



LIBRARY OF CONGRESS MAGAZINE
JANUARY/FEBRUARY 2015

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The Legacy of Alan Lomax

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THE SCIENCE OF PRESERVATION



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An artist performs restoration work on Elihu Vedder's mosaic depiction of Minerva that adorns the Great Hall of the Library's Thomas Jefferson Building. *Carol Highsmith*



LIBRARY OF CONGRESS MAGAZINE

Library of Congress Magazine
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The mission of the Library is to support the Congress in fulfilling its constitutional duties and to further the progress of knowledge and creativity for the benefit of the American people.

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ON THE COVER: This photo illustration shows preservation scientists at work in the Preservation Research and Testing Laboratories in the Library's James Madison Building. Photo Illustration | *Ashley Jones*, Photos | *Amanda Reynolds*

Correction: In the November-December 2014 issue, we incorrectly reported that insurance to exhibit Magna Carta was procured through a private firm. In fact, the Library partnered with the Sterling and Francine Clark Art Institute to obtain full indemnity from the U.S. Government's Arts and Artifacts Indemnity Program, administered by the National Endowment for the Arts.

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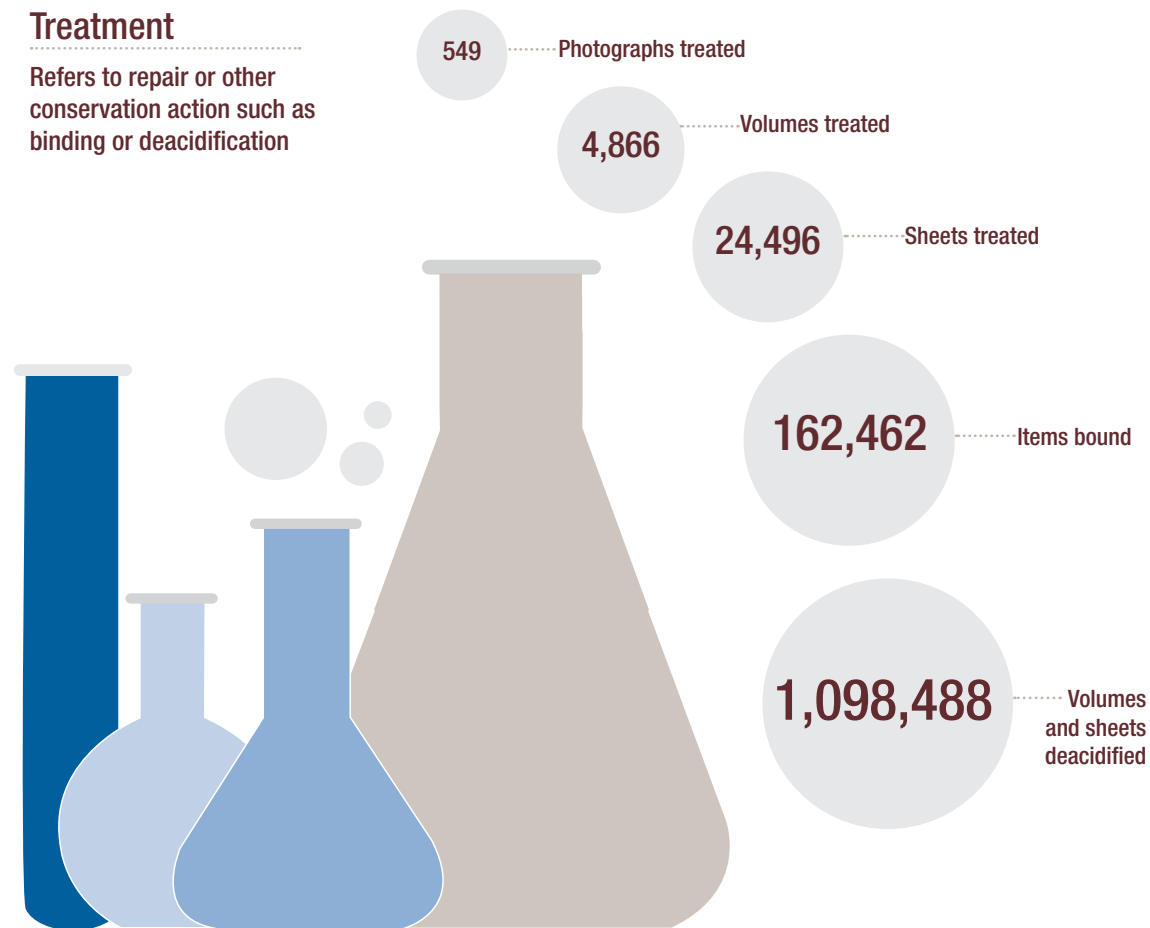
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PRESERVATION TREATMENT BY THE NUMBERS

EACH YEAR, MILLIONS OF ITEMS FROM THE LIBRARY'S COLLECTIONS RECEIVE PRESERVATION TREATMENT.

Treatment

Refers to repair or other conservation action such as binding or deacidification

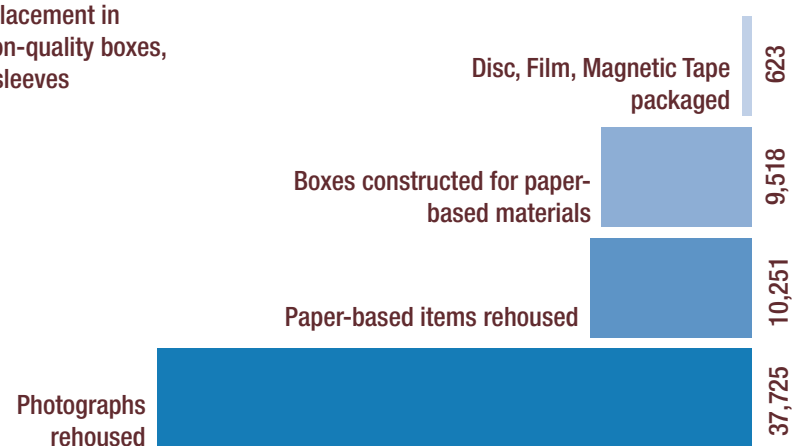


5,686,649

Sheets microfilmed or otherwise reformatted, including 34,462 audio and visual materials

Housing/Rehousing

Refers to placement in preservation-quality boxes, folders or sleeves



RETURN TO DOWNTON ABBEY

RESIDENTS OF THE REAL DOWNTON ABBEY WERE AS COLORFUL AS THEIR TELEVISION COUNTERPARTS.

The wait is over. After nearly a year, the fifth season of the enormously popular British period drama, “Downton Abbey,” is set to begin airing in the U.S. in January. Set in a Yorkshire country estate during the reign of King George V, “Downton Abbey” is the most-watched television series in PBS history and has earned the most nominations of any international television series in the history of the Primetime Emmy Awards.

The series that opened with the sinking of the Titanic in 1912 and continued through the first World War and its aftermath returns this winter with a look at British society—upstairs and downstairs—in the early 1920s. The lives of the aristocratic Crawley family—headed by the Earl and Countess of Grantham—and their servants are the fodder for high drama and intrigue. However, the lives of the real-life inhabitants of the country estate—Highclere Castle in West Berkshire, that serves as the setting for the series—were equally colorful.

Highclere Castle has been home to the Carnarvon family since 1679. The home, which sits atop the 1,000-acre property, was transformed to its current splendor in the mid-19th century. In 1838, the third Earl of Carnarvon hired Sir Charles Barry, the architect who designed the neo-Gothic Houses of Parliament in London, to head the renovation project.

The current residents are George Reginald Oliver Molyneux Herbert, 8th Earl of Carnarvon, and his wife Fiona. Lady Carnarvon is a historian who has written a biography of one of her predecessors, Almina, Countess of Carnarvon, wife of George Edward Stanhope Molyneux Herbert, 5th Earl of Carnarvon.

Like Lady Grantham, Almina was an heiress whose wealth helped sustain the family estate. The couple married in 1895. Almina Wombwell was the illegitimate daughter of millionaire banker Alfred de Rothschild, who acknowledged and supported his only child.



