CHAPTER - V
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PRESERVATION AND CONSERVATION OF MANUSCRIPTS

In this chapter attempt has been made to cover following two areas related to MSS (I) preservation and conservation of MSS - Meaning, Scope, processes, facilities available in our country and (II) Inclusion of this paper in LIS education and its curriculum.

In order to preserve the MSS, an employee in a library or archive should be conversant with the technique of preservation and facilities available in our country. So that these facilities will be utilised for preservation and conservation of MSS in various institutes, where such in house facilities are not available.

(I): Decaying Process of Documents:

As per the nature of law, whatever exists, is going to perish during the course of time. All the living beings are biological species. All the writing material say-Tal-patra, Birch-bark, papyrus or paper etc. are all cultivated out of biological products. So the law of nature plays its role and the written document i.e. MSS are going to deteriorate. This is natural process of decay. This decaying process is accelerated by the external forces in environment, such as heat, moisture etc. In order to retard this process, preservation/conservation is necessary.
Preservation

To restrict this process of decaying, the measures taken, are known as preservation. There are number of ways and means of preservation. The ways of preservation are called preservation techniques and the means to preserve are called as preservation tools.

Conservation

In spite of all the care taken, in natural process document decays. In order to bring it back to its original position to some extent, technique of conservation is adopted.

In Indian context, there is less attention provided to the preservation part of the cultural property and so also the MSS, S.G. Biswas rightly points out that - 'Asians are, by and large, less aware of the value of preserving their own cultural heritage, primarily due to mass illiteracy and ignorance. Secondly, tropical climatic conditions also hamper the process of preservation in a very big way'(1) The survey conducted in the present study reveals that hardly few institutes have preservation programmes and only few of national repute, have conservation laboratories.

Importance of document: Importance of documentary heritage has been very well explained by Dr. S.N. Sinha, Former Director, U.P. State Archives in following words - 'Among all our national
assets, Documentary heritage is the most precious. It is the gift of one generation to another. In fact it is the repository of our cultural heritage (2).

This mostly comprise of documents/records, archives, MSS, books etc. MSS, which is hand-written document, has its unique position in these records. The art of writing has contributed to the growth of MSS. Moreover, this MSS media alone, acquired the merit of holy and piety, amidst the mind of people, generations together.

This wealth of heritage is on the verge of perish. Natural aging is prime factor of the decay. The tropical climate in our country, the careless handling, improper storage, brittleness due to acidic content in paper and so many other reasons are there for the decay of the paper MSS.

Preservation

In order to keep away these MSS from deterioration certain preservative techniques are adopted.

Paper is a hygroscopic material, i.e. the atmospheric humidity can play effect on it. Naturally the maintenance of proper humidity in the store house of MSS is important factor.

Preservation being a preventive measure, it needs to be applied to any outside nuisance making agency to the MSS. Some of them have been enumerated here:

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Damage caused by Insects

a) Silver fish - Causes surface damage to the paper, eats away glue, paste etc. It also attacks photographic plates or illustrated portion of the MSS.

b) Cockroach - Damages wool, leather, paper books etc.

c) Termites - Brings about irreparable loss or damage to the wooden objects, furniture, architectural timber, books, paper MSS, textile and several other cellulosic materials.

d) Book lice - Causes surface damage to paper MSS, herbarium specimens, leather, gelatin, water colour painting etc.

e) Book worm bettle - Tunnels into book binding and feeds on the binding, paper of the MSS and on palm MS.

Bio-deterioration

Apart from these, bio-deteriorating agents like Bacteria, fungi, etc. also play their vicious role in damaging the MSS.

These insect hazards can be avoided by fumigating the documents i.e. MSS with Thymol.

Periodic cleaning, dusting also plays a great role in maintenance of MSS properly.

