

# STUDIES ON DOCUMENTATION OF TREE SPECIES DISTRIBUTED INSIDE THE COLLEGE CAMPUS

Dr. M. Selvi and Dr. K. Parani

Assistant Professors in Botany PG Research Department of Botany Sri Parasakthi College For Women (Autonomous) Courtallam-627 802.

## I. Introduction

Floristic diversity refers to the variability of plants in a given region. It refers to the number of types or taxa in a given region or group. Floristic diversity can be measured at any level from overall global diversity to ecosystem, community, species, populations, individuals and even to genes within a single individual. India is one of the 12 mega diversity centers of the world where western Ghats and the eastern Himalayan region constitute 2 of the 25 biodiversity hotspots (Myers, 1988) representing a store house of several promising and economically important plants. western Ghats from a chain of mountains parallel to west coast almost stretching from Tapti river in the north to Kanyakumari in the south, covering a total area of about 160,000km2. It lies between 220N to 80N and covering western border of the states of south Gujarat, Maharashtra, Karnataka, Tamil nadu and Kerala. The western Ghats, to a large extent, controls the ecology and biogeography of peninsular India.Western ghats, being one of the global hotspots of biodiversity, supports an enormous vegetal wealth, which over the years is undergoing great stress due to anthropogenic disturbances. The development of the tropical rain forests in the Southern- Western Ghats and the `shoals` in the nilgiris region are the most outstanding features of western ghats. The entire western Ghats biogeography region a major genetic estate with an enormous biodiversity of ancient lineage. Nearly 5800 species of flowering plants occur here of which 56 genera and 2100

<sup>©</sup> Association of Academic Researchers and Faculties (AARF)

A Monthly Double-Blind Peer Reviewed Refereed Open Access International e-Journal - Included in the International Serial Directories.

species are endemic. Karnataka alone harbours 3900 species belonging to 1323 genera and 199 families while nilgiris have 2611 species of flowering plants. Some dominant families are, Leguminasae, Moraceae, Loaginaceae, Mimosoidaceae, Caesalpiniaceae, myrtaceae, Combretaceae, Sapotaceae, Anacardiaceae, Meliaceae, sapindaceae and Rubiaceae. Analysis of endemic species reveals that Western Ghats being much older in age compared to Himalayan Mountains support a large majority of relict or palaeo endemics. Agasthyamalai hills, anaimalai ranges, nilgiris and the palani hills are the hyperdiversity area in western ghats which are also the hotspots pockets. Regarding the utilization and management of the bioresources of western ghats, there are immense opportunities for bioprospection, particularly chemo -prospecting in wild medicinal and aromatic plant, which is much neglected. Recent developments in molecular biology and biotechnology have made it possible to scan the biodiversity for molecules with potential for commercial application. Tamil nadu is situated at the south eastern extremity of the Indian peninsula land and located between 8°05` and 13° 34<sup>0</sup> north latitudes and 76° 14` and 80° 21`east longitudes. Andhra Pradesh in the north, Karnataka in the north west, kerala on the west, bay of Bengal in the east and Indian, ocean in the south bound it .with a coastline of 922km and land boundary of 1200km, the total area of the state is 1,30,19,00ha. One sixth of landmass of tamil nadu is covered with forests, the total forest cover of the state is 22643 km2 constituting 17.41% of geographic area.

**Tamilnadu** has an angiosperm diversity of 5640 species which includes 533 endemic species, 230 red-listed species, 1559 species of medical plants and 260 species of wild relatives of cultivated plant. **Tirunelveli hills** is situated in the southern most end of the western ghats. It lies between 77° 10`-77° 40` E and 8° 25`-80 53` N. the elevation varies from50to 1868m.its geographical position is so unique that it has a profound effect on the vegetation and flora of the district. Which has been rightly considered as "an epitome of the whole of the madras state ('Mudaliar and Sundararaj,1954). The forest tracts of Tirunelveli hills including, Thirukurungudi, Kalakad, Mancholai, Papanasam, Mundanthurai, Valayer, Ainthalai, Pothigai, Nagapothigai ,Agasthiyamalai ,Sivagiri hills have undulating topography with in hospitable terrain and undoubtedly the floristic diversity of this region is of ancient lineage (Nair 1991; Nair and Denial 1986; Subramaniyam and Nayar,1974)

**Courtallam** is floristically well known area in the western ghats (India) ever since Robert Wight (1835-36) studied the flora of this region. Botanically, the flora of the mountains of courtallam is much reputed for high rate of endemism. This is because of the

© Association of Academic Researchers and Faculties (AARF)

unique geographical position of the area, being located opposite to the aryankavu pass (shencottah pass) it is also due to this reason that the flora here is basically an admixture of elements characteristics of both west coast (Malabar coast )and deccan plateau, which are in turn well represented by sri lankan and malaysian species. Phyto geographically, the flora also shows affinities to that of north eastern India .it is worthwhile to note here that courtallam flora with such unique characteristics be preserved for posterity (Nair and Nayar,1986).

Shrubs are woody plants of relatively low height, having several stems arising from the base and lacking a single trunk. They are also known as bushes, especially when they are much branched and dense. Some are small and dense, while others are tall and thin. Some are leafy green, while others display colourful flowers. They grow upwards to ten feet, shrubs can be flowering and ornamental. Shrubs are an important feature of permanent landscape planting, being used for formal, decorative groups, hedges, screens, and back ground planting, to which they contribute pattern, colour, fragrance, or utility. There are three types of shrubs namely: Broad leaved green shrubs, Deciduous shrubs and Needled evergreen shrubs. Shrubs come in a variety of shapes, sizes, colours, this along with growth habit, shape and colour of flowers and variety of fragrance make shrubs an important garden plant. In this floristic analysis, shrubs are given more important, because shrubs have a very important part to any well planned garden, not only for providing a long term background for numerous other plants, but also for their display of flowers and, in some cases, attractive foliage and fruits, the flowers of some shrubs are fragrant, and some are attractive to wildlife. Shrubs can also be used to provide a wind break, or as a screen for privacy. While many shrubs will grow in a wide range of conditions, others require a soil that has a greater acidic value. In arid, arctic and other regions of extreme climatic conditions where trees do not thrive, shrubs often provide valuable forage for wildlife and livestock as well as wood for local construction and for fuel.

### II. Geographical features of sampling area

Courtallam, the Spa of South India is situated at an elevation of about 167 meters. It lies within 8'50' and go' North latitude and 77'10' and 77"20' east longitude. It is about 56 kilometers west of Tirunelveli town and about 7 kilometers from Tenkasi town and railway station. The total area of Courtallam Township is 7.68 sq.lan.