Her husband craved adventure. The couple traveled often to Egypt, where the Earl, an amateur archaeologist, undertook a number of significant excavations. Along with his colleague, Egyptologist Howard Carter, the 5th Earl of Carnarvon discovered the Tomb of the Egyptian boy pharaoh, Tutankhamun, in 1922. The archaeological findings from the tomb of King Tut were the subject of a 2014 lecture at the Library by Egyptian scholar Nevine H. Tolba that can be viewed online.

“Downton Abbey” is part of “Masterpiece,” produced by WGBH Boston. Launched in January 1971, “Masterpiece” is America’s longest-running weekly prime-time drama series. In collaboration with WGBH and the Corporation for Public Broadcasting, the Library of Congress recently established the American Archive of Public Broadcasting to preserve thousands of hours of public programming dating back to the 1950s.

—Audrey Fischer

MORE INFORMATION

The Golden Treasures of King Tut (video)
go.usa.gov/GBJ4

▲ “Downton Abbey” is filmed at Highclere Castle in West Berkshire, England. Ianan via Flickr Creative Commons

▲ Left: George Herbert, 5th Earl of Carnarvon, 1923 | New York World-Telegram and the Sun Newspaper Photograph Collection, Prints and Photographs Division

▲ Right: Egyptologist Howard Carter works on preserving the coffin containing King Tutankhamun, 1926. Wide World, Prints and Photographs Division

SCHOLARS' COLUMN

A NEW LIBRARY BLOG HIGHLIGHTS RESEARCH BY SCHOLARS IN THE JOHN W. KLUGE CENTER.

What were the results and cost of American military intervention in the 20th century? How might humanity prepare for the possibility of discovering microbial or complex life beyond Earth?

These are just a few of the questions being explored by scholars at the John W. Kluge Center at the Library of Congress.

Bringing the world's leading scholars to the Library of Congress to interact with its unparalleled collections was the impetus for creating the John W. Kluge Center in 2000. Endowed by philanthropist John W. Kluge, the center allows top scholars the time and resources to dig deep into the collections.

This opportunity has led to remarkable insights. A new Library blog, aptly dubbed "Insights," will share highlights of that scholarship with its readers.

Scholars' research topics have ranged from astrobiology's impact on society to the origins of realpolitik in American foreign policy; from the history of The Coca-Cola Co. to the intersection of politics and medicine in the history of mental-health treatment in Brazil. Approximately 600 scholars have been in residence at the Kluge Center since its inception. Their findings help illuminate truths about our world and the human condition.

The Kluge Center's location in the Library of Congress on Capitol Hill allows scholars to make their insights accessible to America's lawmakers. In the words of Librarian of Congress James H. Billington upon the occasion of the Kluge Center's founding, "The Library seeks to be catalytic rather than bureaucratic, to deepen rather than merely recycle the work of other fine institutions and individuals in the Washington area who also seek to bridge this gap between thinkers and doers."



▲ The John W. Kluge Center at the Library of Congress | Travis Hensley

The research born from use of the Library's collections often raises profound questions about the past, present and future, which will be the subject of many of the blog posts.

—Jason Steinbauer is a program specialist in the John W. Kluge Center in the Library of Congress.

► MORE INFORMATION

Insights

blogs.loc.gov/kluge/

John W. Kluge Center

loc.gov/loc/kluge/

for you AT THE LIBRARY

ONLINE EXHIBITIONS



LIBRARY OF CONGRESS EXHIBITIONS

reflect the universal and diverse nature of the Library's collections. They range from Thomas Jefferson's personal library to Herblock's cartoons, from the Dead Sea scrolls to Danny Kaye's scripts, and from world treasures to "The Wizard of Oz."

WHAT: Online exhibitions

WHO: Global users

WHEN: Year-round

COST: FREE

Once only open to those who were able to visit the nation's library in person, the Library's exhibitions, both current and past, are accessible online. More than 110 Library exhibits dating to 1992—many with interactive presentations—may be viewed on a desktop or laptop computer as well as a mobile device.

► [Library Exhibitions](http://LibraryExhibitions.loc.gov/exhibits/) loc.gov/exhibits/

JOHN MICHAEL KEELING DISCUSSES HIS WORK AS A COLLECTIONS CONSERVATION TECHNICIAN IN THE LIBRARY'S PRESERVATION DIRECTORATE.

How would you describe your work at the Library?

I work with a wonderful team in the Collections Care Section of the Binding and Collections Care Division. Together we provide conservation treatments for the General Collections, as well as make custom-fit boxes using state-of-the-art box-making machines. We also participate in Library-wide preservation activities, such as emergency response and recovery.

We repair damaged books dating back to the early 19th century, while balancing access and service needs with long-term preservation goals. This may mean mending and filling paper tears, or entirely re-sewing a text and making a new case for it, matching—as well as possible—the original (or what remains of the original) binding. We take care to retain as much of the original item as possible, from bookplates to spines to beautiful marbled end-sheets.

How did you prepare for your current position?

On a high school trip to the Metropolitan Museum in New York, I fell backwards through an unlocked door into their conservation lab. Suddenly I was surrounded by all these great paintings, out of their frames, on tables with conservators actually working on them. The knowledge and skills it takes to do that kind of work is so cross-disciplined—art and science—and I found it fascinating.

I first came to work in the Preservation Directorate in 2001 after earning a bachelor's degree in the Writing Seminars from Johns Hopkins University and subsequently completing the pre-med requirements. Knowledge of organic chemistry has been useful in my preservation work, as is my proclivity for painting, drawing and other arts requiring hand skills. I left the Library in 2002 when I was accepted into New York University's Creative Writing Program. Then I spent nearly a decade trying to get my job at the Library back. After working at several different libraries and magazines, I finally returned to the Preservation Directorate's Collections Care Section in 2010 and have been fortunate to have received additional training on the job.



Amanda Reynolds

What are the biggest challenges?

We fix things. Many items come to the Library worn or damaged in some form or another, and often uniquely so. In addition, items that are physically damaged often have bibliographic errors. We work with our great colleagues in the custodial divisions and the Acquisitions and Bibliographic Access Directorate to resolve record-related issues. In the end, quite a large number of items in the Library's collection have been properly identified and given the love and attention they need.

What are some of the most memorable items you worked to repair?

Large-format prints of Aztec hieroglyphs; a collection of children's books with "radioactive" glow-in-the-dark illustrations and special presentation boxes for items given to Library guests are just a few memorable items we have conserved. But I think it is when we can retain—and sometimes re-create—really beautiful bindings and return them to the shelves that the work is most memorable. Hand-marbled papers (example pictured at right) in many of the Library's volumes are so pretty you could weep.

And then there are the smells! We dissolve a lot of old animal-based adhesives. If you enter our lab at the right time it has that rankness of a spring thaw, when all the death frozen by winter is released. That's both memorable and challenging.

of cruelty & perfidy unworthy the head of a civilized nation: he has endeavored to bring on the inhabitants of our frontiers the merciless Indian savages, whose known rule of warfare is an undistinguished destruction of all ages, sexes, & conditions [of existence]. He has incited treasonable insurrections of our fellow-citizens, with the allurements of forfeiture & confiscation of our property. he has waged cruel war against human nature itself, violating it's most sacred

our fellow-citizens

our fellow-citizens,

our fellow-citizens,

our fellow-citizens,

our fellow-subjects,

our fellow-subjects,



▲ This 1876 engraving depicts the signing of the Declaration of Independence. Painted by J. Trumbull, Engraved by W.L. Ormsby, N.Y., Prints and Photographs Division

AN IMPORTANT REVISION

The Library's use of hyperspectral imaging in recent years has provided new insight into Thomas Jefferson's thinking when he was penning the rough draft of the Declaration of Independence.

Applying the latest imaging technology to one of the Library's top treasures, scientists in the Preservation Research and Testing Division confirmed past speculation that Jefferson made an interesting word correction during his writing of the document. Jefferson originally had written the phrase "our fellow subjects." But he apparently changed his mind. Heavily scrawled over the word "subjects" was an alternative, the word "citizens."

