

Preservation of Library Materials: Problems and Perspective

Adupa Sunil¹ and K. Praveen Kumar²

¹*Department of Library and Information Science, Kakatiya University, Warangal-506 009*

²*International Institute for Population Sciences, Govandi Station Road, Deonar, Mumbai-400 088*

ABSTRACT

In any civilised society library has a significant place for study, research, reference, and recreation. It is a product of cultural maturation and storehouse of knowledge. Libraries extend horizons of knowledge. The large-scale explosion of information has necessitated libraries to not only be well-stocked and well-organised, but also to collect non-book materials such as motion picture, slides, magnetic tapes, CDs, DVDs, etc. The preservation of these multifarious materials has necessitated changes in the form of preservation efforts. This paper gives an overview of how to conserve library material.

Keywords: Preservation, library materials, destructive agents

1. INTRODUCTION

S.R. Ranganathan defined library, "as a public institution or establishment charged with the care of a collection of books and the duty of making them accessible to those who require them. It is the responsibility of the authorities to preserve the collection and make it accessible to the public". According to Sir Hilary Jenkinson, "the care of collection of books means protecting the collection from the damage of the four enemies, viz., fire, water, insects, and human beings". Traditional techniques for safe guarding the library material are inadequate. The diversity and complexity of materials, ranging from ancient books to photographic and magnetic images, cannot be solved by older, purely empirical approaches. The preservation of library material, impelled by the forces described above, is just beginning to emerge as a distinct professional discipline. While some indications of the field have been derived from the closely allied profession like museum conservation, and art preservation, conservation of library material lacks formal, academic training programmes¹, and library administrators are just beginning to realise their responsibilities toward preserving their collections as a part of their profession.

2. DESTRUCTIVE AGENTS

The enemies of books can be classified into conventional and non-conventional destructive agents.

The conventional agents are temperature, humidity, light, biological infestation, and pollution. The non-conventional destructive agents are the organic constituents present in paper, cloth, leather, and ink, etc. A typical book is made up of paper (made up of wood); leather, which requires glue for binding; and ink, which is acidic in nature. These organic materials are susceptible to damage by a wide range of destructive agents. Some of the destructive agents are broadly classified into two categories, i.e., insects and microorganisms².

Insects like white ants, cockroaches, ants, beetles, bookworm, rodents, spider, bacteria, etc., eat wood and leather fabrics of documents. The microorganisms like bacteria and fungi bring complete degradation of the material present in the libraries of humid tropics. They find favourable conditions for their growth more easily in such conditions.

There are other factors, which cause damage to the library material. These are fire, human beings, and water. Tearing and stealing are the major harm done by human beings. The water leaking from the ceiling of the library building can make the ink spread or wash it out completely. It also causes stains when the pages dry up after being dampened once. Chemical changes in paper and some of the structural problems of books themselves are compounded by unsatisfactory conditions of storage and by careless or excessive use. Storage conditions are critical for the longevity of books and documents, and

although counsels of perfection have to be balanced against the realistically attainable, it is necessary to consider the ideal conditions under which materials ought to be kept.

Preservation is simply a mean of ensuring that information is available when it is needed, and the preservation of the physical object is only one of several means by which that end can be attained. Therefore, ideal environment has to be reconciled with the conditions in which both librarians and users can work with the books for the purpose for which they are intended, and also with conditions which are technically attainable and economically feasible³.

3. METHODS OF PRESERVATION

Preservation methods are adopted based on location, weather, and environment. These conditions can be attained using an appropriate environment and the various other methods like chemical treatment, fumigation, restoring faded links, bleaching, etc.⁴

3.1 Environmental Conditions

Much research has been done on finding out the ideal condition of humidity and temperature for the storage of books, and archival materials. Gallo an Italian chemist suggested that the ideal humidity between 40 per cent and 65 per cent, and the temperature between 18 °C and 20 °C are good for conservation of books⁵.

It is very difficult to control atmospheric conditions, which are constantly fluctuating. The control of temperature and humidity inside the room implies their constant measurement. A number of sensitive instruments are available for measuring temperature and humidity. Some instruments are of the recording type and make it possible to record temperature and humidity or both over a length of time. Too much of relative humidity or too little of it is equally dangerous. The recording instruments help us to know the actual condition of humidity. It is necessary to find out the humidity and to maintain the right humidity. During the summer, relative humidity falls below 50 per cent and the atmosphere becomes dry. It is necessary to increase the content of moisture in the air.