**Soil:** Soils are of the red series showing variations according to local factors. Specific information on the nature of the soil in courtallam is rather meager and it can be broadly

© Association of Academic Researchers and Faculties (AARF)

classified into the black and red series and about 92 % of the area belongs to the later type. In the foot hills is the red sandy loam called the 'Semman' and thee less loamy type called the 'Sevval' with small pockets of medium black soil is also seen in the area.

**Climate:** In general, the climate of courtallam can be described as the 'tropical montane type'. It is characterized by light rainfall, an equable temperature and a remarkable dryness of the air even during the rainy weather.

**Rain fall:** In general courtallam gets the full benefits of both South-West and North-East monsoons with a short gap in between forming the go called cold season which is scarcely distinct. Atmospheric temperature, often 5-8 c below that of the adjoining plains. In the month of July and September that the downpour becomes heavy and an average of 20-25 cm of rain precipitates during this period. The cold season commences from November and continues up to January and during this period the temperature sometimes reaches  $22^{0c}$  marking the lowest minimum for the period. North-East monsoon is less characteristic in courtallam when compared to the South-West. Mostly during the months of November to January averaging 1.5-14 cm in each month. March to May, thermometer reading exceeds 28 c in the plains and outskirts of the forest which becomes dry. The occasional 'Kodai'shows in summer season helps the sprouting of cattle grass in the plains as well as in the open forest areas.

**Temperature:** In April and May temperature exceeds 38 c on some of the hot sunny days. During hot months of the year the temperature never goes below  $19^{0c}$ . In June-July temperature ranging between  $19^{0c}$  -  $34^{0c}$ , results in the 'Salubrious climate' of courtallam which continues up to the month of October. During December and January a temperature  $17^{0c}$  making the lowest minimum for the area. The drought of summer is severe in the exposed areas and outskirts of the forest.

**Wind:** Strong westerly winds are frequent by the onset of South-West monsoon in May-June. Sand, soil and debris which are often carried away by such winds are deposited in the plains.

**Relative humidity:** In June-July the mountain tops are often covered with mist formed by the slow and incomplete precipitation of dense monsoon clouds. This makes the adjoining area of the forest highly humid and due to the thick shading and high precipitation the mountain tops harbouring the tropical wet evergreen forest are more humid when compared to the outskirts and other lower altitudes.

**Vegetation:** Vegetation of the study area falls under three distinct categories, namely, the hydrophytic, xerophytic and mesic plants. The mesic plants which form the major part of the

© Association of Academic Researchers and Faculties (AARF)

flora. The highest altitudes of the mountain ranges which get the full benefit of the monsoons, southwest and northest is always in a humid state. The canopy is very dense in such areas which make the forest atmosphere cool and wet. In the forest type classification of champion and Seth (1968) monsoon forest of courtallam comes under four distinct types, namely the southern tropical wet evergreen type, the southern moist deciduous type and the southern thorn forest. The present investigation is to study the diversity of vast plant resources in Sri Parasakthi College Campus.

### Sri Parasakthi College

Our Nation's power and prosperity lies in rural parts. Empowering and uplifting rural women is strengthening our nation. With this as the mainstay, our institution was started in June, 1964, in the ideal place Courtallam, with an appropriate and powerful name Sri Parasakthi under the control of Hindu Religious and Charitable Endowment Board of Tamil Nadu, with the Commissioner, H.R. &C.E. (Admn.) department as the President of the College Committee. The college campus is 18.96 acres of land with a wide variety of trees, donated magnanimously by His Highness the Late Maharaja of Travancore. Sri Parasakthi College for women, situated on the lap of sylvan settings and surrounded by silver cascades, is a source of knowledge, with high aims and ideals as the lodestar in its path of progress. The college was conferred autonomy in 1978, the only and first rural women's college to be conferred autonomous status in the whole of India. With the conferment of academic freedom, the institution has designed its curricular programmes with social relevance and academic excellence the watchwords of autonomy. Today it is one of the important centers of higher education in Southern part of our country.

In the present record of tree flora were done at the following places at college campus:

- **4 1.** Near main gate
- \rm 🕹 2. Near Bank
- 4 3. Near rotary club
- **4.** Behind old auditorium
- 4 5. Near indoor stadium
- **4** 6. Near koshala-cowshed
- **4** 7. Near Parasakthi Higher Secondary school
- **4** 8. Near department of mathematics.
- **9.** In and around Students' Hostel and
- **4 10.** Botanical garden and Eves garden.

### © Association of Academic Researchers and Faculties (AARF)

The present work is an attempt to have an idea about field work collection and Taxonomic studies on the plants collected from the college campus.

### II. Results and discussion

Major contributions to the floristic studies in India were made by the Britishers. Among the Botanists who worked on the flora of Peninsular India, the contributions of Robert Wight are the most outstanding. His major publications are *Illustrations of Indian Botany* (1840) and *Icones Plantarum Indiae Orientalis* (1838-1853). Wight together with Arnott published *Prodromus Florae Peninsulae Indiae Orientalis* (1834) in which several new taxa were described. The other notable contributions during the 19th centuary were *The Flora Sylvatica for Southern India* (Beddome 1869-1874), *Icones Plantarum Indiae Orientalis* (Beddome, 1868-1874), *Flora Indica* (Roxburgh, 1820, 1824). *Flora of British India* was published by J.D Hooker during 1872-1897. This seven volume publication dealt with the phanerogams of the erstwhile British India with phytogeographical information. Subsequently regional floras like *Flora of the Presidency of Bombay* (Cooke, 1901-1908) and *Flora of the Presidency of Madras* (Gamble, 1915-1936) were published and the latter work is adjudged as the best among the regional floras.

