

# Unearthed Story of Myanmar History: Preserving Myanmar Manuscripts

By Dr. Thaw Kaung

## Introduction

Myanmar people like many other people of the world value their historical heritage which are preserved in numerous ancient historical sites, and in libraries, archives and museums throughout the world.

Amongst the relics of the past, the written word is valued as “the choicest of relics”<sup>1</sup>. From these written texts which are valuable relics of the past, we can reconstruct the life and times of our ancestors and come to know more about how they lived, worked, and spent their leisure, what their spiritual and religious beliefs and practices were like, and unearth the political and social history of the people of ancient times and their society. Thus through the written words we can conquer the constraints of time and space. We can know the thoughts of our forebears; we can also know about other people separated from us by geographical barriers.

In unearthing Myanmar history, archeologists dig up ancient sites to find artefacts left from past times and display them in museums. As for librarians and archivists, they unearth ancient texts written on lithic stone, on various types of metal, including gold and silver, and on animal and plant materials. For the tropical regions of India and Southeast Asia the ancient texts were written mainly on the leaves of some types of palm-trees, so it is one of the tasks of librarians and scholars of the present times to search far and wide for these valuable handwritten palm-leaf manuscripts of the past, many of them lying neglected in old Buddhist monasteries, temples and some in private collections. Finding rare palm-leaf and *parabike*, local, handmade paper manuscripts in my country Myanmar is like unearthing the story of Myanmar history. We then have to preserve the text from these fragile palm-leaves by microfilming and digitalisation.

## Libraries and repositories for manuscripts

Myanmar has a long tradition of preserving palm-leaf and paper manuscripts in libraries and repositories. We probably learnt the art of writing and of using palm-leaf as a medium with the introduction of Buddhism from India and Sri Lanka in the early years of the present millennium.

The Pyu people of Myanmar used palm-leaves and probably had repositories for mss. attached to Buddhist shrines and monasteries. Although the actual palm-leaves have not survived from the Pyu Period (from about 4th to 9th century A.D.) gold plates in the shape of palm-leaves with inscriptions have been found in Srikshehra, the ancient city near Pyay ( Prome ).

In 1897 two gold plates were found in a brick from one Maung Kan’s field in Lebow village in the vicinity of Srikshehra. Inscriptions on the plates consists of quotations from the Buddhist Scriptures. Now known as the Maunggan gold plates, they are preserved in the British Library in London. According to *Epigraphia Indica*

(vol.V, p.101) these two gold plates mss. “ are in the Pali language and were written in characters which it is believed were in vogue in the first century A.D. India... [and] resemble those of the South Indian class of alphabets. Scholars now identify them as the earliest writings in Pali language and date them to the 5<sup>th</sup> century A.D.

In 1926 similar gold plates, twenty in number, which even had two holes on each leaf as in palm-leaf mss. were discovered at Srikestra on a hillock owned by a farmer named Khin Ba. These mss. came to be known as the Khin Ba Gon mss. Dr. Nihar Ranjan Ray wrote “ the most important record hitherto discovered of Pali Buddhism in Lower Burma is a book of twenty leaves of gold exactly of the nature of old palm-leaf mss. of India each inscribed on one side, placed within two covers of the same metal ... The mss. contains much historical, cultural, linguistic and palaeographic material for scholars to study and build up their theses”.

The oldest library building extant in Myanmar is in Bagan and was built by King Anawratha ( 1044-77 A.D.), the King who consolidated the first extensive Myanmar Kingdom. Myanmar chronicles tell us of how King Anawrahta was converted to Theravada Buddhism by a Mon monk named Shin Arahan in 1057 AD., and of how this learned monk urged the King to get the Buddhist Tipitakas.

The value placed on palm-leaf mss. can be gauged from the fact that one of the earliest wars recorded in our chronicles was for the possession of the thirty sets of Buddhist Tipitaka scriptures on palm-leaves owned by the Mon King Manuha of Thaton in Lower Myanmar. *The Glass Palace Chronicle* tell us that when diplomatic means to procure a set of the Tipitakas on palm-leaves failed, King Anawrahta marched with his army in the year 1057 A.D. to Thaton and captured the Mon capital. King Anawrahta “placed the thirty sets of the Pitakas on the [Mon] king’s thirty-two white elephants and brought them away...Moreover, to the Noble Order acquainted with the books of the Pitakas he made fair appeal and brought them away”.

When the palm-leaf mss. arrived in Bagan, King Anawrahta “kept the thirty sets of Pitakas in a *pyatthad* richly fraught with gems, and caused the Noble Order to give instruction therein”.

Fortunately this early library building still stands today. It is a fine example of how precious mss. were valued and preserved by the Myanmar kings. It was more costly to copy and donate a set of palm-leaf mss. than to build a monument or building in the Pagan Period. A set of palm-leaf scriptures cost up to 3,000 ticals of silver to copy in the Bagan Period.

Anawrahta’s library is a strong brick building, befitting modern library and archival standards. It is a detached, single-storied building, near the palace, the monasteries and the big temples, with an enclosure of its own and entrance only on the east side. It was protected against fire hazards and the harsh climate, and the strong brick walls kept away various enemies: insects, animals and unauthorized human intruders. The interior was kept dark to protect the palm-leaves against the

rays of strong sunlight. The roof was well-built to keep out rain and moisture. In 1783 King Bodawpaya ( A.D.1781-1819) rebuilt the roof and it stands today, a fine monument to the preservation of traditional learning and texts in our country.

The tradition of preserving mss. in libraries, both in the Royal Palace and Court and in the monasteries continued throughout the ages. In 1795 Major Michael Symes visited Amarapura, the Myanmar capital at the time, and left the following account of the palm-leaf, paper and ivory mss. that he saw in the Royal Library.

“The day not being far advanced, we walked from the palace of the prince of Pagan, to see the Piedigaut Teik, or royal library: it is situated at north-west angle of the fort, in the centre, paved with broad flags, and close to a very handsome Kioum, or monastery... From the kioum we proceeded to visit the adjacent library; it is a large brick building, raised on a terrace, and covered by a roof of a very compound structure. It consists of one square room, with an enclosed virando, or gallery, surrounding it: this room was locked, and as we had not brought a special order for seeing it, the person who had the care of the library said that he was not at liberty to open the doors, but assured us that there was nothing in the inside different from what we might see in the virando, where a number of large chests, curiously ornamented with gilding and japan, were ranged in regular order, against the wall. I counted fifty, but there were many more, probably not less than a hundred. The books were regularly classed, and the contents of each chest, were written in gold letters on the lid. The librarian opened two, and showed me some very beautiful writing on thin leaves of ivory, the margins of which were ornamented with flowers of gold, neatly executed. I saw also some books written in the ancient Pali, the religious text. Every thing seemed to be arranged with perfect regularity, and I was informed that there were books upon divers subjects; more on divinity than on any other; but history, music, medicine, painting and romance had their separate treatises. The volumes were disposed under distinct heads, regularly numbered; and if all the other chests were as well filled, as those that were submitted for our inspection, **it is not improbable, that his Birman Majesty may possess a more numerous library, than any potentate from the banks of the Danube, to the borders of China.**

The manuscripts in the Royal Library at Amarapura were classified by subject and neatly numbered. They were kept under lock and key, in manuscript chests known as *Sardaiks*, “container for writings”.

The Myanmar kings and courtiers, monks and laity all placed high value on writings and manuscripts. In founding capital cities, the Pitaka Taik or Royal Library become one of the seven integral structures whose foundations had to be laid, all at the same time to mark the auspicious occasion. For example one of the first buildings to be constructed by King Bayinnaung (1551-81) when he built a new city at Begu

(Hamsavati ) was the Pitaka Taik or Royal Library. So also when King Mindon built Yadanabon, the last Royal City of Mandalay in 1859, the (7) places where foundation were laid simultaneously by Chief Ministers, Ministers and Senior Court Officials were (1) The Royal City (i.e.the main palace and city walls), (2) The Moat, (3) Maha Lawka Marazein Royal Pagoda, (4) The Royal Sima or Ordination Hall for Monks, (5) Maha Atula Weyan Royal Monastery (6) The Royal Library or Pitaka Taik and (7) The Thudammar Zayat or Royal Rest Houses for visiting monks.

