

The LuEsther T. Mertz Library: The evolution of a modern, digitally integrated botanical library

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Abstract. To celebrate The New York Botanical Garden's and the Mertz Library's 125th anniversary, this article outlines some of the Library's newest initiatives as well as summarizes ongoing programming since the Garden's 2001–2007: *Plan for a New Era* and the 2009–2015 *New Strategic Plan: Into the 21st Century*.

Key Words: Biodiversity Heritage Library (BHL), botanical library, botanical research, humanities scholarship, library conservation, library digitization, library exhibitions.

Behind the façade of the New York Botanical Garden's stately 19th century Beaux Arts Library building is a modern 21st century library whose lasting mission has been to connect people to knowledge, by supporting research, discovery, and scholarship for 125 years. Since the founding of the Library, its collections have grown through the negotiation of hundreds of publication exchange agreements with other research institutions, the adoption of botanical literature from important academic and research libraries and private collections, large-scale purchases and a focused collecting policy. Today, the Library continues to build its print, multimedia, and networked information resources at a robust rate, including the digitization of its own collections, and it has developed strategic alliances that allow us to grow and share our resources worldwide.

The LuEsther T. Mertz Library

One of the Garden's most valuable and enduring assets, the Library was named for LuEsther T. Mertz in 2000 when the Library building was renovated and the adjacent International Plant Science Center (IPSC) was completed. LuEsther was born in Ohio in 1906, and developed a passion for education and literature. She trained as a librarian at Syracuse University and in 1953, along with her husband, Harold Mertz, and their daughter Joyce, founded Publishers Clearing House. In the 1980s, Mrs. Mertz became involved in programs in horticulture and science at The

New York Botanical Garden and she contributed greatly to the institution's revitalization. The LuEsther T. Mertz Library is named in recognition of her enduring commitment to the Garden, her dedicated support of the Garden's science programs, and her lifelong love of literature.

When the restoration of the Library building was completed, the collections were relocated from the library stack areas in the Pratt Building to expanded storage in the IPSC with adjacent public spaces in the newly renovated 6th floor of the Library building. An expansive light-filled information center, the Leon Levy Reading Room, a well-appointed Rare Book and Folio room with advanced environmental monitoring systems for the storage of rare books and manuscripts, and a state-of-the-art modern art gallery were built. Then Library Director John Reed planned and orchestrated the relocation with minimal disruption of services and the Library public services department transferred operations to its new quarters in April 2002. Seeing the project to completion, John Reed retired at the end of that year and Susan Fraser was appointed Director of the Library shortly thereafter.

Outreach

THE ART GALLERY

Beginning in 2002, the Library began presenting a rotating series of thematic exhibitions that highlight the remarkable depth and scope of its rare and unique treasures. This was made possible by

the construction of the 950 square foot Rondina and LoFaro Art Gallery, a specially designed space dedicated to exhibitions. The exhibition program has now developed into a multi-venue experience throughout the Garden that explores a boundless wealth of subjects relevant to the relationship of plants and people. Compelling exhibits such as *Darwin's Garden: An Evolutionary Adventure*, *Emily Dickinson's Garden: The Poetry of Flowers*, and *Frida Kahlo: Art, Garden, Life* have provided visitors with a rich educational and cultural experience.

PUBLICATIONS

A series of illustrated catalogs produced by the Library accompanied the gallery exhibitions. The Library has also produced several award-winning publications. *Architectural Photo Reproductions: A Manual for Identification and Care of Collections*, by Eleonore Kissel and Erin Vigneau (1999), was given the 2000 Preservation Publication Award by the Society of American Archivists, which recognizes outstanding published work advancing the theory and practice of preservation in archives. This important reference work used the Lord and Burnham Collection of architectural plans held in the Garden's archive as the study collection and was the result of the continuous effort of the Mertz Library to preserve its collection as well as to train and educate archivists and conservators. *Flora Illustrata*, edited by Susan Fraser and Vanessa Sellers (2014), explores the extraordinary history of botany and its connections to the worlds of science, art and culture while highlighting many great works in the Mertz Library. The book garnered the prestigious Annual Literature Award by the Council of Botanical and Horticultural Libraries as well as the 2015 Annual Book Award by the American Horticultural Society.

