

Preservation and Conservation of Library Materials

Waseem Ahmad*

One of the hard to swallow realities of the library and archives world is the fact that paper materials in our collections are in process of deterioration. But, it is only recently that the librarians and archivists have become aware of the alarming speed with which their holdings are being deteriorated and inadequate methods of conservation and restoration available to them. Particularly in Pakistan, there are a lot of problems which librarians are facing and what is more tragic, they have no immediate remedial action plan before them. Pollution, dust, humidity, temperature and light are the basic damaging factors. We have to take them into consideration when talking about preservation of library materials. It is unfortunate that in majority of our libraries, we don't have sufficient funds to install air-conditioners, dehumidifiers and air filters in order to tackle the situation. In Pakistan, electricity is expensive and we cannot run the A.C. plant throughout the year. Moreover, its constant and steady supply is never sure. Wherever these facilities have been provided, their further utilization is never guaranteed. Therefore, we should consider the sun direction in a new library and its rooms should be comparatively in cooler place.

Molds and Bacteria

A relative humidity over 65% causes the growth of molds and bacteria which not only destroy the paper but leather bindings are also eaten up.

Insects

Damage to library materials from insects is primarily caused by termite, silverfish, various beetles and book lice. It occurs when insects use them as food. Among these, termite, also known as white-ants, is

* Chief Chemist, Lahore Museum, Lahore

very destructive to library materials. It is found in dark and humid places. It is therefore necessary to take all precautions against termite. Before the construction of a new library building, anti-termite chemical should be sprayed in the foundation of the building.

For treatment of existing buildings with insecticides, holes are drilled in the floor one centimeter in diameter and fifty centimeter apart which normally touch the soil. Then the anti-termite chemical is injected in it with pressure at the rate of one litre per hole. After treatment is completed the holes are sealed. Chemicals used in this case are normally Dieldrin in 1:40 ratio i.e. one part of Dieldrin mixed with 40 parts of water.

Silver fish is one of the most common pest in libraries. All have weak, chewing type mouth and tend to feed on carbohydrates and proteins. Such material as paper, prints, glue and paste are favourites of silver fish.

It like to hide underneath some mats during day time. Normally, it is killed by Baygon spray.

Mechanical Damage

Old books have often suffered mechanical damage such as torn and missing pages. These are due to readers. Librarians should keep an eye on the readers to stop them from this type of damage.

The preservation includes managerial decision, policies, financial judgment, storage and accommodation provision, techniques and methods involved in preserving library collections. Adopting preventive measures is also the duty of a librarian.

Dust and Soot

It is estimated that within the city of Lahore 15 to 20 tons of dust precipitates per square kilometer per month. This dust contains about 25% lime (Calcium Carbonate and Calcium Magnesium Carbonate), 20% quartz, 23% amorphous glossy constituents and 2% iron oxide. In the area where traffic is very heavy, dust also contains lead, soot and iron oxide which are the main harmful constituents of the dust. Iron Oxide acts as catalyst in forming Sulfuric Acid from Sulphur dioxide. When Sulfuric Acid attacks the books and paper, it makes them brittle which causes damages to the paper. In order to save documents, we have

to decalcify them one by one after checking P.H. value in them. This is very hard and time consuming process.

Recently mass deacidification of books has been introduced in USA and Canada, but we don't have this facility.

If some books have been catalogued and record of shelf positions prepared, the books can be placed in cartons and wheeled to work room. Here they can be hand dusted after removing from the cart. If the books are uncatalogued and are to be flagged, it is advisable to hand dust each book as it is removed from the shelf. The flags should be reinserted. While hand dusting books, it is advisable to use special cloth that helps keep dust from scattering.

If we regularly remove the dust from the library books, we can save more than 50% of the books straight away. Unfortunately in Pakistan, most of the librarians do not pay due attention to it on the plea that they don't have sufficient staff for this purpose. Actually a small vacuum cleaner can do this job quite easily.

