the works of John Napier, *Mirifici logarithmorum canonis descriptio* (1614) in which he announces his development of logarithms, and *Rabdologie* (1617), in which he describes a calculating machine using ten rods ("Napier's bones"). The early use of "indivisibles" can be found in Kepler's *Nova stereometria doliorum vinariorum* (1615) and Cavalieri's *Geometria indivisibilibus* (1653, second edition). A key mathematical development in the 1600s was the advent of analytic geometry, presented to good effect by Descartes in *La geometrie*, published as an appendix to his *Discours de la methode* (1637). The Library also has later editions of this work, including the separate edition of 1664 and the expanded *Geometria* of 1659. The other great mathematician of the 17th century was Pierre de Fermat, who unfortunately published little during his lifetime and none under his own name. Fortunately, a collection of his works, *Varia opera mathematica*, was compiled shortly after his death in 1679, and this work is in the Library's collection.

Ronald Brashear

This article will continue in the next issue of DLN.

Meet the Staff of the Dibner Library

Ronald Brashear is the Curator of Science and Technology Rare Books in the Dibner Library. As curator of the Dibner Library's collections, he has two main responsibilities: collection development and reader/reference services. In the former capacity, Ron recommends rare books for purchase and works in a number of ways to enhance the research value of the Library's holdings. For example, he prepares the introductory essays and bibliographic information for the Library's digital editions on the SIL web site. In providing reader services, he works closely with Smithsonian staff as well as with visiting scholars to make sure that they get the most out of their limited time at the Library and provides pertinent information to callers and correspondents.

Ron came to the Libraries in June 1998 from the Huntington Library in San Marino, California, where he was Curator of History of Science, Technology, and Medicine for ten years. He also served as Institutional Archivist.

Ron received his B.A. and M.S. from the University of Louisville and spent four years at Johns Hopkins University studying for his Ph.D. in the history of science. His research

interest in the history of astronomy recently resulted in encyclopedia entries for *History of Astronomy* (1997), *Instruments of Science* (1998), and *American National Biography* (1999). He is currently co-curator for an exhibition, "From This World to Others: One Thousand Years of the Art and Science of Astronomy," opening in November 2000 at the Huntington Library.



Ronald Brashear

Dibner Library News is published twice yearly by the Special Collections Department of the Smithsonian Institution Libraries. If you would like to be included on the mailing list for the *DLN*, please send a note to:

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