The present study area courtallam is floristically well known area in the western ghats. Botanically the flora of the mountains of courtallam is much reputed for high rate of endemism .This is because of unique geographic position of the area, being located opposite to the Aryankavu pass (Shencottah pass). In general the climate of the Courtallam can be described as the 'tropical montane type'. It is characterized by the light rain fall, an equable temperature and a remarkable dryness of the air even during the rainy weather. This peculiar dry weather compounded with light rain fall is due to the location of the area being situated near the junction of the wet humid western side of the western ghats and it is proximal to the dry arid climate of the Tirunelveli plains. The present study recorded the following observations,

Courtallam get full benefit of both south-west and north-east monsoons with a short gap in between cloud forming the so called cold season which is scarcely distinct. The rainy season here commences by the onset of south-west monsoon in June-july. The trees have been called the structural elements of the ecosystem. They form the most noticeable living objects except in the driest and coldest climates. Trees have whole communities of other

© Association of Academic Researchers and Faculties (AARF)

organisms associated with each type .some birds or insects are found only in broad-leaved trees, others in conifers

Sri Parasakthi college for women courtallam under HR&CE department consists of a huge flora with trees, shrubs, herbs, climbers and lianas of different families (**Fig:1**). Flora of family consists of **79** tree species belongs to **30** Angiosperms and **4** Gymnosperms' families. Overall total number of trees were recorded as **467** (**Tables: 1-8 & Plates : I to IX**). These families include both economically important plants and medicinally important plants.

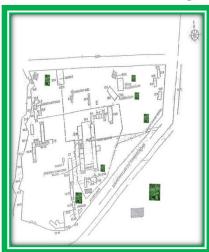
**Fig:3,** showed the percentage of trees recorded inside the college campus and the total number of families also recorded as, 34. Among these Angiosperms (30 & 6%), Gymnosperms(4 &1%) and Total number of species were 462 & 93%.

Fig:4. Enlisted the economic vlaues of trees available in the campus and their Numbers observed as, Rare and threatened species: 13., Essential oil Containing families: 5., Resin Containing Families: 6., Saponin Containing family: 4., Latex containing families: 6 and Ornamental value: 6.

Similar work were done earlier by many taxonomist and are as, The Forest Trees of Travancore by Bourdillon (1908) is the first comprehensive work on the tree flora of Travancore and it dealt with 582 indigenous trees. The other important works on the flora of Peninsular India are: Flowering Plants of Travancore (Rama Rao, 1914), Flora of Anamalai Hills Coimbatore District, Madras Presidency (Fischer, 1921) and Flora of South Indian Hill Stations (Fyson, 1932). Since then, the work on regional as well as local floras were undertaken with the view of preparing a complete and comprehensive flora of India and major work was done by the Botanical Survey of India. Flora of Tamil Nadu, India (Nair & Henry, 1983; Henry et. al, 1987 and 1989) and Flora of Karnataka (Sharma, 1984) were published as part of the aforementioned project. A few Universities and Research Institutions also conducted floristic studies in South India. The floras of most of the districts and Protected areas in Kerala have either been completed or in the process of completion. The notable publications on the flora of Kerala are: Flora of Calicut (Manilal & Sivarajan, 1982), Flora of Cannanore (Ramachandran & Nair, 1988), Flora of Silent Valley (Manilal, 1988), Flora of Palghat (Vajravelu, 1990), Flora of Kerala: Grasses (Sreekumar and Nair, 1991), Flora of Thiruvananthapuram District (Mohanan & Henry, 1994), Flora of Thenmala Division (Subramamiyan, 1995), Flora of Nilambur (Sivarajan

© Association of Academic Researchers and Faculties (AARF)

& Philip Mathew, 1997) and Flowering Plants of Thrissur Forests (Sasidharan & Sivarajan, 1996). Floristic studies of the following places have been completed as Ph. D. programmes: Flora of Quilon District (C. N. Mohanan, 1984); Flora of Kottayam District (Antony, 1989) and Flora of Pathanamthitta District (Anil Kumar, 1993). The flora of protected areas such as Agasthyamala (N. Mohanan, 1995); Shenduruny Wildlife Sanctuary (Sasidharan, 1997); Periyar Tiger Reserve (Sasidharan, 1998), Chinnar Wildlife Sanctuary (Sasidharan 1999) have been studied recently. Besides these general floristic studies revisionary studies of several genera and families were also carried out. The flora of Palakkad district has not been thoroughly explored in the past. Wight, Clerghorn, Beddome, Lawson, Barber, Fischer, Rangachariar, Jacob and Raju & Rathinavelu made sporadic collections from different parts of the district during the late 19th and early 20th centuries (Vajravelu 1990). During 1990's two floras were published on the angiosperms of Palakkad district. The Flora of Silent valley National park by Manilal (1988) dealt with 966 species of angiosperms. The Flora of Palghat (Vajravelu, 1990) dealt with 1355 species of flowering plants from the entire Palakkad district. From literature it is seen that the flora of Parambikulam Wildlife Sanctuary has not been studied in detail when compared to other parts of the district. Some exiguous information is available in the form of a few publications. Airy Shaw (1952) described the monotypic genus Haplothismia based on the collections of KC Jacob from the study area. Ramamurthy & Joseph (1964) discovered a new taxon from the rivers of Parambikulam. Sebastine & Ramamurthy (1966) published brief accounts on the flora of Parambikulam and Aliyar submergible area.



### Fig-1 Sampling area- College campus



Sri Parasakthi College For Women (Autonomous), Courtallam-627 802

### © Association of Academic Researchers and Faculties (AARF)

## List of plants inside the Campus Plate-I Sri Parasakthi College For Women (Autonomous), Courtallam-627 802



## © Association of Academic Researchers and Faculties (AARF)

## List of plants inside the Campus



Barringtonia acutangula Gaertn. Barringtoniaceae; rKj;jpu ghiy



Bougainvillaea spectabilis Wild.Nyctaginaceae fpU\;zfs;sp



Butea monosperma (Lam.)Taub Leguminosae gyR



Bauhinia tomentosa Linn. Caeselpeniaceae ke;jhiu, ,Wthl;rp



Careya arborea Roxb Lecythidaceae Ma;kh



*Cassia fistula L.* Leguminosae ruf;nfhd;id



Cassia siamea (Lam.) Barneby. Leguminosae kQ;r nfhd;id



*Callistemon citrinus*(Curtis) Skeels Myrtaceae ghl;by; gpu];



Calliandra surinamensis Benth. Fabaceae gTlH gg;t;

Plate-II

© Association of Academic Researchers and Faculties (AARF)

Plate-III Caryota urens Linn. Celtis tetrandra Roxb. Cestrum Arecaceae \$e;jy; gid Ulmaceae. Ml nfhd;dh nocturnum Linn. Solanaceae . [h];kpd; uhzp *Caesalpinia sappan* Linn. *Ceiba pentandra* (L) Cocos nucifera Linn. Caesalpiniaceae . rg;ghq;F Gaertn. Arecaceae njd;id Malvaceae., ytk; Cassine glauca Delonix regia ( Emblica officinalis Gaertn. (Rottb.)Pers. Boj.ex Hook.) Raf. Euphorbiaceae . kiy ney;yp Celastraceae. fUthyp Caesalpineaceae kapy; nfhd;iw

