

Sacred Groves are the fragments of a once existed forests, preserved over a period of times due to religious restrictions and taboos. They are often described as the sanctum sanctorum of a wide array of flora and fauna. These virgin forest patches often neglected by the floristic explorers and are usually remained unexplored for ever. They act as a reservoirs of many rare and threatened flora and fauna and also serve as a biodiversity hotspots protecting valuable genetic diversity. The work treats 531 species 5 subspecies and 20 varieties of flowering plants belonging to 398 genera and 112 families in the sacred groves spread across Thiruvananthapuram district of Kerala state, India. Each species is provided with its correct name, important synonyms, a brief taxonomic description, phenology, geographical distribution, etc to facilitate the readers to understand the species correctly. The book is the first of its kind in Kerala and would provide a model methodology for the floristic exploration in the sacred groves of any regions. It will be of immense use to the botanists, agriculturists, foresters, phytochemists, nature conservationists, etc.



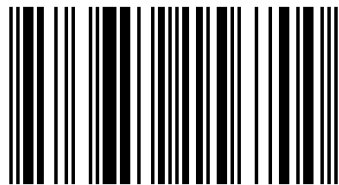
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Flora of the Sacred Groves of Thiruvananthapuram District

Kerla State, India

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THIRUVANANTHAPURAM DISTRICT, KERALA, INDIA**

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INTRODUCTION

The practice of nature conservation is considered a noble tradition in Indian culture. In fact, its roots lie in antiquity, even before the Vedic period. The ancient aboriginals or the nomadic ancient communities, who started clearing forests for agriculture either in the form of shifting cultivation or on a permanent basis, used to keep a patch of forest as the abode of the 'Forest God' for protecting their cultivation and settlements (Basha, 1996). Thus, the traditional custom of worshipping 'Forest Gods' came into existence and their abodes later came to be called 'Sacred Groves'. They remained protected from all vagaries of time and external intervention of urbanization due to religious restrictions and taboos (Gadgil & Vartak, 1976). They are often described as the 'sanctum sanctorum' of a wide array of flora and fauna including many novelties and important species of great conservation value. Apart from helping in the conservation of biodiversity, Sacred Groves also form the binding force of the people of an area (Unnikrishnan, 1995). They also represent the cost-effective community based models for the conservation of the culture as well as the forest and its biota (Nayar, 1997). In short, it can be considered as a typical example for the *in situ* conservation of our Indian heritage.

Sacred Groves or sacred landscapes of similar nature have been reported from around the globe. Several Afro-Asian countries like Kenya, Ethiopia, Egypt, Ghana, Nigeria, Madagascar, Tibet, China, South Korea, Myanmar, Vietnam, Indonesia, Nepal, Sri Lanka, India, and Astro-Pacific regions including Australia, Fiji, Hawaii, Micronesia, and the continents of North, South and Latin America also had long preserved sections of the natural environment as 'sacred groves' to Gods or Goddesses

(Hunghe & Chandran, 1998). In India, they are located in many part of the country- Meghalaya in the north east to Rajasthan in the west and the states along the Western Ghats viz. Maharastra, Karnataka, Kerala and Tamil Nadu. They are also reported from West Bengal, Bihar, Madhya Pradesh, Andhra Pradesh and Orissa. But so far, no such sites have been reported from Jammu and Kashmir, Gujarat, Punjab, Haryana and the Andaman Islands (Malhothra, 1998).

Sacred Groves are known under different names in different parts of India as *Dev* in Madhya Pradesh; *Deorais* or *Deovani* in Maharastra; *Sarnas* in Bihar; *Jaher* in West Bengal; *Lakyntang* in Meghalaya; *Orans* in Rajasthan; *Sidharavana* or *Devarkadu* or *Pavithravana* in Karnataka; *Sarpakavu* in Tamil Nadu; *Sarpakavu* or *Kavu* in Kerala etc. (Pushpangadan *et al.*, 1998). In Kerala, the sacred groves are common and usually associated with temples and ancestral homes or home temples of Namboodiri, Nair and Ezhava families. A few are also in the possession of some ancient Muslim families. The serpent (Naga) groves are more common to temples of Lord Sastha and Bhagavathi Groves and the former is mostly associated with the temples.

Sacred Groves are distinct and unique in their biological diversity. Many of them are the last refuge of many rare, endemic and threatened species. Apart from the biodiversity conservation nutrient and water resources management as well as control of the local climate, these ecological systems influenced the life and culture of the people of Kerala.

AREA OF STUDY

Etymology

The name Thiruvananthapuram is believed to have originated from *Thiru-ananthapuram*, which is presumed to be named after *Anantha*, the many headed serpent supporting Lord *Padmanabha*, the presiding deity of Sri Padmanabha Swami temple, and *puram* denotes the city. Trivandrum is a colonial term for Thiruvananthapuram (Sreedharamenon, 1962.).

Location and boundary

The study area, the Thiruvananthapuram district, located between $8^{\circ} 17' 50''$ - $8^{\circ} 53' 42''$ North latitude and $70^{\circ} 17' 00''$ - $76^{\circ} 40' 24''$ East longitude is the southern most district of Kerala state. It comprises an area of about 2191.92 sq. km. It is bordered on the east by Tirunelveli district, south by Kanya Kumari district of Tamil Nadu state, on the north by Kollam district and on the west it is washed by the Arabian sea.

Topography

On a physiographic basis, the district is divided into lowlands, midlands and highlands. The highlands consists of hills and hillocks, which forms the south Western Ghats. Agastyarkoodam, the second highest peak in the southern portion of Sahyadri Range, with an altitude of 1869 m, is situated in this region. The main vegetation types are: west coast tropical evergreen forest, west coast semi-evergreen forests, southern moist deciduous forest, the subtropical montane forest, southern hill-top evergreen forest, southern tropical moist deciduous riverine forest, wet bamboo brakes and *Myristica* swamps etc. The midlands consists of

undulating land, mostly under cultivation with different kinds of crop plants. The area is well drained by some west flowing rivers: the Attingal-Vamanapuram river, Karamana river and the Neyyar river. The lowlands comprises of flat undulating lands except a few hills at Veli and Varkala. The main backwaters are Veli, Vellayani, Kadinamkulam and Anjuthengu.

Geology, Rock and Soil

Geologically this district is divisible into three, viz. a narrow belt of Pleistocene or late tertiary, a narrow belt of laterite, and a high mountainous belt of crystalline rocks. The crystalline rocks are a mixture of letynites and charnokites, hornblende and gneisses, schists of sand stones and sandy clay.

Gemstones (quartz) and banded agate jasper (vaiduryam) are reported from Nedumangadu and Chirayinkeezhu taluks. Glass sand, graphite, ilmenite, lignite, mica etc. also occur in this district.

Soil is almost wholly loam, of varying depth, in different places. Laterite soil is also found and the laterite extending upto 160 m below the surface, occur extensively in Neyyattinkara and Nedumangadu taluks.. Clayey soil is also reported from the coastal zones, which is usually deficient in potash. Sandy coast consists of quartz sand, ilmenite and monazite.

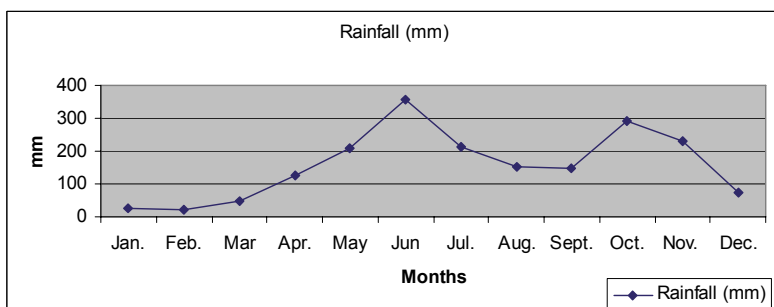
Climate

The climate of this district is moderately humid and the variation in temperature is marginal. The hottest months are March to May, when the

temperature is about 25⁰C to 36.1⁰C. The temperature drops to 13.7⁰C during January. It varies slightly with altitudes.

Rainfall

The district receives rain from both southwest and northeast monsoons. The former commences in June and continues upto September. After a small gap, northeast monsoon lashes out. The average annual rainfall is 2872 mm (based on 5 years average rainfall from 1997-2002, source: - meteorological data from TBGRI). It varies slightly, depending upon the topography at different places.



Humidity

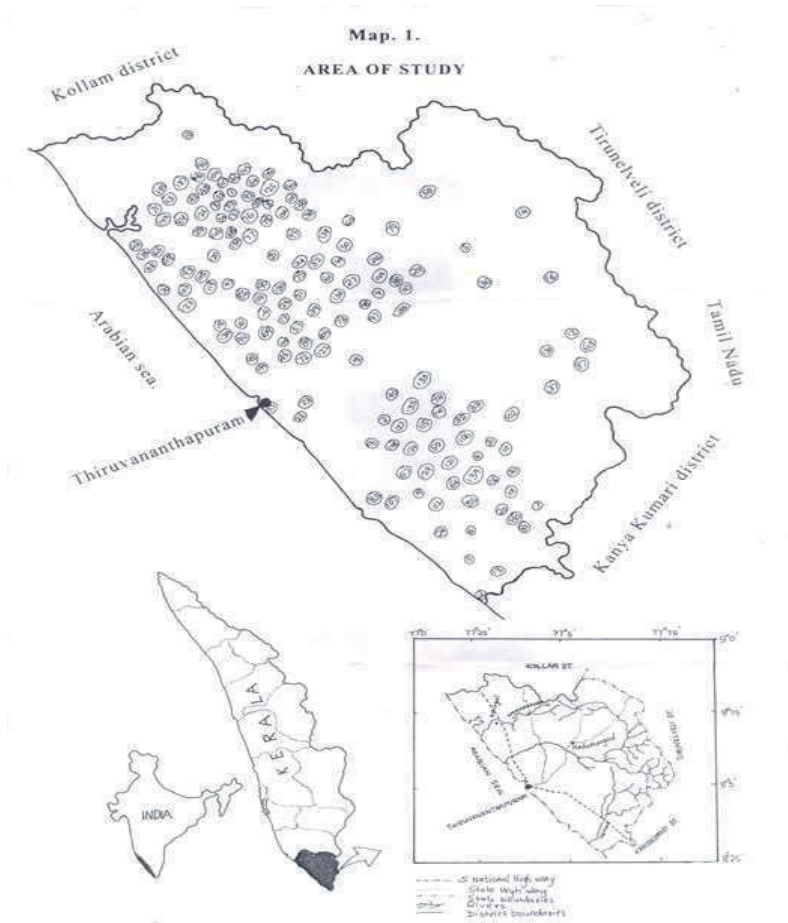
Relative humidity is always greater than 55% and it attains nearly 100% during the rainy season. Generally, from December to May it is comparatively less.

Wind

The average wind velocity in the district is 7-9 km/hr. The highest speed is reported from May to September (11-12 km/hr) and lowest (4-8

km/hr) in the month of December. The wind velocity is higher in subtropical montane forest (Kareem, 1978).

STUDY SITE (Map 1)



Sacred Groves in Thiruvananthapuram district are confined to the lower elevations, particularly associated with temples. A few are in the private possession and also in the home temples of ancient Nair and Ezhava families. A detailed floristic inventory was conducted in all

Sacred Groves in the district. There are altogether 155 sacred groves in the district. They are enumerated, along with their presiding or worshipped deities. The largest sacred grove in the district is the Indalayappan Kavu in Vencode with an area of 8800m². There are 9 Sacred Groves, with an area of 40 m² considered the smallest among the ones in the district.

List of Sacred Groves Studied

Sl. No.	Name of Sacred Grove	Area M²	Deities
1.	Alakkattu Kavu, Ilamba	80	Naga
2.	Ayanierathala Devi temple Kavu, Karimamoola	1400	Naga
3.	Ayiravilli temple Kavu, Ilamba	600	Naga
4.	Bhadrakali temple Kavu, Azhakikonam	200	Naga
5.	Bhagavathi Kavu, Karippur	600	Naga
6.	Bhagavathi Kavu, Pulimuttathu, Poovar	2025	Naga
7.	Chamundeswary Kavu, Neelakesi	400	* * *
8.	Chathambarakonathu Kavu, Chathambara	1200	Naga
9.	Chavar Kavu, Pulluvila, Nagaroor	400	* * *
10.	Chavaru Kavu, Njekkadu	800	Manthramurthy
11.	Chavaru Kavu, Vellarackal	1000	Madan, Marutha,

			Mayamayakki
12.	Cheenivila Kavu, Karingal, Kattakada	800	Naga
13.	Chenavila Kavu, Uchakkada	1200	Naga
14.	Cherukulathu Kavu, Aryanadu	200	Naga
15.	Cherukulathu Sree Mannadi Kavu, Changa	240	Bhagavathi
16.	Cherukulthoor Kavu, Vellanadu	80	Naga
17.	Cherunilakkodu Kavu, Pangappara	280	Naga
18.	Chittalloor Devi temple Kavu, Ambalamukku	1200	Naga
19.	Chokkan Kavu, Pachalloor	4000	Naga
20.	Erathu Kavu, Thokkadu, Panayara	400	Naga
21.	ErumaKavu, Chirayil keezhu	550	Naga
22.	Erumkulangara Bhagavathi temple Kavu, Manacaud	3200	Naga
23.	Erumkulangara Kavu, Manacaud	200	Naga
24.	Gurunagappan Kavu, Chirayinkeezhu	600	Naga
25.	Idivizhunna Kavu, Kidarakuzhi	600	Naga

26.	Ilamkulam Mahadevan Kavu, Sreekaryam	40	Naga
27.	Indalayappan Kavu, Venkode	8800	Naga
28.	Irinjayam Kavu, Irinjayam.	400	Naga
29.	Kallarathekkal Kavu, Ilamba	40	* * *
30.	Kamukarakkonam Kavu, Vattappara	400	Madan
31.	Kanjirathummoodu Kavu, Kulathoor	205	Naga
32.	Kannamkkottu Kavu	800	Naga, Nagayekshi
33.	Karathala Kavu (a), Balaramapuram	400	Naga
34.	Karathala Kavu (b), balaramapuram	330	Naga
35.	Karichayil Kavu, Velamkonam	200	Naga, Nagayekshi
36.	Karimbi Kavu	120	* * *
37.	Karimkada Kavu, Karimkada	400	Naga
38.	Karingal Thottikkara Nagaru Kavu, Kattakada	100	Naga
39.	Karingottu Kavu, Mevarkara	40	Naga
40.	Karumbichivila Nagaru Kavu, Pattom	200	* * *

41.	Kavil Sree Bhagavathy temple Kavu, Pangode	1200	Naga
42.	Kavinmoola Kavu	600	Naga
43.	KizhettiKavu, Pongummoodu	2600	Naga
44.	Kochalummodu Devi temple Kavu, Chathambara	1200	Naga
45.	Kochalummodu Devi Temple Kavu, Chathambara	1200	Naga
46.	Kulangara Kavu	660	Naga
47.	Kunnuvila devi temple Kavu, kesavadasapuram	320	Naga
48.	Madan Kavu (b), Meverkara	400	Naga
49.	Madan Kavu, Karimamoola	80	Madan, Naga
50.	Madan Kavu, Nedumangadu	40	Madan
51.	Madan Kavu, Veyiloorakonam, Kumarapuram	400	* * *
52.	Madanada Kavu, Kallara	400	Naga
53.	Madan temple Kavu, paruthippara	40	Naga
54.	Madanada Kavu, Chathambara	1200	Naga
55.	Madanada temple Kavu, Plakkodu, Chathambara	1200	* * *

56.	MadanKavu (a), Meverkara	1600	* * *
57.	Madanthamburan Kavu, Erattakulangara	800	Naga
58.	Madathil Kavu, Kazhakkoottam	800	Naga
59.	Madavilakathu Kavu, Chathambara	40	* * *
60.	Manchadimoodu Kavu	700	Naga
61.	Mannady Devi temple Kavu, Ambalamukku	400	Naga
62.	Manthuruthu Kavu, Chippanchira	400	Naga
63.	Maruthumangalam Madom Kavu, Muttappalam	1200	Naga
64.	Mathanathu Kavu, Manikkal	200	Madan
65.	Mechamkode Kavu, Vattappara	160	* * *
66.	Moopuram Kavu, Kollamkkodu	6000	Sastha, Naga
67.	Mulampallikonam Kavu, Kattakada	200	Naga
68.	Mulloor Kavu, Chowwara	600	Naga
69.	Murava Kavu, Kulathoor	200	Naga
70.	Myvalli Ela Kavu, Ayilam	200	Naga
71.	NagarKavu, Keezhathalakuzhi, Kavalakkulam	410	Naga

72.	Nagaramma kovil Kavu, Thiruppuram	1600	Naga
73.	NagarKavu, Plavilakom, Kulathoor	400	Naga
74.	Nagaru KavU, Karimamoola	200	Naga
75.	Nagaru KavU, Kazhakkoottam	40	Naga
76.	Nagaru KavU, Kottiyottu, Attingal	1200	Naga
77.	Nagaru KavU, PuliyoorKonam, Nalanchira	200	Naga
78.	Nagaru KavU, Nedumangadu	60	Naga
79.	Nagaru KavU, Ullorkonam	810	Naga
80.	Nagaru KavU, Velamkonathu	280	Naga
81.	Nagayekshi KavU, Ayilam	80	Nagayekshi, Naga
82.	Nagayekshi KavU, Thennoorkonam	400	Naga
83.	Nakramkodu KavU, Avanavamchery	520	Naga
84.	Nanniyode KavU, Nanniyode	4000	Naga
85.	Neelakesi KavU, Marayamuttam, Neyyattinkara	6075	Naga

86.	Nilami Nagar Kavu, Neyyattinkara	610	Naga
87.	Onathuthodi Kavu, Velamkonam	400	* * *
88.	Oorankudi Kavu, Chirayinkeezhu	800	Naga
89.	Ottavetil Kavu	400	Naga
90.	Padayarakam Kavu, Thiruvallam	1200	Naga
91.	Padinjatte Kavu, Thachottu	600	* * *
92.	Panayarathala Kavu, Perumpazhuthoor	410	Naga
93.	Pannikonam Kavu, Thruthippally	200	Naga
94.	Parambarathala Kavu, Karingal, Kattakada	200	Naga
95.	Parayaru Kavu, Nedumangadu	400	Naga
96.	Parottukonam Kavu, Parottukonam	400	Naga
97.	Pattupurak Kavu, Chittayikkode, Kallambalam	4000	Naga
98.	Pazhanchira Devi Temple Kavu, Pazhanchira	280	Naga
99.	PerinKavu, Mevarkara	40	Naga
100.	Pillathamburan Kavu, Veettukonam, Pothenkode	6000	Naga

101.	Pillaveedu Kavu, Kesavadasapuram	200	Naga
102.	Ponnumthuruthu Kavu	2200	Naga
103.	Poolanthara Kavu, Manikkal	160	Naga
104.	Poovampara Kavu, Mevarkara	80	Rakshassu
105.	Poovathoor Kavu, Poovathoor	600	Naga
106.	Puliyankkeezhu Kavu, Chiayinkeezhu	800	Naga
107.	Pulickal Bhagavathi Kavu, Pongummoodu	400	Naga
108.	Pulickal Kavu, Pongummoodu	120	Naga
109.	Pulivalam Mulelthottam Devi temple Kavu, Ilamba	400	Naga, Nagayekshi
110.	Pulivila Sree Dharma Sastha Kavu, Pachalloor	200	Naga
111.	Punnakkattu Edathara Nagaru Kavu, Chemmaruthy	400	Naga
112.	Punnattu Sri Thampuran Kavu , Kazhakkoottam	120	Naga
113.	Puthanvila Kavu, Ilamba	4000	Naga
114.	Siva Temple Kavu, Ambalathara	200	Naga
115.	Sree Aryankuzhi	80	Naga

	Bhagavathi temple Kavu, Kamaleswaram		
116.	Sree Bhadrakali Temple Kavu, Pachalloor	2000	Naga
117.	Sree Bhagavathi Temple Kavu, Nellyode	800	Naga
118.	Sree Bhoothathan KavU, Kudappanakunnu	80	Naga
119.	Sree Bhoothathan KavU, Vazhayila	200	Naga
120.	Sree Dharma sastha KavU, Amaravila	210	Naga
121.	Sree Dharma Sastha KavU, Pirayil	40	Naga
122.	Sree Dharma Sastha KavU, Thachttu	4000	Naga
123.	Sree Dhurga Devi Temple Kavu, Kaduvayilkonam, Thottakkadu	400	Naga, Nagayekshi
124.	Sree Eswari Bhoothathan Kavu, Kanjikuzhi	800	Naga
125.	Sree Indalayappan KavU, Karumam	1600	Naga
126.	Sree Thamburan KavU, Punamkulam	200	Naga
127.	Sree Thamburan KavU, Thampanoor	160	Naga
128.	Sri Bhagavathi KavU,	200	Naga

	Kariprathala		
129.	Sri Dharma Sastha Kavu, Karyavattom	200	Naga
130.	Sri Dharma Sastha Kavu, Thuruthippally	400	Sastha
131.	Sri Dhurga temple Kavu, Thoppil	400	Ykshiyamma, Madan
132.	Sri Kunnathu Mannadi Bhagavathi Temple Kavu, Mekkepattom	200	Naga
133.	Sri Naduvathan Kavu, Kazhakkoottam	40	Naga
134.	Sri Raja Rajeswary Devi temple Kavu, Thennoorkonam	600	Brhmarakshassu
135.	Thachoor Kavu, Avanavamchery	400	* * *
136.	Thachottu Madan Kavu, Thachottu	2000	Vanadhurga, Naga
137.	Thannimmoottil Kavu, Oruvathilkotta	800	Naga
138.	Thaivilakom Sri Nagaraja Kavu	400	Naga
139.	Thannikkattu Kavu, Kazhakkoottam	80	Naga
140.	Thekkekonam Dhurga Kavu, Chowwara	320	Naga
141.	Thengazhiyathu Kavu,	800	Naga

	Thottakkadu		
142.	Therikunnathu Nagaru Kavu, Karingal, Kattakada	4000	Naga
143.	Thiruchittoor Kavu, Nedumangadu	800	Naga
144.	Thoppilmele Sri Nagaru Kavu, Maruthoorakonam	200	Naga
145.	Thottakkadu Devi temple Kavu, Pongummoodu	1200	* * *
146.	ThripporittaKavu, Panayara	2000	Naga, Nagayekshi
147.	Udavan Kavu, Edavattom	800	Naga
148.	Vadakkathil Kavu, Avanavamchery	40	Naga
149.	Vadakkodu Kavu, Thottakkadu	2000	Naga
150.	Vadavila Sree Dharma Sastha Kavu, Pangode	600	Naga
151.	Valiya Kavu, Chittayikkodu	4000	Madan
152.	Valiya thoppil Kavu	800	Naga
153.	Valiyaveetil thekkedathu Kavu, Nedumangadu	400	Madan, Naga
154.	Venmaranelloor Kavu, Thirumannom	2000	Madan
155.	Viruthiyottu Kavu, Attingal	1000	Naga

*** No dieties found

People of the Area

According to the census report of 1991, the population of Thiruvananthapuram district was 2, 938, 706, 60% of the population dwell in rural areas. The female population dominates. Agriculture is the main occupation of the people. Rubber is the main source of agriculture wealth; however coconut, arecanut, tapioca, plantain etc., are other crops next in importance. Tea and cardamom are cultivated in the mountainous zones. In plains, paddy is the principal food grain cultivated, which serves as the prime food of the people.

Religion and caste

Of the total population of the district, 1,807,891 are Hindus, followed by 611052 Christians and 203652 Muslims. *Kanikkars* are the one and only tribal people in the district. They dwell, adjacent to forest areas. The three important castes among the Hindus are Nairs, Ezhavas and Brahmins. Roman Catholics and Orthodox Christians are the two important castes among Christians. Temples, Churches and Mosques are commonly found everywhere in the district. Temples and some old *tarvadás* of Hindu families, often have Sacred Groves in their premises.

Festival, Rituals and Worships

The festivals or *Ustav*, is a major part of Indian life. This brings delight and joy to all classes of people and compensates for life's hardship and inadequacies. Its rich colour, extravagance of expression, myriad cultures and creeds are all interpreted through the year long continuous process of festivals. In short, there is a celebration for every season and for every reason.

Onam is the national festival of Kerala. Irrespective of religion or caste, the people enjoy the festival. *Vishu*, *Deepavali*, *Makaravilakku* etc. are the important festivals of Hindus; *Pesaha* and *Christmas*, those of Christians, and *Ramzan* and *Bakrid*, those of Muslims. In addition, there are many other important rituals and annual festivals in all temples, locally known as 'national festival of the region'.

In many of the Sacred Groves, more than one deity is worshipped; the patron deity and two or more assistant deities. However, in certain groves, a stone slab installed at the base of some trees, considered as the abode of ancestral or natural spirits. It is the altar, on which worship or offerings including animal sacrifices are made. The serpent god (*naga*) is commonly worshipped. But, when the sacred groves are in tribal possession, *Vanadevatha*, the forest goddess or ancestral or natural spirits are worshipped. *Nurum Palum*, is an important offering, made to snake gods and to those of the ancestral or the natural spirits, animal sacrifice is offered. *Nurum Palum* is a mixture of rice powder, turmeric powder, cows milk, tender coconut water, *Kadali* banana and ghee. This ritual is performed on *Ayilyam* star of the local almanac.

The rituals and rites performed in the Sacred Groves vary with the region, caste and the patron deity. The local people observe strict code of conduct in protecting the sanctity of sacred groves. No materials are permitted to be taken out of the sacred groves, except in certain exceptional cases, and that too only after consulting the local priest. Violation of these rules are considered an unpardonable sin, that will invite the wrath of the presiding deity, by bringing epidemic diseases, famine and natural calamities to the people. Menstruating women keep away from the sacred area till their polluting period is over. No one is

allowed to enter in with slippers. All these faiths and beliefs guided the non-interference to sacred groves. This is an excellent example of India's rural folk *in situ* conservation of biodiversity.

VEGETATION

The vegetation of Sacred Groves in Thiruvananthapuram district is typical to that of low level evergreen forest having several tiers of trees, climbers, shrubs, epiphytes, parasites and undergrowth. The dominant trees in the first storey are: *Antiaris toxicaria*, *Anacolosia densiflora*, *Artocarpus hirsutus*, *Buchanania lanceolata*, *Calophyllum apetalum*, *Elaeocarpus serratus*, *Ficus spp.*, *Garcinia gummi-gutta*, *Hopea parviflora*, *Lagerstroemia lanceolata*, *Mesua ferrea*, *Ormosia travancorica*, *Poeciloneuron indicum*, *Pterospermum reticulatum*, *Syzygium gardneri*, *Terminalia bellirica*, *Vateria indica*, *Vitex altissima* etc.

The second storey consists of *Aglaia elaeagnoidea* var. *courtallensis*, *Alstonia scholaris*, *Aphanamixis polystachya*, *Aporusa lindleyana*, *Holigarna arnottiana*, *Hopea ponga*, *Knema attenuata*, *Myristica malabarica*, *Symplocos cochinchinensis*, *Xanthophyllum arnottianum* etc.

The third storey consists of plants like *Diospyros ferrea*, *Eugenia terpnophylla*, *Chassalia ophioxylodes*, *Isonandra lanceolata*, *Ixora spp.*, *Holarrhena pubescens*, *Lepisanthes erecta*, *Meiogyne pannosa*, *Murraya paniculata*, *Nothopegia colebrookeana*, *Psychotria spp.*, *Strobilanthes lupulinus* etc.

The most common climbers are *Anamirta cocculus*, *Artrabotrys hexapetalus*, *Calamus thwaitesii* var. *canaranus*, *Erycibe paniculata*, *Gnetum ula*, *Ipomoea mauritiana*, *Jasminum* spp., *Salacia chinensis*, *Spatholobus parviflorus*, *Strychnos colubrina*, *Tetracera akara*, *Tinospora sinensis*, *Tiliacora acuminata*, etc. The rare climbers are *Ampelocissus indica*, *Calamus travancoricus*, *Chonemorpha grandiflora*, *Celastrus paniculata*, *Morinda reticulata*, *Piper hapnium*, *Salacia beddomei*, *Spatholobus purpureus*, *Uvaria zeylanica* etc.

Epiphytes and parasites are poorly represented in the study area. The important epiphytes are *Acampe praemorsa*, *Bulbophyllum sterile*, *Dendrobium macrostachyum*, *Cymbidium aloifolium*, *Oberonia* spp. and *Vanda testacea*. The rare epiphytes are *Vanda spathulata* and *Vanda tessellata*. The common parasites in the study area are *Cassytha filiformis*, *Dendrophthoe falcata*, *Helicanthes elasticus*, *Macrosolen parasiticus* and *Viscum orientale*.

The ground flora consists of *Acrotrema arnottiana*, *Alysicarpus vaginalis*, *Andrographis atropurpurea*, *Biophytum veldkampii*, *Biophytum reinwardtii*, *Crotalaria* spp., *Cynodon dactylon*, *Cyperus* spp., *Desmodium* spp., *Elephantopus scaber*, *Gomphrena* spp., *Hedyotis* spp., *Ischaemum* spp., *Polygala arvensis*, *Phyllanthus* spp. and many other species of grasses and sedges.

In the marshy region are seen large formations of *Artanema longifolia*, *Hygrophila ringens*, *Impatiens diversifolia*, *Lagenandra ovata*, *Limnophila ciliata*, *Monochoria vaginalis*, *Nymphaea nouchali*, *Pandanus fascicularis*, *Torenia travancorica*, etc. Besides several species of ferns like *Adiantum latifolium*, *Adiantum lunulatum*, *Drynaria*

quercifolia, *Drymoglossum heterophyllum*, *Hemionitis arifolia*, *Lindsaea ensifolia*, *Pteris spp.* etc .are seen in this area.

REVIEW OF EARLIER WORK

Brandis & Grant (1868) made an inventory on the *Kans*, the sacred groves in the Sorab Taluka of Karnataka state. This was the first report on the sacred groves from India. Gammie (1903) started studies on the sacred groves in the form of an inventory, then it was extended to various parts of the country by many authors like Bor (1942), Raju (1964), Gadgil & Vartak (1973, 1975), Vartak (1983), Vartak & Gadgil (1981), Chandran & Gadgil (1993), Kalam (1996) etc. Vartak *et al.*, (1987) listed the important arborescent lianes of sacred Groves in Maharashtra and discussed the need to conserve those ecosystems. Medicinal plants of sacred groves were explored by Bhattacharya (1953), Jain (1971), Vartak *et al.* (1985, 1987), from different parts of India. Gadgil & Vartak (1976) mentioned about the ecological importance of these systems. Chandran *et al.* (1998) and discussed the management of watershed protection and biodiversity conservation of the sacred groves of the Western Ghats. Jha *et al.* (1998), Singh and Saxena (1998) etc. studied a few sacred groves in Rajasthan. Untawale *et al.* (1998) have enumerated the important sacred mangroves of India. Tiwari *et al.* (1998) discussed the socio-cultural and present status of *Lawkyntang* in Meghalaya.

Literature pertaining to sacred groves of Kerala is very scanty. Ward & Corner (1894) gave the first authentic report on the Sacred Groves of Kerala. In their census report, 15,000 sacred groves were reported from Travancore alone. Studies of Nair & Mohanan (1981), and

Mohanani & Nair (1981) resulted in the rediscovery of four rare species and discovery of a new species from the sacred groves of southern Kerala. Ramachandran & Mohanan (1990) published an inventory of the sacred groves of Kerala and reported some rare and endemic plants. Induchoodan & Balasubramanyam (1991) made a survey of endemism of plants of sacred groves by comparing the flora of 3 groves from Kerala. Sarojini & Sasidharan (1994) evaluated the optimum productivity of the system, giving special emphasis to common trees and lianas of the system. A detailed ecological study of Iringole Kavu, the largest one in Kerala was conducted by Induchoodan in 1988. Balasubramanyan & Induchoodan (1996) studied 761 sacred groves in Kerala, with its floristic wealth of over 722 species, belonging to 217 families and 474 genera. Santhosh (1999) conducted detailed floristic studies on the sacred groves across Nedumangadu taluka of Thiruvananthapuram district, with a floristic wealth of over 176 species. Rajendra Prasad (1995), Rajendra Prasad *et al.* (1996a, 1996b) and Krishnan (1998) have conducted detailed ecological studies on the sacred groves of Kerala. Their studies mainly focussed on the structural and functional aspects of these systems. Chandrasekhara & Sankar (1998) studied the vegetation structure and composition of sacred groves. Chand Basha (1998) recommended the strategies for conserving these systems. Pushpangadan *et al.* (1998) discussed the biological diversity and ecological functions of sacred groves. Unnikrishnan (1997) enumerated the fauna of the sacred groves of Northern Kerala. All the above studies are either of a general inventory type or special to some important sacred groves and no exclusive floristic inventory was attempted from these regions, especially the sacred groves, spread across Thiruvananthapuram district of Kerala. Hence the present study was undertaken.

METHODOLOGY

The present study is the result of over three and a half years of extensive field work (February 1999-September 2002) in the sacred Groves of Thiruvananthapuram district. As a preliminary survey to locate sacred groves, field trips were conducted mainly to the temple premises. Survey of India map gave an excellent clue as regards the location of each temple. Information was also gathered from temple authorities, local public etc., through interviews in respect of sacred groves, in private properties. These were marked and a location map was prepared. Further attempts were made to record other pertinent information like area of the grove, composition of vegetation, ownership, deity, folklore etc.

Floristic surveys were arranged in such a way so as to cover all major seasons. Field visits were made once in two months, to each and every sacred grove. These were repeated all the year round, till ample data on each species was gathered. For collection and preservation, the procedures given by Jain & Rao (1977) and van Balgooy (1987) were generally followed. Difficulties were often faced, during the collection of specimens, from tall trees or lianas, since no tree climbers were allowed to climb on trees in sacred groves. In such cases a long aluminium adjustable pole with hook is generally used to collect specimens. Plants in generative stages were collected for herbarium. Usually 4 specimens of each species were collected from each sacred grove. In case of dioecious species, both male and female specimens were collected separately. The parasitic plants were collected along with their respective host. Detailed field note and supplementary data such as the local uses, vernacular names etc. were also recorded.

The collected plant specimens were preserved by wet method (Fosberg & Sacht, 1965) using 70% methylated alcohol. It was felt that, this method was very effective, space and time saving. For drying and poisoning, the standard methods were followed. Large fruits were dried and poisoned separately to keep the shape unchanged. A set of herbarium specimens were deposited in the herbarium of the Department of Biology, K.J. Somaiya College of Science and Commerce, Vidhyavihar, Mumbai.

The specimens were critically studied and identified initially with the help of the *Flora of the Presidency of Madras* (Gamble & Fischer, 1915-1936); *Flora of British India* (Hooker, 1872-1897); *Flora of Thiruvananthapuram* (Mohanan & Henry, 1994) and available monographs and other relevant literature. For confirmation of identification, the specimens were matched with that of authenticated ones at BLAT, CALI, MH, TBGT etc. The critical specimens were identified by experts in respective families, notably from Royal Botanic Garden, Kew, England and Rijksherbarium, The Netherlands. Available literature on phytogeographical studies gave the world distribution of each species.

PLAN OF PRESENTATION OF DATA

For the general format of Flora, Radford *et al.* (1974) was followed. The families of Phanerogams are arranged according to the classification proposed by Bentham & Hooker (1862-1883) with necessary alteration made by Hutchinson (1926, 1934, 1959, 1973). An artificial diagnostic key is provided for the identification of families Keys for identification of genera, under each family and that for the species, under each genus are given in respective places. Treatment of genera within a family and species within a genus is followed in alphabetical

order. Abbreviated name of the authors and citation of the original publication of the family name and generic name are also given. The key for identification of infraspecific taxa are given after the description of the respective species. All the keys are strictly dichotomous and bracketed type.

The correct name of the species is given in bold Roman letters followed by author citation and full references of original publication. Basyonym, important synonyms and citations of the names in important floras of the region including references to *Flora of the Presidency of Madras* (Gamble & Fischer, 1915-1936); *Flora of British India* (Hooker, 1872-1897); *Flora of Thiruvananthapuram* (Mohanan & Henry, 1994) are also quoted. Citation of Icons of Robert Wight (1838-1853) and Beddome (1868-1874) are also given. Other important publications like *A Revised Handbook to the Flora of Ceylon* (Dassanayake & Fosberg, 1980 -2000) and *Flora Malesiana* (van Steenis, 1948-1958, 1972-1976) are also included, wherever necessary. All the relevant monographs and revision works are also cited. Nomenclatural citation was followed by a detailed species description in the following sequence: Habit; Branchlets. Leaves. Inflorescence. Flowers. Calyx. Corolla. Stamens. Ovary. Fruit and Seeds. Species description was followed by area of occurrence, specimen citation, flowering (Fl.) and fruiting (Fr.) period, the geographical distribution, the status of the species in relation to the conservation point of view and relevant notes etc. The following abbreviations were used in the thesis.

BLAT	:	Blatter Herbarium,Mumbai
CALI	:	Calicut University Herbarium
ca.	:	about

cm	:	centimeter
mm	:	millimeter
diam.	:	diameter
Dist.	:	Distribution
Fl.	:	Flowering
Fr.	:	Fruiting
MH	:	Madras Herbarium, Coimbatore
m	:	meter
SK	:	Santhosh Kumar
TBGT	:	Tropical Botanic Garden Herbarium, Trivandrum.
UCT	:	University college herbarium, Trivandrum.

FLORISTIC ANALYSIS

This study reveals that the sacred groves in Thiruvananthapuram district has 531 species, 5 subspecies and 20 varieties of flowering plants, belonging to 398 genera and 112 families. Of this, dicotyledons are represented by 449 species, 4 subspecies and 19 varieties in 91 families, and monocotyledons by 80 species, 1 subspecies and 1 variety in 19 families. Gymnosperms are represented by 2 species and 2 genera in 2 families. Fabaceae with 52 species in 34 genera is the largest family; Rubiaceae with 27 species and 14 genera comes next; Poaceae is the third largest with 26 species in 24 genera. Among the rest of the families, Euphorbiaceae has 22 species in 16 genera, Acanthaceae has 19 species in 14 genera, Asteraceae has 18 species in 17 genera, Apocynaceae has 16 species in 13 genera, Annonaceae has 15 species in 9 genera,

Malvaceae has 14 species in 7 genera, and Verbenaceae has 11 species in 8 genera. Among the 112 families, 28 dicot, 9 monocot and 2 Gymnosperm families are represented by a single species each.

Dominance of families with number of genera and species.

The following table shows the comparison of the 5 largest families, in the order of their species content with that of India (Hooker, 1904), Madras Presidency (Gamble & Fischer, 1936), Western Ghats (Subramanyam & Nayar, 1974) and Thiruvananthapuram district (Mohanan & Henry, 1994).

India (Hooker, 1904)	Madras Presidency (Gamble & Fischer, 1936)	Western Ghats (Subramanyan & Nayar, 1974)	Thiruvanantha puram district (Mohanan & Henry, 1994).	Sacred Groves of Thiruvanantha puram district (Present study)
Orchidaceae	Fabaceae	Poaceae	Fabaceae	Fabaceae
Fabaceae	Poaceae	Fabaceae	Poaceae	Rubiaceae
Poaceae	Rubiaceae	Acanthaceae	Orchidaceae	Poaceae
Rubiaceae	Acanthaceae	Orchidaceae	Rubiaceae	Euphorbiaceae
Euphorbiaceae	Euphorbiaceae	Asteraceae	Euphorbiaceae	Acanthaceae

Analysis of the first three major families

1.Fabaceae

Fabaceae, a predominant tropical family with diverse groups of plants, stands first in the order of dominance and is well represented by 34 genera and 52 species under 3 subfamilies. This family is well

represented in the Western Ghats, with 85 genera and about 400 species. Though Fabaceae is considered a herbaceous family, there are 14 trees and 6 lianas. Of this, the top canopy species are: *Albizzia chinensis*, *Bauhinia malabarica*, *Cassia fistula*, *Dalbergia latifolia*, *Ormosia travancorica*, *Pterocarpus marsupium*, *Xylia xylocarpa* etc. Some of the notable lianas are *Acacia caesia*, *Aganope thyrsiflora* var. *eualata*, *Entada rheedei*, *Dalbergia volubulis*, *Spatholobus parviflorus*, *S. purpureus* etc. Two of the larger genera are *Desmodium* (8 species) and *Cassia* (5 species). *Ormosia travancorica*, *Kunstleria keralensis* and *Spatholobus purpureus* are endemic to Peninsular India.

2. Rubiaceae

Rubiaceae stands second in the order of dominance with 27 species and 14 genera. This family holds predominantly herbs or shrubs, but are also represented by 2 species of trees viz. *Hymenodictyon orixense* and *Ixora brachiata*. The largest genera are *Hedyotis* (6 species), *Ixora* (5 species), *Morinda* (3 species) and *Spermacocce* (3 species). There are 6 endemic species of Peninsular India namely: *Hedyotis stylosa*, *Ixora malabarica*, *Morinda reticulata*, *Mussaenda belilla*, *Psychotria flavida* and *P. nudiflora*. Of this, *Morinda reticulata* is an endangered species of Southern Western Ghats, known by very few old collections.

3. Poaceae

Poaceae, the third largest family of the study area stands with 26 species in 24 genera. Among them, *Digitaria*, *Eragrostis*, *Ischaemum* and *Paspalum* are represented by two species each and 21 genera are represented by a single species each. *Ischaemum fischeri* is a recently

described species also reported from the study area. Since many parts of the study area are near the cultivated lands they are prone to severe weed eradication and hence are poorly represented.

Endemic Plants

Ahmedulla & Nayar (1986) listed 1932 taxa (1788 species and 144 infraspecific taxa), out of the estimated 6500 species as endemic to the peninsular Indian region. According to them, Rubiaceae dominates in peninsular India with, 46% endemic species, followed by Acanthaceae (41%), Balsaminaceae (40%), Asclepiadaceae (29.6%), Lamiaceae (18%) and Leguminosae (10.3%). Of the 58 endemic genera of the Western Ghats, three genera viz., *Blepharistemma*, *Helicanthes* and *Poeciloneuron* are found in the study area. Among the 531 species, 5 subspecies and 20 varieties, 70 species and 5 varieties are endemic to peninsular India, particularly to the Western Ghats. Rubiaceae has maximum number of endemics— 6 species; whereas Annonaceae, Anacardiaceae and Melastomataceae have 5 each. Clusiaceae, Dipterocarpaceae, Euphorbiaceae, Fabaceae and Lauraceae have 3 endemic species each.

Rare and Threatened Plants

The rare and threatened plants of South India are well documented by Joseph (1977), Henry *et al.* (1979), Jain and Sastry (1984), Ahmedulla & Nayar (1986), Nayar & Sastry (1987, 1988, 1990) and Anonymous (1998). Nayar (1997) listed out 1272 endemic taxa of Kerala and 460 of them were placed under the threat category. During these study, 30 species have been categorized as rare and threatened. They are: *Ampelocissus indica*, *Anacolosia densiflora*, *Begonia trichocarpa*, *Blepharistemma serratum*, *Buchanania barberi*, *Calophyllum calaba*,

Celastrus paniculata, *Chonemorpha grandiflora*, *Diospyros candolleana*, *Garcinia gummi-gutta*, *Hydnocarpus pentandra*, *Justicia beddomei*, *Kaempferia galanga*, *K. rotunda*, *Mesua ferrea*, *Morinda reticulata*, *Myristica malabarica*, *Ormosia travancorica*, *Phaeanthus malabarica*, *Premna glaberrima*, *Pterospermum reticulatum*, *Pterospermum rubiginosum*, *Piper hapnium*, *Rauvolfia micrantha*, *R. serpentina*, *Sageraea dalzelli*, *Salacia beddomei*, *Semecarpus auriculata*, *Sonerila sahyadrica* and *Symplocos cochinchinensis* ssp. *laurina* var. *laurina*..

Wild Relatives of Crop Plants

Arora and Roshini (1986) have given a detailed account of wild relatives of crop plants in India. They categorized the wild relatives of crop plants into cereals, pulses, fruit crops, vegetables, oil seeds, fibre crops, spices and condiments. From the study area, the following wild relatives of cultivated crop plants have been collected. They are *Abelmoschus moschatus*, *Alpinia galanga*, *A. calcarata*, *Amaranthus viridis*, *A. spinosus*, *Artocarpus hirsutus*, *Carissa spinarum*, *Chrysophyllum roxburghii*, *Cinnamomum malabattrum*, *Corchorus aestivus*, *Crotalaria nana*, *C. laburnifolia*, *C. retusa*, *Cajanus scarabaeoides*, *Curcuma ecalcarata*, *Dioscorea oppositifolia*, *Dioscorea wallichii*, *Dioscorea pentaphylla*, *Garcinia gummi-gutta*, *Jasminum rottlerianum*, *Jasminum azoricum* var. *travancoricum*, *Myristica malabarica*, *Murraya paniculata*, *Olea dioica*, *Oryza meyeriana* ssp. *granulata*, *Paspalum scrobiculatum*, *P. vaginatum*, *Persea macrantha*, *Piper hapnium*, *Sesamum orientale*, *Solanum americanum*, *S. anguivii*, *S. torvum*, *Syzygium gardneri*, *Syzygium zeylanicum*, *S. lanceolatum*, *Zingiber zerumbet*, *Ziziphus oenoplia*, *Z. rugosa* etc.

Medicinal plants

Habitat destruction and over-exploitation are the two main causes of medicinal plant rarity. Still, huge quantities of medicinal plants are being collected from the natural habitats and their population number is depleting day by day. Sacred Groves act as an abode of such species due to religious restriction and taboos. They act as a dispensary of medicinal plants to the rural people. During the present study, 220 species of medicinal plants (Appendix I) were collected from the study area. This included nearly 40% of the flora. They included the following rare and threatened species: *Ampelocissus indica*, *Calophyllum calaba*, *Celastrus paniculata*, *Chonemorpha grandiflora*, *Garcinia gummi-gutta*, *Hydnocarpus pentandra*, *Justicia beddomei*, *Kaempferia galanga*, *K. rotunda*, *Mesua ferrea*, *Morinda reticulata*, *Myristica malabarica*, *Pterospermum rubiginosum*, *Piper hapnium*, *Rauvolfia micrantha*, *R. serpentina*, *Salacia beddomei*, *Symplocos cochinchinensis* ssp. *laurina* var. *laurina*. etc.

Wild Ornamental Plants

Wild ornamental plants are one of the major attractions of a flora. Any new introduction of such species to the present day garden will be an asset to the world of horticulture, and the same can be utilized for future plant breeding programmes. During the present study myriads of such species were noticed. Some of the important species are *Acrotrema arnottianum*, *Ceropegia candelabrum*, *Impatiens diversifolia*, *Melastoma malabathricum*, *Memecylon umbellatum*, *M. wightianum*, *Mussaenda belilla*, *Osbeckia aspera*, *O. virgata*, *Sonerila sahyadrica*, etc.

FLORISTIC NOVELTIES

The present study showed that the sacred grove flora of Thiruvananthapuram district is rich, diverse and with a good percentage of endemism. Moreover, this study also revealed that the sacred groves in this area are under-explored or even unexplored as evidenced by the following findings.

New species

The present study resulted in the establishment of two new species viz. *Biophytum veldkampii* Shanavas, Santhosh, Binu et Pushpangadan, and *Grewia palodensis* Santhosh et al. *Biophytum veldkampii* belongs to the family Oxalidaceae. This species is closely allied to *B. reinwardtii* and *B. longibracteatum*, but clearly distinguished from the former by the eglandular inflorescence and calyx, distinctly shorter pedicel and capsule compared to calyx; and from the latter by the shorter bracts.

Grewia palodensis (Tiliaceae) is a liana, that grows over and entangling trees. It is allied to *G. umbellifera*, but can be clearly distinguished by the many flowered axillary and terminal cymes, distinctly 4-grooved andro-gynophore and the bi-partite fruits.

New variety

This study also resulted in the discovery of a new variety of *Biophytum reinwardtii* viz. *B. reinwardtii* var. *keralanum*. It differs from the typical variety by the much shorter calyx and corolla and the calyx distinctly shorter than the capsule. This taxon has the smallest flower among the *Biophytum* species so far reported from India.

New Distributional Reports

This study resulted in locating of three species new to Indian flora, one new record for South India and 8 species, new to the Flora of Kerala. Discovery of 107 species from the sacred groves are additions to the Flora of Thiruvananthapuram. These include 20 rare and threatened species.

New record for India

Two Ceylonese elements viz. *Eugenia terpnophylla* Thw. and *Memecylon sylvaticum* Thw, and *Sida unicornis* Marais, a native of Mascarene Islands were reported from the study area.

Eugenia terpnophylla is a shrubby species, belonging to the family, Myrtaceae. The fruits of this species are edible. This is a common understorey element in the sacred groves.

Memecylon sylvaticum belongs to the family Melastomataceae. This beautiful shrubby species is usually seen in rocky cliffs, in disturbed sacred groves.

Sida unicornis is closely allied to *S. rhombifolia* and often overlooked as the same species. This is a unique species, having single awned, indehiscent mericarp.

New record for South India

Eclipta prostrata (L.) L. var. *dixitii* has been described by Kumar & Khanna (1999) from Madhya Pradesh. The finding of this taxa from Kerala forms a new distributional record for South India.

New Records for Kerala

The discovery of *Aglaia elaeagnoidea* (Juss.) Benth. var. *courtallensis* (Gamble) KKN Nair (Meliaceae), *Biophytum umbraculum* Schweinf. (Oxalidaceae), *Cadaba trifoliata* (Roxb.) Wight & Arn. (Capparaceae), *Drypetes sepiaria* (Wight & Arn.) Pax Hoffum (Euphorbiaceae), *Justicia betonica* var. *ramosissima* (Nees) Cl. (Acanthaceae), *Phyllanthus rotundifolius* Kelin ex Willd. (Euphorbiaceae), *Pyrenacantha volubilis* Hook.f. (Icacinaceae) and *Psilanthus wightianus* (Wt. & Arn.) Leroy (Rubiaceae) formed new distributional record to Kerala.

New addition to the Flora of Thiruvananthapuram

Sacred Grove flora of Thiruvananthapuram district resulted in the collection of 107 species of angiosperms, which were not previously recorded from the district (Appendix II). This included 20 rare and threatened species of the Western Ghats, wild edible plants like *Flacourtia montana*, *Salacia beddomei*, *Spondias pinnata*, *Eugenia terpnophylla* and *Schleichera oleosa*, and 52 species of medicinal plants.

Rediscovery

Buchanania barberi has been rediscovered from the study area, after a lapse of over 97 years of its first collection. . This endangered species was originally collected by C.A. Barber in 1904 from the Nadarai near Varkala and not collected again. Still a few individuals adorn the Nanniyode Kavu. As part of the species recovery programme, a few seedlings were raised and re-introduced in its original habitat.

Threats to the Flora

Both natural as well as man made threats brought about the depletion or even the complete wiping out of the sacred grove system. Natural threats including natural calamities like heavy wind and storm caused tree falls and disturbance to the nearby vegetation, or even entire destruction of the grove. In some sacred groves, land sliding is the main disaster. Man-made disturbances are mainly by shifting of presiding deities, conversion of land for agriculture, construction or expansion of temples, grazing, crisscrossing of paths, collection of fuel wood and timber wood, poaching of birds and animals and ruthless collection of medicinal and other economically important species etc. Transaction of the land area to others who may not have any faith in the religious practices is another threat to the existence of sacred grove. In such cases, the new owner may clear the grove, resulting in the demolition of the entire system forever.

Proposed Measures for Conservation

Sacred Groves are relics of a past glory that are passed on to us through generations. The religious sentiments and the associated sanctity that played a vital role in the preservation of sacred groves have become a thing of the past. Therefore, people should be made aware of the value of sacred groves and functions which they perform for the society, to thwart any further attempts to reduce the extent of Sacred Groves. This is the most difficult but important task to be accomplished. Other suggestions to save Sacred Groves from total wipe out are:

1. A total ban on illicit felling of trees and poaching of birds and animals from sacred groves should be imposed.

2. Efforts to protect species in Botanic Gardens, Seed Banks, Cryo-Banks etc should be encouraged.
3. Government should pay adequate maintenance grant to those who presently look after the grove, provide financial assistance to raise nursery of rare, endangered, threatened and endemic species, which may further be used to revitalize or boost up the degraded sacred groves of the region.

SUMMARY

A detailed floristic study of the sacred groves of Thiruvananthapuram district was carried out with an intention to have a thorough knowledge of the diversity of phanerogamous plants, their correct identity, locating wild relatives of crop plants and utilization of genetic resources, endemism, present status of species, extent of threats to various species etc.

The district consists of the mountainous zone, mid land zone and the coastal zone and has a tropical humid climate. The south west monsoon and north east monsoons provide fairly good rain.

Intensive and extensive collection of plants has been made, for a period of about 3½ years. A total of about 2000 specimens, belonging to 531 species, 5 subspecies and 20 varieties in 398 genera belonging to 112 families have been studied. The plants were classified according to Bentham and Hooker's system, with necessary alteration proposed by Hutchinson (1926, 1934, 1959 & 1973). Keys have been provided for families, genera and species and are strictly dichotomous and bracketed. Each species was provided with a detailed nomenclatural citation,

followed by a diagnostic and detailed species description, rarity, occurrence, specimen citation, phenology, distribution and relevant notes, wherever necessary. Local names if available, were given in italics, at the end of the nomenclatural citation.

During the course of the study, three new species and a new variety have been discovered as new to science. The study reported three species new to Indian Flora, one species new to South India and 7 taxa new to Kerala flora. The present collection of 107 species has formed addition to the Flora of Thiruvananthapuram district. Rediscovery of *Buchanania barberi* thus far believed extinct, is another highlight of the study.

An analysis of the flora of the sacred groves of Thiruvananthapuram district showed that 72 species and 5 varieties of endemics are present, which formed 14% of the total species. It was revealed that 30 species are rare and threatened, most of which are local endemics. A total of 40 wild relatives of crop plants and 220 species of medicinal plants have been collected.

The present study indicates that the flora of the sacred groves in Thiruvananthapuram district is affluent, diverse and with a substantial proportion of endemism. The discovery of 3 taxa new to science, 3 new records to India and many state records, 107 new additions to the flora of Thiruvananthapuram etc. shows that the sacred groves in the study area are un-explored or under-explored, during the past years. At the same time, the study has ascertained the fact that the sacred groves are the vestiges of a once-gregarious evergreen forest, as indicated by the supremacy of evergreen elements. It also revealed the serious threats that the flora is facing and proposed the immediate need for implementing

conservation measures, to maintain the species diversity which is our national heritage, and to save the valuable genetic resources for judicious and sustainable utilization in the future.