### **Palm-leaf Manuscripts**

Palm-leaves have been the most popular writing material in India and the countries of Southeast Asia where Buddhism and Indian culture spread. In India and Southeast Asia because of the harsh climate and insect destruction, the earliest examples of palm-leaf mss. have not survived, but the very ancient palm-leaf texts are found where the climate is dry and humidity is low. They are found in Central Asia some datable to the 2nd century A.D.<sup>2</sup>

Three species of palm-trees provided material suitable for writing: the talipot, or umbrella palm ( *Corypha umbraculifera*), the palmyra palm (*Borassus flabellifer*) and, especially in Southeast Asia, the lontar palm (*Corypha uton*).<sup>3</sup>

There are five main types of palm-leaf mss. <sup>4</sup> :-

	<u>Name Romanized</u>	<u>Name in Myanmar script</u>	<u>Colour of leaf edges</u>
1	Shwe-myin, or Shwe-bain-cha	ရွှေမျှင်း ရွှေပိန်းချ	Gilded an all four edges
2	Kyan-sit	ကြံဆစ်	Coated with vermilion on the two length-wise edges with about 4 inches in the middle gilded
3	Myin-ni	မျှင်းန	Coated with vermilion on all four edges
4	Myin-net	မျှင်းနတ်	Coated with black resin on edges
5		ဝေကြမ်း	No colouring or coating on edges

*Shwe-myin*, or *shwe-bain-cha* palm-leaf mss. were at one time used exclusively by the royalty. They were kept in Royal Libraries and Archives, and monastic libraries supported by members of the Myanmar royal family.

*Kyan-sit* palm-leaf mss. were at one time used by court officials, and in donations to monasteries supported by them.

*Myin-ni*, *Myin-net* and *Pe-gyan* palm-leaf mss. were for the use of common people.

After the British Annexation of Myanmar in 1886, the differentiations which existed during the time of the Myanmar kings were no longer observed.

For the Myanmar people, from the earliest times of recorded history to the early years of the present century, writing and literature were closely bound up with the palm-leaf as a writing material. The importance that the Myanmar people attached to the palm-leaf can be deduced from the Myanmar word for “literature”, “*sar-pe*,” “*sar*” is “writing” and “*pe*” is the palm-leaf. In some instances, according to eminent Myanmar lexicographer and poet U Wun ( Minthuwn ) the word “*pe*” (palm-leaf) becomes synonymous with the word “*sar*” (writing),<sup>5</sup> as in the term *sar-tat pe-tat* (စာတတ်ပေတတ်) meaning someone learned.

Palm-leaf mss. were probably in use in Myanmar from the early years of the 1st century A.D. when Buddhism was first introduced into the country. Though no intact palm-leaf mss. have survived older than about 500 years, because of the harsh tropical climate, there is strong evidence that they were widely used from early times by the Pyu people. A manuscript on twenty gold leaves in the shape of palm-leaves datable to the 5th century A.D. discovered in 1926 from the Khin Ba’s mound in Srikshehra, consists of excerpts from the Abhidhamma and Vinaya Buddhist Scriptures.<sup>6</sup> The reason for the gold-leaves to be shaped like palm-leaves indicate that palm-leaves were the main writing materials. Also during the severe earthquake of 1975 one old Buddha Image at Bagan (11<sup>th</sup> to 13<sup>th</sup> century) broke apart and some fragments of palm-leaf manuscripts were discovered inside. These unearthed palm-leaf fragments with writings from that period are now on display at the Bagan Archaeological Museum.

Palm-leaves from *Pe-bin* (*Corypha umbraculifera*, Linn.) provided broad leaves to write on and was the most widely used material for traditional mss. These mss. are known as *pe-sar*. For Royal Orders and Orders of the Hluttaw, (the “parliament” at the time of the Myanmar kings,) the long and narrow, tender leaves of the *htan-bin* (*Borassus flabellifer*, Linn.) were used. They are known as *htan-bu sar*. The Royal Orders known as *ta-gyaung sar-gyun-daw* were written in a single line on the long and narrow leaves of this palm tree. (Commonly known as the palmyra palm, it also produces the drink toddy. The Orders of the Hluttaw known as *hna-gyaung sar-gyon* were written two lines on a leaf of the palmyra palm. These two types of mss. are not as common as the ordinary *pe-sar*, and only few libraries now have them. The tender leaf buds of the palmyra palm are still used today for making horoscopes.<sup>7</sup>

The main conservation problem we face in preservation of the Royal Orders and the Orders of the Hluttaw, arise from the way these mss. were stored in the old days. Since the palmyra palm-leaves are long and narrow, they were usually kept in curled up rolls. With age they become brittle and it is difficult to straighten them out, without breaking, to read and copy the text.

### **Making of palm-leaf mss.**

The Myanmar people probably learnt the art of manufacturing palm-leaves as writing material from Sri Lanka. This art of making palm-leaf mss. was probably brought by Sri Lankan (Singhalese) monks who also brought some of the earliest Buddhist texts and commentaries to Myanmar.

Albert Fytche in his book *Burma past and present* wrote:-

“ The leaves of the palmyra as well as corypha (*Corypha umbraculifera*) are used as substitutes for paper, and are very large, more especially the latter, which are divided into many rays, and are often fifteen feet in diameter and eighteen long, exclusive of the stalk”<sup>8</sup>

Fytche in a footnote referred to Sir Emerson Tennent in describing the method of preparing palm-leaves.<sup>9</sup>

“Sir Emerson Tennent in his” History of Ceylon”. vol. I, p.110, thus describe the process as pursued by the Ceylonese in preparing these leaves. It is similar to that pursued by the Burmese, who probably first learnt it from them. “The leaves are taken whilst still tender, and after separating the central ribs, they are cut into strips and boiled in spring water. They are first dried in the shade, and afterwards in the sun, then made into rolls, and kept in store, or sent to market for sale. Before they are fit for writing upon they are subjected to a second process, called *Madema*. A smooth plank of areca-palm is tied horizontally between two trees, each leaf is then damped, and a weight being attached to one end of it, it is drawn backwards and forwards across the edge of the wood till the surface become perfectly smooth and polished, and during the process, as the moisture dries up, it is necessary to renew it till the effect is complete. The smoothing of a single leaf will occupy from fifteen to twenty minutes”.

The monasteries used to have groves of palm trees grown in their compounds; it was a successful and sustainable natural way to have ready writing material at your doorstep. The art of preparing palm-leaves for use as writing materials gradually died out after the introduction of the first printing press to Lower Myanmar in AD 1816, and by about 1940 they were no longer in use. Only the writing of small horoscopes made from toddy palm (*htan-bin* in Myanmar) remain today, in and around Mandalay. The prepared blank toddy palm-leaves, quite short in length, (about (6) to (10) inches) are sold in pagoda market stalls, like the one along the covered entrance passage-ways to the Maha Muni pagoda in Mandalay.

Prepared palm-leaves were stored in the old days in monasteries, libraries and archives as blank writing material. There were professional scribes known as *kyaung saye* (monastery scribes) who engraved the letters on the palm-leaves by using pointed iron or steel stylus (pens). The scribe sat on a mat on a raised platform and used a writing table about two feet in height with a cloth cushion knob in one corner. The palm-leaf was held on the cloth cushion knob of the writing table, with the

material to be copied from laid in a length-wise slanting position, nearly vertical on the other end of the writing table which had a support to hold this copy material.

Today Ponna (or Manipuri Brahman) scribes and their descendants still write horoscopes on small and short palm-leaves for the Myanmar people who like to keep their horoscopes on the family Buddha shrine.