© Association of Academic Researchers and Faculties (AARF)



© Association of Academic Researchers and Faculties (AARF)



Kingiodendran pinnatum (DC.)Hams. Fabaceaeae kilad; rhk;gpuhzp

Plate-V



Lagerstroemia flos-reginae(L) Pers. Lythraceae G+ kUJ, fjyp



*Michelia champaca* (<u>L.</u>) <u>Baill.exPierre</u> Magnoliaceae nrz;gfk;



Mallotus philippensis (Lam.) Muell.Arg. Euphorbiaceae fgpyk;



Madhuca longifolia (J.Koenig) J.F.Macbr. (Syn.Bassia latifolia) Sapotaceae ,Yg;jg



Mangifera indica L.

kh

Anacardiaceae

*Melia azedarach* L. Meliaceae kiy Ntk;G



*Millingtonia hortensis* Linn. Bignoniaceae gd;dPH kyH



Mimusops elengi Linn. Sapotaceae kfpok;

© Association of Academic Researchers and Faculties (AARF)

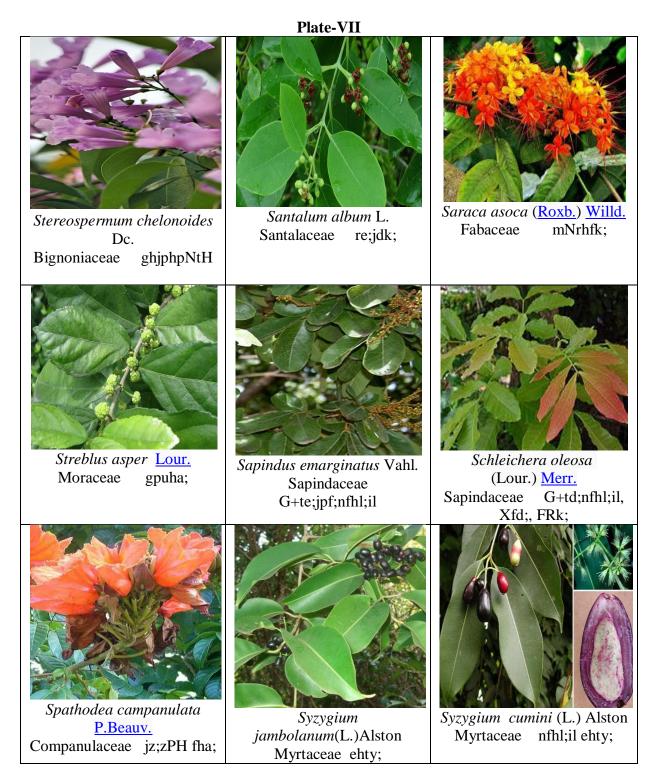
## Sri Parasakthi College For Women (Autonomous), Courtallam-627 802

## List of plants inside the Campus

### **Plate-VI**



© Association of Academic Researchers and Faculties (AARF)



## © Association of Academic Researchers and Faculties (AARF)

Plate-VIII

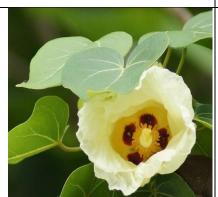




Strychnos nuxvomica Linn. Loganiaceae fhQ;ruk;, vl;b



*Tamarindus indica* Linn. Caesalpineaceae Gsp



Thespesia populnea (L.) Solandex .Correa Malvaceae G+tuR



*Tectona grandis* L. Verbenaceae Njf;F



*Terminalia catappa L.* Combretaceae thJik



*Terminalia arjuna*(Roxb.)Wight&Arn Combretaceae kUJ



Ziziphus xylopyrus Retz.(Wild) Rhamnaceae nfhl;il ,ye;ij



Ziziphus trinervia Retz.(Wild) Rhamnaceae rPik ,ye;ij

© Association of Academic Researchers and Faculties (AARF)

Plate-IX GYMNOSPERMS



© Association of Academic Researchers and Faculties (AARF)

Table-1	. List	of 7	<b>Frees</b>	inside	the	Campus
---------	--------	------	--------------	--------	-----	--------

Sl. No	Plant name & Family	Tamil Name	No. of trees recorded in 2006	No. of trees recorded in2016/Tr ee number	Total No.of trees	Location
1	Aglaia elaeagnoidea var. Courtallensis(juss) Benth. Meliaceae	nrhf;fyh, ,Uk;Gyp	9	-	9	Near stone bench, back side of the Physics & English dept. Front & Right side of Botany dept.
2.	Artocarpus heterophyllus Lam. Moraceae	gyh kuk;	6	-	6	Left side of New Auditorium, back side of Students' Hostel and backside of greenhouse
3.	<i>Atalantia monophylla</i> correa. Rutaceae	fhl;L vYkpr;ir		1	1	Playground
4.	Azadirachta indica A.Juss Meliaceae	Ntk;G	11	-	11	Staff hostel, entrance, near botanical garden, Near generator & Back side of the students hostel
5.	<i>Albizzia amara</i> (Roxb.) Boivin. Mimosaceae	crpiy	6	-	6	Botanical garden, assembly ground & Back side of the students hostel
б.	<i>Albizzia lebbeck.</i> (L.) Benth Mimosaceae	fhl;L thif	19-1	-	18	Near dept. of History, Botanical gaden, Back side of the Hr.Sec. school Block
7.	<i>Albizzia odoratissima</i> <i>L.F (Benth)</i> Mimosaceae	fUf;F thif	34	100	100	Near dept. of History, Play ground, Back side of the Hr.Sec. school Block
8.	Annona sqauamosa Linn. Annonaceae	rPjh gok;		01	1	In Front of Power room
9.	Arecca catechu Linn. Arecaceae	ghf;F		01,02,03& 04	4	In Front of Maingate (Near CNB)
10.	Barringtonia acutangula Gaertn. Barringtoniaceae	rKj;jpu ghiy		01	1	Assembly ground
		Total			167	** Tree had fallen down.