3.2 Fire

Fire may be prevented by banning smoking in the library. Inflammable articles like kerosene, petrol, waste paper should be kept outside. Electric wiring must be enclosed in metal conducts to localise the effect of sparks due to short circuits. Control switches for lighting should be fixed outside the room and the mains should be off when the stack area is closed. A good method of

limiting the fire is to partition the stack area into different portions with metal partitions which have metal doors and to isolate them from one another through shutting the doors in case of fire. This will check the spreading of fire and will help in its control. Sufficient number of fire extinguishers should be kept at strategic points in the library.

3.3 Human Beings

Readers, with a stealing inclination, can be checked through preventive measures like spying and installing thief-catching devices. The fundamental factor in minimising unnecessary damage to the library material also depends on the careful handling of the materials on the part of both staff and reader. Videotapes or slides regarding the handling of books should be shown to the new employees and the readers. Books should never be pulled off the shelves by head caps. When more than four to five books have to be carried within the library, care should be taken to reduce the possibility of dropping of the books. Over sized books should be handled with particular care. Books should not be jammed on to over crowded shelves that may cause damage to binding⁶.

3.4 Chemical Methods of Preservation

Some standards should be followed while using chemicals for preservation. Examination of the object thoroughly and the isolation of deterioration factors must be the starting point. Only standard materials must be used. The methods and materials used should not damage the original condition of documents. All commercial products whose composition is unknown must not be used. It is better to use pure reagents. Caution is to be employed in deciding on restoration or cleaning. For restoration of materials the least drastic method should always be tried initially.

3.4.1 Preservation from Insects and Pests

Insects and pests can be controlled by chemical treatments like fumigation and using chemicals in the affected areas. The optimal range of temperature for microorganisms to survive is 20 °C to 40 °C and for insects is 20 °C to 30 °C. Termite's infection starts from the soil. To control termites, creation of chemical barrier around the building using crude creosote in kerosene (1:1) or Siedren in water (1:60) is recommended. Dieldrins, insecticides like DOT are being used in the public libraries to control a variety of insects. DDT acts as a stomach poison to insects and affects their sensory organs and nervous system and causing violent agitation followed by paralytic death.

Gaseous poisons used for killing insects and fungi are called fumigants. The process is called

fumigation. The gases penetrate the inner spine of documents and kill all kinds of insects and fungi including larvae. It is a good method to use on the documents carrying fungus and larvae, which can produce mould and growth of insects, which in course of time spreads to other documents. If fumigation is done early we can inhibit the future growth of mould and insects. In case of insect attack, the fumigant used is paradichloro benzene. A quantity of 1 lb for every 10 cubic feet of space of the chamber is required. Para-dichloro benzene fumigation chamber is a normal sized, steel cupboard available in the market with perforated shelves. Para-dichloro benzene is placed inside a dish at the bottom of the cupboards. Air tightness of the shelf is achieved by pasting strips of brown paper of ordinary thickness over all the openings.

3.5 Restoring Faded Inks

Iron gal inks fade in adverse conditions because tannin in the ink decomposes and disappears. The paper containing the faded writing may be treated for few seconds with a dilute solution of ammonium hydro sulphide until the writing darkens. The faded writing may also be treated with 3 per cent solution of tannic acid so as to darken the iron oxide and bring back the writing.

3.6 Bleaching

The removal of general discoloration is necessary very often to give the document freshness. A bleaching agent, which is less injurious to the fibres of the document material, is chloramines. It is invariably used as 2 per cent solution in water.

4. PHYSICAL METHODS OF PRESERVATION

4.1 Lamination

It is the process in which a document is embedded between sheets of synthetic plastic film or tissue. The synthetic plastic is the adhesive and the tissue paper is the reinforcement. The adhesion of the synthetic plastic may be brought about by using pressure and heat or by using suitable solvent. The temperature required is about 140 °C to 150 °C for 22 to 36 kg/cm². At this temperature and pressure, the synthetic plastic cellulose accurately melts and seals up firmly. This makes good reinforcement.