SYSTEMATIC TREATMENT

Artificial diagnostic key to the families of Phanerogams

1. Ovules naked (Gymnospermae).....142
1. Ovules enclosed in carpels (Angiospermae).....2
2. Leaf venation reticulate; flowers usually 4-5 merous;
cotyledons mostly 2 (Dicotyledons).....3
2. Leaf venation parallel; flowers usually 3-merous;
cotyledons mostly one (Monocotyledons).....123
3. Perianth uniseriate or absent.....100
3. Perianth biseriate or multiseriate.....4
4. Plants aquatic.....Nymphaeaceae
4. Plants terrestrial.....5
5. Inner perianth lobes (Petals) free.....6
5. Inner perianth lobes (Petals) united.....71
6. Thalamus elongate.....Magnoliaceae
6. Thalamus not elongate.....7
7. Ovary superior.....8
7. Ovary inferior or half inferior.....62
8. Carpels free.....9
8. Carpels united.....12
9. Flowers unisexual.....Menispermaceae
9. Flowers bisexual.....10
10. Flowers 3-merous.....Annonaceae
10. Flowers 4-5 merous.....11
11. Ovule solitary in each carpel.....Ranunculaceae
11. Ovules 2-many in each carpel.....Dilleniaceae
12. Stamens 15 or less.....13

12. Stamens more than 15.....	51
13. Flowers zygomorphic.....	14
13. Flowers actinomorphic.....	20
14. Ovary 1-locular.....	15
14. Ovary 2-many locular.....	17
15. Fruit a drupe.....	Xanthophyllaceae
15. Fruit a legume , pod or a capsule.....	16
16. Fruit a legume or pod.....	Fabaceae (p.p)
16. Fruit a capsule.....	Polygalaceae
17. Placentation parietal.....	Violaceae
17. Placentation axile.....	18
18. Fruit elastically opening.....	Balsaminaceae
18. Fruit otherwise.....	19
19. Leaves pinnate.....	Sapindaceae (<i>Cardiospermum</i>)
19. Leaves simple.....	Sterculiaceae (<i>Helicteres</i>)
20. Placentation parietal.....	21
20. Placentation otherwise.....	25
21. Gynandrophore present.....	22
21. Gynandrophore absent.....	24
22. Plants with tendrils; corolline corona present.....	Passifloraceae (p.p)
22. Plants without tendrils; corolline corona absent.....	23
23. Herbs; fruit a capsule.....	Cleomaceae
23. Shrubs or stragglers; fruit a berry.....	Capparaceae
24. Anthers horse shoe shaped; capsule echinate.....	Bixaceae
24. Anthers not horse shoe shaped; capsule not echinate.....	Flacourtiaceae
25. Ovary 1-celled.....	26
25. Ovary 2-many celled.....	33

26. Ovules free- central.....	27
26. Ovules not free-central.....	28
27. Sepals 2.....	Portulacaceae
27. Sepals 5.....	Caryophyllaceae
28. Ovary seated on the disc.....	29
28. Ovary not seated on the disc.....	31
29. Flowers polygamous; disc intra-staminal.....	Anacardiaceae (p.p)
29. Flowers bisexual; disc extra-staminal.....	30
30. Stamens opposite to petals.....	Olacaceae
30. Stamens alternate to petals.....	Icacinaceae
31. Branches with hooks.....	Ancistrocladaceae
31. Branches without hooks.....	32
32. Flowers with one fertile and a few sterile carpels.....	Connaraceae
32. Flowers with one carpel only.....	Fabaceae (p.p)
33. Flowers perigynous.....	34
33. Flowers hypogynous.....	35
34. Calyx lobes imbricate; anthers attenuate at apex.....	Melastomataceae (p.p)
34. Calyx lobes valvate; anthers orbicular to ovoid.....	Lythraceae
35. Staminal filaments united into a staminal tube.....	36
35. Staminal filaments free or basally connate.....	39
36. Plants mucilaginous.....	Sterculiaceae (p.p)
36. Plants not mucilaginous.....	37
37. Base of the petiole sheathing; lateral nerves of lamina opposite.....	Leeaceae
37. Base of the petiole is not sheathing; lateral nerves of the lamina not opposite.....	38
38. Filaments free.....	Simaroubaceae
38. Filaments connate into a tube.....	Meliaceae

39. Flowers unisexual; ovary 3-celled.....	Euphorbiaceae (p.p)
39. Flowers bisexual or polygamous; ovary 1-5 celled.....	40
40. Extra staminal disc present below the ovary.....	41
40. Disc absent or if present are intra-staminal.....	42
41. Carpels 3-fertile.....	Sapindaceae (p.p)
41. Carpels only one fertile.....	Anacardiaceae (p.p)
42. Stamens opposite to petals.....	43
42. Stamens alternate to petals.....	46
43. Tendrillate climbers.....	44
43. Non tendrillate plants.....	45
44. Fruit 3-winged, capsule.....	Rhamnaceae (<i>Goania</i>)
44. Fruit not winged either a berry or a drupe.....	Vitaceae
45. Sepals valvate.....	Rhamnaceae (p.p)
45. Sepals imbricate.....	Dichapetalaceae
46. Stamens 3; filaments curved.....	Hippocrateaceae
46. Stamens 5-10; filaments erect.....	47
47. Leaves gland dotted.....	Rutaceae
47. Leaves not gland dotted.....	48
48. Leaves compound, pinnate or palmate.....	49
48. Leaves simple.....	50
49. Trees.....	Averrhoaceae
49. Herbs.....	Oxalidaceae
50. Disc very prominent; stamens erect on the disc.....	Celastraceae
50. Disc not prominent; stamens free from the disc.....	Linaceae
51. Flowers unisexual.....	52
51. Flowers bisexual or polygamous.....	53
52. Ovary 3-celled; style well developed.....	Euphorbiaceae (p.p)
52. Ovary 4-10 celled; style short or absent.....	Clusiaceae (<i>Garcinia</i>)
53. Leaves alternate.....	54

53. Leaves opposite.....	Clusiaceae
54. Placentation parietal.....	55
54. Placentation axile or basal.....	56
55. Gynandrophore present.....	Capparaceae (p.p)
55. Gynandrophore absent.....	Flacourtiaceae (p.p)
56. Hypanthium cup present.....	Rosaceae
56. Hypanthium cup absent.....	57
57. Two sepals enlarged in fruits.....	Dipterocarpaceae (p.p)
57. Sepals all equal in fruits.....	58
58. Staminal filaments united to form a long staminal tube.....	59
58. Stamens free or if united not produced into a long staminal tube.....	60
59. Sepals free; anthers bi-locular.....	Sterculiaceae (p.p)
59. Sepals united; anthers unilocular.....	Malvaceae
60. Sepals united; stamens connate at the base.....	Bombacaceae
60. Sepals and stamens free.....	61
61. Petals fimbriate or laciniate.....	Elaeocarpaceae
61. Petals entire.....	Tiliaceae
62. Stamens more than twice the number of sepals.....	63
62. Stamens equal to or twice the number of sepals.....	65
63. Leaves opposite, gland dotted.....	Myrtaceae
63. Leaves alternate, not gland dotted.....	64
64. Flowers unisexual.....	Begoniaceae
64. Flowers bisexual.....	Barringtoniaceae
65. Tendrillate climbers.....	Cucurbitaceae
65. Non tendrillate climbers.....	66
66. Fruit a cremocarp.....	Apiaceae
66. Fruit otherwise.....	67
67. Parasitic plants with haustoria.....	Loranthaceae

67. Non parasitic plants, haustoria absent.....	68
68. Flowers polygamous.....	Combretaceae (p.p)
68. Flowers all bisexual.....	69
69. Leaves opposite.....	70
69. Leaves alternate.....	Alangiaceae
70. Sepals smaller than petals.....	Melastomataceae (p.p)
70. Sepals larger than petals.....	Rhizophoraceae
71. Flowers epigynous.....	72
71. Flowers hypogynous.....	76
72. Plants parasitic.....	Viscaceae
72. Plants non parasitic.....	73
73. Stamens more than twice the number of calyx lobe.....	Symplocaceae
73. Stamens 5 or equal to the number of calyx lobe.....	74
74. Ovary 1-celled sepals modified into small spines of pappus.....	Asteraceae
74. Ovary 2-many celled; sepals not as above.....	75
75. Leaves alternate; flowers zygomorphic.....	Lobeliaceae
75. Leaves opposite; flowers actinomorphic.....	Rubiaceae
76. Flowers zygomorphic.....	77
76. Flowers actinomorphic.....	85
77. Leaves alternate (except <i>Sesamum</i>).....	78
77. Leaves opposite.....	79
78. Base of petiole with 2 sessile glands.....	Pedaliceae
78. Base of petiole eglandular.....	Scrophulariaceae (p.p)
79. Leaves pinnately compound.....	Bignoniaceae
79. Leaves simple or rarely palmately 3-foliolate.....	80
80. Ovary with 1-ovule in each locule.....	81
80. Ovary with 2-many ovules in each locule.....	83

81. Flower clusters surrounded by radiate involuclal bracts.....	Verbenaceae (p.p)
81. Flower clusters not surrounded by involuclal bracts.....	82
82. Style gynobasic; fruit of 4-nutlets.....	Lamiaceae
82. Style not gynobasic; fruit not as above.....	Verbenaceae (p.p)
83. Anthers usually jointed in pairs; placenta thick...	Scrophulariaceae
83. Anthers free; placenta thin.....	84
84. Seeds supported on retinacula.....	Acanthaceae
84. Seeds not supported on retinacula.....	Thunbergiaceae
85. Carpels free or basally united.....	86
85. Carpels united throughout.....	88
86. Style 2; staminal corona present.....	87
86. Style 1; staminal corona absent.....	Apocynaceae
87. Staminal filaments free at apex.....	Periplocaceae
87. Staminal filaments connate at apex.....	Asclepiadaceae
88. Leaves alternate.....	89
88. Leaves opposite.....	96
89. Placentation parietal.....	Passifloraceae (<i>Adenia</i>)
89. Placentation not parietal.....	90
90. Flowers unisexual.....	Ebenaceae
90. Flowers bisexual or polygamous.....	91
91. Ovary 1-celled.....	92
91. Ovary 2-5 celled.....	93
92. Disc below the ovary 4-lobed.....	Opiliaceae
92. Disc absent.....	Plumbaginaceae
93. Stamens double the number of sepals or more.....	Sapotaceae
93. Stamens equal to the number of sepals.....	94
94. Locule of ovary 1-ovuled.....	95
94. Locule of ovary many ovuled.....	Solanaceae

95. Stamens equal.....	Boraginaceae
95. Stamens unequal.....	Convolvulaceae
96. Stamens 2.....	Oleaceae
96. Stamens 4 or 5.....	97
97. Ovule solitary in each cell of the ovary.....	98
97. Ovules few –many in each cell of the ovary.....	99
98. Corolla valvate.....	Loganiaceae (p.p)
98. Corolla imbricate.....	Verbenaceae
99. Small trees; fruit a berry.....	Loganiaceae (p.p)
99. Herbs or subshrubs; fruits otherwise.....	Scrophulariaceae (p.p)
100. Ovary inferior or half inferior.....	101
100. Ovary superior.....	103
101. Ovary half inferior; perianth cup with fleshy appendages.....	Santalaceae
101. Ovary inferior; perianth cup without appendages.....	102
102. Ovary 1-celled.....	Combretaceae (p.p)
102. Ovary 3-6 celled.....	Aristolochiaceae
103. Flowers bisexual.....	104
103. Flowers unisexual.....	112
104. Carpels free.....	Ranunculaceae
104. Carpels united.....	105
105. Anther opening by valves.....	Lauraceae (p.p)
105. Anthers opening by other than valves.....	106
106. Disc present.....	107
106. Disc absent.....	108
107. Leaves 3-ribbed from the base; fruit a drupe.....	Rhamnaceae
107. Leaves 1-ribbed fro the base; fruit otherwise....	Sapindaceae (p.p)
108. Perianth tubular.....	Nyctanginaceae

108. Perianth not tubular.....	109
109. Leaves pinnate.....	Sapindaceae (p.p)
109. Leaves simple.....	110
110. Ovary with 3 or more locules.....	Lythraceae (p.p)
110. Ovary with only 1 locule.....	111
111. Perianth present, chaffy.....	Amaranthaceae
111. Perianth absent.....	Piperaceae
112. Anthers open by valves.....	Lauraceae
112. Anthers not open by valves.....	113
113. Flowers aggregated in hypanthodium	Moraceae (p.p)
113. Flowers not aggregated in hypanthodium.....	114
114. Ovaries seated on a gynophore.....	Sterculiaceae (p.p)
114. Ovaries not seated on a gynophore.....	115
115. Carpels 1-celled.....	116
115. Carpels 2-many celled.....	Euphorbiaceae (p.p)
116. Female flowers 3-8 together;	
male flowers with petals.....	Menispermaceae (p.p)
116. Female flowers not as above; male flowers without petals.....	117
117. Flowers densely packed in a fleshy receptacle.....	Moraceae (p.p)
117. Flowers not in fleshy receptacle.....	118
118. Seeds arillate.....	Myristicaceae
118. Seeds exarillate.....	119
119. Ovules solitary.....	120
119. Ovules a few.....	122
120. Stigma 1.....	Urticaceae
120. Stigma 2 or 2-4 toothed.....	121
121. Filaments inflexed in bud.....	Euphorbiaceae (p.p)
121. Filaments not inflexed in bud.....	Ulmaceae
122. Ovules parietal.....	Flacourtiaceae (p.p)

122. Ovules otherwise.....	Euphorbiaceae (p.p)
123. Ovary superior.....	124
123. Ovary inferior.....	135
124. Fruit a caryopsis.....	125
124. Fruit otherwise.....	126
125. Trees.....	Bambusaceae
125. Herbs.....	Poaceae
126. Inner perianth lobes herbaceous or absent.....	131
126. Inner perianth lobes coloured.....	127
127. Perianth lobes differentiated into inner petals and outer sepals.....	Commelinaceae
127. Perianth lobes similar , not differentiated into petals or sepals.....	128
128. Flowers unisexual.....	Smilacaceae
128. Flowers bisexual.....	129
129. Cells of ovary 1-ovuled; perianth tubular below.....	Agavaceae
129. Cells of ovary 2-many ovuled; perianth free to the base.....	130
130. Marshy or aquatic herbs; one of the stamens larger than the rest.....	Pontederiaceae
130. Terrestrial plants; stamens equal.....	Liliaceae
131. Stem triquetrous; fruit a 1-seeded achene; flowers arranged in spikelets.....	Cyperaceae
131. Stem not triquetrous; fruit not a 1-seeded achene; flowers not in spikelets.....	132
132. Flowers dense on terminal heads on erect leafless scape.....	Eriocaulaceae
132. Flowers not as above.....	133
133. Fruit a woody syncarp.....	Pandanaceae
133. Fruit not a woody syncarp.....	134

134. Spadix branched.....	Arecaceae
134. Spadix unbranched.....	Araceae
135. Pollen grains collected in pollinia; seeds powdery....	Orchidaceae
135. Pollen grains not collected in pollinia; seeds not powdery....	136
136. Flowers irregular.....	137
136. Flowers regular.....	140
137. Stamens 5, with two perfect anther lobes.....	Musaceae
137. Stamen 1, either perfect r with one anther lobe.....	138
138. Leaves with pulvinate petiole;	
cells of ovary 1-ovuled.....	Marantaceae
138. Leaves without pulvinate petiole;	
Cells of ovary 3-many ovuled.....	139
139. Stem spirally twisted.....	Costaceae
139. Stem not a above.....	Zingiberaceae
140. Flowers unisexual.....	Dioscoreaceae
140. Flowers bisexual.....	141
141. Flowers in umbels or erect scapes.....	Amaryllidaceae
141. Flowers in racemes or panicles.....	Hypoxidaceae
142. Climbers; leaves simple.....	Gnetaceae
142. Erect trees; leaves pinnate.....	Cycadaceae

RANUNCULACEAE Juss.,
Gen. Pl. 231. 1789, *nom. cons.*

Naravelia Adanson,
Fam. Pl. 2: 460, 581. 1763, *nom. cons.*

Naravelia zeylanica (L.) DC. var. **roxburghii** DC., Prodr. 1: 10. 1824; Almeida, Fl. Maharashtra 1: 5. 1996. *N. zeylanica sensu* Graham, Bombay Pl. 1. 1839; Hook.f. & Thoms. in Hook.f., Fl. Brit. India 1: 7. 1872; Rao, Fl. Pl. Travancore 2. 1914; Dunn in Gamble, Fl. Madras 3. 1915; Mohanan & Henry, Fl. Thiruvananthapuram 41. 1994; Rau in B.D.Sharma *et al.*, Fl. India 1: 100. 1993; Nayar & *al.*, Flg. Pl. Kerala-Handb. 495. 2006. *Atrangena zeylanica sensu* Roxb., Pl. Coromandel. t. 188. 1805, *non* L.1753. *Vathakkodi*.

Climbing shrubs; young shoots pubescent. Leaves opposite, 3-foliolate, terminal one modified into a 3-fid hooked tendril; lateral leaflets broadly ovate, 12-15 x 3-7 cm, rounded or cordate at base, acuminate at apex, glabrous above, pubescent beneath. Flowers greenish-yellow, in terminal and axillary divaricately branched panicles. Sepals 4-5, elliptic to broadly ovate, 5-6 x 2-3 cm, caducous, pubescent without. Petals 6-12, linear – spatulate, ca. 7x1 mm, glabrous. Stamens numerous, filaments glabrous, connective produced beyond anther lobes. Achenes 5.5-7 x 0.8-1mm, red or reddish brown, sparsely hairy, with a long twisted feathery tail, 3.5-5 cm long.

Rare. Indalayappan Kavu SK 39302.and Karimamoola Kavu SK 47901.
Fl. & Fr: Oct. - Aug. *Dist.:* India.

Note: According to de Candolle (*l.c.*), the Indian velutinous pubescent variety differs from typical Hermann's plant from Ceylon, which is densely tomentose (Almeida *l.c.*)

Uses: Roots are beaten and inhaled to cure sinusitis.

DILLENACEAE Salisb.,

Parad. Lond. 2:sub t.73. 1807, *nom. cons.*

- 1. Herbs with large radical leaves*Acrotrema*
- 1. Trees or woody climbers.....2
- 2. Trees; flowers solitary or in clusters.....*Dillenia*
- 2. Woody climbers; flowers in terminal panicles.....*Tetracera*

Acrotrema Jack in

Malayan Misc. 1 (5): 36. 1820.

Acrotrema arnottianum Wight, Ill. 1: 9. t. 3. 1840; Hook.f. & Thoms. in Hook.f., Fl. Brit. India 1: 32. 1872; Rao, Fl. Pl. Travancore 2. 1914; Dunn in Gamble, Fl. Madras 1: 5. 1915; Majumdar, Fl. India Fasc. 2: 2. 1979 & in B.D.Sharma *et al.*, (eds.) Fl. India 1: 151. 1993; Mohanan & Henry, Fl. Thiruvananthapuram 41. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 216. 2006. *Nilampunna*.

Perennial herbs, stem very short or even absent. Leaves obovate-oblong, 15-30 x 7-12 cm, rounded or cordate at base, obtuse at apex, sharply dentate along margins, young leaves floccose, mature with long soft hairs; petiole to 7 cm long, winged. Flowers bright yellow, in long peduncled axillary racemes; pedicels 5-15 cm long, clothed with long hairs. Sepals 5, obovate, 7-9 mm long, scarlet or pink. Petals 5, obovate,

8-9 mm long, yellow. Stamens many; anthers spatulate. Carpels 5-8 mm long; ovules many. Follicles few to many seeded.

Rare. Manthuruthu Kavu. *SK* 39345. *Fl. & Fr.*: Round the year. *Dist.*: Southern Western Ghats, endemic.

Dillenia L.,

Sp. Pl. 535. 1753.

Dillenia pentagyna Roxb., Pl. Coromandel. 1: 21. t. 20. 1795; Bedd., Fl. sylv. S. India t. 104. 1869; Hook.f. & Thoms. in Hook.f., Fl. Brit. India 1: 38. 1872; Rao, Fl. Pl. Travancore 3. 1914; Dunn in Gamble, Fl. Madras 8. 1915; Hoogland, Blumea 7: 117. 1952; Majumdar, Fl. India Fasc. 2: 7. 1979 & in B.D.Sharma *et al.*, (eds.) Fl. India 1: 156. 1993; Mohanan & Henry, Fl. Thiruvananthapuram 42. 1994 Nayar & *al.*, Flg. Pl. Kerala-Handb. 216. 2006. *Pattipunna, Syalitha.*

Large deciduous trees; bark greyish, smooth; young shoots glabrous. Leaves oblong–lanceolate, obovate or oblong–obovate, 20-45 x 10-20 cm, obtuse or cuneate at base, obtuse or acute at apex, entire or dentate along margins; lateral nerves 25-50 pairs, parallel, pubescent on the nerves beneath. Flowers yellow in fascicles of 2-7 in the axils of leaf scars; pedicels 3-5 cm long. Sepals 5, fleshy, persistent. Petals 5, obovate, 1.5 x 1.2 cm, obtuse at apex. Stamens many, anther cells linear. Carpels 5, basally united. Berry yellow, 2 cm across, enclosed by the enlarged thickened calyx.

Indalayappan Kavu. *SK* 39351, Nagayekshi Kavu, Ayilam, *SK* 47897. *Fl. & Fr.*: Dec. - Mar. *Dist.*: Indo-Malesia and China.

Tetracera L.,

Sp. Pl. 533. 1753, *nom.cons.*

Tetracera akara (Burm.f.) Merr., Philipp. J. Sci. 19: 366. 1921; Majumdar in B.D.Sharma *et al.*, (eds.) Fl. India. 1: 158. 1993; Mohanan & Henry, Fl. Thiruvananthapuram 42. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 217. 2006. *Calophyllum akara* Burm.f., Fl. Ind. 121. 1768. *Tetracera rheedei* DC., Syst.1: 402. 1818; Wight, Icon. pl. Ind. orient.. t. 70. 1838. *T. laevis auct. non* Vahl; DC., Syst. 1: 401. 1818; Hook.f. & Thoms. in Hook.f., Fl. Brit. India 1: 31. 1872; Rao, Fl. Pl. Travancore 2. 1914; Dunn in Gamble, Fl. Madras 7. 1915.

Lianas; young shoot scabrous. Leaves oblong-lanceolate, 7-13 x 3.5-5cm, cuneate or slightly decurrent at base, acute or acuminate at apex, entire or serrate at margins; lateral nerves 7-9. Flowers white, in 5-8 flowered axillary or terminal panicles. Sepals 5, orbicular, to 0.8 cm long. Petals white, orbicular, to 1 cm long. Stamens many; filaments thickened towards apex; connective broad. Carpels 5, free. Follicles ovoid. Seed 1.

Common to all Sacred Groves. Kavintemoola Kavu, SK 39357, Pulickal Bhagavathi Kavu, SK 47822. *Fl. & Fr:* Jan. - Mar. *Dist.:* Indo-Malesia.

MAGNOLIACEAE Juss.,
Gen. Pl. 280. 1789, *nom. cons.*

Michelia L.,
Sp. Pl. 536. 1753.

Michelia champaca L., Sp. Pl. 536. 1753; Hook.f. & Thoms. in Hook.f., Fl. Brit. India 1: 42. 1872; Rao, Fl. Pl. Travancore 3. 1914; Dunn in Gamble, Fl. Madras 9. 1915; Raju in B.D.Sharma *et al.*, (eds.) Fl. India 1: 175. 1993; Mohanan & Henry, Fl. Thiruvananthapuram 43. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 396. 2006. *Chempakam*.

Evergreen trees; bark thick, grey. Leaves ovate to elliptic-lanceolate, 10-25 x 4-10 cm, acute or cuneate at base, long acuminate at apex, shiny and glabrous above, minutely pubescent beneath; lateral nerves 12-18 pairs. Flowers solitary, axillary, 3.5-6 cm across, pale yellow, fragrant; bud ovoid; bracts spathaceous, broadly ovate, ca. 2.5 cm long. Perianth 12-15, oblanceolate, oblong-lanceolate, to 4 x 1 cm, fleshy. Stamens numerous, subclavate; filaments short. Ovary 1.5-2 cm long, glabrous. Fruits ovoid to ellipsoid, 1-2 cm long, white speckled. Seeds many.

Kunnuvula Devi temple Kavu. SK 47862. *Fl.*: Mar. – May. *Dist.*: Indo-Malesia.

ANNONACEAE Juss.,

Gen. Pl. 283. 1789, *nom. cons.*

1. Ripe carpels united, forming many loculed syncarpous fruits...*Annona*
1. Ripe carpels free, forming apocarpous fruits.....2
2. Anther-locule not concealed at top by overlapping connectives.....*Phaeanthus*
2. Anther –locule concealed at top by overlapping connective.....3
3. Petals valvate in buds.....5
3. Petals imbricate in buds.....4
4. Climbers or Scandent shrubs.....*Uvaria*
4. Trees*Sageraea*
5. Ripe carpels moniliform.....*Desmos*
5. Ripe carpels not moniliform.....6
6. Petals arching over the stamens and carpels.....*Artabotrys*
6. Petals not as above, spreading from the base.....7
7. Stamens more than 3 mm long, connective apiculate.....*Cananga*
7. Stamens less than 3 mm long, connective flat topped or convex.....8
8. Flowers densely tomentose; ripe carpels sessile.....*Meiogyne*
8. Flowers pubescent or rufous tomentose; ripe carpels stalked.....*Polyalthia*

Annona L.,

Sp. Pl. 536. 1753.

1. Inner whorl of petals well developed; fruits muricate.....*A. muricata*
1. Inner whorl of petals wanting; fruits not muricate.....2
2. Leaves acuminate; fruits reticulate.....*A. reticulata*
2. Leaves obtuse; fruits tuberculate.....*A. squamosa*

Annona muricata L., Sp. Pl. 536. 1753; Das in Bull. Bot. Surv. India 5: 44.1963; Brandis, Indian Trees 22. 1911; Rao, Fl. Pl. Travancore 8. 1914; Sinclair, Gard.Bull. Strait. Settl. 14: 476. f. 46.1955; Mitra in B.D. Sharma *et al.*, Fl. India 1:206. 1993; Nayar & *al.*, Flg. Pl. Kerala-Handb. 62. 2006. *Mullathi*.

Small evergreen trees; branches glabrous. Leaves elliptic or obovate-oblong, 10-14 x 4-6 cm, acute at base, shortly acuminate at apex, glabrous; petioles to 5 mm long, glabrous. Flowers solitary, axillary or leaf opposed. Sepals 3, triangular, 3-5 x 5-6 mm, glabrous, persistent. Petals 6 in two rows; outer ones 3-3.5 x 2-2.5 cm, ovate-acute, yellow, thick, glabrous; inner ones to 1.5 x 1cm. Stamens numerous, 4-5 mm long, linear; filaments broad at base, connective capitate at apex. Carpels many, linear, to 4 mm long, slightly curved. Fruits 6-8 cm long, muricate, dull green, covered with long curved spines. Seeds many, reddish-brown.

Nanniyode Kavu SK 42343. *Fl. & Fr.*: Apr. - Oct. *Dist.*: Native of Central America and West Indies. Now planted elsewhere.

Note: Addition to Flora of Thiruvananthapuram.

Annona reticulata L., Sp. Pl. 573. 1753; Hook.f. & Thoms. in Hook.f., Fl. Brit. India 1: 78. 1872; Rao, Fl. Pl. Travancore 8. 1914; Mohanan & Henry, Fl. Thiruvananthapuram 44. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 62. 2006. *Anamunthiri*.

Small trees; young branches tomentose, glabrous at maturity. Leaves oblong-lanceolate, 8-15 x 2-3.5 cm, rounded or cuneate at base, acute or obtuse at apex, glabrous above, scattered hairy beneath; lateral

nerves 15-18 pairs; petioles to 1.5 cm long. Flowers in extra- axillary cymes, 4-5 together; pedicels 1.5-2 cm long. Sepals 3, broadly ovate, 1.5-3 x 2-3 mm, shortly acuminate at apex. Petals 6, outer one well developed, narrowly oblong, 1.5-2 x 0.4-0.6 cm, pubescent without; inner ones rudimentary, to 2 mm long. Stamens numerous, to 1 mm long; connective ovoid. Carpels many, ovoid-linear, to 1 mm long. Fruits ovoid to subglobose, 5-10 cm across, reticulate, many loculed, yellowish-brown to reddish-green. Seeds black, arillate.

Ilamkulam Mahadevan Kavvu, SK 48617. *Fl. & Fr.*: Aug. - Feb.
Dist.: Native of Central America and West Indies. Now planted elsewhere.

Annona squamosa L., Sp. Pl. 537. 1753; Hook.f. & Thoms. in Hook.f., Fl. Brit. India 1: 78. 1872; Rao, Fl. Pl. Travancore 8. 1914; Mitra in B.D.Sharma *et al.*, Fl. India 1: 207. 1993; Mohanan & Henry, Fl. Thiruvananthapuram 44. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 62. 2006. *Seethppazham, Aathi*.

Small trees; branches pubescent when young, glabrous at age. Leaves elliptic-oblong or ovate-lanceolate, 6-14 x 3-6 cm, acute-cuneate at base, obtuse or acute at apex, glabrous above, pubescent on the nerves beneath when young; petiole to 1.5 cm long, glabrous. Flowers solitary or a few together, axillary, leaf opposed; pedicels 1-3 cm long. Sepals 3, broadly ovate, 2-3 x 3-4 mm, acuminate at apex, pubescent without. Petals 6, in two whorls; inner whorl minute, to 1 mm long; outer ones narrowly oblong, 1.5-3 x 3-4 cm, thick, pubescent without. Stamens numerous to 1 mm long; connective ovoid at apex. Carpels many, subconnate, ovoid, pubescent. Fruit ovoid-globose, 8-10 cm across, tuberculate with rounded apex, glaucous. Seeds many, black.

Erumkulangara Kavu, SK 48616; Chenavila Kavu, SK 48610. *Fl. & Fr.*: July - Nov. *Dist.*: Native of Central America and West Indies. Now planted elsewhere.

Artabotrys R.Br.,

Bot. Reg.:ad t. 423. 1820.

Artabotrys hexapetalous (L.f.) Bhandari, Bailea 12(4): 149. 1964; Mohanan & Henry, Fl. Thiruvananthapuram 45. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 62. 2006. *Annona hexapetala* L.f., Suppl. Pl. 270. 1781. *Artabotrys odoratissimus* (Roxb.) R.Br. in Bot. Reg. 423. 1820; Hook.f. & Thoms. in Hook.f., Fl. Brit. India 1: 54. 1872; Rao, Fl. Pl. Travancore 4. 1914; Dunn in Gamble, Fl. Madras 14. 1915. *Uvaria odoratissima* Roxb., Fl. Ind. 2: 666. 1832. *Manoranjitham*.

Straggling shrubs. Leaves oblong-lanceolate, 8-12 x 2.5-5 cm, acute at base, obtusely acuminate at apex, glabrous and shining above. Flowers pale yellow, solitary, ca. 2 cm across; peduncle terminal or leaf opposed, curved and hooked; pedicels ca. 1 cm long. Sepals 3, ovate, 7.5 x 6 mm, pubescent, recurved. Petals 6, lanceolate, concave or saccate below; outer to 2.5 x 0.7 cm; inner one to 2 x 0.5 cm, appressed-villous. Stamens ca. 80; anthers oblong, pubescent. Carpels oblong, pubescent; ovules 2-per locule; stigma clavate. Fruitlets to 2.5 cm long, sessile.

Manthuruthu Kavu SK 39375. *Fl. & Fr.*: Round the year. *Dist.*: Peninsular India and Sri Lanka.

Cananga (DC.) Hook.f. & Thomson,

Fl. Ind. 129. 1855, *nom. cons.*

Cananga odorata (Lam.) Hook.f. & Thoms., Fl. Ind. 130. 1855; Hook.f. & Thoms. in Hook.f., Fl. Brit. India 1: 56. 1872; Rao, Fl. Pl. Travancore 5. 1914; Mitra in B.D.Sharma *et al.*(eds), Fl. India 1: 254. 1993; Mohanan & Henry, Fl. Thiruvananthapuram 45. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 63. 2006. *Uvaria odorata* Lam., Encycl. 1: 595. 1785; Roxb., Fl. Ind. 2: 661. 1832. *Canangium odoratum* (Lam.) Baillon ex King, J. Asiat. Soc. Bengal Pt. 2. Nat. Hist. 61(2): 41. 1892; King, Ann. Roy. Bot. Gard. (Calcutta) 4: t. 67. 1893.

Trees. Leaves alternate, oblong-lanceolate or elliptic, 12-22 x 4-8 cm, obtuse or oblique at base, acuminate at apex, entire at margins, thinly coriaceous; lateral nerves 7-9 pairs, arching along margins; petiole to 2 cm long. Flowers in axillary, 2-6 flowered, drooping racemes; bracts subulate, caducous; pedicels ca. 3 cm long. Sepals 3, ovate, to 6 mm long, pubescent. Petals 6, 2-series of 3 each, green turning yellow, linear-lanceolate, to 5 x 1.5 cm, inner whorls smaller, subequal. Stamens numerous, to 3.5 mm long, connective broadly appendaged, concealing the anther cell. Carpels numerous.

Kanjiramkulam Kavu, SK48658. *Fl. & Fr.*: Jun.-Mar. *Dist.*: Native of Malesia, introduced in India.

Desmos Lour.,

Fl. Cochinch. 329, 352. 1790.

Desmos chinensis var. **lawii** (Hook.f. & Thoms.) Tien Ban Bot. Zhurn. (Moscow & Leningrad) 59 (12): 1774.1974; Nayar & *al.*, Flg. Pl. Keral Zhurn. (Moscow & Leningrad) 59 (12): 1774.1974a-Handb. 63. 2006.

Desmos lawii (Hook.f. & Thoms.) Safford, Bull. Torrey Bot. Club 39: 506. 1912; Nair & Henry, Fl. Tamil Nadu I, 1: 4. 1983; Mohanan & Henry, Fl. Thiruvananthapuram 46. 1994. *Unona lawii* Hook.f. & Thoms., Fl. Ind. 132. 1855 & in Hook.f., Fl. Brit. India 1: 59. 1872; Bedd., Icon. pl. Ind. orient. pl. Ind. orient. t. 73. 1868-1874; Rao, Fl. Pl. Travancore 6. 1914; Dunn in Gamble, Fl. Madras 15. 1915; Das in Bull. Bot. Surv. India 5: 41. 1963.

Woody climbers; young shoots grey-pubescent. Leaves simple, alternate, oblong-lanceolate, 8-14 x 2.5-5 cm, rounded or subcordate at base, acuminate at apex, glabrous above and glaucous beneath; lateral nerves 7-10 pairs, faint; petiole to 0.6 cm long. Flowers solitary, axillary or extra axillary with slender long pedicels, to 3.5 cm long; bracteate near below the middle, narrowly ovate. Sepals 1-1.3 cm long, ovate, acute at apex. Petals 6, linear-oblong, 6-8 x 0.3-0.5 cm. Stamens numerous, connective broadened above the anther cells. Carpels glabrous.

Karichayil Kavu, SK 48692. *Fl. & Fr.*: Apr. –Aug. *Dist.*: Western Ghats, endemic.

Meiogyne Miq.,

Ann. Mus. Bot. Lugduno-Batavum 2: 12. 1865.

Meiogyne pannosa (Dalz.) Sinclair, Sarawak Mus. J. 5: 604. 1951; Mohanan & Henry, Fl. Thiruvananthapuram 46. 1994; Das in B.D.Sharma *et al* (eds.), Fl. India 1: 266. 1993 ; Nayar & *al.*, Flg. Pl. Kerala-Handb. 57. 2006. *Unona pannosa* Dalz. in Hooker's. J. Bot. Kew Gard. Misc. 3: 207. 1851; Hook.f. & Thoms. in Hook.f., Fl. Brit. India 1: 58. 1872; Bedd., Icon. pl. Ind. orient. t. 52. 1868-1874; Rao, Fl. Pl.

Travancore 5. 1914; Dunn in Gamble, Fl. Madras 14. 1915. *Elinari*,
Vellamottal.

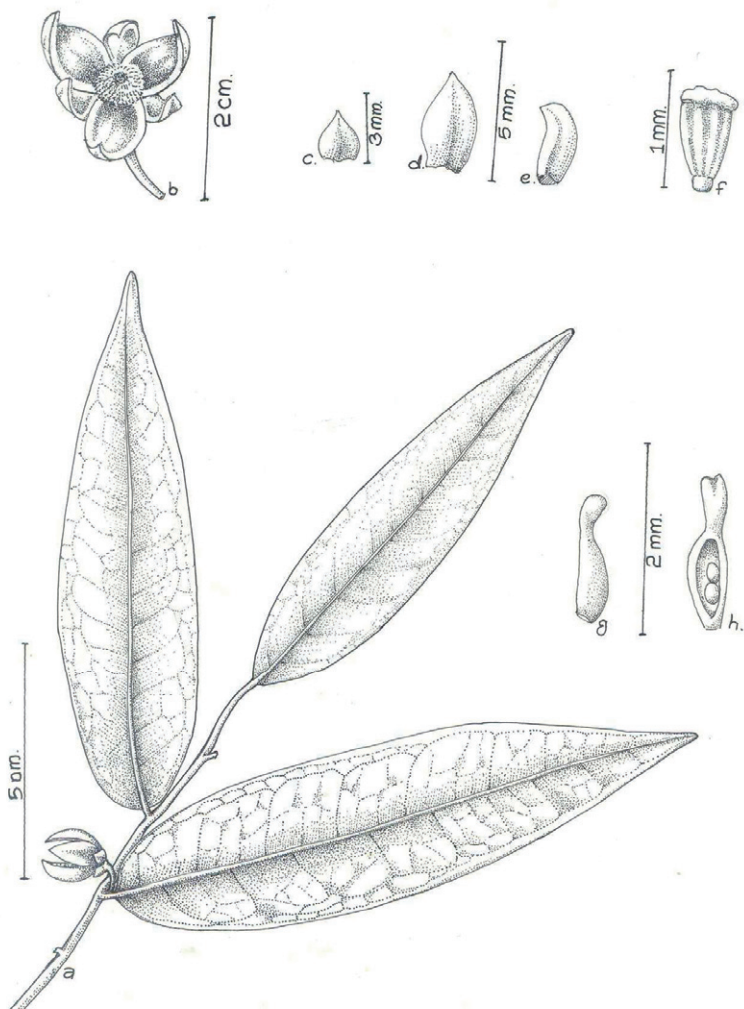
Small trees; bark greyish, smooth; young shoots thinly tomentose. Leaves elliptic or elliptic-oblong, 4.5-7 x 2.5-4 cm, obtuse or rounded at base, acuminate at apex, glabrous above, pubescent on the nerves beneath; lateral nerves 6-8 pairs, faint; petiole to 0.6 cm long; slender, tomentose. Pedicels short, to 0.3 cm long. Sepals 3, ovate, connate at base. Petals yellowish, ovate or oblong, acute at apex; inner ones slightly narrower than outer. Stamens numerous, connective widened above the anthers. Carpels 10-12, strigosely hairy. Fruitlets shortly elongate, constricted between seeds, velvety tomentose.

Indalayappan Kavu SK 39380; Manthuruthu Kavu SK 39378; Pulivalam Mulethottam Devi temple Kavu, SK 48662. *Fl. & Fr.*: Dec.-Jun. *Dist.*: Western Ghats, endemic.

Phaeanthus Hook.f. & Thomson,

Fl. Ind. 146. 1855.

Phaeanthus malabaricus Bedd., Icon. pl. Ind. orient. t. 76. 1868-1874; Hook.f. & Thoms. in Hook.f., Fl. Brit. India 1: 72. 1872; Rao, Fl. Pl. Travancore 7. 1914; Dunn in Gamble, Fl. Madras 17. 1915; Das, Bull. Bot. Surv. India 5:43. 1963; Nayar & Sastry, Red Data Book Indian Pl.3: 16. 1990; Das in B.D.Sharma *et al.*(eds.), Fl. India 1: 230. 1993; Nayar & *al.*, Flg. Pl. Kerala-Handb. 59. 2006.



Phaeanthus malabaricus Bedd. A. Habit, b. Flower, c. Sepal, d. Inner petal, e. Outer petal, f. Stamen, g. Gynoecium, h. L.S. of ovary

Large shrubs or small trees; young shoots tomentose. Leaves narrowly oblong, 10-15 x 3.5-5 cm, subcordate or rounded at base, acute or caudate-acuminate at apex, slightly revolute at margins, glabrous; lateral nerves 8-12 pairs, slender; petiole to 0.3 cm long. Flowers creamy-

white suffused with brown shade, solitary, leaf opposed; pedicels to 1 cm long, tomentose. Sepals 3, valvate, small. Petals 6 in two rows; outer ovate-acuminate, 0.5 cm long; inner thick, boat shaped, to 1 cm long, inflexed and meeting by their apices. Stamens numerous, truncate at apex. Carpels numerous, ovules 1 or 2, basal. Fruitlets red, 1-2 seeded.

Nanniyode Kavu SK 39396; Nagaru Kavu, Kazhakkootam, SK 48665.
Fl. & Fr: Dec.-Apr. *Dist.:* Southern Western Ghats, endemic.

Note: According to the recent revision of the genus *Phaeanthus* by Mols & Kebler (*Blumea* 45: 205-233.2000) excluded this species and reduced it to a synonym of *Polyalthia suberosa* without sufficient taxonomic justification. Present studies shows that *Phaeanthus malabaricus* and *Polyalthia suberosa* differed considerably each other and in the present treatment the earlier taxonomic concept of Hooker and Thomson (*l.c.*) is followed.

According to Nayar & Sastry (*l.c.*) this species is vulnerable and is confined to Northern Kerala. Present collection from the study area shows its extended distribution to southern Kerala.

Polyalthia Blume,

Fl. Javae, Anonaceae: 68. 1830.

- 1. Trees with conical crown; leaf margins undulate.....*P.longifolia*
- 1. Trees with sub globose crown; leaf margins not undulate.....2
- 2. Petals upto 1.5 cm long.....3
- 2. Petals more than 1.5 cm long.....*P. fragrans*
- 3. Leaves obtuse, flowers extra axillary.....*P.suberosa*
- 3. Leaves acute or acuminate; flowers axillary.....*P.korintii*

Polyalthia fragrans (Dalz.) Bedd., Fl. sylv. S. India t. 74. 1871; Hook.f. & Thoms. in Hook.f., Fl. Brit. India 1: 63. 1872; Bedd., Icon. pl. Ind. orient. t. 54. 1868-1874; Rao, Fl. Pl. Travancore 6.1914; Dunn in Gamble, Fl. Madras 16. 1915; Das in Bull. Bot. Surv. India 5: 42. 1963 & in B.D.Sharma *et al.*(eds.), Fl. India 1:271. 1993; Nayar & *al.*, Flg. Pl. Kerala-Handb. 60. 2006. *Gutteria fragrans* Dalz. in Hooker's. J. Bot. Kew Gard. Misc. 3: 206. 1851. *Nedunar*.

Large trees; bark pale brown, smooth; young shoots hoary-pubescent. Leaves simple, alternate, elliptic or elliptic-oblong, 20-25 x 6-8 cm, obtuse-truncate or subcordate at base, acuminate at apex, glabrous above, minutely pubescent beneath; lateral nerves to 25 pairs. Flowers greenish-pale yellow in tubercles of old wood or in axillary racemes; pedicels bracteate towards the base. Sepals small, valvate. Petals 6, linear, to 4 x 0.3 cm, linear, pubescent. Stamens numerous, connectives overlapping and concealing the anther cells. Carpels 10-20. Fruitlets broadly ovoid, 1-seeded.

Cherukulathoor Kavu, SK 48669. *Fl. & Fr*: Nov.- Apr. *Dist.*: Southern and Central Western Ghats, endemic.

Note: Addition to Flora of Thiruvananthapuram.

Polyalthia longifolia (Sonn.) Thw., Enum. Pl. Zey. 398. 1864; Bedd., Fl. sylv. S. India t. 38. 1870; Hook.f. & Thoms. in Hook.f., Fl. Brit. India 1: 62. 1872; Rao, Fl. Pl. Travancore 26. 1914; Dunn in Gamble, Fl. Madras 16. 1915; Mohanan & Henry, Fl. Thiruvananthapuram 48. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 63. 2006. *Uvaria longifolia* Sonn. Voy. Ind. 2: 233.t. 131.1782; Roxb., Fl. Ind. 2: 664. 1832. *Gutteria longifolia* Wall.,

Cat. 6442. 1832; Wight, Icon. pl. Ind. orient.. t. 1. 1838; King, Ann. Roy. Bot. Gard. (Calcutta) 4: t. 99. 1893. *Aranamaram*.

Tall handsome trees; young branches slender, glabrous, pendulous. Leaves simple, alternate, narrowly lanceolate, 9-22 x 1.5-4 cm, acute at base, acuminate at apex, undulate at margins, glabrous, shining green above and pale beneath. Flowers greenish-yellow, fascicles or in short peduncled umbels; pedicels slender, to 3.75 cm long, pubescent, deciduous bracts about or above the middle. Sepals 3, to 4 mm long, triangular, pubescent, refluxed at apex. Petals 6, two seriate, flat, linear, spreading, tapering towards apex. Stamens many; connective truncate dilated beyond the cells. Ovaries indefinite. Ripe carpels to 2 cm long, staked, ovoid, obtuse at both ends.

Keezhetti Kavu, SK 48670. *Fl. & Fr.*: Nov.-May. *Dist.*: Native of Sri Lanka, cultivated in India.

Polyalthia korintii (Dunal) Thw., Enum. Pl. Zeyl. 398. 1864; Hook.f. & Thoms.in Hook.f., Fl. Brit. India 1: 64. 1872; Mitra in B.D.Sharma *et al.*, Fl. India 1: 273; Nayar & *al.*, Flg. Pl. Kerala-Handb. 60. 2006. 1993. *Gutteria korintii* Dunal, Monogr. Fam. Anon. 133. 1817.

Shrubs or small trees, spreading. Leaves lanceolate, elliptic-oblong to ovate-oblong, 6-15 x 3.5-6 cm, acute to rounded at base, acuminate at apex, coriaceous, glabrous. Flowers solitary, axillary, or 1-3 in a cluster; pedicels slender, 2-3 cm long; bracts 1-3, median on the petiole. Sepals 3, to 4 mm long, ovate. Petals 6, to 10 mm long, oblong, obtuse, pubescent outside. Stamens numerous, oblong, to 1 mm long, connective flat at top. Carpels 7-14, oblong, strigose. Fruits bright crimson red.

Pazhanchira Devi temple Kavu, SK 48651. *Fl. & Fr.*: Jan.-Aug.
Dist.: South India and Sri Lanka.

Polyalthia suberosa (Roxb.) Thw., Enum. Pl. Zeyl. 398. 1864; Hook.f. & Thoms. in Hook.f., Fl. Brit. India 1: 65. 1872; Mitra in B.D.Sharma *et al.*, Fl. India 1: 278. 1993; Mohanan & Henry, Fl. Thiruvananthapuram 48. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 60. 2006. *Uvaria suberosa* Roxb., Pl. Coromandel. 1: t. 34. 1795.

Shrubs or small trees. Leaves oblong or oblong-lanceolate, 4-10 x 2-3.5 cm, slightly narrowed at base, obtuse at apex, glabrous and shiny above, pubescent and pale beneath. Flowers greenish yellow, extra-axillary, solitary, rarely in pairs; pedicels slender to 2.5 cm long. Sepals 3, spreading, ovate, acute, to 2x1 mm, pubescent outside, glabrous inside. Petals 6, reddish brown, silky pubescent outside, glabrous inside, thickly coriaceous. Stamens numerous, to 1 mm long. Carpels many, to 2 mm long, pubescent. Fruits purple.

Thottakkadu Devi temple Kavu, SK 48679. *Fl. & Fr.*: Apr.-Aug.
Dist.: Indo-Malesia.

Sageraea Dalzell in

Hooker's J. Bot. Kew Gard. Misc. 3: 207. 1851.

Sageraea dalzellii Bedd., Icon. pl. Ind. orient. t. 42. 1868-1874; Dunn in Gamble, Fl. Madras 12. 1915; Mitra, Fl. India Fasc. 10: 6. 1982; Nayar & *al.*, Flg. Pl. Kerala-Handb. 61. 2006. *Bocagea dalzellii* (Bedd.) Hook.f. & Thoms. in Hook.f., Fl. Brit. India 1: 92. 1872 p.p. Rao, Fl. Pl. Travancore 10. 1914.

Moderate sized trees; bark black, smooth; young shoots glabrous. Leaves broadly elliptic-oblong or oblong-lanceolate, 20-25 x 3-6 cm, cuneate or acute at base, acute at apex, glabrous; lateral nerves 6-8 pairs, faint; petiole to 0.8 cm long. Flowers pale yellow in fascicles of 2-10, on small woody lateral tubercles. Sepals 3, imbricate, orbicular, connate at base, glabrous. Petals 6; outer ones orbicular, to 1.2 x 0.7 cm, concave; inner one a little shorter. Stamens 25-28; the outer rows rarely imperfect. Carpels 3-8, oblong, hairy. Fruitlets globose, glabrous, to 3 cm across.

Manthuruthu Kavu, SK 39379. *Fl. & Fr.*: Nov.- Apr. *Dist.*: Southern and central Western Ghats, endemic.

Note: Addition to Flora of Thiruvananthapuram.

Uvaria L.,

Sp. Pl. 536. 1753.

- 1. Carpels subsessile.....*U.zeylanica*
- 1. Carpels on slender pedicels.....*U.narum*

Uvaria narum (Dunal) Wall. ex Wight & Arn., Prodr. fl. Ind. orient. 9. 1834; Hook.f. & Thoms. in Hook.f., Fl. Brit. India 1: 50. 1872; Rao, Fl. Pl. Travancore 4. 1914; Dunn in Gamble, Fl. Madras 13.1915; Mitra, Fl. India Fasc. 10: 18. 1982; Huber in Dassan. & Fosb., Rev. Handb. Fl. Ceylon 5: 18. 1985; Mohanan & Henry, Fl. Thiruvananthapuram 43. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 61. 2006. *Unona narum* Dunal, Monogr. Anon. 99. 1817.

Scandent shrubs; young shoots pubescent. Leaves simple, alternate, narrowly elliptic to lanceolate, 10-16 x 3-6 cm, acute at base, obtuse or acuminate at apex, glabrous; lateral nerves to 15 pairs; petiole to 0.5 cm long. Flowers solitary, terminal or leaf opposed; pedicels to 3 cm long. Sepals 3, rotund-ovate, basally connate, minutely tomentose. Petals subequal, inflexed, dull-red, connate at base. Stamens numerous; connectives widened above the anthers. Carpels numerous, oblong; ovules numerous; style short. Fruitlets few seeded.

Common to all sacred groves. Ayiravilli temple Kavu, SK 48603, Gurunagappan Kavu, SK 48613, Sree Dharmasastha Kavu, Amaravila, SK 48690. *Fl. & Fr.*: Nov.- Feb. *Dist.*: South India and Sri Lanka.

Uvaria zeylanica L., Sp. Pl. 536. 1753; Hook.f. & Thoms. in Hook.f., Fl. Brit. India 1: 51. 1872; Dunn in Gamble, Fl. Madras 13. 1915; Das in B.D.Sharma *et al* (eds.), Fl. India 1: 295. 1993; Mohanan & Henry, Fl. Thiruvananthapuram 43. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 62. 2006.

Large climbers; young branches ferruginous tomentose. Leaves elliptic, lanceolate or oblong-lanceolate, 5-9 x 2-3.5 cm, cuneate at base, acute or acuminate at apex, thinly coriaceous, glabrous; lateral nerves 7-15 pairs. Flowers solitary, terminal of leaf opposed; pedicels to 7 mm long; bracts elliptic, 1.5-2.5 mm long. Sepals 3, rotund – ovate, 4-5 x 5-6 mm. Petals 6, ovate to oblong-ovate, slightly reflexed at apex, 7-10 x 4-5 mm, dull red, pubescent without, glabrous inside except the margin. Carpels many, obovate to oblong, 1 mm long, pubescent; stigma sessile, subcapitate. Ripe carpels 4-12, ovoid, 1 cm long.

Punnattu Kavvu. SK 48619, Venmaranellor Kavvu SK 48636. *Fl. & Fr.*:
May – Aug. *Dist.*: South West India and Sri Lanka.

MENISPERMACEAE Juss.,

Gen. Pl.: 284. 1789, *nom.cons.*

- 1. Leaves peltate.....2
- 1. Leaves not peltate.....4
- 2. Male flowers with 4 stamens.....3
- 2. Male flowers with 6-8 stamens.....*Stephania*
- 3. Stamens exceeding petals.....*Cyclea*
- 3. Stamens not exceeding petals.....*Cissampelos*
- 4. Anthers adnate, bursting vertically.....*Tiliacora*
- 4. Anthers not adnate, bursting otherwise.....5
- 5. Stamens free.....6
- 5. Stamens connate into a globular synandrium.....*Anamirta*
- 6. Anthers with apical pores.....*Diploclisia*
- 6. Anthers with lateral splits.....*Tinospora*

Anamirta Colebr. in

Trans. Linn. Soc. London 13: 52, 66. 1821.

Anamirta cocculus (L.) Wight & Arn., Prodr. fl. Ind. orient. 446. 1834;
Hook.f. & Thoms. in Hook.f., Brit. India 1:93. 1872; Rao, Fl. Pl.
Travancore 11.1914; Dunn in Gamble, Fl. Madras 1:28. 1915; Forman,
Kew Bull. 32:392. 1978; Mohanan & Henry, Fl. Thiruvananthapuram 50.
1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 426. 2006. *Menispermum*
cocculus L., Sp. Pl. 340. 1753. *Polla*.

Woody climbers, young shoots glabrous. Leaves broadly ovate, 16-22 x 8-12 cm, truncate or cordate at base, acute or acuminate at apex, glabrous; 3-5 ribbed; petiole 7-14 cm. Long. Flowers creamy-white in many flowered panicles from old wood. Male flowers having many stamens with sessile anthers on the top of the staminal column, dehiscing transversely. Female flowers having 3 carpels, on a short gynophore, staminodes 9. Fruitlets globose, white, to 1cm wide. Seeds smooth black.

Common to all sacred groves. ErumaKavu, SK 48629, Indalayappan Kavu, Vencode SK 39358. *Fl. & Fr.*: -December- January. *Dist.*: Indo-Malesia.

Cissampelos L. ,

Sp. Pl. 1031. 1753.

Cissampelos pariera L. var. **hirsuta** (Buch.-Ham. ex DC.) Forman, Kew Bull. 22:356. 1968; Rhodes, Phytologia 30: 446. 1975; Mohanan & Henry, Fl. Thiruvananthapuram 50. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 426. 2006. *C. hirsuta* Buch.-Ham. ex DC., Syst. 1: 535. 1817. *C. convolvulacea* var. *hirsuta* (Buch.-Ham- ex DC.) Hassk. , Pl. Jav. Rar. 171. 1848. *C. pariera* L. , Sp. Pl. 1031. 1753 p.p.; Hook.f. & Thoms. in Hook.f. , Fl. Brit. India 1:103. 1872; Rao, Fl. Pl. Travancore 12. 1914; Dunn in Gamble, Fl. Madras 1:30. 1915. *Kattukodi*.