Sl. No	Plant name & Family	Tamil Name	No. of trees recorde d in 2006	No. of trees recorded in 2016	Total No.of trees	Location
11.	Bougainvillaea spectabilis Wild.Nyctaginaceae	fpU\;zfs;sp		2	2	Botanical Garden, In Front of Students Hostel
12.	Butea monosperma (Lam.)Taub Leguminosae	gyR		1	1	Back side of the dept. of Zoology (UG Block)
13.	Bauhinia tomentosa Linn. Caesalpeniaceae	ke <u>;j</u> hiu, ,Wthl;rp		1	1	Left side of the Founders' statue
14.	<i>Careya arborea</i> Roxb Lecythidaceae	Ma;kh	15-1		14	Assembly ground, backside of the dept.of English and Mathematics, In Front of Back gate
15.	<i>Cassia fistula L.</i> Leguminosae	ruf;nfhd;id	97**	8	8	Left side of the Founders' statue, Play ground and Near Eco garden
16.	Cassia siamea (Lam.) Barneby. Leguminosae	kQ;r nfhd;id		4	4	
17.	Callistemon citrinus(Curtis) Skeels Myrtaceae	ghl;by; gpu];		1	1	In Front of Students' Hostel
18.	<i>Calliandra</i> surinamensis Benth. Fabaceae	gTlH gg;t;		2	2	Back side of Administrative office,near Ecogarden
19.	<i>Caryota urens</i> Linn. Arecaceae	\$e;jy; gid	1	6	7	Near Frontgate, Ganesha temple, Biogas Plant- field area , old auditorium and Eves garden.
20.	<i>Celtis tetrandra</i> Roxb. Ulmaceae	Ml nfhd;dh		1	1	In front of Mathematics lab.
		Total			41	** Old record completely vanished

## Table-2. List of Trees inside the Campus

Sl. No	Plant name & Family	Tamil Name	No. of trees recorded in 2006	No. of trees recorded in 2016	Total No.of trees	Location
21.	Cestrum nocturnum Linn. Solanaceae	[h];kpd; uhzp			1	Inside the Botanical Garden
22.	<i>Caesalpinia sappan</i> Linn. Caesalpiniaceae	rg;ghq;F			1	Inside the Botanical Garden
23.	<i>Ceiba pentandra</i> (L) Gaertn. Malvaceae	,ytk;			3	In front of the Indoor stadium, Hostel kitchen and Near Well
24.	<i>Cocos nucifera</i> Linn. Arecaceae	njd;id	4	6	10	Biogas Plant-field area and Eves garden.
25.	Delonixregia(Boj.ex Hook.) Raf.Caesalpineaceae	kapy; nfhd;iw		1	1	In front of the Examination Section
26.	<i>Elaeodendron glaucum</i> (Rottb.)Pers. Syn: <i>Cassine glauca</i> Celastraceae	fUthyp		15	15	In front of dept.of Botany, Chemistry, History block and Backside of the dept.of English and Students hostel
27.	<i>Emblica officinalis</i> Gaertn. Euphorbiaceae	kiy ney;yp		2	2	In front of the Examination Section and Meditation hall.
28.	<i>Erythrina superosa</i> (Syn. <i>E.indica</i> ) Fabaceae	Ky;Y KUq;if	2		2	Near Valley-ball ground
29.	<i>Eucalyptus globulus</i> Labill. Myrtaceae	ijy kuk;	1		1	Trespass towards Agathiyar statue
30.	<i>Ficus benghalensis,</i> Linn. Moraceae	Му;	1	4	5	Near Enterance and In front of the new block (towards canteen) & Back side of students hostel
		Total	1	1	41	

## Table-3. List of Trees inside the Campus

Table-4	. List	of	Trees	inside	the	Campus
---------	--------	----	-------	--------	-----	--------

Sl. No	Plant name & Family	Tamil Name	No. of trees record ed in 2006	No. of trees recorded in 2016	Total No.of trees	Location
31.	Ficus hispida L. Moraceae	fhl;lj;jp		1	1	Near back gate
32.	Ficus religiosa L. Moraceae	muR		2	2	Near indoor stadium & well
33.	Fiscus racemosa Linn. Moraceae	mj;jp		1	1	Near well
34.	Garcinia mongostana Linn (G.indica) Clusiaceae	kq;F];jhd;	5		5	Play ground & backside of the hostel mess.
35.	<i>Garcinia combogia</i> (Gaertn.) Desr. Clusiaceae			1	1	Play ground and backside of indoor stadium
36.	Holoptelea integrifolia (Roxb.) Planch Ulmaceae	Mtyp	1	1	1	
37.	<i>Ixora pavetta</i> , Andr. Rubiaceae	,Uk;Gsp, Nfhuhd;		3	3	Playground, Near stone bench & In front of Mathematics lab.
38.	Kingiodendran pinnatum (DC.)Hams. Fabaceaeae	kilad; rhk;gpuhz p		6	6	Botanical Garden
39.	Lagerstroemia flos-reginae(L) Pers. Lythraceae	G+ kUJ, fjyp	6**	2	2	Near Goshala & backside of the Administrative office
40.	Mallotusphilippensis(Lam.) Muell.Arg.Euphorbiaceae	fgpyk;		4	4	Near students'toilet & Backside of dept.of Economics.
41	<i>Mangifera indica</i> L. Anacardiaceae	kh	43**	17	17	Playground, near students'toilet & backside of the students' hostel
	Total				43	** Old record completely vanished

Sl. No	Plant name & Family	Tamil Name	No. of trees recorded in 2006	No. of trees recorded in 2016	Total No.of trees	Location
42.	Micheliachampaca(L.)Baill.exMagnoliaceae	nrz;gfk;		3	3	In front of botanical garden , Eves garden & Near Hostel mess
43.	Madhuca longifolia(J.Konig) J.F.Mac br. (Syn.Bassia latifolia) Sapotaceae	,Yg;ig	30**	15	15	Play ground, Back side of the green house, aStudents' hostel and Back side of the SF-New building.
44.	<i>Melia azadirachta</i> L. Meliaceae	kiy Ntk;G		1	1	Near staff hostel block
45.	MillingtoniahortensisLinn.Bignoniaceae	gd;dPH kyH	4		4	Near students' hostel and hostel mess
46.	<i>Mimusops elengi</i> Linn. Sapotaceae	kfpok;		2	2	Botanical garden & In front of the entrance path
47.	Murraya koenigii(L.)Spreng. Rutaceae	fwpNtg;gpiy		1	1	Backside of the hostel mess
48.	<i>Muntingia calabura</i> L. Muntanginaceae	Njd; fdp		1	1	Botanical garden
49.	<i>Morinda tinctoria</i> Roxb. Rubiaceae	Edh, kQ;rdj;jp	4		4	Near Lobby, students' hostel & In front of administrative office
50.	Nyctanthes arbor-tristis Linn. Oleaceae	gtsky;yp		2	2	In front of administrative office & Eves garden
51	Polyalthia longifolia Benth. Annonaceae	nel;b ypq;fk;	7	2	9	Backside of the Administrative block &Back side of students hostel
	Total				42	** Old record completely vanished

