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Survey of Sthalavrikshas and its indigenous uses in the selected temples of Agasteeswaram Taluk of Kanyakumari District, Tamil Nadu, India

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Abstract

The tradition of associating trees with gods and goddesses in Tamilagam can be traced back to Sangam literature, which is full of references to more than a hundred plants that dominated the life of ancient Tamils. Sthalavrikshas worship in temples was a religious practice. The present study is the survey of Sthalavrikshas and associated plants and its indigenous uses in the selected temple of Agasteeswaram Taluk. The ultimate aim of this study is to document the indigenous uses of the temple plants. The collected plants are used for various purposes such as medicine, timber, ornamental, edible and dye yielding. Totally 60 plants and its indigenous uses were documented. Among the 60 plants nine plants documented as Sthalavrikshas and the remaining 51 species are the associated plants. These 60 plants come under 52 genera belonging to 33 families. Of these 60 plants, 34 species are trees; it is followed by shrubs, herbs and climbers including 16, 8, and 2 species respectively. The present study focused on Sthalavriksha worship is an old practice, myths, beliefs and folklore play a major role in the existence of Sthalavriksha worship and this customs helps in conservation. So, it is the work of contemporary generation to preserve and promote these aesthetic treasures to conserve biodiversity and nature, which will surely play a part in progression of human beings.

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Introduction

Worship of plants is practiced throughout the world and is well established from pre-historic periods in India. In Tamil Nadu state, India this customary practice follows with religious faiths and culture. One such religious worship is known as Sthalavriksha in temples.

For the Hindus all life is sacred. The divine soul is believed to permeate all that exists in nature: stones, plants, animals and humans. It is most likely that the indigenous people of India worshipped trees and groves before the arrival of the Aryans in the Indus valley about 1500-1200 BC. They respected trees for their auspiciousness and the numerous benefits derived from them in the form of food, fodder, medicine and firewood.

Sthalavriksha refers to the plant of which 'Sthala' means Place and 'Vriksha' means tree. From ancient periods, trees were considered as sacred and worshipped in Indian mythology and by folklore. It is the natural tree found in temple site before construction of the temple. These trees have religious and medicinal importance. The worshipper who comes to the temple attains a healthy spiritual enlightment. Sthalavriksha is a single plant mostly in the form of a tree or in some places occurring as an herb, shrub, grass or climber. Devotees and temple authorities serve as protectors of the Sthalavrikshas and if a tree dies it is usually replaces by a sapling from the same species (Gunasekaran and Balasubramanian, 2012).

Traditional worship practices show the symbiotic relation of human beings and nature. Sthalavrikshas are valued for their botanical, medicinal, environmental, religious and mythical importance. Conservation of natural resources including biodiversity has been an integral part of several indigenous communities in and around the forest areas. The concept of sacred groves is very old and has existed since the time of Rig-Veda (an ancient Indian sacred of Vedic Sanskrit hymns), when tree worship was quite popular and universal. Buddha's study and enlightenment was also in the company of a banyan tree (Negi, 2005). The concept and beliefs of sacred trees and groves of forests are one of the best practices to conserve the natural resources.

Providing innumerable benefits trees are the highest and noblest production of the plant kingdom. In Indian culture trees have been regarded with special reverence. The ancient Indian civilization was primarily dependent upon and intimately associated with forests and flora. During the Vedic times the ordinary term as found in Rigveda and later Samhitas for flora was "Vriksas" for trees and 'Ausadhi' for plants having medicinal value. The Indian 'Shastras' and 'Panchang', too mention several ways of doing so, one of them being offering prayers to various trees.

Worship of plants is practiced throughout the world and is well established from pre-historic in India. Plant worshipping practice was varied depending on their geographical distribution Figs (*Ficus benghalensis* and *Ficus religiosa*) in India, Baobabs (*Adansonia digitata*) in Africa, Olives and Oaks (*Quercus* sp.) in Europe, Palm (*Phoenix sylvestris*) in Egypt and Middle East.

Plant worship can be classified as sacred groves, deity beneath a single tree and sthalavrikshas.