Herbaceous tomentose twiners. Leaves ovate or ovate- orbicular, 3-8 x 2.5-5cm, cordate at base, acuminate or apiculate at apex, puberulous above, canescent beneath. Male flowers: Greenish-white in cymose panicles. Petals united to form a cup. Stamens 4, anthers connate and forming a ring at the top of staminal column. Female flowers: Fascicled

in axils of leafy bracts. Sepals and petals fused with the bracts, Carpel one, style shortly 3 – fid . Drupes scarlet red, hirsute, compressed.

Cherukulathu Kavu, SK 39303.Nagaru Kavu, SK48624, Kazhakkootam, SK 42329. *Fl. & Fr:* Sept.- Nov. *Dist.:*- Throughout the tropics.

Cyclea Arn. ex . Wight,

Ill. Ind. Bot. 1:22. 1838.

Cyclea peltata (Poiret) Hook.f. & Thoms., Fl. Ind. 201. 1885 & in Hook.f. , Fl. Brit. India 1: 104. 1872.p.p; Rao, Fl. Pl. Travancore 13. 1914; Dunn in Gamble, Fl. Madras 1:31. 1915; Santapau. & Janardh., Bull. Bot. Surv. India 10: 369. 1969; Mohanan & Henry, Fl. Thiruvananthapuram 50. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 428. 2006. *Menispermum peltatum* Poir. in Lam., Encycl. 4:96. 1797. *Cyclea burmanni* (DC.) Hook.f. & Thoms. , Fl. Ind. 201. 1855 & in Hook.f., Fl. Brit. India 1: 104. 1872. *Cocculus burmanni* DC. Syst. 1: 517. 1818 & Prodr. 1: 96. 1824.

Herbaceous twiners, stem pubescent. Leaves peltate, broadly ovate, 10-15 x 4-6 cm, truncate or retuse at base, acute at apex, strigose, thinly coriaceous. Flowers in axillary or lateral panicles. Male flowers: Greenish - yellow. Sepals united at base. Petals free or slightly united. Stamens united to form a ring at the top of the staminal column, anthers dehiscing transversely. Female flowers: Greenish-yellow. Sepal and Petal 1 each. Carpel 1; style 3-5 lobed. Fruits subglobose, white, 3-4 mm across. Seeds horse-shoe shaped.

Common to all sacred groves. Ottavveettil Kavu SK 48704, Erathu Kavu, SK 48725. *Fl.& Fr:* Mar.- Aug. *Dist.:* Indo-Malesia and China.

Diploclisia Miers in

Ann. Mag. Nat. Hist., ser.2, 7:37,42.1851.

Diploclisia glaucescens (Bl.) Diels in Engl. , Pflanzenr. 46: 226. 1910; Dunn in Gamble, Fl. Madras 28. 1915; Mohanan & Henry, Fl. Thiruvananthapuram 51. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 428. 2006. *Cocculus glaucescens* Bl., Bijdr. 25. 1825. *C. macrocarpus* Wight & Arn., Prodr. fl. Ind. orient.13.1834; Hook.f. & Thoms. in Hook.f., Fl. Brit. India 1: 101. 1872; Rao, Fl. Pl. Travancore12. 1914. *Theepacha*.

Woody climbers; stem glabrous. Leaves simple, alternate, suborbicular or broadly ovate or peltate-cordate, 6-8 x 8-10 cm, truncate or shortly cordate at base, obtuse at apex, slightly thickened along the margins, glabrous above, glaucous beneath; 5-ribbed; petiole to 12 cm long. Inflorescence arising from old stem, drooping. Male flowers: Sepals 6, free. Petals 6, smaller than sepals, emarginated, free. Stamens 6; anthers dehiscent vertically. Female flowers: carpals 3, free on short gynophore. Drupes obovoid, compressed, 1.5-3 cm long, endocarp ridged and tubercled.

Pazhayaveedu Kavu, SK 48620, Chavaru Kavu, Njekkadu, SK 48631.
Fl. & Fr.: Mar.-May. *Dist.*: Indo-Malaysia and China.

Stephania Lour.,

Fl. Cochinch. 598, 608. 1790.

Stephania japonica (Thunb.) Miers, Ann. Mag. Nat. Hist. (ser.3.) 18: 14. 1866; Dunn in Gamble, Fl. Madras 29. 1915; Forman, Kew Bull. 11: 49.

1956; Mohanan & Henry, Fl. Thiruvananthapuram 52. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 429. 2006. *Menispermum japonicum* Thunb., Fl. Jap. 193. 1784. *Stephania hernandifolia sensu* Hook.f. & Thoms. in Hook.f., Fl. Brit. India 1: 103. 1872 p.p., non Walp. 1842. *Clypea hernandifolia* Wight & Arn., Prodr.14. 1834; Wight, Icon. pl. Ind. orient..t. 939. 1845.

Twining herbs with tuberous roots; stem slender, glabrous. Leaves ovate-acuminate, peltate, 6-10 x 4-7 cm, rounded or truncate at base, mucronate at apex, glabrous above and glaucous beneath; petioles to 7 cm long. Flowers greenish – yellow in stalked umbellate heads. Male flowers: Sepals 6-10 free. Petals 3-5, fleshy, free. Anthers 4-6, connate at the top of the staminal column to form a ring, dehiscent transversely. Female flowers: Sepals and petals 3-5 each, free. Carpel 1; style 3-5 partite. Drupes 0.5 cm long, red. Seeds annular.

Chavar Kavu, Pulluvila SK 48626. *Fl. & Fr.*: Mar.-Jul. *Dist.*: Throughout Asia.

Note: Forman (*l.c.*) has recognized 3 varieties based on indumental characters. But the said specimen belong to var. *japonica*.

Tiliacora Colebr.in

Trans. Linn. Soc. London 13: 53, 67. 1821, *nom. cons.*

Tiliacora acuminata (Poir.) Miers ex Hook.f. & Thoms. in Fl. Ind. 187. 1855; Dunn in Gamble, Fl. Madras 28. 1915; Forman, Kew Bull. 30: 90. 1975; Mohanan & Henry, Fl. Thiruvananthapuram 52. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 429. 2006. *Menispermum acuminatum* Poir. in Lam., Encycl. 4: 101. 1797. *Tiliacora racemosa* Colebr., Trans. L. Soc.

London 13: 67. 1821; Hook.f. & Thoms. in Hook.f., Fl. Brit. India 1: 99. 1872; Rao, Fl. Pl. Travancore 12. 1914.

Climbing shrubs; branchlets glabrous. Leaves ovate-lanceolate, 10-15 x 6-8 cm, truncate or cordate at apex, acuminate at apex, glabrous; lateral nerves 3-5; petiole to 1 cm long. Flowers unisexual in axillary racemes. Male flowers: Sepals 6 in 2-series, 1.5 mm long, ovate. Petals 6, smaller than sepals. Stamens 6, dehiscing vertically. Pistillode minute. Female flowers: Sepals 6. Petals 6, obovate-obtuse, yellow. Carpels 3-8. drupes obovoid, 1.5 cm long, orange –red.

Kudavoor Sree Bhagavathi Kavu, SK 48628; Alakkattu Kavu, SK 48634. *Fl. & Fr.*: Aug. – Mar. *Dist.*: Peninsular India, Sri Lanka and Malesia.

Tinospora Miers. in

Ann. Mag. Nat. Hist. ser.2, 7: 35,38. 1851, *nom.cons.*

1. Leaves glabrous.....*T.glabra*

1. Leaves hairy.....*T.sinensis*

Tinospora glabra (Burm.f.) Merr. in J. Arnold Arbor. 19: 340. 1938; Forman, Kew Bull. 36: 414. 1941. *T. cordifolia* (Willd.) Hook.f. & Thoms., Fl. Ind. 184. 1855 & in Hook.f., Fl. Brit. India 1: 97.1872; Rao, Fl. Pl. Travancore 11. 1914;Dunn in Gamble, Fl. Madras 26.1915; Forman, Kew Bull.36: 403. 1981; Mohanan & Henry, Fl. Thiruvananthapuram 53. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 429. 2006. *Menispermum cordifolium* Willd., Sp. Pl. 4: 826. 1806; Roxb., Fl. Ind. 3: 811. 1832. *Cocculus cordifolius* (Willd.) DC., Syst. 1: 517. 1818

& in Prodr. 1: 97. 1824; Wight, Icon. pl. Ind. orient. tt. 485 & 486. 1841.

Amruthu

Woody climbers; branchlets glabrous. Leaves cordate, 4-9 x 4-8 cm, acuminate at apex, glabrous, 5-7 nerved; petiole to 10 cm long, pulvinate. Male Flowers in pseudo-racemes, axillary or on leaf less branchlets, 10-20 cm long. Sepals 6 in two rows, outer one ovate; inner one elliptic. Petals 6, green, obovate, reflexed. Stamens 6, enclosed by the petals, free; filaments clavate. Female flowers in racemes, to 3 cm long. Sepals 6; outer one lanceolate; inner one obovate. Petals 6, broadly spatulate. Carpels 3; styles stout; stigma forked. Drupes globose, 6-5 mm.

Thiruchittor Kavu, SK 39368, Madan Kavu, Karimamoola, SK 48602. *Fl.* & *Fr.*: Jan. – Jun. *Dist.*: India, Bangladesh, Sri Lanka.

Tinospora sinensis (Lour.) Merr., Sunyatsenia 1: 139. 1935 & in Trans. Am. Phil. Soc. Philad. 24. 158. 1935; Forman, Kew Bull. 36: 386. 1981; Nayar & *al.*, Flg. Pl. Kerala-Handb. 430. 2006. *Camylus sinensis* Lour., Fl. Cochinch. 113. 1790. *Tinospora malabarica* (Lam.) Hook.f. & Thoms. in Fl. Ind. 183. 1855 & in Hook.f., Fl. Brit. India 1: 96. 1872; Rao, Fl. Pl. Travancore 10. 1914. *Pothamruthu*, *Kattamruthu*.

Deciduous climbing shrubs; mature stem with smooth shining papery bark; young parts tomentose. Leaves broadly ovate, 12-18 x 10-14 cm, cordate at base, acuminate at apex, pubescent above and densely tomentose beneath; basally 5-7 nerved; petiole to 12 cm long, thickened at base. Flowers greenish-yellow in stout racemes from leaf scars. Male flowers: Sepals 6 in 2 series. Petals 6, smaller than sepals. Stamens 6, free;

anthers dehiscing longitudinally. Female flowers: Sepals 6. Petals 6. Staminodes 6. Carpels 3; stigma bi-lobed. Drupes 1-2, ovoid, red. 0.6-0.9 cm long.

Ayiravilli temple Kavu, Ilamba, SK 48640, Indalayappan Kavu, vencode SK 48605. *Fl. & Fr.*: Feb. – Jun. *Dist.*: India.

Note: Addition to Flora of Thiruvananthapuram.

NYMPHAEACEAE Salisb.in

Ann. Bot. (Koenig & Sims) 2:70. 1805, *nom.cons.*

Nymphaea L.,

Sp. Pl. 510. 1753, *nom.cons.*

Nymphaea nouchali Burm.f., Fl. Ind. 120.1768; Mohanan & Henry, Fl. Thiruvananthapuram 53. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 457. 2006. *N. stellata* Willd., Sp. Pl.ed.4, 2: 1153. 1799; Wight, Icon. pl. Ind. orient..t.178. 1839; Hook.f., Fl. Brit. India 1: 114. 1872; Rao, Fl. Pl. Travancore 14. 1914; Dunn in Gamble, Fl. Madras 24. 1915. *Ambal.*

Aquatic rhizomatic herbs. Leaves orbicular or suborbicular, 10-30 x 10-26 cm, incised-cordate at base, acute – obtuse at apex, coriaceous, smooth, glossy bright green above, dark purplish green and glabrous beneath, veins prominent beneath. Flowers solitary, 8-15 cm across, usually pale violet or light blue; buds narrowly conical. Sepals 4-5.5 x 1-2 cm, lanceolate, acute and rounded at apex, cuspidate, glabrous, coriaceous, bright green with purple dots and narrow streaks. Petals 9-16, lanceolate or narrowly elliptic, 4-5.5 x 1-2 cm, acute at apex with a broad base. Stamens 16-30, the outer longer; filaments flat, pale yellowish to

1.5 cm long. Carpels 10-16, yellow, 10-12 mm broad. Fruits subglobose, to 5 cm wide. Seeds many narrowly ovoid, 1-1.5 mm long.

Manthuruthu Kavu SK 39306. *Fl. & Fr: Round the year. Dist. Indo-Malesia and Africa.*

CAPPARACEAE Juss.,

Gen. Pl.: 242 .1789. *nom. cons.*

1. Leaves 3-foliolate, stamen 6.....*Cadaba*

1. Leaves simple, stamens more than 20.....*Capparis*

Capparis L.

Sp. Pl. 503. 1753.

Capparis brevispina DC., Prodr. 1:246. 1824: Wight in Hook., Icon. t. 126. 1837; Dunn in Gamble, Fl. Madras 45. 1915: Jacobs, Blumea 12: 437. 1965; Mohanan & Henry, Fl. Thiruvananthapuram 55. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 162. 2006. *C. zeylanica auct. non* L.1753, *sensu* Hook.f. & Thoms. in Hook.f., Fl. Brit. India 1: 174.1875; Rao, Fl. Pl. Travancore 19. 1914. *Karthotti*.

Shrubs; branchlets adpressed tomentose, stipules spinecent, spine to 3mm long, straight. Leaves narrowly elliptic or ovate, 4-6 x 1.5-2.5 cm, cuneate at base, acute at apex, sub-coriaceous; lateral nerves 3-4 pairs, faint; petiole very short. Flowers solitary, axillary, 4-5cm across, pedicels to 2cm long. Sepals 4, outer pair orbicular, inner ovate. Petals 4, oblong, to 2x1.2 cm, creamy yellow with orange-yellow blotch at base. Stamens

30; free or basally connate with the gynophore. Gynophore to 2.5 cm long, ovary angular, sparsely tomentose. Fruit a berry.

Maruthamangalam Madom Kavu, SK 48612; Mechamkode Kavu, SK 48614. *Fl. & Fr.*: -Nov. -Feb. *Dist.*: Peninsular India and Sri Lanka.

Cadaba Forssk.,

Fl. Aegypt. - arab. 67. 1775.

Cadaba trifoliata (Roxb.) Wight & Arn. in Wight, *Cat.* 7.1833 & *Prodr. fl. Ind. orient.* 24. 1834; Hook.f., *Fl. Brit. India* 1:172.1872; Rao, *Fl. Pl. Travancore* 18.1914; Dunn in Gamble, *Fl. Madras* 42.1915; Nayar & *al.*, *Flg. Pl. Kerala-Handb.* 162. 2006. *Stroemeria trifoliata* Roxb., *Fl. Ind.* 2:79. 1832. *Cadaba triphylla* Wight in Hook. *Bot. Misc.* 3:296, suppl. t.37. 1833.

Shrubs. Leaves 3-foliolate; leaflets obovate, 3-7.5 x 1-3.5 cm, cuneate at base, acuminate at apex, entire at margins, dark green above, pale beneath; petiole to 3 cm long; petiolule to 3.5mm long. Flowers in axillary, corymbose racemes, rarely terminal also; pedicels to 4cm long. Sepals 4, to 3x1.5 cm. Petals 2, creamy white, sub orbicular, to 6x3cm, claw to 2.5 cm. Androphore o. Stamens 6, filaments refluxed, to 2.5 cm long, anthers linear, to 6mm long. Gynophore to 4.5 cm long. Ovary to 8 mm long, ovules numerous.

Moopuram Sri Dharma Sastha Kavu. 47848. *Fl. & Fr.*: February-Apr. *Dist.*: South India and Sri Lanka.

Note: This species was not previously recorded from Kerala until the present finding.

CLEOMACEAE Horan.,

Prim. Lin. Syst. Nat. :92. 1834

Cleome L.,

Sp. Pl. 671. 1753, *nom. cons.*

1. Flowers pale blue; stamens 6*C. rutidosperma*
1. Flowers yellow; stamens 12-18*C. viscosa*

Cleome rutidosperma DC., Prodr. 1:241. 1824.; Mukherjee in Indian Forester 95:237. 1969; Raghavan in J. Econ. Tax. Bot. 5:463.1984; Nayar & *al.*, Flg. Pl. Kerala-Handb. 165. 2006.

Spreading annual herbs, branchlets ascending, angular, glandular. Leaves 3-foliolate; leaflets ovate-oblong or lanceolate, to 4 x 2 cm, acute or rounded at base, obtuse or acute at apex, mucronate, dark green above, pale beneath; lateral nerves 5-8 pairs; petioles to 4 cm long. Flowers pale blue, axillary, solitary; pedicels slender to 3 cm long. Sepals 5 mm long, linear pale green. Petals clawed, claw yellow, 10 mm long, acute at apex. Stamens 6, adnate to the base of gynophore; anthers dark blue. Ovary on a short gynophore, capsule sub-cylindric, glabrous; 6.5 cm long.

Nagaru Kavu, Ullorkonam, SK 48621; Karingottu Kavu, Mevarkara, SK 48667. *Fl. & Fr:* Sept.-Mar. *Dist.:* Old world topics.

Note:- Addition to flora of Thiruvananthapuram.

Cleome viscosa L., Sp. Pl. 672. 1753; Hook.f. & Thoms. in Hook.f., Fl. Brit. India 1:170. 1872; Rao, Fl. Pl. Travancore 17.1914;Dunn in Gamble, Fl. Madras 41.1915; Jacobs in Steenis, Fl. Males. I, 6:103. 1960; Mohanan & Henry, Fl. Thiruvananthapuram 56. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 166. 2006. *Polanisia viscosa* (L.) DC., Prodr. 1: 242. 1834.

Annual herbs; stem glandular hairy. Leaves 3-5 foliolate; leaflets elliptic-oblong or obovate, terminal one largest, glandular hairy; petiole to 5 cm long. Flowers yellow, axillary. Sepals 3-4 mm long, oblong-lanceolate. Petals obovate. Stamens 12-18, adnate to the base of gynophore. Ovary on a short gynophore; ovules many on 2 parietal placenta. Capsule ridged, 4.5-6 cm long; seeds finely striate.

Pillathamburan Kavu, SK 48609. *Fl. & Fr.*: - June-Feb. *Dist.*:Paleotropics.

VIOLACEAE Batsch,

Tab. Affin.Regni Veg. : 57. 1802. *nom. cons.*

Hybanthus Jacq.,

Enum. Syst. Pl. 2., 1760. *nom. cons.*

Hybanthus enneaspermus (L.) F. Muell. Fragm. 10:81.1876; Tennant, Kew Bull. 16:431. 1963; Jacobs & Moore in Steenis, Fl. Males. I.7:197.1971; Banerji & Pramanik, Fl. Ind. Fasc. 12: 2.1983; Mohanan & Henry, Fl. Thiruvananthapuram, 58. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 626. 2006. *Viola enneasperma* L., Sp. Pl. 937. 1753. *V. suffruticosa* L., Sp. Pl. 937. 1753. *Ionidium suffruticosum* (L.) Ging. ex DC., Prodr. 1:311. 1834; Wight, Ill. Ind. bot. t. 19. 1840 & Icon. pl. Ind. orient. t. 308. 1840; Hook.f. Fl. Brit. India 1:185.1872; Rao, Fl. Pl.

Travancore 21.1914; Dunn in Gamble, Fl. Madras 49. 1915. *Nelam-
parenda* Rheede, Hort.Malab. 9:117,t.60. 1689. *Orilathamara*.

Small suffrutescent perennial herbs, to 30 cm height, with many diffuse or ascending branches, glabrous or more or less pubescent. Leaves alternate, linear or lanceolate or elliptic, to 2.5 x 0.7 cm, attenuate at base, acute at apex, serrate at margins, subsessile; stipules gland-tipped, subulate. Flowers axillary, solitary, violet; pedicel shorter than leaves to 8 mm long. Sepals 5, lanceolate, 3-3.5 mm long, laterals falcate, upper one oblong. lower one larger, orbicular, clawed, to 1.2 x 0.8 cm. Stamens 5, connate; anthers villous. Ovary ovoid, ovules numerous; stigma oblique. capsule subglobose, 3-valved. Seeds ovoid, acute, longitudinally striate, yellowish-white, to 2 mm long.

Madan Kavu, Kumarapuram, SK 48618. *Fl. & Fr.*: Sept. – Feb. *Dist.*: Tropical Asia, Africa and Australia.

BIXACEAE Link,

Handbuch 2:371.1831, *nom.cons.*

Bixa L.,

Sp.Pl. 512. 1753.

Bixa orellana L., Sp. Pl. 512. 1753; Bedd. Fl. sylv. S. India t. 79. 1871; Hook.f. Fl. Brit. India 1: 190. 1872; Rao, Fl. Pl. Travancore 22. 1914; Dunn in Gamble, Fl. Madras 51. 1915; Dassan. in Dassan. & Fosberg, Rev. Handb. Fl. Ceylon 5: 121. 1985; Mohanan & Henry, Fl. Thiruvananthapuram 59. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 148. 2006. *Kurangumanjal*.

Small trees with yellowish or red juice. Leaves alternate, broadly ovate, 16-18 x 8-11 cm, truncate or sub-cordate at base, acute or acuminate at apex, sub-entire or entire at margins, glabrous on both sides; penni-nerved; petioles 6-8 cm long. Flowers white or pink in terminal corymbose panicles, 5 cm across. Sepals 5, two smaller and three larger, oblong or suborbicular, concave. Petals 5, obovate-obtuse, 1.5-2 x 0.8-1 cm. Stamens numerous, inserted on a thick torus; anthers oblong, dehiscent at the apex by 2 short slits. Ovary 1-celled, echinate; ovules many; style slender, curved; stigma very shortly 2-lobed. Capsule 2-valved, ovoid, 3-4 x 2-2.5 cm, covered by red bristles. Seeds trigonous, rounded and grooved on the back, covered with red pulp.

Parambarathala Kavu, SK 48623. *Fl. & Fr.*: Round the year. *Dist.*: Native of Tropical America, now planted elsewhere as a garden plant.

FLACOURTIACEAE Rich. ex DC.,

Prodr. 1: 255. 1824, *nom. cons.*

- 1. Petals 0.....*Flacourtia*
- 1. Petals 4-5.....2
- 2. Trunk armed with branched thorns.....*Scolopia*
- 2. Trunk unarmed.....*Hydnocarpus*

Flacourtia Comm. ex L'Her.

Stirp. Nov. 59. 1786.

Flacourtia montana Grah., Cat. Pl. Bombay 10. 1839; Hook.f. & Thoms. in Hook.f. Fl. Brit. India 1: 192. 1872; Rao, Fl. Pl. Travancore 23. 1914

Dunn in Gamble, Fl. Madras 54. 1915; Nayar & *al.*, Flg. Pl. Kerala-Handb. 334. 2006. *Kattu sheemanelli*.

Small to medium sized trees; trunk often thorny; branchlets pubescent or glabrous. Leaves alternate, ovate, 18-22 x 6-8 cm, acute or rounded at base, acute or acuminate at apex, crenate at margins, glabrous except the midrib below; 3-5 nerved from the base; petiole to 0.8 cm long. Flowers unisexual in small branched pubescent cymes. Perianth lobes 4-5, imbricate. Stamens many. Ovary incompletely 2-5 locular; ovules many; style 3-5. Berry globose, 1-1.5 cm across, bright red. Seeds many, creamy white.

Padinjatte Kavu, Thachottu SK 48668. *Fl. &Fr*: Nov.- Mar. *Dist.*: India.
Note: Addition to Flora of Thiruvananthapuram.

Hydnocarpus Gaertn.,

Fruct. Sem. Pl. 1: 288. 1788.

1. Leaves entire at margins.....*H. alpina*

1. Leaves serrate at margins.....*H. pentandra*

Hydnocarpus alpina Wight, Icon. pl. Ind. orient.. t. 942. 1845; Bedd., Fl. sylv. S. India t. 77. 1871; Hook.f. & Thoms. in Hook.f. Fl. Brit. India 1: 197. 1872; Rao, Fl. Pl. Travancore 24. 1914; Dunn in Gamble, Fl. Madras 52. 1915; Mohanan & Henry, Fl. Thiruvananthapuram 61. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 334. 2006. *Kattumarotti*.

Medium sized evergreen trees; bark smooth, mottled with grey. Leaves oblong or elliptic-oblong, 15-20 x 5-7 cm, rounded or obtuse at

base, acute or acuminate at apex, entire; lateral nerves 7-10 pairs, intercostae reticulate, faint; petiole to 1 cm long. Flowers unisexual, clustered at the tip of short thick peduncle. Male flowers: Sepals 5, imbricate. Petals 5, with a scale at base. Stamens 5-many, connective broad. Pistillode sometimes present. Female flowers: Sepals 5. Petals 5, creamy-white, glabrous. Ovary 1-locular; ovules many on parietal placenta; stigma sessile, 3-5 lobed. Berry globose, tomentose, 5-8 cm across.

KeezhettiKavu SK 48674. *Fl. & Fr.*: Dec. – Mar. *Dist.*: South India and Sri Lanka.

Hydnocarpus pentandra (Buch.-Ham.) Oken, *Allg. Naturgesch.* 3(2): 1381. 1841; Mukherj., *Bull. Bot. Surv. India* 14: 183. 1872; Mohanan & Henry, *Fl. Thiruvananthapuram* 62. 1994; Nayar & *al.*, *Flg. Pl. Kerala-Handb.* 335. 2006. *Chilmoria pentandra* Buch.-Ham., *Trans. Linn. Soc. London* 13: 501. 1822. *Hydnocarpus laurifolia* (Dennst.) Sleumer, *Bot. Jarhrb.* 69: 33. 1938. *Munnicksia laurifolia* Dennst., *Schluss. Hort. Ind. Mal.* 27. 1818, nom.nud. *Hydnocarpus wightiana* Bl., *Rumph.* 4: 22. 1848; Hook.f. *Fl. Brit. India* 1: 196. 1872; Rao, *Fl. Pl. Travancore* 24. 1914; Dunn in Gamble, *Fl. Madras* 37. 1915. *Marotti*.

Medium sized evergreen trees; bark smooth, grey. Leaves elliptic or elliptic – lanceolate, 16-20 x 6-8 cm, acute at base, acuminate at apex, serrate at margins, glabrous above, pubescent beneath; lateral nerves 5-6 pairs. Flowers unisexual in axillary cymes. Sepals 5, imbricate, pubescent. Petals 5, greenish-yellow, ciliate along the margins. Male flowers: Stamens 5, opposite the petals; filaments subulate, hairy at the base, about equalling the petals. Female flowers: Stamens 5, without pollen. vary

globose, hairy. Berry globose, vertically 5-grooved, 4-6 cm across. Seeds 15-20, embedded in pulp, ovoid-oblong, obtusely angular, to 2.2 x 1.5 cm.

Common to almost all sacred groves. Thengazhiyathu Siva temple Kavu, SK 42323; Vaiaveettil thekkedathu Kavu SK 39312; Nagaramman kovil Kavu, SK 48677. *Fl. & Fr.*: Nov.- May. *Dist.*: Southern Western Ghats, endemic.

Scolopia Schreb.,

Gen. Pl. 335. 1789. *nom.cons.*

Scolopia crenata (Wight & Arn.) Clos, Ann. Sci. Nat. Bot. 4, 8: 250. 1857; Bedd., Fl. sylv. S. India t. 78. 1871; Hook.f. & Thoms. in Hook.f. Fl. Brit. India 1: 191. 1872; Rao, Fl. Pl. Travancore 22. 1914; Dunn in Gamble, Fl. Madras 52. 1915; Sleumer, Blumea 20: 39. 1972; Mohanan & Henry, Fl. Thiruvananthapuram 62. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 336. 2006. *Phoberos crenatus* Wight & Arn., Prodr. fl. Ind. orient. 29. 1834.

Small to medium sized trees; trunk armed with branched thorns; bark smooth, reddish-brown. Leaves simple, lanceolate or elliptic-lanceolate, 10-14 x 3-4.5 cm, rounded or acute at base, caudate-acuminate at apex, crenate at margins, coriaceous; basally 3-5 nerved, reticulation faint; petiole to 0.8 cm long. Flowers in axillary racemes. Sepals 5, ovate, to 2.5 mm long, ciliate, shortly connate at base. Petals 5, white, to 1.5 mm long, oblong, glabrous. Stamens numerous, connective prolonged into a narrow appendage. Ovary 1-celled, stigma lobed. Berry globose, to 1 cm across, apiculate.

Cherunilakkodu Kavu, SK 48627. *Fl. & Fr.*: Jul.-Oct. *Dist.*: Indo-Malesia.

POLYGALACEAE R.Br.in

Flinders, *Voy. Terra Austr.* 2: 542. 1814. *nom.cons.*

Polygala L.,

Sp. Pl. 701. 1753.

Polygala arvensis Willd., *Sp. Pl.* 3: 876. 1802; Burt, *Notes Roy. Bot. Gard. Edinb.* 32: 404. 1973; Chandr. & Nair, *Proc. Indian Acad. Sci. (Pl. Sci.)* 90. 123. 1981; Mohanan & Henry, *Fl. Thiruvananthapuram* 64. 1994; Nayar & *al.*, *Flg. Pl. Kerala-Handb.* 486. 2006. *P.chinensis auct.non* L. 1758; Benn. in *Hook.f. Fl. Brit. India* 1: 204. 1872 p.p.; Rao, *Fl. Pl. Travancore* 25. 1914; Dunn in *Gamble, Fl. Madras* 58. 1915; Mukh., *Bull. Bot. Soc. Beng.* 12: 38. 1958.

Erect or procumbent herbs; roots aromatic. Leaves simple, obovate or narrowly elliptic or orbicular, 1-4 x 0.5-1.5 cm, acute at apex, glabrous to densely pubescent or puberulent. Flowers yellow, solitary or in lateral racemes of 2 cm long. Sepals 5, persistent, unequal, the outer 3 smaller; inner 2 larger, petaloid. Petals yellow, adherent to the staminal sheath, keel petal crested with shortly forked or notched appendages. Stamens 8, monadelphous. Ovary 2-loculed, each with one ovule; style curved, hooked at apex. Capsule ciliate along the margins, laterally compressed. Seeds black, elliptic-obovate, pilose, caruncle with 2-oblong appendage and a short tooth.

Thiruchittor Kavu, SK 48706; Udavan Kavu, SK 48656. *Fl. &Fr.*: Jul.-
Dec. *Dist.*: Indo-Malesia.

XANTHOPHYLLACEAE (Chodat) Gagnep. ex Reveal & Hoogland
in Bull. Mus. Natl. Hist. Nat., B, Adansonia 12:206. 1990.

Xanthophyllum Roxb.,

Pl. Coromandel 3:81. 1820. *nom.cons.*

Xanthophyllum flavescens Roxb., Pl. Coromandel. 3:81,t.284. 820;
Bennett in Hook.f., Fl. Brit. India 1:209.1874; Rao, Fl. Pl. Travancore
26.1914; Dunn in Gamble, Fl. Madras 1:59. 1915; Banerjee &
Balakrishnan in B.D. Sharma *et al.*, Fl. India 2:497.1993; Mohanan &
Henry, Fl. Thiruvananthapuram 66.1994; Nayar & *al.*, Flg. Pl. Kerala-
Handb. 634. 2006. *X. virens* Roxb., Fl. Ind. 2:221.1832.

Small trees, bark smooth, greenish-black, mottled with grey.
Leaves elliptic-oblong or ovate – lanceolate, 6-16 x 3.5-8cm, acute at base,
acuminate at apex, entire at margin, shining and dark green above, dull
beneath, yellow when dry; lateral veins 5-7, reticulation prominent.
Flowers yellowish-white in axillary and extra axillary racemes, also in
terminal panicles. Sepals 5, ovate-obtuse, subequal. Petals 4 or 5, obovate.
Stamens 8. Ovary one celled, style curved. Fruit subglobose to 2 cm wide,
green, rugose, 1-seeded.

Cherunilakkodu Kavu, SK 48607; Cherukulathu Sree Mannady Kavu, SK
39325; KeezhettiKavu SK 42336. *Fl. & Fr.*: - Nov-March. *Dist.*:
Endemic to Southern Western Ghats

Note: According to Meyden (l.c) the Indian element of *Xanthophyllum* represent *X. arnottianum* Wight. and *X. flavescens* is distributed throughout South and East Asia. Banerjee & Balakrishnan (l.c.) reinstated the name *X. flavescens* for the South Indian species

CARYOPHYLLACEAE Juss.,

Gen. Pl.: 299. 1789. *nom. cons.*

DRYMARIA Willd. ex Schult.in

Roemer & Schultes Syst. Veg. 5: xxx1, 406. 1819.

Drymaria cordata (L.) Roem. ex Schult., Syst. Veg. 5:406. 1820; Edgw. & Hook.f. in Hook.f., Fl. Brit. India 1: 244. 1874; Dunn in Gamble, Fl. Madras 63. 1915; Mohanan & Henry, Fl. Thiruvananthapuram 66.1994. ssp. **diandra** (Bl.) Duke, Ann. Missouri Bot. Gard. 48: 253. 1961; Majumdar, Bull. Bot. Surv. India 10:294.1969; Nayar & *al.*, Flg. Pl. Kerala-Handb. 168. 2006. *Holostum cordatum* L., Sp. Pl. 88. 1753. *Drymaria diandra* Bl., Bijl. 62. 1825.

Diffuse glabrous herbs. Leaves opposite, 1-2x 1-1.8 cm, basally 3-5 nerved; stipules filiform. Flowers bisexual, in terminal and axillary cymes. Sepals 5, oblong 0.2-0.3 cm long. Petals 5, 2-fid, white, 0.2 cm long. Stamens 3, free. Ovary 1-celled; style 3-fid. Capsule 3-valved; seeds many, reniform.

Thaivilakom Sri Nagaraja Kavu, SK 48608. *Fl. & Fr.*: Round the year.

Dist.: Paletropics

PORTULACEAE Juss.,

Gen. Pl.: 312. 1789. *nom. cons.*

Portulaca L.,

Sp. Pl. 445. 1753.

- 1. Leaves decussate, flowers solitary.....*P. guardifida*
- 1. Leaves alternate or sub opposite, flowers 1-3 or more in
terminal clusters.....2
- 2. Stem nodes glabrous, unappendaged.....*P. oleracea*
- 2. Stem nodes with a ring of hairs or with
scarios appendage.....*P. grandiflora*

Portulaca grandiflora Hook. in Curtis, Bot. Mag. t. 2885. 1829; L. Baily, Man. Cult. Pl. 365. 1915; Matthew, Fl. Tamil Nadu Carnatic 1:81. 1983. *P. pilosa* L. Sp. Pl. 445. 1753, ssp. *grandiflora* (Hook.) Gees, Blumea 17:297. 1916. & in Steenis Fl. Malesiana I.7:131. 1971; Nayar & *al.*, Flg. Pl. Kerala-Handb. 492. 2006.

Diffuse succulent herbs; branchlets decumbent or ascending, puberulous. Leaves alternate to sub opposite, linear, 1-3 x 0.2-0.3 cm, terete or sub terete, obtuse at both ends, sessile, green above, pale beneath. Flowers ca. 2-5 in a terminal clusters surrounded by 5-8, dense foliar involucres; to 2.5 cm across; bracteoles to 5mm long. Sepals 2, ovate, keeled at apex. Petals 5, broadly obovate, 1-2.5 x 0.8-1 cm. Stamens numerous. Ovary 1-celled, style terminal. Capsule globose, to 5 mm long.

Sri Dhurga temple Kavu, SK 48664. *Fl.* & *Fr.*: Round the year. *Dist* : Native of Tropical America, cultivated as an ornamental and found escaped elsewhere.

Note : Addition to Flora of Thiruvananthapuram.

Portulaca oleracea L., Sp. Pl. 445. 1753; Roxb. Fl. Ind. 2:463. 1832; Wight & Arn. Prodr. Fl. Ind. orient. 356. 1834; Hook.f., Fl. Brit. India 1:246. 1874; Rao, Fl. Pl. Travancore 26. 1914; Dunn in Gamble, Fl. Madras 66. 1915; Mohanan & Henry. Fl. Thiruvananthapuram 68. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 491. 2006.

Prostrate herbs; branchlets glabrous, green or purplish. Leaves alternate or sub-opposite, obovate or spatulate, 0.7-2 x 0.5-1.5 cm, attenuate at base, obtuse or truncate at base, entire at margin, fleshy, glabrous. Flowers 3-6 in a terminal clusters, foliar involucre 3-6; bracteoles 3-5 mm. Sepals 2, lanceolate, 2-3 mm long, subequal. Petals 5, yellow, obovate, 5.5-7 mm long, minutely united at base, retuse and mucronate at apex. Stamens 10-12, filaments unequal, pubescent at base. Ovary obovoid, 1.5 mm long, half enclosed by the calyx, 1-celled. Capsule ovoid, to 7 mm long, circumscissile. Seeds many, reniform, black, tubercled.

Valiyaveetil thekkedathu Kavu, SK 48661. *Fl. &Fr*: Sept. – Jan. *Dist.*: Pantropical.

Portulaca quadrifida L., Mant. Pl. 1:73. 1767; Wight & Arn., Prodr. fl. Ind. orient. 356. 1834; Wight, Ill .Ind. Bot. t. 109. 1890; Hook.f., Fl. Brit. India 1: 247. 1874; Rao, Fl. Pl. Travancore 27. 1914; Dunn in Gamble, Fl. Madras 66. 1915; Gees., Blumea 17:290. 1969; Mohanan & Henry. Fl. Thiruvananthapuram 68. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 491. 2006.

Prostrate herbs with fluffy nodes; branchlets creeping pinkish. Leaves decussate, elliptic or ovate-lanceolate, 4-8 x 1-3 mm, cuneate at base, acute at apex, entire at margin. Flowers solitary, terminal, to 1 cm across, foliar involucre 4. Sepals 2, oblong, to 3 mm, equal. Petals 4, yellow, obovate, 4-5 x 1.5-2 mm, basally sub connate. Stamens ca. 8, filaments subequal, to 2.5 mm long. Ovary ellipsoid, 1-celled; style apically 4-fid. Capsule oblong 3.5-4 mm long. Seeds ca. 10, tubercled.

Sree Dharma Sastha Kavu, Pirayil SK 48606. *Fl. & Fr.*: June – Feb
Dist.: Pantropical, except Australia.

Talinum Adans.,

Fam. Pl. 2 : 245, 609 1763. *nom. cons.*

Talinum portulacifolium (Forssk.) Asch. ex Schw. Bull. Herb. Boissier 4, App. 2:172. 1896; Mohanan & Henry. Fl. Thiruvananthapuram 68. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 492. 2006. *Orygea portulacifolia* Forssk., Fl. Aegypt.-Arab. 103. 1775. *Talinum cuneifolium* Willd. Sp. Pl.2: 864. 1799; Hook.f., Fl. Brit. India 1:247. 1874; Rao, Fl. Pl. Travancore 27. 1914; Dunn in Gamble, Fl. Madras 66. 1915. *Sambarcheera*.

Glabrous herbs; branchlets glabrous. Leaves alternate, obovate or oblanceolate, 6-9 x 2-3 cm, attenuate at base, obtuse or rotund at apex, mucronate, fleshy, glabrous, glossy. Flowers purple in terminal panicles; pedicels curved; bracts deciduous, acute at apex, to 6 mm long. Sepals 2, lanceolate, to 6 x 3 mm, 3- nerved. Petals 5, obovate, to 1 x 0.6 cm, rotund, apiculate. Stamens numerous, basally united, filaments unequal; anthers oblong. Ovary subglobose; style 3-fid, to 4 mm long. Capsule

globose, 3- valved; Seeds reniform, compressed, with regular concentric striations.

Thannikkattu Kavu, Kazhakkootam, SK 48604. *Fl. & Fr*: Round the year.

Dist : Africa, Arabia, India.

CLUSIACEAE Lindl.,

Nat. Syst. Bot., ed. 2:74. 1836. *nom. cons.*

- 1. Nerves of leaves close and parallel, ovary 1-celled*Calophyllum*
- 1. Nerves of leaves otherwise, ovary 2-12 celled..... 2
- 2. Fruit a capsule.....*Poeciloneuron*
- 2. Fruit a berry.....3
- 3. Flowers bisexual, large.....*Mesua*
- 3. Flowers unisexual, small.....*Garcinia*

Calophyllum L.

Sp. Pl. 513.1753.

- 1. Petals absent.....*C. apetalum*
- 1. Petals present.....*C. inophyllum*

Calophyllum apetalum Willd., Ges. Naturf. Freunde Berlin Mag. Neuest 5:79. 1811; Maheswary., Bull. Bot. Surv. India 2: 143.1960., Stevens, J. Arnold Arbor. 61: 253. 1980; Mohanan & Henry, Fl. Thiruvananthapuram 69. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 179. 2006. *C. decipiens* Wight, Icon. pl. Ind. orient. t. 106. 1839; Dunn in Gamble, Fl. Madras 1:76. 1915. *C. wightianum* Wall. ex Planch. & Triana, Ann. Sci. Nat. Bot. (ser.4) 15: 256.1862; Anders. in Hook.f., Fl. Brit. India 1:274.1874; Rao, Fl. Pl. Travancore 32. 1914. *Calophyllum calaba* sensu Nicolson & *al.*, Interp. Hort. Malab. 81. 1998. *Attupunna*.

Medium sized trees, with yellowish brown, rough bark; branchlets 4-angled. Leaves oblong or elliptic – oblong, 8-12 x 3-5 cm, truncate or rounded at base, acute or obtuse at apex, coriaceous; lateral nerves ascending; petiole to 0.5 cm long. Flowers white in axillary racemes, to 1.3 cm wide. Sepals 4, petaloid. Petals absent. Stamens many, basally united into groups. Ovary 1-celled, ovule solitary, basal; stigma peltate. Drupes reddish, ellipsoid, to 1 cm long.

Manthuruthu Kavu, SK 39321; Keezhetti Kavu, SK 48611; SreeDharma Sastha Kavu, Thuruthippally, SK 48615. *Fl. & Fr* : Nov. – March. *Dist.*: Southern Western Ghats, endemic.

Calophyllum inophyllum L., Sp. Pl. 513. 1753; Roxb. Fl. Ind. 2:606. 1832; Wight & Arn., Prodr. fl. Ind. orient. 103. 1834; Wight, Ill. t. 77. 1840; Hook.f., Fl. Brit. India 1:273. 1874; Rao, Fl. Pl. Travancore 31. 1914; Dunn in Gamble, Fl. Madras 76. 1915; Kosterm. in Dassan. & Fosb., Rev. Handb. Fl. Ceylon 1:90. 1980; Mohanan & Henry, Fl. Thiruvananthapuram 69. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 179. 2006. *Punna*.

Small or moderate sized handsome evergreen trees; bark grey and smooth; leaf-scars persistent. Leaves decussate, oblong-ovate or broadly elliptic, 8-14 x 4-9 cm, acute at base, rounded or emarginate at apex, thick-coriaceous, glossy, glabrous, dark green above; lateral nerves numerous, close and parallel; petiole to 1 cm long. Flowers white in lax few-flowered terminal racemes, 10-15 cm long, fragrant. Sepals 4, outer pair smaller, ovate-orbicular, to 7 x 5 mm, inner larger, to 1 x 0.8 cm, obovate. Petals 4, oblong, to 1.5 x 0.5 cm, reflexed. Stamens numerous,

in 4-5 bundles, filaments to 7 mm long. Ovary 1- celled, ovule 1, erect; style to 5mm long, flexuous; stigma peltate. Drupe globose, with thick pericarp, to 3.5 x 3 cm; seeds solitary, 1.5 cm across.

Thoppilmele Nagaru Kavu, SK 48625. *Fl. & Fr.*: Apr-Aug.

Dist: Pantropical

Garcinia L.,

Sp. Pl. 443. 1753.

Garcinia gummi-gutta (L.) Robson, Brittonia 20:103. 1968; Kosterm., Ceylon J. Sci. Biol. 12:55. 1976. Mohanan & Henry, Fl. Thiruvananthapuram 71. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 180. 2006. *Cambogia gummi-gutta* L., Gen. Pl. (ed.5). 552.1754. *Garcinia cambogia* (Gaertn.) Desv. in Lam., Encycl. 3: 701. 1701., Anders. in Hook.f., Fl. Brit. India 1:261. 1874; Rao, Fl. Pl. Travancore 29.1914., Dunn in Gamble, Fl. Madras 73. 1915. *Mangostana cambogia* Gaertn. Fruct. 2:106. 1790. *Garcinia conicarpa* Wight, Icon. pl. Ind. orient.t. 121. 1839. *G. cambogia* (Gaertn.) Desv. var. *conicarpa* (Wight) Anders. in Hook.f., Fl. Brit. India 1:261. 1874; Maheswari in Bull. Bot. Surv. India 6:129.1965. Kudampuli.

Medium sized evergreen tree, bark brownish black, yellow inside. Leaves elliptic-oblong or obovate, 10-14 x 3-6 cm, cuneate at base, acute or obtuse apex, chartaceous, glabrous; lateral nerves faint; petiole 1-2 cm long. Male flowers fascicled, terminal or axillary to leaf scars. Sepals 4, outer larger, ovate-suborbicular. Petals yellowish with a median pink steak, fleshy, 0.8-1 x 0.6-0.8 cm. Anthers dehiscing longitudinally. Female flowers usually solitary, ovary to 0.8 mm, grooved, 6-12 locular,

smooth, staminodes in a ring around the ovary. Berry depressed globose 6-8 grooved, 4-5.5 cm wide.

Mechamkode Kavu, SK 39383; Chokkan Kavu, Pachalloor, SK 48630. *Fl. & Fr* : Mar.- May .*Dist.*: Southern Western Ghats, endemic.

Note: According to Kostermans (l.c.) *G. gummi-gutta* is endemic to India.

Mesua L.,

Sp. Pl. 515. 1753.

Mesua ferrea L., Sp. Pl. 515.1753; Anders. in Hook.f., Fl. Brit. India 1:277. 1874; Rao, Fl. Pl. Travancore 32. 1914; Dunn in Gamble, Fl. Madras 76. 1915; Stevens, Taxon 35:353. 1986; Mohanan & Henry, Fl. Thiruvananthapuram 73. 1994. ssp. *ferrea* Nayar & al., Flg. Pl. Kerala-Handb. 180. 2006. *Calophyllum nagassarium* (Burm.f.) Kosterm., Ceylon J. Biol. Sci. 12:71. 1976. & in Dassan. & Fosb., Rev. Handb. Fl. Ceylon 1:107. 1980; Steven, J. Arnold Arbor. 61: 682. 1980; *Nangu*.

Moderate sized evergreen trees; trunk straight, erect; bark smooth, ash - coloured; branches horizontally spreading. Leaves lanceolate. or oblong-lanceolate, 8-10 x 1.5-2.5 cm, rounded or acute at base, acute or acuminate at apex, red when young, turning green at maturity, dark green above, glaucous beneath; petiole to 1 cm. Flowers white, solitary, axillary and terminal, short-pedicelled; buds subglobose. Sepals 4, orbicular, inner two larger, to 1.5 cm long. Petals 4, white, spreading, obovate-cuneate, to 3 cm long, margin crisped or undulate,. Stamens numerous, golden yellow, much shorter than petals, slightly united at the base into a fleshy ring; anthers oblong. Ovary ovoid; style twice as long as the stamens;

stigma peltate. Berries ovoid. to 4 cm long, woody, surrounded by persistent calyx. Seeds 1-4, brown, shining.

Naniyode Kavu, SK 48632. *Fl. & Fr* : January – June. *Dist.*: South India and Ceylon.

Note: The nomenclature of this species ran into trouble when Kosterman (l.c.) restricted *M. ferrea* L., as an endemic of Ceylon and assigned the Indian materials to *M. nagassarium* (Burm.f.) Kostern. Nair (1984) subsequently made corrections in nomenclature bringing all sub specific taxa under *M. nagassarium* . Stevens (l.c.) after a revised study of the types concerned and concluded that the correct name of the Indian material is *M. ferrea* L.

Poeciloneuron Bedd.in

J. Linn. Soc. Bot. 8:267. 1865.

Poeciloneuron indicum Bedd., J. Linn. Soc. Bot. 8:267, t. 17. 1865 & in *Fl. sylv. S. India* t. 3. 1869; Dyer in *Hook. f, Fl. Brit India* 1: 278. 1874; Rao, *Fl. Pl. Travancore* 32. 1914. Dunn in *Gamble, Fl. Madras* 77. 1915. Mohanan & Henry, *Fl. Thiruvananthapuram* 73. 1994 ; Nayar & al., *Flg. Pl. Kerala-Handb.* 183. 2006.*Poothamkollu*.

Large evergreen trees; bark greyish-brown, reddish inside. Leaves simple, opposite, linear-oblong to oblong-lanceolate, 16-25 x 4-6.5 cm, obtuse at base, acuminate at apex, entire at margins; glossy; petiole to 2 cm long. Flowers white in terminal or axillary panicles, 1.5-2 cm across. Sepals and petals 5. Stamens Ca. 20, filaments free or slightly united at base, anthers lobed. Ovary 2-celled; styles 2. Capsule globose, beaked, to. 2.5 cm across, 1-seeded.

Poolamthara Kavu, SK 48635. *Fl. & Fr.*: November-March.

Dist.: Western Ghats, endemic.

DIPTEROCARPACEAE Blume,

Bijdr. Fl. Ned. Ind. : 222. 1825, *nom. cons.*

1. Stamens 15.....*Hopea*

1. Stamens more than 15, usually 50.....*Vateria*

Hopea Roxb.,

Pl. Coromandel 3:7. 1811. *nom. cons.*

1. Leaves coriaceous. more than 18 cm long, domatia

not prominent.....*H. ponga*

1. Leaves chartaceous, less than 7 cm long,

domatia prominent.....*H. parviflora*

Hopea parviflora Bedd., Fl. sylv. S. India t. 7. 1869; Hook.f., Fl. Brit.

India 1: 308. 1874; Rao, Fl. Pl. Travancore 35. 1914; Dunn in Gamble, Fl.

Madras 82. 1915; Mohanan & Henry, Fl. Thiruvananthapuram 75.1994;

Nayar & *al.*, Flg. Pl. Kerala-Handb. 218. 2006. *Thambakam*.

Evergreen trees; bark dark coloured, cracking irregularly. Leaves alternate, ovate-lanceolate, 5-7 x 2.5-3.5 cm, rounded or acute at base, acuminate at apex, entire, chartaceous, glabrous, domatia prominent in the nerve axils. Flowers white in terminal panicles of unilateral racemes. Sepals subequal, enlarged in fruits. Petals glabrous, oblong, acute at apex, irregular at margins. Stamens 15, connective awned. Ovary 3-celled,

ovule 2 in each cell; style shortly subulate. Fruit nut like with 2 oblong wings developed from the accrescent calyx. Seeds ovoid.

Nanniyode Kavu, SK 48638. *Fl. & Fr* : Mar. – Oct. *Dist.*: South West India.

Hopea ponga (Dennst.) Mabb., *Taxon* 28: 587. 1979; Mohanan & Henry, *Fl. Thiruvananthapuram* 75. 1994; Nayar & *al.*, *Flg. Pl. Kerala-Handb.* 218. 2006. *Artocarpus ponga* Dennst., *Schlüssel Hort. Malab.* 15, 18, 30. 1818. *Hopea wightiana* Wall. ex Wight. & Arn., *Prodr.* 1: 85. 1834; Wight, *Ill. Ind. Bot.* 1:t.37. 1840; Hook. f., *Fl. Brit. India* 1:309. 1874; Rao, *Fl. Pl. Travancore* 35. 1914; Dunn in Gamble, *Fl. Madras* 82. 1915.

Large evergreen trees; bark smooth; young branches pubescent, at length glabrous. Leaves alternate, oblong or ovate-oblong, 18-23 x 5-7 cm, rounded at base, obtuse or sub acute at apex, glabrous; lateral nerves 7-10, oblique, curved, coriaceous. Flowers white in unilateral paniced racemes, slender, glabrous; bracts lanceolate; pedicels very short. Sepals 5, sub equal, ovate, obtuse. Petals 5, oblong, acute at apex, pubescent without. Stamens 15, awned; anthers ovate. Ovary ovoid, 3-celled. Nuts winged; wings oblong, to 5 cm long. Seeds ovoid.

Ayaniyerathala Devi Temple Kavu, SK 48683; Nagarukavu, Puliyoor Konam, SK 48680; Siva temple Kavu, Ambalathara, SK 48707; Kulangara Kavu, SK 39345. *Fl. & Fr* : March-Oct. *Dist.*: South West India.

Vateria L.,
Sp. Pl. 515. 1753.

Vateria indica L., Sp. Pl. 515. 1753; Dyer in Hook. f., Fl. Brit. India 1:313. 1874; Rao, Fl. Pl. Travancore 36. 1914; Dunn in Gamble, Fl. Madras 85. 1915; Mohanan & Henry, Fl. Thiruvananthapuram 75. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 219. 2006. *V. malabarica* Bl., Mus. Bot. 2: 29. 1852; Bedd., Fl. sylv. S. India t. 84. 1871. *Vella Payin*, *Velutha Kunthirikkum*.

Large handsome resinous trees; bark whitish; young branches and inflorescence clothed with hoary, stellate pubescence. Leaves alternate elliptic-oblong, , 12-20 x 5-10 cm, cordate or rounded at base, obtuse or shortly pointed at apex, glabrous; lateral nerves 12-15 pairs, very prominent beneath; petiole to 2.5 cm long, stout. Flowers white in profusely branched terminal panicles; bracts ovate, acute, caducous; pedicels 0.6-1 cm long. Sepals 5, free upto the base, oblong – lanceolate. Petals a little longer than the sepals, oblong, obtuse at apex. Stamens numerous; anthers slightly hairy at the base or glabrous, cells linear, connective produced into a subulate point. Ovary oblong, pubescent; style exceeding anthers, filiform, glabrous. Capsule to 8 cm long, oblong, obtuse at apex, 3-valved.

Cherunilakkodu Kavu, SK 48671. Fl. & Fr.: Mar.-Jun. Dist.: Western Ghats, North Canara southwards, endemic.

ANCISTROCLADACEAE Planch. ex Walp. in

Ann. Bot. Syst. 2: 175. 1851, *nom. cons.*

Ancistrocaldus Wall.,

Numer. List: No. 1052. 1829, *nom. cons.*

Ancistrocladus heyneanus Wall. ex Graham., Cat. Pl. Bombay 28. 1839; Wight, Icon. pl. Ind. orient. tt. 1987, 1988. 1853; Dyer in Hook. f., Fl. Brit. India 1:299. 1874; Dunn in Gamble, Fl. Madras 86. 1915; Mohanan & Henry, Fl. Thiruvananthapuram 76. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 54. 2006.

Climbing shrubs with hooked branches. Leaves sessile, crowded towards the apex of branches, 12-20 x 4-7 cm, oblanceolate, attenuate at base, acute or obtuse at apex, entire, coriaceous. Flowers in terminal or from the axils of upper leaves, in racemose panicles. Calyx tube adnate to ovary. Corolla yellow. Stamens 10; filaments short, dilated at base. Ovary 1-celled, 1-ovuled; style 3; stigma flattened. Fruit not seen.