Fytche described the method of writing as follows: -

[The steel style is] “held nearly perpendicular by the two forefingers and thumb of the right hand, and steadied by the thumb-nail of the left hand, in which a nick is often cut to receive it. The writing is rendered visible by the application of charcoal ground with *engtway*, a fragrant gum procured from *Dipterocarpus grandilora*, and which latter preserves also the leaves from the attacks of insects”<sup>10</sup>

If we examine the palm-leaf we can see that it is slightly curled on one side. We have terms to describe the concave side of the leaf, which we call “*wun*” or belly, and the convex side is known as “*kyaw*” or back of the body. Letters are inscribed on both sides of the palm-leaf. Pagination of palm-leaf mss. bundles is not numerical, but alphabetical according to the Myanmar alphabet, consonant letters in conjunction with the twelve Myanmar vowels. Twelve leaves make one set and is known as one *angar*, and palm-leaf bundles are counted by these sets (of twelve leaves).<sup>11</sup> Palm-leaf mss. are also classified by the number of lines on each leaf; usually they range from 8 to 12 lines. Each palm-leaf is pierced with two round holes called *palin bauk* through which two small bamboo sticks known as *palin-taing* are inserted to hold the mss. bundle in place, preventing the leaves from falling out. The mss. bundle is then placed between two wooden covers called *kyan*. Writing is inscribed on each leaf on both sides skirting, the two perforated holes, except on the preliminary pages and the colophon. For these first and last pages of the palm-leaf mss., only the portion between the two perforated holes is used for writing, so that the preliminaries and colophon have wide margins on both the left and right-hand sides of the palm-leaf. The first and last pages of a palm-leaf mss. bundle have extra leaves sewn in, usually about ten in front and ten at the back. These extra palm-leaves were intended to be used for repairing and replacing leaves which get broken or damaged.

For the librarian, archivist and cataloguer, the colophon of each mss. bundle is extremely important. It usually gives two dates, *viz.*, the date when the mss. was first written and the recopied date. Quite often the colophon also contains useful biographical and bibliographical information, together with name of the donor and a short prayer.

### **Parabike paper mss.**

The various types of parabikes (folded paper writings) are classified according to the number of folds which range from a single fold (*hlwa-chin*) to 64 folds (*hsu-htat*) There are seven main types. “*Yesi*” is the Myanmar term for a fold of a parabike and comes from the Myanmar word for a water current (or wavelet). *Yesi*<sup>12</sup> is also a

term used as a numerical classifier for counting the leaves (or folds) of a parabike. The most commonly seen parabaiks are *Ta-su* which consists of 32 folds.

### Seven types of parabikes <sup>13</sup>

	Name Romanized	Name in Myanmar script	Folds
1	<i>Hlwa-chin</i>	လွှာချင်း	one <i>yesi</i> or fold
2	<i>A-hlwa ta-hlwa</i>	အလွှာတစ်လွှာ	2 <i>yesi</i> or folds
3	<i>Hlwa-htat-galay</i>	လွှာထပ်ကလေး	3 to 5 <i>yesi</i> or folds
4	<i>Hlwa-htat-gyi</i>	လွှာထပ်ကြီး	6 to 11 <i>yesi</i> or folds
5	<i>Hsu-wet</i>	ဆူဝတ်	12 to 16 <i>yesi</i> or folds
6	<i>Ta-hsu</i>	တစ်ဆူ	32 <i>yesi</i> or folds
7	<i>Hsu-htat</i>	ဆူထပ်	64 <i>yesi</i> or folds

Apart from the seven main types given above, the term parabike is also used occasionally for writing materials made out of cloth, or thin metal sheets in the form of accordion folds.<sup>14</sup> Illustrated paper mss. with coloured pictures are known as *Yaung-zon* parabike (ရှောင်စုံပုရပိုက်), “*Yaung-zon*” meaning multicoloured. In size parabikes usually range from those with the length of 17 or 18 inches and width of 7 or 8 inches to those with the length of 4 feet and width of 1.5 feet. Occasionally very small parabikes are found with the length of about 3 inches and width of 1.5 inches. These small parabikes are made out of the Maing Kaing paper, a kind of coarse paper made from paper mulberry pulp in Maing Kaing town in Shan State.<sup>15</sup> The bigger parabikes are usually made of bamboo pulp. Parabikes are also classified into two main groups by colour, viz. black parabike (*parabike net* ပုရပိုက်နက်) and white parabike (*parabike phyu* ပုရပိုက်ဖြူ) The black parabikes were used mainly as note-books in the old days and for writing drafts which were later transferred to either white parabikes or to palm leaves. Black parabikes were used like blackboards or slates, and the script was written with a white soapstone called by the Myanmar people *kangu* (ကန့်တူ), a steatite, shaped like a small pen. On the black parabikes, the writing could be easily wiped off with a damp cloth and so they were not used for permanent records. U Tin wrote that he had not seen black parabikes older than 150 years. For the historian the black parabikes are a rich source of social and economic history, as they record notes kept by individuals and families of financial transactions, agricultural records, accounts, medicinal formulas, recipes, short poems and so on. Black parabike mss. are classified into (4) main types according to the material and method of manufacture.<sup>16</sup>

	Name Romanized	Name in Myanmar Script	Material
1	Shan	ရှမ်း	Made in Shan State from bark of paper mulberry tree
2	Thayet-chin	ထရက်ချင်	Made from pulp of



			Thayet-chin tree <sup>17</sup>
3	Wa-shahto	ဝါးရှာထို	Made from bamboo pulp in tongue and groove manner
4	Wa-yo-yo	ဝါးရိုးရိုး	Made from ordinary Bamboo pulp

(1) **Shan parabikes** are made mainly in the Shan State by Shan people. They are some of the best material for mss. and last the longest. A kind of wrapping paper known as Maing Kaing paper made in Maing Kaing town (Shan State) is also used all over Myanmar even today. This paper is used in conservation work as fill-in material for damaged parabikes of all kinds, black, white and illustrated. It is useful especially to strengthen the creased accordion folds of old parabikes.

(2) **The thayet-chin parabike** is not as strong or lasts as long as the Shan parabike. But U Tin wrote that he has seen *thayet-chin* parabike from the reign of Bodawpaya (1782 A.D. to 1819 A.D.).

(3) **Wa-sha-hto parabike** is made of bamboo pulp like the fourth kind of parabike, but the method of manufacture in “a tongue and groove manner” makes this type more stronger and durable than the parabike made out of “ordinary bamboo”.

(4) **Wa-yo-yo parabike** is made out of “ordinary bamboo”. It is the roughest and most inferior type of parabike. It is used only for rough copies, or for “office copies” of mss. later recopied usually on types (1) or (2) parabikes or on palm-leaves.

The white parabikes have smoother leaves, often chalked and glazed with *entada* seeds (ခုံချင်း)<sup>18</sup>. The writing was done with ink, made from the soot of crude oil or Chinese ink, and so they were of a more permanent nature, and not easy to erase.

For illustrated, coloured parabikes, the colours used were nearly all natural or earth colours. The main colours were: --

Yellow-- paint made from yellow orpiment called *hsedan* (ဆေးဒန်း)

Blue -- paint made from indigo (မဲနယ်)

Green -- paint made from a mixture of orpiment and indigo

Red -- paint made from red ochre called *gweni* (ဝေ့နီ) , vermilion called *hinthapada* (တယ်ဝဒါး)

Black -- paint made from soot of crude oil, or charcoal and chalk power mixed with gum of *neem* tree, or *tamar* (တမာ)

Gold and silver were also used to embellish and decorate.

The *neem* gum was concocted with all these paints to make the colours fast. <sup>19</sup> Gall of animals and fishes, especially from the Hamilton's carp, *nga-gyin* (ငါးကြင်း) *Cirrhina morigala* was often mixed with ink to give the paint a shining effect. For

painted white parabikes, brushes (ဖုတ်) and reed-pens (ခေါင်တံ) were the only writing implements used with the paints and ink.

