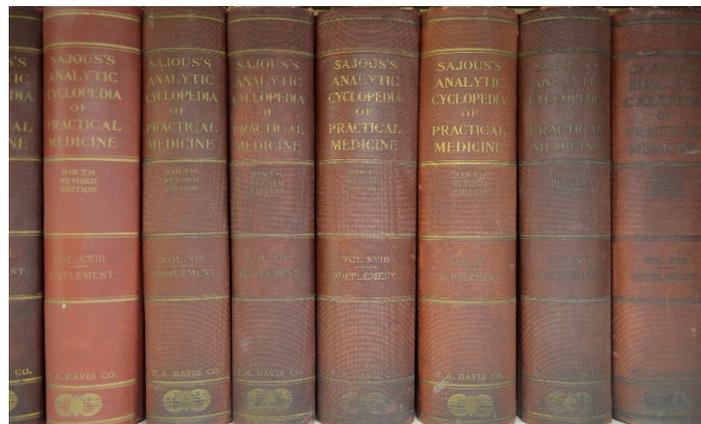




Storage, Handling, and Display of Rare Books and Works on Paper

Helpful Tips for the Care of Library and Paper Collections



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Introduction

Librarians, curators, and conservators know that books and works on paper require delicate care to assure their long-term survival. Many expensive, purpose-made products help collections managers preserve their treasures, but with a bit of ingenuity, you can accomplish the same tasks on a lean budget. Follow the guidelines laid out in this document, and you too will care for your library and paper collections with ease and pleasure.

Part One: Common Degradations of Books and Works on Paper

Books and works on paper deteriorate in predictable—and preventable—ways. Knowing what to expect of your historic collections is a good first step toward keeping objects safe. Careful monitoring of your collection can be done with virtually no budget at all. Common causes of deterioration of book and paper collections include: light exposure, temperature extremes, relative humidity extremes and fluctuations, chemical degradation, water damage, pests, air pollution, and improper storage and handling.¹ The images below illustrate typical problems you may encounter in your book collections: weak/broken bindings, separated boards, improperly shelved books, and chemical deterioration of the objects.



The text block of this 1797 edition of William Buchan, M.D.'s Domestic Medicine, published in Philadelphia, has split in two due to wear on the binding. Photo by the author.



Books should never be stored with their bindings on top, text blocks downward. This position places undue stress on the binding structure and may eventually result in the text block's complete separation from the binding. Photo by the author.

¹ Joan Irving (paper conservator, Winterthur Museum, Garden, & Library), interview with author, April 15, 2015.



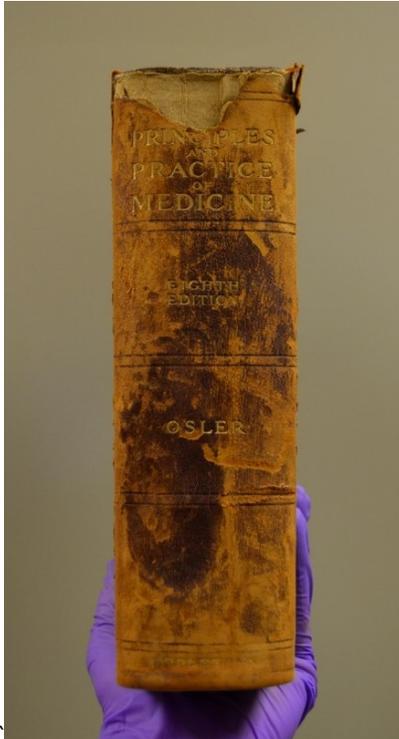
This book's cover has become completely detached from the rest of its binding structure. Covers' joining points with the rest of the binding are vulnerable to long-term wear. Photo by the author.



While in better condition than the volume above, this book's front board is slowly detaching from the rest of the volume, revealing cord used to fasten together the quires that compose the text block. This book should be opened only when necessary, using foam wedge supports, and only so far as the cover will naturally allow. It should be stored flat, in a purpose-built enclosure. Careful handling will prevent further damage. Photo by the author.



