



Ethnomedicinal uses of Sthalavrikshas (temple trees) in Tamil Nadu, southern India

M. Gunasekaran & P. Balasubramanian

Research

Abstract

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** (**sthal**: locality, **vriksha**: tree) in temples. Very few field studies have been conducted on **Sthalavriksha** practice and its role in social, ecological and environmental impacts of local people. In particular, ethnomedicinal uses on **Sthalavrikshas**, occurring in the temples of Tamil Nadu have been unexplored. A survey was conducted at 1165 ancient temples of the state and revealed the occurrence of 112 plant species during 2002-2006. At the time of study, several ethnomedicinal uses of 101 **Sthalavriksha** species were recorded by both direct observations and referred to by devotees, priests and **Nattuvaidyas** (traditional healers) in the temples.

Introduction

Sthalavriksha is referred to as a plant, which is venerated from time immemorial by devotees as being as holy as the presiding deity of a temple (Gunasekaran & Balasubramanian 2005). The Sanskrit term **Sthalavriksha** means tree of the locality (**Sthal** - place; **Vriksha** - tree). **Sthalavriksha** is a natural tree found in the temple site before construction of the temple and most temple myths (**sthalapuranas**) and temple histories (**sthalavaralaru**) refer to a prime deity that was first unearthed or found under the tree. **Sthalavriksha** is a single plant mostly in the form of a tree or in some places occurring as an herb, shrub, grass or climber. These are different than a group of plants found in sacred sites or sacred groves. After the construction of temples, these plants are treated as **Sthalavriksha** or temple trees (sacred plants). Due to traditional beliefs, both the devotees and temple authorities serve

as protectors of the **Sthalavriksha** in temples and if a tree (**Sthalavriksha**) dies because of old age, it is usually replaced by a sapling from the same species. Hence, the tree occurs constantly in a temple for several centuries. However, in most cases the original **Sthalavriksha** are still living within the temple grounds. In Hinduism, especially in **Shaivism**, there are three important aspects of the temple grounds, **Moorthy** (a Deity), **Sthalam**, (a Shrine and **Sthalavriksha**) and a **Theertham**, (Sacred tank or water body). These are the three prime elements to learn about the antiquity of a temple. The worship of these three elements will yield wisdom even without a guru or teacher (Thambiran 1963). In Tamil Nadu there are 25,000 ancient temples and these heritage sites play a vital role in conserving traditional arts, temple architectures, Tamil culture and also **Sthalavrikshas**. **Sthalavrikshas** are an integral part of temple worship and this practice is still in vogue in Tamil Nadu and its bordering states of Kerala, Karnataka, Andhra Pradesh and the neighboring Island nation of Sri Lanka. Ancient history of Tamil Nadu reveals the origin and development of temple tradition in the state through

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Figure 1. Huge **Sthalavrikaha** (gbh +800 cm) *Prosopis cineraria* (L.) Druce with offerings at Vedaranyam Siva temple, in Tamil Nadu, India.

the epigraphs and ancient Tamil literature, sacred hymns and poems.

Sthalavriksha worship is mostly associated with **Shaiyam** (worship of Lord Siva), **Vaishnavam** (worship of Lord Vishnu) and **Sthalavriksha** get divine power from these deities, which are treated as equal to the prime deity of the temple (Nedunchezhiyan 2005, Srinivasan 1972). Many medieval Tamil sacred hymns e.g., **Devaram** (Thambiran 1997) and **Thiviyaprabantham** (Anon 1962) refer to **Sthalavrikshas** and their associated deities. Even though **Sthalavriksha** worship is an ancient practice in Tamil Nadu very few studies have been conducted on its importance (Amirthalingam 1998, Sundara Sobitharaj 1994, Thirugnanam 1995). In particular, medicinal uses of **Sthalavrikshas** were referred to, based on secondary sources only.

Hence, the present study was designed to gather data using a field survey:

1. To catalogue all **Sthalavriksha** species and their associated deities in the temples of Tamil Nadu.

2. To document the ethnomedicinal utilization of user groups including devotees, priests and **Nattuvaidiyas** on **Sthalavrikshas**.

Study Areas

The study was carried out in Tamil Nadu and Puducherry states. Tamil Nadu state is situated at the southernmost corner of the Indian peninsula. It is located between 8° 05' and 13° 35' North latitudes and 76° 15' and 80° 20' East longitudes and covers an area of 1,30,058 km², occupying 4% of the total land area of India. Tamil Nadu state has three phytogeographic regions, i.e., East coast, Central plains and Western Ghats. The study was designed to cover all three regions of the state.

Methods

The survey was conducted in temples that were a minimum of 100 years of age, very few temples were surveyed that were less than 100 years old to find whether the **Sthalavriksha** practice still continues. Temples sur-

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veyed were sorted into age categories: >1000 years, 500-1000 years, 100-500 years, and less than 100 years.

Sthalavriksha specimens were collected in temples at the rate of one specimen from each species for herbarium preparation and identification. Plants were identified on the basis of Flora of the Presidency of Madras (Gamble, reprint 1986), Flora of Tamil Nadu (Henry *et al.* 1987, 1989, Nair & Henry 1983). The herbaria at the Botanical Survey of India, Southern Circle and Institute of Forest Genetics and Tree Breeding, Coimbatore were consulted for correct botanical identification. After confirming the identity, the herbarium specimens were deposited in the Herbarium of Salim Ali Centre for Ornithology and Natural History, Coimbatore.

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 belonging to several castes and many ethnic communities (Hindus). No specific permission from authorities was required to learn ethnomedicinal uses from the people in the local communities. During the temple survey the researchers interviewed the local priest about the user groups and from them were selected people over 40 years of age to approach.

Documentation of the medicinal utilization of **Sthalavriksha** species by user groups were recorded using two techniques:

1. Interview and questionnaire - A questionnaire was used to record the knowledge of the ethnomedicinal use from the user groups, including parts used, disease treated, etc.
2. Direct observation and interaction - Collections of leaves and withered plant parts of **Sthalavrikshas** by user groups were observed in a few occasions and interactions with these people were done learning about medicinal utilization of the **Sthalavrikshas**.