Then the use of repellents also is advisable, to keep in control the attacks of the harmful insects and growth of bio-deteriorating elements. It helps to retard deterioration to some extent. These involve the use of volatile chemical repellants like -
a) Napthalene Balls or Bricks  
b) Camphor cubes  
c) Para-di-chlorobenzene  
d) Thymol crystals  
e) Saffeol and Menthol  

Then the formulation of P.D.C.B (Para Di Chloro Benzene) with Creosote and Benzene, in equal quantity, by mixing together on wood, which is effective for keeping away the cockroaches, beetles etc. away from the cupboards of MSS.

Ventilation and Illumination of light

Proper and adequate ventilation of the MS library building is advisable. This can be achieved by having ventilators above the windows and other suitable places. Those, which can be closed and opened are advisable, so that they can be closed during odd hours to block the unnecessary inlets into the library, proper Ventilation keeps the room full of fresh air, which is one of the devices, helping in keeping in control the damage of MSS. However cross ventilation is preferred, because due to this fresh air becomes easily available.

Illumination of lighting helps in eliminating most of the creatures like rodents, cockroaches etc. Alongwith that diffusion of light destroys many of the insects, pests, fungi and bacterial diseases to some extent.

While planning lighting in the stacks of MSS library, following norms may be taken into consideration.
a) Intensity of light desired.
b) Quality of light
c) Lighting need for specific areas
d) Aesthetic effects
e) Cost

There are standards laid down by ISI and other institutions in the field.

The famous proverb, 'Prevention is better than cure', needs to be taken into consideration while thinking of preservation aspect. Then also, in spite of all the care taken, it may happen, that the MS gets deteriorated. Then it needs to go in the specialised hands for conservative or restorative treatment. So, it is considered, informally that, 'Preservation is preventive and conservation is curative'. However, some concrete guidelines are there for care and handling of paper MSS as follows -

1. Paper materials should never be touched with dirty hands. This tends to make paper oily or greasy. Stains can be caused by oil, dirt etc.

2. Best method of cleaning paper is by gentle dusting with brushes. If the document is in a good condition, vacuum cleaner can be used.

3. Pencil and finger marks may be removed by soft rubbers or erasers.

4. Books and MSS should not be exposed to excessive light and ultra-violet radiation. It not only causes the colours and inks to fade but also has a damaging effect on the fibres.
5. Ideal relative humidity for materials of archives is 45-55% and temperature in the range of 20-24 degree C. If air conditioning is provided, it must be on for 24 hour basis during all seasons of the year.

6. Stagnant air combined with high humidity accelerates the decomposition of materials and also favours the growth of insects and micro-organisms. An adequate number of windows and ventilators must be provided in the stack areas.

7. Flood affected or soaked documents and books must be immediately placed in an open space and a slow current of air might be passed over it until it is dry.

8. While lifting a MS or a book, it should be supported gently with both the hands. It should not be held by the edges. Moist hands should never be used to turn the pages as they induce moisture in the fibres resulting in stains and fungus growth.

9. Regular inspection of paper MSS and their cleaning will prevent any irreparable damage to occur. If any growth of moulds or insects is discovered, MSS should be taken in an open space, cleaned and fumigated.

10. Cellotape is most dangerous for paper MSS. It not only leaves stains but is difficult to remove it without injury to the paper.

Conservation

Conservation and restoration constitutes the two aspects of preservation. Y.P.Kathpalia, a doyen in field of conservation
gives his observation, "conservation means adopting techniques, methods or steps, which will inhibit destruction of paper documents. When it fails, or deterioration has advanced, necessitating corrective steps, restoration comes in. The cost of the conservation is less, while for restoration it is prohibitive. In institutions storing MSS and archival materials, e.g. libraries and archives, where preservation has become necessity, it is not uncommon to see paper of poor quality in an advanced state of deterioration and yet no funds or means for taking corrective steps are available" (3).

The observations made by the senior conservator Kathpalia holds good in the context of Indian scene, especially, Maharashtra and to the most of the responding institutes to this study.

In order to restore the situation, our senior scientists in the field, like Dr. O.P. Agarwal, Shri Y.P.Kathpalia, T.R.Gairola, A.S.Bisht and Smt. Kapila Vatsyayan etc. are striving hard to change the scenario.