Hyperspectral imaging is the process of taking digital photos of an object using distinct portions of the visible and non-visible light spectrum, revealing what previously could not be seen by the human eye.

"It had been a spine-tingling moment when I was processing data late at night and realized there was a word underneath citizens," said research scientist Fenella France, who made the discovery. "Then I began the tough process of extracting the differences between spectrally similar materials to elucidate the lost text."

The correction seems to illuminate an important moment for Jefferson and for a nation on the eve of breaking from monarchy: a moment when he reconsidered his choice of words and articulated the recognition that the people of the fledgling United States of America were no longer subjects of any nation, but citizens of an emerging democracy.

▶ MORE INFORMATION

Creating the United States exhibition
loc.gov/exhibits/creating-the-united-states/

◀ A series of images of Thomas Jefferson's rough draft of the Declaration of Independence showing the word "citizens" analyzed under various wavelengths—with certain images enhanced by computer—make the underlying word "subjects" more apparent. Preservation Research and Testing Division



▲ Folklorist Alan Lomax at work at his manual typewriter, 1942

▶ Alan Lomax performs on guitar, 1940

ALAN LOMAX'S LEGACY

A CENTURY AFTER HIS BIRTH, FOLKLORIST ALAN LOMAX IS REMEMBERED FOR HIS PRESERVATION OF THE NATION'S CULTURAL HERITAGE.

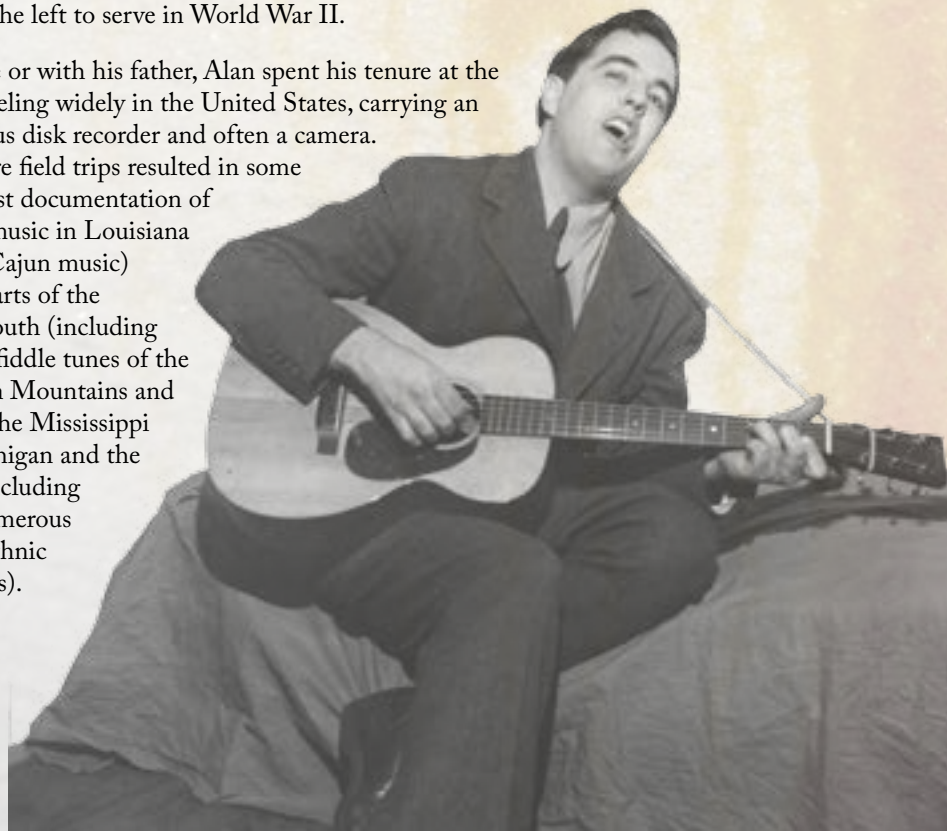
BY STEPHEN WINICK

Of all the pioneering folklorists and documentarians whose work can be found in the American Folklife Center (AFC) in the Library of Congress, none is as well-known as Alan Lomax (1915-2002), both for the quantity and quality of his collections and for his influence on American culture.

Lomax's career at the Library began in 1933, when his father, John A. Lomax, became a special consultant to the Library's Music Division, in charge of the Archive of American Folk Song. Alan took over most of the day-to-day running of the archive, and by 1937 had a position at the Library and the title "assistant-in-charge." He remained at the Library until 1942, when he left to serve in World War II.

Either alone or with his father, Alan spent his tenure at the Library traveling widely in the United States, carrying an instantaneous disk recorder and often a camera.

His signature field trips resulted in some of the earliest documentation of traditional music in Louisiana (including Cajun music) and other parts of the American south (including ballads and fiddle tunes of the Appalachian Mountains and blues from the Mississippi Delta), Michigan and the Midwest (including music of numerous European ethnic communities).



With important collaborators, including his father, his wife Elizabeth, Pete Seeger and colleagues from other institutions (such as Fisk University's John Wesley Work III), Alan was the first to record Huddie "Lead Belly" Ledbetter, McKinley "Muddy Waters" Morganfield, David "Honeyboy" Edwards, Aunt Molly Jackson and an enormous number of other significant traditional musicians. He also recorded many musicians at the Library, including a landmark series of 1938 recordings of Jelly Roll Morton, which yielded nine hours of music and speech. In 2006, "Jelly Roll Morton: The Complete Library of Congress Recordings by Alan Lomax" (Rounder Records) won a Grammy Award for best historical album.

Lomax did not return to work at the Library after the war, but he did spend the rest of his life collecting and analyzing folk culture for a variety of organizations, including the BBC, PBS Television, Columbia and Atlantic Records, Hunter College in New York, and his own organization, The Association for Cultural Equity. During this time, many of the songs he collected on his Library of Congress field trips became iconic examples of American culture, from "Bonaparte's Retreat" (which became famous as the hoe-down section of Aaron Copland's "Rodeo") to "House of the Rising Sun," which was recorded by Bob Dylan, the Animals and a host of other musicians.

"Alan was one of those who unlocked the secrets of this kind of music," Dylan once said. "So if we've got anybody to thank, it's Alan."

Stephen Winick is a folklorist and writer-editor in the American Folklife Center.

► MORE INFORMATION

Alan Lomax Centennial
loc.gov/folklife/lomax/lomaxcentennial.html

THE LOMAX COLLECTION

In 2004, the American Folklife Center (AFC) in the Library of Congress acquired the Alan Lomax Collection, which comprises the unparalleled ethnographic documentation collected by the legendary folklorist over a period of more than 60 years.

The collection, which had been housed at Hunter College in New York City, includes more than 5,000 hours of sound recordings, 400,000 feet of motion-picture film, 2,450 videotapes, 2,000 scholarly books and journals, hundreds of photographic prints and negatives, several databases and more than 120 linear feet of manuscript materials.

The acquisition was made possible through an agreement between AFC and the Association for Cultural Equity (ACE) at New York City's Hunter College and the generosity of Lillian and Jon Lovelace, members of the Madison Council (the Library's private-sector advisory group). With this acquisition, the Alan Lomax Collection joined the material that he and his father, John, collected during the 1930s and 1940s for the Library's Archive of American Folk Song, thus bringing the entire collection together at the Library of Congress.

► MORE INFORMATION

Lomax Family Collections
loc.gov/folklife/lomax/

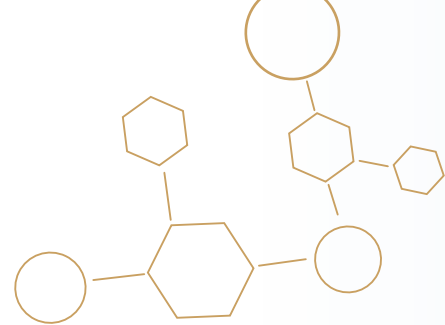
▶ Alan Lomax records the music and language of the people living in La Plaine, Dominica, in 1962. *Antoinette Marchand, Alan Lomax Collection, American Folklife Center*

FETING A FOLKLORIST

To mark the centennial birthday of the influential folklorist Alan Lomax, the Library's American Folklife Center is presenting a year-long series of projects, concerts and special events. The events will celebrate the Lomax family's contributions to the preservation and promotion of traditional music and dance, and highlight the depth and diversity of the Library's Lomax family collections.