Results

Information regarding the binomial and the local names for each *Sthalavrikshas* are listed in Table 1. All the information obtained related to medicines prepared for treating different ailments. Interview and questionnaire approaches are provided separately in Table 2. Data related to the second approach (direct observation) including **Sthalavriksha** species, parts used and diseases treated are furnished in Table 3.

In Tamil Nadu state, eastern and southern regions have a higher number of temples than any other region. A total of 1165 temples, distributed in 30 districts of Tamil Nadu

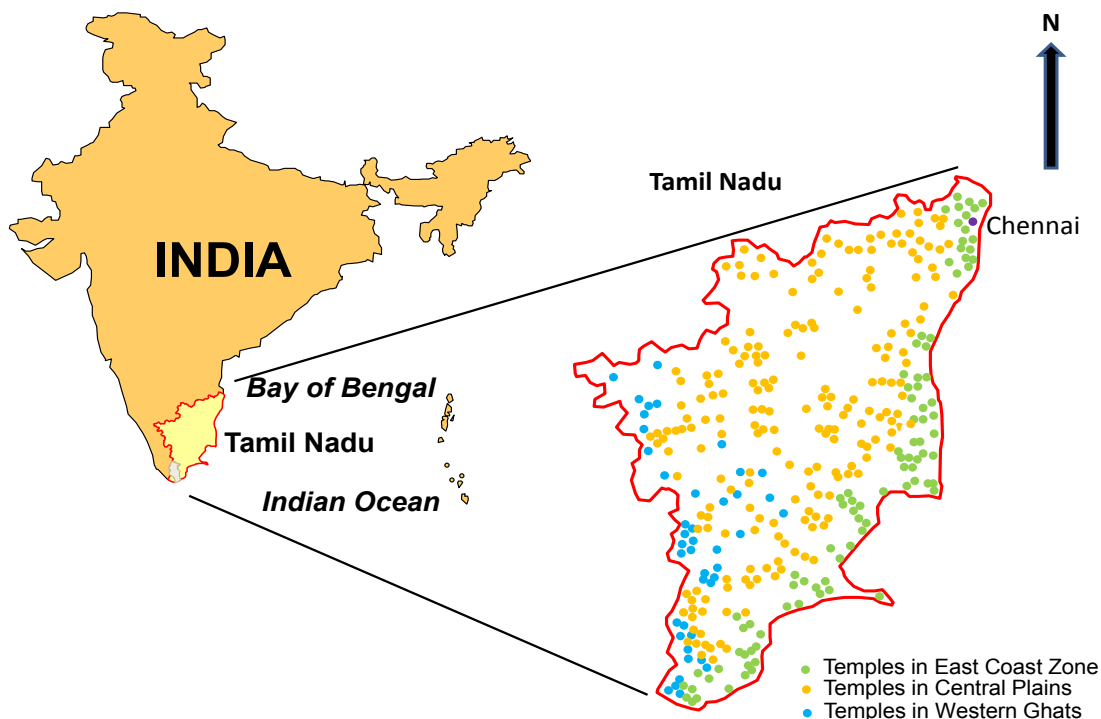


Figure 2. Temples surveyed in three different biogeographic zones in Tamil Nadu, India.

and Puducherry, were surveyed. During the study, temples constructed in the kingdoms of Chera, Chola, Pandia, Pallava, Nayakas and the latest period (20th century) were surveyed. In all the districts except Chennai, a minimum of 30 temples were surveyed. Chennai is a metropolitan city and the smallest district in the state. This district only has a small number of historic temples. Hence, Chennai district and the adjoining Thiruvallur and Kanchipuram districts, only 20 temples were surveyed. The highest number of temples were surveyed in Nagapattinam and Tirunelveli districts viz., 80 and 76 respectively.

A total of 127 people were interviewed after obtaining their oral consent, among them only 11 were women. Most of these ladies were collecting the withered parts of the **Sthalavrikshas** to ward off evil spirits from their home. Of the remaining 116 people 85 were local devotees, 17 temple priests and 14 were local traditional healers.

A total of 1165 temples surveyed which include 846 Siva temples, 246 Vishnu temples, 23 Amman temples, 48 Murugan temples and two other deity temples. Of 1165 temples surveyed, **Sthalavrikshas** were present in 820 temples. In total 112 species of **Sthalavrikshas** belonging to 41 families were recorded (Table 1) during our field research between 2002-2006. Of the 112 **Sthalavriksha** species documented in temples 83 are trees followed by 17 shrubs, 7 climbers, 3 grasses and 2 herbs. Among the 112 species, Bengal quince (*Aegle marmelos* (L.) Corrêa) was the most frequently recorded (n = 324) at temples followed by *Prosopis cineraria* (L.) Druce (n = 63). The leaves of the *A. marmelos* and *P. cineraria* are used as offerings to Lord Siva and these trees are thought to occur in higher numbers in temples than in the wild in Tamil Nadu. All 112 **Sthalavriksha** species recorded were angiosperms and 102 species were dicotyledons belonging to 78 genera and 38 families, and ten species of monocotyledons, representing 3 families.

Table 1. List of **Sthalavrikshas** recorded during a survey of temple trees in Tamil Nadu, India.