HUMANITIES INSTITUTE

In 2014, the Humanities Institute was created with funding from the Andrew W. Mellon Foundation as a new research division within the Mertz Library. This program promotes awareness of the Library as an innovative study center for both the sciences and humanities and helped formalize the Garden's academic role among institutes and museums worldwide. The program has

attracted emerging and established scholars from around the world to further their own research, especially in areas relating to environmental humanities, which connect the built and natural landscape to human experience. As a result the Library has become engaged in new areas of study and discourse including urban planning and greenspace design, environmental ethics and ecocriticism. Visiting scholars benefit from the expertise of The New York Botanical Garden's own scientists, who have firsthand experience studying the impacts of these issues on every level of plant life from genomes to ecosystems.

The Humanities Institute's symposia and colloquia count participants from a wide variety of backgrounds and areas of educational interest. The Institute's Mellon Fellows have the opportunity to explore all areas of the Garden—Library, Herbarium, Laboratories, and Living Collections—to forward interdisciplinary solutions for the built environment.

We understand that the answers to complex issues facing the environment lie at the intersection of several disciplines which the Library is well poised to address, humanistic and social science questions as much as scientific ones. The Humanities Institute demonstrates the potential to advance humanities scholarship considerably (<http://www.nybg.org/education/mertz-library/humanities/>).

DIGITIZATION

Strategic Planning introduced the implementation of our mass digitization projects and the modernization of the Library's electronic infrastructure. Our participation in major digitization initiatives such as the Latin American Plants Initiative and later the Global Plants Initiative funded by the Andrew W. Mellon Foundation and hosted in the JSTOR portal have placed us as a leader in biodiversity literature digitization. A founding member of the Biodiversity Heritage Library (BHL) (<http://www.biodiversitylibrary.org>) the Mertz Library has successfully digitized millions of pages of taxonomic literature hosted in an open access environment making this information freely available to researchers around the world. This ground breaking and award-winning enterprise has revolutionized the support of scientific research in natural history and has garnered

praise from researchers and others outside the field of biology.

PUBLIC SERVICES

Staff in the Information Services department are dedicated to assisting researchers and visitors. Both reference and plant information staff research and respond to over 5000 questions annually, ranging from inquiries about caring for houseplants, to problems related to botanical nomenclature, or botanical bibliography.

As user needs and requests have evolved with technology, so too has the way in which the Library provides services and answers. Through the use of content management software known as LibGuides, staff have created hundreds of online guides that are accessed by visitors from all over the world. Notable guides include those made for home gardeners that answer frequently asked questions. Other guides are made to support a current event or new initiatives such as the guide to the Invasive Species Summit of 2015, created in collaboration with the Garden's Science division (<http://libguides.nybg.org/portalpage>).

Over the past 15 years, the Library has embraced the technologies necessary to serve a large and diverse population, both in person and online, offering access to hundreds of searchable databases and electronic journal titles. Through services such as the Mertz Digital Library, users visiting the Library's online resources can freely access digital surrogates of content from the Library's physical collections. With grant funding, the Library has supported the conversion of the Index of American Botanical Literature from a paper index to the digital version (<http://library.nybg.org/IndexToAmericanBotanicalLiterature.php>) and has digitized literature, artwork and original correspondence and other archival documents that are linked to specimen records in the C.V. Starr Virtual Herbarium, thereby facilitating scientific research. Additionally, the Library maintains a robust interlibrary loan program, sharing items from its highly specialized holdings with scholars at institutions worldwide.

The Collections

The collections continue to expand and include new subjects, shifting the scope of collecting to keep up with changes in the foci of research. The

development of tools to analyze DNA relatively quickly has created new methods for the study of botany and systematics in relation to evolutionary synthesis. The study of non-European, indigenous knowledge of plant use and lore and cross disciplinary research from outside traditional botany and horticulture has opened new areas of study that include traditional humanities fields of Art, Architecture, Design and History.