Information about Lomax events at the Library and around the country can be found on the American Folklife Center's blog, "Folklife Today," and the Lomax centennial website.





THE SCIENCE OF PRESERVATION

SCIENTIFIC RESEARCH IN ITS LABORATORIES HELPS THE LIBRARY TO PRESERVE AND DISPLAY WORLD TREASURES.

BY JENNIFER GAVIN

Books with cracked leather bindings; crumbling, yellowed maps and newspapers; faded photos; delaminating audio tapes. Most of us have seen what time can do to the media of the moment, when that moment is years, decades or even centuries past.

Preventing such damage is a significant issue for the Library of Congress, which holds millions of books, maps, photos, illustrations and manuscripts in many formats—and preserves them for future use, even if they are also digitized. While many Library divisions have a hand in the maintenance, preservation or recordation of these original materials, the Preservation Directorate is at the heart of the effort. Its expert staff brings science to the task of preserving a given item by keeping it stable, and thereby available for future users; ensuring that the Library's handling doesn't hurt it; and finding out what secrets an object may hold.

THE MISSION: KEEP IT USABLE

The Preservation Directorate's mission is to assure long-term uninterrupted access to the intellectual

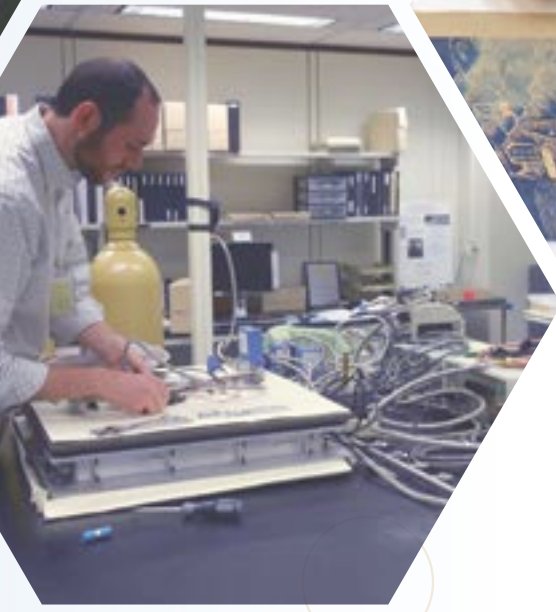
content of the Library's collections. Materials to be preserved range from parchment and paper to glass, fabrics, ceramics, photographs and metals, as well as inks and colorants used on those items. Preservation must occur while still allowing access to the collections.

The Preservation Directorate manages several programs to ensure this long-term access. Specialists in the Preservation Reformatting Division prepare collections of brittle material to be reformatted into microfilm or digital files. Staff in the Preservation Directorate's Conservation Division and Binding and Collections Care Division address how an item is stored: the temperature, humidity, and light conditions of its environment, its enclosures, and its handling, including care taken so labels or other utility marks don't deteriorate the item.

In addition, staff in both divisions treat the Library's collections to improve their physical condition. This includes the deacidification of books and paper-based manuscripts—the process of removing acid—which can add centuries to an item's life. (See story on page 16.)



Preservation specialist Michele Youket assesses CD damage through a microscope known as an Axio Imager. Amanda Reynolds



Clockwise from top left: Books await preservation treatment; Chemist Lynn Brostoff uses X-ray fluorescence spectroscopy to analyze manuscripts and, at right, studies a glass flute under a stereomicroscope; Equipment developed by PTLP is being used by the Library to deacidify books and manuscript pages; Conservation technician Nathan Smith repairs a collection item; "The Searchlight" newspaper is shown before receiving deacidification treatment. All photos | *Amanda Reynolds*

A recent example of a conservation project was the treatment of an artwork by "outsider artist" Martín Ramírez. (See story on page 21.) Titled "Madonna," the work was created on pieced-together envelopes. It was discovered tucked into the Library's papers of designers Charles and Ray Eames, tightly rolled and chewed by insects. With permission from the late Ramírez's heirs in Mexico, the artwork was cleaned, its holes were expertly patched, and it was flattened and framed. It graced an exhibition at the Library celebrating Mexico in December 2013.

OUT OF A CRISIS, NEW EXPERTISE

Modern preservation science is often traced back to the triage methods devised by an ad-hoc team of experts who rushed to Italy from around

the world in 1966, following the catastrophic flood of the River Arno in Florence. Ancient artworks, books, manuscripts and other world treasures, soaked in water and silt, required speedy intervention if they were to be saved. (See story on page 20.)

One of the so-called "mud angels" later established the Library's Conservation Division and the Library's first preservation laboratory. Today, the Preservation Research and Testing Division (PRTD) in the Preservation Directorate includes a set of recently renovated laboratories in the Library's Madison Building on Capitol Hill. One is the Optical Properties lab, where new methods of analyzing collection items take place including X-ray diffraction, Raman spectroscopy, scanning electron microscopy and use of hyperspectral imaging and X-ray fluorescence and

From left: This daguerreotype plate, created to mimic those made in the 19th century, can be studied under an electronic microscope to determine its properties. *Abby Brack*; Preservation specialist *Matt Kullman* conducts anoxic leak testing to determine oxygen levels. *Amanda Reynolds*; Conservator *Heather Wanser* treats a rare Korean map. *Richard Herbert*



Preservation specialist Hans Wang and visiting scientist Christina Bisulca conduct pH and quality-assurance testing on paper-based items. *Amanda Reynolds*

equipment to analyze one of the Library's top treasures, a draft Declaration of Independence in Thomas Jefferson's hand (see story on page 6). Hyperspectral imaging has allowed the Library to see previously obscured details of the 1791 Pierre L'Enfant plan of Washington, D.C., and four fingerprints on the handwritten draft of the Gettysburg Address.

The Library has also used hyperspectral imaging to establish links between a rare copy of Ptolemy's 1513 "Geographica," an atlas with hand-colored maps, and the 1507 Waldseemüller World Map, the first known document to have the word "America" in it.

The Library is able to publicly display the Waldseemüller map and Abel Buell's 1784 map of the newly independent United States due to hermetically sealed encasements that control humidity and minimize oxygen. The cases were designed and constructed in collaboration with the National Institute of Standards and Technology (NIST).

"The most challenging part of what we do is knowing that you may be working with the 'only' copy, so that's why the focus is on new non-invasive technologies that can reveal hidden, exciting information about our amazing collections," said France. "Using current techniques, while looking to new high-tech advances that we can adapt, means we know more about our rare collections than ever before, and without even touching them!"

► MORE INFORMATION

Preservation at the Library of Congress
loc.gov/preservation/

the Physical and Chemical Testing Laboratory, where housing materials are tested to make sure they meet preservation standards. There, conditions of storage areas—sampling of the air for pollutants, for example—can be assessed.

PRTD finds non-invasive ways to assess and preserve collections; devises ways to slow or halt deteriorating factors—such as the "iron gall" ink used in historic manuscripts and the acidity of wood pulp-based papers, which, left untreated, will yellow and crumble.

SCIENTIFIC SLEUTHING

Advanced techniques, such as hyperspectral imaging, are making it possible to learn things about centuries-old documents that previously could not be known.

In 2010, PRTD Chief Fenella France—a world-renowned expert in conservation science—made an exciting discovery while using hyperspectral

Jennifer Gavin is a senior public-affairs specialist in the Library's Office of Communications.

FENELLA FRANCE, CHIEF OF THE LIBRARY'S PRESERVATION RESEARCH AND TESTING DIVISION, DISCUSSES THE LIFESPAN OF STORAGE MEDIA.

Many Library visitors are astonished to learn that even computer-age storage media are subject to deterioration.

Compact discs, an easy-to-use storage medium used publicly and privately to store computer files, photos, music and other digital data, have varying lifespans. All of the modern formats weren't initially made to last a long period of time. They were really developed more for mass production, for fast storage and access.