Scientific Name	Vernacular Name	Habit	Voucher No.
<i>Acacia chundra</i> Willd. (Fabaceae)	Karungali	Tree	238
<i>Acacia farnesiana</i> (L.) Willd. (Fabaceae)	Odaimaram	Tree	277
<i>Acacia leucophloea</i> Willd. (Fabaceae)	Velavel	Tree	10
<i>Aegle marmelos</i> (L.) Corrêa (Rutaceae)	Vilvam	Tree	3
<i>Alangium salviifolium</i> (L.f.) Wangerin (Cornaceae)	Alangiam	Tree	293
<i>Albizia amara</i> (Roxb.) Boivin (Fabaceae)	Osilai	Tree	271
<i>Albizia lebbek</i> (L.) Benth. (Fabaceae)	Vahai	Tree	139
<i>Andropogon pumilus</i> Roxb. (Poaceae)	Vizhal	Grass	263
<i>Artabotrys hexapetalus</i> (L.f.) Bhandari (Annonaceae)	Manoranjitham	Climber	321
<i>Artocarpus heterophyllus</i> Lam. (Moraceae)	Pala	Tree	236
<i>Artocarpus hirsutus</i> Lam. (Moraceae)	Ayini	Tree	289
<i>Atalantia monophylla</i> DC. (Rutaceae)	Kurunthai	Tree	62
<i>Azadirachta indica</i> A. Juss. (Meliaceae)	Vembu	Tree	25
<i>Bambusa arundinacea</i> (Retz.) Willd. (Poaceae)	Moongil	Grass	188
<i>Bauhinia acuminata</i> L. (Fabaceae)	Mantharai	Tree	242
<i>Bauhinia purpurea</i> L. (Fabaceae)	Mantharai	Tree	74
<i>Bauhinia racemosa</i> Lam. (Fabaceae)	Mantharai	Tree	327
<i>Borassus flabellifer</i> L. (Arecaceae)	Panai	Tree	296
<i>Butea monosperma</i> (Lam.) Taub. (Fabaceae)	Purasu	Tree	15
<i>Cadaba fruticosa</i> (L.) Druce (Capparaceae)	Vizhi	Shrub	85
<i>Calamus rotang</i> L. (Arecaceae)	Pirambu	Climber	46
<i>Calophyllum inophyllum</i> L. (Calophyllaceae)	Punnai	Tree	124
<i>Calotropis procera</i> (Aiton) W.T. Aiton (Apocynaceae)	Velerukku	Shrub	292
<i>Canthium parviflorum</i> Lam. (Rubiaceae)	Karai	Tree	117
<i>Capparis divaricata</i> Lam. (Capparaceae)	Thoratti	Tree	63

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Scientific Name	Vernacular Name	Habit	Voucher No.
<i>Capparis zeylanica</i> L. (Capparaceae)	Peyarillamaram	Tree	283
<i>Carissa carandas</i> L. (Apocynaceae)	Kala	Shrub	421
<i>Carissa spinarum</i> L. (Apocynaceae)	Kala	Shrub	179
<i>Cassia fistula</i> L. (Fabaceae)	Sarakondrai	Tree	142
<i>Citrus aurantiifolia</i> (Christm.) Swingle (Rutaceae)	Yelumichai	Shrub	35
<i>Citrus pennivesiculata</i> (Tan.) (Rutaceae)	Narathai	Tree	41
<i>Cocos nucifera</i> L. (Arecaceae)	Thennai	Tree	157
<i>Commiphora caudata</i> Engl. (Burseraceae)	Kiluvai	Tree	47
<i>Cordia domestica</i> Roth (Boraginaceae)	Uthalam	Tree	169
<i>Corypha umbraculifera</i> L. (Arecaceae)	Thalapanai	Tree	259
<i>Crateva magna</i> (Lour.) DC. (Capparaceae)	Mavilangam	Tree	67
<i>Crescentia cujete</i> L. (Bignoniaceae)	Thiruvottukai	Tree	434
<i>Dichrostachys cinerea</i> (L.) Wight & Arn. (Fabaceae)	Vedathalan	Shrub	143
<i>Diospyros montana</i> Roxb. (Ebenaceae)	Vakkanai	Tree	56
<i>Dodonaea viscosa</i> Jacq. (Sapindaceae)	Virali	Shrub	7
<i>Ehretia ovalifolia</i> Wight (Boraginaceae)	Karukattan	Tree	164
<i>Ensete edule</i> Bruce ex Horan. (Musaceae)	Monthan	Tree	187
<i>Euphorbia nivulia</i> Buch.-Ham. (Euphorbiaceae)	Ilaikalli	Tree	83
<i>Excoecaria agallocha</i> L. (Euphorbiaceae)	Thillai	Tree	407
<i>Ficus racemosa</i> L. (Moraceae)	Athi	Tree	397
<i>Ficus benghalensis</i> L. (Moraceae)	Aal	Tree	171
<i>Ficus microcarpa</i> L.f. (Moraceae)	Kallal	Tree	307
<i>Ficus mollis</i> Vahl (Moraceae)	Kalathi	Tree	330
<i>Ficus nervosa</i> B. Heyne ex Roth (Moraceae)	Selamaram	Tree	417
<i>Ficus religiosa</i> L. (Moraceae)	Arasu	Tree	468
<i>Ficus virens</i> Dryand. (Moraceae)	Ithi	Tree	115
<i>Guettarda speciosa</i> L. (Rubiaceae)	Panneer	Tree	339
<i>Holoptelea integrifolia</i> Planch. (Ulmaceae)	Aacha	Tree	376
<i>Imperata cylindrica</i> var. <i>major</i> (Nees) C.E. Hubb. (Poaceae)	Tharupai	Grass	175
<i>Jasminum auriculatum</i> Vahl (Oleaceae)	Mullai	Climber	87
<i>Jasminum cuspidatum</i> Rottl. & Willd. (Oleaceae)	Mullai	Climber	141
<i>Jasminum grandiflorum</i> L. (Oleaceae)	Jathimalli	Climber	312
<i>Jasminum sambac</i> (L.) Aiton (Oleaceae)	Malligai	Climber	239
<i>Lepisanthes tetraphylla</i> (Vahl) Radlk. (Sapindaceae)	Neikotta	Tree	172
<i>Limonia acidissima</i> L. (Rutaceae)	Vila	Tree	280
<i>Madhuca longifolia</i> (J. König ex L.) J.F. Macbr. (Sapotaceae)	Ilupai	Tree	61
<i>Magnolia grandiflora</i> L. (Magnoliaceae)	Malaimagudam	Tree	95
<i>Mangifera indica</i> L. (Anacardiaceae)	Ma	Tree	55
<i>Manilkara hexandra</i> (Roxb.) Dubard (Sapotaceae)	Paala	Tree	77
<i>Michelia champaca</i> L. (Magnoliaceae)	Senpagam	Tree	125
<i>Millingtonia hortensis</i> L. f. (Bignoniaceae)	Maramalli	Tree	284