4.2 Repair

A document may suffer a minor physical change such as tears, wrinkling, scattered holes, and gross deterioration such as abnormally large number of holes and tunnels caused by insects. Latter case calls for the

strengthening of the sheets with chiffon and through the modern process of lamination.

4.3 Leather Book Binding

In the cases of leather book bindings, the decay starts at the hinges of the book and can be noticed from the top inside and takes the form of cracking. With time and negligence the cracks spread and leather begins to disintegrate. The decay is caused because leather has the property of absorbing sulphur dioxide from the atmosphere. Plenderleith holds the view that even leather dressing gives only incomplete protection to the leather against chemical decay and the replacement of the natural protective agents is essential through protection.

4.4 Racking and Shelving

The racks, shelves and containers also conform to the exigencies of good storage that is resistant to dirt, dampness, fire, and microorganisms. Proper choice of material and design of racks, shelves and containers avert the dangers to the documents. Racks should be made of steel. They may be arranged width wise along the length of the rooms. Steel racks may be suitably painted to avoid rusting. Flat dishes of metal should be placed under the legs of the racks and filled with water or insecticides solution to prevent insects from going up the racks from the floor. The shelf should be made of battens so that the airflow is maintained underneath the archival material kept on them. For long rolled documents, Jenkinson suggested cantilever brackets built into the wall and provided with teak battens. These racks may be placed close together one above another, each taking one layer of rolled maps, etc., of any length up to 5'. Jenkinson suggested that cleaning space must be provided on every floor keeping the document while the place is being cleaned.

4.5 Dust Removal

Dust accumulates quickly in our climate, so it is necessary to remove it regularly. Dusting cannot be done properly with cloth and broom, because particles of dust rise into air and again settles down in some other part of the room or in other shelves. To overcome this problem libraries should use vacuum cleaners. Vacuum cleaners also helps in saving a lot of time otherwise spent on brooming and cleaning.

5. PRESERVATION OF NON-BOOK MATERIAL

Containers should be devised in such a way as to prevent the documents from fraying and wrinkling. Containers may be of metal, which are fire resistant and long lasting. The more common containers are millboard

or strawboard. These may be made of glazed leather board and fibreboard. Different sizes of boxes should be kept for enclosing documents of different sizes. The documents in the form of rolls may be protected at their ends with fine unbleached linen and kept in a leather board box of square section.

Illustrations may be placed in manila folders or cellophanes envelopes and filled vertically in metal cabinets. The maps should be placed horizontally in shallow drawers and protected by heavy manila sheets. These are also stored in vertical containers. These may be mounted on cloth for resistance or may be strengthened by lamination. The atlases are preserved horizontally on roller shelves for easy withdrawal and replacement. Only three volumes should be kept on one shelf.

5.1 Conservation of Manuscripts

To preserve manuscripts in a good condition, it is essential to maintain a controlled environment. Due to climatic conditions in India, the manuscripts become brittle and fragile. Biological organisms like mould, fungi, silver fish, bookworms, and termites are dangerous to manuscripts⁷. These can be preserved by insect repellent chemicals like naphthalene balls, camphor, and bingo bait. Environmental gases and chemicals used in paper manufacturing are also harmful in the long run. Direct natural and electrical light also causes loss of strength and oxidation of cellulose in paper.

Fumigation is also carried out when necessary. Fumigation with thymol vapours is very useful. Leaves of manuscripts can be separated and placed in fumigation chamber. The leaves can be given treatment for a longer period to remove any trace of fungus. Manuscripts should not be kept in steel cupboards and should be kept in wooden cupboards⁸.

6. CONCLUSION

Conservation of library material is a priority and emerging area. Every professional in libraries must draw the attention of the policy makers to the proper preservation techniques and their applications. For the purpose of further development of preservation of library

materials, the following steps have to be taken into the consideration:

- ✘ The latest preservation techniques have to be followed.
- ✘ The library professional must upgrade their technical expertise by taking orientation and training programmes on conservation of library materials.
- ✘ Conservation techniques must find place in the curriculum of library sciences courses.
- ✘ Good governance and best technical support should be adopted for the strengthening of preservation of valuable books in libraries.
- ✘ In the era of electronic information storage devices, the digitisation of library books may solve the problems of preservation of libraries to a greater extent.

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