## Table-5. List of Trees inside the Campus

	Table-6. List of Trees inside the Campus									
SI. No	Plant name & Family	Tamil Name	No. of trees recor ded in 2006	No. of trees recorded in 2016	Total No.of trees	Location				
52.	<i>Psidium guajava</i> Linn. Myrtaceae	nfha;ah		2	2	Near Goshala & Transformer				
53.	Pongamia pinnata Syn.P.Glabra (L.)Pierre Fabaceae	Gq;if kuk;	18		18	All areas of College campus				
54.	PlumeriarubraLinn.Var.ScarletApocyanaceae	<oj;jyhp< td=""><td></td><td>1</td><td>1</td><td>In front of the Dept.of chemistry</td></oj;jyhp<>		1	1	In front of the Dept.of chemistry				
55.	<i>Plumeria alba</i> Linn.Var .White Apocyanaceae	<or;nrz;gfk;< td=""><td></td><td>1</td><td>1</td><td>In front of the Dept.of chemistry</td></or;nrz;gfk;<>		1	1	In front of the Dept.of chemistry				
56.	Stereospermum chelonoides Dc Bignoniaceae	ghjphpNtH	1		1	In front of the dept.of Commerece				
57.	<i>Santalum album</i> L. Santalaceae	re;jdk;	1	2	3	Botanical garden & In front of administrative office				
58.	Saracaindica(Roxb.) Willd.Fabaceae	mNrhfk;		3	3	Botanical garden & Enterance- Trespass				
59.	Streblus asper Lour. Moraceae	gpuha;	14		14					
60.	Sapindus emarginatus Vahl. Sapindaceae	G+te;jpf;nf hl;il		1	1	In front of III year physic class room				
61	Schleicheraoleosa(Lour.) Merr.Sapindaceae	G+td;nfhl;il , Xfd;, FRk;		1	1	Near canteen				
	Total				45					

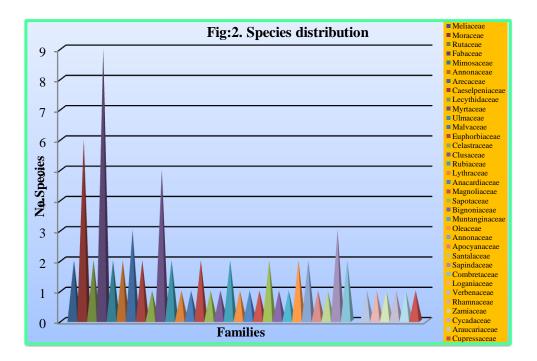
### Table-6. List of Trees inside the Campus

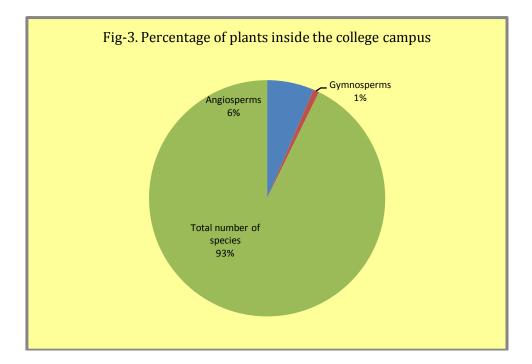
~	Table-7. List of Trees inside the Campus									
Sl. No	Plant name & Family	Tamil Name	No. of trees recorded in 2006	No. of trees recorded in 2016	Total No. of trees	Location				
62.	<i>Spathodea campanulata</i> <u>P.Beauv.</u> Companulaceae	jz;zPH fha;		2	2	Near Agathiyar Pond				
63.	<i>Syzygium jambolona</i> (L.)Alston Myrtaceae	ehty;		4	4					
64	<i>Syzygium cumini</i> (L.) Alston Myrtaceae	nfhl;il ehty;	57 -17** = 40	40	40	Playground, Assembly ground, Hostel backside, Goshala, Canteen, History dept. & Backside of the dept. of economics and commerece				
65.	Strychnos potatorum Linn. Loganiaceae	Njw;whd; nfhl;il		1	1	Botanical Garden				
66.	Strychnos nuxvomica Linn. Loganiaceae	fhQ;ruk;, vl;b		1	1	In front of the dept. of History				
67.	<i>Tamarindus indica</i> Linn. Caesalpineaceae	Gsp	4		4	Near back gate & Back side of the students' hostel				
68.	<i>Thespesia populnea</i> (L.) Solandex .Correa Malvaceae	G+tuR	2	2	4	Entrance and Biogas plant-field area				
69.	<i>Tectona grandis</i> L.F Verbenaceae	Njf;F	2	2	4	Play ground, Eves garden and Biogas plant-field area				
70.	<i>Terminalia catappa L.</i> Combretaceae	thJik		6	6	Eves garden and Biogas plant-field area				
71	<i>Terminalia arjuna</i> (Roxb.)Wight&Arn Combretaceae	kUJ	11		11	Near Back side of the students' hostel, New SF Block and In front of the indoor stadium				
	Total				77					

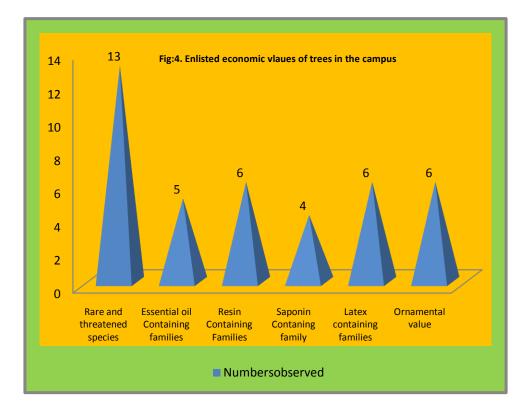
### Table-7. List of Trees inside the Campus