In India, different religions having different traditions, beliefs, and rituals are associated with conservation of biodiversity and forests. In Hindu religion, it is a traditional belief that nature shows a reverence for five basic 8 elements i.e., Earth (Prithvi), Fire (Agni), Water (Jal), Air (Wayo) and Space (Akash). All the five elements are treated as a body of God and are worshipped. These five elements are protected for religious, cultural and spiritual reasons. There are many studies entitled to further quantify this ethics, which leads to biodiversity conservation and sustainable ecosystem. Similar works were carried out by many authors, few among them are Rekka Raja *et al.*, 2021; Parisutha Rajan *et al.*, 2021; Manimozhi,

2019; Jayakumar, 2019; Vinoth Kumar and Aruna, 2018; Periyasamy and Saranya, 2018; Prabakaran and Sabari Lakshimi, 2019.

The present study area Agasteeswaram Taluk is rich with traditional beliefs and heritage. The study aimed at enumeration of Sthalavriksha of the temples located in study area and to document their indigenous uses, medicinal properties and conservation.

Materials and methods

Study area

Kanyakumari is a coastal town in the state of Tamil Nadu on India's southern tip. It is one of the 38 districts of Tamil Nadu state and the southernmost district in mainland India. It stands second in terms of population density among the districts of Tamil Nadu. It is also the richest district in Tamil Nadu in terms of per capita income and also tops the state in Human Development Index (HDI), literacy, and education. The district's headquarters is Nagercoil.

Agastheeswarm Taluk is a taluk located in Kanniyakumari district, Tamil Nadu, India. The headquarters of the Taluk is the town of Nagercoil. Agastheeswaram is named after the sage Agastya who visited this place to teach Ramayana. Compared to other districts in Tamil Nadu, most of the residents of this village are well educated.

The Kanyakumari district has mainly four types of lands, i.e, Kurungi (Hilly tract), Mullai (Forest), Marutham (Agricultural land) and Neidal (Sea-shore). The Northern and Western part of the district are hilly tracts and forests. In the South Eastern and middle parts, the districts have agricultural land, traditionally known as the Nanjil (the land of plough). The southern border of the district has a long sea-shore.

Kanyakumari is the only district in Tamil Nadu that benefits from rains in all seasons. Kanyakumari weather highlights the pleasant and delightful atmospheric conditions of the district. Weather is assumed to be a tropical one. Rainfall is quite common at any period of the year. The Monsoon Season is relatively more precipitation than at any other seasons.

Important temples in Kanyakumari

Temples in Kanyakumari territorial dominion are far-famed all over the world for their glorious architecture. The people of Tamil Nadu are known for their spirituality and devotedness and majority of the population being Hindus in the state, there is no wonder that entire district of Kanyakumari is dotted with temples. Temples in Kanyakumari are not only famous for their magnificent architecture, but a bunch of mythical accounts connected with each temple makes them exceptional! A lot of temples in the district are age-old, constructed by significant rulers of South india. Some of the most temples in Kanyakumari district include Kumari Amman Temple, Thiruvattar Adikesava Perumal Temple, Thiruvaazhmaarban Temple (Thirupathisaram) Kuralappa Perumal Temple, Suchindram Sthanumalaya Perumal Temple, Nagercoil Nagaraja Temple, Padmanabhapuram Saraswathi Temple, Kuzhithurai Mahadeva Temple, Kollencode, Vattavila Bhadrakali Temple and so on.

Plant collection and identification

During the field visit temples were frequently visited and surveyed for the Sthalavrikhas from the month of December 2023 to March 2024. The field visited areas are Ozhuginasery, Vadiveeswaram, Kalliyankadu, Parvathipuram, Nagercoil, Saraloor, Vattakarai, Kunjanvillai, Suchindaram andKeezhavannavilai. A total number of 25 temples which includes 5 Amman Temple, 6 Siva Temple , 6 Perumal Temple, 2 Krishna Temple, 4 Sudalaimadan Temple, 1 Ayyapan Temple and 1 Ganapathi Temple.