Restoration and Treatment of Paper Document

Preservation of documents constitutes two aspects, one conservation and the other restoration. To put simply, conservation is akin to taking preventive steps for protection against diseases and constitutes steps like good house keeping and preventive action against agents of deterioration of archives materials, such as:
a) Biological agents like fungi, bacteria, insects and rodents.

b) Physical agents, viz heat, light moisture fire, floods and ravages of war, and

c) Chemical agents i.e. acidity, pollution, atmospheric gases and dust.

Restoration, on the other hand is akin to surgery i.e. taking corrective measures for strengthening weakened or brittle documents. Once deterioration has set in and paper, which most of our archives are, has become brittle or damaged by insects, fungi, acidic impurities or by any other cause or causes, like acts of man or natural calamities, restoration is the only way to impart strength to make it usable and serviceable.

In both these fields, i.e. conservation and restoration the awareness of work and research has increased during the last decade or so. As a result, a number of techniques, materials and equipments have flooded the market, making it difficult for institutions in developing countries and also to some extent in developed countries to choose on the right type and best suited method to their needs.

Principles of repair

1) Examination of the nature of the material.

2) Extent of damage.

3) Types of ink

4) Acidity

5) Numbering
Rules of Repair

1) The Originality must be maintained.
2) The nature and extent of the repair should be evident.
3) The writing should not be marred or defaced in any way.
4) The process applied should be reversible.
5) Methods used for repair should be durable.
6) Maximum re-inforcement at minimum cost.

Restoration

It is a surgical operation comprising, in particular, the elimination of later additions and their replacement by better material or reconstitution of the original state.

Conservation

It is deprived operation aimed before every thing prolonging life of an object, while preventing for shorter or longer duration, its accidental or natural deterioration.

Treatment

Documentation

a) Photography: Is an aid in conservation science. Minute details are recorded U.V. photography and infra-red photography records details, which are not visible to eyes, writing which were made illegible by chemical bleach or mechanical eraser or by application of ink can be studied.

b) Preparation of history sheet: Aim of this is to collect information of the object. When it is received for treatment, the examiner should record information, how the object appear to his eyes. IN this case the physical conditions of the object, missing portion if any, damages
are recorded. In the history sheet, report of chemical analysis is also recorded.

Fumigation

The process of disinfection involving the use of an insecticide or fungicide in gaseous form is called fumigation:

i) Fumigation in air tight chamber,
ii) Fumigation under vacuum.

Following fumigants are used:

i) Hydrocyanic Acid gas, which is very dangerous.
ii) Carbon disulphide.
iii) Ethylene oxide plus carbon dioxide—Carboxide--1:9 (under vacuum fumigation)
iv) Ethylene dichloride plus carbon tetrachloride--3:1 (known as kilopetra)
v) Ethylene oxide
vi) Methyl bromide
vii) PDCB (Para-Di-ChloroBenzene)
viii) Thymol, Camphor or Para dichlorobenzene

For immediate action 1% thymol or 1% pentachlorophenol in alcohol can be sprayed, if the colour of the object is not affected.

Cleaning:

The dust which has accumulated should be removed by soft brushes from the junction of leaves. If possible vacuum cleaning or cleaning under air pressure be adopted depending upon the condition of the objects.
Testing of acidity

Acidity in the paper can be tested with moist blue litmus paper. In contact with the object, if blue litmus paper turns brown, then acidity is present, if does not change, no acidity.

pH meter

pH is defined as the concentration of hydrogen and hydroxyl ion. Higher the pH lower the acidity, lower the pH higher the acidity. Paper is neutral at 6.7 to 6.9 pH, while brittle at 4 pH.

Examination of ink

Identification of ink is an important aspect and is the subject of considerable research. Test the solubility of ink by placing a drop of water. Soak it on filter paper. Test the solubility in alcohol. The traces of colour are evidence of solubility.