This is of no small interest to the Library, because it has an estimated 500,000 compact discs (CDs) in use, holding various types of data ranging from music to maps. Many of these date to the 1980s, when CD manufacture was in its infancy.

Our task in the Preservation Research and Testing Division is to analyze the Library's disc collections to determine which of the types of CDs are the most at-risk. The fact is that some CDs hold up better than others, even those put out by the same manufacturer with the same content. What researchers conclude is that extremes of temperature and humidity are not good for this storage mode, and placing labels or even ink from commonly used pens on the recorded portion of a CD may compromise its content more quickly.

The Library's preservation laboratory staff has done extensive testing of such discs—speed-aging expendable CDs by exposing them to heat, humidity and other potentially degrading factors. Of course, nothing from the Library's actual collections has been used in these tests. The tests simulate what might happen, over time, in your home or in a Library or archive.

Another Library study tracked the disc quality of a specific population of CD-audio discs from the Library's collection over a course of 10 years, with periodic non-invasive testing to check for the accumulation of playback errors with age. Insiders have a pointed term for such deterioration: "CD rot."

As with many other (often-now defunct) types of storage media, CDs are machine-dependent, so access to the data on these materials requires



Amanda Reynolds

the equipment needed to read the disc, including working hardware and software.

CD data can be lost because some discs (which consist of a data layer sandwiched between protective sides) can oxidize, become mechanically deficient or lose their data. Digital video discs (DVDs), which are similar to CDs, but have much larger data-storage capacity, face similar preservation issues. Therefore, with even the smallest-capacity DVD able to store about seven times more data, the potential for loss of data from minor damage is much greater with a DVD than a CD.

Rewritable CDs tend to be more unstable than commercially produced CD recordings, because the dyes used in their manufacture are prone to break down faster.

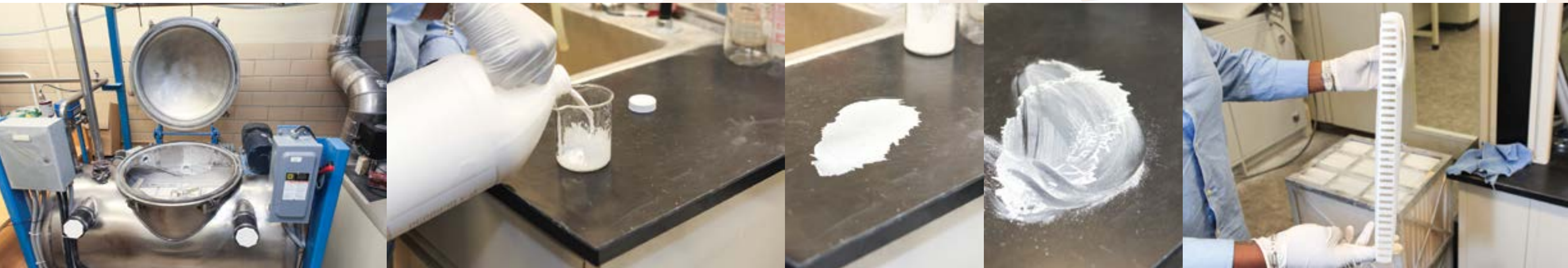
The news from the 10-year aging sample was not all bad: while attaching labels and damage to the CD surface clearly accelerates error, studies showed that after a decade, only about 4 percent failed to successfully play back. Most CD products earned a high probability of prolonged lifetime relative to their DVD counterparts.

But if you want to keep your most-loved CDs in working order, be prepared to check them and then store them in a cool, dry place that doesn't fluctuate. The storage environment actually matters.

If you really want to ruin your discs, just leave them in your car over the summer.

THE PAPER CHASE

THE LIBRARY IS MEETING THE CHALLENGE OF PAPER PRESERVATION THROUGH THE PROCESS OF DEACIDIFICATION



BY JEANNE DREWES

Prior to the Industrial Revolution, paper was made from rag content (cotton and linen), which produced a relatively strong and durable product.

Mass production of paper, which began around 1840, introduced a new substance—wood pulp—and with it, a polymer known as lignin, which causes paper to deteriorate rapidly.

Therefore, paper deterioration has been the subject of scientific research since the 19th century and a concern for the Library of Congress since that time.

In 1898, Librarian of Congress John Russell Long decried the use of this non-durable paper by publishers, “which threaten in a few years to crumble into a waste heap, with no value as record.” Over the years, the Library has researched and tested various methods of slowing that deterioration, such as reducing light exposure and controlling temperature and humidity.

Chemists now know that acid deterioration can be minimized by deacidification—neutralizing the acid in acidic paper to extend the paper life and

stop the embrittlement process. The Library’s Preservation Directorate began exploring the use of this technology in the mid-1980s and determined that the process was promising for library materials, but required more research and testing.

In 1995, the Library began using a product called Bookkeeper to treat bound volumes. Patented and distributed by Preservation Technologies, L.P. (PTLP) the Bookkeeper method deacidifies bound volumes en masse by immersing them in

extremely fine magnesium oxide suspended in a fluid. The process, which is done off Library premises, raises the pH level of treated paper to the acceptable range of 7 with an alkaline reserve of 1.5 percent. To date, more than 3 million volumes have been treated, which is calculated to extend their useful life by 300 years.

A sheet treater was installed in the Library’s Preservation Research and Testing laboratory in 2002 to deacidify loose sheet material, using the same Bookkeeper process. The Library

Opposite, from left: A sheet treater, developed by PTLP, deacidifies manuscript pages by using magnesium oxide; The magnesium oxide is suspended in liquid and turns into a fine powder; Documents are loaded into a plastic cassette in preparation for treatment. *Amanda Reynolds*



From left: Marja Matthews of PTLP demonstrates how multiple manuscript pages are treated and monitored. *Amanda Reynolds*

required the vendor to install the equipment onsite due to the value and uniqueness of the Library's collections. Onsite treatment secures the collections and makes them accessible to patrons as needed.

More than 8 million sheets from multiple collections have been deacidified using the sheet treater. The first collection to be treated was the Pinkerton Archive Collection, donated to the Library in 2000. Housed in the Manuscript Division, this archive documents the records of the Pinkerton National Detective Agency from its founding in 1850, by Scottish immigrant Allan Pinkerton, to 1937. The company, which operates today as Pinkerton, Inc., is the nation's oldest and largest provider of security services. The collection comprises 100 boxes of manuscripts and photographs, including 195 binders of criminal

investigations involving some of the most notorious criminals of the day.

Last year the Library completed the treatment of the paper-based items in the NBC Radio History Collection—tens of thousands of documents tracing the network's evolving censorship policies, its business and programming history, audience letters and reminiscences of early employees and network executives, from the mid-1920s through the 1980s.

"The collection opens a window on not only the programming of the past, but the corporate thought behind it," said Janet Wilson McKee, a reference librarian in the Recorded Sound Division.

"NBC coverage of World War II is a great example of how the collection is beneficial to the historical

record," said Karen Fishman, a digital reference specialist in the Recorded Sound Division. "NBC's coverage of the war helped revolutionize news reporting in the U.S."

The Library, in 2003, began treating a large and very heavily used manuscript collection—the records of the National Association for the Advancement of Colored People (NAACP). Organized into nine parts, the records were given to the Library beginning in 1964 in a donation that is ongoing. They span the period 1842-1999, with the bulk of the material dating between 1919 and 1999, and document the organization from its founding in 1909. More than 90 percent of the collection, which comprises 5 million items, has been deacidified, thereby ensuring its preservation and accessibility to researchers.

Marja Matthews, a PTLP employee, has worked on treating the collection at the Library for more than a decade.

"Being privileged to work with such a remarkable collection as the NAACP, I often come across manuscripts that simply demand to be read," said Matthews. "The one that stands out the most was an informal handwritten note from civil-rights leader Roy Wilkins to John F. Kennedy and Jacqueline Kennedy, congratulating them on the birth of John Jr. in 1960. Finding a personal, heartfelt document like that among thousands of historical papers, yes, I'd have to say that was the most memorable for me."