Devotees and Temple authorities serve as protectors of the Sthalavrikshas. The Sthalavriksha plants and associated plants in subsequent temples

were recorded during observation. The indigenous uses of the collected plants were recorded by interviewing the temple priests, elderly people and traditional healers. Some of the medicinal value information of the Sthalavrikshas has also collected from the available literature. Threatened status of Sthalavrikshas was determined based on the red data book of Indian plants (IUCN redlist.org, 2014). Sthalavrikshas were collected, photographed and characters were noted for the identification purpose. Plants were identified by Flora of the Presidency Madras by Gamble (1827-1945) and Flora of the Carnatic Tamil Nadu by Matthew (1995). The Specimens collected were made into herbarium. All the herbarium specimens were deposited in the P.G and Research Department of Botany, S.T. Hindu College, Nagercoil.

Results and discussion

The tree in a temple is called Sthalaviruksha. Tree is a useful one religiously, medicinally and also helpful to devotees to give its shade. Each temple will have different virukshas (trees) according to the temple puranas and every virukshas is having a story. Traditionally, the Indian population has been worshipping rivers, lakes, mountains, trees, and other natural resources. People of India have been living very closely with the Nature and thriving well on natural resources.

Sthalavrikshas are the common property of the particular temple and the ethnomedicinal knowledge is common to the local society and people living nearby that particular temple and many ethnic communities (Hindus).

Table 1. List of medicinal plants and its uses in the study area

SL	Botanical name	Local name	Family/ Habit	Useful part	Uses
1.	*Acacia auriculiformis* A.Cunn.exBenth	Pencil maram	Mimosaceae/ Tree	Root, Bark	Rheumatism, inflammation
2.	*Aegle marmelos* (L.) Correa	Vilvam	Rutaceae/ Tree	Leaf, Fruit	Constipation, Stomach ulcer
3.	*Annona muricata* L.	Mullu –sitha – pazham	Annonaceae/ Tree	Leaf, Fruit	Cancer, Dysentery
4.	*Artocarpus heterophyllus* Lam.	Jack fruit	Moraceae/ Tree	Root, Fruit	Asthma, Diarrhoea
5.	*Azadirachta indica* A. Juss	Vembu	Meliaceae/ Tree	Leaf, Bark	Blood purifier, Joint pains
6.	*Bauhinia variegata* (L.) Benth .	Sigappumandarai	Fabaceae/ Tree	Bark, Flower	Tuberculosis, Diabetes
7.	*Bauhinia tomentsa* L.	Kanchini	Fabaceae/ Tree	Leaf	Menstrual disorders, Diarrhoea
8.	*Calotropis procera* (Aiton) W.T. Aiton	Velleruku	Asclepiadaceae/ Shrub	Latex, Leaf	Jaundice, Diarrhoea.
9.	*Cassia fistula* L.	Konrai	Fabaceae/ Tree	Bark, Root, Flower	Leprosy, Ringworm, Constipation
10.	*Catharanthus roseus* (L.) G.Don	Nithiyakayaani	Apocynaceae/ Shrub	Flower, Root	Cancer , Asthma
11.	*Celosia argentea* (L.) Kuntze	Kozhi poo	Amaranthaceae/ Herb	Leaf, Root	Eczema, Snake bite
12.	*Centratherum punctatum* Cass.	Keasavardhini	Asteraceae/ Herb	Leaf	Joint pain, Headache
13.	*Cliotria ternatea* L.	Sankupushpam	Fabaceae/ Climber	Flower. Leaf, Root	Eye infection, Fever
14.	*Cocos nucifera* L.	Thennaimaram	Arecaceae/ Tree	Flower, Fruit	Diarrhoea, Menstrual problems
15.	*Couroupita guianensis* Aulb.	Nagalingamaram	Lecythidaceae/ Tree	Bark, Leaf. Flower	Hypertension, Pain
16.	*Cryptostrgia grandiflora* R.Br.	Garuda palai	Asclepiadaceae/ Shrub	Latex, Leaf	Eczema
17.	*Curcuma caesia* Roxb.	Black Turmeric	Zingiberaceae/ Herb	Whole plant	Pneumonia, Diabetes
18.	*Duranta erecta* L.	Sky flower	Verbenaceae/ Shrub	Leaf, Fruit	Malarial fever Intestinal worms