Iron gall ink

1) Put a drop of 5% Acetic acid on the letters and pick it up after 5 minutes with blotter.
2) Put a drop of potassium ferrocyanide (1%) on the blotter.
3) Blue colour on the blotter indicate the presence of iron or put a drop of potassium sulphocyanide (1%) on the wet blotter.

Red colour indicates the presence of iron, or put a drop of 4% sodium hydroxide solution on writing and pick it up with a blotter. If dark brown colour appears -- iron is present.
Carbon black ink

The most ancient ink is the carbon ink, prepared from lamp black, the binding medium being oil, gum or glue, etc. Carbon ink is extremely stable and cannot be removed from documents by the action of chemical bleaches but the modern carbon ink supplied in liquid form utilises carbon black rather than soot as the source of amorphous carbon while the hide glue is replaced by a solution of shellac in borax.

Fixing of ink

If the ink is susceptible to moisture, the ink should be fixed prior to aqueous treatment. For this 2% PVA in toluene is applied on the letters with fine brush. This process can be repeated till the ink does not show the tendency of staining the moist cotton.

A coating of amyl acetate (50%), acetone (50%) with celluloid film (5gm.) can also be applied with soft brush.

Deacidification

The permanence of document is more important than durability. The acid deterioration of paper must be restrained preferably by control of mass gas fumigation process and also on the premises of libraries for those books being embrittled in storage. Acids mostly H₂SO₄ break the links of the cellulose polymer chain reducing the strength of paper fibre. Strongly alkaline paper is also dangerous because hydrolysis takes place in presence of (OH) ions as well as acids.

Deacidification is probably the most important process for preservation of paper, but it does not decrease the probability
of biological attacks because some fungi thrive in alkaline conditions. Nor does deacidification prevent oxidative decay or photochemical reaction and it will not strengthen paper already embrittled by acid hydrolysis. On the other hand deacidification does arrest the deterioration and embrittlement of paper by introducing strong base to form neutral salts with the sulfuric acid. The excess neutralizer must also be easily convertible to neutral substance, so that paper will not be subjected to subsequent alkaline hydrolysis. The same neutral salt will act as buffering agent.

Resizing

If the paper has become limp or porous due to the loss of sizing material, the same can be resized with sizing materials, e.g. soluble nylon, starch, gelatin, etc.

Removal of stains

The removal of stains depends upon the nature of stains. The following solvents have been successful in removing the stains listed opposite to them:

<table>
<thead>
<tr>
<th>Stains</th>
<th>Solvents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adhesive tapes</td>
<td>Benzene, carbon tetra chloride</td>
</tr>
<tr>
<td>Glue</td>
<td>Warm water</td>
</tr>
<tr>
<td>Lacquer</td>
<td>Acetone</td>
</tr>
<tr>
<td>Oil, grease and tar</td>
<td>Benzene, Pyridine, trichloroethlene</td>
</tr>
<tr>
<td>Tea and coffee</td>
<td>Potassium perborate</td>
</tr>
<tr>
<td>Mildew</td>
<td>Ethyl alcohol</td>
</tr>
<tr>
<td>Mud</td>
<td>water Ammonia</td>
</tr>
<tr>
<td>Rust stains</td>
<td>3% oxalic acid</td>
</tr>
<tr>
<td>Ink stains</td>
<td>Citric acid, oxalic acid</td>
</tr>
</tbody>
</table>
Mounting and lamination of highly fragile document:

If the paper document has become weak and cannot be handled with hand, the same can be strengthened by lamination process. There are different methods of lamination and mounting.

i) Hand lamination and (ii) Machine lamination out of which hand lamination is best.

Lamination

1) Morane Process - Under heat and pressure with cellulose diacetate film - gloss finish and cellulose triacetate Matt finish at 80°C

2) Mipofolic Process - It is used in Germany but not suitable for document. In this case PVC film used with adhesive at room temperature for maps, etc.

3) Genotherm Process - Polyvinyl chloride film used in this process at 70°C but as PVC is not good for document, it is used for newspapers, etc.

4) Hennecke process - Based on cellulose acetate film at 80°C for 20 seconds under press of 30 Kg/cm.