Today the Research Collection has grown to over 550,000 volumes including nearly 12,000 serial titles. In 2015 the Rare Book Collection, formerly defined as the Pre-Linnaean Collection (pre-1753) was expanded to include volumes published before 1850 and the Rare Book Collection now holds 16,000 volumes. The Folio Collection of more than 4000 volumes has exceptional holdings of 18th and 19th century books featuring fine botanical plates from paintings and drawings by renowned artists. These collections represent more than 75% of the world's literature on systemic botany and approximately 80% of the world's published floras.¹

Gifts constitute a major source of acquisitions and the library has over the last 15 years accessioned materials from the libraries of former staff members Clark Rogerson, Bassett Maguire, and Rupert Barneby as well as significant gifts from individuals such as botanist Rudolf Schmid (UC Berkeley) and botanical librarian and historian William Burk (UNC Chapel Hill) and bequests from the estates of Enid A. Haupt, Henry Clay Frick II, Louise Mastrantonio (USDA) and Norton Miller (New York State Museum). Major gifts by bibliophiles like Elizabeth Kals Reilley, whose collection of over 400 rare books and engravings relating to the development of European garden design provided the Library with a comprehensive collection of publications relating to landscape design from the 16th to the

¹ These are conservative estimates based on comparing our library catalog entries against titles listed, for systematics, in Stafleu and Cowen, *Taxonomic Literature*, 2nd edition, (1976) and for floras in Frodin, *Guide to Standard Floras of the World*, 2nd edition, (2001). Stafleu and Cowan's *Taxonomic Literature* is a selected list of publications up to 1940. Of course publications in systematics continued to be produced after 1940 and the library continues to collect these. Frodin's *Standard Floras* does not include comprehensive coverage of local or regional floras, many of which are included in the library collections, and all entries in Frodin stop with works published to 1999.

19th century, and Board members Lynda and William C. Steere Jr., and Dr. David L. Andrews continue to add valuable legacy materials to the collection. The David Andrews gift is rich in botanical and horticultural Americana and as a result the Mertz Library now holds the most extensive collection of André and François André Michaux material on record² (Fig. 1).

The continued growth of the library is not a simple task of adding more. These collections must be managed with consideration to physical and digital space, financial allocation, fidelity to the mission of the Garden, long-term preservation needs, concentration on staff research areas and methods, and to retain the focus on core subjects. While the total number of volumes acquired each year may fluctuate, and numbers in subject areas vary, growth in the core areas of botany, plant monographs and floras remains about 45% annually.

The library continues to collect printed materials yet the acquisition of and access to published materials in digital form has increased dramatically. Between 2011 and 2015 the number of resources provided through the Mertz Library's electronic resource management system increased 360% for journals and 108% for databases. Most of this content is open access, made available for use without fees by the providers. Long term access and preservation of these digital resources is a primary concern for the Library. The creation of an institutional Trusted Digital Repository remains a strategic goal of the Library.

The Mertz Library's outstanding collections represent 125 years of commitment to botanical and environmental research. The collections continue to grow through the purchase or publication exchange of new books, journals, and a wide range of digital media and through thoughtful collecting strategies that support research and study in areas of systematics, floristics, genomics, economic botany, horticulture, and garden design.

Collection management and curation

In the last 15 years, scientists, as well as other library users, have dramatically changed the way they gather information and share their ideas and research. The escalating shift toward digital media, created within a completely new infrastructure, has necessitated the creation of a virtual library with challenges and demands paralleling the physical library: storage, access, preservation and curation. These new demands have transformed how the Library functions. In order to effectively maintain the Library's electronic resources and supply information in digital forms the roles of the librarians have also been transformed. They have become managers of information in an ever-evolving digital environment.

The Cataloging department provides bibliographic control and intellectual access for the collections. This work is essential for enabling users to find information about items in the collection that would otherwise be hidden, revealing hidden treasures unique to the Mertz Library. The Library holds works in over 86 languages dating from the 11th century to the present and more than 550,000 volumes are documented in the online catalog. The Cataloging department staff have recently cataloged the extensive 58,000 item Nursery and Seed Catalog collection as well as a collection of 630 educational Posters and Charts, and the 80 volume collection of bound *Exsiccatae*, and are currently describing and cataloging the 980 volume collection of Plant Collector's Field Notebooks, making excellent progress towards the goal of cataloging all unprocessed collections (Fig. 2).

With over 11 million documents of unpublished manuscripts, correspondence, field notebooks, photographs, architectural plans, maps, illustrations, and artifacts, all pertinent to the history and mission of The New York Botanical Garden, the archival collections continue to grow. Responsible stewardship of these collections ensures the Garden's legacy of scientific and historic research. With generous funding from the National Endowment for the Humanities (NEH), more than 139 collections of original source materials on the history of botany and horticulture, botanical exploration and horticultural education were inventoried and processed with descriptive finding guides published on the Garden's website.