Scientific Name	Vernacular Name	Habit	Voucher No.
<i>Mimosa pudica</i> L. (Fabaceae)	Thottachinungi	Herb	329
<i>Mimusops elengi</i> L. (Sapotaceae)	Mahizham	Tree	439
<i>Morinda pubescens</i> Sm. (Rubiaceae)	Manjanathi	Tree	415
<i>Moringa oleifera</i> Lam. (Moringaceae)	Murungai	Tree	36
<i>Murraya koenigii</i> (L.) Spreng. (Rutaceae)	Karuveppilai	Shrub	370
<i>Musa paradisiaca</i> L. (Musaceae)	Vazhai	Tree	279
<i>Naringi crenulata</i> Nicolson (Rutaceae)	Mahavilvam	Tree	51
<i>Neolamarckia cadamba</i> (Roxb.) Bosser (Rubiaceae)	Kadampu	Tree	428
<i>Nerium oleander</i> L. (Apocynaceae)	Arali	Shrub	385
<i>Nyctanthes arbor-tristis</i> L. (Oleaceae)	Pavazhamalli	Tree	97
<i>Ochna obtusata</i> DC. var. <i>gamblei</i> (King ex Brandis) Kanis (Ochnaceae)	Silanthi	Tree	387
<i>Ocimum tenuiflorum</i> L. (Lamiaceae)	Thulasi	Herb	210
<i>Phoenix sylvestris</i> (L.) Roxb. (Arecaeae)	Icham	Tree	112
<i>Phyllanthus emblica</i> L. (Phyllanthaceae)	Nelli	Tree	131
<i>Pleiospermium alatum</i> (Wight & Arn.) Swingle (Rutaceae)	Kurunthai	Tree	462
<i>Pongamia pinnata</i> (L.) Pierre (Fabaceae)	Pungam	Tree	17
<i>Premna latifolia</i> Roxb. (Lamiaceae)	Kattuminnai	Tree	39
<i>Prosopis cineraria</i> (L.) Druce (Fabaceae)	Vanni	Tree	267
<i>Pterocarpus marsupium</i> Roxb. (Fabaceae)	Vengai	Tree	422
<i>Punica granatum</i> L. (Lythraceae)	Madulai	Shrub	89
<i>Ricinus communis</i> L. (Euphorbiaceae)	Amanaku	Shrub	159
<i>Salvadora persica</i> L. (Salvadoraceae)	Kalar Ugai	Tree	226
<i>Santalum album</i> L. (Santalaceae)	Santhanam	Tree	294
<i>Saraca asoca</i> (Roxb.) De Wilde. (Fabaceae)	Asokam	Tree	463
<i>Schleichera oleosa</i> (Lour.) Oken (Sapindaceae)	Poovan	Tree	65
<i>Scaevola plumieri</i> (L.) Vahl (Goodeniaceae)	Rutharacham	Shrub	189
<i>Securinega leucopyrus</i> (Willd.) Müll. Arg. (Phyllanthaceae)	Venpoola	Shrub	340
<i>Stereospermum chelonoides</i> DC. (Bignoniaceae)	Pathiri	Tree	172
<i>Stereospermum colais</i> (Buch.-Ham. ex Dillwyn) Mabb. (Bignoniaceae)	Pathiri	Tree	357
<i>Stobilanthes kunthiana</i> (Nees) T. And. (Acanthaceae)	Kurunji	Shrub	82
<i>Streblus asper</i> Lour. (Moraceae)	Parai	Tree	209
<i>Strychnos nux-vomica</i> L. (Loganiaceae)	Yetti	Tree	328
<i>Strychnos potatorum</i> L.f. (Loganiaceae)	Thettra	Tree	432
<i>Syzygium cumini</i> (L.) Skeels (Myrtaceae)	Naval	Tree	29
<i>Tabernaemontana divaricata</i> (L.) R. Br. ex Roem. & Schulte. (Apocynaceae)	Nanthiavattai	Shrub	137
<i>Tabernaemontana heyneana</i> Wall. (Apocynaceae)	Nanthiavattai	Shrub	447
<i>Tamarindus indica</i> L. (Fabaceae)	Puli	Tree	218
<i>Tarenna asiatica</i> Kuntz ex K. Schum. (Rubiaceae)	Kura	Tree	423
<i>Telosma minor</i> (Andrews) W.G. Craib (Apocynaceae)	Sambangi	Climber	459

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Scientific Name	Vernacular Name	Habit	Voucher No.
<i>Terminalia arjuna</i> (Roxb. ex DC.) Wight & Arn. (Combretaceae)	Marutham	Tree	336
<i>Terminalia bellirica</i> (Gaertn.) Roxb. (Combretaceae)	Thani	Tree	224
<i>Terminalia catappa</i> L. (Combretaceae)	Badam	Tree	461
<i>Terminalia chebula</i> Retz. (Combretaceae)	Kadukkai	Tree	190
<i>Vitex negundo</i> L. (Lamiaceae)	Nochi	Shrub	158
<i>Wrightia tinctoria</i> R. Br. (Apocynaceae)	Palai	Tree	358
<i>Ziziphus mauritiana</i> Lam. (Rhamnaceae)	Ilandai	Tree	31

Medicinal uses

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 (Anon 1988-89). *A. marmelos* is the most utilized **Sthalavriksha** followed by *Azadirachta indica* A. Juss., *Ocimum tenuiflorum* L. and *Naringi crenulata* Nicolson. The villagers know the medicinal properties of the plant resources; hence medicinal utilization of **Sthalavriksha** species is probably more common in the villages than in the cities. Two factors pertain to these practices: 1) traditional beliefs and 2) devotional approaches to the **Sthalavrikshas** in tem-

ples. Generally villagers treat the **Sthalavrikshas** as living gods of the temples, whereas the prime deity is in the form of stone statues. Additionally, **Sthalavriksha** medicines are cheaper or are free (as an offering to a priest) and ease of access to these is a factor that maintains this practice by the local communities.

In addition to 91 **Sthalavriksha** medicinal uses discussed by users (Table 2), the collection of leaves and withered plant parts of 11 species were also documented from temples (Table 3).

The **Nattu-Vaidiyas** and local devotees collected these plant parts for medicinal purposes. Women often collect these materials based on local beliefs, for instance to tie the plant parts at their doorsteps to ward off evil spirits.

Table 2. Medicinal uses of **Sthalavrikshas** reported by temple priests, devotees, and local Nattu Vaidiya in response to a questionnaire, in Tamil Nadu, India.