Note: The present author had an opportunity, to undergo 6 weeks rigorous training at ICI, Lucknow, on 'Paper conservation and preventive maintenance in libraries', supported by Ford Foundation, during 29th Sept 1994 to 30th October 1994. The restoration treatment he had given to documents during his practical sessions has been stated above.

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Institutes Imparting Training in Preservation and Conservation

From the above discussion it is noticed that the job of conservation is specialised. The study also reveals paucity of facilities for conservation. In this connection Dr. O.P. Agarwal, Director, ICI Lucknow states, 'India is one of those very few countries which took the initiative of preserving her cultural heritage on a scientific basis at a very early date. Today, there are several conservation laboratories and departments to look after the nation's cultural property, although it must be admitted that even these are not sufficient in number' (4).

Following institutes, are running conservation laboratories, and some of them are conducting training programmes. A brief resume of their activities is given below:

a) National Research Laboratory for Conservation of Cultural Property (NRLC), Sector E/3, Aliganj Scheme, Lucknow-226 020

This laboratory provides two types of regular training programmes: i) For conservators and chemists, (ii) For curators, directors and other incharge of collections.

The training course for conservators and chemists is of six months duration and is conducted in collaboration with UNESCO and ICCROM. The course aims at training the students for practice in conservation of Works of art. A maximum eight students are taken every year. The Government of India awards four fellowships to Indian nationals. Some fellowships are awarded to candidates...
from South and South-East Asian region by UNESCO and ICCROM. The course offers facilities for practical work in the following subjects, besides lectures:

a) Stone, ceramics and metals.
b) Wood, ivory and bone.
c) Textiles and paintings on textiles.
d) Paper and paintings on paper.
e) Ethnographical materials.

This laboratory conducts intensive workshops, seminars etc. from time to time (5).

b) National Archives of India (NAI), Janpath, New Delhi-110 001

It has its genesis in the Imperial Record Department (IRD) which was established in 1891, with its main objective of maintaining the records of the Government of India, which changed to National Archives of India in 1947 after Independence.

Preservation unit in the NAI was started in 1952, with the additional provision of a separate Assistant Director in charge of this unit.

Today the National Archives Conservation Department is the focal point for training for conservation work in India. Trainees from India and outside take part in its training course, which is a course of its own type in this part of the world.

NAI has succeeded in having State Archives in their most of the states to carry out the mission (6). Most of the State Archives have deputed their candidates to this course and trained their manpower.
c) The National Library (NL), Belvedere Alipore Calcutta-700027

Conservation Unit of the NL was started in 1957 with Shri B.B Chaudhuri, as head. It went through many hurdles and due to efforts of Shri B.B.Keshavan, the present well equipped conservation unit with about 100 staff on its roll, functioning efficiently.

Regular training course on conservation of library materials was started in 1983. This is mainly in-service training programme, under which regular employees from various libraries can join the training course. The participants are trained in the modern methods of book binding, repairing and other techniques of library conservation.

The training course is of two months duration and 25 in service candidates are admitted every year. Its primary aim is to help libraries and institutes, who have rich collection in their custody, but lacking in resources and technical know-how in this field (7).

d) National Museum (NM), Janpath, New Delhi 110 001

National Museum, mainly deals with the art objects, paintings, decorative arts, sculptures, bronze images and quite often MSS.

The conservation laboratory of the National Museum, has its own place amongst the best conservation laboratories, not only in the country, but even outside.
The conservation laboratory activated rigorously after 1966 and in 1972, wing of Central conservation laboratory was attached to it.

Report of the UNESCO experts Dr. Paul Coremanas and Dr. H.J. Plenderlieth, submitted to Government of India, recommended of museum items, to the participants from South and South-East Asian countries (8).

e) Indian Conservation Institute (ICI), B-10, Sector-C, Aliganj Scheme, Lucknow - 226 020

INTACH (Indian National Trust for Art and Cultural Heritage), established this conservation centre at Lucknow in 1985, under the advisory guidance of Dr. O.P. Agarwal.

