

## **Preservation cooperation in Nepal: from training to conservation and digitization of rolled palm leaf manuscripts**

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### **1. IFLA/PAC Regional Centre for Asia**

First, let me talk a little about the IFLA/PAC Regional Centre for Asia.

The IFLA/PAC Regional Centre for Asia was established in 1989 within the National Diet Library.

At the same time, the National Diet Library settled on the Preservation Cooperation Program and defined the role and activities of the Centre as follows:

Role:

-promote and encourage preservation activities for library materials in Japan and other countries in the region by providing information services, technical assistance, etc. in order to ensure the long-term availability and accessibility of documentary heritage.

Activities:

- provide preservation information service
- promote research activities
- implement educational and training programs

According to the Program, the Regional Centre for Asia has received trainees thirteen times from nine countries (Malaysia, Australia, Thailand, U.K., Sri Lanka, Indonesia, South Korea, Taiwan and Nepal) and sent skilled staff members as lecturers twelve times to eleven countries (Indonesia, U.K., Mongolia, Egypt, Myanmar, India, Thailand, Malaysia, Vietnam, South Korea and Nepal) during the past sixteen years.

### **2. Preservation cooperation activities in Nepal**

Now we let me move on to the preservation cooperation between Nepal and Japan.

As you know, Nepal has possessed for centuries a wealth of valuable materials written in Sanskrit, Tibetan, Newari, Nepali, Hindi and Awadhi and attracted scholars from all over the world. Some of these are the oldest and rarest documentary heritage in South and Central Asia.

As to the preservation project of the contents, the Nepal-German Manuscript Preservation Project (NGMPP) is well-known and widely acknowledged as a long-term and comprehensive project. More than 180,000 Nepalese manuscripts have been microfilmed during the thirty-one years from 1970 to 2001.

However, the threats to the originals still remain mainly because of a lack of awareness, knowledge, and funds.

I will show here two approaches to protect documentary heritage in Nepal; one based in the Nepal National Library (NNL) was carried out by the Regional Centre for Asia with the collaboration of the Japan International Cooperation Agency (JICA). The other based in the Asa Archives has been carried out by the Paper Conservators Asia Unlimited (PCAU) partially funded by the Japan Foundation. The former focuses on preservation administration, while the latter focuses on the conservation treatment.

## **2-1 Training program of the Regional Centre for Asia**

The first step for the program was initiated by a senior overseas volunteer staff member of JICA. She had worked for NNL as advisor on library management for two years from April 2002. She had visited libraries in various parts of Nepal during her stay and recognized that many valuable library collections were at risk of deterioration without any care.

At her request, the Regional Centre for Asia started a training program for Nepal.

In February 2004, the Director of the Centre at that time visited in 11 libraries, archives, museums and related institutions in Kathmandu. There, he conducted a brief assessment on preservation needs and discussed them with the staff.

He also delivered a lecture to 18 staff members of 11 institutions at NNL, displaying examples of damaged materials, preservation tools such as Japanese papers, phase boxes, and related publications.

In October 2004, the Regional Centre accepted one staff member of NNL as a trainee in cooperation with JICA.

At the request of the Chief Librarian of NNL, the Centre prepared him a wider training program including the legal deposit system, compilation of national bibliography, library management and user services.

Concerning his study of preservation and conservation, special emphasis was put on preventive measures for library collections rather than conservation/restoration techniques for each item.

Nepal and Japan are quite different in the circumstances surrounding libraries and archives. In particular, library materials in Nepal suffer more from natural causes; heat, humidity, light, air pollution, dust, mould or mice. It is quite important for the preservation/conservation planner to understand well the local situation; political, financial, social and cultural differences. Therefore, training programs for core persons of the region would be a very effective way to develop long term preservation/conservation practices fit to each country. Their active involvement is essential for improving the actual situation of the region.

## **2-2 Digitisation and Conservation of Rolled Palm Leaf Manuscripts and Related Activities in Nepal**

A different approach was undertaken by the Paper Conservators Asia Unlimited (PCAU).

PCAU was founded in 2003 by three Japanese paper conservators, Takagi, Chudo and Maeda, who are concerned with the preservation of cultural properties around Asia and are willing to spend some time on the spot to promote conservation on a volunteer basis.

The main aims of PCAU are:

- To train conservation specialists in the Asian region and promote conservation activities among local people.
- To ensure better preservation of Asian cultural properties by carrying out interdisciplinary examination and research.
- To carry out research in conjunction with local experts on the availability of local materials which can be developed to be safely used in conservation, as imported materials can be expensive.

Regrettably, they cannot attend the pre-conference for this year's practice in Nepal. So, I will read their paper for them.

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During the summer 2005, PCAU carried out a 6-week project conserving and digitising 400 rolled palm leaf manuscripts at the Asa Archives in Kathmandu, Nepal. This is about one-third of the collection housed in the Archives. Prior to the project, a one-day

workshop was organised at the Archives for participants from other institutes around the Kathmandu Valley.