² In the standard bibliography of the publications of André and François André Michaux, Ian MacPhail (1981) provides bibliographic descriptions of all monographic work the Michaux's, printed before the end of the 19th century. The work describes 25 titles with an additional 14 variant editions for a total of 39 entries. The Mertz Library holds 26 of those titles, more than any other library searched by using OCLC WorldCat.



FIG. 1. Laurel Oak, a color stipple engraving from *The North American Sylva* by François André Michaux (1770). This work is from one of the first volumes digitized in 2000 by the Mertz Library.

Today, the Archives face the ongoing challenge of preserving the information in a variety of digital

formats, with unverified “shelf life.” To address this problem, the Library has received additional



FIG. 2. Specimen sheet from recently cataloged unpublished work *Catalogus plantarum flore, polypetalu regulari*, compiled between 1660 and 1753 and held in the Library's Bound Exsiccated Specimens Collection. Photograph by Andrew Tschinkel.

funding from the NEH to develop Preservation Plans for both the analog and digital collections.

CONSERVATION AND PRESERVATION

Because of the scientific, historical, horticultural and architectural significance of its renowned collections, the Library maintains an active conservation program to preserve the Garden's investment in one of the most complete, extensive and valuable botanical and horticultural collections in the world. In 2003 the Mertz Library won the prestigious Award for Outstanding Commitment to the Preservation and Care of Collections by the American Institute for Conservation of Historic and Artistic Works (AIC) and Heritage Preservation.

The Conservation and Preservation Program adheres to a long-term preservation strategy, an evolving process attuned to and created in conjunction with the institution's strategic planning process. It consists of a general framework of professional guidelines established in the Conservation field, and includes provisions pertaining to both the published literature and unpublished, non-book or "special" materials held in its collections. The preservation activities that are the highest priority are those that benefit, in the short- and long-term, the greatest number of items in the Collection, such as the improvement of climate control in storage areas and rehousing collections. Successful and continuous funding from the New York State Discretionary Grant program resulted in the stabilization or restoration of hundreds of volumes in the collection. Project specific funding from the Institute of Museum and Library Services and the Kress Foundation provided museum-quality standard storage and environmental conditions. Long-term curation and preservation strategies allow the Library to expand access to and discovery of valuable research collections, and further enhance the Garden's scholarly reputation.

Collaborations

Strategic alliances and collegial arrangements such as those with the Council of Botanical and Horticultural Libraries (CBHL) and its European counterpart EBHL provide an essential network of librarians who serve as team members supporting the care and management of, and access to, the world's store of botanical and

horticultural knowledge. Our membership in the Biodiversity Heritage Library (BHL) has positioned us as a leader in digitization, integrating our collections into a network of digital initiatives and opening them to the world of online users. A recently awarded National Leadership Grant from the Institute of Museum and Library Service (IMLS) to Expand Access to Biodiversity Literature will allow us to share our expertise with smaller organizations that do not have the resources to get their content into a national digital platform.

Vision for the future

One enters the library beneath the building's iconic glass and cast-iron dome from which is suspended a globe-like light fixture displaying the signs of the zodiac—a commonly occurring theme in 19th century Beaux Arts libraries meant to symbolize universal knowledge and enlightenment (Fig. 3). Today the Mertz Library is highly regarded for its comprehensive offerings in all major disciplines relating to the plant world. We are integrated into a global network of information providers and services, creating an infrastructure that breaks barriers to knowledge and understanding, serving diverse users worldwide. The Library will continue to create an environment fostering academic achievement by engaging researchers and motivating them to share ideas. We will increase our contributions to a universe of information and services based in digital technologies, providing services and programs responsive to scholarship and informed thinking as we move further into the 21st century.

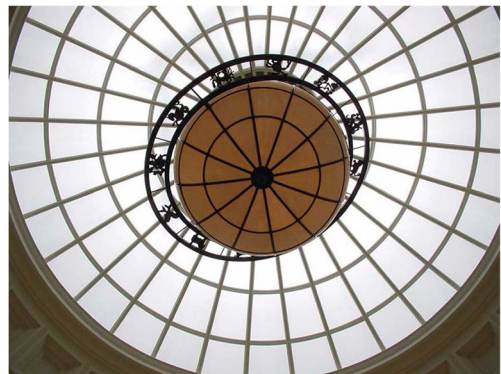


FIG. 3. Chandelier in the rotunda entry way to the Mertz Library. The signs of the zodiac around the circumference of the globe symbolize all the knowledge in the universe. © Robert Benson Photography.

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