▶ MORE INFORMATION

go.usa.gov/F33m

From left: The tank is sealed and the process is monitored using a computer screen. *Amanda Reynolds*

Jeanne Drewes is chief of the Binding and Collections Care/Mass Deacidification Division in the Library's Preservation Directorate.



THE LIBRARY TO THE RESCUE

THE LIBRARY OF CONGRESS HAS A LONG TRADITION OF ASSISTING OTHER INSTITUTIONS IN PRESERVING THEIR COLLECTIONS.

▲ Library of Congress restoration specialist William Berwick took this photograph of the ruins of The New York State Library's folio edition of John James Audubon's "Birds of America" in the aftermath of the 1911 fire. *Manuscript Division*

Nearly a century after the Library of Congress collection was destroyed by a fire in the U.S. Capitol building in 1814, the New York State Library in Albany, N.Y., experienced a similar fate.

On March 29, 1911, just weeks before the New York State Library was scheduled to move to the newly constructed State Education Building, a fire ravaged the State Capitol, which housed the library. While parts of the building were unaffected, the State Library and its collection of 600,000 volumes were badly damaged. As the New York State National Guard worked to secure the building and safeguard its contents, a member of the staff of the Library of Congress helped to preserve the collections of the State Library.

William Berwick, a bookbinder at the Government Printing Office, had been detailed to the Manuscript Division at the Library of Congress in 1899. Berwick quickly established himself as the American master in the Vatican technique of silking, as well as other restoration techniques. The technique—adhering silk gauze to both sides of a deteriorated document—was state-of-the-art at the time. Berwick directed the State Library staff in the restoration of John James Audubon's priceless "double-elephant" folios of hand-colored plates illustrating more than 700 species of North American birds published between 1826 and 1838.

November 1966 witnessed the flooding of the Arno River in Florence, Italy, which damaged millions of art masterpieces and rare books housed in the Biblioteca Nazionale Centrale di Firenze. Library of Congress staff were among the volunteers led by British bookbinder and conservator Peter Waters, who were dispatched

to clean, dry and re-bind some of the library's most valuable volumes. Waters, who had trained at the Royal Academy of Art, was subsequently appointed head of the newly created Restoration Division (today the Conservation Division) at the Library of Congress, and served in that position until his retirement in 1995.

In the five decades following the Florence Floods, the Library's trained staff has continued to assist in the aftermath of natural and man-made disasters at home and abroad. For example, Library conservators were dispatched to the Russian Academy of Sciences in St. Petersburg following a devastating fire in 1988. In 2003, they helped reconstruct the National Library of Iraq, which was destroyed under Saddam Hussein's regime, and they advised on the establishment of a memorial archive following the 2007 shooting at Virginia Tech. Most recently, Library staff helped with disaster-recovery efforts following the earthquake in Japan and the fire at the Institut d'Égypte in Cairo. Library conservators have provided training to personnel in the national libraries, museums and archives of more than a dozen countries throughout the world.

—Audrey Fischer

Library of Congress Archivist Cheryl Fox and Paper Conservation Section Head Holly Krueger contributed to this article.

► MORE INFORMATION

Caring for America's Library: A History
loc.gov/preservation/about/history/

TREATING TREASURES

CONSERVATION DIVISION CHIEF ELMER EUSMAN DISCUSSES CONSERVATION TREATMENT OPTIONS FOR A VARIETY OF PRIZED COLLECTION ITEMS.



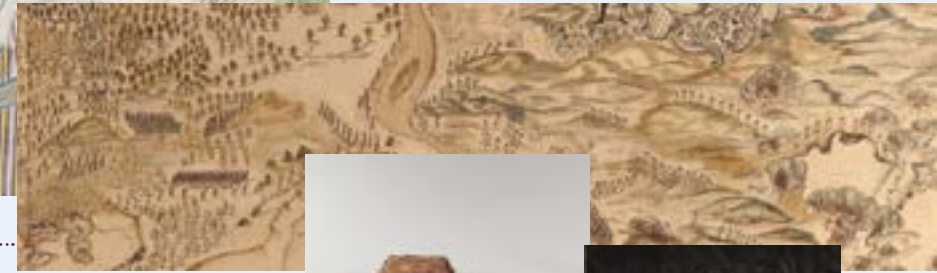
Pre-Columbian Objects

"Collections such as this classic Maya whistling vessel, dated A.D. 400-600, are safeguarded in customized storage boxes constructed of smooth, inert materials that provide padding without abrading the surface of the object. The boxes are designed with drop walls or easily removable padding to provide safe access to the collection of fragile and irreplaceable objects." *Jay I. Kislak Collection, Rare Book and Special Collections Division*



Martín Ramírez' "Madonna"

"This 1951 drawing is one of the earliest surviving works by the self-taught, "outsider" artist. His 'Madonna' was drawn on the back of 22 pieces of postal mail, patched together using pastes he made by chewing starchy foods such as bread, oatmeal and potatoes—items found at the hospital where he was treated for schizophrenia. Library conservators flattened the many creases, mended the tears and filled the losses." *Charles and Ray Eames Collection, Prints and Photographs Division*



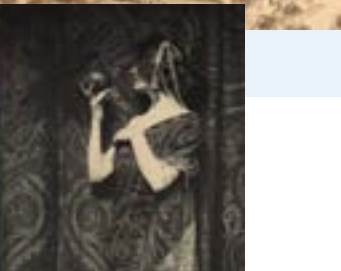
Map of Cape Breton, Nova Scotia

"Hand drawn by Lamiralle Boucoune, this map depicting a pivotal battle at Cape Breton during the French and Indian War was discolored and illegible. Conservators removed the brown-colored silk fabric that had been pasted onto the surface, washed the item to remove discoloration and mended the many tears and losses. After treatment, many details and colors were once again visible." *Geography and Map Division*



Ethiopian Prayer on Parchment

"Originally housed in a separate, telescoping carrying pouch, this traditional Ethiopian text written on vellum ('Prayer to Our Lady the Virgin, Mother of Light') is now housed in a custom-fitted box. The boards are wood, covered in leather. This rare item bears the hallmarks of a traditionally bound Ethiopian manuscript." *Thomas L. Kane Collection, African and Middle Eastern Division*



Platinum Photograph

This platinum photograph by Zaida Ben-Yusuf (1869-1933) is an excellent example of pictorialist photography—a style in which the photographer manipulates the image rather than simply recording it. The Library's photograph conservators are conducting research into how platinum photographs were made, how they deteriorate and what treatments are possible to preserve them for future generations. *Frances Benjamin Johnston Collection, Prints and Photographs Division*

► MORE INFORMATION

Conservation at the Library
loc.gov/preservation/conservators/



Foreground: Four photographers capture events at the 1963 March on Washington. *New York World-Telegram and the Sun Newspaper Photograph Collection, Prints and Photographs Division*

Background: A contact sheet from the Library's photograph collections documents the 1963 March on Washington. *Prints and Photographs Division*

PRESERVE MY PHOTOGRAPHS

THE LIBRARY OF CONGRESS holds more than 14 million photographs. Taken as a whole, they comprise the nation's visual history. Our personal histories are similarly revealed through our own photograph collections. Below are some tips on the proper handling and storage of photographic prints.