### **(1) Workshop**

We wanted to involve the participants during the workshop. Therefore, we invited conservators, curators and bookbinders rather than administrative personnel who have had more opportunities to attend preservation workshops previously. The participants were from the National Museum, National Archives, Kaiser Library and the Tribhuvan University Central Library. The workshop was carried out at the Asa Archives in the room where the rolled palm leaf manuscript project would later take place. Two librarians from the Archives were also present.

In the morning, as the photographs show, samples of various conserved objects were displayed.

They included Sanskrit manuscripts from India, palm leaf manuscripts from Sri Lanka, Quran pages from Turkey, a 19<sup>th</sup> century book from England and a model of display mounting for palm leaf manuscripts

We discussed the materials and methods used in the conservation of these items with the participants.

All participants had a chance to try their hand at dyeing the Japanese paper with Cartasol K dyes in various shades. These are cationic, direct dyes developed especially for predominantly wood-free pulp paper. These dyes were also used to tone the repair paper for this project.

The morning session was followed by a simple, but typical, catered Newari lunch. Not all the participants had previously met one another, and this informal lunch gave them a chance to get acquainted and talk about their jobs.

In the afternoon, everyone made methyl cellulose and participated in a discussion of the relative merits of the methyl cellulose and wheat starch paste for conservation use in different situations.

This photo shows the demonstration of the conservation of a rolled palm leaf manuscript. This included humidifying, flattening, cleaning and repairing, after which the manuscript was ready for the digital photography.

A practical workshop was also carried out using damaged palm leaf manuscripts from Sri Lanka. Each participant cleaned and repaired them using the dyed Lens tissue and Kozo paper. Methyl cellulose for this purpose was prepared the previous day by PCAU members.

Protection support was made with conservation board and clear polyester strips.

One of the aims of the PCAU activities is to try to cultivate the use of local materials and equipment as much as possible. We discussed locally available materials like hand-made paper made from Lokta fiber, or having carpenters or other local artisans make items such as light boxes.

The workshop was a good opportunity for people to get to know each other, spend a day working together and to be introduced to different materials and conservation methods. We exchanged ideas from Nepal, Japan, Turkey and Britain.

Another practical workshop is already being planned for this year. It will be a workshop making fascicule for housing single-sheet material. The fascicule system would be very useful for any institute which has accumulated large numbers of single-sheet items.

## **(2) Rolled Palm Leaf Manuscripts, locally called Tamsuk**

The Asa Archives is a small but important archive on a back street in the old part of Kathmandu. It houses more than 6,700 manuscripts on various subjects. Land grants written on rolled palm leaf manuscripts with clay seals seem to be unique to Nepal.

The Asa Archives is one of the very few institutions in Nepal to have digitised nearly its entire collection of manuscripts. This digitizing project has been carried out by the Buddhist Library Nagoya since 1997. However, the collection of rolled palm leaf manuscripts remained untouched because the people who digitised the other manuscripts realised that it was too dangerous even to attempt to open them without causing damage.

At the Asa Archives, all the rolled palm leaf manuscripts were housed in a metal case with shallow drawers with cardboard dividers. Each rolled manuscript was kept in a small plastic bag with a string to close the top.

This storage method is beneficial in preventing damage caused mainly by mice which are quite common and which Nepalese people—being mostly either Hindu or Buddhist—are reluctant to harm. However, the metal of the case was getting rusty

under the relentless monsoon humidity. Plastic bags also trap the moisture inside, causing mould growth on the palm leaves.

There are approximately 1,000 catalogued and 300 uncatalogued rolled palm leaf manuscripts in the Archives. This we believe is the largest collection of its kind in Nepal. The next largest collection is at the National Archives of Nepal where just under 1,100 are housed. The manuscripts are land grant documents commonly called tamsuk, which means “transaction” or “agreement” in both Nepali and Newari. The oldest tamsuk among the 400 we conserved last year is dated 1337 AD. The newest one was from the 17<sup>th</sup> century. The languages used are Nepali and Newari mixed with Sanskrit. The scripts generally used are Bhujimmola, Devanagari and Prachalita.

Out of the 400 tamsuk the longest was 1m 27cm. This measurement excludes the part which was folded several times under the seal. The shortest complete manuscript was 25.7cm. The average length was 55.2cm. The natural shape of a palm leaf is generally widest in the middle and tapered towards both ends. The width in the middle varied between 1.5cm and 5.5cm.

At the head of each tamsuk, an unfired dark grey clay seal varying in design and in size between 8mm and 2.8cm in diameter, is affixed over a knot of palm leaf strips which secured the folded part of the document.

Sometimes there were short texts written here, but quite often they were blank. The tail end is generally cut off a little and folded once. This folded line was found to be weak and many were broken off completely.

The text was normally written on one side only but occasionally codicils, brief notes or numbers were added on the reverse side.

The text was written on the surface, presumably with a reed pen and carbon based ink, rather than incised.

Leaves of Talipot and Palmyra were both found among the manuscripts in the Asa Archives. Talipot is far superior as a writing material; longer, wider, lighter in colour with a smooth and supple surface. Palmyra leaf is shorter, narrower, thicker, and coarser and tends to become brittle and prone to physical damage.