Vadakkottu Sri Dharma Sastha Kavu. SK 48675; Valiya Kavu, SK 47968.
Fl.: Mar. -Apr. *Dist.*: Western Ghats, endemic.

MALVACEAE Juss.,

Gen. Pl. 271. 1789. *nom.cons.*

- 1. Epicalyx present.....2
- 1. Epicalyx absent.....3
- 2. Mericarp 1-seeded.....*Sida*
- 2. Mericarp 2-3 seeded.....*Abutilon*
- 3. Style unbranched, calyx entire or slightly
5-toothed at apex.....*Thespesia*
- 3. Style branched, calyx distinctly lobed.....4
- 4. Fruits glochidiate.....*Urena*
- 4. Fruits not glochidiate.....5
- 5. Calyx spathaceous.....*Abelmoschus*
- 5. Calyx not spathaceous.....6
- 6. Fruit a capsule.....*Hibiscus*
- 6. Fruit a schizocarp.....*Pavonia*

Abelmoschus Medik.,

Malvenfam. 45.1787.

Abelmoschus moschatus Medic., Malv. 46. 1787; Borssum, Blumea. 14: 90. 1966; Mohanan & Henry, Fl. Thiruvananthapurasm 77. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 399. 2006. *Hibiscus moschatus* L., Sp. Pl. 696. 1773; Mast. in Hook. f., Fl. Brit. India 1: 342. 1874; Dunn in Gamble, Fl. Madras 97. 1915. *Kasthuri Venda*.

Subshrubs; stem covered with stellate hairs and sharp bristles. Leaves simple, alternate, to 17 cm across, orbicular-cordate, deeply 5-lobed, lobes serrate-dentate at margin; petiole to 15 cm long; stipules linear. Flowers axillary, solitary or in terminal racemes; pedicels to 4 cm

long. Epicalyx lobes 8-10, linear. Calyx spathaceous, splitting down on one side, to 3 cm long. Petals 5, yellow with purple center. Capsule fusiform, to 5 x 1.75 cm, bristly all over. Seeds reniform, concentrically ribbed.

Pillaveedu Kavu, Kesavadasapuram, SK 48637. *Fl. & Fr* : July-October.
Dist.: South Asia – Pacific Islands.

Abutilon Mill.,

Gard. Dict. Abr., ed. 4: 23. 1754.

Abutilon indicum (L.) Sweet, Hort. Brit. 54. 1827; Wt. Icon. pl. Ind. orient. t. 12. 1838; Mast. in Hook. f., Fl. Brit. India 1:326. 1874; Rao, Fl. Pl. Travancore 39. 1914; Dunn in Gamble, Fl. Madras 91. 1915; Borssum, Blumea, 14: 170. 1966; Mohanan & Henry, Fl. Thiruvananthapuram 77. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 399. 2006. ssp. **indicum** Borssum, Blumea 14:171. 1966.

Undershrubs; stem minutely stellate and simple tomentose all over. Leaves 5-7 x 3.5-5 cm, ovate, cordate at base, acuminate, serrate or dentate at margins, pale green; pedicel to 4.5 cm, jointed above the middle. Flowers yellow, solitary, axillary. Calyx to 0.8 cm long, divided to the middle; lobes ovate, acute or apiculate. Petals to 1.2 cm long, obovate, retuse at apex. Staminal column stellate-tomentose, filaments to 3 mm long. Carpels 15-20, usually longer than calyx; styles 15-20. Schizocarp to 1.5 x 2 cm; mericarp 15-20; densely stellately hairy. Seeds ovoid or sub orbicular, black.

Sree Dhurga Devi temple Kavu, kaduvayil Konam, SK 48633. *Fl. & Fr* : Oct.-Jan. *Dist.*: Tropics and sub tropics of the world.

Note : Borssum (l.c) recognized three sub species, and ssp. *indicum* can be distinguish from the other two by its calyx being much smaller than the schizocarp.

Hibiscus L.

Sp. Pl. 693. 1753. *nom. cons*

1. Plants with prickles.....*H. hispidissimus*

1. Plants glabrous, without prickles.....*H. rosa-sinensis*

Hibiscus hispidissimus Griff., Not. Pl. Asiat. 4:521. 1854; Pradeep & Sivaraj., Taxon 40:637. 1991; Mohanan & Henry, Fl. Thiruvananthapuram 75. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 401. 2006. *H. aculeatus auct. non* Walter 1788; Roxb., Fl. Ind. 3:206. 1832, *nom. illeg*; Paul & Nayar, Bull. Bot. Surv. India 22: 194. 1982 & in Fl. India Fasc. 19:123. 1988. *H. furcatus auct. non* Willd. 1809; Roxb. ex DC., Prodr. 1: 449. 1824, *nom. illeg*. Mast in Hook. f., Fl. Brit. India 1: 335. Rao, Fl. Pl. Travancore 40 ., 1914; Dunn in Gamble, Fl. Madras 97. 1915. *Karthika poovu*.

Straggling shrubs, stem, petioles and pedicels with sharp recurved prickles. Leaves 7-17 x 4.5-10 cm, ovate-lanceolate, cordate at base, acuminate at apex, crenate-serrate at margins; 5-7 nerved at base; petioles 2-8 cm long. Flowers solitary, axillary, 5-10 cm across, yellow with a deep purple base. Epicalyx 8-12, 8x3 mm. Petals 5, 3x1.5 cm. Capsule globose, 1.5 x 1 cm, not exceeding calyx, bristly hairy, beaked; seeds 3-gonous, 4 mm long.

Manthuruthu Kavu, SK 39371; ParottuKonam Kavu, SK 48652. *Fl. & Fr.* :
Nov. – Dec.

Dist.: Pantropical.

Note : According to Pradeep & Sivarajan (l.c.) , the names *H. furcatus*
Roxb. and *H. aculeatus* Roxb. are illegitimate later homonyms.
The correct name for the species is *H. hispidissimus* .

Hibiscus rosa- sinensis L. Sp. Pl. 694. 1753; Roxb. Fl. Ind. 3:194. 1832;
Wight & Arn., Prodr. fl. Ind. orient. 49. 1834; Mast. in Hook. f., Fl. Brit-
India 1:344. 1874; Rao, Fl. Pl. Travancore 42. 1914. Gamble, Fl. Madras
99. 1915; Borssum, Blumea 14:72. 1966; Mohanan & Henry, Fl.
Thiruvananthapuram 80.1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 409.
2006. *Chembarathi*.

Shrubs, stem glabrous. Leaves simple, 7-10 x 4-6 cm, ovate,
subcordate at base, acuminate at apex, crenate-serrate at margins, 3-
nerved from base, dark green above, pale beneath. Flowers solitary, erect
or nodding, pedicels jointed near the calyx. Epicalyx lobes 10, green.
Calyx tubular, lobes 5, green. Corolla rose-red; petals 5, contorted.
Staminal column glabrous. Ovary 5-celled; style slender, 5-fid at apex,
stigma capitate.

Planted elsewhere in sacred groves. Virunthiyottu Kavu, SK 48639. Fl :
Round the year. *Dist.*: Africa, India. (Cultivated).

Pavonia Cav.,

Diss.2: App.(ii). 1786, *nom. cons.*

Pavonia odortata Willd. Sp. Pl. 3: 837. 1800; Wt. & Arn., Prodr. fl. Ind. orient. 47. 1834; Mast. in Hook. f. Fl. Brit. Ind. 1:331. 1874; Rao, Fl. Pl. Travancore 40. 1914; Dunn in Gamble, Fl. Madras 93. 1915; Mohanan & Henry, Fl. Thiruvananthapuram 80. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 404. 2006.

Subshrubs; branchlets hispid. Leaves simple, shallowly 3-lobed, 0.8-2.5 x 0.5-2 cm, ovate-suborbicular; lobes ovate, basally 5-nerved, cordate at base, acute at apex, dentate or sub entire at margins; petiole to 2.5 cm long. Flowers white, solitary or paired, to 1.5 cm across; pedicels to 3 cm long. Epicalyx segments 10-12, subulate, to 1 cm long. Calyx tubular at base; tube 1.5 mm long; lobes 5, ovate, to 2 mm long. Petals 5, to 1 x 0.5 cm, rotate. Stamens 10-12, staminal column to 1 cm long; filaments 4-6 mm long. Ovary 5-celled; ovule 1 in each cell. Schizocarp pubescent, to 7 mm long; mericarp not winged. Seeds 1-per mericarp, pubescent.

Sri Kunnathu Mannady Bhagavathy temple Kavu, SK 48641. *Fl. & Fr* : Round the year. *Dist.*: India, Burma, Sri Lanka, Tropical E. Africa.

Sida L.,

Sp. Pl. 683. 1753.

- 1.Mericarps 5.....2
1.Mericarps 6-10.....3
2.Prostrate herbs.....*S.cordata*
2.Erect herbs.....*S.mysorensis*

3.Leaves distichous.....	<i>S.acuta</i>
3.Leaves not distichous.....	4
4.Mericarps indehiscent.....	5
4.Mericarps dehiscent.....	6
5.Awn completely included in the calyx, glabrous.....	<i>S.rhomboidea</i>
5.Awn exceeding the calyx, pubescent.....	<i>S.unicornis</i>
6.Leaves obovate, retuse or truncate at apex.....	<i>S.alnifolia</i>
6.Leaves elliptic to rhomboid, acute at apex.....	<i>S.rhombifolia</i>

Sida acuta Burm.f., Fl. Ind. 147.1768; Wight & Arn., Prodr. fl. Ind. orient. 57. 1834; Wight, Icon. pl. Ind. orient. t. 95. 1838; Dunn in Gamble, Fl. Madras 90.1915; Borssum, Blumea 14:186. 1966; Fryxell, Syst. Bot. Monogr. 25: 380.1988; Paul & Nayar in Nayar et al (eds.); Fl. India 3: 281. 1993; Mohanan & Henry, Fl. Thiruvananthapuram 81. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 404. 2006. Sivaraj. & Pradeep, Malvaceae of South. Pen. India 238.1996. *S. frutescens* Cav., Diss. 1: 12. t. 10.f. 1.1785. *S. balbisiana* DC., Prodr. 1:460. 1824.

Erect undershrubs; stem and branches green, stellate pubescent or glabrescent. Leaves distichous, 3-6 x 1-2 cm, lanceolate-ovate, truncate at base, acute or acuminate at apex, serrate and entire towards the base; 3-nerved at base; stipules unequal, linear – lanceolate, the larger 5-veined and the smaller –veined; petioles to 5 mm long, pulvinate on both ends. Flowers yellow, axillary, solitary; pedicels to 4 mm long, jointed at the middle. Calyx 5-6 mm diameter, campanulate, villous, divided to middle; lobes 5. Petals 5, yellow, to 7 mm long, obliquely obovate, sparsely glandular hairy without. Staminal column to 2.5 mm long, glabrous or minutely pubescent; anthers pale yellow. Ovary 1.5 mm long, ovoid,

sparsely hairy towards apex. schizocarp glabrous, almost equalling the mericarp 6-8, to 3x2 mm, trigonous with acute angles, 2 awned, sides reticulate, glabrous. Seeds glabrous.

Sree Indalayapan Kavu, Karumam. SK 48727; Valiya thoppil Kavu, SK 39478; Oorankudi Kavu, SK 27299. *Fl. & Fr* : Sept. – Apr.

Dist.: Pantropical.

Note : Borssum Walkes (*l.c.*) has distinguished two subspecies under this taxon in Malesia, namely ssp. *acuta* and ssp. *carpinifolia* (L.f.) Borss. our material represents ssp *acuta* only.

Sida alnifolia L., Sp. Pl. 2: 684. 1753; Wight & Arn., Prodr. fl. Ind. orient. 1:58.1834; Sivaraj. & Pradeep, in Sida 16 (1):69. 1994 & in Malvaceae. South. Pen. India 241. t. 85. 1996; Nayar & *al.*, Flg. Pl. Kerala-Handb. 404. 2006. *S. retusa* L., Sp. Pl. ed. 2. 961. 1763; Wight & Arn., Prodr. fl. Ind. orient. 1:58. 1834. *S. rhombifolia* var. *retusa* (Linn) Mast., in Hook.f., Fl. Brit. India 1:324. *S. rhombifolia* ssp. *retusa* (L.) Borss., Blumea 14:198. 1966; Paul & Nayar in Nayar et al. (eds.), Fasc. Fl. India 19:216. 1988; Paul in Sharma & Sanjappa (eds.), Fl. India 3: 289. 1993. *S. rhombifolia* ssp. *alnifolia* Ugborogho, Bot. Soc. Bot. ser. 54: 70.1980. *Kurumthotti*.

Woody herbs or subshrubs, usually low and strongly branched; younger parts stellately hairy. Leaves simple, alternate, 0.5-4.5 x 0.5-3.5 cm, mostly obovate, obtuse or rounded at base obtuse or retuse at apex, or rarely truncate, serrate-dentate or crenate at margins, short petioled; stipules linear-subulate. Flowers yellow, axillary, solitary, rarely in terminal clusters due to reduction of distal leaves; pedicels jointed at middle. Calyx 6-7 mm diam., pubescent with minute stellate hairy

without and glabrous within, 5-lobed. Corolla to 12 mm diam; petals 5, obliquely ovate, truncate at apex. Staminal column to 3 mm long, glabrous or minutely stellately hairy. Ovary 1.5 mm diam., depressed globose, glabrous; styles 7-10; stigma capitate. Schizocarp to 4 mm long, mericarp 7-10, to 2.5 mm long, included in the calyx, reticulate or rugose on the sides and back, with a pair of short stellately hairy retuse, emarginate or mucronate at apex. Seeds to 2 mm long, black.

Sree Indalayappan Kavu, Karumam, SK 48660; Kannamkottu Kavu, SK 48687; Ponnanthuruthu Kavu, SK 48897. *Fl. & Fr* : Oct. – Mar. *Dist.*: India -Malesia.

Note : Addition to Flora of Thiruvananthapuram.

Sida cordata (Burm.f.) Borssum, *Blumea* 14:182. 1966; Paul & Nayar in Nayar *et al.* (eds.) *Fl. India Fasc.* 19:206.1988. in part; Mohanan & Henry, *Fl. Thiruvananthapuram* 81. 1994; Sivaraj. & Pradeep, *Malvaceae South. Pen. India* 90. 1996; Nayar & *al.*, *Flg. Pl. Kerala-Handb.* 404. 2006. *Melochia cordata* Burm.f., *Fl. Ind.* 143. 1768. *Sida veronicaefolia* Lam., *Encycl.* 1:5. 1783; Dunn in Gamble, *Fl. Madras* 89. 1915. *S. humilis* Cav., *Diss.* 5.t. 134. f.2. 1788; Mast., *Fl. Brit. India* 1:322. 1875; Rao, *Fl. Pl. Travancore* 35. 1914.

Prostrate herbs; branches slender, trailing, never rooting at nodes. Leaves alternate, 1-7 x 1-6 cm, broadly ovate or orbicular, cordate at base; acuminate at apex, crenate at margins; basally 5-nerved; stellate pubescent; petiole to 4 cm long; stipules to 2 mm long, linear, pubescent. Flowers yellow, axillary, solitary. Pedicels filiform. Calyx 5 mm long, widely campanulate, divided to middle, glabrous within. Corolla 9-10 mm in diam., petals 5, 6x5 mm, obovate, base ciliate. Staminal column to

2 mm long, glabrous or sparsely simple hairy. Ovary subglobose, 1.5 x 2 mm, yellowish-green, glabrous or sparsely hairy at apex; styles 5, stigma globose. Schizocarp shortly hairy at apex; mericarp 5, 3x2 mm, completely enclosed in accrescent calyx, trigonous with rounded angles, smooth on the side and back. Seeds 2 mm long, reniform, brownish-black, glabrous.

Indalayappan Kavu, Venkode, SK 39371; Sree Eswary Bhoothathan Kavu, SK 48710. *Fl*: July – Oct. *Dist.*: Tropics of the world.

Sida mysorensis Wight & Arn., Prodr. fl. Ind. orient. 59. 1834; Mast. in Hook. f., Fl. Brit. India 1:322. 1874; Borssum, Blumea 14:180. 1966; Paul & Nayar in Nayar *et al.* (eds.) Fasc., Fl. India 19:209. 1988; Paul in Sharma & Sanjappa (eds.) Fl. India 3:286. 1993; Mohanan & Henry, Fl. Thiruvananthapuram 82. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 405. 2006.. *S. glutinosa auct. mult. non* Cav. 1785; Dunn in Gamble, Fl. Madras 89. 1915.

Erect herbs or undershrubs, aromatic; stem viscid, green, densely stellate-gland tipped and simple patent hairs. Leaves alternate, 4-11 x 3-8 cm, broadly ovate, or orbicular, cordate at base, acute-acuminate at apex, 5-7 nerved at base; lateral nerves 3-4 pairs, hairy, petiole to 4 cm long, hairy. Stipules linear-filiform, hairy. Flower 1-2 in axils, often accompanied by short, densely flowered lateral shoots. Pedicels 4-7 mm long, filiform, articulate towards the center. Calyx to 7 mm long, campanulate, divided to the middle. Corolla 10 mm in diam; petals 6 x 5 mm, obovate, emarginate or retuse at apex. Staminal column 3 mm long, pubescent with scattered simple hairs. Ovary subglobose, 1.5 x 2 mm,

glabrous; style and stigma 5 each, yellow. Schizocarp to 3 mm long, glabrous; mericarp 5, to 3 x 2.5 mm, trigonous with rounded angles.

Sree Bhoothathan Kavu, Kudapanakunnu, SK 48681; Pulivila Sree Dharma Sashta Kavu, SK 48653. *Fl. & Fr* : Aug – Mar. *Dist.*: South East Asia.

Note : During his revision of Malesian Malvaceae, Borssum (*l.c*) segregated *S. glutinosa* and *S. mysorensis* to two different species in two different sections. This is followed by Sivaraj. & Pradeep, (1996). This treatment is followed here.

Sida rhombifolia L. Sp. Pl. 684. 1753; Mast., Hook.f., Fl. Brit. India 1:323. 1874, in part; Rao, Fl. Pl. Travancore 38. 1994; Dunn in Gamble, Fl. Madras 1:90. 1915; Fryxell, Syst. Bot. Monogr. 25:403. 1988, in part, excl. syn. *S. rhomboidea*; Mohanan & Henry, Fl. Thiruvananthapuram 82. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 406. 2006. Sivaraj. & Pradeep Malvaceae South. Pen. India 245. 1966. *S. rhombifolia* ssp. *rhombifolia*, Borss., Blumea 14:193. 1996. *S. rhombifolia* var. *rhombifolia* Paul & Nayar in Nayar *et al.* (eds.) Fasc. Fl. India 19:214. 1988.

Erect branched undershrubs, stem terete, green or purplish, cinereous with many armed short stellate hairs. Leaves 5-6 x 2-2.5 cm, elliptic-rhomboid, rounded or truncate at base, acuminate at apex, serrated; to 2/3 from apex, 3-nerved at base; petiole to 6 mm long, shortly pulvinate at both ends; stipules equals, linear-lanceolate, 1-nerved. Flowers yellow, solitary, axillary. Calyx 5-6 mm in diam, divided 1/3 from apex, campanulate, 10-ribbed at base, pubescent, 5-lobed; lobes to 3 mm long. Corolla 1 cm diam., petals 9-10 x 6-7 mm, obliquely obovate, truncate or cuneate at apex. Staminal column to 3mm long, glabrous.

Ovary 1.5 mm diam, conical, glabrous; styles 8-10; stigma capitate. Schizocarp 4-5 mm long; mericarp 8-10, 4x3 mm, included in the calyx, trigonous with acute angles, distinctly and transversely rugose on the sides and back; apex with a pair of short glabrous, divergent awns. Seeds 2 mm long, black, minutely hairy at hilum.

Poovampara Kavu, Mevarkara, SK 48672; Sree Dharmasastha Kavu, Amaravila, SK 48642. *Fl. & Fr.*: Oct. – Apr. *Dist.*: Tropics of the World.

Sida rhomboidea Roxb. ex Fleming, *Asiat. Res.* 11:178. 1810; Roxb., *Fl. Ind.* 3:176. 1832; Wight & Arn., *Prodr. fl. Ind. orient.* 57. 1834; Dunn in Gamble, *Fl. Madras* 90. 1915; Sivaraj. & Pradeep, *Sida* 16:73. 1994 & in *Malvaceae South. Pen. India* 246. 1996; Nayar & *al.*, *Flg. Pl. Kerala-Handb.* 406. 2006.. *S. rhombifolia* var. *rhomboidea* (Roxb. ex Fleming) Mast. in Hook.f., *Fl. Brit. India* 1: 324. 1874. *S. rhombifolia* ssp. *rhombifolia sensu* Borss., *Blumea* 14:193. 1966; Fryxell, *Syst. Bot. Monogr.* 25:403. 1988; Paul in Sharma & Sanjappa (*eds.*) *Fl. India* 3:73. 1993 (all. in parts).

Erect undershrubs; stem terete, usually purplish, minutely pubescent with small stellate hairs. Leaves 1-8 x 0.5-6 cm, obovate-rhomboid to lanceolate, truncate or rounded at base, subobtuse or acute at apex, coarsely crenate or serrate at margin, 3-nerved at base; lateral nerves 3-5 pairs; petiole to 1.5 cm long, stellate pubescent. Flowers yellow, axillary, solitary; pedicels 4 cm in fruits, articulated at the middle. Calyx 9 mm in diam, campanulate, 10-ribbed at base; lobes 5. Corolla to 1.5 cm across; petals 7-8 x 5-6 mm, obliquely obovate, retuse at apex, glabrous. Staminal column to 3mm long, stellate pubescent. Ovary 1.5 mm diam., depressed globose, glabrous; styles 8-10; stigma capitate.

Schizocarp 3-4 mm long; mericarp 8-10; closely coherent, completely included in the calyx, indehiscent, trigonous with acute angles, prominently reticulate on the sides, apex beaked with a single, glabrous mucicous process. Seeds 2 mm long, brownish-black, glabrous.

Manchadi moola Kavu, SK 49654. *Fl. & Fr.*: Round the year. *Dist.*: Peninsular India

Note: Because of the frequent confusion with *S. rhombifolia*, it is difficult to draw conclusion on its distribution in other parts of the world, based on literature (Sivaraj. & Pradeep, 1996).

*Addition to Flora of Thiruvananthapuram.

Sida unicornis Marais in Kew Bull. 38:42. 1983; Santhosh *et al.* in Rheedeia 11(1): 55. 2001; Nayar & *al.*, Flg. Pl. Kerala-Handb. 407. 2006..

Erect branched undershrubs to 1.5 m tall; stem terete, green and purplish, minutely pubescent with stellate hairs. Leaves 2-7 x 0.5-2 cm, elliptic-rhomboid or narrowly obovate, rounded to truncate at base, acute and crenate – serrate at apex and entire towards the base, lateral nerves 3-5 pairs, shortly 3-nerved at base, green and glabrous above, pale beneath, cinereous with short stellate hairs; petiole to 0.6 cm long, minutely pubescent, shortly pulvinate at both ends; stipules to 7 mm long, linear, 1-nerved. Flowers axillary, solitary; pedicels to 1.5 cm in flower, to 3 cm in fruit, sparsely stellately hairy, articulate above the middle. Calyx 5-7 mm across, campanulate, 10-ribbed at base, stellately pubescent; lobes 5, to 3 mm long, triangular, acute-acuminate at apex, glabrous within. Corolla to 1.2 cm across, pale yellow; petals 5, to 10 x 7 mm, obliquely obovate, truncate or cuneate at base, shortly hairy without and glabrous within, stellate-hairy at base. Staminal column to 3.5 mm long. stellate-

pubescent, antheriferous at apex. Ovary 2mm across, conical, glabrous; style 8-10; stigma capitata. Mericarp 8-10 (-11), to 5 x 3 mm, enclosed in calyx, trigonous with acute angles, pale, distinctly and transversely rugose on sides and back, apex beaked with a single awn, stellately hairy. Seeds to 2 mm long, black, smooth, minutely hairy at hilum.



Sida unicornis Marais. a. Habit, b. A flower, c. Androecium, d. C.S. of ovary, e. Mericarp with calyx, f. Mericarp.

Nanniyode Kavu, SK 48682. *Fl. & Fr.*: Round the year. *Dist.*: Native of Mauritius, naturalised in India (Kerala).

Note: i) *Sida unicornis* Marais was not previously reported from India. It is often confused with *S.rhombifolia* L. but the former can easily be recognized by the single awned stellately hairy mericarp, which is two awned and glabrous in *S. rhombifolia*.

ii) *S.unicornis* is presently considered as a synonym of *S. rhombifolia*, however these two taxa possess distinct floral characters to treat them as different entity, hence the earlier taxonomic concept is followed here.

Thespesia Sol.ex Correa in

Ann. Mus. Natl. Hist. Nat. 9: 290. 1807, *nom. cons.*

1. Shrubs; leaves 3-lobed.....*T. lampas*

1. Trees; leaves entire.....*T. populnea*

Thespesia lampas (Cav.) Dalz. & Gibson, Bombay Fl. 19. 1861; Mast. in Hook.f., Fl. Brit. India 1:345. 1874; Dunn in Gamble, Fl. Madras 98. 1915; Rao, Fl. Pl. Travancore 43. 1914; Mohanan & Henry, Fl. Thiruvananthapuram 82. 1994; Sivaraj. & Pradeep Malvaceae South. Pen. India 245. 1996; Nayar & al., Flg. Pl. Kerala-Handb. 407. 2006. *Hibiscus lampas* Cav., Diss. 3: 154.t.56.f.2.1787; Roxb., Fl. Ind. 3: 197. 1832; Wight & Arn., Prodr. fl. Ind. orient. 48. 1834; Wight, Icon. t. 5. 1838 *Kattupoovarasu*.

Erect branched shrubs; branches slender, younger parts slightly angular, densely tomentose by minute, many armed stellate hairs. Leaves 11 x 10.5 cm, ovate or orbicular, cordate at base, acute at apex, 3-5 lobed or unlobed, 3-5 nerved with a prominent oval gland at the base of midrib; petiole to 6 cm long. Flowers with a brown or purple base, solitary;

pedicels non articulate. Calyx cupular, to 1cm in diam., slightly accrescent and spreading, stellately hairy without and glabrous within. Corolla 6-8 cm diam; petals 5, 8 x 4.5 cm, obovate, truncate at apex. Staminal column to 2 cm long, 5 toothed and antheriferous at apex. Ovary 1 cm long, conical, slightly 4-5 angular, 4-5 celled, densely pubescent with minute hairs; stigmatic lobes connate and grooved. Capsule 2.5 x 2 cm, ellipsoid, or ovoid 4-5 angular, dehiscent. Seeds ovoid or obovoid, glabrous, black

Nanniyode Kavu, SK 48659. *Fl. & Fr* : Nov – April. *Dist.*: Throughout the World.

Note : Borssum (l.c) recognized two varieties in this species namely, var. *longisepala* and var. *lampas*. The former is known to occur in Northern India. (Paul, 1993).

Thespesia populnea (L.) Soland. ex Corr., Ann. Mus. Hist. Nat. Paris 9:290. t. 8.f.2. 1807; Wight & Arn., Prodr. fl. Ind. orient.32. 1834; Wight, Icon. pl. Ind. orient. t.8. 1838; Bedd., Fl. sylv. S. India t. 63. 1834; Mast. in Hook.f., Fl. Brit. India 1:345. 1874; Rao, Fl. Pl. Travancore 43. 1994. ; Dunn in Gamble, Fl. Madras 101. 1915; Borssum, Blumea 14:106. 1966; Fryxell, Syst. Bot. Monogr. 25:441. 1988; Paul in Sharma & Sanjappa (*eds.*) Fl. India 3:352. 1993; Mohanan & Henry, Fl. Thiruvananthapuram 83. 1994; Sivaraj. & Pradeep Malvaceae South. Pen. India 37. 1996; Nayar & *al.*, Flg. Pl. Kerala-Handb. 407. 2006..*Hibiscus populneus* L., Sp. Pl. 694. 1753. *Poovarasu, Sheelanthi*.

Trees; young branches covered with minute peltate scales or glabrescent; older parts with fissured bark. Leaves simple, alternate, 8-16 x 8-11 cm, broadly ovate, deeply cordate or subtruncate at base,

acuminate or subobtusate at apex, entire at margins; 5-7 nerved from the base, densely clothed with minute scales or glabrescent; petiole 1-10 cm long, scaly; stipules 1 cm long, linear-lanceolate, caducous. Flowers erect or drooping, axillary, solitary; pedicels 2-12 cm long, articulated. Calyx 1.2-1.5 cm long, cupular, subtruncate or obscurely 5-dentate at apex, densely sericeous within. Corolla 5-7 cm across, campanulate, yellow with a dark purple centre, turning to deep pink on fading. Staminal column 2.5 cm long, glabrous; filaments 4 mm long. Ovary ovoid, 6-8 mm across, 5-celled; styles 4 cm long; stigma elongated, connate and entire. Capsules depressed apically, slightly 5-angular, dry and indehiscent. Seeds obovoid, many, 8-15 x 6-9 mm.

Punnattu Sri Thamburan Kavu, SK 48684. *Fl. & Fr.*: Round the year.
Dist.: Pantropical.

Urena L.,

Sp. Pl. 692. 1753.

Urena lobata L., Sp. Pl. 692. 1753; Mast. in Hook.f., Fl. Brit. India 1:329. 1874; Rao, Fl. Pl. Travancore 39. 1914; ; Dunn in Gamble, Fl. Madras 92. 1915; Borssum., Blumea 14: 138. 1966; Paul in Sharma & Sanjappa (*eds.*) Fl. India 3:228. 1993; Mohanan & Henry, Fl. Thiruvananthapuram 83. 1994; Sivaraj. & Pradeep Malvaceae South. Pen. India 180. 1996; Nayar & *al.*, Flg. Pl. Kerala-Handb. 407. 2006.

- 1. Leaves undivided.....ssp. *lobata*
- 1. Leaves palmately deeply lobed.....ssp. *sinuata*

ssp. **lobata** : Borssum, Blumea 14: 138. 1966; Paul & Nayar in Nayar et al. (eds.) Fl. India Fasc. 19: 228. 1988. *Oorpam*.

Erect annual herbs; young shoots densely stellately hairy. Leaves 5-6 x 6-7 cm, ovate – orbicular, unlobed or angular, truncate or cordate at base, acute at apex, obscurely crenate-serrate at margin; 5-7 nerved from base, stellately pubescent. Flowers axillary, solitary or 2-3 fasciculate. Calyx campanulate, 6 mm in diameter, 5-9mm long, 5-parted, pale green. Corolla 20-25 mm in diameter, pink with a dark centre; petals obovate with rounded apex, reflexed or not., stellately hairy externally, glabrate within. Staminal column 9-10 mm long, glabrous. Ovary subglobose, 4 mm in diameter, densely pubescent; stigmas capitate. Schizocarp 10-12 mm diameter, obovate; mericarp 5, subglobose, 8x5 mm, trigonous with rounded angles; densely stellate-pubescent and with many glochidiate spines. Seeds minutely pubescent.

Onathuthodi Kavu, SK 48666; Sree Rajarajeswary Devi temple Kavvu, SK 48676. *Fl. & Fr* : July – Feb. *Dist.*: Pantropical.

ssp. **sinuata** (L.) Borssum, Blumea 14:142. 1966; Paul & Nayar in Nayar et al. (eds.) Fl. India Fasc. 19:230. 1988; *Urena sinuata*, L. Sp. Pl. 692. 1753; Rao, Fl. Pl. Travancore 39. 1914; Dunn in Gamble, Fl. Madras 92. 1915. Sivaraj. & Pradeep, Malvaceae South. Pen. India 184. 1996; Nayar & al., Flg. Pl. Kerala-Handb. 407. 2006.

Annual subshrubs; stem terete, densely stellate pubescent. Leaves 4-10 x 3-9 cm, 3-5 angular to palmately deeply lobed, shallowly cordate or truncate at base, acute or subobtusate at apex, crenate –serrate at margins; 3-5 nerved from base, densely minutely stellate hairy on both surfaces;

petiole 3-10 cm long; stipules subulate. Flowers axillary, solitary or paired; pedicels 3-5 mm long, pubescent. Calyx 4 mm across, 2mm long, pubescent, campanulate, 5-parted; lobes elliptic-acute, 5.5 x 2.5 mm, pale green. Corolla to 1.2 cm across, rose or pink with a dark centre; petals obovate, rounded at apex, slightly oblique. Staminal column glabrous, slightly curved. Ovary depressed globose, 1 cm across, densely pubescent. Schizocarp obovate, 1 cm across; mericarp 5, to 7x4 mm, trigonous with rounded angles, densely stellate pubescent and also with numerous glochidiate spines. Seeds black.

Madanthamburan Kavu, Erattakulangara, SK 48622. *Fl. & Fr.*: Aug. – Feb. *Dist.*: Pantropical.

Note: Addition to Flora of Thiruvananthapuram.

BOMBACACEAE Kunth,

Malvac., Buttner., Tiliac. 5. 1822, *nom.cons.*

- 1. Flowers to 5 cm long; stamens to 15.....*Ceiba*
- 1. Flowers over 7 cm long stamens more than 20.....*Bombax*

Bombax L.,

Sp. Pl. 511. 1753, *nom. cons.*

Bombax ceiba L., Sp. Pl. 511. 1753; Nicols., Taxon 28: 370. 1979; Robyns in Dassan. & Fosb., Rev. Handb. Fl. Ceylon 1: 64. 1980; Mohanan & Henry, Fl. Thiruvananthapuram. 83. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 148. 2006. *B. malabaricum* DC., Prodr. 1: 479. 1824; Wight, Ill. Ind. Bot. t. 29. 1840; Mast. in Hook.f., Fl. Brit. India 1:349. 1874; Rao, Fl. Pl. Travancore 45. 1914; Dunn in Gamble, Fl. Madras 99.

1915. *Salmalia malabarica* (DC.) Schott. & Endl., Melet. Bot. 35. 1832.
Elavu.

Large deciduous, buttressed trees; bark greyish-brown, reddish inside. Leaves digitately 5-7 foliolate; leaflets 9-18 x 2-3 cm, oblong-lanceolate, narrowed at base, caudate at apex; petiolule to 2.5 cm long; petioles to 20 cm long. Flowers solitary or clustered at the end of branchlets, appear before the leaves. Calyx 3-4 lobed, green and densely silky within. Petals bright red, elliptic-oblong, tomentose without, to 7.5 x 2.2 cm. Capsule subcylindric.

Indalayappan Kavu, SK 48688. *Fl. & Fr.*: Feb. – May. *Dist.*: Tropical Asia.

Ceiba Mill.

Gard. Dict. Abr., ed.4: 287. 1754.

Ceiba pentandra (L.) Gaertn., *Fruct. Sem. Pl.* 2: 244, t. 133.f.1. 1791; Alston in Trimen, *Handb. Fl. Ceylon* 6: 30. 1931; Nayar & Biswas in B.D. Sharma et al., (eds.) *Fl. India* 3: 400. 1993; Nayar & al., *Flg. Pl. Kerala-Handb.* 149. 2006. *Bombax pentandrum* L., *Sp. Pl.* 511. 1753. *Eriodendron anfratuosum* DC., *Prodr.* 1: 479. 1824; Mast. in *Fl. Brit. India* 1:350. 1874. *E. pentandrum* (L.) Kurz in *J. Asiat. Soc. Beng.* 43: 113. 1874; Dunn in Gamble, *Fl. Madras* 100. 1915. *Panjimaram*.

Trees; trunk straight, smooth or prickly when young. Leaves digitately 5-9 foliolate; leaflets 10-12 x 2-4 cm, narrowly ovate-oblong to obovate-oblong, narrowed at base, acute to acuminate at apex, glabrous. Flowers usually in clusters of 3-8, axillary or grouped towards the end of

branchlets. Calyx campanulate, irregularly 5-lobed. Petals 5, connate at base, oblong to oblanceolate, rounded at apex. Staminal tube divided into 5 phalanges, each divided again into 3 filiform branches. Ovary globular or ovoid, glabrous, 5-locular. Capsule to 20 cm long, ellipsoid to fusiform.

Sree Bhuthathan Kavu, Vazhayila, SK 48663. *Fl. & Fr.*: Dec.-Apr. *Dist.*: Native of Tropical America, introduced and naturalized in many tropical countries.

STERCULIACEAE (DC.) Bartl.,

Ord. Nat. Pl. 225, 340. 1830, *nom.cons.*

1.Flowers unisexual.....	<i>Sterculia</i>
1.Flowers bisexual.....	2
2.Staminal tube distinct from carpels.....	3
2.Staminal tube adnate to carpels.....	4
3.Trees; seeds winged.....	<i>Pterospermum</i>
3.Shrubs; seeds not winged.....	<i>Helicteres</i>
4.Styles 5; fruits with 5-valves.....	<i>Melochia</i>
4.Style 1; fruits with 2-valves.....	<i>Waltheria</i>

Helicteres L.,

Sp. Pl. 963. 1753.

Helicteres isora L., Sp. Pl. 963. 1753; Wight, Icon. pl. Ind. orient. t. 180. 1839; Mast. in Hook.f., Fl. Brit. India 1:365. 1874; Rao, Fl. Pl. Travancore 48. 1914; Dunn in Gamble, Fl. Madras 107. 1915; Mohanan & Henry, Fl. Thiruvananthapuram 85. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 590. 2006.. *Edampiri Valampiri.*

Large shrubs, young shoots stellately tomentose. Leaves 8-12 x 6-8 cm, oblong-obovate, unequally cordate at base, acute or acuminate at apex; crenate-serrate at margin, scabrous above and stellately tomentose beneath; 3-5 ribbed at base; petioles to 1.5 cm long. Flowers in axillary fascicles. Calyx 3-5 toothed, tubular, to 2.5 cm long, brown tomentose. Petals 5, unequal, clawed, 3-3.5 cm, red, fading to blue. Stamens 10, filaments short, staminoides 5. Carpels 5; ovules many in each cell; style 5, connate basally, subulate. Follicles 5, spirally twisted, to 6 cm long.

Karimkada Kavu, SK 39353; Indalayappan Kavu, SK 39389. *Fl. & Fr.* : Aug. – March. *Dist.* : Indo – Malesia.

Melochia L.,

Sp. Pl. 674. 1753. nom. cons.

Melochia corchorifolia L., Sp. Pl. 675. 1753; Mast. in Hook.f., Fl. Brit. India 1: 374. 1874; Rao, Fl. Pl. Travancore 50. 1914; Dunn in Gamble, Fl. Madras 110. 1915; Mohanan & Henry, Fl. Thiruvananthapuram 86. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 591. 2006.. *Vellakurumthotti.*

Erect branched herbs. Leaves alternate, 2.5 – 5.5 x 1-3 cm, ovate-oblong, cordate at base, acute at apex, serrate at margin; stipules lanceolate; 5-ribbed from base; petiole 8-10 mm long. Flowers pink, subsessile, crowded in terminal clusters. Calyx 5 toothed, tubular, truncate at apex. Petals 5, to 0.5 cm long, obovate-obtuse or retuse. Stamens 5, filaments connate at base. Ovary 5-celled; styles 5, glabrous. Capsules depressed globose, 5mm, 5-valved. Seeds 5, angular, 2 mm across.

Thannimmoottil Kavu, Oruvathilkotta, SK 48657. *Fl. & Fr.*: Jul. – Oct.
Dist.: Pantropical.

Pterospermum Schreb.,

Gen. Pl. 2: 461. 1791, *nom.cons.*

1. Leaves to 7 cm long.....*P. rubiginosum*

1. Leaves more than 10 cm long..... *P. reticulatum*

Pterospermum rubiginosum Heyne ex Wight & Arn., Prodr. fl. Ind. orient. 68. 1934; Bedd., Fl. sylv. S. India t. 106. 1871; Mast. in Hook.f., Fl. Brit. India 1:365. 1874; Rao, Fl. Pl. Travancore 49. 1914; Dunn in Gamble, Fl. Madras 109. 1915; Nayar & *al.*, Flg. Pl. Kerala-Handb. 592. 2006. *Ellootti*.

Medium sized trees; bark greyish-brown, peeling off in thin rectangular stripes, branchlets drooping. Leaves 4-7 x 1.5-2 cm, oblong, unequal at base, acuminate at apex, glabrous above and white tomentose beneath; lateral nerves 5 pairs; petiole to 0.5 cm long. Flowers greenish-white, solitary, axillary. Sepals 5, to 4.5 cm long, linear. Petals 5, linear, slightly shorter than sepals. Stamens 15; staminodes 5; staminal column adnate to gynophore. capsule to 6 x 1.5 cm, narrowly oblong, acuminate at apex..

Manthuruthu Kavu, SK 39316. *Fl. & Fr.*: Nov. – Apr. *Dist.*: Western Ghats from Kanara south wards, endemic.

Note : Addition to Flora of Thiruvananthapuram.

Pterospermum reticulatum Wight & Arn., Prodr. fl. Ind. orient. 69. 1834; Mast. in Hook.f., Fl. Brit. India 1:368. 1874; Dunn in Gamble, Fl. Madras 108. 1915; Nair & Henry, Fl. Tamil Nadu I, 1:41. 1983; Nair & Sastry, Red Data Book Indian Pl. 3:254. 1990; Nayar & *al.*, Flg. Pl. Kerala-Handb. 592. 2006.

Medium sized trees; bark greyish-brown, deep pink-red inside. Leaves alternate, simple, 12-15 x 5-6.5 cm, oblong, obovate, obliquely cordate at base, acuminate at apex, entire at margins except for the dentate tip, glabrous above and dull white tomentose below; lateral nerves 6-9 pairs, intercostae reticulate; petiole to 1 cm long. Flowers bisexual, axillary solitary or in 2-3 together, 3-3.8 cm across, white. Sepals 5, densely tomentose on both surface. Petals 5, creamy-white, to 2.5 cm long. Staminal column adnate to gynophore; stamens 15. Ovary 5-celled; ovules many in each cell; style unbranched; stigma 5-grooved. Capsules 5-7.5 x 3-3.7 cm, woody, oblong, obtusely angled, densely tomentose. Seeds 15-20; winged at one end.

Sree Dharma sastha Kavu, Thachottu, SK 47985. *Fl. & Fr.*: Jan.- Apr.
Dist.: Western Ghats from Konkan South wards , endemic.

Note: According to Nayar & Sastry (*l.c.*) this species is rare.

Addition to Flora of Thiruvananthapuram.

Sterculia L.,
Sp. Pl. 1007. 1753.

1. Calyx tube campanulate, 4 mm long.....*S. balanghas*
1. Calyx tube cupular, more than 1 cm long.....*S. guttata*

Sterculia balanghas L., Sp. Pl. 1007. 1753; Wight, Ill. Ind. Bot. t. 30. 1840; Mast. in Hook.f., Fl. Brit. India 1: 358. 1874; Dunn in Gamble, Fl. Madras 106. 1915; Mohanan & Henry, Fl. Thiruvananthapuram 87. 1994; Malick in B.D.Sharma *et al.* (eds), Fl. India 3: 458. 1993; Nayar & *al.*, Flg. Pl. Kerala-Handb. 593. 2006.

Trees; young shoots rusty tomentose. Leaves simple, crowded towards the end of branchlets, 12-30 x 5-13 cm, oblong-ovate, rounded at the base, acuminate at apex, entire at margin, chartaceous, glabrescent or sparsely stellately hairy beneath; petiole 3-5 cm long, pubescent. Flowers yellow or greenish-purple in axillary or terminal, erect, long panicles; pedicels longer than flowers. Calyx campanulate, to 4 mm long., 5-lobed, stellately-hairy outside, densely along the margins, hispid inside. Male flowers: Staminal column to 2 mm long, with a group of 2-loculed anthers at the tip. Female flowers: Sigma recurved, as long as style. Follicles 4-5, horizontally spreading, woody, oblong, sessile. Seeds oblong to ovoid, black, shining.

Common to almost all sacred groves.. Pillaveedu Kavu, SK 48673; Madathil Kavu, SK 48643. *Fl. & Fr.*: Sept. – June. *Dist.*: India, Burma and Sri Lanka.

Sterculia guttata Roxb. ex DC., Prodr. 1: 482. 1824; Wight, Icon. pl. Ind. orient. t. 487. 1841; Bedd., Fl. sylv. S. India t. 105. 1871; Mast. in Hook.f., Fl. Brit. India 1:355. 1874; Rao, Fl. Pl. Travancore 47. 1914; Dunn in Gamble, Fl. Madras 106. 1915; Mohanan & Henry, Fl. Thiruvananthapuram 88. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 593. 2006. *Kavalam*.

Large deciduous trees; bark brownish, thinly scaly. Leaves 25-30 x 8-14 cm, oblong, elliptic-oblong or ovate-oblong, truncate or subcordate at base, acuminate at apex, entire at margin, glabrescent above, rusty or stellately pubescent on the nerves beneath. Flowers reddish-brown in long pubescent racemes towards the end of branchlets, with foetid smell. Calyx tube cupular, lobes 5, flesh coloured, to 1.2 x 0.5 cm, refluxed, lanceolate, wooly without, stellate-tomentose within, glandular. Stamens 10, anthers to 1.5 mm long. Follicle 2 or 3 lobed, bright red, to 7 cm long, villous without, beaked. Seeds black, smooth.

Puthanvila Kavu SK 47909. Mechamkode Kavu, SK 39373. *Fl. & Fr.*: Sept. – Feb.

Dist.: South West India and Sri Lanka.

Waltheria L.,

Sp. Pl. 673. 1753.

Waltheria indica L., Sp. Pl. 673. 1753; Mast. in Hook.f., Fl. Brit. India 1:374. 1874; Rao, Fl. Pl. Travancore 51. 1914; Dunn in Gamble, Fl. Madras 110. 1915; Mohanan & Henry, Fl. Thiruvananthapuram 89. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 594. 2006.

Perennial erect herbs; stem terete. Leaves 2.5-6 x 1.5-3.5 cm, ovate or elliptic, rounded or subcordate at base, obtuse at apex, toothed or serrate at margins, softly pubescent on both surface; strongly nerved; petiole to 1.5 cm long, densely pubescent; stipules subulate. Flowers 0.5 cm diameter, sessile, in dense axillary heads. Calyx campanulate; sepals 5, connate below into a tube. Corolla yellow; Petals 5, longer than sepals. Stamens 5, connate at the base; anther cells parallel. Ovary sessile, 1-

celled; ovules 2; style excentric; stigma club shaped above. Capsule very small, enclosed in the calyx, membranous. Seeds smooth, black.

Madan Nada Kavu, Kallara, SK 48678. *Fl. & Fr.*: Jul. – Mar. *Dist.*:

Pantropical.

TILIACEAE Juss.,

Gen. Pl. 289. 1789, *nom.cons.*

- 1. Fruits echinate or bristly..... *Triumfetta*
- 1. Fruits not echinate or bristly.....2
- 2. Petals glandular at base.....*Grewia*
- 2. Petals eglandular at base.....*Corchorus*

Corchorus L.,

Sp. Pl. 529. 1753.

Corchorus aestuans L., *Syst. Nat.* (ed. 10) 1079. 1759; Robyns & Meijer in Dassan. & Fosb., *Rev. Handb. Fl. Ceylon* 7: 23. 1991; Mohanan & Henry, *Fl. Thiruvananthapuram* 89. 1994; Nayar & *al.*, *Flg. Pl. Kerala-Handb.* 600. 2006. *C. acutangulus* Lam., *Encycl.* 2: 104. 1786; Mast. in Hook.f., *Fl. Brit. India* 1:398. 1874; Dunn in Gamble, *Fl. Madras* 121. 1915.

Annual branched herbs. Leaves 3-6 x 1.5-3 cm , ovate, rounded or subcordate at base, acute at apex, serrate at margins. the lower serratures on each side usually produced into filiform appendages, glabrous; petiole to 2.5 cm long, slender, hairy; stipules lanceolate, acicular. Flowers pale yellow, small, in leaf opposed cymes or fascicles; pedicels very short. Sepals 5, linear-oblong, to 5mm long, apiculate at apex. Petals 5, spathulate, to 6 mm long. Stamens ca.20. Ovary angular, to 4 mm long, 3-

celled; ovules numerous; style to 3 mm long; stigma capitate. Capsule 2-2.5 cm long, 6-angled, 3-winged; beak 3-fid, radiating. Seeds truncate at apex, dark brown, to 1.5 mm, smooth, 4-angled.

Nagaru Kavu, Velamkonathu, SK 48685. *Fl. & Fr.*: Aug. – Feb. *Dist.*: Pantropical.

Grewia L.,
Sp. Pl. 964. 1753.

- 1. Shrubs or trees.....2
- 1. Straggling shrubs.....3
- 2. Flowers in terminal panicles.....*G. nervosa*
- 2. Flowers in axillary cymes.....*G. glabra*
- 3. Leaves broadly elliptic or oblong.....*G. palodensis*
- 3. Leaves ovate-elliptic.....*G. rhamnifolia*

Grewia glabra Bl., Bijdr. 115. 1825; Burret, Notizbl. Bot. Gart. Berlin-Dahlem 9: 1926; Nair & Henry, Fl. Tamil Nadu 1:43. 1983; Nayar & *al.*, Flg. Pl. Kerala-Handb. 602. 2006. *G. disperma auct. non* Rottl. ex Spreng. 1825; *sensu* Dunn in Gamble, Fl. Madras 118. 1915. *G. laevigata auct. non* Vahl, 1790; Mast. in Hook.f., Fl. Brit. India 1:389. 1874; Rao, Fl. Pl. Travancore 53. 1914.

Medium sized trees; bark greyish- white, smooth. Leaves 6-12 x 2-5 cm, ovate-lanceolate or lanceolate, rounded or acute at base, acuminate at apex, sharply serrate at margins, glabrous above, minutely stellately hairy beneath; basally 3-nerved, petiole to 1 cm long. Flowers white in axillary or extra axillary umbellate cymes; peduncles longer than the

petiole. Buds ovoid. Sepals 5, lanceolate, 1.2 x 0.4 cm, wooly without. Petals 5, oblong, notched. Torus glabrous, grooved. Stamens to 7 mm. Drupe 1-4 lobed, glabrous, 1.5 cm across.

Indalayappan Kavu, SK 48686. *Fl. & Fr.*: Oct.- Mar. *Dist.*: Indo-Malesia and Tropical Africa.

Note: addition to Flora of Thiruvananthapuram.

Grewia nervosa (Lour.) Panigr., Taxon 34: 702. 1985. *Fallopia nervosa* Lour., Fl. Cochinch. 336. 1790. *Grewia microcos* L., Syst. (ed.12.) 2: 602. 1766, *nom. illeg.*; Mast. in Hook.f., Fl. Brit. India 1: 392. 1874; Rao, Fl. Pl. Travancore 53. 1914; Dunn in Gamble, Fl. Madras 116. 1915; Mohanan & Henry, Fl. Thiruvananthapuram 90. 1994. *Microcos paniculata* L., Sp. Pl. 514. 1753; Robyns & Meijer in Dassan. & Fosb., Rev. Handb. Fl. Ceylon 7: 418. 1991; Nayar & al., Flg. Pl. Kerala-Handb. 604. 2006. *G. ulmifolia* Roxb., Fl. Ind. 2: 591. 1832; Wight, Icon. pl. Ind. orient. t. 84. 1838.

Shrubs or small trees; young shoots minutely stellately pubescent. Leaves 8-18 x 4-7 cm, elliptic-oblong or obovate, rounded or acute at base, caudate-acuminate at apex, subentire at base, glabrous; 3-nerved from the base. Flowers pale yellow in terminal panicles. Buds ovoid. Sepals 5, to 0.5 cm long. Petals 5, white, very small, entire or lobed. Stamens many. Ovary glabrous. Drupes obovoid or subglobose, entire, to 1 cm long, glabrous.

Pulickal Bhagavathi Kavu, SK 47829. *Fl. & Fr.*: Aug.- Apr. *Dist.*: Asia.

Note: According to many recent taxonomic treatment, *Grewia nervosa* is being treated as a distinct genus under the name viz. *Microcos paniculata*

L. However, we prefer to treat it under the earlier taxonomic concept following www.theplantlist.org.

Grewia palodensis Santhosh, Shanavas, Binu & Almeida in *Rheedea* 11(1): 41. 2001; Nayar & *al.*, Flg. Pl. Kerala-Handb. 603. 2006.

Lianas; branchlets brown, stellate-tomentose. Leaves 8-12 x 4-6 cm, broadly elliptic or oblong, rounded at base, abruptly acuminate at apex, crenate-serrate at margins, thin-coriaceous, stellately pubescent, sparsely so above and along the nerves beneath; basally 3-nerved; petiole 0.7-1 cm long, stellate pubescent; stipules 0.5-0.6 cm long, linear, caducous. Inflorescence axillary and terminal, many flowered umbellate cyme; peduncle 1-3 together, 3-4.5 cm long, stellate pubescent; bracts 0.5-0.6 cm long, linear, channeled within, puberulent; pedicels 0.8-1.2 cm long in flower, to 2 cm long in fruits. Flowers bisexual, 0.8-1 cm across. Sepals 5, narrowly oblong-lanceolate, 1.5-1.8 x 0.3cm, gray-white, reflexed and curled, longitudinally ribbed, stellate -tomentose without, and pubescent at the base within. Petals 5, linear-oblong, narrow, 0.5-0.6 cm long, obtuse-apiculate at apex, base densely appressed pilose, gland 0.2 cm. Andro-gynophore distinctly 4-grooved, to 2.5 mm; anthers 2-celled. Ovary globose, villous, to 1 mm long, 4-locular with 1-ovule in each locule; style 0.6-0.7 cm long, puberulent 1/3 from the base; stigma shallowly 4-5 grooved. Drupes deeply 2-partite, lobes emarginate, 1.5-2 cm wide, black at maturity, sparsely stellate pubescent. Pyrenes 2- per lobe, glabrous.

Manthuruthu Kavu, SK 20091; Pulickal Bhagavathi Kavu, SK 47906; Nanniyode Kavu, SK 47952. *Fl. & Fr.*: Aug.- Nov. *Dist.*: Southern Western Ghats, endemic.

Grewia rhamnifolia Heyne ex Roth, Nov. Pl. 244. 1821; Dunn in Gamble, Fl. Madras 117. 1915; Matthew, Fl. Tamil Nadu Carnatic 172. 1983; Nayar & *al.*, Flg. Pl. Kerala-Handb. 604. 2006. *G. orientalis auct. non* L., Roxb. Fl. Ind. 2: 586. 1832; Wight & Arn., Prodr. fl. Ind. orient. 76. 1834; Mast. in Hook.f., Fl. Brit. India 1:384. 1874,p.p.