Humidity

Excessive humidity (70% or more) can have detrimental effects on library materials. Not only it damages the paper materials, but there is also a negative effect in library building. Growth of mold and insects accelerates in humid atmosphere.

Control of relative humidity is very essential for paper and library materials. As paper is hygroscopic and it absorbs moisture from the atmosphere, excessive moisture tends to weaken the tissues of paper. The possibility and extent of damage to paper by moisture can be judged from the fact that one thousand tons of books are calculated to absorb at least 20 thousand pounds of water when the relative humidity of the atmosphere increases to 57/0-63% at 16 degree centigrade. So, if the relative humidity increases the 65% limit, it must be controlled.

Dehumidifiers are necessary in humid climate and in damp room where the relative humidity is more than 65%. Dehumidifier works on the principle of absorption. These are available in various sizes. The size required will depend on the volume of air in the room and on the temperature and relative humidity. As dehumidifiers are very expensive we can place silica gel on the shelves. Silica gel has hygroscopic properties which has the capability of absorbing water from surroundings. When it is saturated with water vapours, it can be regenerated or can be

used again after heating the saturated matter at 100-200 degree centigrade.

Water Fountains

Keeping in view the hot climate, dust and pollution of our country, water fountains should be fixed in front of all libraries. It is possible to wash a high proportion of both particulate and gaseous pollutants out of the air by passing it through a spray of water. We have also installed a fountain in front of Lahore Museum which not only gives the good look but also removes most of the pollutant gaseous along with so. In the dry season water spray can also serve as humidifier.

Cleaning

The air can be effectively cleaned by filters which can be fixed with air conditioning systems. But as we know that there are only a few libraries in Pakistan which are air-conditioned. So, these filters cannot be fixed in every library. As such, in Pakistan, we should adopt some other measures. We should fix wire gauze in all the doors, windows and ventilators. In this way most of the air can be filtered.

Precaution

Since most libraries have no more cleaning staff that is necessary to keep the office and public area presentable, one can hire a full time person whose only job should be to clean each and every book daily.

When it is impossible to provide even one full time book cleaner, help from students and volunteers can be taken. Before the books are returned to their original shelves they should be individually vacuum cleaned and inspected for evidence of mildew, silverfish and other damage. The leather bound volumes are treated with potassium lactate. Leather cover should be cleaned with non ionic detergent. The pages of any book with traces of mildew or silverfish must be sprayed with 5% solution of Thymol in Alcohol. Books that show other signs of chemical or physical damage should be set aside for further repair. Instructions for routine cleaning of books can also be had from the conservation laboratory .

Storage

Collection of manuscripts should be stored in acid free wrappers in flat boxes with documents unfolded and lying flat. But still there is danger to the collection, if:

- a) A ground wood pulp paper or rosin fixed paper is in the same folder with good quality paper .
- b) News clippings are attached to hand-written or typed record. (News clippings should be deacidified if they must be filed with good paper) and
- c) A book or a manuscript is placed on photostat machine for purpose of copying. (Normally the operator easily breaks the spine of a volume in effort to flatten the pages and get a clear copy).

Scotch Tape

In our libraries and quite often in museums too, adhesive tapes are frequently used for mending the valuable record. As a matter of fact, these pressure sensitive tapes are never manufactured for the repair of valuable record. In case we remove the tape, it leaves stains on the paper which become difficult to remove. Therefore pressure sensitive tapes should never be used for repair of library material.

These are some ideas as to how bound library materials can be preserved through proper care and handling. By maintaining of moderate environment with controlled temperature and humidity and Proper Light, the library can slow the rate of damage. Hood shelving and careful handling of the books by staff and readers can save the books from physical damage. Organized stock maintenance programme, cleaning of shelves and books can help to prolong the life of library's printed collections

Pakistani Librarian is an annual journal published by the Department of Library and Information Science, University of the Punjab, Lahore, Pakistan.

This journal is available on the world wide web at www.geocities.com/pakistani_librarian. Visit this site to find a complete archive of Pakistani Librarian.