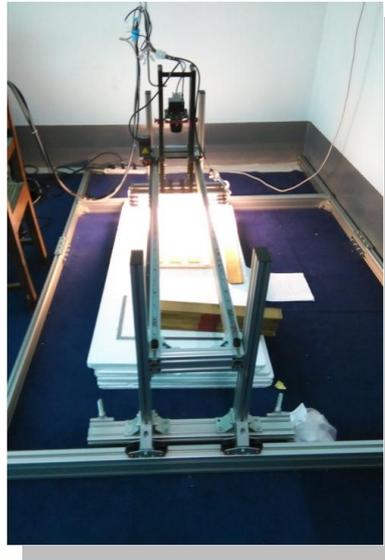


Digitization Process and study on selective Traditional Medicine Palm-leaf Manuscripts



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ABSTRACT

This paper is to study the digital preservation and creating database of palm-leaf manuscripts. Librarians are responsible for creating, storing and digitizing palm-leaf manuscripts for the users easily access in University of Yangon Library. Palm-leaf manuscripts are cultural heritage and wisdom records of rare collections. These should be preserved in the digital form for both knowledge and the manuscripts themselves, for long term use throughout its life cycle, for the purpose of education, preservation and research for future generations. This paper mentions how to digitize, how to edit, how to store of palm-leaf manuscripts and therapeutic treatment of traditional medicine of selective Palm-leaf Manuscripts. It also suggests a digital preservation of palm-leaf manuscripts to be easily accessed by researchers and scholars.

Keywords : Therapeutic treatment; Traditional medicine; Cultural heritage

1. Introduction

University of Yangon Library urgently needs to do the digitization process for its valuable library collections. Digitization is the process of taking traditional library materials that are in form of manuscripts, books, papers and converting them to the electronic form where they can be stored and manipulated by a computer. Without digitization, rare and special collections remain obscure and hidden. Digital materials can be stored, transmitted and retrieved easily and quickly.

1.1 Objectives

Objectives of the paper are –

- To preserve rare Palm-leaf manuscripts with various subjects.
- To create database for storing and searching the digitized files easily for the users.
- To preserve digital forms of Palm-leaf manuscripts for long term use throughout its lifecycle for the purpose of education and research for future generations

1.2 Digitization Process

The process is from original document to digital document and editing process. Data files created in digital format stored in storage device. These files are stored in 16 (TB) Terabyte storage device which has stored in scanned file and digital format for PDF files. Scanned file includes two types which are TIFF file and JPGE file. In implement result, METADATA files containing additional data, for example author, title, subject, keywords and so on.

2. Main points of Digitization Process

The process has five main points. These are pre-scanning process, scanning process, editing process, study on the selective traditional Medicine Palm-leaf Manuscripts and storing file format (create database).

2.1 Pre-scanning Process

Staff are cleaning the dust with soft brush on every palm-leaf manuscripts. We are applying lemon grass oil to strengthen the leaves, protect the growths of micro-organisms and flexible. Palm-leaf manuscripts are systematically arranged by alphabetical order according to Myanmar alphabet “က ကိ ကု ကေ ကဲ ကော ကော် ကံ ကာ... etc.”(12 leave for one ingar)

Some old palm-leaf manuscripts are broken or having tear edges some experts are repairing the tear edges. Repairing the broken edges is using glue which is organic glue (not chemical). They are replacing with blank palm-leaf. Repairing process is very detail and has long steps. They have being starting the digitization process with advanced Niji scanner at Chemistry Department, University of Yangon. It is high resolution scanner Microscope.

2.2 Scanning Process

The staff adjusts motor velocity, DPI (Dot per Image), scan size, light and color. They do the scanning process, three or four leaves for one time. First of all, scanning files of palm-leaf manuscripts save “TIFF” file and keep for original format (archiving). They get scanning with high resolution. Palm-leaf manuscript has two sides: one for convex (Myanmar called (ကျော) Kyaw and the other side is concave (Myanmar called (ဝမ်း) Wun). They do two times scanning for one leaf.

2.3 Editing Process

After scanning process, the staff rotates and crops the palm-leaf manuscripts. They separate and saving for each palm-leaf with JPG files which display on the web-site and upload for database. They use adjustment with color, levels and curves. Sometime they use brightness and contrast function. These files are very clear and high quality image of Palm-leaf Manuscripts.

After editing process, they are wrapping it with Maing Kaing paper or silk cloth. Maing Kaing paper is called Shan paper. It is made by handmade and acid free paper. We are sorting of palm-leaves which are kept on shelves or showcase.