Straggling shrubs; branchlets densely tomentose. Leaves simple, alternate, 4.5-6.5 x 3-4 cm, ovate-lanceolate, obtuse or sub-cordate at base, acute or acuminate at apex, crenulate at margins; 3-nerved at base; petiole to 5 mm long. Flowers in leaf opposed, axillary or terminal cyme; bracts obovate, to 4 mm long. Sepals 5, lanceolate, 1.8-2 x 0.3 cm long, wooly without. Petals 5, lanceolate, 8x3 mm, ciliate below; gland ovoid, to 2 mm. torus to 1 mm, angular, glabrous. Andro-gynophore wooly, grooved. Ovary globose, densely stiff-wooly, 2 mm long, 4-celled; ovule 1-per cell. Drupes globose, obscurely 4-lobed, 1.5 cm across.

Mulloor Kavu, Chowwara, SK 47971. *Fl. & Fr.*: Jun.-Oct. *Dist.*: Peninsular India and Sri Lanka.

Note: Addition to Flora of Thiruvananthapuram.

Triumfetta L.,

Sp. Pl. 444. 1753

Triumfetta rhomboidea Jacq., Enum. Pl. Carib. 22. 1760; Mast. in Hook.f., Fl. Brit. India 1:395. 1874; Rao, Fl. Pl. Travancore 54. 1914; Dunn in Gamble, Fl. Madras 120. 1915; Robyns & Meijer in Dassan. & Fosb., Rev. Handb. Fl. Ceylon 7: 433. 1991; Mohanan & Henry, Fl. Thiruvananthapuram 92. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 605. 2006. *Bartamia indica* L., Sp. Pl. 378. 1753, *non Triumfetta indica* Lam.

1792. *T. angulata* Lam., Encycl. 3: 41. 1789; Wight, Icon. pl. Ind. orient.t. 320. 1840.

Erect annual herbs or subshrubs; stem and branches stellately tomentose. Lower leaves 3-lobed, to 8 x 8 cm; upper ones rhomboid to narrow lanceolate to elliptic, to 2.5 x 0.7 cm, truncate or cuneate at base, acuminate at apex, serrate at margins; petiole to 5 cm long; stipules to 4 mm long. Flowers in axillary, leaf opposed cymes; bracts linear-lanceolate, to 2.5 mm long; pedicels short. Sepals 5, oblong, 4-6 mm long, apiculate at apex. Petals 5, yellow, obovate-oblong, to 5 mm long, ciliate at base. Stamens 10-15, to 5 mm long. Ovary spherical, 5-celled; style slender, to 4 mm long; stigma 2-dentate. Capsule 4-5 mm across, prickles 1.5 mm. glabrous. Seed 1-per cell.

NagarKavu, Kulathur, SK 48689; Mathanathu Kavu, Manickal, SK 48732. *Fl. & Fr.*: Oct.- Feb. *Dist.*: Tropical Asia and Africa.

ELAEOCARPACEAE Juss. ex DC.,

Prodr. 1: 519. 1824, *nom.cons.*

Elaeocarpus L.,

Sp. Pl. 515. 1753.

Elaeocarpus serratus L., Sp. Pl. 515. 1753; Mast. in Hook.f., Fl. Brit. India 1:401. 1874; Rao, Fl. Pl. Travancore 54. 1914; Dunn in Gamble, Fl. Madras 124. 1915; Tirel & Raynal, Adansonia (ser.2) 20: 175. 1980; Mohanan & Henry, Fl. Thiruvananthapuram 93. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 227. 2006. *E. oblongus* Gaertn. Fruct. 1: 202, t. 43. 1788. *Kara*.

Medium or large sized trees; bark brown, mottled with grey, reddish inside. Leaves 8-12 x 4-6 cm, elliptic-oblong, acute at both ends, distantly serrate at margins, glabrous above and glabrescent beneath; lateral nerves c. 7 pairs, glandular in the axils; petiole to 3 cm long. Flowers white in axillary racemes, to 1.5 cm across. Sepals 5, to 4.5 mm long, connate at base, ovate, glabrous, green. Petals 5, to 8 mm long, laciniate, white. Stamens numerous, free; anthers oblong, with 4-5 bristles at apex. Ovary tomentose, 3-celled, to 2 mm; ovules 2-per cell; style subulate, to 3 mm long; stigma entire. Drupe obovoid or ellipsoid, to 4 x 2.5 cm. Seed 1-per drupe, shortly tuberculate.

Nanniyode Kavu, SK48691. *Fl. & Fr.*: Feb.-Apr. *Dist.*: Indo-Malesia.

LINACEAE DC. ex Grey,

Nat. Arr. Brit. Pl. 2: 622, 639. 1821, *nom.cons.*

Hugonia L.,

Sp. Pl. 675.1753.

Hugonia mystax L., Sp. Pl. 675. 1753; Wight & Arn., Prodr. fl. Ind. orient. 72. 1834; Wight, Ill. Ind. Bot. t.32. 1840; Hook.f., Fl. Brit. India 1:413. 1874; Rao, Fl. Pl. Travancore 56. 1914; Gamble, Fl. Madras 1:126. 1915; Mohanan & Henry, Fl. Thiruvananthapuram 93. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 384. 2006. *Mothirakanni*.

Stragglers; branchlets tomentose. Leaves 1.5–3 x 0.5–1.5 cm, oblong or elliptic, tapering at base or subacute at apex, entire at margins, glabrous, coriaceous, nerves pubescent beneath; petiole to 4 mm long; stipules

lanceolate or subulate. Flowers golden yellow in axillary and or terminal cymes, lower peduncles spirally hooked. Sepals 5, basally connate, ovate, to 6 mm long, pubescent, persistent. Petals 5, ovate or oblong, to 1.5 x 0.5 cm. Stamens 10; filaments to 5 mm, glands alternate to petals. Ovary 5-celled; ovules 2 per cell, pendulous, styles 5, to 1 cm long, stigma capitate. Drupe globose, to 1.5 cm long, red; seeds compressed.

Moopuram Kavu, SK 42388; Punnattu Sree Thamburan Kavu, SK 48693.
Fl. & Fr.: Sept. – Jan. *Dist.*: Peninsular India and Sri Lanka.

OXALIDACEAE R. Br. in Tuckey, Narr.

Exped. Zaire :433.1818. nom. cons.

- 1. Leaves pinnate.....*Biophytum*
- 1 Leaves trifoliate.....*Oxalis*

Biophytum DC.,

Prodr. 1:689. 1824.

- 1. Leaflets 7-9 jugate, seeds transversely tubercled.....*B. umbraculum*
- 1. Leaflets more than 10-jugate, seeds otherwise.....2
- 2. Pedicels shorter than sepals.....*B. veldkampii*
- 2. Pedicels longer than sepals.....*B. reinwardtii*

Biophytum reinwardtii (Zucc.) Klotzch, Peters Reise Mossamb. Bot. 1: 85. 1862; Edgew. & Hook.f. in Hook.f., Fl. Brit. India 1: 437. 1874; Gamble, Fl. Madras 133. 1915; Mohanan & Henry, Fl. Thiruvananthapuram 95.1994; Nayar & al., Flg. Pl. Kerala-Handb. 470. 2006. *Oxalis reinwardtii* Zucc., Abh. Math.-Phys.Cl. Koenigl. Bayer. Akad. Wiss. 1: 274. 1829-1830. *Mukkutti*.

1. Corolla to 4.5 mm long; capsule longer than sepals.....var. *reinwardtii*
 1. Corolla more than 6 mm long; capsule more or less
 equal to sepals.....var. *keralanum*

var. **keralanum** Santhosh, Yeragi, Shanavas *et* Babu in J. Econ. Tax. Bot. 20(3): 745. 2001; Nayar & *al.*, Flg. Pl. Kerala-Handb. 471. 2006.

Annuals. Stem simple, upto 15 cm long. Leaves 12-17 jugate; rachis 4-7.5 cm, sparsely puberulous; leaflets overlapping, terminal largest, to 13 x 5 mm, asymmetric, obovate, midrib eccentric curved, others elliptic, symmetric, base truncate, midrib median, straight to slightly curved, more or less glabrous, margin sparsely strigose, nerves many, oblique, a little conspicuous. Peduncle 5-18 cm long, patent to appressed-strigose and septate-glandular hairy. Pedicels to 6 mm long. Bracts ovate-attenuate, 1-1.5 mm long. Sepals 2-2.5 x 1-1.25 mm, ovate, acute-acuminate at apex, 7-nerved, half as long as petals in flower, 2/3 as long as in fruits. Petals 3.5-4.5 mm long, elliptic to oblanceolate, emarginate at apex; claw greenish, limb yellow. Filaments puberulous, shorter 1-1.5 mm long; longer 2-2.6 mm long. Ovary 0.6-0.8 mm long, 0.5 mm in diam., apically ciliate; style to 0.5 mm long; stigma flattened, crenate-bifid; ovules 2-per cell, superposed. Fruits 3-3.5 x 2-2.5 mm, glandular hairy on the ribs. Seeds 1-2 per cell, to 1.2 x 0.8 mm, transversely ridged and tubercled.

KeezhettiKavu, SK 44476. *Fl. & Fr.*: June-Feb. *Dist.*: Kerala, endemic.

Note: This new variety is differing from the typical variety by the smaller flowers, sepals distinctly shorter than capsule and the different pollen grains.

var. **reinwardtii**

Annual herbs; stem to 20 cm high. Leaves 5-12 cm long, rachis sparsely hairy; leaflets 10-15 pairs, 7-13 x 3-7 mm, oblong, slightly oblique, truncate at base, apiculate at apex; peduncle to 15 cm long, glandular hairy; flowers 12-16 per umbel; pedicels glandular-hispid. Calyx lobes 5, lanceolate, 7-nerved. Corolla yellow with or without purple veins, 8 mm long. Stamens 10, filaments slightly glandular hairy. Ovary glabrous except a few glandular hairs near the base of style. Capsule to 3.5 mm long, hispid, more or less equal to calyx lobes. Seeds 1-2 per cell, obliquely ridged and tubercled.

Mechamkode Kavu, SK 48694. *Fl. & Fr.*: July- Mar. *Dist.*: Indo – Malesia.

Biophytum umbraculum Sch., Apont. 590. 1859; Santhosh *et. al.*, J. Econ. Tax.Bot. 24 (3): 746. 2000; Nayar & *al.*, Flg. Pl. Kerala-Handb. 471. 2006. *B. petersianum* Klotz. in Peters, Reise Mossab. Bot. 1:81, t.15. 1862; Veldkamp, Fl. Thailand 2: 18. 1970. *Oxalis petersianum* (Klotz.) C. Muell. in Walp. Ann. 7: 502. 1868. *B. apodiscias* (Turcz.) Edgew. & Hook.f. in Hook.f., Fl. Brit. India 1: 437. 1874; Rao, Fl. Pl. Travancore 58. 1914; Gamble, Fl. Madras 133. 1915. *Oxalis apodiscias* Turcz. Bull. Soc. Nat. Mosc. 36: 595. 1863

Annual herbs; stem simple, to 7 cm long. Leaves 3-9 jugate, rachis 0.5-1.5 cm long, sparsely hirsute, mainly on the nodes; leaflets often overlapping, terminals 3.5-6 x 3.5-5 mm, obovate, \pm oblique, midrib eccentric, other leaflets triangular to elliptic, midrib \pm median, obtuse-apiculate at apex, sparsely hairy at margin; peduncle to 3 cm long, appressed strigose and glandular hairy. Flowers to 6 per umbels; pedicels

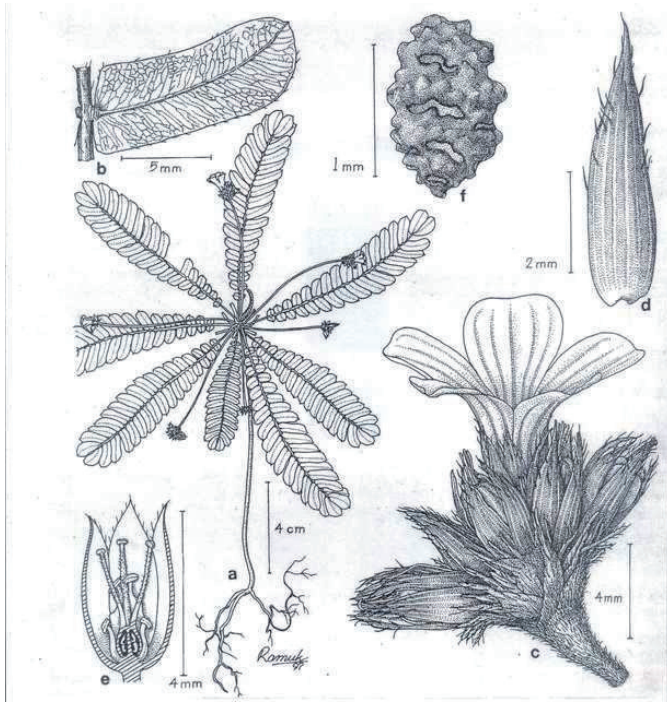
1-2.5 mm with bristly hairy. Sepals 5, to 4 x 0.6 mm, ovate-lanceolate, 7-nerved, sparsely glandular hairy. Petals yellow with purple veins, 5-6 mm long. Stamens 10; inner 5 longer; filaments pilose to subglabrous. Ovary 0.5 x 0.5-0.7 mm; style sparsely hairy; stigma flattened-crenate. capsule 3.5-4 mm long. Seeds transversely tubercled.

Nanniyode Kavu, SK 48745. *Fl. & Fr.*: Aug. – Nov. *Dist.*: Tropical South East Asia, T.Africa and Madagascar.

Biophytum veldkampii Shanavas, Santhosh, Binu *et* Pushpangadan, *Rheedea* 8(1): 79. 1998; Nayar & *al.*, *Flg. Pl. Kerala-Handb.* 471. 2006.

Annuals, stem simple, rarely branched, upto 15 cm long. Leaves 7-16 jugate, rachis slightly winged, 2.5-12 cm long, sparsely patently strigose; leaflets overlapping; terminals obovate and falcate, oblique, 7.5-16 x 3.5-7 mm, midrib eccentric; other oblong, truncate at base, apiculate at apex, midrib median, sparsely hairy above in the acroscopic half and along the midrib, margin ciliate, nerves a few, oblique to midrib, inconspicuous. Peduncles 6-9 cm long, appressed to patently strigose, eglandular, mucronate at apex. pedicels 1.5-2 mm long, glabrous. Flowers heterotristylos. Sepals ovate-lanceolate, 4-4.5 x 0.7-1 mm, half as long as corolla, 6-8 nerved in fruits, longer than pedicels, longer than capsules, sparsely strigose near the apex without. Petals oblanceolate, 8-10 x 4-5 mm, retuse at apex, claw greenish, limb yellow. Filaments puberulous, shorter 1-2 mm long; longer ones 2.5-4 mm long. Ovary 0.5-1 mm long, apically ciliate; style 0.2-2.7 mm long; stigma flattened, crenate-bifid; ovules 2-per cell, superposed. Fruits 3-3.5 x 2-2.5 mm, apically, ciliate on the ribs. Seeds 1-2 per cells, to 1.4 x 0.9 mm, transversely ridged, not tuberculate.

Common to almost all sacred groves. Cherunilakkodu Kavu, SK 47892, Puthenvila Kavu, SK 48695. *Fl. & Fr.*: Round the year. *Dist.*: Kerala, endemic.



Biophytum veldkampii Shanavas, Santhosh, Binu & Pushpangadan. a. Habit, b. Leaflet, c. Inflorescence, d. A sepal, e. L.S. of a flower (petals removed), f. A seed.

Oxalis L.,

Sp. Pl. 433. 1753.

Oxalis corniculata L., Sp. Pl. 435. 1753; Wight, Icon. pl. Ind. orient. t. 18. 1838; Edgew. & Hook.f., Fl. Brit. India 1: 436. 1874; Rao, Fl. Pl. Travancore 58. 1914; Gamble, Fl. Madras 132.1915; Veldkamp in Steenis; Fl. Males. I, 155. 1971; Mohanan & Henry, Fl.

Thiruvananthapuram 96. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 471. 2006. *Pularila*.

Diffused herbs; branches rooting at lower nodes, pubescent with appressed hairs. Leaves palmately 3-foliolate; leaflets to 1.5 cm long, obcordate, emarginate, cuneate at base, pilose; petiole to 2.5 cm long. Flowers 2-5 in long peduncled pseudo-umbels, yellow. Sepals 5, ovate-lanceolate, to 3 mm long. Petals 5, to 6 mm long, oblanceolate, rounded or emarginate at apex. Stamens 10, outer 5 shorter; filaments connate at base. Ovary 5-celled, ovules many in each locules; styles 5, free; stigma papillose. Capsule oblong or linear-oblong, to 1.5 cm long, loculicidal, acuminate at apex, tomentose. Seeds numerous, broadly ovoid, acute, transversely ridged, brown.

Mannady Devi temple Kavu, SK 48644; Nagar Kavu, Nedumangadu, SK 48696. *Fl. & Fr* : April-Feb. *Dist.*: Cosmopolitan.

AVERRHOACEAE Hutch.,
Fam. Fl. Pl., ed. 2:356. 1959.

Averrhoa L.

Sp. Pl. 428. 1753.

1. Leaflets 4-6 pairs; berry with acutely angled ridges.....*A. carambola*
1. Leaflets 8-25 pairs; berry obtusely angled.....*A. bilimbi*

Averrhoa bilimbi L., Sp. Pl. 428. 1753; Bedd., Fl. sylv. S. India t. 117. 1872; Edgew. & Hook. f. in Hook .f., Fl. Brit. India 1:439. 1874; Rao, Fl. Pl. Travancore 59. 1914; Gamble, Fl. Madras 133. 1915; Mohanan &

Henry, Fl. Thiruvananthapuram . 96. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 129. 2006. *Elimbi puli*.

Small tree with erect or patent branches. Leaflets 8-25 pairs, to 5 x 1.5 cm, oblong, rounded at base, more or less pubescent on both surfaces. Flowers from the trunk and branches; panicles villous. Sepals 5, ovate-lanceolate, acute, pubescent. Petals 5, oblong-spathulate, twice as long as sepals. Stamens 10. Ovary 5-lobed, 5-celled. Fruits oblong, to 5 cm long. Seeds exarillate.

Kochalummoodu Devi temple Kavvu, SK 48697. *Fl. & Fr.*: Mar. – Oct. *Dist.*: India (cultivated).

Averrhoa carambola L., Sp. Pl. 428. 1753; Edgew. & Hook.f. in Hook.f. Fl. Brit. India 1:439. 1874; Rao, Fl. Pl. Travancore 58. 1914; Gamble, Fl. Madras 133.1915; Mohanan & Henry, Fl. Thiruvananthapuram 96. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 129. 2006.

A small tree with close drooping branches. Leaves alternate; leaflets 4-6 pairs, to 7 x 4 cm, ovate-oblong, acute and oblique at base, acuminate at apex, glabrous above, glaucous beneath. Flowers in short racemes, axillary or from old wood. Sepals 5, to 5 mm long, glabrous. Petals 5, oblong-obovate, white-purple. Stamens 10, 5 shorter; filaments dilated at the base. Fruits oblong, acutely angled or winged, yellow. Seeds arillate.

Madanada temple Kavvu, SK 48648. *Fl. & Fr.*: Sept – Mar. *Dist.*: Cultivated in many parts of the tropics.

BALASAMINACEAE A Rich.

in Bory, Dict. Class. Hist. Nat. 2:173. 1822, *nom. cons.*

Impatiens L.,

Sp. Pl. 937. 1753

Impatiens diversifolia Wall. ex Wight & Arn. Prodr. fl. Ind. orient. 139. 1834; Hook.f., Fl. Brit. India 1:446. 1874; Gamble, Fl. Madras 140. 1915; Mohanan & Henry, Fl. Thiruvananthapuram 97. 1994; Vivek. et al. in Hajra et al.(eds.) Fl. India 4:141. 1997; Nayar & *al.*, Flg. Pl. Kerala-Handb. 133. 2006.

Flaccid, diffuse herbs; stem rooting at lower nodes. Leaves opposite, 1-7 x 0.8-1.5 cm, elliptic. or oblong or linear-oblong, subcordate at base, acute at apex, serrate at margins; stipules obscure, glandular; sessile or shortly petioled. Flowers axillary, solitary or binate, c. 2 cm across; pedicels 1-2 cm long, pubescent, deflexed in fruits. Lateral sepals linear, acuminate; Spur filiform 1-1.5 cm long; standard small. Wings sub obovate, to 1.2 x 0.8 cm. Capsules ellipsoid, c.8 mm long. Seeds globose, dark brownish, smooth, shining.

Nanniyode Kavu, SK 48545. *Fl. & Fr.*: July – Nov. *Dist.*: Western Ghats, endemic.

RUTACEAE Juss.,

Gen. Pl. : 296. 1789, *nom. cons.*

- 1.Flowers bisexual.....3
- 1.Flowers polygamous or monoecious.....2
- 2.Fruits indehiscent.....*Acronychia*
- 2.Fruits dehiscent.....*Melicope*

3.Armed plants.....	4
3.Unarmed plants.....	6
4.Leaves 3-foliolate.....	5
4.Leaves 1-foliolate.....	<i>Atalantia</i>
5.Climbing shrubs; stamens 8-10.....	<i>Luvunga</i>
5.Trees; stamens numerous.....	<i>Aegle</i>
6.Flowers small; style persistent.....	<i>Glycosmis</i>
6.Flowers large; style deciduous.....	<i>Murraya</i>

Acronychia J.R.Forst. & G. Forst.,

Char. Gen. Pl.: 27. 1775, *nom. cons.*

Acronychia pedunculata (L.) Miq., Fl. India. Bat. (suppl.) 532. 1861; Rau, Bull. Bot. Surv. India 10 (suppl. no.2) : 18. 1968; Stone in Dassan & Fosb., Rev. Handb. Fl. Ceylon 5: 412. 1985; Mohanan & Henry, Fl. Thiruvananthapuram 101. 1994; Nair & Nayar in Hajra *et al.* (eds.), Fl. India 4:264.1997; Nayar & *al.*, Flg. Pl. Kerala-Handb. 546. 2006. *Jambolifera pedunculata* L., Sp. Pl. 349. 1753. *Acronychia laurifolia* Bl., Cat. Grew. Buitenz. 63. 1823; Hook. f., Fl. Brit. India 1:498. 1875; Gamble, Fl. Madras 152. 1915.

Small evergreen trees; bark greyish-yellow, dull red inside. Leaves opposite or sub opposite, 8-16 x 3-5 cm, oblong-lanceolate or elliptic-lanceolate, acute at base, shortly obtusely acuminate at apex, entire at margins, glabrous and shining above, pale beneath; lateral nerves 10-15 pairs, slender; petiole to 2 cm long. Flowers polygamous in long peduncled corymbose from the axils of upper leaves. Calyx ciliolate along margins persistent. Petals linear-lanceolate. Stamens 8, alternate

one longer. Ovary conical, partly sunk in disc; disc 8-ribbed. Fruits subglobose, obscurely lobed to 1 cm across.

Sree Dharma Sastha Kavu, Thachottu, SK 47983. *Fl. & Fr.*: August – May. *Dist.*: Indo-Malesia.

Aegle Correa in

Trans. Linn Soc. London 5:222. 1800, *nom. cons.*

Aegle marmelos (L.) Correa in Trans. Linn. Soc. London 5:223. 1800; Wight, *Icon. pl. Ind. orient. t.* 16. 1838; Hook .f., *Fl. Brit. India* 1:516. 1875; Gamble, *Fl. Madras* 1: 161. 1915; Mohanan & Henry, *Fl. Thiruvananthapuram* 101. 1914; Nair & Nayar in Hajra *et. al* (eds.) *Fl. India* 4:264. 1997; Nayar & *al.*, *Flg. Pl. Kerala-Handb.* 547. 2006. *Craateva marmelos* L., *Sp. Pl.* 444. 1753.*Koovalam*.

Small tree, armed with strong straight sharp thorns. Leaves 3-foliolate, leaflets, 3.5 – 7.5 x 1.5 – 4 cm; elliptic-lanceolate or narrowly obovate, acuminate at apex, cuneate and slightly unequal at base, crenulate at margins, glabrous. Flowers greenish-white in axillary panicles. Calyx 4-lobed, pubescent, lobes rounded, ciliolate. Petals 4, oblong, coriaceous. Stamens numerous, filaments subulate, glabrous; anthers linear-oblong, apiculate. Ovary ovoid-oblong, glabrous, faintly ribbed; cells many ovuled. Berry globose, rind grey or yellowish, pulp sweet, thick, orange coloured.

KeezhettiKavu , SK 47846; Idivizhunna Kavu, SK 48698. *Fl. & Fr.*: April – Sept. *Dist.*: India, Burma, Indo-China. Cultivated in S.E. Asia, Malesia, Tropical Africa and United States.

Atalantia Correa in

Ann. Mus. Natl. Hist. Nat. 6:383,385,386. 1805, *nom. cons.*

Atalantia wightii Tanake in Bull. Soc. Bot. France 75: 714. 1928; Fischer in Gamble, Fl. Madras 1895. 1936; Mohanan & Henry, Fl. Thiruvananthapuram 102. 1994; Nair & Nayar in Haja *et al* (eds) Fl. India 4:274. 1997; Nayar & *al.*, Flg. Pl. Kerala-Handb. 548. 2006. *A. ceylanica sensu* Hook. f., Fl. Brit. India 1:512. 1875, *pro parte non* (Arn.) Oliver 1861.

Glabrous evergreen shrubs with axillary spines. Leaves simple, alternate, 8-15 x 3-6 cm, elliptic-lanceolate or ovate-oblong, acute or rounded at base, acuminate at apex, entire at margins, glabrous; lateral nerves 16-20 pairs, slender; petiole to 0.8 cm long. Flowers white in short axillary cymes; pedicels to 0.7 cm long. Calyx shortly 4-lobed, ovate-acute, ciliate along the margins. Petals 4, elliptic-oblong, acute at apex, glandular. Stamens 8-10, filaments flat, subequal. Ovary conical; style distinct; stigma capitate. Berry ovoid or subglobose, to 2.5 cm across.

Pulickal Bhagavathi Kavu, SK 47831, Cherunilakkodu Kavu, SK 47871. *Fl. & Fr.*: December – March. *Dist.*: Southern Western Ghats, endemic.

Glycosmis Correa in

Ann. Mus. Natl. Hist. Nat. 6:384. 1805, *nom cons.*

Glycosmis pentaphylla (Retz.) DC., Prodr. 1:538. 1824; Mitra & Subram., J. Arnold Arbor. 50:155. 1969; Stone in Dassan. & Fosb., Rev. Handb. Fl. ceylon 5: 449. 1985; Mohanan & Henry, Fl. Thiruvananthapuram 104. 1994. var. *pentaphylla*, Nair & Nayar in Hajra

et al.(eds.), Fl. India 4: 346. 1997; Nayar & *al.*, Flg. Pl. Kerala-Handb. 549. 2006. *Limonia pentaphylla* Retz., Obs. Bot. 5: 24. 1788. *L. arborea* Roxb., Pl. Coromandel. t. 85. 1798. *Glycosmis cochinchinensis sensu* Gamble, Fl. Madras 153. 1915 p.p. *Panal*.

Shrubs. Leaves alternate, odd pinnate, prominently gland dotted; leaflets 3-7, elliptic or oblong or oblong-lanceolate, 7-14 x 2.5-6 cm, acute at base, acuminate or obtuse at apex, finely serrate or even entire at margins; lateral nerves 5-7, faint. Flowers creamy white, crowded in axillary short panicles. Calyx 5-partite, lobes minute, ovate-orbicular, ciliolate along the margins. Petals 5, broadly obovate- suborbicular, margin membranous. Stamens 10, filaments tapering towards apex; anthers with a small gland at the tip and sometimes with a small one on the back. Ovary ovate, seated on a short thick disc; style short; stigma capitate. Berry globose, 6-8 mm across, white turning dull pink. Seeds 1-2, oblong.

Nanniyode Kavu, SK 48647; Ayaniyerathala Devi Temple Kavu, SK 48699. *Fl. & Fr.*: Round the year. *Dist.*: Indo-Malesia.

Note: The taxonomy and nomenclature of this species were a matter of strong debates through years. Nair & Nayar (*l.c.*) correctly concluded the problem. According to them, there are two varieties in this species: var. *pentaphylla* and var. *linearifolia* Tanaka. The later is known only in cultivation.

Luvunga Buch.- Ham. ex Wight & Arn.,
Prodr. fl. Ind. Orient. 90. 1834.

Luvunga eleutherandra Dalz. in Hook's, J. Bot. Kew. Gard. Misc. 2:258. 1850; Hook.f., Fl. Brit. India 1:509. 1875; Gamble, Fl. Madras 157. 1915; Mohanan & Henry, Fl. Thiruvananthapuram 104. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 549. 2006.

Climbing shrubs with sharp stout thorns; bark greyish-brown, rough. Leaves alternate, 3-foliolate; leaflets 6-9 x 2.5-4 cm, elliptic-oblong, acute at base, acuminate and plicate at apex, recurved at margins; lateral nerves and reticulation faint. Flowers in axillary fascicled racemes. Calyx subentire or shortly 4-lobed. Petals 4, white, oblong, 6 mm long. Stamens 8, inserted around the disc. Ovary 3-celled, glandular. Berry to 2 cm long, pitted, ellipsoid.

Vadakkottu Sri Dharma Sastha Kavu, SK 47929. *Fl. & Fr.*: Dec.–June.
Dist.: Western Ghats, endemic.

Melicope J.R. Forst. & G. Forst.,
Char. Gen. Pl. 28. 1775.

Melicope lunu-ankenda (Gaertn.) T. Hartley in Sandakania 4: 61. 1994; Nair & Nayar in Hajra et al.(eds.), Fl. India 4: 369. 1997; Nayar & al., Flg. Pl. Kerala-Handb. 550. 2006. *Fagara lunu-ankenda* Gaertn., Fruct. 1: 334. t. 68. f.9. 1788. *Euodia lunu-ankenda* (Gaertn.) Merr. in Philipp. J. Sci. 7: 378. 1913; Gamble, Fl. Madras 148. 1915; Stone in Dassan. & Fosb., Rev. Handb. Fl. Ceylon 5: 436. 1985; Nair & Nayar, J. Econ. Tax. Bot. 13: 197. 1989. *Zanthoxylum triphyllum* Wight, Icon. pl. Ind. orient.t.

204. 1839. *Euodia roxburghiana* Benth., Fl. Hong.-Kong 59. 1861; Hook.f., Fl. Brit. India 1: 487. 1875. *Kanala*.

Small to medium sized trees; bark greyish-brown, smooth, prominently reticulate; branchlets 4-angled. Leaves opposite, 3-foliolate; leaflets 14-20 x 6-10 cm, elliptic, acute and oblique at base, acuminate at apex, membranous; lateral nerves 15-20 pairs, parallel; petiole to 12 cm long. Flowers unisexual in axillary paniced cymes, to 3 mm across. Sepals minute, broadly elliptic or suborbicular. Petals white, ovate acute. Male flowers: Stamens 4; filaments glabrous; anthers elliptic. Female flowers: Ovary deeply 4-lobed, 4-celled, pubescent; style short, thick; stigma obsoletly 4-lobed. Fruit of 4-coriaceous 2-valved, 1-seeded cocci. Seeds globose, black, shining.

Nanniyode Kavu, SK 48650; Karathala Kavu (b), SK 48718. *Fl. & Fr.:* Aug. – Feb. *Dist.:* Indo-Malesia.

Note: According to Hartley (l.c.) the genus *Euodia* comprises 7 species and ranges from New Guinea and north eastern Australia east to Samoa, Tonga and Niue.

Murraya J. Konig ex L.,

Mant. Pl. 554, 563. 1771, *nom. cons.*

1. Leaflets 3-7; flowers >1cm long, axillary.....*M. paniculata*

1. Leaflets 10-20; flowers < 1cm long, terminal.....*M. koenigii*

Murraya koenigii (L.) Spreng. Syst. Veg. 2: 315. 1826; Hook.f., Fl. Brit.India 1: 503. 1875; Gamble, Fl. Madras 155. 1915; Nair & Nayar in Hajra *et al.* (eds.), Fl. India 4: 351. 1997; Nayar & *al.*, Flg. Pl. Kerala-

Handb. 554. 2006. *Bergera koenigii* L. Mant. Pl. 565.1771; Wight, Icon. pl. Ind. orient.t. 13. 1838. *Kariveppu*.

Small trees; bark dark grey. Leaves imparipinnate; leaflets 10-20, to 3.5x2 cm, obliquely ovate or rhomboid, obtuse or acute at base, acuminate or notched at the very apex, irregularly crenate-dentate at margins. glabrous above, minutely pubescent beneath. Flowers white, in much branched terminal peduncled corymbose cymes. Sepals 5; lobes triangular, sub-truncate at apex. Petals 5, to 0.6 cm long, linear-oblong, rounded at apex, gland dotted. Stamens 10, free; filaments narrowed at apex. Ovary 2-celled. Berry ovoid or subglobose, 0.6-0.9 cm across, apiculate at apex, black at ripening. Seeds 2.

Cherukulathu Kavu, SK 48647. *Fl. & Fr.*: Feb.- Jun. *Dist.*: India-Ceylon (Cultivated).

Murraya paniculata (L.) Jack., Malay. Misc 1: 31. 1820; Swingle, Citrus Ind. 1: 232. 1967; Matthew, Fl. Tamil Nadu Carnatic 3, I: 212. 1983; Stone in Dassan. & Fosb., Rev. Handb. Fl. Ceylon 5: 459. 1985; Mohanan & Henry, Fl. Thiruvananthapuram 105. 1994; Nair & Nayar in Hajra *et al.*(eds.), Fl. India 4: 352. 1997; Nayar & *al.*, Flg. Pl. Kerala-Handb. 550. 2006. *Chalacas paniculata* L., Mant. 68. 1767. *Murraya exotica auct. non L.* 1753, *sensu* Wight, Icon. pl. Ind. orient. t. 96. 1838; Hook.f., Fl. Brit.India 1: 502. 1875; Gamble, Fl. Madras 155. 1915. *Kattu Kariveppu*.

Shrubs or small trees; bark greyish-brown, shallowly fissured. Leaves alternate, imparipinnate; leaflets 3-7, to 6.5 x 3.5 cm, ovate-elliptic, acute at base, acuminate at apex, glabrous; lateral nerves 8-10 pairs, faint. Flowers white in axillary few flowered panicles. Sepals 5,

oblong, obtuse at apex, glandular. Petals 5, to 1.8 cm long, oblong-lanceolate, the upper half spreading. Stamens 10; filaments flat, linear. Ovary 2-celled, smooth. Berry 1-1.2 cm long, ellipsoid, red at ripening.

Nanniyode Kavu, SK 48649; Indalayappan Kavu, Venkode, SK 48806.

Fl. & Fr.: Mar.- Apr. *Dist.*: Indo-Malesia

Note: *Murraya exotica* and *M. paniculata* were treated as two different species by Matthew (*l.c.*). Nair & Nayar (*l.c.*) considered this species as a very variable species with many intermediate forms. Hence they united *M. exotica* with *M. paniculata*.

SIMAROUBACEAE DC. in

Ann. Mus. Natl. Hist. Nat. 17: 422. 1811, *nom.cons.*

Quassia L.,

Sp. Pl. Ed. 2. 1: 553. 1762.

Quassia indica (Gaertner) Nooteb. Blumea 1: 517. 1963; Nayar & *al.*, Flg. Pl. Kerala-Handb. 580. 2006. *Samadera indica* Gaertn., Fruct. 2: 352. t. 156. 1791; Hook.f., Fl. Brit. India 1: 519. 1875; Gamble, Fl. Madras 163. 1915; Mohanan & Henry, Fl. Thiruvananthapuram 106. 1994; Basak in Hajra *et al.* (eds.) Fl. India 4: 420.1997. *Karingotta*.

Small trees with stout branches. Leaves simple, alternate, 14-25 x 4-8.5 cm, elliptic–blong, rounded or subacute at base, shortly acuminate at apex, entire at margin, glabrous, shining; petiole to 1.75 cm long, stout. Inflorescence a many flowered drooping umbel, axillary, often longer than leaves. Calyx small, glabrous, persistent; lobes broad, thick, ciliate. Petals 1.8-2.5 cm long, oblong, obtuse at apex. Stamens 10, slightly

shorter than petals; filaments with a hairy scale at the base. Ovary shortly stalked, glabrous, 4-celled; style glabrous. Drupes 5-6.5 cm long, semi-circular, much compressed, smooth, reticulate.

Murava Kavu, SK 48700. *Fl. & Fr.*: Oct.- May. *Dist.*: India, Burma, Sri Lanka.

MELIACEAE Juss.,

Gen.Pl. 263. 179, *nom.cons.*

- 1. Herbs..... *Naregamia*
- 1. Trees.....2
- 2. Leaves 3-foliolate.....*Walsura*
- 2. Leaves 5 or more foliolate.....3
- 3. Ovary 5-celled.....*Cipadessa*
- 3. Ovary 3-celled.....4
- 4. Petals 3.....*Aphanamixis*
- 4. Petals 5.....5
- 5. Staminal tube globose.....*Aglaia*
- 5. Staminal tube oblong..... *Azadirachta*

Aglaia Lour.,

Fl. Cochinch. 173. 1790, *nom. cons.*

Aglaia elaeagnoidea (Juss.) Benth. var. **courtallensis** (Gamble) K.K.N.Nair in J. Bombay nat. Hist. Soc. 78: 426. 1981; Jain & Bennet in Hajra *et al.*(eds.), Fl. India 4: 465. 1997; Nayar & *al.*, Flg. Pl. Kerala-Handb. 420. 2006. *A. roxburghiana* (Wight & Arn.) Miq. var. *courtallensis* Gamble, Fl. Madras 180. 1915.

Trees, young parts with brown lepidote scales. Leaves imparipinnate, 7-20 cm long; leaflets 5, opposite, elliptic-obovate or oblanceolate, 5-9 x 2.5-4 cm, acute-acuminate at apex, thinly coriaceous, glabrous above; secondary nerves 8-15 pairs. Flowers in axillary dense flowered panicles, shortly pedicelled, globose. Calyx cup shaped, 5-lobed, ciliate along margins. Petals 5, elliptic-oblong, longer than calyx. Staminal tube shorter than petals. Stamens 5, small. Ovary depressed, stellately lepidote; style half as long as staminal tube; stigma ovoid. Berries obcordate, 1-seeded.

Pazhanchira Devi Temple Kavu, SK 47988, Nagaru Kavu, Kazhakootam, SK 48792. *Fl. & Fr.*: Sept.- June. *Dist.*: Western Ghats, endemic.

Note: This variety was published by Gamble (*l.c.*) from Courtallum in Tamil Nadu State. The present collection hence form a new record for Kerala.

Aphanamixis Blume,

Bijdr. 165. 1825.

Aphanamixis polystachya (Wall.) Parker, *Indian For.* 57: 486. 1931; Mabb., *Taxon* 26: 528. 1977; Jain & Bennet in Hajra *et al.* (eds.) *Fl. India* 4: 461.1997; Nayar & *al.*, *Flg. Pl. Kerala-Handb.* 422. 2006. *Aglaia polystachya* Wall., *Roxb. Fl. Ind.* 2: 429. 1824. *Amoora rohituka* (Roxb.) Wight & Arn, *Prodr. fl. Ind. orient.* 119. 1834; Bedd., *Fl. sylv. S. India* t. 132. 1971; Hieron in *Hook.f., Fl. Brit. India* 1: 559. 1875; Gamble, *Fl. Madras* 181. 1915. *Chemmaram*.

Medium sized trees; bark brown, reddish inside. Leaves pinnate; leaflets 9-15, oblong, 18-25 x 5-9 cm, oblique at base, acute or acuminate at apex, entire, glabrous; lateral nerves 10-12 pairs. Flowers polygamous in spicate panicles, as long as the leaves, drooping. Sepals 5, green. Petals 3, imbricate. Stamens 6, included within a tube. Ovary 3-celled; ovules 2 in each cell; stigma subsessile, 3-lobed. Capsule pyriform, 3-4 cm long. Seeds 2-3, covered with orange-red arils.

Pulickal Bhagavathi Kavu, SK 47843. *Fl. & Fr.*: Dec.–May. *Dist.*: Indo-Malesia.

Note : Addition to Flora of Thiruvananthapuram.

Azadirachta A. Juss.in

Bull.Sci. Nat. Geol. 23: 236. 1830.

Azadirachta indica Adr., Juss. Mem. Mus. Hist. Nat. 19: 221. t. 2. f. 5. 1832; Wight & Arn. Prodr. fl. Ind. orient. 118. 1834; Wight, Icon. pl. Ind. orient. t. 17. 1838; Gamble, Fl. Madras 177. 1915; Mohanan & Henry, Fl. Thiruvananthapuram 108. 1994; Jain & Bennet in Hajra *et al.* (eds.) Fl. India 4: 478. 1997; Nayar & *al.*, Flg. Pl. Kerala-Handb. 422. 2006. *Melia azadirachta* L., Sp. Pl. 385. 1753; Roxb. Fl. Ind. 2: 394. 1832; Bedd., Fl. sylv. S. India. t. 14. 1869; Hieron in Hook.f., Fl. Brit. India 1: 544. 1875. *Veppu*.

Trees; branchlets glaucous. Leaves pinnate, 16-20 x 10 cm; leaflets 5-7 pairs, sub-opposite, 4.5-7 x 1.5-2.5 cm, oblong-lanceolate, falcate, cuneate and oblique at base, acuminate at apex, serrate at margins. Flowers 8 mm across. Calyx lobes 5, to 0.7 mm long, ovate, ciliolate, connate at base. Corolla white, free; lobes 5x1.5 mm, oblong-obovate,

attenuate at base, tomentose. Stamens 10; filaments united to form a tube, to 4 mm long, glabrous; anthers slightly exerted, apiculate. Ovary 3-celled; ovules 2-per cell; style to 3 mm long; stigma terete, 3-lobed. Drupe to 1.5 x 0.5 cm, oblong-ovoid. Seed solitary, to 8 mm long, ellipsoid.

Karimbikavu, SK 47802. *Fl. & Fr.*: May–Aug. *Dist.*: India, China, Malesia.

Cipadessa Blume,
Bijdr. 162. 1825.

Cipadessa baccifera (Roth) Miq., *Ann. Mus. Bot. Lugduno-Batavum* 4: 6. 1868; Gamble, *Fl. Madras* 176. 1915; Mohanan & Henry, *Fl. Thiruvananthapuram* 110. 1994; Jain & Bennet in Hajra *et al.* (eds.) *Fl. India* 4: 482.1997; Nayar & *al.*, *Flg. Pl. Kerala-Handb.* 422. 2006. *Melia baccifera* Roth, *Nov. Pl. Sp.* 215. 1821. *Cipadessa fruticosa* Bl., *Bijdr.* 162. 1825; Hieron in *Hook.f., Fl. Brit. India* 1: 545. 1875. *Kattuveppu*.

Large shrubs or small trees; young shoots glabrous. Leaves pinnate, to 20 cm long; leaflets 5-11, opposite, 6-8 x 3-4 cm, elliptic-lanceolate, acute at both ends, base unequal, entire or coarsely serrate; lateral nerves 7-9 pairs, slender, reticulation not prominent. Flowers greenish-white in axillary corymbose, hairy panicles. Sepals 5-toothed, teeth short, triangular, sparsely ciliate. Petals 5, to 4 mm long, oblong, acute at apex, pubescent without. Stamens 5; filaments fused at base, forked at apex. Ovary 5-celled; style linear, stigma lobed. Berry 4-5 mm across, subglobose, 5-ribbed, red when ripening.

Chavaru Kavu, SK 48701. *Fl. & Fr.*: Round the year. *Dist.*: Indo-Malesia.

Naregamia Wight & Arn.,

Prodr. Fl. Ind. Orient. 116. 1834, *nom.cons.*

Naregamia alata Wight & Arn., Prodr. fl. Ind. orient. 117. 1834; Wight, Icon. pl. Ind. orient. t. 90. 1838; Hieron in Hook.f., Fl. Brit. India 1: 542. 1875; Gamble, Fl. Madras 174. 1915; Mohanan & Henry, Fl. Thiruvananthapuram 110. 1994; Jain & Bennet in Hajra *et al.* (eds.) Fl. India 4: 498. 1997 Nayar & *al.*, Flg. Pl. Kerala-Handb. 424. 2006. *Nilanaragam*.

Glabrous herbs with decumbent branches. Leaves alternate, 3-foliolate, 2.5-7.5 cm long; leaflets 2-5 cm long, obovate, cuneate at base, obtuse at apex, glabrous. Flowers white, 2.5-3 cm long, axillary, solitary. calyx tomentose without; lobes oblong-lanceolate. Petals linear-spathulate, free. Stamens 10, tube elongate, inflated at apex; anthers appendaged. Ovary ovoid, 3-celled; style filiform; stigma capitate. Capsule subglobose, 3-lobed, 3-valved. Seeds 2 in each locules, chestnut-brown, terete, truncate at both ends.

Indalayappan Kavu, SK 39354; Cherukulathu Sree Manadi Kavu, SK 48760. *Fl. & Fr.*: May – Dec. *Dist.*: Peninsular India.

Walsura Roxb.,

Fl. Ind. ed. 1832: 386. 1832.

Walsura trifolia (A. Juss.) Harms in Engl. & Prantl, Pflazenf. (ed.2) 196: 119, 177. 1940; Mohanan & Henry, Fl. Thiruvananthapuram 111. 1994; Jain & Bennet in Hajra *et al.* (eds.) Fl. India 4: 498.1997; Nayar & *al.*, Flg. Pl. Kerala-Handb. 425. 2006. *Heynea trifolia* A. Juss., Mem. Mus. Hist. Nat. Paris 19: 230.1830. *Walsura piscidia* Roxb., Fl. Ind.2: 387. 1832; Wight, Ill. Ind. Bot.t. 55. 1840; Hieron in Hook.f., Fl. Brit. India 1: 564. 1875; Gamble, Fl. Madras 183. 1915.

Medium sized trees; bark pale brown, smooth. Leaves 3-foliolate, to 12 x 8 cm; leaflets 5-7.5 x 2-4 cm, oblong or ovate –lanceolate, cuneate at base, obtuse or retuse at apex, glabrous, glossy above, glaucous below; petiole to 4 cm long; petiolule to 1 cm long. Flowers greenish-yellow in axillary or terminal corymbose panicles; peduncles to 9 cm long. Calyx lobes 5, triangular, pubescent. Petals 5, to 3 mm long, lanceolate, pubescent without. Disc annular, fleshy. Stamens 10; staminal tube cupular, to 1.5 mm long, pubescent, deeply 10-lobed; anthers exserted. Ovary globose, 2 mm long, pubescent, 2-celled; ovules 2-per cell; style to 1 mm long, clavate; stigma turbinate-capitate. Berry globose, to 2 x 1 cm, velvety tomentose. Seed solitary, ovoid, to 7x5 mm.

Sreedharma Sastha Kavu ,SK 47888, Cherunilakkodu Kavu, SK 47866.
Fl. & Fr.: Dec.–Aug. *Dist.*: Peninsular India and Sri Lanka.

Note : Jain & Bennet (*l.c.*) recognized two varieties for India viz. var *ternata* (Roxb.) Haines and var. *trifolia*. The presented specimen represent the typical variety.

DICHAPETALACEAE Baill. in

Martius, Fl. Bras. 12(1): 365. 1886, *nom.cons.*

Dichapetalum Thouars,

Gen. Nov. Madagasc. 23. 1806.

Dichapetalum gelonioides (Roxb.) Engl. in Engl. & Prantl. Pflanzenfam. 3, 4: 348. 1896; ; Gamble, Fl. Madras 188. 1915; Mohanan & Henry, Fl. Thiruvananthapuram 112. 1994; Nair in Hajra *et al.*(eds.), Fl. India 4: 529. 1997; Nayar & *al.*, Flg. Pl. Kerala-Handb. 215. 2006. *Moacurra gelonioides* Roxb., Fl. Ind. 2: 69. 1832. *Chailletia gelonioides* (Roxb.) Bedd., Fl. sylv. S. India 59. t.9. f. I. 1-8. 1870.p.p.; Hook.f., Fl. Brit. India 1: 570. 1875.

Dioecious trees; young branches scattered-pubescent, soon becoming glabrous. Leaves 10-16 x 3.5-7 cm, elliptic-obovate, rounded at base, acuminate at apex, undulate along margin, glabrous or nearly so; lateral nerves 5-10 pairs. Flowers white in axillary cymes. Sepals 5, slightly united at base, ovate, pubescent on both sides. Petals 5, free, clawed. Disc lobes quadrate, rounded or cordate. Stamens 5, free or slightly adnate to petals. Ovary velvety pubescent in female flowers. Drupes obcordate, grey-tomentose.

Nanniyode Kavu, SK 47951, Chokkan Kavu, SK 47958. *Fl. & Fr.*: Jan.-May. *Dist.*: Indo-Malesia.

OLACACEAE Mirb. ex DC.,
Prodr. 1: 531.1824, *nom.cons.*

Anacolosia (Blume) Blume,
Mus. Bot. 1: 250. 1851.

Anacolosia densiflora Bedd., Trans. Linn. Soc. xxv. 211. t. 22. 1874;
Mast. in Hook.f., Fl. Brit. India 1: 580. 1875; Gamble, Fl. Madras 192.
1915; Nayar & *al.*, Flg. Pl. Kerala-Handb. 459. 2006.

Lofty straight stemmed trees; bark grey. Leaves simple, alternate,
6-16 x 3-8 cm, oblong or elliptic-oblong, rounded or acute at base,
acuminate at apex, entire at margins, dark green above, dull beneath,
glabrous; lateral nerves 5-7; petiole very short. Flowers white in axillary
and extra axillary clusters. Calyx 5-lobed or toothed, cupular. Petals 5,
slightly united at the very base, densely villous inside, 4-5.5 mm long.
Stamens 5, extrorse, to 1 mm long. Disc annular, encircling the base of
ovary. Ovary 3-celled; ovules 1-per cell; style short, stout; stigma 3-fid.

Manthuruthu Kavu. SK 39361. *Fl.*: Dec. – Mar. *Dist.*: Peninsular India,
endemic.

OPILIACEAE (Benth.) Valetton,
Crit. Overz.Olacin. 136. 1886, *nom.cons.*

Cansjera Juss.,
Gen. Pl. 448. 1789, *nom.cons.*

Cansjera rheedii J. Gmelin in L., Syst. Nat. (ed.13) 2(1): 280. 1791;
Wight, Icon. pl. Ind. orient. t. 1861. 1852; Bedd., Fl. sylv. S. India t.

26.f.6. 1872; Hook.f., Fl. Brit. India 1: 582. 1875; Gamble, Fl. Madras 193. 1915; Mohanan & Henry, Fl. Thiruvananthapuram 112. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 468. 2006. *C. scandens* Roxb. Pl. Coromandel. t. 103. 1799 & Fl. Ind. 1: 441. 1832.

Stragglers; branchlets tomentose; thorns occasional, curved or straight. Leaves alternate, simple, 4-8.5 x 2-3.5 cm, ovate or oblong-lanceolate, obtuse at base, acuminate to caudate at apex, entire at margins, glabrous, thin-coriaceous; petiole to 5 mm long; lateral nerves 4-5pairs. Flowers yellowish in axillary spikes, solitary or 2-3. Calyx lobes 4, minute. Corolla urceolate, to 4 mm long, 4-lobed, tomentose. Disc 4-5 lobed, glandular, to 1 mm long. Stamens 4, shorter than petals; filaments subulate, 2 mm long. Ovary ovoid-oblong, 1 mm long; ovule solitary; style attenuate to 5 mm long; stigma capitate, shallowly 4-lobed. Drupes ovoid, to 2 cm long. Seed solitary, to 1 cm long.

Moopuram Sri Dharma Sastha Kavu.SK 47927; Kunnuvila Devi temple KavU, SK 48705; Nakrakodu KavU SK 47960. *Fl. & Fr.*: Round the year. *Dist.*: Indo-Malaya, Australia.

ICACINACEAE (Benth.) Miers. in

Ann. Mag. Nat. Hist., ser.2, 8: 174. 1851, *nom.cons.*

- 1. Trees.....*Nothapodytes*
- 1. Climbing shrubs or stragglers.....2
- 2. Flowers in elongated spike; sepals and petals 5 each.....*Sacostigma*
- 2. Flowers in long peduncled capitate clusters;
sepals and petals 4 each.....*Pyrenacantha*

Nothapodytes Blume,
Mus. Bot. 1:248. 1851.

Nothapodytes nimmoniana (Grah.) Mabb. in Manilal, Bot. Hist. Hort. Malab. 88. 1980; Mohanan & Henry, Fl. Thiruvananthapuram 113. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 348. 2006. *Premna nimmoniana* Grah., Cat. Pl. Bombay 155. 1839. *Stemonurus foetidus* Wight, Icon. pl. Ind. orient. t. 955. 1845. *Mappia foetida* (Wight.) Ann. Mag. Nat. Hist. (ser.2) 9:395; Mast. in Hook.f., Fl. Brit. India 1:589. 1875; Gamble, Fl. Madras 196. 1915. *Nothapodytes foetida* (Wight) Sleumer, Notzbl. Bot. Gart. Berlin-Dahlem. 15: 247. 1940 & Blumea 17: 232. 1969. *Peenari*.

Small trees; branchlets prominently lenticellate. Leaves simple, alternate, 12-17 x 6-9 cm, broadly ovate or elliptic or ovate-oblong, unequal sided at base, acute or acuminate at apex, glabrous above and tomentose along the nerves beneath; lateral nerves 8-10 pairs, domatia present along the axils of nerves; petiole to 6 cm long. Flowers creamy-white in terminal corymbose cymes. Calyx 5-toothed, teeth triangular, acute at apex. Petals 5, 6 mm long, linear-oblong, densely villous within, apex inflexed. Stamens 5, as long as the petals; anthers elliptic-oblong. Ovary ovoid, densely clothed with silky hairs, 1-celled; ovules 2; stigma thickened. Drupes ellipsoid, 0.9-1.5 cm long, pubescent when young, afterwards glabrous, purple at maturity. Seed 1, ellipsoid.

Moopuram Kavau, SK 48709; Venmaranellor Kavau, SK42348. *Fl. & Fr.*: August – Nov. *Dist.*: Indo – Malesia and China.

Pyrenacantha Wight in

Bot. Misc. 2: 107. 1830, *nom. cons.*

Pyrenacantha volubilis Wight in Hook. Bot. Misc. 2: 108. 1831; Gamble, Fl. Madras 198. 1915; Santhosh *et. al.*, J. Econ. Tax. Bot. 25(3): 729. 2001; Nayar & *al.*, Flg. Pl. Kerala-Handb. 348. 2006.

Climbing shrubs or undershrubs. Leaves simple, alternate, 5-10 x 2.5-4 cm, elliptic-obovate to oblanceolate, rounded or sub-cordate at base, obtusely acuminate at apex, entire at margins; lateral nerves 5-7, basally 3-nerved; petiole to 5 cm long. Flowers unisexual, greenish-yellow in supra axillary long peduncled spikes. Calyx 4-toothed. Petals 4, connate or free. Male flowers: Stamens 4; anthers ovate. Female flowers: Ovary 1-celled, ovules 2; stigma cupular. Drupe oblong, 1.8 cm long. Seed1, ovate-oblong.

