

Palm Leaves as Writing Material: History and Methods of Processing in Kerala

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1. Palm leaf records from Kerala.

Leaves of *Borassus flabellifer* L. and *Corypha umbraculifera* L. have long been used for the preparation of writing materials in India and other neighboring countries. They are still in use in many parts of Kerala. They are resistant to the attack of insects and are impervious to water, but the mode of preparation differs according to the species. The common forms of palm leaf writing material and their methods of preparation in Kerala are discussed in this paper.

Pre-historic men used burnt clay, stone and metals to engrave their early records. Gradually these materials were replaced by processed animal skin, silk, bark, wood and the leaves of trees. The bark of *Betula utilis* and the leaflets of palms were used as writing materials in the early days of civilization in Eastern Asia. In India the young leaves of *Borassus* were much used for writing (Royle 1855).

Palm leaflets are one of the oldest and cheapest materials used for writing. Van Rheedee, in his *Hortus Malabaricus* (1678–1693), while mentioning the uses of *Corypha umbraculifera*, mentioned that the leaves were used in Kerala as parchment paper and that the leaves of this palm were quite durable. An iron stylus, with which the writing is done, cuts the upper cuticle of the leaf and hence the letters remain on the leaf. Similarly Marshal (in Blatter 1926), in his account of the coconut tree, wrote, "The leaflets are sometimes used to write upon, and the instrument employed to make the impression is an iron stylus... The leaves of the palmyra palm (*Borassus flabelliformis* L.) or talipot palm (*Corypha umbraculifera* L.) are however much more frequently employed for this purpose."

In India, Sri Lanka and Burma, *Corypha umbraculifera* and *Borassus flabellifer* have been used for writing. In India the history of writing on palm leaves dates from the famous Sanskrit scholar Paniny-rishee, who lived in the year 790 of 'kaliyuga,' i.e., approximately 4161 years ago, on the banks of the river Ganga at Arrittuwarum (now Haridwarum) (Ferguson 1888). In Sri Lanka, talipot palm leaves were adopted for writing before 900 BC (Suvatabandhu 1962). Ferguson (1888) reported the existence of 400–500 year old palmyra leaf manuscripts in Sri Lanka. The English term leaf and folio with reference to the printed word appear to be derived from palm leaf writing (Davis & Johnson 1987).

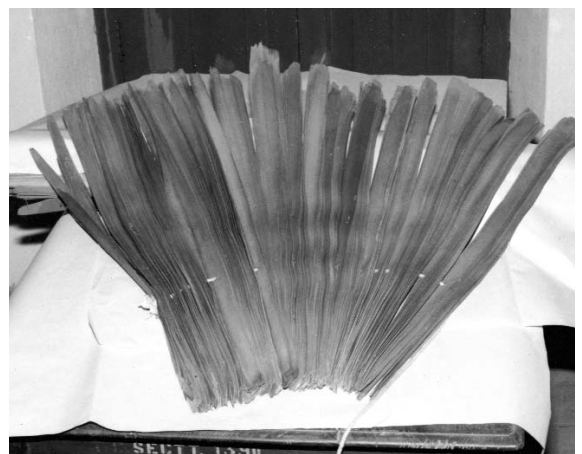
Palm leaf manuscripts in Kerala

In Kerala, the southernmost state in India, the leaves of *Borassus flabellifer* and *Corypha umbraculifera* have been used extensively for writing horoscopes, religious and Ayurvedic documents (Ayurveda is the traditional system of medicine practiced in Kerala). In the Malayalam language, the processed single rectangular palm leaflet is known as *taliola*. A manuscript contains a number of rectangular pages, or *taliolas*, threaded at each end on a string. A palm leaf book is held together with a pin through one end so that the leaves can be fanned for reading. Sometimes holes are bored through each end, and the strings are passed through them so that the leaflets can be turned over and read in sequence (Fig. 1).

Writing materials prepared from the leaflets of *Borassus flabellifer* and *Corypha umbraculifera* differ in a number of ways. In *Corypha*, leaf veins are prominent in both transverse and vertical directions forming a network-like appearance. A thick cuticle is present above the epidermis. In contrast, the leaflets of *Borassus* have a thin cuticle and prominent transverse veins. Usually *taliolas* from *C. umbraculifera* are larger and superior in quality compared with those made from *B. flabellifer*. Writing material from *C. umbraculifera* will last longer than that from *B. flabellifer*. Hence most of the surviving ancient literature is written on the leaves of *Corypha*.

The Manuscripts Library and The University of Kerala Oriental Research Institute, in Thiruvananthapuram, have a collection of more than 70,000 palm leaf manuscripts, some as old as 500 years. One of the popular works often written on palm leaf records is *Citraramayana*, an epic story of the God Rama, comprising 318 sequences. Before the middle of the eighteenth century, palm records served as religious and

2 (left). Partially processed palm leaflets (Churuna). 3 (right). Charuna, opened out.



ayurvedic documents. Afterwards they were used for fiscal documents for the conveyance of land, and issued as receipt of the land registration. Similarly, fortune tellers use small-sized palm leaf books like bound decks of cards.

