

Responsible Conservation; Steps in the Digitization of Rare Manuscripts in Academic Libraries

Aditya Harbola

Department of School of Computing, Graphic Era Hill University, Dehradun, Uttarakhand, India
248002

Abstract

A library's primary purpose is to provide its patrons with easy access to a wealth of resources for learning, exploring, and relaxing. Libraries are the hubs for the collection and preservation of not just our collective knowledge and history, but also our individual experiences and perspectives. The library's collections are vulnerable to a wide range of environmental hazards, which may cause permanent damage to many of them over time. Manuscripts contain valuable information, but the materials often utilised to make copies provide a significant barrier. These written records are crucial to the progress of humanity because they include evidence of past events, actions, ideas, and beliefs. These serve as a beacon for future generations and ought to be preserved for them. This page gives a concise explanation of the preservation methods used to save the manuscripts. Caution and cost-effectiveness are essential when implementing preventative measures.

Keywords: Library, educational, cultural, research, recreational information, heritage, environments, generations, preservation strategies protect

Introduction

The use of information and communication technologies (ICT) in libraries has shifted the focus of librarianship. ICT greatly facilitates the provision of new tools and procedures for document preservation, manuscript conservation, and the dissemination of information content. Rare papers and manuscripts are invaluable resources because of the information they carry. The national heritage of the country is protected via the preservation of many historical manuscripts and rare books. Through their extensive and carefully curated collections of manuscripts and rare documents, many libraries have helped to preserve the cultural history of their respective countries. For its upkeep, they use both contemporary and ancient techniques. There is a need to provide systematic knowledge on how to retrieve and disseminate information in today's ICT environment, where the digitization of rare papers and manuscripts has opened up new storage possibilities.

Carefully store the priceless books and papers away. Manuscript and rare book conservation is an art as well as a science within the field of library science. There is a lack of education among LIS professionals on the steps that must be taken to permanently protect a country's cultural treasures. Since the establishment of such laboratories requires specialised knowledge about the conservation and preservation process, no such facilities have been established in LICs. The process of document preservation is complex and time-consuming, necessitating the assistance of trained professionals.

The world's body of information, which has hitherto been transmitted mostly via written sources, has entered the digital age. The basic information included in old manuscripts may provide a fresh angle on research and development.

Types of Manuscripts and their preservation

Manuscripts are an invaluable resource for learning about our past and present, as well as our language, literature, and civilisation. The Indian cultural heritage includes a wealth of manuscripts. These are the primary stores of our forebears' achievements in many disciplines, including but not limited to the arts, sciences, humanities, and medicine. The term "manuscript" refers to a written work that has been composed by hand as opposed to having been printed or otherwise reproduced. According to www.wikipedia.in, the word "manuscript" comes from the Mediaeval Latin word "manuscriptum," which meant hand written writings. A manuscript is a written work of important scientific, historical, or artistic significance that was written on bark, cloth, metallic material, palm leaf, paper, or any other medium. Hundreds of languages and scripts are used to create manuscripts (www.indianetzone.com). Contemporary manuscripts include not just handwritten works but also letters and documents created with a typewriter. The existence of the manuscripts dates back many years. A manuscript is defined as "a book or document produced by hand before the introduction of printing" (Allied Chambers (India) Limited, 2000) by the Chambers Dictionary. Thus, all pre-print forms of writing are included under the umbrella term "manuscripts." Manuscripts, as contrast to books that are printed on paper, refer to any written work that is not typed.

- a) Fig leaf
- b) Sanchi Fang Brich
- c) In a Bamboo Leaf
- d) Fig Leaf
- e) A Bhoj Patra
- f) Textiles
- g) the parchment
- h) The ivory colour
- i) Any of several metals (Bronze, Copper, Gold, etc.)

Paper Factors Responsible for Deterioration of Archival Materials

There are several factors responsible the gradual date :

- i. **Environmental Factors** : Conditions of heat, light, shade, and dampness Insects, fungi, moulds, rats, and other animals are all examples of biological factors.
- ii. **Natural Factors** : Catastrophic events such as floods, earthquakes, and fires.
- iii. **Biological Factors** : Moist and warm conditions are favourable for the growth of fungus, moulds, silverfish, insects, readers, termites, and mice in the archives and texts.