Moopuran Sri Dharma Sastha Kavvu, SK 47886, Erumkulangara Bhagavathy Kavvu, SK 45835; Mannady Devi Temple Kavvu, SK 47963. *Fl. & Fr.*: Jun.- Nov. *Dist.*: South India and Sri Lanka.

Sarcostigma Wight. & Arn .in

Edinburg. New Philos. J. 14:299. 1833.

Sarcostigma kleinii Wight & Arn. , Edinburg New philos. J. 14:299. 1833; Wight, Icon. pl. Ind. orient.t. 1854. 1852; Mast. in Hook.f., Fl. Brit. India 1:594. 1875; Gamble, Fl. Madras 199. 1915; Sleumer, Blumea 17: 254. 1969; Mohanan & Henry, Fl. Thiruvananthapuram 114. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 349. 2006.

Lianas; bark smooth, brown. Leaves simple, alternate, 14-17 x 6-8 cm, oblong-lanceolate, rounded or obtuse at base, acuminate at apex, entire margins, coriaceous; lateral nerves 6-8 pairs; intercostae; reticulate, very prominent. Flowers unisexual in elongated spikes from axillary or extra axillary tubercles. Male flowers: Calyx cup shaped, 5-toothed, pubescent without. Petals to 2.5 mm long, oblong, acute, at apex, reflexed. Stamens 5, a little longer than the petals. Ovary rudimentary, small, conical. Female flowers: slightly larger than male. Calyx cup shaped, 5-toothed, pubescent without. Petals to 2.5 mm long, oblong. Ovary large, oblong or obovoid, villous; stigma large, subsessile, conical. Drupe brownish-yellow or orange red when ripening, to 3 x 1.8 cm. Seed 1.

Pulickal Bhagavathi Kavu, SK 47885; Pulivalam Mulethottam Devi temple Kavu, SK 47919. *Fl. & Fr.*: October – August. *Dist.*: Indo – Malesia.

CELASTRACEAE R. Br. in Flinders,
Voy. Terra Austr. 2:554. 1814, *nom. cons.*

- 1. Shrubs or large trees2
- 1. Climbing shrubs..... *Celastrus*
- 2. Petals 4.....*Glyptopetalum*
- 2. Petals 5.....*Lophopetalum*

Celastrus L.

Sp. Pl. 196. 1753.

Celastrus paniculatus Willd. Sp. Pl. 1:1125. 1798; Roxb. Fl. Ind. 1:621. 1832; Wight & Arn., Prodr. fl. Ind. orient. 158. 1834; Wight, Icon. pl. Ind. orient. t. 158. 1839. & Ill. Ind. Bot. t. 72. 1840; Laws. in Hook. f., Fl. Brit.

India 1:617. 1875; Gamble, Fl. Madras 208. 1918; Ding Hou in Steenis, Fl. Males. I, 6:235. 1962; Nayar & *al.*, Flg. Pl. Kerala-Handb. 171. 2006.

Stragglers or Lianas; bark brown; branchlets prominently lenticellate. Leaves 7-10 x 4-8 cm, ovate or orbicular, obtuse to subacute at base, acuminate to caudate at apex, dentate at margins, glabrous; lateral nerves 5-8, slender, petiole to 3 cm long. Flowers polygamous, white in terminal panicles. Calyx tube cupular; lobes 5, suborbicular. Petals 5, ovate to oblong, 4 mm, reflexed. Male flowers: stamens 5, inserted on the margin of disc; filaments short; anthers oblong. Ovary rudimentary, small, sub conical, slightly 3-toothed at apex. Female flowers: Staminodes 5, anthers small, without pollen, acute or sub triangular. Ovary globose, narrowed into a stout, glabrous; stigma large, 3-lobed. Capsule 0.6-1 cm, sub globose, bright yellow when ripening, 3-valved, the valves spreading after dehiscence. Seeds 1-6, often solitary, ovoid, to 5 mm long.

Indalayappan Kavu, SK 48703. *Fl. & Fr.*: May – Sept. *Dist.*: Indo – Malesia to Australia.

Glyptopetalum Thwaites in

Hooker's J. Bot. Kew Gard. Misc. 8: 267. 1856.

Glyptopetalum zeylanicum Thw. in Hooker's J. Bot. Kew Gard. Misc. 8: 267. t. 7B. 1856; Laws. in Hook.f., Fl. Brit. India 1:612. 1875; Gamble, Fl. Madras 204. 1918; Mohanan & Henry, Fl. Thiruvananthapuram 115. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 172. 2006. var.**zeylanicum**

Large shrubs. Leaves 9-14 x 3-7 cm, ovate-lanceolate or elliptic, crenate at base, acuminate at apex, serrate at margin, shining and glabrous above, pale beneath; lateral nerves 8-10 pairs, slender; petiole to 1 cm long. Flowers in axillary or extra axillary 3-flowered cyme. Calyx 4-lobed. Petals with 2 pit-like depressions on the upper surface. Disc large, 4-angled; connective of stamens prolonged; anthers divergent. Ovary 4-lobed. Capsule subglobose, obscurely 2-4 lobed. Seeds 2-4, globose; aril orange-red.

Sree Bhagavathy Temple Kavu, SK 47959; Thripporitta Kavu, SK 47981.
Fl. & Fr.: Mar.- Dec. *Dist.*: South West India and Sri Lanka.

Note: Ding Hou (in *Fl. Males. Ser. I*, 6: 257. 1963) described another variety, *viz.* var. *brevipedicellatum*, from Malesia, which is characteristic by the lax spreading dichotomously branched inflorescences, articulate flower stalks at about the 1/5 and the shorter pedicels (2-3 mm long).

Lophopetalum Wight ex Arn.in

Ann. Nat. Hist. 3: 150. 1839.

Lophopetalum wightianum Arn., Nat. Hist. 3:151. 1839; Wight, Icon. pl. Ind. orient..t. 162. 1839; Bedd., Fl. sylv. S. India t. 142. 1871; Laws. in Hook.f., Fl. Brit. India 1:615. 1875; Gamble, Fl. Madras 205. 1918; Mohanan & Henry, Fl. Thiruvananthapuram 116. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 173. 2006

Very large trees; bark grey, mottled with yellow, dull red inside. Leaves simple, opposite, 10-15 x 4-6 cm, oblong-lanceolate, or broadly elliptic, rounded at base, acuminate at apex, chartaceous, lateral nerves 9-

12 pairs; petiole to 2 cm long. Flowers bisexual in axillary and terminal dichasial cymes. Sepals reflexed, rounded, adhering to the disc. Petals yellow, obovate, cristate or lamellate on the inner surface, minutely denticulate at apex. Disc large, flattened, purple-red, 5-lobed; stamens 5, inserted on the disc; filaments subulate; anthers oblong. Ovary 3-celled, immersed in the disc; style short, conical. Capsules woody, to 12 cm long, 3-valved, triangular. Seeds oblong, compressed, surrounded by a long linear-wing.

Ayaniyerathala Devi Temple Kavu, SK 42400. *Fl. & Fr.*: January-July.
Dist.: Indo – Malesia.

HIPPOCRATEACEAE Juss.,

Ann. Mus. Natl. Hist. Nat. 18: 486. 1811, *nom. cons.*

Salacia L.,

Mant. Pl.159. 1771, *nom. cons.*

1. Calyx lobes fringed..... *S. malabarica*
1. Calyx lobes not fringed.....*S. chinensis*

Salacia malabarica Gamble, Kew Bull. 1916: 133. 1916 & in Fl. Pres, Madras 215. 1918; Nayar & *al.*, Flg. Pl. Kerala-Handb. 176. 2006.
Korandi.

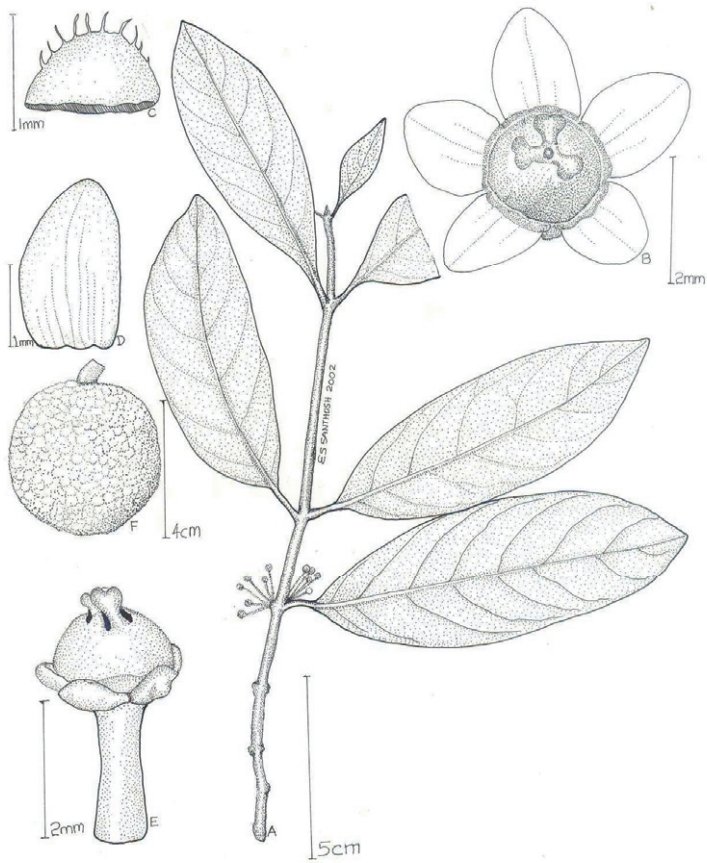
Glabrous climbing shrubs. Leaves simple, opposite, 5-9 x 2.5-5 cm, elliptic-oblong, rounded at base, acute to acuminate at apex, entire at margins, coriaceous. Flowers greenish-brown, fascicled in axillary tubercles. Calyx 5-lobed, fringed, persistent. Petals oblong, rounded at apex, spreading. Stamens 3, inserted on the disc; filaments recurved. Disc

sinuate. Ovary partly sunk in the disc, globose or subglobose, attenuate into the style. Berry globose, orange-yellow, 3.5-5 cm across. Seeds 1-2, covered with muscilaginous pulp.

Threatened. Manthuruthu Kavu. SK 39327. *Fl. & Fr.*: Feb.- May. *Dist.*: Peninsular India, endemic.

Salacia chinensis L., Mant. Pl. 293. 1771; Ding Hou in Steenis, Fl. Males. I.6: 419. 1964; Mohanan & Henry, Fl. Thiruvananthapuram 118. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 175. 2006. *S. prionoides* DC., Prodr. 1: 571. 1824; Wight & Arn., Prodr. fl. Ind. orient. 105. 1834; Hook.f., Fl. Brit. India 1: 626. 1875; Gamble, Fl. Madras 215. 1918. *Cherukurandi*.

Scandent shrubs. Leaves simple, sub-opposite, 4-7 x 1.5-2.5 cm, oblong-ovate or lanceolate, subacute or obtuse at base, acute-acuminate at apex, serrate-crenate at margins; midrib prominent below, nerves obscure, glabrous, glossy above; stipules 0.5 mm long. Flowers in axillary umbels, to 1 cm long. Calyx lobes 5, broadly ovate, to 0.5 mm long. Petals 5, orbicular, to 4 x 2 mm, greenish-yellow. Disc urceolate, thick, lobed, base papillose. Stamens 3, inserted on the rim of disc; filaments linear, subulate, 1.5 mm long. Ovary ovoid, to 1 mm long, 3-celled; style to 0.5 mm long; stigma simple. Berry globose, to 1 x 0.5 cm. Seed solitary, globose to 0.6 cm long.



Salacia malabarica Gamble: A. a twig; B. a flower; C. sepal; D. petal; E. gynoecium; F. Fruit

Common to almost all sacred groves. Kottiyottu Kavu, SK 48708; Pillaveedu Kavu, SK 42346. *Fl. & Fr.*: Feb.- Oct. *Dist.*: Pantropical.

RHAMNACEAE Juss.,

Gen. Pl. 376. 1789, *nom. cons.*

Ziziphus Mill.,

Gard. Dict. Abr., ed.4: (1547). 1754.

- 1. Inflorescence elongate; petals 0..... *Z. rugosa*
- 1. Inflorescence condensed; petals present2
- 2. Leaves ovate-lanceolate, acute at apex, drupes less
than 4 mm across.....*Z. oenoplia*
- 2. Leaves elliptic or sub-orbicular, rounded or retuse at apex,
drupes about 10 mm across.....*Z. mauritiana*

Ziziphus mauritiana Lam., Encycl. 3: 319-1789; Mathew, Fl. Tamil Nadu Carnatic. I. 271. 1983; Nayar & *al.*, Flg. Pl. Kerala-Handb. 498. 2006. *Z. jujuba* (L.) Gartern., Fruct. sem. Pl. 1:203. 1788, *non* Miller 1768; Wight & Arn. Prodr. fl. Ind. orient. 162. 1834; Wight, Icon. pl. Ind. orient. t. 99. 1838; Law. in Hook. f., Fl. Brit. India 1:632. 1875; Gamble, Fl. Madras 1:219. 1918. *Rhamnus jujuba* L., Sp. Pl. 194. 1753. *Lanthea*.

Trees; branchlets wooly; stipular thorns erect or recurved, to 0.6 mm long. Leaves 2-3.5 x 1.5-3 cm, orbicular or elliptic, subcordate and oblique at base, rounded or retuse; petiole to 8 mm long. Flowers in axillary cymes; peduncle much reduced. Calyx tube wooly, to 0.5 mm long; lobes ovate, 1 mm long. Petals ovate, greenish, to 1 mm long. Disc 10-lobed, grooved. Stamens 5, to 1 mm long. Ovary embedded in disc, 2-celled; ovule 1, ascending; style 2, united to middle; stigma 2-fid. Drupe oblong-globose, 1x 0.5 cm, rugose.

Once collected from Karimbi Kavu, SK 39354. *Fl* : July – Nov. *Fr* : Oct – Dec. *Dist.*: India, Sri Lanka.

Ziziphus oenoplia (L.) Miller, Gard. Dict. (ed.8) no. 3.. 1768; Wight & Arn., Prodr. fl. Ind. orient. 163. 1834; Bedd., Fl. Sylva.S. India, anal. gen. 69. 1870; Law. in Hook. f., Fl. Brit. India 1:634. 1875; Gamble, Fl. Madras 1:220. 1918; Mohanan & Henry, Fl. Thiruvananthapuram 118. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 499. 2006. *Rhamnus oenoplia* L . Sp. Pl. 194. 1753. *Cheru thudali*.

Scandent shrubs; spines recurved; branchlets densely tomentose. Leaves 4-5.5 x 1.5-3 cm, ovate-lanceolate, subacute-obtuse and oblique at base, acute-acuminate at apex, denticulate at margins, 3-nerved from the base, petiole to 5 mm long. Flowers in axillary fascicles, to 3 mm across. Calyx lobes 5, triangular-ovate, 1 mm long. Petals obovate, to 1 mm long, greenish-yellow, cuneate at base. Disc orange-red, 10-lobed, pitted. Stamens 5; filaments to 8 mm long; anthers to 0.5 mm. Ovary embedded in the disc; ovule solitary; style 2, connate to middle. Drupe globose, 5 mm across, rugose, woody, 1-elled. Seed 1, ovoid, to 4 mm long.

Common to almost all sacred groves. Mechamkode Kavu, SK 39368; Bhagavathi Kavu, Pulimuttathu, SK 48601. *Fl.* & *Fr.*: Jan.-May. *Dist.*: South Asia.

Ziziphus rugosa Lam., Encycl.3: 319. 1789; Wight, Icon. pl. Ind. orient..t. 339. 1840; ; Law. in Hook. f., Fl. Brit. India 1:636. 1875; Gamble, Fl. Madras 1:221. 1918; Mohanan & Henry, Fl. Thiruvananthapuram 119. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 499. 2006. *Vanthudali*.

Armed scandent shrubs; stem with sharp spines. Leaves 10-16 x 4-8 cm, ovate or elliptic, rounded or subcordate at base, obtuse or acute at apex, finely serrate at margins; basally 3-4 nerved; petiole to 1.5 cm long. Flowers in terminal and axillary panicles; pedicels densely tomentose. Calyx lobes keeled within. Petals absent. Stamens 5. Disc lobed. Ovary 2-celled. Drupes obovoid, white, 6mm long.

Valiya Kavu, Chittayikkode, SK 48655. *Fl. & Fr.*: Jan.- May. *Dist.*: South Asia.

VITACEAE Juss.,

Gen. Pl. 267. 1789, *nom.cons.*

- 1. Leaves 3-9 foliolate.....*Cayratia*
- 1. Leaves simple.....2
- 2. Tendrils on inflorescence peduncle.....*Ampelocissus*
- 2. Tendrils on main stem, usually leaf opposed.....*Cissus*

Ampelocissus Planch. in

Vigne Amer. Vitic. Eur. 8: 371. 1884, *nom.cons.*

Ampelocissus indica (L.) Planch., Vigne Amer. Vitic. Eur. 8: 371. 1884; Shetty & Singh, Taxon 37: 169. 1988; Nayar & *al.*, Flg. Pl. Kerala-Handb. 629. 2006. *Vitis indica* L. Sp. Pl. 202. 1753; Laws. in Hook.f. Fl. Brit. India 1: 653. 1875. *Ampelocissus arnottiana* Planch. in DC., Monogr. Phan. 5: 379. 1887; Gamble, Fl. Madras 231. 1918; Mohanan & Henry, Fl. Thiruvananthapuram 119. 1994. *Thamra valli*.

Climbing shrubs; stem glabrous. Leaves simple, 12-18 x 11-17 cm, orbicular, 3-lobed; lobes acuminate, serrate at margins, pink-red below and dark green above, tomentose along the nerves when young; 5-7 ribbed at base; petiole to 10 cm long. Flowers nearly sessile in dense clusters or racemose cymes. Peduncle and pedicels wooly. Calyx cupular; lobes obscure. Petals oblong, brownish-red, recurved. Disc vertically furrowed. Ovary grooved; stigma foveolate. Berry oblong-ovoid, to 2 cm long, smooth, reddish-purple.

Thiruchittor Kavu, SK 39341; Keezhetti Kavu, SK 47935. *Fl. & Fr.*: Apr.-Aug. *Dist.*: South India and Sri Lanka.

Cayratia Juss. in

Cuvier, *Dict. Sci. Nat.* 10: 103. 1818, *nom. cons.*

1. Leaves 3-foliolate.....*C. trifolia*
 1. Leaves 5-7 foliolate.....*C. pedata*

Cayratia pedata (Lam.) Juss. ex Gagnep. in Lecomte, *Notul. Syst. (Paris)* 1: 346. 1911; Gamble, *Fl. Madras* 236. 1918; Mohanan & Henry, *Fl. Thiruvananthapuram* 120. 1994; Nayar & *al.*, *Flg. Pl. Kerala-Handb.* 630. 2006. *Cissus pedata* Lam. *Encycl.* 1: 31. 1783; Roxb., *Fl. Ind.* 1: 413. 1832. *Vitis pedata* Wall. ex Wight & Arn., *Prodr. fl. Ind. orient.* 128. 1834; Laws. in Hook.f. *Fl. Brit. India* 1: 661. 1875. *Amarcha Kodi*

Lianas; branchlets apically densely pubescent, basally strigose. Leaves pedately 5-7 foliolate; leaflets 7-12 x 3-6 cm, terminal one elliptic, oblong or ovate-lanceolate; laterals pedately lobed, cuneate at base, acuminate at apex, serrate or subentire at margins, pubescent. Flowers in axillary, corymbose, divaricate cymes; peduncle 2-5cm long. Calyx tube

1 mm long, 4-lobed; lobes rounded. Petals 4, ovate, 2mm long, crenulate at the rim. Stamens 4; filaments 1 mm long. Ovary 2-celled, 1 mm long; ovules 2-per cell; style to 1.5 mm long. Berry subglobose, to 6 x 8 mm.

Common to all sacred groves. Irinjayam Kavu, SK 39314; Indalayappan Kavu, SK 39384. *Fl. & Fr.*: Apr.-Oct. *Dist.*: Indo-Malaya.

Cayratia trifolia (L.) Domin, *Biblioth. Bot.* 89: 371. 1927. *Vitis trifolia* L., *Sp. Pl.* 203. 1753; Nayar & *al.*, *Flg. Pl. Kerala-Handb.* 631. 2006. *Cayratia carnososa* (Lam.) Gagnep. in *Lecomte, Notul. Syst. (Paris)* 1: 347. 1911; Gamble, *Fl. Madras* 237. 1918; Mohanan & Henry, *Fl. Thiruvananthapuram* 120. 1994. *Cissus carnososa* Lam. *Encycl.* 1: 31. 1789; Roxb., *Fl. Ind.* 1: 427. 1820. *Vitis carnososa* Wight & Arn., *Prodr. fl. Ind. orient.* 127. 1834; Wight, *Icon. pl. Ind. orient. t.* 171. 1839; Laws. in *Hook.f. Fl. Brit. India* 1: 654. 1875.

Scandent sub-shrubs; branchlets densely pubescent. Leaves 3-foliolate; leaflets 4-8 x 3-6 cm, ovate-suborbicular, truncate or cuneate at base, obtuse or rotund at apex, dentate at margins, pubescent, thin-coriaceous; petiole to 7 cm long; stipules 2, triangular, to 4 mm long. Flowers greenish-white in axillary umbellate or corymbose cymes. Calyx tube 0.5 mm long, pubescent without. Petals 4, to 1.5 mm long. Disc obscurely lobed, crenulate at apex. Stamens 4; filaments to 1 mm long. Ovary 2-celled; style conical, to 1.5 mm long. Berry obovoid, 0.5 cm long. Seeds 2, pyriform, rounded and rugose on the back.

Ayaniyerathala Devi Temple Kavu, SK 42399; Nagayekshi Kavu, Ayilam, SK 47898 *Fl. & Fr.*: Aug.-Nov. *Dist.*: Pantropical.

Cissus L.

Sp. Pl. 117. 1753.

Cissus vitiginea L. Sp. Pl. 117. 1753; Gamble, Fl. Madras 234. 1918; Mohanan & Henry, Fl. Thiruvananthapuram 121. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 633. 2006. *Vitis linnaei* Wall. ex Wight & Arn., Prodr. fl. Ind. orient. 126. 1834; Laws. in Hook.f. Fl. Brit. India 1: 649. 1875. *Kattu munthiri*.

Scandent subshrubs; branchlets densely pubescent. Leaves simple, 5-8 x 4.5-8.5 cm, broadly cordate, 5-angular or deeply 5-lobed, cordate or subcordate at base, acuminate at apex, dentate at margins, pubescent, thick-coriaceous; petiole to 6 cm long; stipules ovate, 1.5 mm long. Flowers in pedunculate cymes of 5-6 unequal branches; buds oblong or subglobose; pedicels 2-8 mm. Calyx tube obscurely lobed, pubescent without. petals 4, to 1.5 mm long, pale yellow, ovate or oblong, hooded. Disc fleshy, 4-lobed. Stamens 4, to 1.5 mm long. Ovary 2-celled, to 0.5 mm long; ovules 2-percell; style t 1 mm long. Berry pyriform, to 1 x 0.6 cm, rugose, apiculate at apex. Seeds obovoid, tessellate.

Moopuram Kavu. SK 48711. *Fl. & Fr.*: Jun.-Dec. *Dist.*: Peninsular India and Sri Lanka.

LEEACEAE (DC.) Dumort.,

Anal. Fam. Pl. 21, 27. 1829, *nom.cons.*

Leea D. Royen ex L.,

Syst. Nat., ed.12, 2: 608,627. 1767, *nom.cons.*

Leea indica (Burm.f.) Merr. In Philipp. J. Sci. 14: 245. 1919; Ridsdale, Blumea 22: 95. 1974 & in Steenis, Fl. Males. I, 7: 279. 1976; Mohanan &

Henry, Fl. Thiruvananthapuram 122. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 379. 2006. *Staphylea indica* Burm.f., Fl. Ind. 75.t. 23.f.2. 1768. *Leea sambucina* Willd., Sp. Pl. 1: 1177. 1798; Wight, Icon. pl. Ind. orient. t. 78. 1838; Laws. in Hook.f. Fl. Brit. India 1: 666. 1875; Gamble, Fl. Madras 240. 1918. *Njekku*.

Shrubs to 5 m; branchlets puberulous. Leaves 2-3 pinnate; pinnae 3-paired; leaflets odd-pinnate, 2-5 paired, opposite, 5-15 x 3-6 cm, oblong or oblong-lanceolate, obtuse-subacute at base, caudate –acuminate at apex, serrate – dentate at margins; thin coriaceous; lateral nerves 12-15 pairs; stipules obovate, 5x4 cm, obtuse at apex; young leaves bright red. Flowers greenish-white in lateral or leaf opposed corymbose, divaricate cymes; peduncle to 5 cm long. Calyx tube campanulate, to 1 mm long, pubescent without; lobes 5, triangular. Petals 5, ovate, to 2.5 mm long, spreading. Stamens 5; filaments united to form a 0.5 mm long tube, urceolate, 5-lobed; retuse. Ovary 6-celled, to 2 mm long; ovule 1-per cell, erect; style to 0.3 mm; stigma capitate. Berry globose, depressed, to 6 mm across, purple when ripened. Seed 1.

Nanniyode Kavu, SK 48767; Cherukulathu Kavu, SK 39311; Thiruchittoor Kavu SK 39344. *Fl. & Fr.*: Mar.- Aug. *Dist.*: Indo-Malesia to North Australia and China.

SAPINDACEAE Juss.,

Gen. Pl. 246. 1789, *nom. cons.*

- 1. Herbaceous climbers; inflorescence with
a pair of tendrils.....*Cardiospermum*
- 1. Trees or shrubs; inflorescence not as above.....2

2. Leaves simple.....	<i>Dodonaea</i>
2. Leaves compound.....	3
3. Leaves 3-foliolate.....	<i>Allophylus</i>
3. Leaves otherwise.....	4
4. Petals absent.....	<i>Schleichera</i>
4. Petals present.....	<i>Lepisanthes</i>

Allophylus L.

Sp. Pl. 348. 1753.

Allophylus cobbe (L.) Raeusch., Nomed. Bot. (ed.3) 108. 1799; Hiern in Hook.f. Fl. Brit. India 1: 673. 1875 p.p., Leeh. in Blumea 15: 322. 1968; Mohanan & Henry, Fl. Thiruvananthapuram 123. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 557. 2006. *Rhus cobbe* L., Sp. Pl. 267. 1753. *Schmidelia rheedei* Wight, Icon. pl. Ind. orient..t. 964. 1845. *Allophylus rheedei* (Wight) Radlk., Engl. & Prantl., Pflanzenf. 3 (5): 313. 1895; Gamble, Fl. Madras 246. 1918. *Mukkannan Pezhu*.

Large shrubs or small trees; branchlets ferruginous-tomentose. Leaves digitately 3-foliolate; leaflets 12-18 x 6-9 cm, elliptic, acute at base, acute or acuminate at apex, serrate towards the distal half; lateral nerves 7-10 pairs, domatia present in the axils of nerves; petiole to 11 cm long. Flowers white, small, shortly pedicelled, clustered along thyrsus. Sepals 4, outer pair smaller. Petals 4, declinate, white, oblong. Disc unilateral. Stamens 8, arising from within the disc. Ovary 2-loculed, 2-celled, hairy; styles 2. Berry globose, smooth, red when ripe.

Indalayappan Kavu, SK 39386. *Fl. & Fr.*: Jul.- Oct. *Dist.*: Indo-Malesia to Australia.

Cardiospermum L.

Sp. Pl. 366. 1753.

Cardiospermum halicacabum L., Sp. Pl. 366. 1753; Wight, Icon. pl. Ind. orient. t. 508. 1841; Hiern in Hook.f. Fl. Brit. India 1: 670. 1875; Gamble, Fl. Madras 244. 1918; Mohanan & Henry, Fl. Thiruvananthapuram 124. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 558. 2006. var. **microcarpum** (Kunth) Bl., Rumphia 3: 185. 1847. *C. microcarpum* Kunth, Nov. Gen. Sp. 5: 104. 1821. *Uzhinja*.

Slender herbaceous climbers; branchlets sparsely puberulous. Leaves alternate, bi-ternate, to 8 cm long; leaflets 2.5-4 x 1-2 cm. ovate-lanceolate, obtuse and slightly decurrent at base, acuminate at apex, incised at margins; petiole to 3 cm long; petiolule to 2 mm long. Flowers polygamous, white in axillary racemes; peduncles to 8 cm long; pedicels to 2 mm long. Male flowers: Outer sepals suborbicular, 1 mm long; inner ones oblong-obovate, 2.5 mm long. Petals 4, upper one oblong, to 2.5 mm, scaly, apical crest puberulous. Stamens 8; filaments 1.5-2 mm long, pilose. Bisexual flowers: to 3.5 mm long. Stamens 8; filaments 1-1.5 mm long, densely pilose. Ovary oblong, to 2.5 mm long, 3-celled, pubescent; ovule 1-per cell; stigma shortly 3-fid, sessile. Capsule sharply 3-lobed, to 1.5 x 2 cm, winged at angles, pubescent. Seeds 3, globose, to 3 mm.

Bhadrakali temple Kavu, Azhakikonam, SK 48712. *Fl. & Fr.*: Jul. – Feb.
Dist.: Pantropical.

Dodonaea Mill.,

Gard. Dict. Abr. ed.4: (450) 1754.

Dodonaea angustifolia L. f., Suppl. Pl. 218. 1782; Mathew, Fl. Tamil Nadu Carnatic 294. 1983; Leech. Blumea 28:280. 1983; Nayar & *al.*, Flg. Pl. Kerala-Handb. 559. 2006. *D. burmanniana* DC. Prodr., 1:616. 1824;

Wight & Arn., Prodr. fl. Ind. orient. 114. 1834. *D. viscosa* auct. non Jacq : Hook. f., Fl. Brit. India 1: 697. 1875; Gamble, Fl. Madras 1:253. 1918; Mohanan & Henry, Fl. Thiruvananthapuram 125. 1994.

Shrubs, with erect twiggy branches often angled; young parts scurfy-pubescent. Leaves simple, alternate, 3.5-10 x 0.6-3.5 cm, oblanceolate, tapering towards the base, sub acute or shortly apiculate, glabrous, shining above, pale beneath. Flowers greenish-yellow, small in short, few-flowered axillary spreading cymes, pedicels slender, nodding. Sepals oblong, 2.5-3 mm long, about equalling the stamens. Petals 0. Stamens 8; anthers oblong-linear, large. Ovary sessile, pilose; style long. Capsules membranous, compressed, 1.25-2 cm long and slightly broader, notched at apex and base, viscid, orange-brown. Seeds 1-2, subglobose, black.

Once collected from PerinKavu, Mevarkara, SK 48734. Fl. & Fr – Aug – Apr. *Dist.*: Pantropical

Note: According to Leenhouts (*l.c*) *D. viscosa* Jacq. occurring in Burma and the south Indian specimens represented by *D. angustifolia* L.f.

Lepisanthes Blume,

Bijdr. 237. 1825.

Lepisanthes erecta (Thw.) Leenh.in Blumea 17:69. 1969; Mohanan & Henry, Fl. Thiruvananthapuram 125. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 559. 2006. *Nephelium erectum* Thw., Enum. Pl. 57. 1858. *Sapindus erecta* (Thw.) Hiern in Hook .f., Fl. Brit. India 1:683. 1875, ‘erectus’. *Thraulococcus erectus* (Thw.) Radlk. in Sitzungsber Math. –

Phus. Koenigl. Bayer Akad. Wiss. Muenchen. 8:300. 1878; Gamble, Fl. Madras 251. 1918.

Erect shrubs. Leaves alternate, paripinnate, to 40 cm long; leaflets 3-5 pairs, 16-18 x 5-7 cm, oblong or oblong-lanceolate, acute at base, acute or acuminate at apex, glabrous; lateral nerves 8-10 pairs. Flowers dull yellow, in terminal and axillary panicles. Sepals 5, unequal, imbricate. Petals 5, shortly clawed, scaly beneath. Disc lobed. Stamens 8. Ovary trigonous, 3-celled; ovule one in each cell. Fruits of 1-3 drupes, ellipsoid, connate by their bases.

Manthuruthu Kavu, SK 39376. *Fl. & Fr.*: Oct. – Jan.. *Dist.*: South India, Sri Lanka an Burmas.

Schleichera Willd.,

Sp. Pl. 4(2):1096. 1806, *nom. cons.*

Schleichera oleosa (Lour.) Oken, Alleg. Naturgesch. 3(2):1341. 1814; Nayar & *al.*, Flg. Pl. Kerala-Handb. 561. 2006. *Pistacia oleosa* Lour., Fl. cochinch. 615. 1790. *S. trijuga* Willd., Sp. Pl. 4:1096. 1806; Bedd., Fl. sylv. S. India t. 119. 1871; Hiern in Hook.f., Fl. Brit. India 1:681. 1875; Gamble, Fl. Madras 248. 1918. *Poovanam*.

Large deciduous trees; bark grey, reddish inside; young leaves bright red. Leaves paripinnate; leaflets 3-pairs, opposite, 10-22 x 3.5-10 cm, elliptic-lanceolate or oblong, rounded and unequal at base, acuminate at apex, rachis and nerves pubescent beneath, otherwise glabrous; lateral nerves 10-15 pairs. Flowers greenish, small, polygamo-dioecious. Sepals 5, acute at apex. Petals 0. Stamens 7-8, filaments equal. Disc margin

wavy. Ovary tomentose, 3-celled, cells 1-ovuled; stigma 3-lobed. Drupe globose, glabrous, sparsely echinate, Ca. 2 cm across. Seeds 1-2, arillate.

Vadakkodu Sree Dharma Sastha Kavu, SK 47934, Moopuram Kavu 47806; Nagaru Kavu, Karimamoola, SK 47816. *Fl. & Fr.*: Mar. – Aug..
Dist.: Indo – Malesia.

ANACARDIACEAE Lindl., *Intr. Nat. Syst.*

Bot. :127. 1830, *nom. cons.*

- 1. Leaves compound.....2
- 1. Leaves simple.....3
- 2. Leaflets with intramarginal nerves.....*Spondias*
- 2. Leaflets without intramarginal nerves.....*Lansea*
- 3. Leaves with petiolar appendages.....*Holigarna*
- 3. Leaves without petiolar appendages.....4
- 4. Drupes on fleshy hypocarp.....*Semecarpus*
- 4. Drupes not on fleshy hypocarp.....5
- 5. Fertile stamens (s) 1 or 2*Mangifera*
- 5. Fertile stamens 4 or 10.....6
- 6. Drupes striate ; stamens pilose.....*Nothopegia*
- 6. Drupes not striate; stamens glabrous.....*Buchanania*

Buchanania Spreng. in

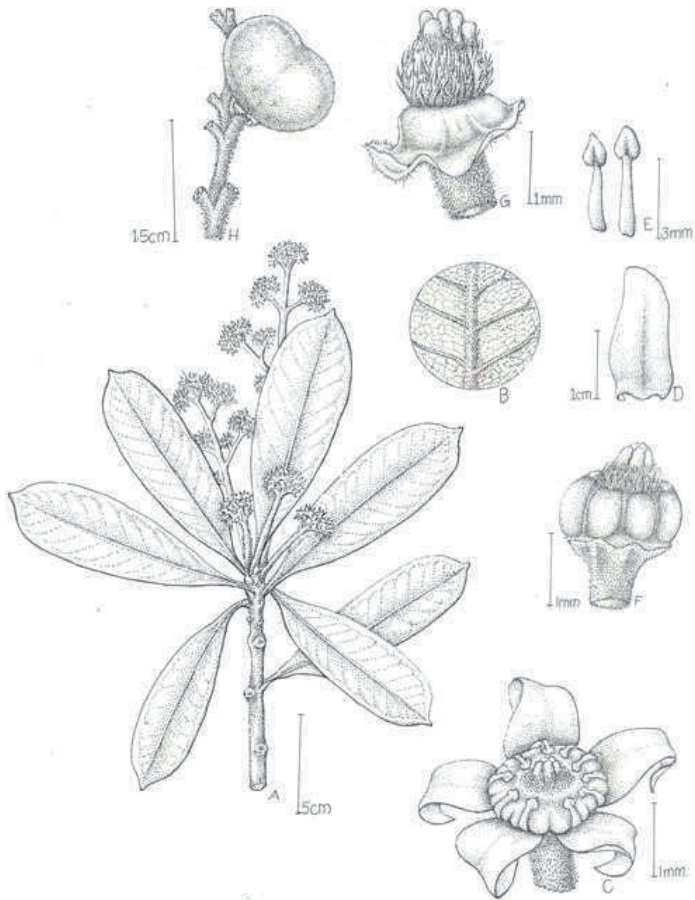
J. Bot. (Schrader) 1800 (2):234. 1801.

- 1. Leaves broadly oblong, more than 6 cm wide.....*B. lanzan*
- 1. Leaves narrowly oblong less 6 cm wide.....2
- 2. Leaves glabrous beneath.....*B. lanceolata*
- 2. Leaves rufous villous beneath.....*B. barberi*

Buchanania barberi Gamble in Bull. Misc. Inform. 135. 1916 & Fl. Madras 259. 1918; Henry, *et al.*, J. Bombay Nat. Hist. Soc. 75: 1978; Vajravelu in Jain & Sastry, Plant Cons. Bull. 4: 23. 183; Vajravelu & Daniel in Jain & Sastry, Mat. Cat. Threat. Pl. India 15. 1983; Vajravelu in Nayar & Sastry, Red Data Book Indian Plants 2: 10. 1988; Mohanan & Henry, Fl. Thiruvananthapuram 127. 1994; Santhosh & *al.*, Rheedia 12 (2): 197. 2002; Nayar & *al.*, Flg. Pl. Kerala-Handb. 49. 2006.

Large trees, to 15 m. tall; bark smooth or slightly fissured, blaze flesh coloured. Leaves simple, alternate, crowded towards the apex, elliptic-oblong, 11-14 x 3-4.5 cm, obtuse at base, obtuse or shortly acuminate at apex, glabrous above and rusty villous beneath when young, villous along the nerves at maturity, coriaceous; lateral nerves 16-20 pairs, sub horizontal, straight and parallel; petiole 2-2.5 cm long, sub-terete, rusty villous. Inflorescence a terminal branched pubescent panicle, 3-12 cm long. Flowers creamy-white, to 5 mm across; pedicel to 1.5 mm long, puberulent; bracts deltoid, to 0.3 mm long, puberulent; bracteoles similar to bracts. Calyx lobes 5, creamy-white; lobes triangular, to 0.8 mm long, pubescent without, glabrous within. Petals 4-5, creamy-white, oblong, to 2.5 x 0.8 mm, rounded at apex, reflexed, glabrous. Stamens 8-10, 2-seriate; filaments 1-3 mm long, glabrous; anthers triangular-ovate, to 0.8 mm long, obtuse at apex, pale brown, dehiscing laterally. Disc cupular, 10-ridged, pilose. Carpels 4-6, free, immersed in the disc, ellipsoid, one carpel developed, others suppressed; ovary pilose; ovule 1-per cell, pendulous; style lateral, short; stigma obtuse or truncate. Drupes to 1.5 cm across, subglobose, slightly compressed laterally, glabrous. Seeds ovoid, curved inward at one end, to 1.3 x 1 cm; endosperm absent.

Nanniyode Kavu, SK 47949. *Fl. & Fr.*: Oct- Jan. *Dist.*: Endemic to Kerala state.



Buchanania barberi Gamble. A. A twig, B. Ventral side of a leaf, C. A flower, D. A petal, E. Stamens, F. Pistil with disc, G. Pistil without disc, H. A fruit.

Note: This species was known until by a single collection made by C.A Barber in 1904 from Nadarai in Thiruvananthapuram district. The

present collection hence form a rediscovery of this species after a lapse of over 97years

Buchanania lanceolata Wight, Icon. pl. Ind. orient. t. 237. 1839; Bourdillon, For. Trs. Travancore 108. 1908; Hook.f., Fl. Brit. India 2:24. 1876; Gamble, Fl. Madras 1:258. 1918; Mohanan & Henry, Fl. Thiruvananthapuram 127. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 49. 2006. *Kulamavu*.

Medium sized trees of 18 m height. Leaves simple, alternate, elliptic-lanceolate, 10-12 x 4-4.5 cm, acute at base, obtusely acuminate at apex, entire or waved at margins, glabrous; lateral nerves 16-20 pairs, slender, arched; petioles 12-20 mm long. Flowers bisexual in terminal panicles, 2-3 mm wide. Sepals 5, rounded. Petals 5, broadly oblong. Stamens 5, filaments subulate. Fruit a drupe, 18 mm long, laterally compressed, red. Seed 1.

Keezhetti Kavu, SK 48713; Kunnuvila Devi temple Kavu, SK 48807. *Fl. & Fr.*: Nov–Apr. *Dist.*: India and Myanmar.

Buchanania lanzan Sprengel, J. Bot. (Schrader) 2: 234. 1801; Gamble, Fl. Madras 1:258. 1918; Mohanan & Henry, Fl. Thiruvananthapuram 127. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 49. 2006. *B. latifolia* Roxb., Fl. Ind. 2:385. 1832; Wight & Arn., Prodr. fl. Ind. orient. 169. 1834; Bedd., Fl. sylv. S. India. S. India t. 165. 1871; Hook. f., Fl. Brit. India 2:23. 1876. *Moongapezhu*.

Trees; branchlets apically rusty, stellate-tomentose. Leaves simple, alternate, broadly oblong, 15-20 x 10-15 cm, rounded at base, obtuse or

retuse apex, entire at margins, thick coriaceous, glabrescent above, more or less villous beneath; lateral nerves 10-20 pairs; petiole stout. Flowers small, greenish white in pyramidal, panicles, shorter than leaves, villous. Calyx-lobes 5, to 1.5 mm long, ciliate. Petals 5, oblong-ovate, 2.5 mm long, subacute at apex. Stamens 10, a little longer than the petals; filaments flattened; anthers as long as filaments. Ovary of 5 carpals, free, ellipsoid, 1 perfect, conical, villous, the other 4 reduced to cylindrical filaments. Drupes obliquely reniform, to 1 cm long, black at maturity.

Nanniyode Kavu, SK 48714. *Fl. & Fr.*: February – May. *Dist.*: India ,
Burma.

Holigarna Buch.–Ham. ex Roxb.

Pl. Coromandel, 3: 79. 1820, *nom.cons.*

Holigarna arnottiana Hook. f., *Fl. Brit. India* 2: 26. 1876; Gamble, *Fl. Madras* 1: 268. 1918; Mohanan & Henry, *Fl. Thiruvananthapuram* 128. 1994; Nayar & *al.*, *Flg. Pl. Kerala-Handb.* 50. 2006. *H. longifolia* Wight & Arn., *Prodr. fl. Ind. orient.* 169. 1834, *non* Roxb. 1820; Bedd., *Fl. sylv. S. India*. *S. India* t. 167. 1871. *Charu*.

Large evergreen trees, bark smooth, pale brown with grey blotches, dull red inside, later milky. Leaves simple, alternate, oblanceolate, 16-20 x 5-7 cm, acute or attenuate at base, acute or shortly acuminate at apex, glabrous; lateral nerves 10-20 pairs, intercostae reticulate; petiole to 1.6 cm long, spur 2, slender. Flowers yellowish-white, polygamous in terminal panicles. Calyx cupular, shortly 5-toothed. Petals 5, tomentose without. Stamens 5, filaments subulate. Ovary 1-celled; ovules pendulous;

style 3; stigma capitate. Drupe obliquely ovoid, dark purple, to 1.5 cm long, partly enclosed by the enlarged calyx.

Cherunilakkodu Kavu, SK 47874; Mechamkode Kavu, SK 39307 ; Indalayappan Kavu, SK 39338; Thiruchittoor Kavu , SK 39339. *Fl. & Fr.*: February – July. *Dist.*: Western Ghats, endemic.

Lannea A. Rich. in

Guillemin *et al.*, *Fl. Seneg. Tent.* 153. 1831, *nom. cons.*

Lannea coromandelica (Houtt.) Merr., *J. Arnold Arbor.* 19: 353. 1938; Ding Hou in Steenis, *Fl. Males. I.* 8:478. 1978; Mohanan & Henry, *Fl. Thiruvananthapuram* 128. 1994; Nayar & *al.*, *Flg. Pl. Kerala-Handb.* 51. 2006. *Dialium coromandelicum* Houtt., *Nat. (ser.2)* 2:39. t.5.f.2. 1774. *Odina wodier* Roxb., *Fl. Ind.* 2:293. 1832; Wight, *Icon. pl. Ind. orient. t.* 60. 1838; Bedd., *Fl. sylv. S. India. S. India t.* 123. 1871; Hook. f., *Fl. Brit. India* 2:29. 1876; Gamble, *Fl. Madras* 1:263. 1918. *Uthi*.

Trees; bark dark brown, flaking off in thin irregular scales, crimson red inside; young shoots rusty, stellate-tomentose. Leaves odd-pinnate, 15-25 cm long; leaflets opposite, 4 pairs, oblong-lanceolate, obtuse and oblique at base, acuminate at apex, entire at margins, chartaceous; petiole 6-9 cm; petiolule to 5 mm; lateral nerves 5-7 pairs. Flowers fascicled in terminal racemes or panicles, unisexual or bisexual. Male flowers : 4 mm across. Calyx lobes 4, triangular, 1 mm long, persistent. Petals 4, lanceolate, 3x1.5 mm, reflexed. Disc annular, 8-lobed. Stamens 8, inserted below disc; filaments 1.5-3 mm, equal, free, glabrous. Pistillode 4-lobed, with 4 styles and minute ovary. Bisexual flowers : 8 mm across. Sepals and petals as in male flowers. Stamens 8; anthers ovoid, sterile.

Ovary 1-celled, 4 mm long; styles 4, distant; stigma peltate. Drupes ovoid or obovoid, 1 cm long. Seed 1.

Indalayappan Kavu, SK 39329; Kamukarakonam Kavu, SK 39363; Pilaveedu Kavu, SK 42335. *Fl. & Fr.*: Mar. – May. *Dist.*: South and South East Asia and China.

Mangifera L.,

Sp. Pl. 200. 1753.

Mangifera indica L., Sp. Pl. 200. 1753; Roxb. *Fl. Ind.* 1:641. 1832; Wight & Arn., *Prodr. fl. Ind. orient.* 170. 1834; Bedd., *Fl. sylv. S. India* t. 162. 1871; Hook. f., *Fl. Brit. India* 2:13. 1876; Gamble, *Fl. Madras* 1:259. 1918; Ding Hou in Steenis, *Fl. Males. I.* 8:427. 1978; Mohanan & Henry, *Fl. Thiruvananthapuram* 129. 1994; Nayar & *al.*, *Flg. Pl. Kerala-Handb.* 51. 2006. *Mavu*.

Very large trees; bark dark grey, rough, exudation yellowish, gummy; young shoots glabrous, dark purple. Leaves simple, alternate, oblong or elliptic-lanceolate or oblong-lanceolate, 8-22 x 2.5-5 cm, cuneate-subacute at base, acuminate at apex, entire at margins; petiole to 3 cm long. Flowers polygamous in terminal panicles. Calyx lobes 5, ovate, 2 mm long, hairy without. Petals 5, creamy-white, oblong-obovate, 4 mm long, subequal, nerves at base gland-crested. Male flowers: stamens 5, fertile 1, 1.5 mm; staminodes 4, to 0.7 mm long. Bisexual flowers: Disc cupular, 4-5 lobed. Stamens 5, fertile stamens 1-2; filaments free, glabrous; anthers ovoid; staminodes 3-4, apically gland tipped. Ovary oblique, sessile, 1-celled; style lateral, 1mm long; stigma simple. Drupe ovoid-oblong, 5-7 cm long.

Nanniyode Kavu, SK 39400. *Fl. & Fr.*: January – May . *Dist.*: Indo – Malesia

Nothopegia Blume,

Mus. Bot. 1: 203. 1850, *nom.cons.*

Nothopegia colebrookeana (Wight) Blume, Mus. Bot. Lugundo-Batavum 1: 203. 1850; Hook. f., Fl. Brit. India 2: 40. 1876 p.p; Gamble, Fl. Madras 265. 1918; Nayar & *al.*, Flg. Pl. Kerala-Handb. 51. 2006.

Moderately sized trees; bark smooth, black, blotched with grey, reddish inside, exudation pale white, scanty. Leaves simple, alternate, elliptic-oblong, 6-11 x 2-2.5 cm, acute at base, acuminate at apex, glabrous, coriaceous; lateral nerves 10-15 pairs, parallel; petiole to 5 mm long. Flowers white in short axillary racemes, polygamous, to 5 cm long. Calyx tomentose, persistent; lobes imbricate. Petals 4, white, linear-oblong. Disc annular, 4-5 lobed. Male flowers: Stamens 4, inserted on the margins of disc. Pistillode rudimentary. Bisexual flowers: Stamens 4; anthers cordate at base. Ovary ovoid, 1.5 mm long, 1-celled; ovule 1, pendulous; style attenuate; stigma capitate. Drupe globose, 1-1.5 cm across, pinkish-red.

Puthanvila Kavu SK 47912; Manthuruthu Kavu, SK 39331. *Fl. & Fr.*: Mar.-May. *Dist.*: India and Sri Lanka.

Semecarpus L.f.,

Suppl. Pl. 25, 182. 1782.

1. Leaves oblanceolate, auricled at base.....*S. auriculata*

1. Leaves obovate-oblong, rounded at base.....*S. anacardium*

Semecarpus anacardium L.f., Suppl. Pl. 182. 1781; Wight, Icon. pl. Ind. orient. t. 558. 1842; Bedd., Fl. sylv. S. India t. 166. 1871; Hook. f., Fl. Brit. India 2:30. 1876; Gamble, Fl. Madras 1:266. 1918; Ding Hou in Steenis, Fl. Males. I. 8:518. 1978; Mohanan & Henry, Fl. Thiruvananthapuram 129. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 52. 2006. *Alakkucheru*.

Moderate sized deciduous trees; bark greyish-brown, red inside; branchlets sericeous. Leaves simple, alternate, oblong-elliptic or obovate, 20-38 x 8-17 cm, obtuse, subacute or cordate at base, rotund, retuse or emarginate at apex, glabrous above, rusty-villous below; lateral nerves 10-15 pairs; petiole to 4 cm long. Flowers unisexual and bisexual interterminal panicles. Male flowers: 6 cm across. Calyx lobes 5, to 1 mm long, triangular, caducous. Petals 5, ovate, greenish, to 2.5 mm long. Disc annular, to 2 mm long, lobed, villous. Stamens 10, fertile; filaments equal, free, to 1 mm long, glabrous; anthers oblong. Pistillode hairy, with 3-fid styles. Bisexual flowers: Sepals and Petals as in male flowers. Stamens 10, filaments to 2 mm long; anthers ovoid, base distant. Ovary 1-celled; style 3, free; stigma subclavate. Drupe ovoid, reniform, to 2 x 2.5 cm, hypocarp fleshy.

Nanniyode Kavu, SK 48762. *Fl. & Fr.*: Sept.- Feb. *Dist.*: Indo-Malesia to Australia.

Semecarpus auriculata Bedd., Fl. sylv. S. India 2: t. 232. 1872 & Icon. pl. Ind. orient. t. 187. 1872; Bourdillon, For. Trs. Travancore 106. 1908; Hook. f., Fl. Brit. India 2:32. 1876; Gamble, Fl. Madras 266. 1918; Nayar & *al.*, Flg. Pl. Kerala-Handb. 52. 2006.

Large trees to 25 m. high; bark grey, smooth; branchlets thick. Leaves alternate, simple, oblanceolate, 10-20 x 1.8-4 cm, auriculate at base, acuminate at apex, glabrous; lateral nerves 12-17 pairs; petiole 2-6 mm long. Flowers polygamo-dioecious in axillary panicles. Male flowers: 4 mm across, 3-5 merous. Calyx slightly pubescent. Petals glabrous, veins more or less prominent. Stamens as many as petals. Pistillode small, rounded with a turbinate apex. Female flowers much larger than male flowers, greenish-yellow, 4-5 merous. Calyx very slightly pubescent. Petals 4-5, prominently veined. Stamens as many as petals. Ovary globose; stigmas large. Fruits a drupe, 1.8 x 1.2 cm, oblique, black when ripening.

Manthuruthu Kavu, SK 39349, 39387. *Fl. & Fr.*: Apr.- Oct. *Dist.*: Southern western Ghats, endemic.

Note: Addition to Flora of Thiruvananthapuram.

Spondias L.,

Sp. Pl. 371. 1753.

Spondias pinnata (L.f.) Kurz, Prelim. rep. forest Peg. A. 44 & B. 42. 1875; Airy Shaw & Forman in Kew Bull. 21: 8. 1967; Ding Hou in Steenis, Fl. Males. I. 8: 483. 1978; Kosterm., Found. Useful Pl. Asia 1: 43. 1991; Nayar & *al.*, Flg. Pl. Kerala-Handb. 53. 2006. *Mangifera pinnata* Willd., Sp. Pl. 2: 751. 1799; Roxb. Fl. Ind. 2: 451. 1832; Wight & Arn., Prodr. fl. Ind. orient. 173. 1834; Wight, Ill. Ind. Bot. t. 76. 1840; Bedd., Fl. sylv. S. India. t. 169. 1872; Hook. f., Fl. Brit. India 2: 42. 1876; Gamble, Fl. Madras 261. 1918. *Ambazham*.

Medium sized trees; bark greyish-brown, smooth, and pink inside. Leaves pinnate; leaflets 7-11, opposite, oblong or oblong-ovate, 5-8 x 3-4 cm, rounded at base, acuminate at apex, entire at margins, coriaceous; lateral nerves numerous, close and parallel; petiolule 2-3 mm long. Flowers yellowish-white, polygamous in terminal panicles. Male flowers: 5 mm across. Calyx lobes 5, triangular, caducous. Petals 5, yellow, ovate, to 2 mm long. Disc cupular, 10-crenate. Stamens 10, inserted below the disc; filaments 1 mm long, equal, free, glabrous; anthers oblong. Pistillode with 5-fid styles. Bisexual flowers: calyx, corolla and stamens are as in male flowers. Ovary 5-celled; style 5, connivent. Drupe oblong-ovoid, to 4 x 2.5 cm, furrowed.

Nagaru Kavu, Karimamoola, SK 42363. *Fl. & Fr.*: Mar. – Dec. *Dist.*: South and South East Asia

CONNARACEAE R. Br. in Tuckey,
Narr. Exped. Zaire : 431. 1818, *nom. cons.*

- 1. Panicles rusty pubescent; calyx persistent
on the pedicels.....*Connarus*
- 1. Panicles glabrous; calyx accrescent,
clasping the base of fruit.....*Rourea*

Connarus L.,
Sp. Pl. 675. 1753.

Connarus monocarpus L., Sp. Pl. 675. 1753; Hook. f., Fl. Brit. India 2:50. 1876; Gamble, Fl. Madras 1:272. 1918; Leenh. in Steenis, Fl.

