

A Study towards Ancient and Modern Preservation Techniques of Historical Manuscripts against Deterioration

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Abstract

Our precious resources like literary, linguistic, artistic and cultural heritage are usually engraved by means of manuscripts. It is very important to preserve the historical manuscripts which reveal the information about the civilized past. All ancient manuscripts are accessible in any one of the forms like stone and metal carvings, palm leaf manuscripts, paper manuscripts. However, because of many factors available historical documents are found in degraded form. Historical documents contain important information, so we need to restore them and preserve for our future followers. There are hundreds and thousands of historical documents available. But not all available ones are in good condition. Researchers need to find modern tools and techniques in coming era to preserve this information from deterioration for our followers. This research paper is a drop of such study and pays an attempt to summarize various forms of such techniques available to restore old historical documents.

Keywords: Manuscripts, Preservation, Digitization, Cultural Heritage, Deterioration

1. INTRODUCTION

The Archaeological Survey of India (ASI), as an attached office under the Department of Culture, Ministry of Tourism and Culture, is the premier organization for the archaeological researches and protection of the cultural heritage of the nation [1]. Maintenance of ancient monuments and archaeological sites and remains of national importance is the prime concern of the ASI.

The organization has a large work force of trained archaeologists, conservators, epigraphist, architects and scientists for conducting archaeological research projects through its Excavation Branches, Prehistory Branch, Epigraphy Branches, Science Branch, Horticulture Branch, Building Survey Project, Temple Survey Projects and Underwater Archaeology Wing. In India some three thousand five hundred and ninety three protected monuments besides chemical preservation of museum and excavated objects countrywide are taken care by Archaeological Survey of India's Science Branch, it is responsible mainly for the chemical conservation treatment and preservation monuments. [2]. Evidence shows that several preservation methods to preserve the manuscripts against deterioration have been used by Indians from the

ancient period. They were also quite aware of the basic factors of deterioration of the manuscripts namely light, dust, heat and humidity. This attempt has been made to summarize various practices followed during the ancient and modern era.

2. CONVENTIONAL PRESERVATION METHODS

Set Prevention of manuscripts is a global problem which is almost faced by every part of the world by the custodians. Based on the locally available resources ancient people followed some techniques for prevention. In that, some of them have utilized the locally available plants, products, their germicidal properties and insect repellence potentialities [3]. Enumerated below are some of the traditional preservation practices which were adopted by most of the custodians to safe upkeep of manuscripts.

- Ancient manuscripts were mostly written over various preserved leaves. For the safety of the manuscripts, the leaves were initially subjected to seasoning process before writing. Commonly seasoning was done by burying the leaves under mud or boiling them in water. After this process the leaves had some antiseptic effect which could kill the insects
- Traditional annual seasonal ritual is followed to protect manuscripts. A clean cloth which is wiped with a medicinal paste of coconut leaf juice (*Coccinia Indica*), wood charcoal and turmeric prevents manuscripts from fungal and insect attack
- To give protection from dust and worms ancient people used to cover the manuscript with the help of clothes. To a greater extent from variation in atmospheric moisture, dryness and absorption of acidic fumes. To protect the manuscripts against the insects, dried and powdered leaves of *Aswagandha* kept in small packets are used. Dried ginger or *Vasambu* is also used to protect the manuscripts from insects attack.
- Holes are made on either side of the leaves of the manuscript and then script is fastened by cords passing through the holes. Then the leaves are pressed between the two stiff flat wooden boards to prevent curling at

the edges. Chipping of leaves are also done by abrasion technique.