3. Study on the Selective Traditional Medicine Palm-leaf Manuscripts

The paper selects (10) traditional medicine palm-leaf manuscripts. These are ကလေးဆေးကျမ်း (Children Che’’kyan) Kalayche’’ kyan, ကျောက်ကျမ်း (Small pox kyan) - Kjau Kyan, ခန္ဓငါးပါးဆေးကျမ်း Khananapa’’che’’kyan, ဆေးကျမ်း (Medicine Kyan) Che’’Kyan, ဓာတုဒီပင်္ဂါ Dhatudi pani, ပဋိသန္ဓေဆေးကျမ်း (Pregnancy) Parisadayche’’kyan, ဥတုဘောဇနသင်္ဂဟကျမ်း (Utubhaojansagahakyan), ကွန်ချာဝတ်ကျမ်း (Khuchardhatkyan), ဇမ္ဗူချမ်းသာဝတ်ကျမ်း (Zamuchanthardhatkyan), and ဖိုးရာဇာဝတ်ကျမ်း (Pho Yazar Dhatkyan),.

It is divided into (2) parts of Herbal traditional Medicine. They are (7) Che’’Kyans (Medical Kyan) and (3) Dhatkyans are as follows :

3.1 ကလေးဆေးကျမ်း=Kalao’’Che’’Kyan (Medical Kyan for Children) Taung 291, Myin Phyu, 9 lines, 11’ (ခ-ခဲ), National Library (Yangon).

It mentions how to cure infantile ailments resulting in nervous disorders and muscular dysfunction and also about indigenous medicinal ingredients.

Therapeutic treatment – Infantile ailments, diarrhea, temperature or fever, blocked nose, not clear of with infantile ailments.

Drugs - Bile of boa constrictor, sandalwood, nutmeg and clove have to grind and apply as ointment

3.2 ကျောက်ကျမ်း = Kjau Kyan - Small pox kyan, 1208, Myin Phyu, 7 lines, ၂၂၄° (က-ခိ)၊
Taung 2133, NL (Yangon).

It mentions disease and characteristic of small pox. It explains kinds of small pox, drugs of small pox. Some small pox which are of no drugs for example Kjau yar gyi, Kjau pa dan, Kjau khaya pwint and Kjau black and so on.

3.3 ခန္ဓာငါးပါးဆေးကျမ်း = Khananapa''che''kyan, Bar 302, Myin Ni, 8 lines, ၂၂၇° (ယု-စား)
NL (Yangon).

It mentions the five aggregates embodying a being which are physical, feeling, perception, volition and consciousness. People's blood and phlegm are unbalanced due to the lack of harmony and such characteristics of disease and using drugs are described in it.

3.4 ဆေးကျမ်း = Che'' Kyan (Medicine Kyan), Bar 1976, Myin Phyu, 10 lines, ၂၂၇°
NL (Yangon).

Therapeutic treatment – It mentions the drugs of small pox, snake - antidote, mad dog-antidote, swollen body, method of healthy and relieve of fever. It describes method of laxative for children. In new regions, toxic appear in the water.

Drugs- Rain tree (Siris) flowers, mace and Shan root and 2 kinds of fragrant.

3.5 ပဋိသန္ဓေဆေးကျမ်း=Pregnancy=Parisadayche''kyan), Taung Phi Lar Sayataw
1255, Myin Phyu, 10 lines, ၂၂၈° , 148 bar, NL (Yangon).

It mentions how to stay starting the birth, conditions and necessities of four basic properties of matter (solidity, heat, fluidity and volatility or mobility), during the birth and after birth period, effective of mother's colostrum.

It explains when don't have effective mother's colostrum and disease of oliguria and constipated and usable medicine.

- **Four basic properties of matter**
- One month - liquid condition – become intelligence – **solidity** – required taste with sweet
 - Two months - (**volatility or mobility**) – required taste with acrid
 - Three months become piece of flesh - **heat** – required taste with heat, cold and acrid.
 - Four months become blood freeze – **element of Cohesion** – required taste with salt.

Over 40 years old women become Mother's breast not yielding freely:

- Become gas in the body
- Become phlegm
- Become bile

Therapeutic Treatment – Drugs to be used not in proper condition of urine and stool, feeling dizzy not having clear eyes, and deafened by noise.