151 rolls out of 400 (38%) were damaged to various extents by mice.

Surprisingly only 12 rolls were damaged by insects. A few suffered from mould damage especially around and underneath the seals.

184 rolls (46%) had previous cellophane tape repairs.

Sometimes the entire surface of the palm leaf was covered with cellophane tape.

The clay seals of 175 rolls (44%) were either completely missing, separated from the palm leaf strip on which the seal was partially imbedded, or cracked.

Many manuscripts suffered numerous vertical cracks, folds and tears. These are the result of the rolls having been pressed down over the years.

The condition of the text itself was found to be generally sound, apart from some smudges or frayed surface making the text illegible.

The aim of the conservation for this project was to stabilise the objects to prevent any further damage, and to prepare them for digital photography. Therefore, the minimum intervention was to be carried out for the actual physical conservation. This included cleaning, removing all the previous repair tapes, joining and repairing the fragments, treating mould, stabilising folds by providing support from the verso, consolidating frayed layers and parts, and consolidating or joining the damaged clay seals.

In order to unroll the tamsuk without damaging them, it was necessary first to humidify them. Humidification was carried out in a shallow tray. In the tray we put several layers of Lokta paper dampened with filtered water, a sheet of Capillary matting, a sheet of Sympatex and a sheet of unwoven polyester. A sheet of glass was placed over the tray to create a small humidification chamber. The duration of the humidification was 90 minutes.

Both surfaces of the palm leaves were cleaned with cotton swabs moistened with a mixture of ethanol and filtered water, avoiding the text area. All the cellophane tape, masking tape and other old repairs were removed and residue cleaned mostly with acetone. All the tears were repaired using 100% Kozo fibre Japanese papers of various weights which were toned with Cartasol K dyes in various shades. These dyes have been used in the British Library for quite some time for conservation purposes. They show good colour fastness and are stable. The vertical folds and creases were also supported with repair paper from the verso. The loose or faulty seal attachments were also strengthened.

Methyl cellulose was chosen as an adhesive mainly in consideration of climatic conditions in Kathmandu, where during the summer monsoon months relative

humidity stays around 60% or over and the temperature between 28 and 31<sup>o</sup> C.

Cracked or broken seals were repaired using Paraloid B72 in acetone.

For palm leaves over 66cm, two photographic frames were taken and carefully joined together at the editing stage. A photograph of the verso was also taken when there was writing of any kind. Separate close up photographs were also taken for each seal, which might make further research easier. The measurements of the length and the width of three parts (head, middle and tail) were recorded before the tamsuk was rolled back in the same way starting from the left seal side so that both the seal and the text could be protected. The record of the diameter of each roll prior to the humidification was referred to, and the same diameter retained as far as possible.

The roll was tied temporarily with a piece of twisted Lokta paper cord and left to air dry until the next day.

Completely dried manuscripts were wrapped in 14g/M<sup>2</sup> Lokta paper softened by hand-squeezing.

They were then placed in an alkali buffered archival box with double outer walls. The double wall should act as a buffer to changes of temperature and relative humidity in the storage room. It is extremely important to provide the safe enclosure which can sustain the stable micro-climate especially in countries where there is no other means of controlling the environment of the entire room. The double wall structure constructed with strong archival board with a tight fit lid should also discourage further attack by mice and insects. The polypropylene coated board keeps out atmospheric pollution and is waterproof.

Inside the lid, a sheet of SHC (Super Humidity Controlling) board is incorporated which acts as buffer against the humidity fluctuation to a certain degree as well as absorbing the harmful gases emitted from the objects themselves.

### **(3) The Future**

During last year's project, 400 tamsuk were successfully conserved and clear images of the texts digitised. Research into the text by qualified scholars will shed new light onto administrative and legal practices in mediaeval Nepal. The work on the remaining rolled palm leaf manuscripts will continue for the next two years. We are hoping to get

more Nepali conservators involved in the practical work over this period.

There is also a scope for investigating the use of natural insect repellents such as dried neem leaves instead of the present abundant use of naphthalene. This would have the benefit of negating the harmful effects of breathing naphthalene on the health of workers and visitors alike.

We have also started inquiring into the feasibility of having conservation board made in Nepal using lokta or mitsumata which is locally called Argeli. Another possibility is recycling cotton cuttings from local textile factories. There are numerous hand-made paper producers in the Kathmandu Valley alone.

### **3. Conclusion**

Human resources and funds are essential for achieving long-term preservation/conservation practices at an institution.

What I presented here represents very limited movements both in scale and in funds.

We are quite aware that effective conservation and preservation practice can not be achieved by one group or in a short period. Therefore, each movement has given special attention to involving local people and promoting their awareness and knowledge of preservation matters.

We need to exchange more ideas on how best to implement different specialised fields to achieve long-term conservation/preservation practice in Nepal and other Asian countries.

Concerning library collections, national libraries are expected to initiate the preservation cooperation activities in the region. More collaboration between national libraries and the PAC Regional Centres should be pursued. At the same time, the Centre should strengthen its function as an information center for coordinating specific activities on preservation and conservation in the various fields.

Thank you.