Sthala-vrikshas No.	Sthalavriksha	Parts Used	Disease Treated
1.	<i>Acacia chundra</i> Willd. (Fabaceae)	Bark	Tooth ache
2.	<i>Acacia leucophloea</i> Willd. (Fabaceae)	Bark	Tooth ache
		Gum	Tooth ache
3.	<i>Alangium salviifolium</i> (L.f.) Wangerin (Cornaceae)	Bark	Antidote
		Seeds	Laxative
4.	<i>Albizia amara</i> (Roxb.) Boivin (Fabaceae)	Leaves	Dandruff
5.	<i>Albizia lebbek</i> (L.) Benth. (Fabaceae)	Bark	Tooth ache
		Leaves	Antidote
		Seeds	Eye diseases
6.	<i>Andropogon pumilus</i> Roxb. (Poaceae)	Roots	Joint pain
7.	<i>Artocarpus heterophyllus</i> Lam. (Moraceae)	Leaves	Skin diseases, Ulcer
		Root	Asthma, Diarrhea
8.	<i>Artocarpus hirsutus</i> Lam. (Moraceae)	Leaves	Bubonic plague
9.	<i>Atalantia monophylla</i> DC. (Rutaceae)	Leaves	Itching
		Root	Joint pain
		Oil	Paralysis

Sthala-vrikshas No.	Sthalavriksha	Parts Used	Disease Treated
10.	<i>Azadirachta indica</i> A. Juss. (Meliaceae)	Bark	Astringent, Leprosy
		Leaves	Antiseptic, Measles
		Flowers	Liver diseases
		Fruit	Cut wounds
		Root	Antidote
		Seed	Dandruff
		Oil	Laxative, Ringworm
11.	<i>Bambusa arundinacea</i> (Retz.) Willd. (Poaceae)	Leaves	Cooling tonic, Asthma, Cough
12.	<i>Bauhinia acuminata</i> L. (Fabaceae)	Bark	Bladder stone
		Leaves	Leprosy, Asthma
		Flowers	Cooling effect
		Root	Burns
13.	<i>Bauhinia purpurea</i> L. (Fabaceae)	Bark	Ulcer
14.	<i>Borassus flabellifer</i> L. (Arecaceae)	Flower Juice	Refrigerant
		Fruit	Boils, Diarrhoea
15.	<i>Butea monosperma</i> (Lam.) Taub. (Fabaceae)	Seeds	Ringworm
16.	<i>Cadaba fruticosa</i> (L.) Druce (Capparaceae)	Leaves	Intestinal worms
17.	<i>Calamus rotang</i> L. (Arecaceae)	Tuber	Cold, Cough, Fever
18.	<i>Calophyllum inophyllum</i> L. (Calophyllaceae)	Bark	Bleeding
		Leaves	Eye diseases
		Flowers	Fever
19.	<i>Calotropis procera</i> (Aiton) W.T. Aiton (Apocynaceae)	Bark	Dysentery
		Flowers	Cold, Cough, Asthma
20.	<i>Canthium parviflorum</i> Lam. (Rubiaceae)	Leaves	Dysentery, Diarrhea
		Flowers	Refrigerant
21.	<i>Capparis zeylanica</i> L. (Capparaceae)	Bark	Fever
		Leaves	Stomach problems
22.	<i>Carissa carandas</i> L. (Apocynaceae)	Flowers	Eye diseases
		Fruit	Vomiting, Dropsy
23.	<i>Carissa spinarum</i> L. (Apocynaceae)	Flowers	Eye diseases
		Fruit	Vomiting, Dropsy
24.	<i>Cassia fistula</i> L. (Fabaceae)	Bark	Laxative, Fever
		Fruit	Laxative
25.	<i>Citrus aurantiifolia</i> (Christm.) Swingle (Rutaceae)	Fruit	Scurvy, Dysentery
		Oil	Stimulant
26.	<i>Citrus pennivesiculata</i> Tan. (Rutaceae)	Fruit	Dysentery
		Oil	Stimulant
27.	<i>Cocos nucifera</i> L. (Arecaceae)	Tender Fruit	Coolant
		Flower juice	Stimulant, Natural Vinegar

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Sthala-vrikshas No.	Sthalavriksha	Parts Used	Disease Treated
28.	<i>Commiphora caudata</i> Engl. (Burseraceae)	Bark	Diarrhea
		Leaves	Dysentery
29.	<i>Cordia domestica</i> Roth (Boraginaceae)	Bark	Stomach ache, Mouth Ulcer
30.	<i>Crateva magna</i> (Lour.) DC. (Capparaceae)	Bark	Cleaning
		Leaves	Fever
31.	<i>Crescentia cujete</i> L. (Bignoniaceae)	Bark	Laxative, Ulcer
		Fruit	Refrigerant
32.	<i>Dichrostachys cinerea</i> (L.) Wight & Arn. (Fabaceae)	Leaves	Eye complaints
33.	<i>Diospyros montana</i> Roxb. (Ebenaceae)	Fruit	Boils
34.	<i>Dodonaea viscosa</i> Jacq. (Sapindaceae)	Leaves	Wounds, Swelling, Burns
35.	<i>Ensete edule</i> Bruce ex Horan. (Musaceae)	Stem Juice	Peptic Ulcer, Bladder stone
		Bark	Burn ulcer
		Flowers	Dysentery, Diarrhoea
		Fruit	Ulcer
36.	<i>Euphorbia nivulia</i> Buch.-Ham. (Euphorbiaceae)	Bark	Boils
		Stem	Ulcers in nails
		Latex	Knee and joint pain, Laxative
37.	<i>Excoecaria agallocha</i> L. (Euphorbiaceae)	Flowers	Eye diseases
		Root	Tooth ache, Intestinal worms
		Oil	Joint pain, Leprosy
38.	<i>Ficus benghalensis</i> L. (Moraceae)	Bark	Dysentery
		Leaves	Diarrhea
		Seeds	Refrigerant
		Latex	Pains, Bruises
39.	<i>Ficus microcarpa</i> L. f. (Moraceae)	Bark	Fever
40.	<i>Ficus mollis</i> Vahl (Moraceae)	Bark	Urinary infections
41.	<i>Ficus racemosa</i> L. (Moraceae)	Bark	Ulcer
		Fruit	Laxative
		Leaves	Bilious infections
		Root	Dysentery
		Seeds	Refrigerant
42.	<i>Ficus religiosa</i> L. (Moraceae)	Bark	Ulcer
		Fruit	Laxative
		Latex	Piles, Diarrhea
		Leaves	Cut wounds
		Seeds	Refrigerant
43.	<i>Ficus virens</i> Dryand. (Moraceae)	Seeds	Refrigerant