19.	*Elaeocarpus angustifolius* Blume	Rudraksham	Elaeocarpaceae/ Tree	Leaf, Fruit	Asthma, Epilepsy
20.	*Ficus benghalensis* L.	Aalam	Moraceae/ Tree	Leaf, Bark, Fruit	Ulcers, Leprosy
21.	*Ficus benjamina* L.	Weeping Fig	Moraceae/ Tree	Latex	Vomiting, Leprosy
22.	*Ficus racemosa* L.	Athimaram	Moraceae/ Tree	Leaf, Bark, Fruit	Constipation, Chronic ulcers
23.	*Ficus religiosa* L.	Arasamaram	Moraceae/ Tree	Leaf, Bark, Fruit	Diabetes ,Bone fracture
24.	*Gomphrena globosa* L.	Vadamalli	Amaranthaceae/ Herb	Leaf, Flower	Gall stones, Reducing stress
25.	*Hibiscus rosa- sinensis* L.	Chembaruthi	Malvaceae/ Shrub	Leaf, Flower	Cough , Heart diseases
26.	*Ixora coccinea* L.	Thetti	Rubiaceae/ Shrub	Root, Leaf, Flower	Hiccups, Nausea
27.	*Jasminum grandiflorum* L.	Pichi poo	Oleaceae/ Shrub	Leaf, Flower, Root	Mouth ulcers ,Weak gums
28.	*Jasminum sambac* (L.)	Malli poo	Oleaceae/ Shrub	Leaf, Flower	Chest pain, Menstrual pain
29.	*Lawsonia inermis* L.	Maruthani	Lythraceae/ Shrub	Leaf	Jaundice
30.	*Leucas aspera* (Willd.)Link	Thumbai	Lamiaceae/ Herb	Flowers, Leaf	Carminative, Scorpion bite
31.	*Michelia champaka* (L.) Baill. ex Pierre	Champaka	Magnoliaceae/ Tree	Root, Bark, Flower, Seeds	Psoriasis, Ulcers
32.	*Mangifera indica* L.	Manga	Anacardiaceae/ Tree	Bark, Leaf	Rheumatism, Heart disease
33.	*Millingtonia hortensis* L.f.	Maramalli	Bignoniaceae/ Tree	Flower, Leaf	Asthma, Sinus
34.	*Murraya koenigii* (L.) Spreng.	Kariveppillai	Rutaceae/ Tree	Leaf, Root	Obesity, Anaemia
35.	*Musa paradisiaca* L.	Vazhai	Musaceae/ Herb	Root, Leaf, Flower, Fruit	Kidney stone, Breast cancer
36.	*Nerium oleander* L.	Aralli	Apocynaceae/ Shrub	Roots, Leaf, Flowers	Scabies, Haemorrhoids.
37.	*Nyctanthes arbourtristis* L.	Pavazhamalli	Oleaceae/ Tree	Leaf, Flower	Scurvy, Asthma
38.	*Ocimum tenuiflorum* L.	Tulsi	Lamiaceae/ Shrub	Leaf	Earache, Ringworm
39.	*Phyllanthus emblica* L.	Nelli	Euphorbiaceae/ Tree	Leaf, Fruit	Jaundice, Anaemia
40.	*Plumeria rubra* L.	MalaiArali	Apocynaceae/ Shrub	Flower	Rheumatism,Back pain
41.	*Piper betle* L.	Vetrilai	Piperaceae/ Climber	Leaf	Throat pain, Constipation
42.	*Pongamia pinnata* (L.) Pierre	Pongamaram	Fabaceae/ Tree	Flower	Leprosy, Bronchitis
43.	Prosopis spicigera L. Mant.	Vannimaram	Mimosaceae/ Tree	Bark,Fruit	Dysentery,Piles, Skin diseases
44.	*Psidium guajava* L.	Koyya	Myrtaceae/ Tree	Bark, Leaf, Fruit	Diabetes,Cooling, bleeding gums
45.	*Pterocarpus erinaceus* Poir	Rose wood	Fabaceae/ Tree	Root, Bark, Leaf	Cough, Fever
46.	*Punica granatum* L.	Madhulai	Punicaceae/ Tree	Leaf. Fruit, Flower	Cholera, Dysentery, Jaundice
47.	*Quisqualis indica* L.	Rangoon Mallikai	Combretaceae/ Shrub	Leaf, Flower	Ring worm, ulcer, fever
48.	*Santalum album* L.	Santhanam	Santalaceae/ Tree	Heart Wood	Acne, Cooling
49.	*Streblus asper* Lour.	Puraamaram	Moraceae/ Tree	Root, Bark	Fever, Dysentery
50.	*Syzygium cumini* (L.) Skeels	Naval	Myrtaceae/ Tree	Bark, Fruit, Seed	Diabetes, Asthma, Dysentery
51.	*Tabernaemontana divaricata* (L.)R.Br.exRoem.&Schult.	Nandiarvattai	Apocynaceae/ Shrub	Leaf	Headache, fever, boils
52.	*Tagetes erecta* L.	Marigold	Asteraceae/Herb	Flowers, Leaves	Sore, Ulcers