Handle photographic materials properly by:

- Having clean hands and wearing 100 percent cotton gloves; having a clean work area
- Keeping food and drink away
- Not marking photographs, even on the back
- Not using paper clips or other fasteners to mark or organize prints
- Not using rubber bands, self-adhesive tape and/or glue

Store photographs properly by:

- Keeping in a relatively dry (30-40 percent relative humidity), cool (room temperature or below), clean and stable environment
- Avoiding exposure to direct or intense light
- Avoiding exposure to heat
- Avoiding exposure to industrial atmospheric pollutants
- Placing in protective folders made of acid-free paper or uncoated polyester film

▶ MORE INFORMATION

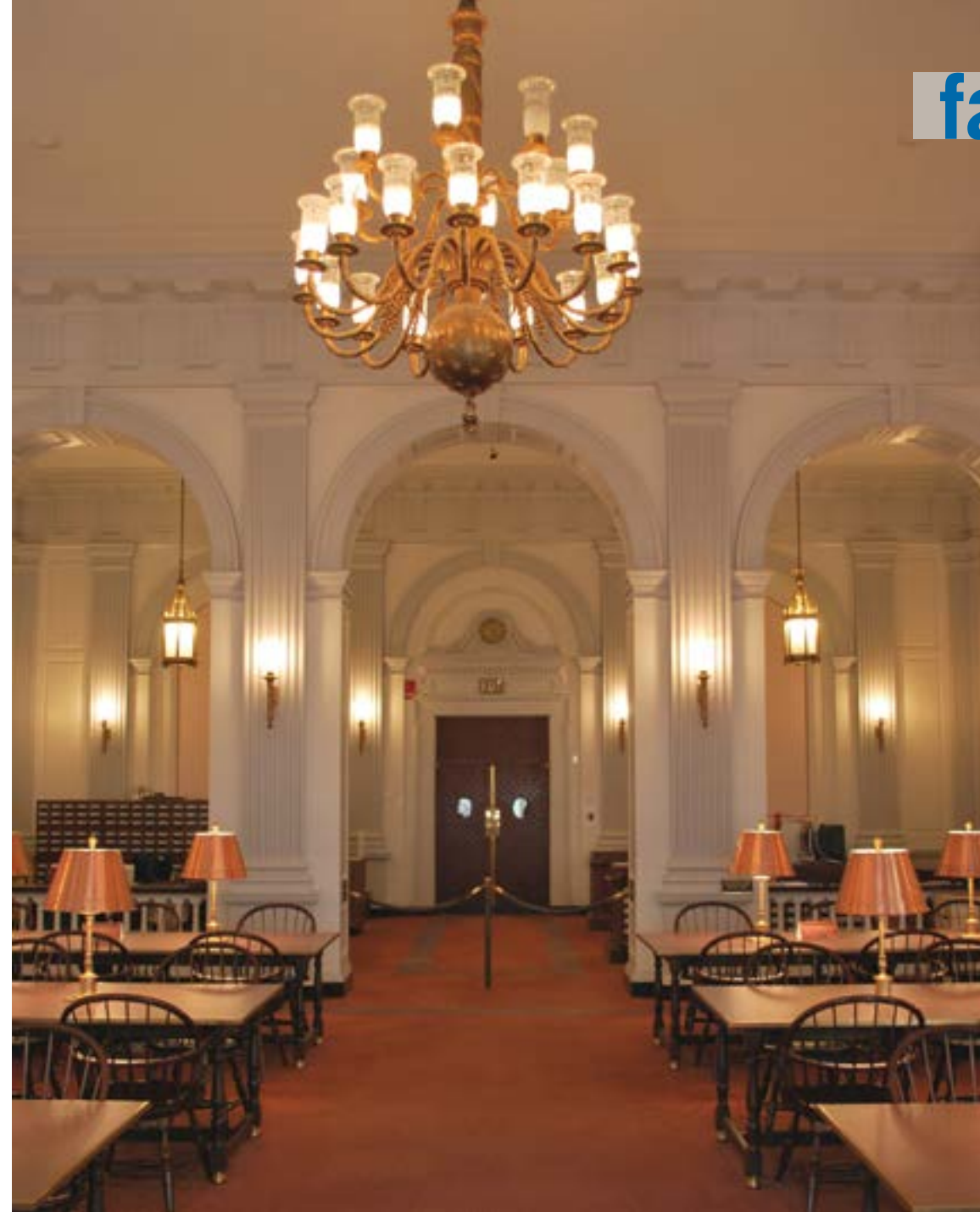
Caring for Photographic Prints

loc.gov/preservation/care/photo.html

loc.gov/preservation/about/faqs/photographs.html

Caring for Digital Images

digitalpreservation.gov/personalarchiving/photos.html



Eric Frazier

▶ MORE INFORMATION:

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THE RARE BOOK AND SPECIAL COLLECTIONS READING ROOM

THE LIBRARY'S COLLECTION OF RARE BOOKS

dates back to establishment of the Congressional Library in 1800. Housed in the U.S. Capitol building, the small working library intended for the use of the nation's legislators burned with the rest of Washington during the war in 1814. Thomas Jefferson's personal library was acquired by Congress in 1815 to repair the loss. Those 6,487 Jefferson volumes became the foundation of the modern-day Library of Congress, now comprising more than 158 million items.

Rare materials were acquired through purchase and gift, most notably the private library of Peter Force, the Vollbehr Collection (including a Gutenberg Bible) and the Lessing J. Rosenwald Collection on the History of the Illustrated Book. Today, the Library's Rare Book and Special Collections comprise nearly 1 million items, including nearly 8,000 incunabula (15th-century imprints). Many of these items can be accessed in the Rare Book and Special Collections Reading Room.



1. Billy Joel performs at a star-studded concert honoring his receipt of the Library's 2014 Gershwin Prize for Popular Song on Nov. 19. *John Harrington*
2. U.S. Poet Laureate Charles Wright gives his inaugural reading in the Library's Coolidge Auditorium on Sept. 25.
3. Law Librarian David Mao (left); The Princess Royal, Princess Anne; and Librarian of Congress James H. Billington officially open the Library's Magna Carta exhibition on Nov 6. *John Harrington*
4. Mavis Staples performs in the Library's Coolidge Auditorium at the opening of the Music Division's concert season on Oct. 18.
5. French author and illustrator Hervé Tullet paints with pre-schoolers during a visit to the Library's Young Readers Center on Oct. 16.
6. Jazz pianist Justin Kauflin performs at the Library on Oct. 22 to mark 50 years of service from the Music Section of National Library Service for the Blind and Physically Handicapped.

All photos except where noted | *Amanda Reynolds*

JANE MCAULIFFE TO HEAD JOHN W. KLUGE CENTER



Amanda Reynolds

Distinguished scholar and academic administrator Jane McAuliffe has been appointed director of the John W. Kluge Center in the Library of Congress and head of the Library's Office of Scholarly Programs.

McAuliffe is the immediate past president of Bryn Mawr College and a world-renowned scholar of Islam, the Qur'an and Muslim-Christian relations. She is the author or editor of six books, including the "Norton Anthology of World Religions: Islam" and the six-volume "Encyclopedia of the Qur'an," the first major reference work on the Qur'an in Western languages. McAuliffe completed the reference work on the Qur'an while in residence at the Kluge Center, 2013-2014. She holds a Ph.D. in Islamic studies and a master's degree in religious studies from the University of Toronto; she also holds a bachelor's degree in classics and philosophy from Trinity College in Washington, D.C.

► **MORE:** loc.gov/today/pr/2014/14-180.html

DIGITAL STEWARDSHIP RESIDENTS SOUGHT

The Library of Congress, in partnership with the Institute of Museum and Library Services, is now recruiting the next Washington, D.C.-area class of the National Digital Stewardship Residency program, which begins in June 2015. Five post-graduates will be selected. Each will be paired with an affiliated host institution for a 12-month residency that will afford opportunities to develop, apply and advance their digital stewardship skills in real-world settings.

To be eligible, applicants must be graduate-level or post-graduate students currently enrolled or recently graduated from nationally accredited Library Information Science or related programs. Current graduate students may apply, but must be graduated before the June 2015 start date. Apply through usajobs.gov by Jan. 30, 2015.

► **MORE:** loc.gov/today/pr/2014/14-214.html

LIBRARY TO HOST ROMANCE FICTION CONFERENCE

"What Is Love? Romance Fiction in the Digital Age," an international, multimedia conference, will be hosted by the Center for the Book in the Library of Congress, Feb 10-11, 2015. The conference, which is free and open to the public, is made possible through the generous support of lead sponsor Harlequin. The conference will include panels moderated by Pam Regis, professor of English at McDaniel College and president of the International Association for the Study of Popular Romance; Bill Gleason of Princeton University; Mary Bly of Fordham University (who writes as Eloisa James) and Sarah S.G. Frantz, professor of literature at Fayetteville State University. Special author appearances include New York Times best-selling authors Robyn Carr and Brenda Jackson. Those who attend the conference will have access to sessions featuring writing, cover design, online stations, screenings of "Love Between the Covers" and book giveaways.