The aims and objectives of the institute covers the following areas: a) To take up conservation of different art objects, viz. wall paintings, paper paintings, canvas paintings, thankas, MSS etc. (b) To impart training in conservation, especially in those areas which are not covered at the moment by any of the present institution of the country. (c) To bring out publication on pertinent subjects. (d) To organise seminars and workshops on conservation regularly. (e) To render technical advice about conservation of art objects (9).

These are prominent institutes, which are imparting training in India on preservation-conservation aspect. Whereas on International level, ICCROM (International Centre for Conservation Rome, IICL, (International Institute of Conservation London), etc. are functioning on large scale, in the field of training.
(II) Place of Preservation-Conservation in LIS Education:

The need for library conservation is urgent in tropical and sub-tropical countries. Because of climatic conditions, library material in these countries are prone to be adversely affected. Thus things in the library are on threshold of perish, which necessitates Preservation and Conservation study in LIS education. Prior to that, contribution of NAI and NL in the field needs to be noted.

(II).1. Curriculum at the School of Archival Studies, NAI, New Delhi.

Archives and museums, compared to libraries have to deal with old, rare and monumental objects in their day to day work. They naturally tend to have, training programmes and some course in archival studies.

The NAI is conducting in its School of Archival Studies a 12-month Diploma course in archival studies. The course contents are as follows:

a) Nature of library/archival materials.
b) Enemies of library/archival materials.
c) Preventive care against physical, biological and chemical deterioration and against disasters such as fire, floods, windstorms.
d) Curative treatment: Repair and Restoration.

Course contents have been given by Dr. Ohdedar as follows (10)
Optional Subject: Paper-3 - Conservation

A. Theory:

a) Introduction to preservation

b) Loose paper, palm-leaf, birch-bark, leather, ink, papyrus and synthetic materials.

c) Housing of Manuscripts and records -
   i) Shelving system—their advantages and disadvantages.
   ii) Storage of files, bundles, document boxes, books and volumes, maps, charts and photographs, machine readable records and audio-visual materials, storage environmental conditions.
   iii) Servicing of Manuscripts and records for use by scholars.
   iv) Fire detection and fire protection, security measures against theft and vandalism

d) Building:
   i) Functional requirements and essential features.
   ii) Improvements in an existing building for scientific conservation.

e) Enemies of records and control measures:
   i) Causes of decay of paper.
   ii) Biological deterioration— insects including termites, mildew infestation, rodents etc.
   iii) Physical deterioration— effect of heat, light and moisture.
   iv) Chemical deterioration— effect of ink, atmospheric gases, pollution, dust, acidity in paper.
   v) Fumigation— various techniques.
f) Restoration:
   i) Principles of repair.
   ii) Washing, deacidification and flattening.
   iii) Adhesives, their preparation and use.
   v) Mechanical methods of restoration.
   vi) Binding of manuscripts, library books and volumes; methods, materials and equipments.
   vii) Special problems – seals, palm leaf repair, paintings and maps etc.

g) Requirements of a conservation unit:
   i) Planning of small repair unit.
   ii) Cost of various restoration processes.
   iii) Training of craftsmen.

B) Practicals:
   a) Paginations, washing and deacidification.
   b) Humidification and flattening.
   c) Minor repairs, full pasting, half margin repairs, inlaying etc.
   d) Tissue repair, chiffon repair and docketing.
   e) Solvent lamination, machine lamination.
   f) Air cleaning and fumigation.
   g) Preparation of pastes, determination of pH value and use of preservative chemicals.
   h) L.P. mixture dressing, gathering and guarding, stitching and binding, sectioning, repair of maps etc.
On the course contents, Dr. Odhedar further comments, 'The course although fairly comprehensive in its coverage is too heavily loaded for one single paper (11).

(II) 2. Curriculum at the National Library, Calcutta

Since 1984, the National Library started conducting short courses of two months duration. The course covers following theoretical and practical aspects.