- Drug name – *Mahamuninada*
- Flowers of Clove, Jasmine, Champa, seed and fruit of Netmeg, star flower or Indian Medlar and carrot.
- Powdered can be drunk and inhale.

3.6 ဓာတုဒိပကီ = Dhatudipani, Kyan Sit, 10 lines, ၇၂၂ ၁၀ (က-ဝေါ)၊ Bar 293, NL (Yangon).

It explains (8) planets, (27) stars, and (4) basic properties of matter. It mentions the herbal medicine (Aryubada -science of health, medicine) and the nature of four basic properties of matter. It includes – (4) kinds of heat, (6) kinds of volatility, (12) kinds of fluidity or cohesion and (20) kinds of solidity.

3.7 ဥတုဘောဇနသင်္ဂဟကျမ်း = Utubhaojansagahakyan, ဝေသာမင်းကြီးဦးဘိုးလှိုင် □ Myin Ni ၊

1242, 9 lines, ၉၆၈၊ ၁၀၇၂ ၉ (က-ငဲ့)၊ Kin 32, NL (Yangon).

It explains (3) seasons, (2) gracefulness, (12) signs of the seasons, diseases, fruit, vegetables and other food in season. It mentions prevention and cure-all of the suffering pain, phlegm, kidney, liver and heart troubles.

3.8 ကွန်ချာဓာတ်ကျမ်း = Khuchardutkyan, Myin Phyu, 1250, 9 lines, ၁၂၂၂ (က-ခ)၊

Taung 861, NL (Yangon).

It explains the four basic properties of matter, diet, using drug and (96) kinds of diseases which include two kinds – (52) kinds of discharge urine freely and (44) kinds of suffering from poor urination and be constipated.

3.9 ဇမ္ဗူချမ်းသာဓိတ်ကျမ်း =Zamuchanthardhatkyan U Shwe Lone □ 1236, ၁၂၂၆ (က-ခု),

9 lines □ Myin net, NL(Yangon).

Human beings should depend on drugs or medicine in relation to (3) seasons, diet and suffering from stomach upset had been described.

Some vegetables such as leaves of Mezali, Gwe-dauk, Tha-Khut flowers can cause diseases of hypertension to people. The leaves of Tamarind are suitable to make the blood vessel balanced for three seasons.

3.10 ဖိုးရာဇာဝါတ်ကျမ်း = Pho Yazar Dhatkyan □1231□ 136 Bar, NL(Yangon).

It mentions how to cure patients with effective diet and characteristics of disease.

- **Therapeutic treatment** - ulcer and sore, carbuncle, inflicted with scabies, measles and itch, prurigo, pruritus.
- **Drugs** – powdered with small fennel or black cumin (Samon-net), tea plant, Sin-Don-Ma-Nwe, Meik-thalin

If patients have unhealthy blood, ache of muscle and joint and high fever condition.

- **Drugs** – To grind or pound fruit of Nutmeg, roots of Siris (rain trees) and Gum-Kino
- **Therapeutic treatment** – To drink a liquid to make patients to have clear eyes, promote digestion, increase appetite
- **Drugs** - mixture of fruit and flowers of Nutmeg, flowers of clove, five kinds of fennel, cardamom.
- **Drink** - Mixed with hot water for 2 times (in the every morning and at night.)

4. Storing File Format

Digital format of Palm-leaf manuscripts create database. Users can easily search by metadata fields according to author, title, subject, key words and so on. They can see palm-leaf manuscript data information and bibliography view which link to PDF (Portable Document Format) full-text file which is very clear and high resolution. In “Admin portion” which is administrator view only. He/ she write “user name and password”. If the administrator wants to edit about something error, you can easily edit or delete function.