53.	Tamarindus indica L.	Puzhiyamaram	Fabaceae/ Tree	Bark, Leaf, Fruit	Fever, Vomiting, Scabies
54.	*Tecoma stans* (L.) Juss. Ex Kunth	Manjarali	Bignoniaceae/ Shrub	Leaf, Flower	Diabetes, Cancer, Arthritis
55.	*Tectona grandis* L.f.	Thaekku	Verbenaceae/ Tree	Leaf	Tuberculosis, Eye disorders
56.	*Terminalia catappa* L.	Nattuvadumai	Combretaceae/ Tree	Leaf, Fruit	Scabies , Cholesterol
57.	*Vitex negundo* L.	Nochi	Verbenaceae/ Shrub	Leaf	Cough, Chicken pox, Malaria
58.	*Ziziphus mauritiana* Lam.	Illanthai	Rhamnaceae/ Tree	Bark, Leaf, Fruit, Seed	Fever, Scabies, Ulcer

Table 2. List of Sthalavrikshas, the associated plants and its indigenous uses

SL	Plant name	Indigenous uses				
		Timber	Medicinal	Ornamental	Edible	Dye
1.	*Acacia auriculiformis* A.Cunn.ex Benth	✓	✓	✓	✓	✓
2.	*Aegle marmelos* (L.) Correa	✓	✓	-		✓
3.	*Annona muricata* L.	-	✓	-	✓	✓
4.	*Artocarpus heterophyllus* Lam.	✓	✓	-	✓	✓
5.	*Azadirachta indica* A. Juss	-	✓	-	✓	✓
6.	*Bauhinia variegata* (L.) Benth.	-	✓	✓	-	✓
7.	*Bauhinia tomentsa* L.	-	✓	✓	-	-
8.	*Calotropis procera* (Aiton) W.T.Aiton	-	✓	-	-	-
9.	*Cassia fistula* L.	✓	✓	✓	-	✓
10.	*Catharanthus roseus* (L.) G.Don	-	✓	✓	-	✓
11.	*Celosia argentea* (L.)Kuntze	-	✓	✓	-	✓
12.	*Centratherum punctatum* Cass.	-	✓	✓	-	
13.	*Cliotriat ernatea* L.	-	✓	✓	-	✓
14.	*Clusia rosea* J acq.	-	-	✓	-	-
15.	*Cocos nucifera* L.	✓	✓	-	-	-
16.	*Couroupita guianensi s* Aulb.	-	✓	✓	-	✓
17.	*Cryptostegia grandiflora* R.Br.	-	✓	✓	-	✓
18.	*Curcuma caesia* Roxb.	-	✓	-	-	✓
19.	*Duranta erecta* L.	-	✓	✓	-	-
20.	*Elaeocarpus angustifolius* Blume	-	✓	-	-	-
21.	*Ficus benghalensis* L.	✓	✓	-	✓	✓
22.	*Ficus benjamina* L.	-	✓	✓	-	-
23.	*Ficus racemosa* L.	-	✓	-	✓	-
24.	*Ficus religiosa* L.	-	✓	-	-	✓
25.	*Gomphrena globosa* L.	-	✓	✓	-	✓
26.	*Hibiscus rosa- sinensis* L.	-	✓	✓	✓	✓
27.	*Ixora coccinea* L.	-	✓	✓	-	✓
28.	*Jasminum grandiflorum* L.	-	✓	✓	-	-
29.	*Jasminum sambac* (L.)	-	✓	✓	-	-
30.	*Lawsonia inermis* L.	-	✓	-	-	✓
31.	*Leucas aspera* (Willd.)Link	-	✓	-	-	-
32.	*Michelia champaca* (L.) Baill. ex Pierre	-	✓	✓	-	-
33.	*Mangifera indica* L.	✓	✓	-	✓	✓
34.	*Millingtonia hortensis* L.f.	-	✓	✓	-	✓
35.	*Murraya koenigii* (L.) Spreng.	-	✓	-	✓	✓
36.	*Musa paradisiaca* L.	-	✓	-	✓	✓
37.	*Nerium oleander* L.	-	✓	✓	-	✓
38.	*Nyctanthesarbor –tristis* L.	-	✓	✓	-	✓
39.	*Ocimum tenuiflorum* L.	-	✓	-	-	-
40.	*Phyllanthus emblica* L.	✓	✓	-	✓	-
41.	*Plumeria rubra* L.	-	✓	✓	-	✓
42.	*Piper betle* L.	-	✓	-	-	-
43.	*Pongamia pinnata* (L.) Pierre	✓	✓	-	-	-
44.	*Prosopis spicigera* L. Mant.	-	✓	-	-	-
45.	*Psidium guajava* L.	-	✓	-	✓	-
46.	*Pterocarpus erinaceus* Poir	✓	✓	-	-	-
47.	*Punica granatum* L.	-	✓	-	✓	-
48.	*Quisqualis indica* L.	-	✓	✓	-	-
49.	*Santalum album* L.	✓	✓	-	-	-