A) Theoretical aspects :

a) History of book.

b) History of writing materials including palm-leaf etc.

c) Characteristics of old paper and new paper including history of paper and testing of paper.

d) Natural ageing of paper.

e) Biological deterioration of paper.

f) Control of biological and natural decay of collections in Indian conditions.

g) Storage of books and documents.

h) Repairing methods of damaged documents including water damaged documents.

i) Binding techniques.

j) Inks and their effects.

k) Conservation planning and organisation, including personnel.

l) Repairing materials and equipments.

m) Protection against hazards like fire and floods etc.
B) Practical aspects:

a) Book examination for preservation.

b) Binding of books, mending of books.

c) Map mounting.

d) Deacidification by different methods.

e) Protection and preservation of paintings.

f) Repairing and Rehabilitation of documents including manual lamination, machine lamination.

g) Paste, their formula and preparations.

h) Preservation of leather binding.

i) Management of water damaged documents.

j) Fumigation methods, Disinfection.

k) Stain treatment.

l) Use of fungicides, insecticides, fumigants and rodenticides.

Same type of curriculum was adopted at ICI, Lucknow, in the training programme for preventive maintenance in Libraries and paper conservation, between 21st Sept 94 to 31st October 94.

Archives used to keep in mind their requirements, while designing the course. The LIS professionals may take liberty of incorporating their requirements, while incorporating this paper, in their study. In this context, the requisitions expected, by a Governor of U.P. in the LIS education specially and general awareness among the society in general, is quite thought provoking.

'The efforts of the State and the Central Government alone in this direction can not suffice. First it is necessary to create
awareness in the masses towards their responsibility to preserve the invaluable cultural heritage.

Nations which cut themselves away from the historical roots in the space of history pass out like meteors, which burnt themselves out, when they come off from the fire, which generates and feeds them.

From creating awareness, we have to organise exhibitions, workshops, popular lecture series and take the help of audio-visual media and press. It would also be desirable, if the children at the primary and secondary level are explained in detail, about our extremely rich cultural heritage and its importance.

There is only one, two year degree course in conservation being run by the National Museum Institute, New Delhi, which is a Deemed University. The ICI is, however, conducting, short term specialised courses in conservation of different materials. I feel, what is necessary now, is to link the training of conservation with the universities, because we need many more conservators to attend the vast cultural wealth.

Likewise, it is absolutely imperative that the personnel, who man our libraries, should know preventive maintenance and minor repairs of the books and manuscripts in their charge. For this the syllabus of Library Science at Graduate and Post Graduate levels, should incorporate paper conservation as one of the subjects of theory and also practical in their course of study. Every library must also have a small Conservation
Laboratory for looking after the books and manuscripts in their custody. (12).

The Speech was very appealing, so, by taking risk of elaboration, the excerpt have been taken in above paragraphs. Consequently the activities and decisions taken by UGC in its CDC (Curriculum Development Committee), in LIS education, are stated below:

(II) 3. UGC's contribution in manuscriptology:

University Grants Commission, is working as apex body in the field of higher education. Educational policies, guidelines and implementation of various reforms in educational curriculum, are undertaken by UGC from time to time.

a) Realising the importance of manuscripts in India, UGC has appointed committee in 1959 to survey the manuscripts collections in the Indian University libraries and to recommend ways and means to improve upon them (13).

This committee gave number of recommendations and suggestions, for collection, preservation, utilization and organisation of MSS. There was a provision of appointing 'Curator' in the grade of University reader.

b) In furtherance to this, after application of new guidelines for the appointments of senior positions in the library, say that of Librarian, Dy, Librarian or the Assistant Librarian, 'Archives and MSS keeping' has become essential substitute to specialization in 'Information technology'. Following requisite qualifications stipulated for the post of Dy. Librarian of a
particular university, stands testimony of its recognition by the UGC. It reads as follows:

Deputy Librarian:

1) Masters Degree in Library Science/Information Science/Documentation with at least 55% marks or its equivalent grade and good academic record.

2) One year specialisation in an area of Information Technology/Archives and manuscript keeping or Masters Degree in an area of thrust in the Institution.