- Usually manuscripts of palm leaves are wrapped in red or yellow colour clothes. It is believed that red colours repel the insects and yellow colour clothes made up of using turmeric possess some germicidal action against insects.
- To avoid the effect of climatic changes, the bundles of manuscripts are kept in heavy wooden chest. In order to control the insects attack on the palm leaves manuscripts, they were exposed to the kitchen smoke. Even though this smoke will deposit over the palm leaves, it has the capacity to repel the insects.
- Another ancient way of palm leaf manuscripts preservation is stringing together with a bamboo and a string of cotton or silk. This technique keeps the leaves intact. Keeping palm leaf manuscript in underground cells is also followed for preservation.
- Yet another way is the use of the environmental changes that happens in certain months for preservation. One such method is exposing leaves to the Sun in the month of August which kills the worms that distorts the leaves.
- The nicotinic acid present in the dried Tamakhu leaves packed in small cloth bags or spread on the cupboards, wooden stories or shelves also protect the manuscripts against attack of insects.
- Applying herbal lemon-grass oil over leaf manuscripts controls/destroys the growth of micro-organisms and strengthens the leaves of the manuscripts.
- Powdered vermilion or kumkum fruit powders are used as insect repellent. The roots of dried sweet flag kept in small bags and placed in the cup boards where the manuscripts are there act as a very good insect killer. Powdered Ajwain, and the seed of custard apple also act as insecticide and fungicide.
- Oil extracts from black pepper, sandal wood and clove are also used in the restoration of palm leaf manuscripts. Commonly in most of the libraries the sandal wood dust is used to get rid off the insects.
- Neem oil is also used to protect the manuscripts from insects. It contains limonoids which can control the growth of the insects. They don't kill the insects instantly but affect reproductive system of the insects and control the birth of new born one.
- Dried neem leaves and seeds are also used to kill the insects in order to prevent the manuscripts. So that they have been used widely since ancient times. Mint

leaves are also used to protect the manuscripts by controlling ants and cockroaches.

- Same way the aroma of Indian worm wood bears known as Naga-damani, Black-Cumin are also used as insect repellent to get rid of insects and to prevent the growth of micro organisms. The raw seeds of Black-cumin spread over the manuscripts keep the insects away.
- Commonly all types of manuscripts are kept in Neem wooden planks stories to control the insect attack and ward off termite.
- Indians use naturally obtained camphor to preserve their valuable documents from insects attack. In this technique, camphor is placed in small bags and kept inside the storage media. Instead of natural camphor, synthetic camphor oil is also used to protect palm leaf manuscript from insects.
- Attacks of white ants can be prevented by keeping a sort Pandi grass over bundles of manuscripts.

All the above listed preservation techniques serve better if resources are limited. Usually the entire collection will be better served by giving more attention for storage through basic preservation treatments, rather than through a series of restorations of individual manuscripts. Each series of preservation techniques consumes hundreds of hours and incurring further maintenance. There is an alternate solution to preserve the manuscripts in a better manner than the traditional ones which is easily accessible by all.

3. DIGITIZATION PRESERVATION METHODS

Deterioration is one of the major problems in the management of manuscript collections. It is mostly because of nature. So that attentions should be given on preservation of content along with the physical preservation of the manuscripts. Traditional tools used for preservation procedure is not effective and efficient. [7]

In some cases, physical preservation of manuscripts is impossible too. Digitizing historical cultural architecture is a trend on international preservation [4]. The digital preservation is suggested and followed as it can preserve the manuscripts with its own physical features and contents.

In the recent days digital archiving has been applied for several purposes. Particularly for large collections, the question of wise use of available resources must always be considered. The process of maintaining digital objects as long as required, in a form which is authentic and accessible to users needs to be considered [5].

The term digital preservation is defined by Encyclopedia of Information Technology, as "The process of maintaining, in a condition suitable for use, materials produced in digital formats". Dispute of physical

preservation are compounded by the obsolescence also refers to the practice of digitizing resources formerly fashioned in non-digital formats like print, film, etc. to prevent permanent loss due to deterioration of the physical medium.

- In the Recent years, the historical documents are stored in the computer memories in the form of digital historical documents. The digitized historical documents are easy to restore than the manual restoration process.
- Digital preservation refers to all of the actions required to maintain access to digital materials beyond the limits of media failure or technological change.[6]
- In other words Digitization refers to the progression of managed actions required to make certain persistent admittance to digital materials for as long as necessary
- Digital preservation has two forms; one is conservation of resources in digital form and the other is in printed documents
- Digital preservation facilitates the global accessibility to any form of document. Generally digital preservation processes adapts two different techniques. First one is creating image file of the documents and the second is scanning the documents and then using the OCR process for making the text file error free.
- Most of the time the digitized manuscripts are then preserved in different secondary storage devices.

4. CONCLUSION

Preservation of Historical Manuscripts against Deterioration is of concern to all. From the ancient days a number of traditional methods are used to preserve the manuscripts. After the invention of computers and information techniques digital preservation has become popular.

This paper has given a survey of traditional methods for preserving the manuscripts as well as the digital preservation techniques currently adapted. Preservation of document through digitalization process has become very important. The digital preservation paves ways to access documents easily if available on the web from any part of the world.

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