White parabikes were sometimes used to record astrological and tattooing designs, especially for use as charms and amulets, and for sketch maps<sup>20</sup>, city and palace plans, diagrams of forts, routes for the army and so on. Common subjects for illustration were the life of Buddha, the *Jataka* stories of Buddha's previous lives, court scenes and entertainments, cosmology and classificatory works depicting types of elephants, royal barges, military manoeuvres, objects in use at the royal court, and such like ... If opened out fully, a parabike can extend to several metres, but they were not really designed to be viewed all at once, but opening by opening, and were kept folded up and stored in manuscript chests.<sup>21</sup>

Ms. Patricia Herbert, Retired Curator of Southeast Asian Collections in the British Library, and an authority on Myanmar illustrated parabike mss. wrote that the influence of Thai artists brought to Myanmar after the fall of Ayutthaya in 1769 cannot be discounted.<sup>22</sup>

For the historian, illustrated parabikes are a rich source material for designs of costumes, hairstyle, architecture and social and religious life of Myanmar people especially under the Konbaung Dynasty, the last dynasty of Myanmar kings. Even when the artist was painting the life of Buddha and *Jataka* stories, the scenes he portrayed were from his contemporary Myanmar surroundings. Ms. Herbert calls these illustrated mss. "a wonderful evocation of life in Burma before the British Annexation of Upper Burma put an end to a proudly independent Buddhist kingdom in 1885-86."

### **Conservation of Palm-leaf Mss.**

In earlier times when palm-leaf mss. were in constant use as writing and reading materials, they were carefully looked after and preserved by monks, royalty and laymen. The mss. were often regarded as sacred objects because the majority of them contained Buddhist religious texts and commentaries, and even literary, medical, astrological and legal works were in one way or another connected with Buddhist religion. Myanmar culture is in many ways a Theravada Buddhist culture, the art of writing and the script itself came with the Buddhist religion from India. Libraries were called by the Myanmar people, up to the early 1900's "Pitaka taik" meaning building, repository for the Tipitakas. As mss. were sacred and precious, and because there were professional scribes, (both monks and laity) they were recopied from age to age. There is a saying among Myanmar people that a palm-leaf mss. lasts for a thousand years, but due to the ravages of the harsh monsoon climate, insects, rodents, fires, and human destruction, no intact mss. older than about 350 years have survived in Myanmar. The use of palm-leaves and parabikes as writing materials gradually ended with the introduction of printing presses, to Yangon in 1816, to Innwa (Ava) in 1837 and to Yadanabon (Mandalay) in the 1870s.

## **Storage**

Improper storage of mss. can cause the most damage. They can easily get stained and discoloured and attacked by insects and fungus. Some of the conservation problems encountered with regard to palm-leaf mss. preservation are as follow:--

### **(i) Stains and Spots**

Stains and spots are sometimes seen on palm-leaf mss. In the old days and even now in some libraries and museums, the traditional method of “preserving” palm-leaf is to apply a thin coating of light, crude oil every now and then. Some of the crude oil (unrefined earth oil) contain impurities which leave dark stains and spots, and this method of treating mss. is not suitable.

In the Universities’ Central Library these stains and spots were found to be the result of applying crude oil and tumeric powder over a period of many years. Palm-leaf conservators in the British Library, Oriental and India Office Collections, say that more harm than good is done by applying crude oil in the traditional manner. They sometimes effect the writing on the first and second lines and also on the last lines of the palm-leaf.<sup>23</sup> Dr. O.P.Agrawal recommends that water can be used to remove stains and spots from incised palm-leaves.<sup>24</sup>

### **(ii) Discoloration of the surface**

Sometimes the colour of the surface of the palm-leaves change to a brown or darkish brown colour. In examining bundles of old palm-leaf mss. discoloration is more often found in the middle portion of the bundle than on the top or bottom portions. But in some cases all the leaves of a bundle, and the whole of the palm-leaf is discoloured. Dr. O.P. Agrawal writes that “discoloration of the palm-leaf could be for various reasons like oxidation, accumulation of dirt or frequent application of oil. Incised leaves can be cleaned by the use of a dilute detergent solution. For removal of oil, a mixture of acetone and ethyl alcohol is recommended”.<sup>25</sup>

### **(iii) Damage due to insects and rodents**

Insect damage is more destructive to palm-leaf mss. than other damage due to stains, spots, discoloration or fungus. Dr. O.P. Agrawal found that there is only one kind of insect which feeds on palm-leaf. The scientific name of the insect is *gastrallus indicus*. Some of the palm-leaf mss. kept in private collections and monasteries near food cupboards are sometimes found to be partly eaten by rodents, probably due to food contamination.

Insect damage can be easily controlled by keeping the mss. bundles in air-tight containers. In the Universities’ Central Library, we have designed air-tight wooden containers with sliding panels, in which mothballs and camphor tablets can be kept in a separate compartment in the same box as the mss. We have also designed small wooden troughs to fit in the containers so that the mothballs and camphor, naphthalene tablets can be kept separately in the troughs without coming in touch with the mss. Also regular fumigation with insecticides is necessary to control insect infestation. All mss. brought into the library should be thoroughly fumigated before they are stored together with mss. already in the library. In this way insect infestation

can be kept to a minimum. “Fumigation of palm-leaf is best achieved with paradichlorobenzene at 65% relative humidity”.<sup>26</sup> Although insects can be the greatest enemies of palm-leaf, they can be easily controlled. Fortunately palm-leaf, unlike paper, is not on the diet of many insects.

**(iv) Damage due to fungus**

If palm-leaf mss. are kept under air-conditioning fungus will not develop on them, even during the heavy rains of the monsoon period. Fungus attacks palm-leaf mss. only in very wet regions of lower Myanmar, where there are rainfalls of 100 inches (Yangon area) to 200 inches (Rakhine State) per year. If fungus covered palm-leaf mss. are brought into the library, or if fungus develops later due to inadequate air-conditioning facilities, they can easily be wiped off with cotton swabs moistened with ethyl alcohol. “Fumigation with thymol is also helpful”.<sup>27</sup>

**(v) Brittleness**

Palm-leaves are treated and made flexible before writing, but with age palm-leaves become fragile and brittle, losing their suppleness. Often after long years in monastic libraries, edges of the palm-leaves are already broken when acquired by a modern library for preservation.

In the Universities’ Central Library, one of the main jobs for conservators is to repair the edges of damaged palm-leaves to prevent further breaking off. The best method seems to be to repair the damaged edges with unused palm-leaves as fill-in material. The damaged palm-leaf is put on a light-table and the outline of the broken edges carefully sketched and cut out from unused palm-leaf with a sharp knife. It is then stuck on to the damaged palm-leaf with a polyvinyl acetate emulsion adhesive. To bring back flexibility to old and brittle palm-leaves an oil, such as citronella oil, camphor oil, or lemon grass oil can be applied on the surface of the leaf.<sup>28</sup> Citronella oil can be used for a dual purpose, because it will bring back flexibility to the palm-leaf as well as protect it from insects. This oil is a good insect repellent.

**Substitution and Reformatting**

Libraries and archives are now using more than ever the substitution and reformatting of the medium in preservation. But there is a basic limitation to substitution as a preservation panacea.<sup>29</sup> In the case of traditional mss. we have to preserve the medium for its artefactual value, as well as preserve the texts.

Problems of preservation have increased dramatically as library holdings accumulate at a fast pace. In the Universities’ Central Library in Yangon alone, we now have about 16,000 bundles of palm-leaf and parabike paper mss. Even under environmentally controlled storage some of these mss. are deteriorating as all writing materials, even lithic stone is never permanent. Some materials like paper are inherently unstable due to the chemicals used in their making. Conservation measures undertaken by libraries are expensive and time-consuming. Our libraries lack expert

conservators to carry out the repairs. So while conservational repair work is being undertaken to preserve the medium, we need faster and cheaper methods of transferring the text to a more durable, more compact, and easy to store and retrieve medium. This is where substitution and reformatting becomes of much use to librarians and scholars. Under this heading I would like to present the following methods of substitution:-

- (1) Recopying by hand
- (2) Making typed copies
  - (a) Mimeographed copies
  - (b) Electronic stencil copies
- (3) Estampages, or Rubbings
- (4) Micro-reproduction
- (5) Offset facsimile copies
- (6) Photocopies
- (7) Printing in book form
- (8) Digital reformatting

At the Universities' Central Library in Yangon we have tried out nearly all these methods.

