

Mandapam And Its Environs

SOUVENIR

Edited

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Vegetation of Mandapam Region : A Note on Economic Importance

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The vegetation of Mandapam region mainly comprises of Xerophytes, the plants which are adapted to low water requirements and Mesophytes, the plants of habitats which are neither extremely dry nor very wet, owing to low rainfall mostly limited between September and December during the North east monsoon. Apart from these plant communities, the littoral fringes of the coasts of Gulf of Mannar and Palk Bay support a varied number of halophytes or the plants of saline and marsh habitat. The seas around Mandapam harbour a diversity of marine flora consisting of microalgae, Seaweeds and Seagrasses. A brief account on the Economic and medicinal value of the terrestrial and marine flora existing in Mandapam region is contemplated below.

Terrestrial flora

In view of unfavourable edaphic factors such as sandy soil combined with low rainfall and drought conditions, the substratum does not encourage the growth of plantation crops and hence the dominance of thorny shrubs and salt tolerant plant communities are seen. Cultivation of cereals and pulses is practised in a smaller scale. *Borassus flabellifer*, *Casuarina equisetifolia* and *Acacia planifrons* locally called *panai*, *Savukku* and *Odal marum* respectively are abundant in the wild and casuarina is also cultivated for its wood.

Borassus flabellifer : Tamil - Panai ; English - Palmyrah

A wide spread tree with unbranched columnar trunk. The roots of this plant are used in the treatment of leprosy. The flower is good for enlargement of spleen and the fibrous fruit is said to be an aphrodisiac. The fermented juice is also an aphrodisiac and causes 'Kapha' and flatulence (accumulation of gases in bowels). A useful stimulating application called toddy poultice is prepared by adding toddy to rice flour till it has the consistence of soft poultice and this when subjected to gentle fire, fermentation takes place. This is spread on a cloth and applied to ulcerations, carbuncles, red inflammations and indolent ulcers. In addition to its medicinal value the leaves and trunks of this plant are used to make ornaments and timber. The common toddy which is an intoxicant is prepared from the juice collected from the inflorescence of the tree.

Casuarina equisetifolia : Tamil - Savukku ; English - Casuarina, She - oak

A sturdy tree with needle like leaves. The bark is an excellent and often readily available astringent in the treatment of chronic diarrhoea and dysentery.

Acacia planifrons : Tamil - Odaimarum

The thorny trees are plentiful in this area. The leaves are fed to livestock.

Cassia auriculata : Tamil - Avarai ; English - *Tanner's cassia*.

A herb with bright yellow flowers. The root is useful in thirst, urinary discharges, cures tumours and causes flatulence.

The seed is alexipharmic (antidote to poisons) and used in ophthalmia, diabetes and dysentery.

Cassia occidentalis : Tamil - Peyavarai ; English - Fetid cassia, stinking weed.

The root of this herb is useful in the treatment of ringworm, elephantiasis and scorpion sting. The leaves cure asthma, 'Kapha' and 'Vata' and good for sore throat and biliousness (derangement of secretion of biles). The seeds are used for winter cough and cough in animals. The leaves are said to be a reliable remedy for rheumatism. As a cure for guinea worm, the leaves are pounded with salt and onion and applied to the affected parts. *Oxymethyl anthraquinone* has been isolated from the root, leaf and the fruit.

Leucas aspera : Tamil - Thumbat

The leaves are said to be useful in chronic rheumatism. The juice is applied in psoriasis (a type of skin disease with red scales) and other skin eruptions.

Calotropis gigantea : Tamil - Erukku

A bushy shrub with white milky latex. The milk is oleaginous (oily), cures leucoderma, tumours and diseases of abdomen.

The oil in which the leaves have been boiled are applied to paralysed parts. A powder of the dried leaves is dusted upon wounds to destroy excessive granulation and promote healthy action.

Azadirachta indica : Tamil - Veppu; s h - Margosa or Neem.

An arborescent tree with compound leaves having high medicinal value. The bark is bitter, anthelmintic (expels worms) relieves 'Kapha' and 'pittadosha'. Leaves are insecticidal and are used for the treatment of ophthalmia, biliousness, dermatitis and small pox. The juice of the leaves is useful to cure snake bite. The leaves have antiseptic properties. The seeds are also used for treatment of leprosy. The oil extracted from the seeds contains a characteristic acid called margosic acid which belongs to the inolic acid series. The margosates are antiprotozoal in their action.