► **MORE:** loc.gov/today/pr/2014/14-203.html

ADDITIONS TO THE NATIONAL FILM REGISTRY

Spanning the period 1913-2004, 25 films have been named to the National Film Registry by Librarian of Congress James H. Billington. This year's selections bring to 650 the number of culturally, historically or aesthetically significant films in the registry—a fraction of the Library's vast moving-image collection of 1.3 million items. The 2014 registry list includes such iconic movies as "Saving Private Ryan," a treatise about the harsh realities of war, which earned director Steven Spielberg an Academy Award; the chilling 1968 horror masterpiece "Rosemary's Baby"; Arthur Penn's Western saga starring Dustin Hoffman, "Little Big Man"; director John Hughes' "Ferris Bueller's Day Off"; and Joel and Ethan Coen's cult classic, "The Big Lebowski." Also added to the registry are seven reels of untitled and unassembled silent-film footage featuring vaudevillian Bert Williams, the first African-American Broadway headliner and the most popular recording artist before 1920.

► **MORE:** loc.gov/today/pr/2014/14-210.html

THE LIBRARY OF CONGRESS SHOP celebrates reading with its many book-themed items.



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HARPER-INGLIS FUND FOR PRESERVATION WORK

A FAMILY WHOSE EFFORTS PRESERVED A TOWN IS HELPING TO SUPPORT THE LIBRARY'S PRESERVATION EFFORTS.



To support a preservation internship in the nation's library, Thomas B. Inglis Jr. donated funds to establish the Harper-Inglis Memorial Trust Fund for Preservation at the Library of Congress in 1998. The fund honored the memory of his mother, Kathryn Harper, who had died the previous year, and his father, Navy Vice Admiral Thomas B. Inglis Sr., who died in 1984.

In his letter to Librarian of Congress James H. Billington, dated July 11, 1998, Inglis expressed his intention for the fund to provide an opportunity for students specializing in preservation to work in the unparalleled facilities of the Library under the guidance of the highly trained Library staff.

"Since 1999, the Harper-Inglis Trust Fund has played a major role in the success of the Library's Conservation internship program, where interns work in a guided environment to survey, assess, treat and house library materials in various formats," said Conservation Division Chief Elmer Eusman. "The stipend made available through the fund has attracted some of the brightest American and foreign conservation students, many of whom have subsequently become leaders in the conservation field."

To fund the internship program in perpetuity, Inglis made a charitable bequest to the Library. Following his death on March 25, 2014, the Library received a donation of \$1 million from Inglis's estate.

Who was Thomas B. Inglis Jr. and how did he become passionate about preservation? His obituary in the "San José Mercury News" provides

some clues. "Tom was blessed with a keen and inquisitive mind, and his vast interests included history, art, antiques, government and finance."

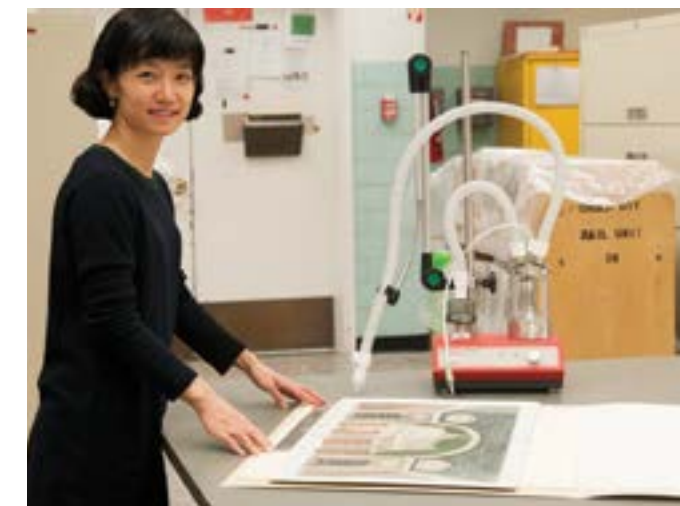
Born Jan. 7, 1927, in Long Beach, California, and educated at the Massachusetts Institute of Technology, Inglis followed in his father's footsteps by joining the U.S. Naval Reserve. After serving in the Office of Naval Intelligence in Washington, D.C., he worked at a management consulting firm in New York. While visiting his parents in Monte Sereno in Santa Clara County, he fell in love with the area and decided to join them. He had a front row seat to his father's fight to preserve the rural, non-commercial character of the town. In April 1957, voters decided to incorporate the town of approximately 3,500 people as a separate entity from nearby Los Gatos.

Thomas Inglis Sr. served as the town's mayor for a decade. His son served as the city's chief administrative officer until his retirement in 1978. Today, the town outside Silicon Valley remains entirely residential with no commercial zoning, a testament to the Inglis family's concern for its preservation.

MORE INFORMATION

Library of Congress Development Office
202.707.2777
loc.gov/philanthropy

Harper-Inglis Fund
loc.gov/preservation/outreach/intern/harper.html



▲ 2014 Harper-Inglis intern Eunji Jang from Korea's Yong In University works on an Oliver Smith set design for the first Broadway performance of "My Fair Lady" in 1956. *Richard Herbert*



THE GRATEFUL DEAD'S MICKEY HART DISCUSSES THE IMPORTANCE OF MUSIC PRESERVATION.

Music is inseparable from our humanity; it fills needs at the center of our being. Music has been there at every place and time in history. It's as basic to our desires and needs as food and sex. We know this from the teachings of indigenous peoples all over the earth. And we know it from the anthropologists, folklorists and ethnomusicologists who have traversed the globe to document and record the world's diverse musical riches.

So what are we going to do with, and about, this musical treasury, this extraordinary archive of human invention, spirit, soul and creation? The answer is simple: we need to take care of this trove in the very best way, the very most imaginative and caring way possible. But implementation can be complex.

Introduced by Congress, the National Recording Preservation Act of 2000 states clearly that all sound recordings that are culturally significant, endangered or rare should be preserved forever. It tasked the Library of Congress to identify and preserve at-risk sound recordings.

But making those recordings available to the public involves preservation, cataloging, access and circulation. These processes are not independent of one another. They are inextricably linked. Just as you cannot access what has not been preserved, there is little incentive to preserve material that has no reasonable demand for access and circulation. Count on circulation to create demand and desire. That lesson is Grateful Dead 101, proven over and over in my experience as a musician. That is why I began collaborating with the Library's American Folklife Center and Smithsonian Folkways on the Endangered Music Project to make recordings from various musical traditions available to the public on CDs.

This is the "big picture" that we must convey to those in a position to support the preservation of deteriorating recorded media, to digitize all-important archival collections and make them available to the public in as many ways as possible—including repatriation to honor their communities of origin.

For the first time in our relatively short history of recorded sound, we can bring these timeless voices to life for millions of ears and hearts to hear. Imagine the opportunity for all generations in all places to hear their legacy in sound—the voices and instruments of their ancestors, their places, their memories, their great contributions to our collective human cultural heritage.

The Library of Congress is making this possible today while its preservation and access plans are bold and visionary for the future.

Imagine searching and streaming the world's largest multi-genre music database directly from your internet portal for free, and then having the ability to clear intellectual property rights, obtain a license and download it straight to your computer or mp3 device. The creative renaissance this development would inspire is practically unfathomable and could immeasurably expand musical consciousness.

But such developments will take an investment in the latest technology and other resources. Like trees in a forest, musical treasures cannot speak for themselves. That's why we must encourage citizens everywhere to become champions for the nation's audio assets. And that means voicing their support for preserving, documenting, cataloging and increasing access so that these riches live a long life, an active life, a life shared with as many listeners as possible.

Mickey Hart is the percussionist for the Grateful Dead for nearly five decades. He created the Endangered Music Project to issue, in CD form, field recordings of the world's music from the Archive of Folk Culture in the Library's American Folklife Center. Ethnomusicologist Steven Feld contributed to this article.

Michael Weintrub



A decade-long restoration of the Library's Thomas Jefferson Building was completed in 1997, the building's centennial. Carol Highsmith



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▶ MORE INFORMATION:
www.loc.gov/exhibits/

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