Males. I. 5:538. 1956; Mohanan & Henry, Fl. Thiruvananthapuram 130. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 188. 2006. *Kuriyil*.

Scandent shrubs. Leaves 3-7 foliolate; leaflets subopposite or opposite, ovate or ovate-oblong, 10-12 x 3.5-5.5 cm, rounded at base, obtusely acuminate at apex, glabrous and shining; lateral nerves Ca. 5 pairs, reticulation thin; petiolule 0.5 cm long. Flowers pink in terminal panicle, brown tomentose. Sepals stellate-tomentose without, imbricate. Petals 5, linear, narrowed towards the base. Stamens 10, 5 shorter, ovaries 5, densely pubescent, one with style and stigma, 4 obsolete. Follicle 3.5-4 cm long, brown, smooth, glossy. Seed 1, aril orange yellow.

Valiyaveetil thekkedathu Kavu, SK 39352. *Fl.* & *Fr.* : Mar.– May. *Dist.* : India and Sri Lanka.

Rourea Aubl.,

Hist. Pl. Guiane 467. 1775, *nom. cons.*

Rourea minor (Gaertn.) Merr., Interp. Herb. Amboin. 413. 1917; Leenh. in Steenis, Fl. Males. I, 5: 514. 1956; Mohanan & Henry, Fl. Thiruvananthapuram 131. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 189. 2006. '*minus*'. *Aegiceras minus* Gaertn., Fruct. 1: 216.t.46. 1788. *Rourea santaloides* (Vahl) Wight & Arn., Prodr. fl. Ind. orient. 144. 1834; Hook.f., Fl. Brit. India 2: 47. 1876; Gamble, Fl. Madras 71. 1918. *Connarus santaloides* Vahl, Symb. Bot. 4: 87. 1794.

Scandent shrubs. Leaves sub-opposite; leaflets 5-9, elliptic-lanceolate or elliptic, to 6.5 x 3 cm, rounded at base, caudate-acuminate at apex; lateral veins prominent. Flowers small in axillary panicles, glabrous.

Sepals broadly ovate, ciliate along the margins. Petals linear-oblong. Stamens 10, filaments connate at base. Ovary ovoid, glabrous. Follicle ovoid, to 2 cm long, orange-yellow; aril yellow.

Kavil Sree Bhagavathy temple Kavu, SK 48715. *Fl. & Fr*: Dec.–Aug.
Dist: Indo-Malesia.

FABACEAE L.,

Nat. Syst. Bot., ed. 2:148. 1836. *nom. cons*; *nom. alt.* Leguminosae,
 Papilionaceae.

Key to the sub families

- 1. Flowers zygomorphic.....2
- 1. Flowers actinomorphic..... III. *Mimosoideae*
- 2. Corolla papilionaceous; stamens usually united.....I. *Faboideae*
- 2. Corolla not papilionaceous; stamens usually free.....II. *Caesalpinioideae*

I. Sub Family Faboideae

- 1. Trees.....2
- 1. Habit otherwise, not trees.....6
- 2. Pod orbicular, winged.....*Pterocarpus*
- 2. Pods not as above.....3
- 3. Leaflets 5-9.....4
- 3. Leaflets more than 9.....*Gliricidia*
- 4. Pods woody.....5
- 4. Pods flat, membranous.....*Dalbergia (p.p)*
- 5. Filaments all free.....*Ormosia*
- 5. Filaments united.....*Pongamia*

6. Leaves 2-foliolate.....	<i>Zornia</i>
6. Leaves not as above.....	7
7. Leaves simple or unifoliolate.....	8
7. Leaves 3-foliolate or pinnate.....	12
8. Pods turgid.....	10
8. Pods flattened.....	9
9. Petiole broadly winged.....	<i>Desmodium (p.p.)</i>
9. Petiole not winged.....	11
10. Stamens monadelphous.....	<i>Crotalaria</i>
10. Stamens diadelphous.....	<i>Flemingia</i>
11. Calyx scarious, joints of pods turgid	<i>Alysicarpus</i>
11. Calyx herbaceous, joints of pods flattened.....	<i>Desmodium (p.p.)</i>
12. Leaves 3-foliolate.....	13
12. Leaves pinnate.....	21
13. Woody climber; pods samaroid with an oblong wing, seed one at the distal end.....	<i>Spatholobus</i>
13. Habit other than woody climbers, pods not as above.....	14
14. Twining herbs.....	15
14. Habit not as above.....	17
15. Pods less than 2 cm long.....	<i>Cajanus</i>
15. Pods more than 2.5 cm long.....	16
16. Stamens monadelphous.....	<i>Teramnus</i>
16. Stamens diadelphous.....	<i>Centrosema</i>
17. Shrubs or undershrubs.....	18
17. Habits other than shrubs or undershrubs.....	20
18. Pods joints twisted.....	<i>Uraria</i>
18. Pods joints not twisted.....	19
19. Lateral leaflets narrower and much smaller than the terminalone.....	<i>Desmodium (p.p.)</i>

19.Lateral leaflets more or less equal to terminal one.....	<i>Pseudarthria</i>
20.Pods tetragonous.....	<i>Indigofera</i>
20.Pods laterally compressed.....	<i>Desmodium (p.p.)</i>
21.Seeds red or white, with or without black spot.....	<i>Abrus</i>
21.Seeds other than above.....	22
22. Stamens monadelphous.....	23
22.Stamens diadelphous.....	24
23.Stragglers or woody climbers.....	<i>Aganope</i>
23. Subshrubs.....	<i>Tephrosia</i>
24.Stamens 5+5 in two bundles.....	<i>Dalbergia (p.p.)</i>
24.Stamens 9+1 in two bundles.....	25
25.Large woody climbers.....	<i>Kunstleria</i>
25.Habit other than woody climbers.....	26
26.Anthers gland tipped, pods less than 5 cm long.....	<i>Indigofera (p.p.)</i>
26. Anthers not gland tipped, pods more than 6 cm long.....	<i>Clitoria</i>

Abrus Adans.,

Fam. Pl. 2:327, 511. 1763.

Abrus precatorius L., Syst. Nat. ed.12, 2:472. 1767; Baker in Hook.f., Fl. Brit. India 2:175. 1876; Gamble, Fl. Madras 349. 1918; Brit., Blumea 10:617. 1960; Rudd in Dassan. & Fosb., Rev. Fl. Ceylon 1:446. 1980; Sanjappa, Leg. India 74.1992; Mohanan & Henry, Fl. Thiruvananthapuram 133. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 264. 2006. ssp. **precatorius**: Verde., Kew Bull. 24:240.1970. *Glycine abrus* L., Sp. pl. 753. 1753. *Kunni*.

Twining shrubs; young parts sparsely hairy. Leaves pinnate, to 10 cm long; leaflets 10-15 pairs, oblong, to 2.5 x 0.8 cm, obtuse at base, obtuse and apiculate at apex, chartaceous, glabrous. Flowers clustered at the nodes on rachis in terminal and axillary racemes; bracts deciduous; bracteoles appressed to calyx; pedicels to 2 mm long. Calyx tube narrowly campanulate, to 2 mm long, truncate at apex, pubescent. Petals pink or white with pinkish tinge, clawed; standard broadly ovate, 1.5 x 0.8 cm, basally united to staminal column; wings narrow, oblong-falcate; keel curved, to 1x0.2 cm. Stamens 9, monadelphous anthers uniform; filaments 1-2 mm long. Ovary subsessile, to 8 mm long, pubescent; ovules many style to 5 mm long, in curved, glabrous; stigma capitate. Pods oblong, 4.5 x 1 cm, wrinkled, septate. Seeds 5, subglobose, to 5 mm in diam. red or white with or without black spot, shining.

Karimbil Kavu, SK 39318; Keezhetti Kavu, SK 42330. *Fl. & Fr.*: Oct. – May. *Dist.*: Tropical Asia.

Aganope Miq.,

Fl. Ind. Bot. 1, 1: 151. 1855.

Aganope thyrsiflora (Benth.) Polhill, *Kew Bull.* 25: 268. 1971; Sanjappa, *Leg. India* 76. 1991; Nayar & *al.*, *Flg. Pl. Kerala-Handb.* 265. 2006. *Millettia thyrsiflora* Benth. in Miq., *Pl. Jungh.* 249. 1852; Baker in Hook.f., *Fl. Brit. India* 2: 246. 1878. *Aganope floribunda* Miq., *Fl. Ind. Bot.* 1, 1: 151. 1855. *Derris thyrsiflora* (Benth.) Benth., *J. L. Soc.* 4: suppl. 114. 1860; Baker in Hook.f., *Fl. Brit. India* 2: 178. 1878. *Derris thyrsiflora* Benth. var. *eualata* (Bedd.) Thoth. *Bull. Bot. Surv. India* 195. 1962; Mohanan & Henry, *Fl. Thiruvananthapuram* 144. 1994. *D. eualata* Bedd., *Icon. pl. Ind. orient. t.* 185. 1874; Baker in Hook.f., *Fl. Brit. India* 2:244. 1878; Gamble, *Fl. Madras* 387. 1918.

Large woody climbing shrubs. Leaves imparipinnate; leaflets 7-9, ovate-lanceolate, 6-15 x 2.5-7 cm, rounded at base, obtusely acuminate at apex, coriaceous, dark green and shining above, pale beneath. Flowers white in axillary panicles, upto 20 cm long. Calyx tube campanulate, obscurely toothed. Corolla exserted; petals clawed; standard suborbicular; wings obliquely oblong; keels obtuse, incurved. Stamens monadelphous; anthers uniform, versatile. Ovary subsessile; style incurved, glabrous; stigma capitate. Pods 7-15 x 3-3.5 cm, broadly winged, indehiscent.

Nanniyode Kavu, SK48737. *Fl. & Fr.*: Jan.-Aug. *Dist*: India, Bangladesh, Burma, Thailand, Vietnam, Malesia, Indonesia

Alysicarpus Desv. in

J. Bot. Agric. 1:120. 1813, *nom. cons.*

Alysicarpus vaginalis (L.) DC., *Prodr.* 2:353. 1825. var. *vaginalis* : Baker in *Hook.f., Fl. Brit. India* 2:158. 1876; Gamble, *Fl. Madras* 338. 1918; Sanjappa, *Leg. India* 81. 1991; Mohanan & Henry, *Fl. Thiruvananthapuram* 135. 1994; Nayar & *al.*, *Flg. Pl. Kerala-Handb.* 267. 2006. *Hedysarum vaginalis* L., *Sp. Pl.* 746. 1753.

Prostrate or ascending herbs, glabrescent. Leaves 1-foliolate, obovate-oblong or ovate-orbicular, to 5x1 cm, cordate at base, acuminate at apex, glabrous above, ad pressed hairy on lower surface; petiole 6-8 mm long; stipules to 7 mm long. Flowers in terminal racemes, purple. Calyx 2-lobed, the upper 2-lobed connate to the apex. Petals slightly exserted; standard 5 mm long; wings 5 mm long; keels 4 mm long. Stamens 9+1; staminal sheath 5 mm long; filaments to 1 mm long. Ovary

4 mm long; style to 3 mm. Pods to 1.5 x 0.3 cm, terete or sub terete, 5-6 jointed, pubescent. Strongly nerved. Seeds suborbicular, to 0.6 mm diam. Nanniyode Kavvu, SK 48759. *Fl. & Fr.*: Sept – Jan. *Dist.*: Paleotropics.

Cajanus DC.,

Cat. Hort. Monspel. 85. 1813. *nom cons.*

Cajanus scarabaeoides (L.) du Petit-Thou., *Sci. Nat.* 6: 617. 1817; van der Maesen, *Agric. Univ. Wageningen Pap.* 85-4: 183, 189. 1985; Sanjappa, *Leg. India* 103. 1982; Nayar & *al.*, *Flg. Pl. Kerala-Handb.* 268. 2006. *Dolichos scarabaeoides* L., *Sp. pl.* 726. 1753. *Canthospermum pauciflorum* Wight & Arn., *Prod. fl. Ind. orient.* 255. 1834. *Atylosia scarabaeoides* (L.) Benth., *Miq. Pl. jungh.* 243. 1852; Baker in *Hook.f., Fl. Brit. India* 2:215. 1876; Gamble, *Fl. Madras* 369. 1918; Mohanan & Henry, *Fl. Thiruvananthapuram* 135. 1994. *Kattuzhunnu.*

Twiners; branchlets densely pubescent. Leaves 3-foliolate; leaflets oblong-obovate, 1-2 x 1-1.5 cm, cuneate at base, obtuse at apex, entire at margins, velvety-pubescent; petiole to 2 cm; petiolule to 1 mm long. Flowers yellow in axillary clusters of 2-6. Calyx tube to 2 mm, pubescent; lobes lanceolate, 2-tipped or nearly so, 2.5-3.5 mm long. Corolla exserted; standard to 7x4 mm; wings to 6.5 mm; keels to 7x2 mm. Stamens 9+1; sheath to 7 mm long; filaments to 1.5 mm long. Ovary sessile, to 5 mm long, densely wooly; style incurved at middle; stigma capitate. Pods to 1.5 x 0.8 cm, oblong, compressed, densely pubescent, with transverse depressions. Seeds 4-5, oblong, 4 mm long.

Nagaru Kavvu, Karimamoola, SK 48716. *Fl. & Fr.*: Dec.–Feb. *Dist.*: Pantropical.

Centrosema (DC.) Benth.,

Comm. Legum. Gen. 53. 1837., *nom.cons.*

Centrosema pubescens Benth., Comm. Leg. Geb. 55. 1837; Sanjappa, Leg. India 111. 1991; Mohanan & Henry, Fl. Thiruvananthapuram 137. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 269. 2006. *C. virginianum auct. non* (L.) Benth. 1838; Subram., Bull. Bot. Surv. India 3: 201. 1961; Thoth. & Prasad, Curr. Sci. 39: 353. 1970. *Vayara*.

Twiners, stem wiry, pubescent. Leaves 3-foliolate, to 9 cm long; leaflets terminal obovate or rhomboid, lateral ovate-lanceolate, 4-9 x 1.5-5 cm, obtuse base, acuminate at apex, entire at margins, pubescent; lateral nerves 4-5 pairs; petiole to 5 cm long; petiolule to 2.5 mm; stipules persistent, to 4 mm. Flowers 2.5 cm long, in axillary, 3-5 flowered racemes; peduncles 4-5 cm long. Calyx tube campanulate, to 4 mm long, adpressed tomentose; lobes subequal, upper pairs united into a 2-fid tip. Corolla lilac; standard ovate-suborbicular, gibbous at the back above the claw, 3x2.5 cm; wings falcate; keels incurved. Stamens 9+1. Ovary subsessile; ovules many; style incurved, beard around the stigma. Pods linear, 10-12 x 0.5 cm, acuminate at apex, glabrescent. Seeds 15-18, oblong, to 5.5 mm long.

Manthuruthu Kavu, SK 48720. *Fl. & Fr:* Sept.-Jan. *Dist:* Native of Tropical America, introduced in India as a cover crop in plantation.

Clitoria L.

Sp. Pl. 753. 1753.

Clitoria ternatea L., Sp. pl. 753. 1753; Wight & Arn., Prod. fl. Ind. orient. 205. 1834; Baker in Hook.f., Fl. Brit. India 2:208. 1876; Gamble, Fl. Madras 365. 1918; Sanjappa, Leg. India 114. 1991; Mohanan &

Henry, Fl. Thiruvananthapuram 137. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 270. 2006. *Shankhu pushpam*.

Twining shrubs; branchlets appressed-tomentose. Leaves imparipinnate, to 9x6 cm; leaflets 2-3 pairs, opposite, ovate, 2.5-4 x 1.5-2.5 cm, chartaceous, obtuse at base, entire at margins; petiole to 1.5 cm long; stipules striate, 2.5 mm long. Flowers deep blue, axillary, solitary or in clusters; bracts 1.5 mm; bracteoles orbicular, 1 cm long, persistent; pedicels to 1 cm long. Calyx tube to 7 mm, membranous; upper lobes subconnate, 6 mm; lower one to 10 mm. Corolla exerted; petals clawed; standard obovate, 4.5 x 2.5 cm, base attenuate, apex rounded; wings oblong, falcate, 2.5 x 1 cm; keels obovate, incurved. Staminal sheath to 1.2 cm long. Stamens diadelphous, 9+1; filaments unequal, 4-5 mm; anthers uniform. Ovary stipitate, tomentose; ovule numerous; style to 1 cm long, curved, tomentose. Pods linear-oblong, 9x0.8 cm, compressed, apically beaked. Seeds 10-15, reniform, to 7x5 mm.

Indalayappan Kavu, SK 39355; Sree Bhagavathi temple Kavu, SK 47849. *Fl. & Fr*: Mar.-May. *Dist*: Native of South America, cultivated in tropics.

Note: Baker (l.c.) recognized two varieties for this species viz. var. *pilosula* Wall. ex Baker and var. *ternata*. In the study area only var. *ternata* is present.

Crotalaria L.

Sp. Pl. 714. 1753, *nom.cons.*

- 1. Leaves less than 2 cm long.....*C.nana*
- 1. Leaves more than 3 cm long.....2
- 2. Leaves simple.....*C. retusa*
- 2. Leaves 3-foliolate.....*C. laburnifolia*

Crotalaria nana Burm.f., Fl. Ind. 156, t. 48, f. 2. 1768; Baker in Hook.f., Fl. Brit. India 2:71. 1876; Sanjappa, Leg. India 125. 1991; Nayar & *al.*, Flg. Pl. Kerala-Handb. 275. 2006. *C. umbellata* Wight ex Wight & Arn., Prod. fl. Ind. orient. 191. 1834; Gamble, Fl. Madras 294. 1918. *C. nana* Burm.f. var. *umbellata* (Wight & Arn.) Prain, J. Asiat. Soc. Beng. 66: 351. 1897.

Diffuse or suberect herbs; branchlets silky-tomentose. Leaves simple, oblong, 0.6-1 x 0.3-0.4 cm, base and apex obtuse, appressed tomentose on both sides; stipules absent. Flowers yellow in 5-8 flowered subumbellate terminal racemes; bracteoles minute, filiform. Calyx tube campanulate, 1 mm long, densely hairy; upper 2-lobes connate to near the tip, the 3 lower lobes ovate-acute, to 4 mm long. Corolla not exerted, equal to calyx; standard oblong, 5 x 4 mm, claw densely ciliate, apex emarginate; wings oblong, 4x1.5 mm; keels oblong-ovate, 5x2 mm. Stamens monadelphous; sheath to 1 mm long; filaments 2-4 mm long. Ovary stipitate, to 2 mm; ovules 8; style to 5 mm long, geniculate. Pods subglobose, glabrous, to 0.5 cm long. Seeds 6-8, subreniform, glossy.

Mechamkode Kavu, SK 48721. *Fl. & Fr.*: Sept.-Dec. *Dist.*: Peninsular India.

Crotalaria laburnifolia L., Sp. Pl. 715. 1753; Roxb. Fl. Ind. 3: 275. 1832; Wight & Arn., Prod. fl. Ind. orient. 193. 1834; Baker in Hook.f., Fl. Brit. India 2:215. 1876; Rao, Fl. Pl. Travancore. 107. 1914; Gamble, Fl. Madras 301. 1918; Munk, Reinwardtia 6: 206. 1962; Sanjappa, Leg. India 120. 1991; Nayar & *al.*, Flg. Pl. Kerala-Handb. 273. 2006. *Kilimookku*.

Undershrubs; branchlets glabrescent. Leaves 3-foliolate; leaflets ovate, 3-4.5 x 1.5-3 cm, subacute at base, obtuse-subacute at apex, entire at margins; petiole 5-7 cm long; petiolules to 4 mm long. Flowers yellow in terminal and lateral racemes; bracts linear-setaceous, to 3 mm; bracteoles linear. Calyx tube 4 mm long, glabrous; lobes ovate, 4-5 mm long. Corolla twice longer than calyx; standard petals 2x2.5 cm, ovate; wings to 1.8 cm, oblong; keels to 2 cm long, ovate. Staminal sheath to 1 cm long; filaments 6 mm and 1.2 cm long. Ovary 1.5 cm long; stipe elongate, glabrous; style to 2 cm long, curved, pubescent on the inner side. Pods 4-5 cm long, oblong, semiterete, glabrous, faintly nerved. Seeds 12-15, to 3 mm long, glossy brown.

Moopuram Kavu, SK 48740. *Fl. & Fr.*: Jan.–Apr. *Dist.*: S.E. Asia, Africa.
Note: Addition to Flora of Thiruvananthapuram.

Crotalaria retusa L., Sp. Pl. 715.1753; Baker in Hook.f., Fl. Brit. India 2: 75. 1876; Gamble, Fl. Madras 293. 1918; Munk, Reinwardtia 6: 212. 1962; Polhill, Kew Bull. 22: 310. 1968; Rudd. in Dassan. & Fosb., Rev. Handb. Fl. Ceylon 7: 192.1991; Nayar & *al.*, Flg. Pl. Kerala-Handb. 276. 2006 Sanjappa, Leg. India 128. 1991; Mohanan & Henry, Fl. Thiruvananthapuram 143. 1994.

Woody, much branched, erect subshrubs; branchlets dense-pubescent. Leaves simple, oblanceolate, 3-8 x 1.5-2.5 cm, attenuate at base, obtuse, retuse, apiculate at apex, entire at margins, chartaceous, glabrous above, pubescent below; petiole to 2mm long; stipules in pairs, linear-lanceolate. Flowers yellow in a few to many flowered terminal racemes. Calyx tube 5 mm, appressed-puberulous, lobes lanceolate; upper lobes 4 mm; lower ones 5 mm. Corolla exerted; standard orbicular, to

8x6 mm, glabrous, apex obtuse; wings oblong, to 7x1.5 mm; keels ovate, to 7x3 mm. Staminal sheath to 8 mm long; filaments 4-8 mm long; anthers oblong to 3 mm long. Ovary 1 cm long, glabrous; style to 1.2 cm long, curved, pubescent on both sides. Pods shortly stipitate, oblong-terete, 4.5x1.5 cm, glabrous. Seeds 15-20.

Madan Kavu, Mevarkara, SK 48735. *Fl. & Fr.*: Sept. –Jan.*Dist.*: Tropics.

Dalbergia L.f.,

Suppl. Pl. 52, 316. 1782, *nom.cons.*

1. Trees.....*D. latifolia*

1. Lianas..... *D. volubilis*

Dalbergia latifolia Roxb., Pl. Coromandel t. 113. 1799; Wight, Icon. pl. Ind. orient. t. 1156. 1848; Baker in Hook.f., Fl. Brit. India 2:231. 1876; Gamble, Fl. Madras 383. 1918; Thoth., Dalberg. Indian Subcont. 46. 1987; Sanjappa, Leg. India 137. 1991; Mohanan & Henry, Fl. Thiruvananthapuram 144. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 280. 2006.

Large deciduous trees; bark brown, yellow inside. Leaves imparipinnate, 10-20 cm long; leaflets 3-4 pairs, alternate, obovate or orbicular-ovate, 3.5-5 x 3-4.5 cm, rounded at base, obtuse or emarginate at apex, coriaceous, glabrous above, glaucous beneath; petiole to 9 cm long; petiolule to 8 mm. Flowers in corymbose short panicles from the axils of fallen leaves of last years shoot; peduncle to 1 cm long; pedicels short, to 1 mm. Calyx glabrous, tube to 4 mm; lobes subequal, to 15 mm. Corolla white; petals clawed; standard 6x3.5mm, obovate; wings 6x2 mm;

keels to 5.5 x 3.5 mm, connate at apex. Stamens 9, monadelphous; filaments to 2 mm. Ovary 3 mm, glabrous; style to 2 mm. Pods oblong-lanceolate, to 9x2 cm, prominently nerved. Seeds 1-4, to 7x4 mm.

Nagayekshi Kavu, Ayilam, SK 47907. *Fl. & Fr.*: Aug.-Sept. *Dist.*: Indo-Malesia.

Dalbergia volubilis Roxb., Coromandel t. 191. 1805; Baker in Hook.f., *Fl. Brit. India* 2:235. 1876; Gamble, *Fl. Madras* 384. 1918; Thoth., Dalberg. *Indian Subcont.* 163. 1987; Sanjappa, *Leg. India* 142. 1991; Nayyar & *al.*, *Flg. Pl. Kerala-Handb.* 281. 2006.

Large woody climbers; bark dark brown; branchlets glabrescent, thickened in places and twisted into spiral hooks. Leaves imparipinnate; leaflets 7-13, oblong or obovate, to 3.5x2 cm, obtuse at base, obtuse or emarginate at apex, glaucous beneath, coriaceous, glabrous. Flowers in terminal tomentose panicles. Calyx tomentose, to 3 mm long; lobes 5, unequal, the 4 upper lobes oblong, obtuse at apex, the lower one longer, triangular, subacute at apex. Corolla pale purple, 5-6 mm long; standard 6 mm, suborbicular-oblong; wings 5.5 mm; keels 6 mm, connate at apex. Stamens 10, diadelphous in two bundles of 5 each. Pods 0.5-7.5 cm long, linear-oblong, pale brown with darker linear blotches, obtuse at apex. Seeds 1-2.

Thengazhiyathu Kavu, SK 47939. *Fl & Fr.*: Feb.- May. *Dist.*: Indo-Burma, Sri Lanka.

Desmodium Desv.in

J. Bot. Agric. 1:122. 1813, *nom.cons.* (*sensu lato*).

Note: Ohasi while revising the Asiatic species of *Desmodium* Desv. (*Ginkgoana* 1: 1-318. 1973) proposed a new systematic treatment based on comparative morphology of vegetative and floral parts, pollen grains, seeds and seedling suggested 7 genera in *Desmodium* complex. However his treatment of the genus is not widely accepted. In this work Bentham (1865) and van Meeuwen (*Reinwardtia* 6: 239-276. 1962) are followed.

1. Erect shrubs or subshrubs.....3
1. Decumbent, trailing or creeping herbs.....2
2. Leaflets less than 1 cm long.....*D. triflorum*
2. Leaflets more than 1.5 cm long.....*D. heterophyllum*
3. Petiole winged.....*D. triquetrum*
3. Petiole not winged.....4
4. Leaves simple.....5
4. Leaves trifoliolate.....6
5. Stem angular; lower suture of pod deeply undulate.....*D. gangeticum*
5. Stem terete; lower suture of pods not undulate.....*D. velutinum*
6. Flowering bracts orbicular, large and enclosing the flowers.....*D. pulchellum*
6. Flowering bracts not as above and not enclosing the flowers.....7
7. Lateral leaflets narrower and much smaller than the terminal leaflet.....*D. motorium*
7. Lateral leaflets similar to the terminal leaflet.....*D. heterocarpon*

Desmodium gangeticum (L.) DC., Prodr.2: 327. 1825; Wight & Arn., Prod. fl. Ind. orient. 225. 1834; Wight, Icon. pl. Ind. orient.t. 271. 1839; Baker in Hook.f., Fl. Brit. India 2:168. 1876; Gamble, Fl. Madras 345. 1918; van Meeuwen, Reinwardtia 6: 249. 1962; H. Ohasi, Ginkgoana 1: 184. 1973; Sanjappa, Leg. India 153. 1991. Mohanan & Henry, Fl. Thiruvananthapuram 146. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 283. 2006. *Orila*.

Erect shrubs; branchlets sericeous. Leaves 1-foliolate, oblong-obovate or lanceolate, 4-10 x 2-5 cm, obtuse-subacute at base, acute or apiculate at apex, entire at margins, chartaceous, puberulous above, appressed-tomentose beneath; petiole 1.5-2 cm; stipules narrowly ovate. Flowers white, tinged lilac in terminal racemes. Calyx tube 4-lobed, 1 mm long; upper lobes connate, 1.5 mm long; lower one 2 mm. Petals: standard 5 mm long, broadly obovate; wings 3 mm; keels 4 m. Stamens 9+1; staminal sheath 3.5 mm. Ovary sessile, 3 mm long; ovules 8; style 1.5 mm. Pods to 2 cm long, moniliform, lower margins deeply undulate; articles 5-6. broadly oblong, hooked-pubescent. seeds 4-6, to 2mm.

Indalayappan Kavu, SK 39326; Kochalummoodu Devi temple Kavu, SK 48765. *Fl. & Fr.*: Aug.- Dec. *Dist.*: Tropical Asia, Africa and Australia.

Desmodium heterocarpon (L.) DC., Prodr.2: 337. 1825; van Meeuwen, Reinwardtia 6: 251. 1962; Sanjappa, Leg. India 154. 1991. Mohanan & Henry, Fl. Thiruvananthapuram 146. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 284. 2006. *Hedysarum heterocarpon* L., Sp. Pl. 747. 1753. *H. polycarpum* Poir in Lam., Encycl. 6: 43. 1805. *Desmodium polycarpum* (Poir.) DC. Prodr. 2: 334. 1825; Wight & Arn., Prod. fl. Ind. orient. 227.

1834; Wight, Icon. pl. Ind. orient.t. 406. 1840; Baker in Hook.f., Fl. Brit. India 2: 171. 1876; Gamble, Fl. Madras 346. 1918.

Scandent subshrubs; branchlets densely hooked pubescent. Leaves 3-foliolate; leaflets, obovate, 2-4 x 1-2 cm, lateral nearly as long as the terminals, obtuse or truncate at base, acute at apex, entire at margins; petiole to 2cm long. Flowers in terminal, cone like, 20 cm long racemes; primary bracts broadly ovate, to 6 mm long. Calyx \pm 4 lobed; tube to 2 mm long, upper lobes connate. Petals violet or purple; standard 1x0.8 cm obovate-orbicular; wings 6x4 mm; keels 1x0.4 cm. Staminal sheath 8 mm long; stamens diadelphous. Ovary 8 mm long; ovules 8; style to 3 mm. Pods 2.5-3 cm, erect, lower margins indented, upper straight. Seeds 1.5 mm long, broadly ellipsoid.

Myvalli Ela Kavu, SK 48722; Mechamkode Kavu, SK 37770. *Fl. & Fr.*: Oct.- Apr. *Dist*: Indo-Malesia and Japan.

Note: This species has 3 varieties viz. *gymnocarpum* Schindl., var. *heterocarpon* and var. *strigosum* van Meeuwen. In the study area only var. *heterocarpon* is only found.

Desmodium heterophyllum (Willd.) DC., Prodr.2: 334. 1825; Gamble, Fl. Madras 347. 1918; van Meeuwen, Reinwardtia 6: 251. 1962; Ohasi, Ginkgoana 1:239. 1973; Sanjappa, Leg. India 155. 1991; Mohanan & Henry, Fl. Thiruvananthapuram 147. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 284. 2006. *Hedysarum heterophyllum* Willd., Sp. Pl. 3:1201. 1802. *Desmodium triflorum* (L.) DC. var. *majus* Wight & Arn., Prodr. fl. Ind. orient. 229. 1834; Wight, Icon. pl. Ind. orient. t. 291. 1840.

Prostrate herbs, stem slender, angled, patently hairy. Leaves trifoliolate; leaflets elliptic-oblong, to 2x1.4 cm, obtuse at apex, glabrescent above, shortly adpressely hairy along the nerves beneath; lateral nerves Ca. 5 pairs, slender; petiole to 2 cm long; stipules ovate-lanceolate, cuspidate, to 8 mm long. Flowers in short, 1-4 flowered racemes. Calyx lobes subequal, longer than the tube, lanceolate, villous without. Petals bluish-purple; standard obovate. Pods 2-5 jointed, intended along the lower suture, to 2 cm long.

Nagar Kavu, Kavalakkulam, SK 48719; Madan temple Kavu, Paruthippara, SK 48784. *Fl. & Fr.*: Jul.–Dec. *Dist.*: Indo–Malesia and China.

Desmodium motorium (Houtt.) Merr. *J. Arnold. Arbor.* 19:345. 1938; van Meeuwen, *Reinwardtia* 6: 254. 1962; Sanjappa, *Leg. India* 153. 1991. Mohanan & Henry, *Fl. Thiruvananthapuram* 148. 1994; Nayar & *al.*, *Flg. Pl. Kerala-Handb.* 285. 2006. *Hedysarum motorium* Houtt. *Nat. Hist.* 10:246. 1779. *H. gyrans* (*L.f.*) DC., *Prodr.* 2: 326. 1825; Wight & Arn., *Prodr. fl. Ind. orient.* 227. 1834; Wight, *Icon. pl. Ind. orient.* t. 294. 1840; Baker in *Hook.f., Fl. Brit. India* 2: 171. 1876 ; Gamble, *Fl. Madras* 347. 1918.

Erect undershrubs; branches slender, grooved, glabrescent. Leaves 3-foliolate; terminal leaflets oblong-elliptic or lanceolate; 4.5-8.5 x 2-3.5 cm, laterals to 8x3 mm, obtuse at both ends, entire at margins, glabrous above, pubescent beneath. Flowers in lax terminal racemes, to 10 cm long; primary bracts broadly ovate. Calyx membranous, campanulate; tube to 2 mm long; lobes deltoid, shorter than tube. Corolla pink; standard 4 mmlong, orbicular; wings 3 mm long; keels 4.5 mm. Staminal sheath to 8

mm long; stamens 9+1, diadelphous. Ovary to 7 mm long; style to 1.5 mm long. Pods 2.8-3.5 cm long, slightly falcate, dehiscing along the ventral suture, pubescent, segments 5-10, broader than long.

Nanniyode Kavu, SK 48717. *Fl. & Fr:* Oct.- Mar. *Dist:* S.E.Asia to Australia.

Desmodium pulchellum (L.) Benth. *Fl. Hongk.* 83. 1861; Baker in Hook.f., *Fl. Brit. India* 2:162. 1876; Snjappa, *Leg. India* 160. 1991; Gamble, *Fl. Madras* 344. 1918; van Meeuwen, *Reinwardtia* 6: 256. 1962; Mohanan & Henry, *Fl. Thiruvananthapuram* 148. 1994; Nayar & *al.*, *Flg. Pl. Kerala-Handb.* 285. 2006. *Hedysarum pulchellum* L., *Sp. pl.* 747. 1753. *Dicerma pulchellum* DC. *Memm Legum.* 326. 1825 & *Prodr.* 2: 339. 1825; Wight, *Icon. pl. Ind. orient.t.* 418. 1841.

Subshrubs; branches pubescent to tomentose. Leaves 3-foliolate; leaflets ovate or elliptic-oblong, 3-11 x 2-6 cm; lateral one half as long as terminals, subacute at base, obtuse –acute at apex, wavy at margins, thin-coriaceous, appressed-pubescent above, tomentose below; petiole to 3 cm long. Flowers in terminal panicles, enclosed by foliaceous bracts; primary bracts 10-15 pairs, 1.5x 1.5 cm, orbicular, each enclosing 5 flowers, stipellate; secondary bracts narrowly ovate, 1-1.5 mm. Calyx campanulate; tube to 1mm long, densely pilose without. Petals yellowish-white; standard 5x3.5 mm, obovate, rounded at apex; wings to 4x3 mm, elliptic; keels 6 x 2 mm. Staminal sheath to 5 mm; stamens monadelphous. Ovary 2 mm, pubescent; ovules 2; style 2 mm. Pods sessile, 6x 4.5 mm, glabrous, margins indented; articles 2, as long as broad, ciliate.

Fl. & Fr: Sept. – Feb. *Dist:* Indo-Malesia to Australia.

Desmodium triflorum (L.) DC., Prodr.2: 334. 1825; Wight & Arn., Prodr. fl. Ind. orient. 229. 1834.p.p.; Wight, Icon. pl. Ind. orient.t. 292. 1839; Baker in Hook.f., Fl. Brit. India 2:173. 1876; Gamble, Fl. Madras 347. 1918; van Meeuwen, Reinwardtia 6: 261. 1962; Mohanan & Henry, Fl. Thiruvananthapuram 147. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 286. 2006. *Nilapulladi*.

Prostrate herbs; branchlets elongate, pilose. leaves 3-foliolate; leaflets obovate, 4-5.5 x 4-5 mm, cuneate at base, obtuse or retuse at apex, entire at margins, chartaceous, glabrous above, pubescent below; petiole to 5 mm long. Flowers 3-5 in a cluster, axillary; primary bracts ovate. Calyx subequally, 5-lobed, united at base; tube to 1 mm long. Petals pink to violet; standard to 3 mm long, obovate; wings to 2 mm long; keels to 4 mm long. Staminal sheath 4 mm long; stamens diadelphous, 9+1. Ovary 4 mm long, glabrous; style to 2 mm, incurved. Pods 0.8-1 cm long, lower margins deeply indented, upper entire; articles 3-5, hooked-pubescent. Seeds 4-5, to 1.2 mm long, broadly oblong.

Manthuruthu Kavu, SK 39374; Karumbichivila Nagar Kav, SK 48775.
Fl. & Fr: Oct.- Mar. *Dist:* Pantropical.

Desmodium triquetrum (L.) DC., Prodr.2: 326. 1825; Baker in Hook.f., Fl. Brit. India 2:163. 1876; Gamble, Fl. Madras 345. 1918; Sanjappa, Leg. India 163. 1991; Mohanan & Henry, Fl. Thiruvananthapuram 149. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 286. 2006. *Hedysarum triquetrum* L., Sp. pl. 746. 1753. *Tadehagi triquetrum* (L.) Ohasi, Ginkgoana 1: 290. 1973.

Erect subshrubs; branches trigonous. Leaves uni-foliolate, ovate-lanceolate, 10-12 x 3.5-5 cm, subcordate at base, acute or acuminate at apex, glabrous above, tomentose beneath; lateral nerves 6-8 pairs, slender; petiole winged, to 3.5 cm; stipules lanceolate, to 1.5 cm long. Flowers in terminal racemes. Calyx campanulate, upper 2-lobes united, others subulate, 4 mm long, sparsely tomentose. Petals pink or purple; standard obovate, 8 mm long; wings 6 mm; keels 7 mm long. Staminal sheath to 6mm long. Ovary sessile, pubescent; ovules 5-7. Pods 1.5 cm long; articles 5-7, intended on lower suture.

Keezhetti Kavu, SK 48723. *Fl. & Fr.*: Jul.- Dec. *Dist.*: Indo-Malesia and China.

Desmodium velutinum (Willd.) DC., Prodr. 2:328. 1825; van Meeuwen, Reinwardtia 6:264. 1962; Sanjappa, Leg. India 165. 1991; Mohanan & Henry, Fl. Thiruvananthapuram 150. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 287. 2006. *D. latifolium* DC. Prodr. 2:328. 1825; Wight & Arn., Prodr. fl. Ind. orient. 225. 1834; Wight, Icon. pl. Ind. orient.t. 270. 1840; Baker in Hook.f., Fl. Brit. India 2:168. 1876; Gamble, Fl. Madras 346. 1918. *Valiya Orila*.

Erect shrubs; branches terete, spreading, densely clothed with short fulvous hairs. Leaves 1-foliolate, ovate, 7.5-12 x 4-7.5 cm, cordate at base, long acuminate at apex, wavy at margins, finely hairy above, densely so beneath; lateral nerves 6-8 pairs. Flowers 3-5 in clusters of terminal panicles, to 15 cm long; primary bracts subulate. Calyx to 3 mm long, 4-lobed, upper lobes connate. Petals rose coloured; standard 6x4 mm, orbicular-obovate; wings 6x2 mm, oblong; keels 6x2 mm, slightly

incurved. Staminal sheath 4 mm long. Stamens diadelphous, 9+1. Ovary sessile, hairy; ovules Ca.10; style to 1 mm long. Pods to 2 cm long, intended on both margins; articles 4-6, pubescent or hispid. Seeds 4-5, to 1mm long.

Nanniyode Kavu, SK 48789. *Fl. & Fr.*: Nov – Jun.. *Dist.*: Pantropical.

Flemingia Roxb. ex W.T. Aiton,

Hort Kew. ed. 2, 4:349. 1812, *nom. cons.*

Flemingia strobilifera (L.) Ait., Hort. Kew 4:350. 1812; Wight, Icon. pl. Ind. orient.t. 267. 1840; Baker in Hook.f., Fl. Brit. India 2:227. 1876; Gamble, Fl. Madras 377. 1918; Rudd. in Dassan. & Fosb., Rev. Handb. Fl. Ceylon 7:360. 1991; Sanjappa, Leg. India 178. 1991; Mohanan & Henry, Fl. Thiruvananthapuram 151. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 290. 2006.

Shrubs; branchlets tomentose. Leaves 1-foliolate, oblong-lanceolate, 6-15 x 5-7 cm, rounded at base, acuminate at apex, entire at margins, thin-coriaceous, gland dotted below; lateral nerves 6 pairs; petiole to 0.8-1.3 cm; stipules to 5 mm. Flowers in axillary and terminal simple or branched racemes, flexuous, tomentose; bracts ovate-cordate, membranous, 2.5-3x3.5 cm; calyx-tube 1.5 mm long; lobes setaceous. Corolla exerted white; standard 6x4 mm, obovate; wings 4 mm oblong; keels 6x2 mm, incurved. Stamens sheath to 6.5 mm; stamens 9+1; anthers uniform. Ovary sessile, to 2 mm; style to 6 mm, incurved, glabrous. Pods 1 x 0.5 cm, oblong, included in the bracts, 2-seeded. Seeds suborbicular.

Madan Kavu, Nedumangad, SK 48736; Manthuruthu Kavu , SK 39394..
Fl. & Fr.: Nov – Feb. *Dist.*: Tropical Asia and Australia.

Gliricidia Kunth inHumboldt et al.,
Nov. Gen. Sp. 6,ed. f. 309. 1824.

Gliricidia sepium (Jacq.) Kunth ex Walp. Repert. 1:679. 1842; Sanjappa, Leg. India 181. 1991; Mohanan & Henry, Fl. Thiruvananthapuram 152. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 312. 2006. *Robinia sepium* Jacq. Enum. syst. Pl. 28. 1760. *Gliricidia maculata* (Steudel) Kunth, Nov. gen. sp. 6:393. 1824. *Seema Konna*.

Shrubs to small trees; branchlets glandular-pubescent. Leaves imparipinnate; leaflets 6-8 pairs, opposite, elliptic-lanceolate, 2-6.5 x 1.5-2.8 cm, glabrous, in equilateral, obtuse at base, acuminate at apex, entire at margins; petiole to 2 cm long; petiolule to 3 mm; stipules caducous. Flowers in axillary racemes and from leafless nodes; peduncle to 2 cm; bracts to 0.5 mm. Calyx campanulate; tube to 5 mm long, truncate at apex. Corolla rose-pink; standard 2x1.5 cm, orbicular, clawed, with 2 callosities above the claw; wings 2x0.6 cm, oblong, auricled; keels 2x 0.8 cm, obovate, incurved. Staminal sheath 1.6 cm long; stamens 9+1; filaments unequal, 3-4 mm long; anthers uniform. Ovary sessile, 1.5 cm long; ovules more than 8; style incurved, to 4 mm long, glabrous; stigma capitate. Pod to 1.5 cm, oblong. Seeds oblong-suborbicular.

Onathuthodi Kavu, SK 39394. *Fl. & Fr.*: Feb – Jul. *Dist.*: Native of South America, Introduces India.

Indigofera L.,
Sp. Pl. 751. 1753.

- 1. Leaves trifoliolate.....*I. prostrata*
- 1. Leaves multifoliolate.....2
- 2. Pods 1-2 seeded.....*I. linnaei*
- 2. Pods more than 6 seeded.....3
- 3. Leaflets opposite.....*I. tinctoria*
- 3. Leaflets alternate.....*I. spicata*

Indigofera linnaei Ali, Bot. Notiser. 3. 549. 1958; Rudd in Dassan. & Fosb., Rev. Handb. Fl. Ceylon 7:120. 1991; Sanajappa in Hajra *et al.*, (eds.) Fasc. Fl. India 21: 96. 1995; Nayar & *al.*, Flg. Pl. Kerala-Handb. 292. 2006. *Hedysarum prostratum* L., Mant. 1:102. 1767. *Indigofera enneaphylla* L., Mant. 2: 272. 1771, *nom. illeg.*; Wight, Icon. pl. Ind. orient. t. 403. 1840; Baker in Hook.f., Fl. Brit. India 2: 94. 1876; Gamble, Fl. Madras 309. 1918. *Indigofera prostrata* (L.) Domin, Bibl. Bot. Stuttg. 187. 1926, *non* Willd. 1803.

Prostrate herbs; branches prostrate or ascending with support, strigose, biramous hairs adpressed with equal arms. Leaves imparipinnate; leaflets 7-9; alternate, ovate to obovate, 5-16 x 2-5 mm, cuneate-obtuse at base, rounded to truncate or rarely emarginate and mucronate at apex, adpressed pubescent on both surfaces. Flowers pink or red in sessile, axillary, globose to ovoid racemes; rachis silvery pubescent calyx hairy without, tube 0.8-1.5 mm long, teeth 2.5-3.5 mm long. Petals: standard 3-4 x 1.5-2 mm, ovate-spathulate; wings 3-4 x 1-2 glabrous, ciliate along margins; Staminal sheath 3-4 mm long; anthers 0.5 mm long. Ovary 2-3 mm long, glabrous or sparsely hairy; 1-4 ovuled; style 1-2 mm long,

glabrous. Pods 3-8 x 1.5-2 mm, straight, globose-oblong, beaked, strigose, 1-2 seeded. Seeds 1x1 mm, cylindrical, dark green to light brown.

Sree Janardhana Kavu, SK 48728. *Fl. & Fr.*: Round the year. *Dist.*: South East Asia to Australia.

Indigofera prostrata Willd., Sp. Pl. 3:1226. 1802; Gamble, Fl. Madras 310. 1918; Britto in Matthew, Fl. Tamil Nadu Carnatic. 1:427. 1983; Sanajappa in Hajra *et al.*, (eds.) Fasc. Fl. India 21: 115. 1995; Nayar & *al.*, Flg. Pl. Kerala-Handb. 293. 2006. *I. trifoliolata* auct. non L. 756; Wight & Arn., Prodr. fl. Ind. orient. 201. 1834; p. p.; Baker in Hook.f., Fl. Brit. India 2:96. 1876.p. p.

Herbs; branches slender, prostrate to ascending, biramous hairs grey adpressed with equal arms. Leaves digitately trifoliolate; stipules narrowly triangular, 1.5 x 1mm; leaflets obovate or oblanceolate, 10-18 x 5-9 mm, adpressed pubescent on both surface, brown gland dotted beneath. Flowers in axillary, sessile, globose, 3-5 mm long racemes; bracts to 1 mm long, triangular, caducous; pedicels to 1 mm long. Calyx adpressed pubescent without, tube 0.5 mm long, teeth 1.5 mm long, narrowly triangular. Petals pink; standard ca. 3 x 2 mm, elliptic or obovate; wings ca. 2.5 x 1 mm, glabrous; keels ca. 2.5 x 1.5 mm, gland dotted on the back. Staminal sheath ca. 2.5 mm long; anthers to 0.5 mm long. Ovary to 2 mm long, linear, globose, 8-ovuled; style to 1 mm long, glabrous. Pods 15-20 x 1-1.5 mm, descending, straight, filiform, sub cylinder, shortly apiculate, 5-8 seeded. Seeds 1-1.5 x 0.8 mm, rounded at both ends, shiny brown.

Nanniyode Kavu, SK 48810. *Fl. & Fr.*: Aug – Jan. *Dist.*: Peninsular India, endemic.

Indigofera spicata Forsskal, *Fl. Aegypt-Arab.* 138. 1775; Gillett in *Fl. W. Trop. Africa* ed. 2,1: 542. 1958 & in *Kew Bull. (Add. ser.)* 1:119. 1959; Mohanan & Henry, *Fl. Thiruvananthapuram* 154. 1994; Sanajappa in Hajra *et al.*, (eds.) *Fasc. Fl. India* 21: 123. 1995; Nayar & *al.*, *Flg. Pl. Kerala-Handb.* 293. 2006. *I. hendecaphylla* Jacq., *Icon. t.* 570. 1781-93 & *Coll. Bot.* 2:358. 1788. *I. endecaphylla* Jacq. sensu Lam., *Encycl. Suppl.* 3: 147. 1813; Baker in Hook.f., *Fl. Brit. India* 2: 98. 1876; Gamble, *Fl. Madras* 311. 1918. *I. kleini* Wight & Arn., *Prodr. fl. Ind. orient.* 204. 1834.

Erect or trailing herbs; branches prostrate or ascending, appressed-strigose or glabrescent. Leaves odd-pinnate to 6 cm long; leaflets 7-11, alternate, obovate or cuneate-oblong, 10-30 x 2-5 mm, rounded or mucronate at apex, glabrous above, sparsely strigose beneath. Flowers in axillary, many flowered, 5-8 cm long racemes. Calyx finely adpressed hairy without; tube 0.5 mm long, teeth narrowly triangular, to 3 mm long. Petals reddish-pink; standard 4.5-5 x 3-3.5 mm, obovate to broadly ovate, rounded or mucronate at apex; wings 4-4.5 x 1-1.5 mm, glabrous; keels 4.5-5 x 2-2.5 mm, ciliate along margins. Staminal sheath 4-4.5 mm long; anthers 0.5 mm long. Ovary 2.5-3 mm long, linear, glabrous, to 12 ovuled; style to 2 mm long, glabrous. Pods 18-25 x 2-2.5 mm, reflexed, straight or slightly curved, 8-10 seeded. Seeds 2-2.5 x 1-1.5 mm, cylindrical to subglobular, rounded at both ends, smooth, reddish brown or yellow.

Moopuram Kavu, SK 48741. *Fl. & Fr.*: May – Dec. *Dist.*: Pantropical.

Note: Du Puy *et al.* (*Kew Bull.* 48: 727-728. 1993) dividing this species into *I. spicata* Forsskal and *I. hendecaphylla* Jacq. based on

vegetative and floral characters and confined the former to Africa, Madagascar, Mascarenes and Yemen and later to Africa, S.E.Asia, Indochina etc. According to Sanjappa (*l.c.*) the Indian species agree with the characters of *I. endacaphylla* except foliage, which is variable.

Indigofera tinctoria L., Sp. Pl. 751. 1753; DC. Prodr. 2: 224. 1825; Roxb., Fl. Ind. 3: 379. 1832; Wight & Arn., Prodr. fl. Ind. orient. 202. 1834; Wight, Icon. pl. Ind. orient. t. 365. 1840; Baker in Hook.f., Fl. Brit. India 2:99. 1876; Gamble, Fl. Madras 312. 1918; Mohanan & Henry, Fl. Thiruvananthapuram 154. 1994; Sanajappa in Hajra *et al.*, (eds.) Fasc. Fl. India 21: 133. 1995; Nayar & *al.*, Flg. Pl. Kerala-Handb. 293. 2006. *Neelayamari*.

Undershrubs; branches erect, strigose, biramous hairs adpressed with equal arms. Leaves imparipinnate ; leaflets 7-13, opposite, elliptic-obovate or obovate-oblong, 10-21 x 6-12 mm, cuneate-obtuse at base, obtuse to rounded or emarginate at apex, glabrous or with few adpressed hairs above, adpressed fine hairy beneath. Flowers pink or brick red in axillary, 2-5 cm long racemes, bracts 1mm long, narrowly triangular; pedicels 1.5-2 mm, dark brown hairy. Calyx adpressed hairy without; tube to 1 mm long; lobes 0.5-0.8 mm long, triangular. Petals: standard 4-4.5 x 3-3.5 mm, broadly ovate, rounded at apex; wings 3.5-4 x 1-1.2 mm, glabrous, ciliate; keels 4-4.5 x 1.5-2 mm, adpressed hairy towards tip. Staminal sheath 3.5-4 mm long; anthers 0.5 mm long. Ovary 2.5 mm long, linear, 6-12 ovuled, glabrous; style 1-1.5 mm long. Pods 20-35 x 2-3 mm, descending, straight or slightly curved, glabrous or with few short adpressed hairs, 6-12 seeded. Seeds 2x1 mm, finely pitted, shiny, yellowish to reddish brown.

Mulloor Kavu, Chowwara, SK 48743. *Fl. & Fr.*: Aug.- Mar. *Dist.*: Pantropical (except Bhutan).

Kunstleria Prain in

J. Asiat. Soc. Bengal 66 (2): 109. 1897.

Kunstleria keralensis Mohanan & Nair, *Proc. Ind. Acad. Sci. (Plant Sci.)* 90 (3): 208. 1981; Manilal, *Fl. Silent Valley* 84. 1988; Sanjappa, *Leg. India* 199. 1992; Sasidharan & Sivarajan, *Fl. Pl. Thrissur For.* 146. 1990; Sivarajan & P. Mathew, *Fl. Nilambur* 223. 1997; Nayar & *al.*, *Flg. Pl. Kerala-Handb.* 294. 2006.

Lianae. Leaflets 5-7, ovate, elliptic-lanceolate, 8-18 x 2-6 cm, rounded at base, acuminate at apex, rugose, nerves prominent below, pubescent on midrib and nerves above, sparsely hairy below; petiole pubescent. Flowers pale yellow in terminal and axillary panicles. Calyx brown hairy. Fruit 12.5-13.5 x 2.8-3 x 0.4 cm, linear oblong. Seeds solitary, rarely 2-3, 3.8-4 x 2-2.3 x 0.2 cm, oblong reniform, compressed, deeply irregularly or plicate grooved; testa black.

Manthuruthu Kavu, SK 48724. *Fl. & Fr.*: Jan. – May. *Dist.*: Southern Western Ghats, endemic. Note: Addition to the Flora of Thiruvananthapuram.

Ormosia Jacks. In

Trans. Linn. Soc. London 10: 360. 1811, *nom. cons.*

Ormosia travancorica Bedd., *Fl. sylv. S. India* t. 45. 1870; Baker in Hook.f., *Fl. Brit. India* 2: 253. 1878; Gamble, *Fl. Madras* 390. 1918;

Sanjappa, Leg. India 223. 1992; Nayar & *al.*, Flg. Pl. Kerala-Handb. 297. 2006. *Malamanjadi*.

Large evergreen trees; bark grey, smooth, yellowish-brown inside. Leaves imparipinnate, to 37 cm long; leaflets 7-11 pairs, oblong or elliptic-oblong, 8-12 x 2.5-3.5cm, obtuse-rounded at base, caudate-acuminate at apex; lateral nerves 6-8 pairs, very slender. Flowers in axillary tomentose racemes. Calyx deeply lobed; lobes ovate-oblong, tawny-tomentose. Petals white, clawed; standard suborbicular. Stamens 10, free, filaments unequal; anthers uniform. Ovary brown tomentose, subsessile; style slender; stigma oblique. Pods woody, 5-6 x 3-4 cm, oblong, oblique, subacute, glabrous, reddish-brown. Seeds 1-2, arils scarlet, 2.5 cm long, oblong.

Cheenivila Kavu, Karingal, SK 47980. *Fl. & Fr.*: Jan.-May. *Dist.*: Western Ghats, Konkan southwards, endemic.

Note: Addition to Flora of Thiruvananthapuram.