The various categories of palm leaf manuscripts are *Churuna*, *Grandha* and *Ozhukku*. *Churuna* means roll of palm leaf manuscripts. They are loose sheets of palm leaves scrolled in bundles of convenient sizes after passing a cord through the holes made in the leaves. The number of sheets in each bundle varies from 500–1000. The main items in a *Churuna* are land details (*olukku*), accounts (*kanakku*), royal decrees (*thitturam*) and another form of accounts (*tirattu*). The Central Archives at Thiruvananthapuram, the capital of Kerala, has a collection of more than 13,000 *Churunas*, mostly containing pre-settlement land resource records written in Tamil and Malayalam (Fig. 2 & 3).

Grandha is a collection of palm leaf manuscripts preserved within wooden flaps. The *Grandha* consists of ancient scriptures such as Kilippattu Ramayana, Balakandam, Narayaneeyam, Mahabharatha, Hymns of Lord Siva and Krishna written in both Kannada and Malayalam scripts, and ayurveda. The historical records of Kerala are also kept as *Grandhas*.

Ozhukku is an account of the boundaries of land fixed after survey and records even the most minute details of land properties including survey number, taxes, area categories, etc. Both sides of the record consist of details regarding the description of the land, signatures of the grantor, witnesses, state administrator and *Diwan* (Prime Minister to the King of the Princely State). The palm leaf documents for the purpose of executing promising notes, land registration and ayurvedic practice are still seen in the royal houses, and they have been used for more than 600 years.

Preparation of palm leaves

Corypha umbraculifera

Corypha leaves must be taken from the plant at a semi-mature condition. The best time is four months after the emergence of the young leaf. The summer season is favored for the collection of leaflets, and some people believe that certain plants are more vigorous on the full moon day. Two traditional methods available for the preparation of *taliolas* from *C. umbraculifera* are described below.

Method. 1.

Extracted palm leaves are dried in the sun. After the leaflets are stripped from the leaf, they are cut to size, rubbed with sesame oil and kept in the

shade for two to three days. Then the leaflets are boiled with rice and kept in the shade for a week. Boiling can also be carried out in water or milk with the juice of fresh turmeric until the leaflets attain the expected yellowish color. Again, oil is applied. The main advantage of this method is the removal of the acidic impurities and closing of small holes in the leaflet. By this method the leaflet will be made fire resistant and waterproof, and it will last longer.

Method. 2.

The cut leaves are kept in the shade for one or two days. Then the leaflets are removed from the leaf. The midrib of the leaflet is removed, and four or five blades are rolled together. The rolled leaves are immersed for some time in boiling water in a copper vessel. The copper ions penetrate into the leaflets, a process that increases their durability. Alternatively, the leaflets are steamed until the color changes; they are then dried in the shade.

Borassus flabellifer

Method. 1.

Even though the time of collection of leaves is the same as for *Corypha*; the processing techniques are entirely different. The cut leaves are dried in the sun until the green color disappears. The leaflets are then removed and immersed in water for a few days until a rotten smell becomes evident. Then they are dried in partial shade and cut into standard sizes for writing.

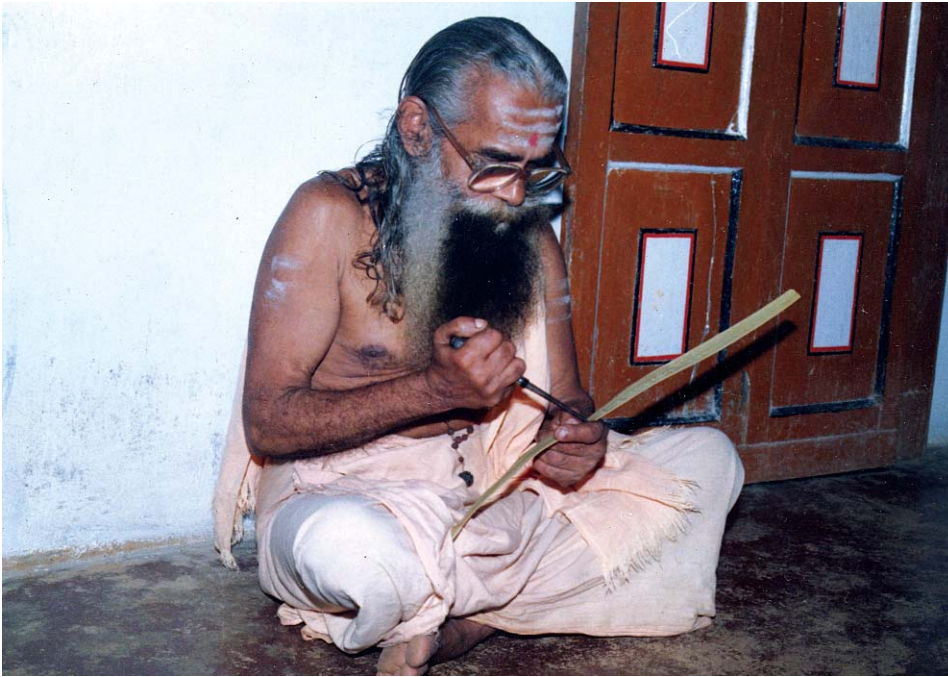
Method. 2.