#### **(1) Recopying by hand**

As pointed out earlier in this paper, copying by hand onto new palm-leaf, or parabike had been the traditional method of preserving the mss. texts, once the medium became old and decayed. In this way new copies of the old text were made for distribution to different repositories, and at the same time to hand them down from age to age. The copyist scribes occupied an important place both at the Royal Court and in the monasteries.

Sir George Scott, an authority on Myanmar life and customs during the last years of the Konbaung Dynasty, visited the capital Mandalay in 1879-80. In the *Thiho Taik*, the Ceylon Monastery, he saw the library, " a separate building standing in the middle of the enclosure, and used for no other purpose, except that the scribes sit here making copies of borrowed mss., or setting down notes of the learned bishop himself. The palm-leaf book is still universal, and the work of making up a volume is therefore very laborious, for the most practised manipulator cannot, with his agate style and light strip of palmyra-leaf, exceed the speed of an English boy who has just got over the preliminary difficulties of pot-hooks and hangers... The regular scribes are always laymen... a copyist who can write neatly and with accuracy is far from being common."<sup>30</sup>

Recopying by hand from palm-leaf to paper has also been used in modern times by some Myanmar libraries. Before the Second World War, the Bernard Free Library in Yangon employed scribes who traveled all over Myanmar, searching for rare mss. and copying them on paper. Even now we can still see some of these handwritten copies in the Myanmar National Library which inherited all the mss.

collections of the Bernard Free Library. In many cases the original mss. have disappeared and only these handwritten copies survive. As they were written on modern paper with high chemical content they urgently need deacidification and also lamination or encapsulation measures for preservation. We have now been able to microfilm, with the help of the National Archives, most of the Mon mss. copied on modern paper kept in the Myanmar National Library.

The Universities' Central Library during the 1970s and 1980s up to mid-1990s made many handwritten copies of rare mss. with the help of student volunteers mainly those studying Myanmar language and literature and Pali at the University of Yangon. We have standardized the size and the number of lines per page for the copyists, instructed them to give the original leaf number and indicate the endings of each line of the original mss. We pay them a small remuneration per copied page. This is a fairly cheap way of making substitution of the medium, but as in all copying by hand there is always the element of human error. Manual copying being a monotonous and laborious process, the copyist often drops letters or even lines in transferring the text from the original mss. to the modern paper medium. This was true of the copyists in the olden days also, because some of the mss. that have survived have corrupted texts that needs careful editing by scholars. If this method of copying by hand is used, trained library or archive staff members should be assigned to check whether the copies are true to the originals. During university vacation time, staff members of the Myanmar and Oriental Studies (Pali) Dept. of the University of Yangon have often helped our library by checking the copies with the original mss.

For ink inscriptions on the brick plaster of ancient temples, copying letter by letter is the only method applicable. I have been to Bagan with eminent scholars who spent many hours in uncomfortable positions, sometimes laying on their backs on high scaffolding to copy the ink inscriptions from high walls and ceilings. Some of the ink inscriptions have been filmed. A good collection of these ink inscriptions have now been published in book form by the Universities Historical Research Centre.

## **(2) Making typed copies**

From handwritten copies of mss. some of the libraries have made typed copies. Here again as in handwritten copies there is the danger of human error. Typists often make mistakes or type words wrongly if they do not understand the old texts and orthography. Usually we give out only handwritten copies for making typed copies, as most typists are not willing to type directly from mss. Again we need staff to check the typed copies with the original texts. In our libraries we are using handwritten copies and typed copies mainly for lending to users, as obviously we do not lend out original mss. If the user finds difficulty in understanding some words or if he or she suspect that there are errors in copying, we allow them to consult the original mss. in the mss. reading rooms of the library.

Typed copies of ancient inscriptions originally on stone or brick plaster are also made for use in libraries.

**(a) Mimeographed copies**

This is an extension of the typed copies. For mss. texts that have a higher user demand our library has made some mimeographed copies for use by students, especially post-graduate students, for class work and reference. Our library has also co-operated with a well-known Myanmar scholar and mss. expert U Htun Yee who made mimeographed copies, about 100 copies or so of each mss. for limited sale to other scholars and libraries. Our library used to buy 50 copies to distribute to other libraries with about 25 abroad, under our exchange of publications programme. We owe a debt of gratitude to U Htun Yee for his untiring efforts in making the texts of rare mss. available in mimeographed form. He produced 235 mimeographed volumes in Myanmar up to 1993 when he started mss. work in Japan.<sup>31</sup> U Htun Yee is now working in Yangon with Dr. Thant Thaw Kaung, M.D. of the Myanmar Book Centre to make computer word processed copies of old mss. available for use of scholars.

**(b) Electronic stencil copies**

Some scholars have tried out transferring the mss. text onto electronic stencils using machines like Rex Rotary or Risograph which are capable of making a thousand copies or more from one stencil master. But at present our libraries lack such machines which could be of use in preserving the texts in a new format.

**(3) Estampages or Rubbings**

Texts on lithic stone inscriptions are copied by professional copyists employed by the Universities Historical Research Centre and by the Archaeology Dept. Actually it is not copying, but making estampages or rubbings, using the soft Maing Kaing paper from the Shan State.

UHRC and UCL have many of these rubbings for the use of scholars. They also need to be preserved, as the paper used for rubbings will soak up moisture during the monsoon season unless they are kept under constant air-conditioning. At present rubbings are kept in air-tight cylindrical metal containers which are then stored in wooden drawers. Some of the rubbing are being microfilmed, and some filmed on offset plates to publish in book form.

**(4) Microreproduction**

Microform is now the principle medium for substitution; it quickly produces 'surrogates'. Reproduction in microformats of library material has been in use since the 1930's and now has a well-proven history.<sup>32</sup> Microform is a very stable medium

and can be produced quickly in single sheet microfiche or roll microfilm. But for developing countries like Myanmar, Laos and Cambodia, it is still difficult to obtain the necessary cameras and equipment, as well as to obtain the films, chemicals, spares and consumables. In Myanmar the Universities Central Library was the first library to set-up on a Reprographic section for microfilming in 1973. In 1980 on completion of the new UCL building, the Japanese government gave generous support by providing 40 million yen worth of microfilming and air-conditioning equipments.

Joint preservation microfilming programmes have been established. For us in Myanmar, our project with Cornell University Library, from 1990 to about 1996 was very successful.<sup>33</sup> A portable microfilming camera was provided under the project to enable us to go to monastic libraries, and various other libraries and private mss. collectors in several parts of our country to microfilm.

To date we have microfilmed over 100 reels using 100 feet roll films, i.e. over 1000 bundles of palm-leaf mss., starting mainly with non-religious subjects like Dhammathats (customary law codes), indigenous medical texts, historical texts, astrology and literature. The project was funded by the Luce Foundation through Cornell University.

I would like to quote again what I wrote in 1991 in *Southeast Asia Microfilm Newsletter* published by the Institute of Southeast Asian Studies, Singapore.<sup>34</sup>

“We can see in Cambodia, Vietnam and Laos that books and manuscripts are often the first and irreplaceable casualties of civil and military strife. The best protection, the swiftest and the safest, is to microfilm them with the help of friends and colleagues from more developed countries, make copies and store the negatives and positives in several different places, some in Myanmar itself and some aboard. Thus, even if the main collections are lost, they can again be reconstructed through the microfilm and photocopy printouts”.

As microfilms have been in use for several decades, problems with the technology have nearly all been ironed out and several standards exist for the production of archival microfilms. The microfilming process needs careful monitoring to produce quality filming of the required standard. Microfilms also need to be stored under constant air-conditioning. There is some user resistance to the use of microfilms, but with the production of more compact microform readers and easier retrieval controls users are slowly accepting microform as a useful substitute for hard copies. Although the information is recorded in another medium (i.e. on film), it is still in its original visual form, and can be reproduced with a printer to its original format.<sup>35</sup>

##### (5) Photocopies

Library users prefer photocopies as a substitute medium because they can be borrowed once they are bound up as a book. For preservation purposes we need good permanent, acid free paper for making photocopies of mss. Parabike paper mss. are



especially conducive for making photocopies. Neutral toners that bonds well are needed to produce archival quality substitutes.