Text blocks can become permanently misshapen if books are allowed to rest in inappropriate positions. The binding structure also becomes weakened. This type of deterioration is preventable by standing books straight, and reinforcing books with bookends. Photo by the author.



The binding of this book is in exceedingly poor condition. Red rot, or the chemical degradation of vegetable-tanned leather due to high humidity levels, has almost entirely destroyed the spine. Frequent grabbing of the book off of a shelf by its upper binding may have contributed to the rip at the top of the volume. This book should be placed in a box and isolated from other volumes, so as to prevent the red rot detritus from soiling other volumes.

Photo by the author.

Part Two: Standard Practices for Book and Paper Storage

You must address issues of environment, pest control, exhibition, storage, and handling to guarantee the long-term safety of your book collection.

According to the Canadian Conservation Institute, leather and general binding structure of old books is especially vulnerable to both low and high relative humidity. If RH gets too low, the leather may become brittle. If it gets too high, mold could grow. **Keep relative humidity in the range of 45% - 55%. Temperatures should be maintained between 64°F and 68°F.** Also, maintain air circulation.²

Never assume that you do not have a pest problem. In fact, assume that you *do*. Insects and rodents are smarter than you think; they eat and defecate on your collections when curators and librarians are out of sight. “Be mindful of the ways that insects can enter a collection,” says Winterthur Library rare books librarian Emily Guthrie. The Winterthur Library maintains an active Integrated Pest Management Program in cooperation with a local exterminator.³

² Canadian Conservation Institute, “Basic Care of Books,” *CCI Notes* 11/7, accessed April 16, 2015, https://www.cci-icc.gc.ca/resources-ressources/ccinotesicc/11-7_e.pdf.

³ Emily Guthrie (National Endowment for the Humanities Librarian, Winterthur Museum, Garden, & Library), interview with the author, April 15, 2015.

Proper storage of books and works on paper will help assure their long-term integrity. Enamel-coated steel shelves are most desirable. Books must be able to slide onto the shelves smoothly and with ease. Bookends (preferably magnetic) should also be coated with enamel.⁴ Most books in good condition can be stored unenclosed on the shelves. Books with structural damage, or pieces that are inherently fragile, must be managed more carefully. The best solution is to place books in enclosures. “Four-flap enclosures are great for flimsy things,” Guthrie says. They require more shelf space than items do on their own and cost \$10-\$15, but the enclosures enhance the security of the item. A cheaper option is using a gray serial box to house several objects.⁵

Detached boards and damaged bindings are common problems. “There are so many books whose board have become detached, but does their infrequent use demand a full treatment?” Guthrie asks. Often, Winterthur staff choose to house all components of the book in one custom box. Spend most time and money treating objects most often used.⁶

One of the greatest moments of risk for a fragile book is handling by staff and patrons. You must provide the proper supplies and instructions for safe use of the objects. “What you are trying to prevent, no matter what types of props you use, is the book lying flat,” Emily Guthrie reminds us. “Do so using a soft, supportive, yet moderately firm surface. If it is a large book, you will want to support the spine somehow. That is trickier to do without specialized props.” Use a micro-spatula to turn fragile pages of old books.⁷



This four-fold enclosure provides protection for a flimsy print publication. Courtesy of the Winterthur Library. Photograph by the author.

⁴ Guthrie, interview.

⁵ Ibid.

⁶ Ibid.

⁷ Ibid.



Gaylord Black Barrier Board Archival Pamphlet File (also called a "serial box"). www.gaylord.com



Foam wedges and weighted snakes help open this book safely. Courtesy of the Winterthur Library. Photograph by the author.



This library patron is demonstrating proper use of foam wedges to support a fragile book, and a micro-spatula to turn pages without damaging their worn, delicate edges. Photo courtesy of Emily Guthrie, Winterthur Library.