Sl. No	Plant name & Family	Tamil Name	No. of trees recorded in 2006	No. of trees recorded in 2016	Total No.of trees	Location
72.	Ziziphus xylopyrus Retz.(Wild) Rhamnaceae	nfhl;il ,ye;ij		2	2	Near stone bench , Near EB post & Back side of bus stop
73	Ziziphus trinervia Retz.(Wild) Rhamnaceae	rPik ,ye;ij		4	4	Back side of the Chemistry & Botany block
74.	Hydnocarpuspentandra(BuchHam.)Oken.Flacourtiaceae.	Serang kottai		2	2	Botanical Garden
	Annona reticulata Linn. Annonaceae	Ramphal		2	2	Botanical Garden
74.	Decalepis hamiltonii Wight & Arn. Apocyanaceae	Mahali- Kizhangu		1	1	Botanical Garden
75.	Gymnosperms					
76.	Auraucaria excelsa (salisb) Franco. Araucariaceae	el;rj;jpu igd;		1	1	Near Founders' Statue
77	<i>Cupressus sempervirens L.</i> Cupressaceae	,j;jhypa irg;u];		1	1	Eves Garden
78	Cycas circinalis.L. Cycadaceae	kjdfhkuh[h		4	4	Eves garden, In front of Administrative office and botanical garden
79	Zamia furfuracea L.(F) Zamiaceae	ml;il gid		1	1	Botanical Garden
	Total	1	1		16	
	Overall Total (Table: 1-8) 42 + 45 + 77 + 16 = 467)		467			

## Table-8. List of Trees inside the Campus







### Summary and conclusion

In the present record of tree flora were recorded at ten sampling areas of college campus, which covers 18.96 acres. The present work is an attempt to have an idea about field work collection and Taxonomic studies on the plants collected from the college campus. The voucher specimen were maintained at the department in the form of herbarium (*ID NO: SPCH, 01 to 551*). The following results were obtained as,

- Latex containing familes- 6: Apocyanaceae, Sapotaceae, Anacardiaceae, Euphorbiaceae, Moraceae and Meliaceae.
- Saponin Contaning family:2 Sapindaceae, Mimosaceae, Fabaceae, Casalpiniaceae
- Resin Containing Families: Caesalpiniaceae, Anacardiaceae, Sapindaceae, Meliaceae, Logainaceae, Araucariaceae.
- Essential oil Containing families: Myrtaceae, Oleaceae, Rutaceae, Meliaceae, Santalaceae.
- Rare and threatened species: *Strychnos nux-vomica, Strychnos potatorum, Decalepis hamiltonii*, *Hydnocarpus pentandra, Annona reticulata, Fiscus racemosa*, *Albizzia lebeck, Saraca indica, Stereospermum chelonoides, Kingiodendran pinnatum, Caesalpinia sappan, Ixora pavetta, Aglaia elaeagnoidea var. Courtallensis.*

### © Association of Academic Researchers and Faculties (AARF)

79 tree species belongs to 30 Angiosperms and 4 Gymnosperms' families. Overall number of trees were recorded as 467. The name of the thirtyfour families are follows: Meliaceae, Moraceae, Rutaceae, Fabaceae, Mimosaceae, Annonaceae, Arecaceae, Caesalpiniaceae, Lecythidiaceae, Myrtaceae, Ulmaceae, Malvaceae, Euphorbiaceae, Celastraceae, Clusiaceae, Rubiaceae, Lythraceae, Anacardiaceae, Magnoliaceae, Sapotaceae, Bignoniaceae, Muntanginaceae, Oleaceae, Apocyanaceae, Santalaceae, Sapindaceae, Combretaceae, Logainaceae, Verbinaceae, Rhamnaceae, Zamiaceae, Cycadaceae, Araucariaceae and Cupressaceae (Fig:2). Among these Fabaceae, Caesalpiniaceae and Myrtaceae are the dominant families which they have large in numbers when compared to other families.

### REFERENCES

- Ahmedullah, M. and M. P. Nayar. 1987. Endemic Plants of the Indian Region. Botanical Survey of India, Calcutta.
- Airy Shaw, H. K. 1952. A new genus and species of Burmanniaceae from South India, *Kew Bull.* 2: 277-279.
- Anil Kumar, N. 1993. Floristic Study of Pathanamthitta District, Kerala, Ph. D. Thesis.

Calicut University, Kerala, India.

- Antony, V. T. 1989. Systematic studies on the flora of Kottayam district, Kerala. Ph. D. Thesis, Bharathiar University, Coimbatore.
- Balakrishnan, M. and P. S. Easa. 1986. Habitat preference of larger mammals in the Parambikulam Wildlife Sanctuary, Kerala, India. Biol. Conserv. 37:191-200
- Beddome, R. H. 1869-1874. *The Flora Sylvatica for Southern India*. Gantz Brothers, Madras.
- Beddome, R.H. 1868-1874. *Icones Plantarum Indiae Orientalis*. Gantz Brothers, Madras.
- 8. Bentham, G. and J.D. Hooker. 1862-1883. *Genera Plantarum* L. Reeve & Co., London.
- 9. Bourdillon, T.F. 1908. The Forest Trees of Travancore. Govt. Press, Trivandrum.
- 10. Bridson, D. M and L. Forman. 1991. *The Herbarium Handbook*. Royal Botanic Gardens, Kew.

© Association of Academic Researchers and Faculties (AARF)

- Brummit, K.R., Santiago Castroviejo, Augustine C. Chikuni, Anthony E. Orchard, Gideon F. Smith and Warren L. Wagner, 2001. The species Plantarum Project, an international collaborative initiative for higher plant taxonomy. *Taxon* 50(4): 1217-1230.
- Champion, H.G. and S.K. Seth. 1968. A Revised Survey of the Forest Types of India. Govt. of India Press, Delhi.
- 13. Chandrasekharan, C. 1962. Forest Types of Kerala State. Ind. For. 88: 660-847.
- Cooke, T. 1901-1908. *The Flora of the Presidency of Bombay*, Vols. 1-3. Taylon & Francis, London.
- 15. Easa, P.S. 1998. Habitat Utilization of Animals in Parambikulam Wildlife Sanctuary with special reference to Gaur. KFRI Research Report No.155, Kerala Forest Research Institute, Peechi.
- Fischer, C.E.C. 1921. A survey of the flora of the Anamalai Hills in the Coimbatore District, Madras Presidency. *Rec. Bot. Surv. India* 9: 1-218.
- 17. Fyson, P. F. 1932. The flora of South Indian hill stations, Vols. 1 & 2, Madras.
- Gamble, J. S. 1915-1936. The flora of the Presidency of Madras. Adlard & Son Ltd., London.
- Gopalan, R. and A. N. Henry. 2000. Endemic Plants of India Camp for the strict endemics of Agasthyamala hills, SW Gats. Bishen Singh Mahendrapal Singh, Dehra Dun.
- 20. Henry, A. N., V. Chithra and N. P. Balakrishnan. 1989. Flora of Tamil Nadu, India. ser.