Care has to be taken in photocopying. Some manuscripts are too fragile to put on a photocopier. But new machines are now coming on the market which minimizes the damage. For palm-leaf mss., we are microfilming first and producing the photocopies with a printer, using plain paper. This is very satisfactory and the photocopied sheets can be bound up for easy carrying and use.

#### **(6) Offset facsimile copies**

To preserve some extremely rare mss., both palm-leaf and parabike, the Universities' Central Library has printed a few offset facsimile editions in co-operation with the Universities Press in Yangon. Six offset reprints were published in limited editions of 1,000 to 1,500 copies each between 1973 and 1979. But later we were unable to continue this offset reprint programme due to lack of funds.

The facsimile reprinting of rare mss. which have never been published in book form before is much appreciated by scholars, and we plan to continue this series once funds become available again, either from the government budget, private sector, or from foreign foundations.

#### **(7) Printing in book form**

The best way of preserving traditional texts and distributing them widely, both within the country and abroad is of course to publish carefully collated, edited editions in book form. Since printing presses were introduced into Myanmar from 1816, traditional texts on stone, palm-leaf and paper have slowly been transferred into printed book form. But even today many texts still remain in mss. form. The Royal Press within the grounds of the King's Palace compound at Mandalay, the Burmah Herald Steam Press and the Hanthawaddy Press in Yangon were some of the early presses which published both religious and secular works, using old texts written on palm-leaf and parabike paper.

The Text Publications Committee of the Burma Research Society, published (46) authoritative editions, edited by well-known scholars, from 1921 to 1941 and about (20) more after the Second World War including three old Mon texts.<sup>36</sup> The Society had its headquarters in the Universities' Central Library, and rare mss. collected by the library were often selected for editing and publishing. The Society was dissolved by the government in January 1981 and recent attempts by the author of this paper and other scholars to revive it have not been successful up to now.

After I retired as Chief Librarian of the Universities Central Library in December 1997, I was appointed as a full-time member of the Myanmar Historical Commission in January 1998. I continued my efforts at publishing in book form edited texts from palm-leaf and parabike manuscripts. I was able to get funding to publish vol. (2) and vol. (3) of Twin-thin Taik-wun Maha Sithu's *Maha Yazawin Thit*, which had never been printed previously; also to publish in 3 vols. the *Rama-pya-zat-*

*taw-gyi*, the Ramayana Court Drama, by Narata Kyaw Gaung. I became interested in the old *Ayedawbon Kyan* texts, and the Myanmar Historical Commission is about to publish at my urging the *Hanthawadi Hsinbyu-shin Ayedawbon Hmawgun U-dan*, by Uttaraw A-mat-gyi, edited by Dr. Toe Hla and later this year *Alaung Mintaya-gyi Ayedawbon*, by Letwe Nawrahta, edited by Daw Ohn Kyi. Both these old texts have been copied from palm-leaf manuscripts and are being printed for the first from.

#### **(8) Digital reformatting**

The Universities' Central Library bought the first scanner in 1994 for transferring traditional texts on mss. for storage in digital format on CD-ROMs and computer hard disks. This is an area which is growing fast, but since the technology is still new we do not know much about the permanency value of magnetic and optical digital medias. The use of digital reformatting is now developing quickly within Myanmar, especially at the Universities Central Library, the National Library and the National Archives; also at the privately owned Myanmar Book Centre run by Dr. Thant Thaw Kaung, son of the author of this paper.

#### **Recent Developments in Preservation of Myanmar Manuscripts**

During the last decade of the 20<sup>th</sup> century and the first five years of the 21<sup>st</sup> century, we were able to take further measures for the preservation, microfilming and digitalisation of rare palm-leaf and paper parabike manuscripts. In our efforts to preserve these manuscripts and make them accessible to scholars all over the world, the Japanese government, Japan and Toyota Foundations and a number of Japanese scholars provided valuable assistance, financial, technical and expert knowledge.

Myanmar scholars, librarians, and archivists took active part in two important preservation conferences held in Chiang Mai, in December 1993 and February 2000. The Conference on the Library and Archives Preservation Needs of Southeast Asia was held from 15<sup>th</sup> to 17<sup>th</sup> December 1993 and it was an important milestone for scholars, librarians and archivists of the region to get together to discuss preservation problems. U Thaw Kaung read an important paper on "Myanmar Traditional Manuscripts and their Preservation and Conservation" at this Conference. Later a Consortium was formed by Southeast Asian librarians, archivists and scholars called SEACAP, acronym for the Southeast Asian Consortium on Access and Preservation. SEACAP was established at the International Meeting on Microform Preservation and Conservation Practices in Southeast Asia convened in Chiang Mai University Library in February 2000. U Thaw Kaung was elected as the National Co-ordinator for Myanmar. One of the important undertakings of SEACAP is the compilation of a Masterlist of Southeast Asian Microforms: Digitalisation Project.

In Myanmar, the National Commission for the Preservation of Traditional Manuscripts was established on 8<sup>th</sup> September 1994; led by a Senior Member and Secretary of the Myanmar Historical Commission with U Thaw Kaung as one of the two Vice-Chairmen. The National Commission has as members Director Generals from the Cultural Institute in charge of the Myanmar National Library and National Museum, the Myanmar National Archives and the Directors of large government

libraries which have rare manuscript collections like the Universities Central Library, Library of the Department for the Promotion and Propagation of the (Buddhist) Sasana (Religion), Universities Historical Research Centre and the Defence Services Historical Research Institute. This Commission organized an important Preservation and Conservation Meeting in Yangon in November 1995 which was attended by senior officials of IFLA (International Federation of Library Associations), British Library Conservation Section palm-leaf manuscript conservator, Chiang Mai University Library Director and nearly all the members of the Myanmar National Commission for the Preservation of Traditional Manuscripts. Unfortunately this Commission has become dormant since 2003.

Resource Centres for Ancient Myanmar Manuscripts were established in downtown Yangon on 29<sup>th</sup> December 2000, and in Central Mandalay on 10<sup>th</sup> April 2001, as branches of the Universities Central Library in Yangon and the Mandalay University Library, respectively. This enables researchers who are not affiliated to the universities to use the manuscripts. Many of the rare palm-leaf manuscripts have been digitalised and the texts are available on CD-Roms.

### **Japanese Assistance**

During the Second World War many precious manuscripts were destroyed in fierce battles between the Allied (British, American, etc.) and Japanese troops, including the entire collection of the Yangon University Library. After the war we have received generous assistance from the Japanese government and Foundations to rebuild some of these manuscript collections, though many of the destroyed mss. can never be replaced.

With the financial support of the Japan and Toyota foundations we have been able to take Inventories of Manuscript collections, especially in old monastic libraries, in several areas of Myanmar: around Mandalay, Southern Shan State, Mon State and in Central Myanmar. A lot more still needs to be done. After the Inventories were taken, librarians, manuscript experts and historians selected items to be microfilmed, so that the texts can be preserved and reproduced. Here also we received generous aid from the Japan and Toyota Foundations.

In Japan Prof. Ito, Toshikatsu (Professor of Southeast Asian History at Aichi University) carried out important digitalisation projects for Myanmar parabiak manuscripts, with funding from Aichi University Grant-in-Aid for Academic Research for 1999-2001 under the title "Comprehensive Research on the Conservation and Compilation of Southeast Asian Historical Manuscripts by Transforming the Medium". Later the catalogue data for the digitalised parabiak manuscripts was published in (3) printed volumes together with CD-Rom versions, with the title *Documents of Myanmar Socio-Economic History* (Aichi, 2002. 3 vols.) This is an important contribution in our efforts to unearth history by preserving old manuscripts. Full-texts in Myanmar with English abstracts are also available through the hard work of U Htun Yee, Visiting Fellow at Institute of International Affairs, Aichi University, who compiled between May 1993 and 2003, rare collections of full-texts from parabiak manuscripts on *Upade*, legal texts (Aichi, 1999, 4 vols.), *Thet-kayit*, on dates (Aichi, 1999. 3 vols.) and *Sayin*, various lists (Aichi, 2003. 4 vols.). Prof. Ito has done a great service for researchers on Myanmar history by publishing the

full-texts in Myanmar script with abstracts in English of these parabike documents.