Part Three: Housing and Handling Works on Paper

Specific care and handling of works on paper depends on the medium used to make the object (iron gall ink, pastels, watercolors, graphite, charcoal, etc.). Generally speaking, however, any and all loose paper objects should be considered fragile and in danger of damage, particularly by means of light and inappropriate handling. Preferably, all works on paper should be stored flat in acid-free enclosures, such as folders and mats. Use caution when housing works made with loose media, including mezzotints and pastels. If individually foldering and matting materials proves too expensive or time-consuming for your organization, consider grouping up to ten items together in one folder, with acid-free interleaving. This will provide basic protection for your collections, if you store the collection in a flat, dark, dry, safe space. **Works of fine art (watercolors, drawings, etc.) should be individually enclosed in a folder or mat.** "The simple act of enclosing materials is the single most important thing you can do for paper-based collections," says Joan Irving, paper conservator at the Winterthur Museum.⁸ Consider matting works on paper—especially larger works—in an acid free "window mat" that allows viewing of the object without direct handling. Much damage can occur when putting works on paper in mats. Only trained technicians should create mats. Otherwise, use folders. Large works on paper should be stored in acid-free folders and flat file drawers whenever possible. Avoid placing undue weight on any works on paper by stacking.⁹

⁸ Irving, interview.

⁹ Ibid. Also, see *American Institute for Conservation of Historic and Artistic Works*, "Proper Care and Handling [of Works on Paper]," accessed April 16, 2015, <http://beta.conservation-us.org/docs/default-source/resource-center/paper.pdf?sfvrsn=2>.



These images illustrate the process of making and using a window mat: cutting the mat to size and using a reversible adhesive and chemically stable paper to adhere the artwork to the mat. Only a trained technician should place works on paper in a mat. Photos courtesy of Joan Irving, Winterthur Museum.

Part Four: Book Exhibition and Handling

Never put books under spotlights or expose them to natural light or direct artificial light in an exhibition setting. This will permanently damage the object, as light causes some dyes and pigments to darken or lighten. According to the Canadian Conservation Institute, “Display and store books at light levels of a maximum of 150 lux with an ultraviolet light content of less than 75 $\mu\text{W}/\text{lm}$. Extremely light-sensitive material, such as illuminated manuscripts, should be exposed to a maximum of 50 lux with an ultraviolet content of less than 75 $\mu\text{W}/\text{lm}$.”¹⁰ To help prevent long-term damage to your exhibited books, consider turning the pages of books often—maybe every day, or at least several times a week.¹¹ In any case, remember to keep lighting levels as low as possible. Turning of pages is not a substitute for low light levels. The advantages of temporary exhibition do not merit permanent deterioration of collection items.

Handle books with care. Remove them securely from shelves by firmly grasping the entire volume—not just the top of the spine, which can lead to tears of the binding structure. Gently pull the book off of the shelf. If you find that the desired volume is packed tightly between its neighbors and thus difficult to grip, consider pushing its neighbors back slightly on the shelf to expose more of the spine, making for easier removal. Use both hands when carrying volumes. The spines of old books are fragile, so you must open books for research and exhibition purposes using proper support for the spine. Consider using foam wedges to prop books open, opening the spine **only as far as the book naturally allows**. If you cannot afford foam wedges, it is essential you provide some other form of soft support so that the volume does not lie flat, Emily Guthrie advises.¹² Use weighted fabric “snakes” to hold books open to certain pages. These can be made at home, using uncolored, cotton-based fabric and inorganic filler. Turn worn and delicate pages with a micro-spatula to avoid further damage. Open books must never be displayed vertically (i.e. at a 90° angle to the display surface). This puts undue weight on the text block and stress on the binding structure. Display books at an angle, using chemically stable snakes or plastic Mylar strips to open the volumes to appropriate pages. (Do not fasten the Mylar strips too tightly. This could damage the pages and make it difficult for you to turn pages on a regular basis.) Exhibit books in cases where they are safe from dust and other agents of deterioration.¹³