Bibliography



- Dr. Htin Aung
- Dr. Yi Yi



Biography



- Dr. Htin Aung
- Dr. Yi Yi



Fig. 1. Home page of Palm-leaf Manuscripts

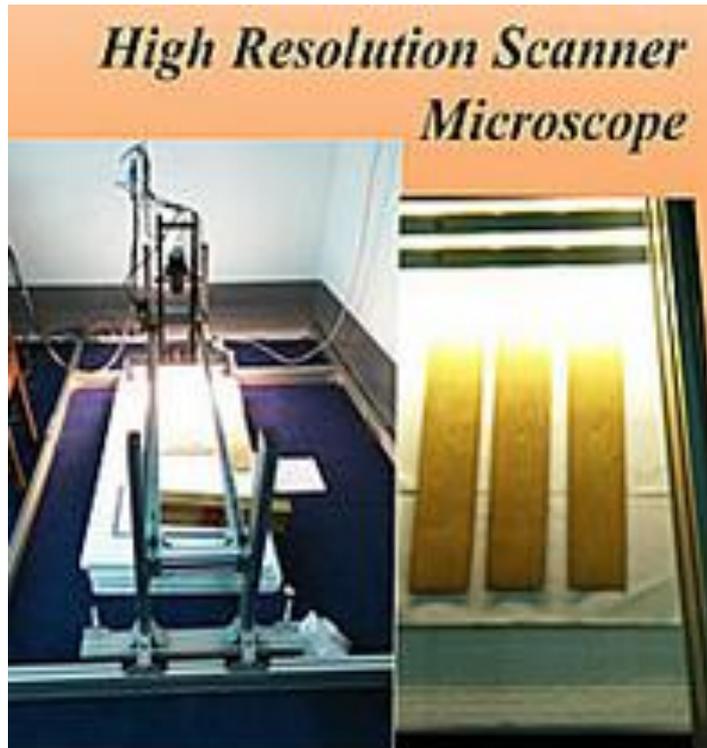


Fig. 2 High Resolution Scanner Microscope (Nijii scanner)

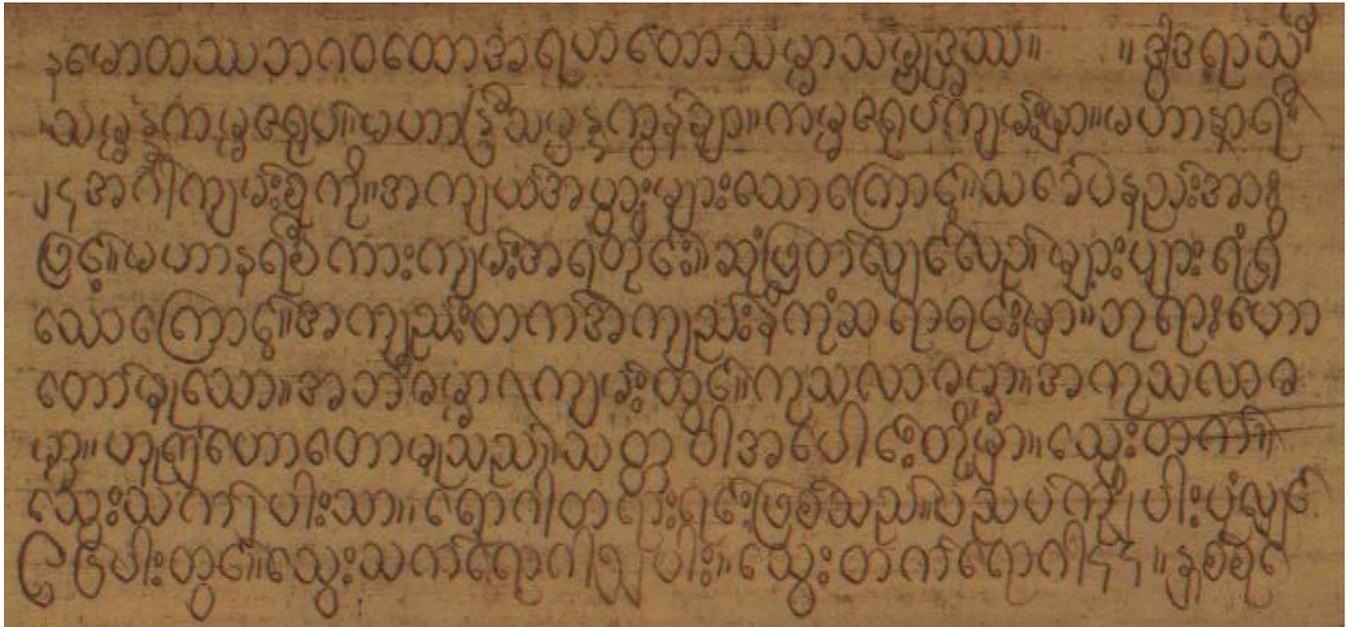


Fig. 3 The result of Digital Form of Traditional Medicine Palm-leaf Manuscript

Conclusion

As Palm-leaf manuscripts are cultural heritage of Myanmar, we have to preserve these manuscripts to cover subject diverse like astronomy, mathematics, medicine, literature, history, astrology and scriptures. By digital preservation of palm-leaf manuscripts which are to be easily accessed and searched by researchers and scholars through author, title, subject and general keywords.

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