Sthala-vrikshas No.	Sthalavriksha	Parts Used	Disease Treated
44.	<i>Guettarda speciosa</i> L. (Rubiaceae)	Bark	Dysentery, Cut wounds
45.	<i>Holoptelea integrifolia</i> Planch. (Ulmaceae)	Bark	Rheumatism
46.	<i>Imperata cylindrica</i> var. <i>major</i> (Nees) C.E. Hubb. (Poaceae)	Leaves	Sedative
		Root	Diarrhoea
47.	<i>Jasminum auriculatum</i> Vahl (Oleaceae)	Leaves	Ulcers in mouth and throat
		Flowers	Eye diseases, Headache
48.	<i>Jasminum cuspidatum</i> Rottl. (Oleaceae)	Flowers	Ulcer
		Leaves	Fever
49.	<i>Jasminum grandiflorum</i> L. (Oleaceae)	Flowers	Ulcer
50.	<i>Jasminum sambac</i> (L.) Aiton (Oleaceae)	Leaves	Fever
		Flowers	Swelling in testes
51.	<i>Lepisanthes tetraphylla</i> (Vahl) Radlk. (Sapindaceae)	Seeds	Dandruff
52.	<i>Limonia acidissima</i> L. (Rutaceae)	Bark	Vomiting
		Leaves	Cough, Cold, Prickle heat boils
		Fruit	Ulcers in throat and mouth
53.	<i>Madhuca longifolia</i> (J. König ex L.) J.F. Macbr. (Sapotaceae)	Bark	Skin diseases
54.	<i>Mangifera indica</i> L. (Anacardiaceae)	Bark	Vomiting, Cracks on foot
		Leaves	Dysentery, Diarrhea, Throat pain
		Seed	Diarrhea
		Gum	Cracks on foot, Ulcer
55.	<i>Michelia champaca</i> L. (Magnoliaceae)	Bark	Cold and fever, Boils
		Leaves	Stomach ache
		Flowers	Fever, Urinary problems
56.	<i>Mimosa pudica</i> L. (Fabaceae)	Leaves	Cut wounds
57.	<i>Mimusops elengi</i> L. (Sapotaceae)	Bark	Tooth ache, Uterus problems
		Leaves	Tooth ache
		Fruit	Tooth ache
		Seeds	Male sterility
58.	<i>Morinda pubescens</i> Sm. (Rubiaceae)	Leaves	Scabies, Ulcer
		Fruit	Tooth ache
		Root	Sedative
		Oil	Skin diseases
59.	<i>Moringa oleifera</i> Lam. (Moringaceae)	Bark	Fever, Fits
		Leaves	Laxative

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Sthala-vrikshas No.	Sthalavriksha	Parts Used	Disease Treated
59. Con't	<i>Moringa oleifera</i> Lam. (Moringaceae)	Flowers	Cough, Male sterility
		Fruit	Infertility
		Gum	Male sterility
60.	<i>Murraya koenigii</i> (L.) Spreng. (Rutaceae)	Leaves	Indigestion
		Fruit	Increasing blood secretion
61.	<i>Musa acuminata X balbisiana</i> Colla	Stem Juice	Peptic Ulcer, Bladder Stone
		Bark	Burn, Ulcer
		Flowers	Dysentery, Diarrhea
		Fruit	Ulcer
62.	<i>Naringi crenulata</i> Nicolson (Rutaceae)	Bark	Fever
		Leaves	Cold, Cough
63.	<i>Nerium oleander</i> L. (Apocynaceae)	Bark	Ear pain
64.	<i>Nyctanthes arbor-tristis</i> L. (Oleaceae)	Bark	Skin diseases
		Seeds	Scabies, Herpes
		Leaves	Fever, Back-pain, Intestine worms
65.	<i>Ocimum tenuiflorum</i> L. (Lamiaceae)	Bark	Fever
		Leaves	Cold, Fever, Ear pain, Chest pain
		Flowers	Cough
		Seed	Heat diseases
		Root	Fever
66.	<i>Phoenix sylvestris</i> (L.) Roxb. (Arecaeae)	Root	Tooth ache
67.	<i>Phyllanthus emblica</i> L. (Phyllanthaceae)	Leaves	Mouth ulcer
		Fruit	Fever, Blood pressure
		Root bark	Tongue ulcer
68.	<i>Pongamia pinnata</i> (L.) Pierre (Fabaceae)	Oil	Scabies, Leucoderma
		Leaves	Fever
		Flowers	Skin diseases
		Root	Skin diseases
69.	<i>Premna latifolia</i> Roxb. (Lamiaceae)	Leaves	Diuretic
70.	<i>Prosopis cineraria</i> (L.) Druce (Fabaceae)	Bark	Tooth ache
		Leaves	Cold, Cough, Fever
		Flowers	Prevent miscarriage
		Gum	Dysentery
71.	<i>Pterocarpus marsupium</i> Roxb. (Fabaceae)	Bark	Tooth ache
		Flowers	Fever
		Gum	Tooth ache
72.	<i>Punica granatum</i> L. (Lythraceae)	Fruit	Dysentery, Diarrhea