50.	*Streblus asper* Lour.		-	✓		-		-		-		
51.	*Syzygium cumini* (L.) Skeels	✓		✓		-	✓		✓			
52.	*Tabernaemontana divaricata* (L.)R.Br.exRoem.&Schult.		-	✓		✓		-		-		
53.	*Tagetes erecta* L.		-	✓		✓		-	✓			
54.	*Tamarindu sindica* L.	✓		✓		-	✓		✓			
55.	*Tecoma stans* (L.) Juss. Ex Kunth		-	✓		✓		-	✓			
56.	*Tectona grandis* L.f.	✓		✓		-		-	✓			
57.	*Terminalia catappa* L.	✓		✓		-	✓		✓			
58.	*Torenia fournieri* Linden ex E. Fourn		-		-	✓		-		-		
59.	*Vitex negundo* L.		-	✓		-		-	✓			
60.	*Ziziphus mauritiana* Lam.		-	✓		-	✓			-		

During the floristic exploration, a total of 60 temple plants belonging to 33 families are distributed in Agastheeswaram Taluk. Among 60 medicinal plants include 52 genera and 60 species. Among these 60 species only 9 plants are grown as Sthalavrikshas in the temples and the remaining 51 plants are also growing along with the temple trees for various purposes. They include herbs, shrubs, trees and climbers. Trees form the major source consisting of about 57% followed by Shrub 27%, Herb and Climbers comprising 13% and 3% respectively. Fabaceae is the most dominant family which includes 7 species. This is followed by Moraceae which have 6 species. This is followed by Apocynaceae which icludes 4 species. Verbenaceae and Oleaceae are the families which comprises three members each. Combretaceae, Asclepiadaceae, Amaranthaceae, Asteraceae, Lamiceae, Bignoniaceae, Rutaceae, Myrtaceae and Mimosaceae are the families which include two members each. The remaining families are represented by only one member each. Most dominant genera of study area are *Ficus*, *Bauhinia* and *Jasminum* species. The remaining genera include single species each. In our data collection totally 9 Sthalavrikshas including to 7 genera belonging 6 families were observed in different area of Agasteeswaram Taluk. The temple plants and associated plants collected in the study area are documented with their binomial, local name, family, useful part, habit and uses were tabulated (Table 1).