Mature leaflets are submerged in either mud or lime for three days and then dried in partial sunlight until the color changes to brown. Sometimes the fruits of *Murraya exotica* are boiled with water, and the leaflets then soaked in the cooled decoction for a day. The leaflets obtained by this technique are resistant to termites and fungi.

After processing by either method, the leaflets are cut to the required length, generally 34 × 5 cm. Both sides of the leaflets may be used for writing. If the midrib is intact, only the upper (adaxial) surface is used, leaving the lower (abaxial) surface blank. Leaves from *Borassus* are generally used for preparing horoscopes, short notes, letters, receipts, etc.

The process of writing

Writing on palm leaflets requires much practice. Those persons experienced in the art of writing are known as *Ezhuthu Assans* (*Ezuthu* = writing, *Assans* = experienced person) in the Malayalam language (Fig. 4). The stylus used for writing on leaves is



4 (top).
Ezhuthu
Assans, a
specialist in
the art of
writing on
palm leaflets.
5 (middle) .
Narayam –
the iron
stylus.
6 (bottom).
Malayalam
letters
engraved on
the palm leaf.



known as *Narayam*. The stylus is made of iron, silver or brass. It is about 25–30 cm in length, having a bulbous middle portion for resting against the hand and tapered, pointed ends (Fig. 5).

In southern India, the common scripts used in the majority of palm leaf records are Vattezhuthu, Kolezhuthu, Sanskrit, Tamil and Kannada. The

letters of the Malayalam alphabet, being rounded, are ideally suited for writing on palm leaves (Fig. 6).

Preservation of Taliolas

Periodic cleaning of the leaves with turmeric powder will decrease insect attack. Periodic removal of dust and drying in the sun also increase

the durability of palm leaves. Manuscripts exposed to a dry climate for a considerable time break at the holes made in the center for tying the leaves together. In the Archives at Thiruvananthapuram, the first step in palm leaf restoration is cleaning the leaves with a mixture of glycerin and alcohol to remove dirt. If the leaves are stuck together, they are separated by placing them in a bath of hot water (60°C) containing 5–10% glycerin. Lemon grass oil or citronella oil is then applied on the leaves to keep them flexible. Tissue paper coated with 5–10% polyvinyl acetate benzene is satisfactory for reinforcement of palm leaf manuscripts. Diethylene glycol, saffrol, olive oil or linseed oil diluted with alcohol may be used to add flexibility to dried leaves (Kishore 1985).

Modern uses

The ways by which knowledge is stored and disseminated have changed dramatically over the years, and the art of writing on palm leaves has almost disappeared. However, in many places in Kerala, Hindu children are still required to write their first alphabet on palm leaves (Fig. 7). Among adults, astrologers are the main users of palm leaves for writing horoscopes.

Acknowledgments

We express our thanks to Dr. J.K.Sharma, Director, Kerala Forest Research Institute, for providing necessary facilities and to the Director, Central Archives, Thiruvananthapuram, for giving

permission to use the library and for providing some photographs.

LITERATURE CITED

- BLATTER, E. 1926. The palms of British India and Ceylon. Oxford Univ. Press. London.
- DAVIS, T.A. AND D.V. JOHNSON. 1987. Current utilization and further development of the Palmyra palm (*Borassus flabellifer* L., Arecaceae) in Tamil Nadu state, India. *Economic Botany* 41: 247–266.
- FERGUSON, W. 1888. Description of the Palmyra palm of Ceylon. Observer Press. Colombo.
- KISHORE, R. 1995. Restoration of palm leaf manuscripts. In: R.K. PERTI (ed.). Conservation of Traditional records paper and allied materials. Proceedings of the international Seminar, Dec 16–19, New Delhi. 121–122.
- ROYLE, J.F. 1855. The fibrous plants of India fitted for cordage, clothing and paper with an account of the cultivation and preservation of flax, hemp, and their substitutes. Smith. Elder and Co. London.
- SUVATABANDHU, K. 1962. The use of talipot palm leaves as writing material in Thailand. Proceedings of the Ninth Pacific Science Congress 4 (Botany): 254–261.
- VAN RHEEDE, H.A. 1678–1693. *Hortus Malabaricus* 12. Amsterdam.



7. Traditional way of teaching in a pre-primary school in Kerala.