Another important Japanese project for the preservation of Myanmar traditional manuscripts is at the Centre for Documentation and Area-Transcultural Studies (C- DATS), located in the Tokyo University of Foreign Studies. It was founded in 2002, with financial support of the Japanese Ministry of Education. C-DATS project for Myanmar documents is headed by Prof. Teruko Saito of the Myanmar Department of the Tokyo University of Foreign Studies. Digitalisation of full-texts of parabike mss. is being carried out under the C-DATS projects, in Yangon and other parts of Myanmar, with Dr. Thant Thaw Kaung of the Myanmar Book Centre serving as the country co-ordinator. Under this project which started in 2003, parabike mss. are being microfilmed and digitalised. For the first two years about 1500 images of parabike folds are being digitalised each year with the help of Dr. Aung Maw who has an office in Bangkok also. At the same time a reading of the full-text of each parabike fold is given in modern computer Myanmar script and full searching can be done by subject key words, dates, etc. Dr. Toe Hla of the Myanmar Historical Commission and U Win Tint, Librarian of Meikhtilar University, are helping to carrying out this project in Myanmar. It is technically the most modern, with a searchable database, developed by the Myanmar Book Centre with support from C-DATS. The transcription of each mss. image can be compared with the scanned image. Scholars can easily view the reformatted detailed readings which are transcriptions of each parabike page, as well as view the original text in the original parabike format. Catalogue data are also given in Romanised script using the Library of Congress Romanisation System for Myanmar Script which is widely used in libraries throughout the world.

The latest development, also with Japanese assistance was the holding of an International Symposium on Preservation of Myanmar Traditional Manuscripts; a very important meeting attended by manuscript experts and scholars from U.K., USA, Japan, Thailand (French scholar) and Myanmar. It was jointly sponsored by the Ministry of Religious Affairs and the Ministry of Culture of the Government of the Union of Myanmar and the Center for Documentation & Area-Transcultural Studies (C-DATS) of the Tokyo University of Foreign Studies. It was held in Yangon on 14<sup>th</sup> and 15<sup>th</sup> January 2006. All together (13) papers were read and lively, cordial discussions were held by seven foreign experts and six Myanmar librarians and scholars, with about (50) other Myanmar participants.

## **Conclusion**

In concluding my paper, I would like to mention that Myanmar libraries and archives have many pressing conservation needs to preserve our traditional texts. We have been doing what we can with our limited resources: constructing new library buildings, training staff for conservation work and starting programmes of preservation microfilming and other forms of substituting and reformatting the medium for the preservation of our traditional texts. Obviously much more needs to be done and our present efforts should be stepped up if we are to stem the rapid deterioration which is besetting our priceless collections. We would welcome international co-operation and assistance to establish national and regional

conservation centres to form a net-work in Southeast Asia and Japan, to train urgently needed conservation staff, to obtain necessary equipment, chemicals, books, journals and expertise for preserving our traditional texts. Japan has been the foremost country helping us to preserve our literary heritage, and we are grateful to the Japanese people, government and foundations for their generous support.

Librarians and archivists are guardians of the intellectual heritage of our culture. In recent PAC literature we have often been compared to unwary bystanders holding parcels with time-bombs already set to go off inside. We may have grand buildings to house our collections, with priceless mss. in our care. But without carefully thought-out and well-planned PAC programmes the invaluable records and mss. in our hands are deteriorating already at a fast pace and soon before we are aware of the danger, there will be a crisis and we will see these priceless items disintegrate and become a dust heap. The invaluable texts recorded on them, the thinking and legacy of countless writers and scholars of the past can disappear from our shelves. We need to preserve the memory of each nation as part of the “Memory of the World”.<sup>37</sup>

We live in an age which is very much aware of conservation problems. Many countries already have development plans to conserve our natural resources, our wildlife, our forests and our lands. We need to draw up similar long-term plans of conservation to keep intact our intellectual history as recorded in our traditional mss. Only then will we be able to preserve the indigenous scholarship of our countries that forms an essential part of our national, as well as, an integral part of Asian culture and intellectual heritage.

## Endnotes

1. Thoreau, Henry David. *Walden, or Life in the Woods*. New York: New American Library, 1942(1949 reprint). (Signet books) p. 23.
2. Gaur, Albertine. *Writing materials of the East*. ... 1979.p.12.
3. *Ibid.* p.14.
4. Phone Kyaw (Natmauk). *Pe phu hlwa*. Yangon: Sarpay Beikman, 1966. p.13.
5. Wun, U. “*Pe hpu hlwa*”...1955. p.8-13.
6. Aung Thaw, U. *Historical sites in Burma*.... 1972, p.31; and Than Swe, Daw. *Pyu sar Khin Ba shwe pe chat*...[Khin Ba gold palm-leaf plates with Pyu writings].Yangon: Myanmar Language Commission, 1992.
7. Myat Kyaw, U. *Let swe pe hnit parabike*. Unpublished typescript. p.28-29.
8. Fytche, Albert. *Burma past and present*... 1878. vol.I, p. 291.
9. *Ibid.*vol.I,p. 291.Footnote.
10. *Ibid.*vol.I,p. 291.
11. Wun, U. “*Notes on Burmese manuscripts books*”... 1950. p.225.
12. *Myanmar-English dictionary*...1993. p.394.
13. Tin, U. *Myanmar Min Okchokpon sa dan*...Pt. V, p. 101.
14. *Myanmar-English dictionary*...1993. p.248.
15. *Myanmar-English dictionary*...1993. p.353.

16. Tin, U. *Myanmar Min Okchokpon sa dan...*Pt. V,1993. p.102-103.
17. Some scholars think “ *thayet chin* ”is a place name. See Maung Maung Thein. *Parabike bagyi lei-lar chet . . .* 2001. p. 44.
18. Wun, U. “*Notes on Burmese manuscripts books*”, 1950.p. 224-225.
19. Wun, U. *Ibid*.p.229.
20. Herbert, Patricia M. “*The life of the Buddha*. London: The British Library, 1993. p.10.
21. *Ibid*. p.11.
22. *Ibid*. p.12.
23. Maung Maung Thein. “*Pe Myet hna byin baw hma twe shi gyet mya..*”1993.p.2
24. Agrawal, Om Prakash. “*Care and conservation of palm-leaf and paper illustrated manuscripts*” In Guy, John. *Palm-leaf and paper* Melbourne: National Gallery of Victoria, 1982. p.85.
25. *Ibid*. p.85.
26. *Ibid*. p.85.
27. *Ibid*. p.85.
28. Agrawal, Om Prakash. *Conservation of manuscripts and paintings of South-East Asia*. London: Butterworths, in association with the International Institute of Conservation of Historical and Artistic Works, 1984. p.48 (Butterworths series in conservation and museology).
29. Kirtlay, T.R. “*Substitution*” In *A reading guide to the preservation of library collections*; ed. by Geraldine Kenny... 1991.p.53.
30. Scott, Sir George (Shway Yoe). *The Burman his life and nation ...*1963 ( reprint ) p. 130-131.
31. *Collection of Upade* (Laws and Regulations of Myanmar Last Two of Kings, A.D.1853-1885); compiled and edited by Htun Yee. Toyohashi, Japan: Aichi University, 1993. Vol.1. Preface, p. IV.
32. Kirtlay, T.R.“*Substitution*” ... 1991. p.55.
33. Thaw Kaung, U. “*Preservation microfilming of Myanmar manuscripts...*1991.p. 1-7.
34. *Ibid*.p. 7.
35. Feather, John. *Preservation and management of library collections ...*1991. p.6.
36. Burma Research Society. *Thu-tay-tha-na sar-zin thamaing . . .* Yangon: BRS, 1970. Compiled by U Thaw Kaung and U Win Mon.
37. Abhakorn, M.R. Rujaya. “*Planning of preventive and curative preservation of library and information material to preserve national memory*”, paper read at Unesco Workshop, Bangkok, 3-5 July 2005. Unpublished.