Sthala-vrikshas No.	Sthalavriksha	Parts Used	Disease Treated
73.	<i>Ricinus communis</i> L. (Euphorbiaceae)	Leaves	Stomach ache
		Oil	Sedative
74.	<i>Salvadora persica</i> L. (Salvadoraceae)	Leaves	Diabetics
75.	<i>Santalum album</i> L. (Santalaceae)	Wood	Pimples, Urinary infections
76.	<i>Saraca asoca</i> (Roxb.) De Wilde (Fabaceae)	Bark	Skin diseases
		Flowers	Dysentery, Diarrhoea
77.	<i>Schleichera oleosa</i> (Lour.) Oken (Sapindaceae)	Fruit	Refrigerant
78.	<i>Securinega leucopyrus</i> (Willd.) Müll. Arg. (Phyllanthaceae)	Leaves	Warms sores
79.	<i>Stereospermum chelonoides</i> DC. (Bignoniaceae)	Flowers	Diabetic boils
80.	<i>Stereospermum colais</i> (Buch.-Ham. ex Dillwyn) Mabb. (Bignoniaceae)	Flowers	Ring worm
81.	<i>Streblus asper</i> Lour. (Moraceae)	Bark	Antidote
		Leaves	Dysentery, Diarrhea
		Latex	Crack in foot, Tooth ache
82.	<i>Strychnos nux-vomica</i> L. (Loganiaceae)	Leaves	Body boils
83.	<i>Strychnos potatorum</i> L.f. (Loganiaceae)	Bark	Cholera
		Leaves	Ulcers
84.	<i>Syzygium cumini</i> (L.) Skeels. (Myrtaceae)	Leaves	Dysentery, Diarrhea
		Fruit	Reduce blood sugar
		Seed	Diabetes
85.	<i>Tabernaemontana divaricata</i> (L.) R. Br. ex Roem. & Schulte. (Apocynaceae)	Flowers	Eye diseases
		Root	Tooth ache
86.	<i>Tamarindus indica</i> L. (Fabaceae)	Bark	Peptic ulcer
		Leaves	Stomach ache, Diarrhea
		Flowers	Eye pain
		Fruit	Uterus problems
		Seed	Vomiting, Dysentery, Tooth ache
87.	<i>Tarenna asiatica</i> Kuntz ex K. Schum. (Rubiaceae)	Leaves	Antidote
88.	<i>Telosma minor</i> (Andrews) W.G. Craib (Apocynaceae)	Flowers	Refrigerant
89.	<i>Terminalia catappa</i> L. (Combretaceae)	Gum	Cough, Dysentery
90.	<i>Terminalia chebula</i> Retz. (Combretaceae)	Seed	Eye disease, Stomach ache
		Fruit	Cold, Cough
91.	<i>Wrightia tinctoria</i> . Br. (Apocynaceae)	Bark	Fever, Dysentery, Diarrhea
		Leaves	Tooth ache
		Seed	Infertility, Dysentery

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Table 3. Collection of **Sthalavrikshas** parts observed from temples for medicinal uses.

Sthalavriksha	Parts Collected	Parts Used	Disease Treated
<i>Acacia farnesiana</i> (L.) Willd. (Fabaceae)	Withered Leaves	Leaf paste	Knee and Joint pain, Infertility
<i>Aegle marmelos</i> (L.) Corrêa (Rutaceae)	Withered Leaves	Leaves	Blood sugar reduction
	Fallen Fruits	Fruit pulp	Skin boils
		Fruit pulp with milk	Diarrhea
		Fruits	Vilvadhilegium prepared by local Vaidyas
	Withered Leaves	Leaves (sweet leaves)	Diabetes, Skin disease
	Withered Leaves	Leaves & Fruit	Cold and cough
	Withered Leaves	Leaf juice	Menstrual disorder in women
Withered Leaves	Leaf juice & Fruit paste	Cold, Cough, Chest diseases	
<i>Bauhinia racemosa</i> Lam. (Fabaceae)	Withered Leaves and Soil	Bauhinia leaf and Neem (<i>Azadirachta indica</i> A. Juss. (Meliaceae)) leaf paste with Thirumani (Sacred soil)	Cough, Cold and other Water based diseases
<i>Capparis divaricata</i> Lam. (Capparaceae)	Withered Bark	Bark paste	Dysentery, Stomach problems
	Withered Leaves	Leaf juice with milk	Infertility, Stomach problem
<i>Manilkara hexandra</i> (Roxb.) Dubard (Sapotaceae)	Withered Leaves	Leaf paste	Infertility
	Bark	Bark powder paste	Veterinary medicine
<i>Neolamarckia cadamba</i> (Roxb.) Bosser (Rubiaceae)	Withered Bark	Bark powder decoction	Rheumatism
<i>Tabernaemontana heyneana</i> Wall. (Apocynaceae)	Withered Flowers	Flowers	Eye diseases
<i>Terminalia arjuna</i> (Roxb. ex DC) Wight & Arn. (Combretaceae)	Withered Bark	Bark powder decoction	Blood pressure
		Bark powder paste	Cut wounds
<i>Terminalia bellirica</i> (Gaertn.) Roxb. (Combretaceae)	Withered Leaves	Leaves (Offerings)	Infertility, Diabetes
<i>Vitex negundo</i> L. (Lamiaceae)	Withered Leaves	Leaf decoction	Skin diseases, Cough
<i>Zizyphus mauritiana</i> Lam. (Rhamnaceae)	Withered Leaves	Leaf paste	Stomachache

Most of the devotees use **Sthalavriksha** plants as a source of medicine in their day to day lives and this knowledge is traditionally taught by elders from their home itself.

Discussion

Sthalavriksha studies ethnomedicinal uses are scanty. Information on uses of **Sthalavrikshas** in temples of Tamil Nadu are based on secondary sources (Aravanan 1984, Samy 1978). Thirugnanam (1995) mentioned 69 **Sthalavriksha** species and their medicinal values, mostly in

Siddha medicine (traditional medicinal practices of Tamil Nadu). Only three research works have been conducted as field studies. Sundara Sobitharaj (1994) recorded 74 plant species including their medicinal uses from 400 temples. Amirthalingam (1998) recorded 60 **Sthalavrikshas** from 300 temples of Tamil Nadu including traditional medicinal uses. Narasimhan & Rathnavathy (2003) identified 14 **Sthalavriksha** species in northern Tamil Nadu. The present study not only reveals a view of **Sthalavriksha** worship but also the medicinal utilization of **Sthalavrikshas**. During the present study 112 species were reported



Figure 2. Devotees worshipping *Cassia fistula* L. at Thiruadigai Siva temple, in Tamil Nadu, India.

as having medicinal uses and 101 medicinal uses **Sthalavrikshas** were documented. That is to say, 90% of the **Sthalavrikshas** are used medicinally.