1, vol. 3. Botanical Survey of India, Coimbatore.

- Henry, A. N., G. R. Kumari and V. Chithra. 1987. *Flora of Tamil Nadu, India*. ser.
  1, vol. 2. Botanical Survey of India, Coimbatore.
- 22. Hooker, J.D. 1872-1897. The Flora of British India, Vol. I-VII. Reeve & Co., London.
- 23. Hutchinson, J. 1959. *The Families of Flowering Plants*. 2 Vols. Revise and 2nd ed.Oxford.
- 24. Hutchinson, J. 1964. *The Genera of Flowering Plants*. Vol. I, Oxford., J. 1967. *The Genera of Flowering Plants*. Vol. II, Oxford.
- 25. Hutchinson, J. 1973. The Families of Flowering Plants (ed. 3). Oxford.
- 26. IUCN [Hilton-Taylor, C.- compiler], 2000. The 2000 IUCN Red List of Threatened Species. IUCN,Gland, Switzerland and Cambridge, UK.

#### © Association of Academic Researchers and Faculties (AARF)

- 27. Manilal, K.S. 1988. Flora of Silent Valley: Tropical Rain Forest of India. Calicut University, Calicut.
- Manilal, K.S. and V. V. Sivarajan. 1982. *Flora of Calicut*. Bishen Sigh Mahendra Pal Sigh, Dehra Dun.
- Mohanan, C. N. 1984. Studies on the flora of Quilon District, Kerala Ph. D. Thesis, Madras University, Madras.
- Mohanan, M and A. N. Henry. 1994. Flora of Thiruvananthapuram District. Botanical Survey of India, Calcutta.
- Mohanan, N. 1995. Floristic Studies of Agasthyamala, Western Ghats. Ph. D. Thesis. Calicut University, Kerala, India.
- 32. Nair, N. C. and A. N. Henry. 1983. Flora of Tamil Nadu, India. ser. 1, vol. 1. Botanical Survey of India, Coimbatore.
- 33. Nayar, M.P. 1996. *Hot Spots of Endemic Plants of India, Nepal and Bhutan.* Tropical Botanic Garden and Research Institute, Trivandrum.
- 34. Nayar, M.P. 1997. Biodiversity challenges in Kerala and Science of conservation Biology. In: P. Pushpangadan and K. S. S. Nair (Eds.), *Biodiversity of Tropical Forests the Kerala Scenario*. STEC, Kerala, Trivandrum.
- Nayar, M.P. and A.R.K. Sastry. 1987, 1988, 1990. *Red Data Book of Indian Plants*, Vols. I-III. Botanical Survey of India, Calcutta.
- 36. Rama Rao, M. 1914. Flowering Plants of Travancore. Govt. Press. Trivandrum.
- Ramachandran, V. S. and V. J. Nair. 1988. *Flora of Cannanore District*. Botanical Survey of India, Calcutta.
- Ramamurthy, K. and J. Joseph. 1964. A new species of *Dicraea* from South India. *Bull. Bot. Surv. India* 6: 333-334.
- 39. Roxburgh, W. 1820-1824. Flora Indica Serampore, Vol. 1 & 2.
- 40. Sasidharan, N. 1997. Studies on the flora of Shenduruny Wildlife Sanctuary with emphasis on endemic species. *KFRI Research Report* No. 128. Kerala Forest Research Institute, Peechi.
- 41. Sasidharan, N. 1998. Studies on the flora of Periyar Tiger Reserve *KFRI Research Report* No. 150. Kerala Forest Research Institute, Peechi.
- 42. Sasidharan, N. 1999. Study on the Flora of Chinnar Wildlife Sanctuary. *KFRI Research Report* No. 167. Kerala Forest Research Institute, Peechi.
- 43. Sasidharan, N. and V.V. Sivarajan. 1996. Flowering Plants of Thrissur Forests.

#### © Association of Academic Researchers and Faculties (AARF)

A Monthly Double-Blind Peer Reviewed Refereed Open Access International e-Journal - Included in the International Serial Directories.

Scientific Publishers, Jodhpur.

- 44. Sasidharan, N., A.R.R. Menon and P.S. Easa. 2002. Management Strategies for Promoting Succession in Plantations of Parambikulam and Wayanad Wildlife Sanctuaries. KFRI Research Report No. 236. Kerala Forest Research Institute, Peechi.
- 45. Sebastian, K. M. and K. Ramamurthy. 1966. Studies on the flora of Parambikulam and Aliyar submergible areas. Bull. Bot. Surv. India. 8: 169-182.
- 46. Sharma, B. D. 1984. Flora of Karnataka. Botanical Survey of India, Howrah.
- 47. Sivarajan, V. V. and P. Mathew. 1997. *Flora of Nilambur*. Bishen Singh Mahendra Pal Singh, Dehra Dun.
- 48. Sreekumar, P.V. and V.J. Nair. 1991. *Flora of Kerala-Grasses*. Botanical Survey of India, Calcutta.
- 49. Subramaniyan, K. N. 1995. *Flora of Thenmala Division*. International Book Distributors, Dehra Dun.
- 50. Vajravelu, E. 1990. Flora of Palghat District. Botanic Survey of India, Calcutta.
- 51. Velayudhan, K.C., V.A. Amalraj, Z. Abraham, K. Joseph John, M. Abdul Nizar and K.I. Asha. 1999. Wild crop genetic resources of Silent Valley with special reference to in situ conservation of *Piper* species. In T.M. Manoharan, S.D. Biju, T.S. Nayar and P.S. Easa (Eds) Silent Valley: Whispers of Reason. Kerala Forest Department. Thiruvananthapuram.
- 52. Ved, D., Saha, D., Ravikumar, K. & Haridasan, K. 2015. Decalepis hamiltonii. The IUCN Red

List

of Threatened Species 2015: http://dx.doi.org/10.2305/IUCN.UK.2015.

- 53. Wight, R. 1838-1853. Icones Plantarum Indiae Orientalis. Madras.
- 54. Wight, R. 1840. Illustrations of Indian Botany. Glasgow.
- 55. Wight, R. and Walker-Arnott. 1834. *Prodromus Florae Peninsulae Indiae Orientalis*. London.

### Acknowledgements:

The authors wish to acknowledge to **The Secretary, The Principal** and **Head of the department of Botany** of Sri Parasakthi College for women (Autonomous), Courtallam -627 802 for their constant encouragement and guidance to complete this field work.

<sup>©</sup> Association of Academic Researchers and Faculties (AARF)