Preservation of Manuscripts

The worth of a civilisation may be measured in the price of its oldest manuscript paper. Keeping manuscripts safe from damage and always accessible are two of the most important aspects of preservation. In today's ever-evolving technology world, preservation may enable the digital capture and gathering of artefacts so that they endure as long as possible without being damaged. Natural disasters will persist, but human intervention may mitigate some of the fallout.

Preservation aims to :

- i. In order to lessen the damage caused by things like heat, light, moisture, flooding, fire, pests, fungus, insects, contamination, dust, etc.
- ii. For the sake of preserving data's historical significance;
- iii. To facilitate its manipulation and utilisation;
- iv. To ensure the long-term viability of data;
- v. With a global reach and round-the-clock availability in mind.
- vi. Methods for Maintaining
- vii. Emulation File Attachment Metadata
- viii. Reliable Electronic DataMethods for Long-Term Digital Conservation and Preservation
- ix. Indigenous Knowledge Documentation
- x. Traditional Wisdom Captured and Documented;
- xi. Documentation of Indigenous Wisdom on Microfilm; Transformation and Storage in Digital Form.
- xii. Libraries, archives, and museums with central air conditioning are ideal environments for preserving books, manuscripts, artefacts, and other historical records.

Indigenous methodology of preserving manuscripts

- a) Pieces of Vasambu, meaning dried ginger, are preserved in manuscript bundles to ward off insects.
- b) To protect the cloth-wrapped manuscripts from insects, dried and powdered Aswagandha leaves are stored nearby.
- c) Manuscript leaves are coated with lemon-grass oil to make them more durable and to prevent the development of microorganisms.
- d) Vermillion or turmeric fruit powder (both red in hue) is used as an effective mosquito repellent in certain libraries.
- e) The elasticity of the palm leaf manuscripts is restored with the use of oil extracts of several natural ingredients like black spice, sandal wood, or clove.

- f) Because of its insecticidal characteristics, a blend of neem leaves, karanja, nirgundi, and citronella might be utilised in book storage facilities.
- g) As an added bonus, ants and cockroaches are also repelled by mint leaves.
- h) In order to keep pests at bay, many libraries sprinkle the floors with powdered sandalwood.
- i) The turmeric paste applied to the aged palm leaves is often used for its antiseptic properties.
- j) The strong fragrant scent of black cumin (Kala Jeera) is utilised as an insect repellent. The seeds may be scattered about the area where the manuscripts are kept to deter pests.

Digitization

The term "digitization" refers to the process of expanding and improving storage and retrieval of data systems to include the ability to edit digital media such as text, photos, sounds, and static or moving images. Both accessibility and long-term preservation need digitization. To this end, digitising manuscripts has become the sole viable option for sharing historical knowledge amongst communities. Because of the accessibility and security offered by the web, manuscripts are now possible to be digitised and made publicly accessible for the first time.

The main tools for digitization are Hardware and Software. Digitalizing helps:

- i. Increasing convenience.
- ii. Avoiding wear and tear from repeated handling is a key concern.
- iii. Exploring options for creating electronic books.
- iv. Collaborating with other organisations to pool resources.
- v. The Digital Preservation and Archiving Initiatives in India for Long-Term Use and Storage

Role of IGNCA, New Delhi:

- i. The Indira Gandhi National Centre for the Arts was founded in her honour with the goal of becoming a hub for the exploration and celebration of Indian art and culture.
- ii. The National Archive of India (NAI) has more historical records than any other institution in all of South Asia. Public documents, private papers, eastern records, cartographic records, and microfilms all make up its massive corpus of records, which are a gold mine of information for archivists and researchers.
- iii. About 3,600 unique and historically significant manuscripts in a variety of languages can be found in the library of the National Library of India in Kolkata. The Rare Books department is responsible for the safekeeping of these manuscripts and other valuable and rare books. This archive also includes the xylographs that His Holiness the Dalai Lama gave to the library.
- iv. **Khuda Bakhsh Oriental Public Library, Patna** : The library has become a world-class research facility, housing priceless works such as the world's only copy of "Tarik-e- Khandan-e-

Responsible Conservation; Steps in the Digitization of Rare Manuscripts in Academic Libraries

Timuriya," which features 132 exquisite paintings by the celebrated court artists of Akbar the Emperor and a writing by Jehangir.