3) Eight years experience as an Assistant University Librarian /College Librarian.

4) Evidence of innovate library services, published work and professional commitment.

Desirable: i) M.Phil/Ph.D. degree in Library Science / Information Science / Documentation / Archives and manuscripts keeping.

ii) Knowledge of Computer Application to Library and Information Science (14).

Incorporation of Archives and Manuscripts keeping, as essential qualification gave momentum to the thought of incorporating the papers in LIS studies.

Side by side, there was pressing demand from the national level conventions like - National conservation of Oriental Libraries (1st convention, New Delhi, 1978). Narinder Kumar, states the recommendation of the convention pertaining to incorporation of paper on care and repair of MSS, in following
words (15) 'The department of Library Science in Indian Universities (especially universities pledged for the Indological studies) may include a special paper on 'Care and Repair of Manuscripts'.

(II)4. University Grants Commission / Curriculum Development Committee (UGC/CDC):

The repercussions of these and alike demands, has given strong weightage to the need. The CDC has taken note of the pressing demands. As a result, Archives and Manuscript keeping, may acquire position of Elective paper, in BLIS, MLIS studies, Recommended syllabus at BLIS level is shown below -

Elective paper :

Paper VI : Archives Librarianship
Archives : History and development and type of archival centres. Archival material in an information context. Kinds and identification : organisation and management of archival material. Records management, Acquisition, Archival appraisal classification, cataloguing and indexing, arrangement description, information retrieval. Care and preservation of archival material, Special preservation processing and treatment, Machine readable, microfilming, databases, Environmental control and effective building design, planning, furniture and fittings. User services, User education, personnel, Issue of copyright, right of information, in relation to archives. Source material on archives, Role of UNESCO and other agencies.
Preservation concepts: Objectives and purpose, causes of deterioration, physical, chemical, atmospheric, pollution and other environmental conditions. Biological enemies of materials: mould, fungi, insects and rodents.

Rehabilitation of documents: Cleaning, removal of stains, fumigation, deacidification, techniques of repair and restoration, lamination of paper. Environmental controls and effective building design. Standards for storage conditions.

Paper XIII: Manuscriptology:

History of writing and writing materials.
Types of MSS and special features. Study of Scripts.
Collecting MSS and search for MSS.
Existing collections: Local, regional and national.
Manuscripts as source material for study and research.
Components of MSS - identification.
Manuscript processing: Classification, cataloguing and indexing.
Catalogue of MSS - Descriptive cataloguing.
Well-known catalogues,
Acquisition and pricing of MSS.
Editing of MSS. Furniture, fittings, display.
Preservation and restoration of MSS.
Preservation concepts: Objectives and purpose. Cause of deterioration, physical, chemical, atmospheric, pollution and other environmental conditions. Biological enemies of materials: mould, fungi, insects and rodents.
Rehabilitation of documents: cleaning, removal of stains, fumigation, deacidification, Techniques of repair and restoration, lamination of paper, Environmental controls and effective building design, standards for storage conditions.

(II)5. Indira Gandhi National Open University (IGNOU):

Implementation of this, can be observed in open university education in its MLIS study programme, place has given to it, under Elective course - MLIS-E1 - Preservation and Conservation of Library Materials.

Prescribed books:

1. Concept of preservation and conservation. p.37
2. Different type of library materials. p.48
3. Hazards to library materials and preservation. p.43
4. Binding. p.48 (17)
REFERENCES


2) Sinha, S.N : Archival and historical importance of documentary heritage. A lecture delivered at 'training programme on paper conservation' at Lucknow supported by Ford Foundation, 1994, ICI Lucknow.


6) Agarwal, O.P : Op Cit. p.19


9) Indian Conservation Institute, Lucknow, Brochure

11) Ibid, p. 27

12) Vora, Motilal, Governor, Uttar Pradesh (India), Presidential Address at the Valedictor function at ICI, Lucknow, on 30th Oct. 1994.


14) Advertisement of the University of Pune, No. 75 dated 29th Dec. 1994.