Worshipping **Sthalavrikshas** in temples of Tamil Nadu is generally derived from myths and beliefs of the devotees. **Sthalapuranas** (Temple myth) quotes the stories of demon (**Asuras**), demi-gods (**Devas**), saints (**Rishis**) and several kings who got rid off all the deeds done during previous births (**Karma**), sin, diseases and ill effects (**Dhoshams**) by worshipping a deity and performing rituals to the associated **Sthalavriksha**. Normally, devotees worship the **Sthalavrikshas** in the temples to obtain boons. Examples maybe: timely marriage, early child birth, extended life span, work for the unemployed, acquiring wealth, reunion of family, relief from diseases, and other such desires. Though the **Sthalavrikshas** are maintained in the temples of Tamil Nadu for their religious value, they are also utilized for their medicinal purposes. Normally devotees are not allowed to pluck the parts of a **Sthalavriksha** in a temple, since it is under worship. But on specific occasions, and for medicinal treatment, it is allowed. The devotees and **Nattuvaidiyas** also collect the withered parts of the **Sthalavrikshas** in temples. Even if

the **Sthalavrikshas'** parts are consumed for their divine power, these plants are important ingredients used in the traditional Indian medical systems such as **Siddha** and **Ayurveda** (Pillai 1931). Of the 112 **Sthalavrikshas** recorded in Tamil Nadu, Bengal Quince (*A. marmelos*) was recorded at 40% of the temples. It is therefore the most frequently occurring **Sthalavriksha** species in the state. The devotees believe that *A. marmelos* is the most suitable sacred plant to maintain at Lord Siva temple in Tamil Nadu.

Most of the **Sthalavrikshas** are found in the temple sites even before construction of the temple hence **Sthalavriksha** worship practice has deeply penetrated into the life style of Tamils and Tamil culture as naming of temple towns, deities and human beings are followed after **Sthalavriksha** names. An example is *Terminalia arjuna* (Roxb. ex DC.) Wight & Arn. It is known as **Maruthu** in Tamil, based on the **Sthalavriksha** temple towns known as **Maruthamalai**, **Thirividaimaruthur** and **Thirupudaimaruthur**. Prime deities are named as Maruthasalamurthy and Marutheeswarar. Human beings are named as Maruthamuthu, Maruthi and Maruthai.

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The **Sthalavrikshas** are utilized by devotees for their religious and medicinal values, and are also important germplasm reserve. For instance two threatened species *Saraca asoca* (Roxb.) De Wilde and *Santalum album* L. are worshipped as **Sthalavriksha**. These species are becoming rare in the wild and are included in the Red listed plants of southern India.

Sthalavriksha parts are not only used for their cost effectiveness but also for devotional belief. In certain temples priests also act as traditional healers; prescribing medicines and providing **Sthalavriksha** leaves as the deity's offering for instance, *Acacia farnesiana* (L.) Willd. leaves in Melakodumalur temple.

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Literature Cited

Amirthalingam, M. 1998. *Sacred Trees of Tamil Nadu; A survey*. C.P.R. Environmental Education Centre, Chennai, India.

Anonymous, 1988-89. *The Wealth of India: Directory of raw materials and industrial products, raw materials*, Volume 1-11, Publication Directorate, New Delhi.

Anonymous. 1962. *Nalayirathiviyaprapantham*. Madavadasan, Ramakrishana Mudaliyar, Madras, India.

Aravanan, K.P. 1984. *Maravazhipadu Dravida Africa Op-edu*. Parinilayam, Chennai, India.

Gamble, J.S. 1915-1936. Reprint, 1986. *Flora of the Presidency of Madras*, Volume 1-3, Bishen Singh Mahendra Pal Singh, Dehra Dun, India.

Gunasekaran, M. & P. Balasubramanian. 2005. Sthalavriksha worship; A tool in plant conservation in Tamil Nadu. Pp. 163-166 in *Proceedings of National Strategy for Conservation of Sacred Groves*. Edited by C. Kunhikannan & G. Singh. Institute of Forest Genetics and Tree Breeding, Coimbatore, India.

Henry, A.N., G.R. Kumari, & V. Chitra. 1987. *Flora of Tamil Nadu, India*, Volume 2. Botanical Survey of India, Coimbatore, India.

Henry, A.N., V. Chitra, & N.P. Balakrishnan. 1989. *Flora of Tamil Nadu, India*, Volume 3. Botanical Survey of India, Coimbatore, India.

Nair, N.C. & A.N. Henry. 1983. *Flora of Tamil Nadu, India*, Volume 1. Botanical Survey of India, Coimbatore, India.

Narasimhan, D. & K. Rathnavathy. 2003. Ecology of sacred trees: Temple trees of northern Tamil Nadu. *Pondicherry Institute of Linguistics & Culture Journal of Dravidic Studies* 13: 89-118.

Nedunchezhiyan. 2005. *Thamizhar Kanda Thavaraviyal*. International Institute of Tamil Studies, Chennai, India.

Pillai, S.T.V. 1931. *Tamil-English Dictionary of Medicine, Chemistry, Botany and Allied Sciences*, Vol I-V, The Research Institute of Siddha's Science, Madras, India.

Samy, B.G.L. 1978. Sources for a history of plant science in India, part IV. Temple- Plants A Reconnaissance. Pp. 23-62 in *Transactions of the Archaeological Society of South India, 1965-68*. The Archaeological Society of South India, Government Museum, Madras, India.

Srinivasan, K.R. 1972. *Temples of South India*. National Book Trust, New Delhi.

Sundara Sobitharaj, K.K.S. 1994. *Thalamarangal*, Sobitham, Chennai, India.

Thambiran, M. 1963. *Thayumanavar's Paraparkkani*. Kasimadam, Thirupananthal, India.

Thambiran, M. 1997. *Thirugnanasambathar Devaram*, Volume 1-6. Dharumapuram Adeenam, Myladuthurai, India.

Thirugnanam, S. 1995. *Thirukoil Marangalin Maruthuvapayangal*. Selvi Pathipagam, Tiruchi, India.