- v. **Rampur Raza Library:** The Rampur Raza Library, constructed by the Nawabs of Rampur State, is a beautiful, unique storehouse of cultural legacy and treasure-house of knowledge. There are also 60,000 printed volumes and tens of thousands of rare and important manuscripts, papers, miniature paintings, astronomical equipment, and illustrated pieces in Arabic and Persian.

Definition of preservation and conservation as terms and techniques

Archives and rare books in libraries may be preserved for much longer with the help of conservation efforts. Conservation ensures that the paper along with other components will last for many years to come. The terms preservation and conservation are frequently used interchangeably to refer to the same thing: the act of protecting something from decay or destruction while preserving it in good shape for current and future usage. Examining an item (rare document/manuscript) closely to ascertain its condition, taking the necessary precautions to keep the object in excellent condition and extend its life as much as possible, and restoring an object that has already been damaged are the three main components of conservation. Therefore, preservation is a part of the activity of conservation. Preservation often entails preventative care, whereas conservation focuses on corrective care for a damaged specimen. Rare documents, such as manuscripts, are the primary focus of conservation efforts.

The Latin word "manuscriptum" refers to any written material that was originally created by hand. To quote the Oxford English Dictionary, a manuscript is "any document of any kind which is written by hand, or the text of a music or literary composition in handwritten or typescript form, and which, in that form, has not been reproduced in multiple copies." (Ray,1990.) Rare books may be found in private collections or in institutions whose holdings are seldom made public. The importance of preserving and conserving rare papers and manuscripts 4.1

- i. As stated in the Indian Constitution of 1950, the purpose of this document is to: "It shall be the obligation of every citizen of India- (F) to cherish and maintain the rich legacy of our composite culture," it says in Article 51A of Part IV-A, Fundamental Duties.(Indian Government, 2015)
- ii. In order to ensure that the knowledge contained in priceless libraries, museums, and manuscripts is passed down from one generation to the next, we must do our best to protect these relics of the past.
- iii. To preserve in writing for future generations the invaluable insights and life lessons of great thinkers and doers.
- iv. All ancient books and manuscripts are important to our history, and we want to make sure that future generations can benefit from them.
- v. When someone contributes a manuscript to a library, they are trusting the library to care after their family's history and the ideals they represent.

The first sort of conservation is preventative, and it involves taking measures to lessen the likelihood of undesirable events occurring in the future. Examples include curative conservation,

which includes fixing up damaged records, and routine collection condition checks. Example: killing all the bugs in a document by fumigating it.

Conservation process of rare documents and manuscripts:

The first kind of conservation is preventive, and it is trying to stop future problems from developing. Curative conservation, which entails restoring damaged recordings, and regular collection condition checks are two such examples. Fumigating a document to remove any defects is only one example.