Indigenous uses

The present study revealed that the temple trees collected from the study area have many indigenous uses. They have been used for many purposes mainly for medicine, timber, ornamental, gums and edible (Table 2).

Medicinal plants

In our present study out of 60 species 58 are used as medicine. The devotees and local traditional medical practitioners (Nattu Vaidyas) use several Sthalavriksha plants for treating various ailments. Normally, the priests or the Vaidyas prescribe medicines with devotion and devotees consume the medicines with great belief. Most of the plants are said to contain medicinal properties. The plants are treated to cure various diseases such as Rheumatism, Ringworm and Menstrual disorders each 3 species respectively. Diabetes, Asthma and Ulcers are cured by 6 species respectively Leprosy, Dysentery, cancer, Diarrhoea, and Jaundice each 4 species each.

Constipation, Joint pain, Hypertension, Pneumonia, Headache is treated by one species each.

Different parts of the temple trees such as leaves, stem, bark, fruit, seed, latex and flower are being used for various medicinal purposes. Leaves of 23 species bark of 8 species, root of 6 species, seeds of 1 species, fruits of 10 species, latex of 2 species, flower of 11 species, are used for the preparation of medicine. It is evident from the study that, different plant parts of trees where used as medicines, in which the leaves are most frequently used for the treatment of various ailments followed by flower, fruits, bark, root, latex and seed, etc. (Table 1).

Timber yielding plants

Out of 60 plant species 16 are used as timber. It is used for construction purpose, making furniture,

making handles for agricultural implements etc. The dominant family for timber yielding plant is Fabaceae it includes 4 species followed by Moraceae consists of 3 species. Remaining families consists of single species each.

Ornamental plants

Out of 60 plant species 27 are grown as ornamental. The plants having attractive flowers are commonly grown as ornamental plant. They are used to beautify our surroundings and home gardens. The dominant family is for ornamental plants are Apocynaceae and Fabaceae which consists of 4 species each followed by Oleaceae consists of 2 species. Remaining all family consists of one species each.

Dye yielding plants

Out of 60 plant species 34 are used in dye preparation. The dominant family for dye yielding plant is Apocynaceae and Fabaceae each consists of 4 species, it is followed by Moraceae consists of 3 species. Rutaceae and Amaranthaceae consists of 2 species each. Remaining all family consists of only one species each.

Edible plants

Out of 60 plant species 17 are used as edible. The dominant family is Moraceae consists of 3 species followed by Rutaceae consists of 2 species. Rest of the family consists of one species each.

Conservation status of Sthalavrikshas

According to IUCN Red list category and criteria version 3.1 (IUCN, 2013), four different types of species are found Vulnerable (Vu), Near threatened (NT), Least Concern (LC) and Data deficient (DD). Out of this (*Aegle marmelos*) is near threatened, 2 species (*Pterocarpus erinaceus* and *Tectona grandis*) are endangered, 2 species (*Centratherum puncatum* and *Santalum album*) are vulnerable, *Mangifera indica* is data deficient and 31 species are least concern (Table, 3).