Part Five: Exhibition of Works on Paper

When exhibiting works on paper, it is vital to use chemically stable supplies. When purchasing supplies, ask for mat boards that are alkaline, produced from cotton rag or 100% chemically purified wood pulp. Use Japanese paper hinges or acid-free photo corners to secure a work on paper to a mat. DO NOT use dry-mounting, tapes, lamination, spray mount, or other similar techniques to secure a work of paper. Backing boards must also be chemically stable. Only glass or an acrylic sheet should be used to cover the object. For added protection against harmful light, consider using glass or an acrylic sheet that filters UV rays.¹⁴ Generally, exhibit durations range from three to twelve months depending on condition, media, and environment. **Prolonged exhibition may lead to the**

¹⁰ Canadian Conservation Institute, “Basic Care of Books.”

¹¹ Northeast Document Conservation Center, “Protecting Paper and Book Collections During Exhibition,” *Northeast Document Conservation Center*, accessed April 18, 2015, <https://www.nedcc.org/free-resources/preservation-leaflets/2.-the-environment/2.5-protecting-paper-and-book-collections-during-exhibition>.

¹² Guthrie, interview.

¹³ Canadian Conservation Institute, “Display Methods for Books,” *CCI Notes 11/8*, accessed April 16, 2016, https://www.cci-icc.gc.ca/resources-ressources/ccinotesicc/11-8_e.pdf.

¹⁴ American Institute for Conservation of Historic and Artistic Works, “Matting and Framing Works of Art and Artifacts on Paper,” *Caring for Your Treasures*, accessed April 16, 2015, <http://beta.conservation-us.org/docs/default-source/resource-center/mattingandframing.pdf?sfvrsn=0>.

destruction of your work on paper. When dealing with works on paper, specific care depends on medium. Consult with a conservator to determine your collection's needs.¹⁵

Part Six: Sources for Library and Archival Products

If possible, your institution should prioritize acquisition of the proper tools to support safe care and handling of rare books and works on paper. The companies listed below sell products of use to collections managers.

1. Archival Methods <http://www.archivalmethods.com/> (archival products)
2. Archivart by Nielsen Bainbridge <http://nielsenbainbridgegroup.com/content/archivart> (archival products)
3. Demco <http://www.demco.com/goto?PNHA01&> (archival products)
4. Gaylord www.gaylordmart.com (archival products)
5. New York Central Art Supply www.nycentralart.com (Japanese tissues, paper, and board)

Part Seven: Summary for Preservation on a Budget

1. **Keep it dark.** Light damages books and works on paper. Store them in the dark. Keep light levels low.
2. **Keep it cool and dry.** Respect parameters for temperature, relative humidity, and air circulation.
3. **Protect against chemical, pest, and fungal deterioration.** Monitor for signs of deterioration.
4. **House it.** The easiest way to prevent damage is to store fragile pieces in purpose-built enclosures.
5. **Keep books straight and paper flat.** Make sure that good-condition books are stored upright, in neat and tight rows. Poor-condition volumes should be stored flat, preferably in their own enclosures. Keep paper collections flat, with individual leaves preferably housed in their own enclosures. Shelve by size group.
6. **No acidic storage materials. Ever.** Never settle for chemically unstable storage materials when working with important and fragile books and works on paper. If you must store objects in non-acid-free boxes, include a chemically stable protective barrier of acid-free tissue paper.
7. **Handle with care.** Avoid stacking materials. Place loose documents in folders before moving.
8. **Empower your patrons.** Make sure that users know how to handle your books and works on paper.
9. **Establish a Culture of Conservation.** Hire a conservator to offer workshops about proper care and handling of collections. Ground your institutional culture in *prevention* of damage and love of objects.

¹⁵ Irving, interview.

Visit the websites of the Canadian Conservation Institute (<https://www.cci-icc.gc.ca/resources-ressources/ccinotesicc/index-eng.aspx>), the American Institute for Conservation (<http://www.conservation-us.org/home>), and the Northeast Document Conservation Center (<https://www.nedcc.org/free-resources/preservation-leaflets/1.-planning-and-prioritizing/1.1-what-is-preservation-planning>) for reliable information on preservation of your collections.