- i. **Document Verification:** Evaluation of the bibliographic information of documents is integral to the document verification process. A dedicated record-keeping sheet should be used to document these specifics. In addition, it helps with cataloguing and/or bibliographical research for rare collections.
- ii. **Fumigation:** It's a strategy for eradicating unwanted pests, including the use of chemical vapours to kill off bugs and bacteria. Thymol vapours are used in this method. Thymol, or 2-isopropyl-5-methylphenol, is a phenol that goes by several other names. The fungus is killed by the vapour and the paper is unharmed.
- iii. **Condition Report:** Both the collecting and storing of data are affected. Photographic evidence is kept and used to compile the condition report.
- iv. **Pagination:** Separating the pages is an essential step in the conservation procedure, after which the book is rebound. Before binding, we now number each page from the first to the last.
- v. **Dry brushing:** Dust and filth may be seen on the surface of certain papers. We use a natural-fiber brush to give it a gentle cleaning. Since the paper is manufactured by separating the fibres into a suspension before being formed into a sheet, it is easily cleaned by simply brushing it with a dry cloth.
- vi. **Test:** The acidity of paper may be measured using the following methods:
- vii. **pH Test:** The surface test of the paper is conducted by using pH strips, on pH strip-Blue indicate alkalinity, Yellow indicate acidity and Green indicate that it is neutral. "The pH is defined as $\text{pH} = -\log_{10} [\text{H}^+]$ where $[\text{H}^+]$ is the hydrogen ion concentration. On this scale, pH7 is neutral, pH1 is extremely acid and pH14 is extremely alkaline. Each pH decrease of 1.0 represents a 10 times increase in hydrogen ion concentration. For example, there is 10 times more active acid at pH4 than pH5." (Daniels,2006.)
- viii. **INK Solubility test:** Manuscript ink or paint quality may be evaluated using this method. After the paper has been deacidified, this test will help us decide whether or not to keep the ink in place.
- ix. **Drying Process:** Pages that have been de-acidified are dried using blotting paper. Moisture is absorbed using this method.
- x. **Making of Anti-fungal Pest/ Gluten free Starch Pest:** Anti-fungal Book repair adhesives include glue and gluten-free starch pest. One hundred grammes of ordinary flour, half a litre of

Responsible Conservation; Steps in the Digitization of Rare Manuscripts in Academic Libraries

cold water, and two drops of thymol are all you need to make the pest. Insects are attracted to gluten, thus starch pest should be gluten-free.

- xi. **Lining, Mending and Filling:** A rare book's missing pages can be replaced with insect alone, but the book's ragged edges must be mended and filled with banana paper. Japanese tissue is laminated to protect flimsy documents.
- xii. **Drying:** Drying racks are used to store the laminated papers until they are ready to be used.
- xiii. **Cutting:** If you want your pages to be consistent in size after they've been split and knotted, you'll need to cut them all to the same size.
- xiv. **Sequence of Pages:** Carefully arrange all pages in order using the page numbers you generated in step 4.
- xv. **Archival Binding:** We may bound these sheets whichever you see fit. Rebound books should be pressed for some time after binding to prevent the pages from blending together and the book from warping.

Conclusion

One of the most crucial areas that needs greater attention to conserve the national history and resources for future generations is the preservation and protection of rare writings, rare books, papers, government data, and digital resources. Information networks should ensure that everyone who wants access to these unique items may get it, expanding people's understanding of Indian culture on a global scale. An significant resource for study, teaching, and original content development, cultural heritage items are expected to surface.

References:

1. Ray, Prytherch. (1990), Harrod's Librarians' Glossary and Reference Book.Ed.7. England , Gower.P.392.
2. Daniels, Vincent. (2006), Paper. In: May, Eric; Jones, Mark. Conservation Science: Heritage Materials. U.K., The Royal Society of Chemistry. P.39.
3. Government of India. (2015), The Constitution of India. New Delhi, Ministry of Law and Justice.P.25. Digital Preservation Coalition, "Preservation Management of Digital Materials: The Handbook [http:// www.dpconline.org/ advice/ preservationhandbook,](http://www.dpconline.org/advice/preservationhandbook)" 2008. Archaeological Survey of India, Government of India, http://asi.nic.in/asi_aboutus.asp
4. Harinarayana, N., and Jeyaraj, V., (Ed.), Care of Museum Manuscripts, Published by the Commissioner of Museums, Government Museum, Madras, June, 1995. "National Mission for Manuscripts" - Government of India website. www.wikipedia.org Anderson, cokie g. starting a digitization centre. Oxford: chandos publishing, 2004
5. Bhattacharyya, B. "Palm Leaf Manuscripts and other Preservation", Indian Archives Vaishnav .A.A and Sonwane,S.S. "Information requirement for digitization of manuscript at BAMUL" <http://www.irinflibnet.ac.in> www.infolibrarian.com