Table 3. List of plants coming under IUCN red list

SL	Botanical name	Local name	IUCN red list
1.	*Acacia auriculiformis* A.Cunn.exBenth	Pencil maram	LC
2.	*Aegle marmelos* (L.) Correa	Vilvam	NT
3.	*Annona muricata* L.	Mullu –sitha –pazham	LC
4.	*Artocarpus heterophyllus* Lam.	Jack fruit	LC
5.	*Azadirachtai ndica* A. Juss	Vembu	LC
6.	*Bauhinia variegata* (L.) Benth.	Sigappumandarai	LC
7.	*Bauhinia tomentsa* L.	Kanchini	LC
8.	*Calotropis procera* (Aiton) W.T.Aiton	Velleruku	LC
9.	*Cassia fistula* L.	Konrai	LC
10.	*Celosia argentea* (L.) Kuntze	Kozhi poo	LC
11.	*Centratherum punctatum* Cass.	Keasavardhini	VU
12.	*Clusia rosea* Jacq.	Autograph Tree	LC
13.	*Couroupita guianensis* Aulb.	Nagalingamaram	LC
14.	*Duranta erecta* L.	Sky flower	LC
15.	*Elaeocarpus angustifolius* Blume	Rudraksham	LC
16.	*Ficus benjamina* L.	Weeping Fig	LC
17.	*Ficus racemosa* L.	Athimaram	LC
18.	*Ficus religiosa* L.	Arasamaram	LC
19.	*Lawsonia inermis* L.	Maruthani	LC
20.	*Michelia champaca* (L.) Baill. ex Pierre	Champaka	LC
21.	*Mangifera indica* L.	Manga	DD
22.	*Murraya koenigii* (L.) Spreng.	Kariveppillai	LC
23.	*Nerium oleander* L.	Aralli	LC
24.	*Nyctanthes arbor –tristis* L.	Pavazhamalli	LC
25.	*Phyllanthus emblica* L.	Nelli	LC
26.	*Plumeria rubra* L.	MalaiArali	LC
27.	*Pongamia pinnata* (L.) Pierre	Pongamaram	LC
28.	*Pterocarpus erinaceus* Poir	Rose wood	EN
29.	*Punica granatum* L.	Madhulai	LC
30.	*Santalum album* L.	Santhanam	VU
31.	*Streblus asper* Lour.	Puraamaram	LC

32.	*Tabernaemontana divaricata* (L.)R.Br.exRoem.&Schult.	Nandiarvattai	LC
33.	*Tamarindu sindica* L.	Puzhiyamaram	LC
34.	*Tectona grandis* L.f.	Thaekku	EN
35.	*Terminalia catappa* L.	Nattuvadumai	LC
36.	*Vitex negundo* L.	Nocchi	LC
37.	*Ziziphu smauritiana* Lam.	Illanthai	LC

Sthalavrikshas are very common in India. They are found in villages, in the countryside and the heart of some temples. Gunasekaran and Balasubramanian (2012) enumerated the ethnomedicninal uses of Sthalavrikshas occurring in the temples of Tamil Nadu and observed 101 Sthalavrikshas species. Our findings are indigenous uses of Sthalavrikshas and associated plants occurring in the temple of Agasteeswaram and observed 9 Sthalavrikshas species.

Sivalingam *et al.* (2016) access the conservation status of 383 temple sthalas in Tamil Nadu and recorded 16 plant species with their religious and medicinal uses. Our findings recorded 60 plant species, 9 cultivated as Sthalavrikshas remaining 51 were documented the indigenous uses of temple trees, such as medicinal, ornamental, dye, edible and timber.

Prabakaran and sabari lakshmi (2017) surveyed the Sthalavriksha of 106 temples in Salem, Namakkal, and Kaurur district of Tamil Nadu and recorded the 18 plant species with the medicinal uses. The survey of Sthalavrikshas of temples was conducted (Periyasamy and Saranya, 2018) in Erodes district of Tamil Nadu and total number of 25 Sthalavriksha species belongs to 14 families and 25 genera were recorded. These sacred plants are worshiped by the local people for getting the blessing of health and wealth by positive powers of nature.

The indigenous uses of Sthalavrikshas and associated plants also an important factor for leading to their protection by local communities (Sukumaran *et al.,* 2005). Hence the folk and ethnobotanical knowledge is the best source of information of preliminary screening in such instances. Methods of conservation and way to have sustainable utilization will be the need of the hour.

Conclusion

Nowadays, the medicinal properties of these plant species were explored and were proved to possess multitude dimensional effects as reported by numerous earlier scientific researchers. The role of the people for the conservation of medicinal plant is an age old practice since historic period. This traditional and religious method of ex situ conservation is rather surprising to understand the efforts and in depth knowledge of our ancestor in environmental related issues and the conservation strategies of medicinal plants in the temple campus. Therefore to conclude, the concept of the Sthalaviruksham is one of the pioneer efforts of our ancestor to conserve medicinal plants in temple campus and it is noteworthy to state that Sthalaviruksham is one of the conservation approach that have achieved great attention in recent past with the domain role of protecting and managing biodiversity.

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