Moringa olifera : Tamil : Murungai ; English - Drumstick tree, Indian Horseradish

The leaves are used for cooking and remove pain. It has de-fattening effect and claims to have aphrodisiac and anthelmintic properties. The fruit cures 'Kapha' biliousness, pain, leucoderma, and tumour. The oil is useful in leprosy ulcers. The gum of the tree, mixed with sesame oil is recommended to be poured in to the ears for the relief of otalgia (ear ache). The flowers are often resorted to as an aphrodisiac by the native medical practitioners in south India. The seeds yield the 'oil of ben' of commerce.

Cissus quadrangularis : Tamil - Pirandai ; English - adamant creeper, Bone setter

A twiner with tendrils and quadrangular stem. The stem is bitter, digestible beneficial in fractures of the bones and in ascites. The juice of the stem is useful in scurvy and irregular menstruation. The stem is used in complaints of back and spine and removes pus. The stem beaten in to paste is given to cure asthma.

Argemone mexicana : Tamil - Bramadandu ; English - Prickly poppy

A prickly herb. The root is an anthelmintic, its juice used as collyrium, cures ophthalmia and opacities of the cornea. The plant is useful in skin diseases and leucoderma. Alkaloids such as berberine and protopine are extracted from it.

Pongamia glabra : Tamil - Ponga; English - Indian Beech.

A well branched tree. The leaves are laxative (loosening the bowels), anthelmintic and cures (Kapha' and 'Vata'), piles, wounds and inflammations. The oil cures eye diseases, pains due to rheumatism, leucoderma, itching and skin diseases. The seed cures lumbago (rheumatic pains in the lower back) and chest complaints, chronic fevers and hydrocele.

The juice of the root is administered internally with equal quantities of coconut milk and lime water every morning for cure of gonorrhoea (inflammation of the genital tract). The oil extracted from the seeds if mixed with equal quantity of lime or lemon juice and shaken well it forms a liniment (thin ointment) which has been used successfully in porrigocapitis (skin disease of the scalp), pityriasis (a skin disease with bran like scales) and psoriasis (a skin disease with red scaly patches).

Phyllanthus niruri : Tamil - Kilanelli

A small herb found growing in all shady places. The fresh root is said to be a potential remedy for jaundice, The fruit is bitter, useful in tubercular ulcers, bruises, scabies & ringworm.

Zizyphus jujuba : Tamil - Illandai; English - Indian cherry

A prickly tree; The dry fruits remove impurities in the blood. The berries are considered to purify the blood and assist in digestion.

Cassia fistula : Tamil - Sarakkondai ; English - Cassia, Indian Laburnum.

A tree with attractive yellow flowers and long cylindrical fruits. The seeds are said to be emetic (causes vomiting). It has been beneficially used in facial paralysis and rheumatism. Oxymethly - anthraquinone is isolated from the fruit and the bark of the twigs.

Opuntia dillenii : Tamil - Nagadali

A succulent and prickly herb. It cures inflammations, ascites (accumulation of watery fluid in the abdomen), tumours and pains. The flowers are known to cure bronchitis and asthma. The juice of the plant cures leucoderma and syphilis (a venereal disease). The mashed up leaves are applied to boils to hasten curing.

Salicornia brachiata : Tamil - Pavalappundu

A succulent herb growing along shores, a typical inhabitant of marshy and saline soil conditions. The ashes are used for mange (scabby) and the itch. They are considered as emmenagogue (restoring menses) and abortive.

Rhizophora mucronata : Tamil - Sorippinnai ; English - Mangle, Mangrove

It is a tree growing in marshy areas and characterised by the presence of pneumatophores (breathing roots) and viviparous germination. The plant has no significant medicinal value.

Avicennia officinalis : Tamil - Vengandal ; English - White Mangrove

It is also a mangrove tree. The roots possess aphrodisiac properties. The unripe seeds are used as poultice (a soft composition applied in clothes on sores) to hasten suppuration of boils.

Ocimum sanctum : Tamil - Thulasi

The leaves are used in bronchitis. Juice of the leaves applied to the skin in ringworm and other cutaneous diseases. The leaves are eaten and said to have alexipharmic properties.

Agave americana : Tamil - Kattukattalai, ; English - American Aloe.