## Bibliography

### In English

1. Agrawal, Om Prakash. *Care and conservation of palm-leaf and paper illustrated manuscripts*, In Guy, John. *Palm-leaf and paper...*1982. p. 84-90.
2. - - -. *Conservation of manuscripts and paintings of Southeast Asia*. London: Butterworths in association with the International Institute for Conservation of Historic and Artistic Works, 1984. (Butterworths series in conservation and museology).
3. Aung Thaw, U. *Historical sites in Burma*. Yangon: Ministry of Culture, 1972.
4. - - -. *Report on survey of ancient manuscripts ( and antiquities ) in Burma*, by U Aung Thaw and Min Naing [prepared by Unesco] Yangon: Ministry of Culture, 1957. 33 leaves. Mimeographed.
5. Banks, P. N. "Environmental standards for storage of books and manuscripts", *Library journal* (1974) p. 339-343.
6. Bode, Mable Haynes. *The Pali literature of Burma*. London: Royal Asiatic Society, 1909. xv. 119p.(Prize publication fund, vol.II) Reprint, Rangoon: Burma Research Society, 1965. With "Review of Mable Bode's The Pali literature of Burma", by Prof. Charles Duroiselle, 1st Hon. Secretary of BRS, from *JBRS*, Vol.1, No.1 (June 1911) p. 119-122.
7. *Conservation in the library: a handbook of use and care of traditional and nontraditional materials*; edited by Susan Garreston Swartzburg. Westport, Conn.: Greenwood Press, 1983. This collection of (11) articles include chap. 1 General care, by Susan Garreston Swartzburg -- Chap. 2. Manuscripts, documents, printed sheets, and works of art, by Karl Buchberg -- Chap. 6. Microforms, by Helga Borck -- Appendix 1. Suppliers and supplies -- Appendix 2. Sources of advice and assistance.
8. Cunha, G.M. *Conservation of library materials*, by G. M. Cunha and D.G. Cunha. Metuchen, N.J.: The Scarecrow Press, 1971.
9. Feather, John. *Preservation and the management of library collections*. London: The Library Association, 1991.
10. Fytche, Albert. *Burma past and present with personal reminiscences of the country*. London: Kegan Paul, 1978. 2 vols. illus.
11. Gaur, Albertine. *Writing materials of the East*. London: The British Library, 1979.
12. *The Glass Palace Chronicle of the Kings of Burma*; translated by Pe Maung Tin and G.H.Luce. Yangon: Rangoon University Press for the Burma Research Society, 1960. 1st pub. in English, 1923.
13. Guy, John. *Palm-leaf and paper. Illustrated manuscripts of India and Southeast Asia*. Melbourne: National Gallery of Victoria, 1982, 26 p. illus., photos.(some colour)

14. Herbert, Patricia M. *The life of the Buddha*. London: The British Library, 1993.
15. - - -. "The Sir Arthur Phayre Collection of Burmese manuscripts", *British Library Journal*, vol.1, no. 1(1975) p. 62-70.
16. Quigly, E. Pauline. *Some observations on libraries, manuscripts and books of Burma*, from the 3rd century A.D. to 1886, with special reference to the Royal Library of the last Kings of Burma; foreword by [Dr.] Than Tun. London: Arthur Probsthain, 1956.
17. Raghavan.V. *Preservation of palm-leaf and parabaik manuscripts and plan for compilation of a Union Catalogue of Manuscripts*. 1979. 19p. (Unesco: Restricted technical report, pp/1977-78/5. 1.5. Serial no. FMR/PGI/ 79/144 Socialist Republic of the Union of Burma. Operational activities in the field of information.)
18. Ray, Dr. Nihar Ranjan. "Early traces of Buddhism in Burma", *Journal of the Greater Indian Society*, vol. VI, no. 1 (1939).
19. *A Reading guide to the preservation of library collections*; ed. by Geraldine Kenny. London: Library Association Publishing, 1991.
20. Scott, Sir James George (Shway Yoe). *The Burman, his life and notions*. New York: W. W. Norton, 1963(reprint). 1st pub. London: Macmillan. 1882. 2vols.
21. Singer, Noel F. "Palm-leaf manuscripts of Burma", *Arts of Asia*, ( Jan. & Feb.1991) p.133-140.
22. Strachan, Paul. *Pagan, art & architecture of Old Burma*. Whiting Bay, Arran, Scotland: Kiscadale Publications, 1989.
23. Symes, Michael. *An account of an Embassy to the Kingdom of Ava*, sent by the Governor-General of India in the year 1795. London: W. Bulmer, 1800.
24. Than Tun, Dr. "Religious buildings in Burma, A.D. 1000-1300", *JBRS*, Vol.XIII. pt. 11(1959)p. 71-80.
25. Thaw Kaung, U. "Japanese microfilming team in Myanmar", *Southeast Asia Microfilms Newsletter*, No.21 (Dec. 1991) p.11-13.
26. - - -. "Preservation microfilming of Myanmar manuscripts", *Southeast Asia Microfilms newsletter*, No. 21 (Dec. 1991) p. 11-13.
27. *Unesco Regional Seminar on the Conservation of Cultural Materials in Humid Climates*. Canberra: Australian Govt. Publishing Service for the Australian National Commission for Unesco, 1980. 122p. Held at the Canberra College of Advanced Education, 19-23.Feb.1979.
28. Wun, U. "Notes on Burmese manuscripts books", *JBRS*, vol. XXXIII, pt. II(1950) p. 224-229.

### **In Myanmar**

29. Maung Maung Thein, U. *Parabike bagyi lei-lar chet*. Yangon: Sarpay Beikman, 2001.



30. Maung Maung Thein, U.. *Pe myet hna byin baw hma twe shi gyet mya.* [Findings from the surface of the palm-leaf] Yangon: Universities 'Central Library, 1993. (11) leaves. Unpublished mss.
31. Myanmar Naing-gan Thu-tay-tha-na A-thin. *Thu-tay-tha-na sar-zin thamaing, thu-tay-tha-na sar-zin sar-yin, thu-tay-tha-na sar-zin sar-dee mya.* Yangon: Burma Research Society, 1970. Compiled by U Thaw Kaung and U Win Mon.
32. Myat Kyaw, U. *Myanma yo-yar a-mway a-hnit shay-haung pe sar parabike sar.* Yangon: Sarpay Beikman, 1993.
33. - - -. *Myanma yoya amwei ahnit she haung pe sar, parabike sar.* Yangon: Sarpay Beikman, 1993.
34. Nyunt Maung, U. *Myanmar do i amyotha yin-kyei-hmu a-mway pe-sar parabike,* by Maung Maung Nyunt (Man-tetkathoe) pseud. Yangon: Sarpay Beikman, 1999.
35. Phone Kyaw (Natmauk). *Pe phu hlwa.* Yangon: Sarpay Beikman, 1966.
36. Shwe Gaing Tha. *A hnit taya pyi Mandalay.* Mandalay: Kyi-pwa-ye Press, 1959.
37. Than Shwe, Daw. *Pyu sar Khin Ba shwe pe chat lei-lar chet.* [Study of Pyu writings on Khin Ba gold leaves]. Yangon: Myanmar Language Commission, 1992. 2 vols.
38. Than Tun, Dr. *A-thit myin Bama thamaing* [A new outlook on Myanmar history]. Mandalay: Myakan Sarpay, 1975. p.321-347.
39. Tin, U. (Bagan Wundauk). *Myanma Min Okchokpon Sadan...*pt. V, Rangoon: Supdt., Govt. Print. and Staty., Burma, 1933.(1983 reprint).
40. Wun, U. "*Pe hpu hlwa*", [Note on palm-leaf], by Minthuwun, *Shumawa Magazine, 100th special issue* (Sept.1955)p.8-13. Reprinted in *Pan hnint pinsi.* Yangon: Kaba Thit Sarpay Taik, 1965. p.87-102.