It is a herb with succulent leaf blades. The roots are diuretic and diaphoretic. The expressed juice of the leaves is administered for curing syphilis, and even cancers.

The gum found exuding from the leaves and the lower part of the stem is used as a cure for toothache. The plant is also used as a fish poison in some countries.

Pandanus tectorius : Tamil - Talhai; English - Screw bine

A bushy plant with stilt roots for its support produces fragrant flowers. The leaves are somniferous (inducing sleep) used in strangury (painful discharge of urine) and tumours. The anthers are useful in puritis (itching). The fruit is useful in 'Vata' and 'Kapha' an urinary discharges. The oil cools and strengthens the brain.

Dodonaea viscosa - Tamil - Virali

This shrub is found gregariously growing in Krusadai Island. The leaves of this shrub are used in baths and as fomentations (as warm lotions). It is believed that the powdered leaves applied over a wound will heal it without leaving a white scar. The powder is used in burns and scalds. The leaf is said to be useful in rheumatism and to possess febrifugal properties.

Gloriosa superba : Tamil - Kalappaikilangu

It is a shrub with attractive red flowers colonising in the Krusadai Island. The tuber is useful in chronic ulcers, leprosy, inflammations, piles, abdominal pains and itching. It is also used to remove the placenta from the uterus and causes biliousness. The tuber is used in bleeding piles. The tuberous root, powdered and reduced to a paste is applied to the navel and suprapubic region with the object of promoting labor.

The juice of the ground leaves is used to destroy lice in the hair.

Pedaliium murex : Tamil - Anainerunji

It is a succulent herb. When fresh leaves and stems of this herb are briskly agitated in cold water it is speedily converted into a thick mucilage, nearly of the consistency of white of a raw egg. This is inodorous and tasteless. An infusion thus prepared, is a highly prized remedy amongst the people of South India for gonorrhoea and dysuria (pain in passing urine).

Besides the above quoted plant communities, the soil of this area also supports plants like ***Spinifex littoreus*** and other grass varieties which do not have significant medicinal or value, but function as sand binders.

MARINE FLORA

There are about 99 genera with 180 species of marine algae and 6 genera with 9 species of Seagrasses recorded from this maritime zone. The seaweeds occurring in this region are predominantly grouped under Red algae (Rhodophyta) Green algae (Chlorophyta) and Brown algae (Phaeophyta). The red seaweeds such as *Gracilaria edulis*, *G. corticata*, *G. crossa*, *G. folifera* and *Gelidium acerosa* and the brown algae like *Sargassum wightii*, *S. myriocystum*, *Turbinaria conoides*, *T. decurrens* and *T. ornata*,

are exploited from the wild to extract Agar and Algin from the red and brown algae respectively. Agar and Algin are the polysaccharides having versatile application in pharmaceuticals, food, cosmetic, textile, Icecream and liquor industries. Carrageenan is another gel like substance obtained from the red seaweed. *Gigartina acicularis* and finds its use in ulcer therapy.

The edible seaweeds popularly called sea vegetables such as *G. edulis* and species of *Caulerpa*, *Ulva*, *Enteromorpha*, *Hydroclathrus* and *Colpomenia* are good sources of Carbohydrate, protein and important minerals. In addition to this, seaweeds are also used as livestock feed and fertilizers. Recently Sargassum has been recommended for utilization as a substrate in Biogas generators.

Medicinal value of SeaWeeds

Seaweeds also serve to cure certain human diseases and disorders. For instance *Hypnea musciformis* is employed as vermifuge. Carrageenan is used in ulcer therapy. Seaweeds rich in Iodine such *Asparagopsis taxiformis*, *Sarconema* sp. are used in the treatment of goitre, a disorder caused by the enlargement of thyroid gland. Species of *Enteromorpha*, *Chaetomorpha* and *Gracilaria edulis* are also recommended for the treatment of goitre.

Seagrasses are another important group of marine flora found colonising along the coasts of Gulf of Mannar and Palk Bay. About 6 genera and 9 species of Seagrasses were recorded from this area. *Cymodocea serrulata* is more abundant among them. Seagrass meadows as such form an ecosystem which supports a variety of commercially important fishes. In relative terms they are much more productive than the plankton. Their rich organic production enters the food chain and forms food of many fishes. It is noteworthy to mention here that Seagrasses form exclusive diet of dugong and the seacow. Seagrasses are also of economic benefit in helping to control erosion of beaches and shore lines.