Pongamia Vent.,

Jard. Malmaison: adt.28. 1803, *nom.cons.*

Pongamia pinnata (L.) Pierre, Fl. Forest. Cochinch. sub.t. 385. 1899; Thoth., Bull. Bot. Surv. Ind. 3: 418. 1962; Rudd. in Dassana.& Fosb., Rev. Handb. Fl. Ceylon &: 25. 1991; Sanjappa, Leg. India 230. 1991; Mohanan & Henry, Fl. Thiruvananthapuram 156. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 298. 2006. *Cytibus pinnatus* L. Sp. Pl. 741. 1753. *Pongamia glabra* Vent., Jard. Malm. 28. t. 28. 1803; Wight, Icon. pl. Ind. orient. t. 59. 1838; Bedd., Fl. sylv. S. India t. 177. 1872; Baker in Hook.f., Fl. Brit. India 2:240. 1876; Gamble, Fl. Madras 385. 1918. *Derris indica*

(Lam.) Bennet, J. Bombay Nat. Hist. Soc. 68: 303. 1971. *Galedupa indica* Lam., Encycl. 2: 594. 1788. *Pongu*.

Small to medium sized trees; bark grey, mottled with brown, dull yellow inside. Leaves alternate, imparipinnate; leaflets opposite, 3-9, oblong or elliptic-oblong, 4.5-7 x 2.5-3.5 cm, cuneate at base, acuminate at apex, entire at margins, glabrous, glossy above; lateral nerves 5-7 slender; petiolules 0.5-0.7 cm long. Flowers in axillary lax racemes. calyx campanulate, truncate at apex. Corolla pinkish-white, exerted, clawed; standard to 1.2 x 1 cm, orbicular; wings 1.2 x 0.4 cm, oblong; keels to 1 x 0.3 cm, obtuse, adherent to wing petals. Staminal sheath to 1 cm long. Stamens 10, monadelphous; vexillary stamens free; filaments to 3 mm long; anthers uniform. Ovary subsessile, to 5 mm ; ovules 2; style incurved, glabrous; stigma capitate. Pods 6x3 cm, obliquely oblong, compressed, woody, narrowed at both ends, indehiscent. Seed 1, reniform.

Nilami Nagar Kavu, SK 48786. *Fl. &Fr.*: Apr. – Dec. *Dist.*: Indo-Malesia to Australia and Polynesia.

Pseudarthria. Wight & Arn.,

Prodr. fl. Ind. orient. 209. 1834.

Pseudarthria viscida (L.) Wight & Arn., Prodr. fl. Ind. orient. 209. 1834; Wight, Icon. pl. Ind. orient. t. 286. 1838; Baker in Hook.f., Fl. Brit. India 2: 154. 1876; Gamble, Fl. Madras 334. 1918; Mohanan & Henry, Fl. Thiruvananthapuram 156. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 298. 2006. *Hedysarum viscidum* L., Sp. pl. 747. 1753. *Moovila*.

Sub shrubs; branchlets viscid-pubescent. Leaves 3-foliolate; leaflets stipellate, terminal to 9x7 cm, rhomboid; lateral in equilateral, obtuse-subtruncate at base, acuminate at apex, entire at margins. Flowers in pairs or clusters in lax terminal racemes; bracts lanceolate, to 2.5 mm long; bracteoles subulate. Calyx-tube campanulate, 1.5 mm long; lobes lanceolate. Corolla rose, exserted; petals clawed; standard to 4 mm long, obovate; wings to 5 mm, obliquely oblong, spurred; keels 5mm, obtuse. Staminal sheath to 4 mm long; stamens 9+1; filaments unequal, to 1.5 mm long; anthers uniform. Ovary 4 mm long, oblong, terete, tomentose; style to 2 mm long, incurved, glabrous. Pods 1.5 x 0.5 cm, oblong, flat, compressed, hooked-pubescent, margins undulate, non-septate, apex apiculate. Seeds 4, reniform, to 3 cm, glossy.

Nanniyode Kavu, SK 48738. *Fl. & Fr.*: Nov- Mar. *Dist.*: Peninsular India and Sri Lanka.

Pterocarpus Jacq.,

Sel. Stirp. Amer. Hist. 283. 1763, *nom. cons.*

Pterocarpus marsupium Roxb., Pl. Coromandel t. 116. 1799; Bedd., Fl. Sylv S. India t. 21. 1869; Baker in Hook.f., Fl. Brit. India 2:239. 1876; Gamble, Fl. Madras 385. 1918; Rajo, Pterocarpus 58. 1972; Rudd in Dassan. & Fosb., Rev. Handb. Fl. Ceylon 7:223.1991; Sanjappa, Leg. India 232. 1991; Mohanan & Henry, Fl. Thiruvananthapuram 156. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 298. 2006 *Venga*.

Large deciduous trees; bark brown or greyish brown, exudes a red sap when cut. Leaves imparipinnate; leaflets alternate, oblong or elliptic oblong, 7.5-12 x 4.5-6 cm, truncate at base, retuse or obtuse at apex, entire at margins, coriaceous, glabrous and glossy above, pubescent

beneath; lateral nerves many, parallel, reticulation prominent. Flower in axillary and terminal many flowered panicles, to 15 cm long; bracts and bracteoles small and deciduous. Calyx-tube 8 mm long; lobes unequal, upper two broader. Petals bright yellow; standard 1.5 x 1 cm, orbicular; wings 1 cm long; keels 1 x 0.6 cm, subconnate. Stamens 10, monadelphous; filaments to 7 mm long, subequal. Ovary 7-8 mm long, tomentose; ovules 2-4; style incurved, glabrous; stigma capitate. Pods 5-6 cm across, orbicular, stipitate; wings broad.

Nanniyode Kavvu, SK48763. *Fl. & Fr.*: Sept – Dec. *Dist.*: Peninsular India and Sri Lanka.

Spatholobus Hassk. in

Flora 25(2), Beibl. 52. 1842.

1. Pods glabrous.....*S. purpureus*
 1. Pods tomentose.....*S. parviflorus*

Spatholobus parviflorus (Roxb. ex DC.) O. Ktze., Rev. Gen. Pl. 1:205. 1891; Ridder-Numman & Wiriadinata, Reinwardtia 10:87. 1985; Rudd in Dassan & Fosb., Rev. Handb. Fl. Ceylon 7:268. 1991; Sanj., Leg. India 251. 1992; Nayar & al., Flg. Pl. Kerala-Handb. 304. 2006. *Butea parviflora* Roxb. ex DC., Prodr. 2: 415. 1825; Wight, Icon. pl. Ind. orient.t. 210. 1839; Mohanan & Henry, Fl. Thiruvananthapuram 136. 1994. *Spatholobus roxburghii* Benth. in Miq. Pl. Jung. 238. 1852; Baker in Hook.f., Fl. Brit. India 2:193. 1876; Gamble, Fl. Madras 358. 1918. *Plachi*.

Liane; branchlets appressed velvety-tomentose. Leaves 3-foliate; leaflets obovate or oblong, 10-25 x 8-19 cm, truncate or obtuse at base, obtuse-rotund or retuse at apex, entire at margins, pubescent beneath; lateral nerves 8-10 pairs; petiole to 18 cm long. Flowers pink in terminal panicles. Calyx tube to 3 mm long, velvety within, upper 2-lobes connate, the lower 3-lobes lanceolate, to 2 mm long. Petals : staminal orbicular, to 8 x 4 mm, clawed; wings obliquely oblong, to 8 x 2 mm, free, clawed; keels straight to 7 x 1.5 mm, clawed stamens 9+1, anthers uniform; filaments to 1.5-2 mm. Ovary sessile, to 3 mm long; ovules 2; style incurved; stigma capitate. Pods to 9 x 2 cm, falcately oblong, prominently veined.

Common . Nagaru Kavu, Ulloorkonam, SK48729; Indalayappan Kavu, SK 39309. *Fl. & Fr.*: Sept – Feb. *Dist.*: India and Sri Lanka.

Spatholobus purpureus Benth. ex Baker in Hook.f., *Fl. Brit. India* 2: 194. 1876; Gamble, *Fl. Madras* 359. 1918; Sanjappa, *Leg. India* 252. 1992; Nayar & *al.*, *Flg. Pl. Kerala-Handb.* 304. 2006. *Butea purpurea* (Benth. ex Baker) Blatt., *J. Indian Bot. Soc.* 8:137. 1929.

Medium sized lianas. Leaves 3-foliate; leaflets 8-13 x 3-5 cm, truncate at base, acuminate at apex, glabrous on both sides; lateral nerves 6-7 pairs; petiole to 5 cm long. Flowers fascicled in lax panicles, 0.6 cm long; peduncles and pedicels minutely tomentose. Calyx campanulate. Petals 5; standard petals orbicular clawed. Ovary sessile, tomentose. Pods falcately oblong, to 9x2 cm, prominently veined, glabrous.

Alakkattu Kavu, SK 47918. Onathuthodi Kavu. SK 47965. *Fl. & Fr.*: Feb – May. *Dist.*: South West India, endemic

Note : Addition to Flora of Thiruvananthapuram.

Tephrosia Pers.,

Syn. Pl. 2:328. 1807, *nom. cons.*

Tephrosia tinctoria Pres. Syns. Pl. 2:39. 1807; ; Wight, Icon. pl. Ind. orient. t. 388. 1840; Baker in Hook.f., Fl. Brit. India 2:111. 1876; Gamble, Fl. Madras 319. 1918; Rudd in Dassan. & Fosb., Rev. Handb. Fl. Ceylon 7:146. 1991; Sanjappa, Leg. India 259. 1992; Mohanan & Henry, Fl. Thiruvananthapuram 159. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 306. 2006.

Erect undershrubs; branchlets velvety or pubescent. Leaves imparipinnate; leaflets opposite; 7-9; terminal one twice as long as lateral, oblong or elliptic-oblong, 1.5-5.5 x 0.8-1.5 cm, obtuse at base and apex, entire at margins, thin-coriaceous, glabrescent above, pubescent below; stipules lanceolate. Flowers in axillary racemes, confined to the apex of peduncle. Calyx-tube 1.5 mm long; lobes lanceolate, pubescent. Petals orange-red; standard 1x0.8 cm, sericeous; wings 8x3 mm, obovate; keels 8x3.5 mm. Staminal sheath to 6 mm; stamens 10, the vexillary stamens free at base; filaments to 2 mm long. Ovary 6 mm long, velvety; style to 3 mm, pubescent. Pods 5-7 x 0.5-0.8 cm, sparsely velvety, linear-oblong. Seeds 10-11, to 3 mm, oblong, strophiolate.

Fl. & Fr.: Sept – Feb. *Dist.*: Peninsular India and Sri Lanka.

Teramnus P. Browne,

Civ. Nat. Hist. Jamaica 290. 1756.

Teramnus labialis (L.f.) Spreng., Syst. Veg. 3:235. 1826; Baker in Hook.f., Fl. Brit. India 2:184. 1876; Rao, Fl. Pl. Travancore 118. 1914; Gamble, Fl. Madras 352. 1918; Rudd in Dassan & Fosb., Rev. Handb. Fl.

Ceylon 7:296. 1991; Sanjappa, Leg. India 261. 1991; Mohanan & Henry, Fl. Thiruvananthapuram 160. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 306. 2006. *Glycine labialis* L.f., Suppl. Pl. 325. 1781; Wight, Icon. pl. Ind. orient. t. 168. 1839.

Slender climbers; branchlets appressed-tomentose. Leaves 3-foliolate, 5-7 cm long; leaflets stipellate, ovate or elliptic or obovate, to 6 x 2.5 cm, cuneate at base, obtuse-acute at apex, entire at margins, mucronate; petiole to 6 cm; petiolule to 1 mm; stipules to 3 mm long. Flowers in axillary racemes; bracts to 3 mm long. Calyx-tube campanulate, to 3 mm; lobes to 1 mm long; upper lobes connate to middle. Corolla pink; petals clawed; standard 6 x 4 mm, obovate; wings 4.5 mm long, oblong; keels to 2 mm, adherent to wings, apex obtuse. Staminal sheath to 2 mm long. Stamens monadelphous; anthers alternately fertile. Ovary stipitate, 2 mm long, tomentose; ovules 10 or more; style short, sub erect, 0.5 mm; stigma capitate. Pods 5 x 0.4 cm, linear, compressed, septate; horn stout, hooked. Seeds ca. 10, 4 x 1.5 mm, oblong.

Parambarathala Kavu, SK48726. *Fl. & Fr.*: Sept–Nov. *Dist.*: Indo – Malesia to Africa.

Uraria Desv. in

J. Bot. Agric. 1:122. 1813.

Uraria refescens (DC.) Schindler, Reperb. Spec. Nov. Regni Veg. 21:14. 1925; van Meeuwen, Rainwardtia 5:453. 1961; Sanjappa, Leg. India 268. 1991; Mohanan & Henry, Fl. Thiruvananthapuram 160. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 307. 2006. *Desmodium rufescens* DC., Ann.

Sci. Nat. (Paris) 4:101. 1825. *Dododia hamosa* Roxb., Fl. Ind. 3:367. 1832. *Uraria hamosa* (Roxb.) Sw. ex Wight & Arn., Prodr. fl. Ind. orient. 222. 1834; Wight, Icon. pl. Ind. orient. t. 284. 1840; Baker in Hook.f., Fl. Brit. India 2:156. 1876; Gamble, Fl. Madras 336 .1918.

Undershrubs; branches tomentose. Leaves 3-foliolate; leaflets obovate, 6-8 x 3-4 cm, obtuse at base and apex, mucronate, entire at margins, glabrescent above and pubescent along the nerves beneath; lateral nerves 8-10 pairs, parallel; petiole to 2.5 cm long; stipules to 1.5 cm long, ovate, long cuspidate. Flowers in many flowered terminal panicles; peduncles glandular hairy; bracts to 7 mm long, ovate-lanceolate. Calyx-tube campanulate, 2-lipped; upper 2 lobed, lower 3-lobed; lobes setaceous, glandular. Corolla bluish-pink; standard petals to 4 mm long, orbicular, clawed; wings oblong, falcate; keels incurved, adherent to wings. Staminal sheath 3.5 mm long. Stamens 9+1; anthers uniform. Ovary stipitate; style filiform, to 5 mm long, inflexed, pubescent; stigma discoid. Pods 3 cm long, bristly, folded up and included in the calyx; segments inflated.

Panayarathala Kavu, SK 48761. *Fl. & Fr.*: Nov – Jan. *Dist.*: Indo-Malesia and China.

Zornia J.F. Gmel.,

Syst. Nat. 2:1076, 1096. 1792.

Zornia gibbosa Span., Linnaea 15:192. 184; Mohlenbrock, Webbia 16:112. 1961; Rudd in Dassan & Fosb., Rev. Handb. Fl. Ceylon 7:175. 1991; Sanjappa, Leg. India 280. 1992; Nayar & *al.*, Flg. Pl. Kerala-Handb. 309. 2006. *Z. diphylla auct. non* (L.) Pres., Baker in Hook.f., Fl. Brit.

India 2:147. 1876; Gamble, Fl. Madras 325. 1918; Mohanan & Henry, Fl. Thiruvananthapuram 162. 1994

Diffuse herbs; branches glabrescent. Leaves 2-foliolate; leaflets ovate or elliptic, 0.8-2 x 0.4-0.8 cm, acute at apex, obtuse at base, entire at margins, glabrous; petiole to 1.5 cm long; stipules peltate, to 0.7 cm long, acuminate at both ends. Calyx-tube to 2 mm; upper lobes ovate, to 4 mm, lower one to 6 mm long, lanceolate, hyaline. Corolla yellow; standard petal 6 x 6 mm, orbicular, cordate above the claw; wings to 6 x 3 mm, equal to keels; keels incurved. Stamens monadelphous, tube split above, alternate anthers long and basifixed. Ovary 3.5 mm long, densely pubescent; style incurved, to 4 mm long. Pods to 8 mm 5-6 joints, scabrid and prickly.

Kunnuvula Devi temple Kavu, SK 48730. *Fl. & Fr.*: Sept.–Jan. *Dist.*: Indo–Malesia to Australia and China.

II. Sub family **Caesalpinoideae**

- | | |
|---|--------------------|
| 1. Leaves 1-foliolate..... | <i>Bauhinia</i> |
| 1. Leaves pinnate..... | 2 |
| 2. Leaves uni-pinnate..... | 3 |
| 2. Leaves bi-pinnate..... | 5 |
| 3. Petals 0..... | <i>Saraca</i> |
| 3. Petals 3-5..... | 4 |
| 4. Fertile stamens 3..... | <i>Tamarindus</i> |
| 4. Fertile stamens 5-10..... | <i>Cassia</i> |
| 5. Branchlets and leaf rachis often prickly, fruit dehiscent..... | <i>Caesalpinia</i> |
| 5. Branchlets and leaf rachis not prickly, fruit indehiscent..... | <i>Delonix</i> |

Bauhinia L.,

Sp. Pl. 374. 1753.

1. Flowers white.....*B. acuminata*
1. Flowers purple.....*B. malabarica*

Bauhinia acuminata L., Sp. pl. 375. 1753; Baker in Hook.f., Fl. Brit. India 2: 276. 1878; Rao, Fl. Pl. Travancore 144. 1914; Gamble, Fl. Madras 407. 1919; Mohanan & Henry, Fl. Thiruvananthapuram 163. 1994. *Velutha Mandaram*.

Erect shrubs, bark brown, lenticellate. Leaves simple, alternate, bilobed, 7-15 x 4-9 cm, cordate at base, acuminate at apex, glabrous above, sparsely pubescent along the nerves beneath. Flowers in axillary racemes. Calyx sparsely pubescent or glabrous. Corolla white; petals 3.5-4 cm long, oblong-elliptic, acute-elliptic at apex. Stamens 10. Ovary stipitate; style filiform. Pods glabrous.

Padayarakam Kavu, SK 48733. *Fl*: Round the year. *Dist*: India, China, Malay islands and Malaysia.

Bauhinia malabarica Roxb., Fl. Ind. 2: 321. 1832; Baker in Hook.f., Fl. Brit. India 2:277. 1878; Gamble, Fl. Madras 407. 1919; Sanjappa, Leg. India 3. 1992; Mohanan & Henry, Fl. Thiruvananthapuram 163. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 313. 2006. *Piliostigma malabaricum* (Roxb.) Benth. in Miq. , Pl. Jungh. 261. 1852; Thoth., Bull. Bot. Bengal 10: 131. 1965. *Arambuli*.

Medium sized trees; bark blackish-brown, inner bark red. Leaves simple, alternate, 6.5-8 x 8-9 cm, cordate at base, acute at apex, chartaceous, glaucous beneath; lateral nerves 9-11; petiole to 3 cm long. Flowers in terminal and axillary racemes. Calyx brown-tomentose without; tube 3-6 mm long; lobes 5 to 8 mm long. Corolla purple, 8-12 mm long; petals obovate-spathulate. Stamens 10, alternately long and short. Ovary stipitate; style filiform, stigma peltate. Pods oblong, 20-25 x 1.5-2 cm, straight, glabrous. Seeds 20-30, ovoid, 4-5 mm in diam., dark brown, polished.

Nanniyode Kavu, SK 48776. *Fl. & Fr.*: Sept.- Mar. *Dist.*: Indo-Burma.

Caesalpinia L.,

Sp. Pl. 380. 1753.

Caesalpinia pulcherrima (L.) Swartz., Obs. 166. 1791; Baker in Hook.f., Fl. Brit. India 2: 255.1878; Gamble, Fl. Madras 394. 1919 ; Mohanan & Henry, Fl. Thiruvananthapuram 171. 1994. *Poinciana pulcherrima* L., Sp. Pl. 380. 1753; Roxb. Fl. Ind. 2: 355. 1832; Wight & Arn. Prodr. fl. Ind. orient. 282. 1834. *Rajamalli*.

Erect glabrous shrubs or small trees; branches often unarmed or with a few weak prickles. Leaves bi-pinnate, 10-25 cm long; pinnae 6-8 pairs; leaflets 8-13 pairs, oblong or obovate-oblong, 1-2.2 x 0.4-1.3 cm, oblique at base, mucronate or emarginate at apex, glabrous. Flowers in terminal corymbiform racemes; bracts ovate, caducous. Calyx 10-12 mm long; tube short; lobes obovate-oblong, obtuse at apex. Corolla yellow or red; petals 10-12 mm across, orbicular, clawed; limb with rather fringed margins. Stamens 10, long exserted; filaments filiform, glabrous. Ovary

shortly stipitate. Pods 5-7.5 x 1.5-2 cm, linear-oblong, flat, thin. Seeds 8-10, ovate-oblong, smooth.

Moopuram Kavu, SK 48787; Pulivila Sree Dharma sasth Kavu, SK 48782. *Fl. & Fr*: Round the year. *Dist*: Native or tropical America, cultivated in tropics.

Cassia L.,

Sp. Pl. 376. 1753, *nom.cons.*

- 1. Leaflets 15 or more pairs.....*C. mimosoides*
- 1. Leaflets less than 10 pairs.....2
- 2. Leaflets and pods glabrous.....3
- 2. Leaflets and pods hairy.....*C. hirsuta*
- 3. Pods 40-60 cm long.....*C. fistula*
- 3. Pods less than 15 cm long.....4
- 4. Leaflets acuminate at apex; seeds orbicular.....*C. occidentalis*
- 4. Leaflets obtuse at apex; seeds slightly oblong.....*C. tora*

Cassia fistula L. Sp. Pl. 377. 1753; Baker in Hook.f., Fl. Brit. India 2: 261. 1878; Gamble, Fl. Madras 400. 1919; de Wit, Webbia 11: 207. 1955; Rudd. in Dassan. & Fosb., Rev. Handb. Fl. Ceylon 7: 62.1991; Sanjappa, Leg. India 15. 1992; Mohanan & Henry, Fl. Thiruvananthapuram 165. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 315. 2006. *C. rhombifolia* Roxb. Fl. Ind. 2: 334. 1832; Wight, Icon. pl. Ind. orient. t. 269. 1840. *Kanikonna*.

Medium sized trees; bark yellowish-brown, reddish inside. Leaves 15-30 cm long; leaflets 4-6 pairs, oblong-broadly ovate, 5-12 x 2.5-7.5cm,

obtuse or rounded at base, acuminate at apex, coriaceous, bright green and glabrous above, paler and pubescent especially on the midrib beneath; petiolules 6-10 mm long; stipules small, caducous. Flowers bright yellow in lax drooping racemes, 15-40 cm long; pedicels 3-6cm long, slender. Calyx to 1 cm long, divided to the base; lobes ovate, reflexed. Corolla 2.5-3 cm across; petals subequal, obovate, shortly clawed. Stamens 10, all fertile, unequal. Ovary puberulent; ovules numerous; stigma punctiform. Pods cylindric, 30-60 cm long, woody, straight or slightly curved, black. Seeds many, orbicular, dark brown, polished.

Nanniyode Kavu, SK 48790. *Fl. & Fr.* Mar. – May. *Dist.* India, Sri Lanka and Burma; widely planted as an ornamental plant.

Cassia hirsuta L., *Sp. Pl.* 378. 1753; Baker in Hook.f., *Fl. Brit. India* 2:263. 1878; Gamble, *Fl. Madras* 401. 1919; de Wit, *Webbia* 11: 250. 1955; Rudd. in Dassan. & Fosb., *Rev. Handb. Fl. Ceylon* 7: 76.1991; Sanjappa, *Leg. India* 15. 1992; Mohanan & Henry, *Fl. Thiruvananthapuram* 165. 1994; Nayar & *al.*, *Flg. Pl. Kerala-Handb.* 316. 2006.

Shrubs; densely hirsute all over. Leaves paripinnate, to 25 cm long; leaflets 3-5 pairs, ovate or elliptic, 3-8.5 x 1.5-3 cm, rounded at base, acute at apex, unequal, hirsute on either surface; petiole to 5 cm long, glandular towards the base. Flowers in axillary and terminal few flowered racemes; bracts linear, subulate. Sepals oblong, acute at apex, hirsute. Petals obovate, obtuse, subequal. Stamens 10, unequal, 6-7 fertile. Ovary densely hirsute; ovules many; style glabrous. Pods linear, subterete, hirsute. Seeds many, transverse.

Siva temple Kavu, Ambalathara, SK 49739. *Fl. & Fr.*: Sept.–Dec. *Dist.*: Native of tropical America, naturalised in tropics.

Cassia mimosoides L., Sp. Pl. 379. 1753; Baker in Hook.f., Fl. Brit. India 2: 266. 1878; Gamble, Fl. Madras 403. 1919; de Wit, Webbia 11: 283. 1955; Vijendra Singh, J. Bombay Nat. Hist. Soc. 75: 439. 1979; Rudd. in Dassan. & Fosb., Rev. Handb. Fl. Ceylon 7: 89.1991; Sanjappa, Leg. India 17. 1992; Mohanan & Henry, Fl. Thiruvananthapuram 165. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 317. 2006.

Diffuse herbs; branchlets densely hispid. Leaves 1.5-4.5 cm; leaflets 30-50 pairs, oblong-elliptic, 2.5-6 x 0.5-1 mm, obtuse at base, glabrescent; petiole to 1.5 mm, with a sessile gland; stipules auriculate, ovate-lanceolate, to 5 mm long. Flowers axillary, solitary or 2-3 in a cluster; bracts and bracteoles scarious. Sepals lanceolate, puberulent, 2.5-5 mm, pilose, acute at apex. Petals 5, yellow, ovate, 3.5 mm, clawed. Stamens 10, alternately long and short, 1-3 mm long. Ovary to 5 mm long, sericeous; ovules numerous; style to 3 mm. Pods short-stipitate, flat, to 3.5x0.5 cm, sericeous, compressed. Seeds 15, ellipsoid, to 3 mm.

Nanniyode Kavu, SK 48742. *Fl. & Fr.*: Jul.-Dec. *Dist.*: Paleotropics.

Cassia occidentalis L., Sp. Pl. 377. 1753; Wight & Arn. Prodr. fl. Ind. orient. 290. 1834; Baker in Hook.f., Fl. Brit. India 2:262. 1878; Gamble, Fl. Madras 401. 1919; de Wit, Webbia 11: 256. 1955; Rudd. in Dassan. & Fosb., Rev. Handb. Fl. Ceylon 7: 75.1991; Sanjappa, Leg. India 19. 1992; Mohanan & Henry, Fl. Thiruvananthapuram 166. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 317. 2006. *Ponnaraveeran.*

Subshrubs; branchlets glabrescent. Leaves to 18 cm long; leaflets 4-5 pairs, opposite, ovate-lanceolate, 3.5-8 x 1.5-3.5 cm, rounded at base, obtuse or acute at apex, entire at margins, chartaceous, glabrous, glandular-pilose; petiole to 4 cm, with a sessile, globose gland at its base; petiolule to 2 mm long; stipules 4-6.5 mm, caducous. Flowers in axillary and terminal racemes. Calyx lobes 5, ovate, 4-7 mm, obtuse at apex, mucronate. Petals 5, yellow, 1.5x1cm, oblong-obovate, clawed. Stamens 10, upper 3 staminodes. Ovary subsessile, to 1.5 cm long, densely appressed-pubescent; ovules numerous; style to 8 mm long. Pods short stipitate, slightly falcate, to 12 x 1 cm, compressed, obtuse at apices, horned. Seeds 20-25, orbicular, 6.5 x 5 mm.

Poovathoor Kavu, SK 48802. *Fl. & Fr.*: Jul.-Dec. *Dist.*: Pantropical.

Cassia tora L., Sp. pl. 376. 1753; Wight & Arn. Prodr. fl. Ind. orient. 290. 1834; Baker in Hook.f., Fl. Brit. India 2:263. 1878, p.p.; Gamble, Fl. Madras 401. 1919; de Wit, Webbia 11: 276. 1955; Brenan, Kew Bull. 13: 248. 1958; Rudd. in Dassan. & Fosb., Rev. Handb. Fl. Ceylon 7: 83.1991; Sanjappa, Leg. India 22. 1992; Mohanan & Henry, Fl. Thiruvananthapuram 166. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 318. 2006. *Senna tora* Roxb. Fl. Ind. 2: 340. 1832. *Thakara*.

Annual subshrubs; branchlets glabrous. Leaves to 14 cm; leaflets 3-pairs, obovate, 2-5.5 x 1.5-3.5 cm, oblique at base, cuneate-rounded at apex, entire at margins; petiole to 2 cm long, glandular; rachis with 2 glands between the lower pair of leaflets; stipules linear, falcate, 0.8-1 cm. Flowers yellow in few flowered axillary racemes. Calyx lobes 5, ovate, 4-6 mm, obtuse at apex, pubescent. Petals 5, golden yellow, 9x4.5 mm, obovate, subequal, clawed. Stamens 10; upper 3 staminodes. Ovary

subsessile, to 1.5 cm, curved, pubescent; style to 4 mm long. Pods short stipitate, flat, compressed, to 9 cm long, glabrous. Seeds 20-30, oblong.

Manthuruthu Kavu, SK 48805. *Fl. & Fr.*: Aug.–Dec. *Dist.*: Indo-Malesia to Polynesia.

Saraca L.,

Syst. Nat., ed.12, 2: 466, 469. 1767.

Saraca asoca (Roxb.) de Wilde, *Blumea* 15: 393. 1968; Sanjappa, *Leg. India* 35. 1992; Mohanan & Henry, *Fl. Thiruvananthapuram* 170. 1994; Nayar & *al.*, *Flg. Pl. Kerala-Handb.* 322. 2006. *Jonesia asoca* Roxb. in *Asiat. Res.* 4: 365. 1799; Wight, *Icon. pl. Ind. orient.* t. 206. 1839. *Saraca indica auct. non* L. 1769, *sensu* Bedd., *Fl. sylv. S. India* t. 57. 1870; Baker in *Hook.f., Fl. Brit. India* 2:271. 1878; Gamble, *Fl. Madras* 409. 1919. *Asokam*.

Medium sized trees. Leaves paripinnate, to 25 cm long; leaflets 4-6 pairs, oblong-lanceolate, 12-18 x 3-5 cm, oblique at base, acuminate at apex, entire at margins; petiole to 5 cm long; stipules scarious, ovate, to 2 cm long. Flowers in dense sessile corymbs, axillary to leaves or leaf scars; bracts ovate, small; bracteoles oblong-spathulate, ciliolate, 4 mm long. Calyx orange-red; lobes ovate-oblong, to 8 mm long. Petals 0. Stamens 7 or 8, much exserted. Ovary pubescent; style incurved. Pods to 15 x 2.5 cm. Seeds ellipsoid-oblong, to 3.5 cm long.

Planted in almost all sacred groves. PeinKavu, Mevarkara, SK 48889. *Fl. & Fr.*: Mar.- Jul. *Dist.*: India and Burma.

Delonix Raf.,

Fl. Tellur. 2: 92. 1837.

Delonix regia (Bojer ex Hook.) Raf. Fl. Tell. 2: 92. 1837; Gamble, Fl. Madras 396. 1919; Blatter *et. al* Beautif. Ind. Trees (ed.2). 52. 1954; Mohanan & Henry, Fl. Thiruvananthapuram 171. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 323. 2006. *Poinciana regia* Bojer ex Hook. in Curtis, Bot. Mag. t., 2884. 1829; Baker in Hook.f., Fl. Brit. India 2:260. 1878.

Trees; branchlets warty. Leaves bi-pinate; leaflets numerous, elliptic-oblong, 0.6-0.8 x 0.2-0.4 cm, unequal at base, obtuse-rounded at apex, entire at margin, glabrous; stipules small. Flowers crimson-red in terminal corymbs, 10-13 cm across. Calyx tube short; lobes 5, green. Petals 5, orbicular, clawed, 5-8 cm long, margins not fimbriate, uppermost dissimilar. Stamens 10, free, declinate, exserted; filaments villous at base; anthers uniform. Ovary sessile; style filiform; stigma truncate. Pods 20-25 cm long, flattened, woody, dehiscent. Seeds numerous, oblong.

Sree Aryankuzhi Bhagavathy Kavu, SK 48746. *Fl. & Fr.*: Apr. – Jun.
Dist: Native of Malagasy Islands, now planted throughout the tropics.

Tamarindus L.

Sp. Pl. 34. 1753.

Tamarindus indica L., Sp. Pl. 34. 1753; Wight & Arn. Prodr. Ind. orient 285. 1834; Bedd., Fl. sylv. S. India t. 184. 1872; Baker in Hook.f., Fl. Brit. India 2:273. 1878; Gamble, Fl. Madras 409. 1919; Mohanan & Henry, Fl.

Thiruvananthapuram 170. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 322. 2006. *Valanpuli*.

Large trees; branchlets warty, tomentose. Leaves pinnate, to 8 cm long; leaflets 15-17 pairs, narrowly oblong, 1.5 x 0.7 cm, obtuse at base, rounded at apex, entire at margin; petiole to 8 mm; petiolule reduced; stipules caducous. Flowers in terminal racemes; peduncle to 1 cm long; bracts and bracteoles ovate, oblong, coloured. Sepals 4, connate at base; tube narrowly turbinate, to 6 mm long; lobes subequal, oblong, to 1 cm long. Petals 3, yellow; outer one rolled up, pink dotted; laterals subequal, clawed, oblong-lanceolate. Stamens 3, monadelphous; filaments to 6 mm, base puberulent; anthers oblong; staminodes 2. Ovary stipitate, to 8mm; style to 5 mm long, tomentose. Pods 10x1.5 cm, oblong, sub-compressed, fruit wall crustaceous, mesocarp fleshy, endocarp septate, leathery, indehiscent. Seeds obovoid-orbicular, compressed, brown-black, polished.

KeezhettiKavu, SK 42386. *Fl. & Fr.*: Apr. – Aug. *Dist.*: Native of Tropical Africa, cultivated in India and other tropical countries.

III. Sub family **Mimosoideae**

- 1. Plants armed with prickles.....2
- 1. Plants unarmed.....3
- 2. Pods bristly.....*Mimosa*
- 2. Pods not bristly.....*Acacia*
- 3. Leaves with 1-pair of pinnae.....4
- 3. Leaves with over 2 pair of pinnae.....5
- 4. Pods circinate.....*Archidendron*
- 4. Pods obliquely oblong.....*Xylia*

5. Leaves rachis with hooked tendrils.....*Entada*
 5. Leaf rachis without hooked tendrils.....6
 6. Flowers in spiciform racemes.....*Adenanthera*
 6. Flowers in globose heads.....*Albizia*

Acacia Mill.,

Gard. Dict. Abr.,ed. 4: (25) 1754.

Acacia caesia (L.) Willd. Sp. Pl. 4:1090. 1806; Gamble, Fl. Madras 1:428. 1919; Kastern. in Dassan & Fosb. Rev. Handb. Fl. Ceylon 1:481. 1980; Mohanan & Henry, Fl. Thiruvananthapuram 171. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 324. 2006. *Mimosa caesia* L., Sp. pl. 522. 1753 p.p. *Acacia intsia* var. *caesia* Baker in Hook.f. Fl. Brit. India 2:297. 1878. *A. intsia* auct non Willd.: Wight & Arn. Prodr. Ind. orient. 278. 1834; Baker in Hook.f., Fl. Brit. India 297. 1878.

Stragglers; branchlets dark brown, grooved, armed with small hooked prickles. Leaves alternate, 2-pinnate, 10-15 cm long; pinnae to 6 pairs, 3-8 cm long; leaflets 10-15 pairs, oblong, 0.8-1.5 x 0.4 cm, truncate at base, obtuse and apiculate at apex, entire at margins; nerves prominent; petiole to 6 cm long, prickles on the underside with a convex elongate gland at base. Flowers in terminal panicles; head globose, to 1 cm across; peduncles to 5 cm long; rachis prickled; bracts lanceolate, apex cuspidate. Calyx campanulate, 5-lobed, to 2.5 mm long, pubescent. Corolla creamy white; petals 5, ovate, to 5 mm long. Stamens numerous, to 5 mm long, basally connate. Ovary stipitate, to 2 mm long, oblong, pubescent; style to 4 mm long. Pod stipitate, 7-15 x 1.5-2 cm, thin, flat, obtuse at both ends, horned. Seeds 10-15.

Kamukarakonam Kavu , SK 39382. *Fl. & Fr.*: Oct – Feb. *Dist.*: Indo–Malesia.

Adenanthera L.,

Sp. Pl. 384. 1753.

Adenanthera pavonina L., Sp. Pl. 384. 1753; Roxb. Fl. Ind. 2: 370. 1832; Wight & Arn., Prodr. fl. Ind. 271. 1834; Wight, I11. t. 84. 1840; Bedd., Fl. sylv. S. India t. 46. 1870; Hook.f., Fl. Brit. India 2:287. 1878; Gamble, Fl. Madras 418. 1919; Kostern. in Dassan. & Fosb. Rev. Handb. Fl. Ceylon 1:470. 1980; Mohanan & Henry, Fl. Thiruvananthapuram 172. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 326. 2006. *Manjadi*.

Small trees; branchlets glabrous. Leaves alternate, 2-pinnate, to 30 cm long; pinnae 3-5 pairs, opposite; leaflets 5-8 pairs, oblong-elliptic, 2-3.5 x 1-1.8 cm, truncate at base, obtuse at apex, entire at margins; petiole to 10 cm long; stipules caducous. Flowers in axillary spiciform racemes, 15-25 cm long; clustered; bracts linear; pedicels short, to 3 mm long. Calyx tube campanulate, 5-toothed, pubescent. Corolla yellow-creamy white; petals 5, to 4 mm long, lanceolate. Stamens 10, free; filaments filiform, to 3.5 mm: anthers gland-crested. Ovary sessile; ovules numerous; style to 2 mm long. Pods 12-25 cm long, spirally coiled after dehiscence, septate, dehiscent into 2 valves. Seeds many, convex on both sides, bright red.

Kamukarakonam Kavu, SK 39317; Nagaru Kavu, Nedumangadu, SK 39399. *Fl. & Fr.*: Jan–May. *Dist.*: Indo – Malesia and China

Albizia Durrazz. in
Mag. Tosc. 3(4): 13. 1772.

Albizia chinensis (Osbeck) Merr. in Amer. J. Bot. 3:575. 1916; Kosterm. in Dassan & Fosb., Rev. Handb. Fl. Ceylon 1:500. 1980; Mohanan & Henry, Fl. Thiruvananthapuram 173. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 326. 2006. *Mimosa chinensis* Osbeck, Dasg. Ostint resc 233. 1757. *M. marginata* Lam., Encycl. 1: 12. 1783. *M. stipulata* Roxb., Fl. Ind. 2: 549. 1832. *Acacia stipulata* DC. Prodr. 2: 469. 1825; Wight & Arn. Prodr. fl. Ind. orient. 274. 1834. *Albizia stipulata* (Roxb.) Boivin in Encycl. xixme siecle 2:33. 1834; Bedd., Fl. sylv. S. India t. 55. 1870; Baker in Hook. f., F. Brit. India 2:300. 1878. *Acacia marginata* (Lam.) Merr. in Philipp. J. Sci. 5:23. 1910; Gamble, Fl. Madras 1:433. 1919. *Potta Vaha*.

Large unarmed evergreen trees; branchlets densely yellowish-pubescent. Leaves 2-pinnate, 4.5-10 cm long; leaflets 25-30 pairs, narrow-elliptic, 5-7 x 1.5-2.5 mm, obliquely truncate at base, acute at apex, ciliate along margin; nerves obscure; petiole to 3 cm long, yellowish-pubescent, with a gland about the middle, rachis pubescent, glands opposite to all pinnae; stipules ovate-cordate, 2 x 2 cm. Flowers in small paniced heads; peduncles to 8 cm long. Calyx funnel shaped, to 2.5 mm long, pubescent, teeth acute. Corolla yellowish-white, densely pubescent without. Stamens 4 times longer than corolla, connate into a tube. Ovary stalked, glabrous. Pods very shortly stalked, flat, compressed 12-15 x 3-4.5 cm, straight or wavy along the margins, round or tapering at apex. Seeds 5-8, ovate, much compressed, dark brown.

Manthuruthu Kavu, SK 39397; Keezhetti Kavu, SK 49766. *Fl. & Fr.*:
Mar – Jul. *Dist.*: Pantropical.

Archidendron F. Muell.,

Fragm. 5: 59. 1865.

Archidendron bigeminum (L.) Nielsen, *Opera Bot.* 76: 73. 1985. *Mimosa bigemina* L., *Sp. Pl.* 1: 517. 1753. *Archidendron monadelphum* (Roxb) Nielsen, *Adansonia* 19: 21. 1979; Sanjappa, *Leg. India* 61.1992; Nayar & *al.*, *Flg. Pl. Kerala-Handb.* 327. 2006. *Mimosa monadelpha* Roxb., *Fl. Ind.* 2: 544. 1832. *Pithecellobium bigeminum* (L.) Mart. ex Benth., 1844; Baker in Hook.f., *Fl. Brit. India* 2:303. 1878; Gamble, *Fl. Madras* 435. 1919. *P. monadelphum* (Roxb.) Kosterm., *Reinwardtia* 3: 11. 1954; Mohanan & Henry, *Fl. Thiruvananthapuram* 176. 1994.

Small trees; bark reddish-brown, lenticellate; young shoots pubescent. Leaves bi-pinnate; pinnae 1-pair; leaflets 3-4 pairs, elliptic or oblong-elliptic, to 12x6 cm, caudate-acuminate at apex, cuneate or oblique at base, entire at margins, glabrous; petiole to 12 cm long, with glands near the base and also between pairs of leaflets. Flower heads in terminal and axillary panicles; peduncle 4-6 cm long; bracts lanceolate; bracteoles linear. Calyx 1.5 mm long; lobes 5, minute. Petals 5, to 1 cm long, basally united, densely pubescent. Stamens monadelphous; staminal filaments 0.6 cm long. Ovary stipitate, to 6 mm long, glabrous; style to 2.5 cm long. Pods linear-oblong, to 10x1 cm, twisted, woody, mesocarp thick. Seeds 3-6, smooth, funicle filiform.

Manthuruthu Kavu, SK 39391; Pillaveedu Kavu, SK 47926. *Fl. & Fr.*:
Jan. – Jun. *Dist.*: South West India and Eastern Himalayas.

Entada Adans.,

Fam. Pl. 2: 318. 554. 1763, *nom. cons.*

Entada rheedei Spreng., Syst. Veg. 2: 325. 1825; Panigrahi, Taxon 34: 714. 1985; Sanjappa, Leg. India 66. 1991; Nayar & *al.*, Flg. Pl. Kerala-Handb. 328. 2006. *E. pursaetha* DC., Prodr. 2: 425. 1825; Kosterm. in Dassan. & Fosb. Rev. Handb. Fl. Ceylon 1: 464. 1980; Brenan, Kew Bull. 20: 363. 1967. *E. monostachya* DC., Prodr. 2: 425. 1825; Mohanan & Henry, Fl. Thiruvananthapuram 174. 1994. *E. scandens auct. non* Benth. 1841; Baker in Hook.f., Fl. Brit. India 2:286. 1878; Gamble, Fl. Madras 417. 1919. *Paranda*.

Unarmed liana; branchlets terete, glabrous. Leaves alternate, 2-pinnate, to 12 cm long; pinnae 2-pairs; leaflets 4 pairs, ovate-obovate or oblong, 3-5.5 x 1.5-2.5 cm, subacute or cuneate at base, obtuse or retuse at apex, entire at margins, chartaceous, glabrous; petiole to 3 cm long; rachis grooved, tendrilled, forked and hooked; stipules small setaceous. Flowers polygamous in axillary peduncled paniced or simple racemes, also from the nodes of old leafless branches. Bisexual flowers: Calyx tube 5-toothed, campanulate. Petals 5, creamy-white, oblanceolate. Stamens 10, free; filaments apically dilated, subequal; anthers gland crested, oblong. Ovary stipitate; style to 4 mm long. Male flowers: Calyx and Corolla as in bisexual flowers. Stamens to 0.7 cm long; anthers gland crested. Pods elongate, flat, to 60 x 8.5 cm. Seeds ovoid-elliptic, to 4.5 cm across, reddish-brown, smooth, hard, shining.

Indalayappan Kavu, SK 39323; Manthuruthu Kavu, SK 48744. *Fl. & Fr.*: Feb.-May. *Dist.*: Indo-Malesia.

Mimosa L.,
Sp. Pl. 516. 1753.

Mimosa pudica L., Sp. pl. 518. 1753; Baker in Hook.f., Fl. Brit. India 2:291. 1878; Gamble, Fl. Madras 421. 1919; Brenan, Kew Bull. 10: 184. 1955; Kosterm. in Dassan. & Fosb. Rev. Handb. Fl. Ceylon 1:463. 1980; Sanjappa, Leg. India 69. 1991; Mohanan & Henry, Fl. Thiruvananthapuram 175. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 329. 2006. *Thottavadi*.

Diffuse herbs, with sharp prickles. Leaves bi-pinnate, to 7 cm long; leaflets 14-22 pairs, oblong, to 5x1.5 mm, obtuse at apex, ciliate at margins. Flowers in axillary globose heads, 1.5 cm across. calyx 4-lobed, to 1 mm long. Petals 4, to 1 mm long. Stamens 4; filaments to 6 mm long. Ovary subsessile, globose, to 1.5 mm long; style to 6 mm. Pods linear-oblong, 2-3 jointed, 1.5-0.5 cm. Seeds 2-5, compressed, ovoid, to 2 mm.

Parayaru Kavu, SK 39310; Mechamkode Kavu, SK 48785. *Fl. & Fr.*: Round the year. *Dist*: Native of Tropical America, introduced , now run wild.

Xylia Benth.in
J. Bot. (Hooker) 4: 417. 1842.

Xylia xylocarpa (Roxb.) Taub., Bot. Centralbl. 47: 397. 1891; Gamble, Fl. Madras 417. 1919; Sanjappa, Leg. India 73. 1991; Mohanan & Henry, Fl. Thiruvananthapuram 176. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 330. 2006 *Mimosa xylocarpa* Roxb., Pl. Coromandel t. 100. 1798. *Xylia*

dolabriformis auct. non Benth. 1842, *sensu* Bedd., Fl. sylv. S. India t. 186. 1872; Baker in Hook.f., Fl. Brit. India 2:286. 1878.p.p. *Erul*.

Medium sized deciduous trees; bark thick, reddish-brown, mottled with white. Leaves alternate, bi-pinnate, rachis 4-6 cm long, with an orbicular gland at the tip; pinnae 1-pair, opposite; leaflets 12-20, opposite, oblong, 7-24 x 2.5-5 cm, obtuse at base, acuminate at apex, entire at margin; petiolule 3-4 mm long; lateral nerves 8-10 pairs. Flowers bisexual, yellowish-white in axillary globose heads. Calyx minutely 5-lobed, to 4 mm long. Petals linear, to 1.5 cm long. Stamens 10; anthers glandular at apex. Ovary sessile; ovules many. Pods to 18 x 6 cm, flat, broadly falcate, woody, dark brown. Seeds 6-10, compressed, brown, oblong.

Nagaru Kavu, Nedumangadu, SK 48801. *Fl. & Fr.*: Feb.- Dec. *Dist.*: India.

ROSACEAE Juss.,

Gen. Pl. 334. 1789, *nom.cons.*

Prunus L.,

Sp. Pl. 473. 1753.

Prunus ceylanica (Wight) Miq., Fl. Ind. 1: 336. 1855; Mohanan & Henry, Fl. Thiruvananthapuram 177. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 503. 2006. *Polydontia ceylanica* Wight, Ill. Ind. Bot. 203. 1840 & Icon. pl. Ind. orient. t. 256. 1840. *Pygeum zeylanicum* Gaertn., Fruct. 218.t.46. 1788; Bedd., Fl. sylv. S. India t. 59. 1870. *P. acuminatum* Colebr., Trans. Linn. Soc. London 12: 360. t. 18. 1818; Hook.f., Fl. Brit. India 2:318. 1878; Gamble, Fl. Madras 439. 1919, *non Prunus acuminata* (Wall.)

Dietr., 1803. *Pygeum wightianum* Bl. ex Muell in Walp. Ann. 4: 642. 1857; Hook.f., Fl. Brit. India 2:319. 1878; Gamble, Fl. Madras 439. 1919. *Pygeum gardneri* Hook.f., Fl. Brit. India 2:321. 1878; Gamble, Fl. Madras 439. 1919. *Naikambakam*.

Medium sized trees; bark dark brown, thick, rough. Leaves alternate, simple, ovate or oblong-lanceolate, 10-15 x 4.5-7 cm, acute or rounded at base, acuminate at apex, entire at margins, midrib with 1-2 glands at the base; lateral nerves 6-8 pairs; petiole to 1.5 cm long. Flowers bisexual in axillary racemes,; bracts forming a cone in the buds, deciduous. Calyx campanulate, lobes ovate, 1.5 mm long, pubescent. Petals 5, white, oblong, to 2 mm long, villous. Stamens ca. 20, filaments incurved. Ovary 2-ovuled; style terminal, subulate; stigma capitate. Drupes 2-2.5 x 3.5-3.8 cm, depressed globose, obscurely 2-lobed. Seeds 1-2.

Manthuruthu Kavu, SK 39365. *Fl. & Fr.*: Sept. – Apr. *Dist.*: Indo-Malesia.

RHIZOPHORACEAE R.Br. in

Flinders, Voy. Terra. Austr. 2: 549. 1814, *nom. cons.*

- 1. Calyx 4-lobed.....*Blepharistemma*
- 1. Calyx 7-8 lobed.....*Carallia*

Blepharistemma Wall. ex Benth. in

J. Proc. Linn. Soc. Bot. 3: 73, 78. 1858.

Blepharistemma serratum (Dennst.) Suresh in Nicolson *et al.*, Interp. Hort. Malab. 214. 1988; Nayar & *al.*, Flg. Pl. Kerala-Handb. 500. 2006.

Rodschiedia serrata Dennst., Schluss. 16, 24, 31. 1818. *Gynotroches membranifolia* Miq., Anal. Bot. Ind. 3: 7. 1852. *Blepharistemma corymbosum* Benth., J. Proc. L. Soc. Bot. 3: 65, 78. 1858; Henslow in Hook.f., Fl. Brit. India 2: 441. 1878; Gamble, Fl. Madras 460. 1919. *B. membranifolium* (Miq.) Ding Hou in Steenis, Fl. Males. I, 5: 489. 1958.

Large shrubs; bark smooth, yellowish-brown; branchlets lenticellate. Leaves oblong or elliptic-oblong, 10-16 x 3-7 cm, cuneate at base, acute or obtusely acuminate at apex, crenate at margins, glabrous; lateral nerves 7-8 pairs, slender; petiole to 1 cm long. Flowers white in axillary cymes; polygamo-dioecious. Calyx 4-lobed, glabrous; lobes ovate, acute at apex. Petals 4, clawed, lacerate at apex. Disc 8-lobed. Stamens 8; filaments ciliate at base. Ovary 3-celled; cells 2-ovuled; style short; stigma minutely 3-lobed. Capsule subglobose, 3-valved, acute, yellowish, to 6 mm across. Seeds covered with yellowish arils.

Nakrakodu Kavu SK 47922. *Fl. & Fr.*: Feb.- Oct. *Dist.*: Kerala and Karnataka, endemic.

Note: Addition to Flora of Thiruvananthapuram.

Carallia Roxb.,

Pl. Coromandel 3: 8. 1811, *nom. cons.*

Carallia brachiata (Lour.) Merr. in Philipp. J. Sci. 15: 249. 1919; Macnae & Fosb. in Dassan. & Fosb., Rev. Handb. Fl. Ceylon 2: 487. 1981; Mohanan & Henry, Fl. Thiruvananthapuram 180. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 501. 2006. *Diatoma brachiata* Lour., Fl. Cochinch. 296. 1790. *Carallia integerrima* DC., Prodr. 3: 33. 1828;

Bedd., Fl. sylv. S. India t. 193. 1872; Henslow in Hook.f., Fl. Brit. India 2:439. 1878; Gamble, Fl. Madras 459. 1919. *Vallabham*.

Medium sized evergreen trees; bark dark grey, corky, dull inside; branches horizontal. Leaves opposite, simple, obovate, 7.5-12.5 x 5-8 cm, acute or attenuate at base, obtuse or shortly acute at apex, glabrous and glossy; lateral nerves 10-25 pairs, parallel. Flowers bisexual, in axillary trichotomously, pedunculate cymes. Calyx 7-8 lobed. Petals clawed, lacerate at apex. Disc 12-16 lobed. Stamens 16, filaments filiform. Ovary 3-5 celled; ovules 2 in each cell; style subulate; stigma 3-5 lobed. Berry 1-seeded.

Sreedharma Sastha Kavu, SK 47864; Thiruchittoor Kavu, SK 39320. *Fl. & Fr.*: Oct.- Apr. *Dist.*: Indo-Malesia to Australia.

COMBRETACEAE R.Br.,

Prodr. 351. 1810, *nom. cons.*

- 1. Trees.....*Terminalia*
- 1. Scandent or straggling shrubs.....2
- 2. Petals 0; calyx accrescent.....*Calycopteris*
- 2. Petals 5; calyx not accrescent.....*Quisqualis*

Calycopteris Lam.,

Tabl. Encycl. t. 357. 1793

Calycopteris floribunda (Roxb.) Poir. in Lam. Encycl. (suppl.) 2: 41. 1811; C.B. Clarke in Hook.f. Fl. Brit. India 2: 449. 1878; Gamble, Fl. Madras 469. 1919; Mohanan & Henry, Fl. Thiruvananthapuram 181.

1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 184. 2006. *Getonia floribunda* Roxb., Pl. Coromandel t. 87. 1798. *Pullanni*.

Climbing shrubs; bark pale brown; stem variously twisted; branchlets tomentose. Leaves opposite, elliptic, 8-10 x 3-5 cm, rounded at base, acuminate at apex, glabrescent above and tomentose along the nerves beneath, minutely glandular-pitted below; lateral nerves 8-pairs; petiole to 1 cm long. Flowers greenish in dense axillary and terminal panicles. Calyx tube produced above the ovary, 5 mm long, lobes campanulate, lobes oblong, acute. Petals 0. Stamens 10, 2-seriate; filaments subulate; anthers didymous. Ovary 1-celled; ovules 3, pendulous; style subulate. Fruit oblong, 5-ribbed, 8 mm long, tomentose, surrounded by accrescent calyx. Seed 1.

Sree Bhagavathy Kavay, Kariprathala, SK48783. *Fl. & Fr.*: Dec. – Mar.
Dist.: Indo-Malesia.

Quisqualis L.

Sp. Pl. ed.2: 556. 1762.

Quisqualis indica L., Sp. Pl. ed.2, 556. 1762; Roxb. Fl. Ind. 2: 427. 1832; Wight & Arn., Prodr. fl. Ind. orient. 318. 1834; Wight, Ill. Ind. Bot. t. 92. 1840; C.B. Clarke in Hook.f. Fl. Brit. India 2: 459. 1878; Gamble, Fl. Madras 469. 1919; Mohanan & Henry, Fl. Thiruvananthapuram 182. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 185. 2006. *Osanapoovu*.

Large straggling shrubs; old stem spinous. Leaves simple, opposite or subopposite, elliptic-oblong, 5-19 x 2.5-8.5cm, rounded or subcordate at base, acuminate at apex, glabrous or pubescent; petiole to 2.5 cm long.

Flowers in terminal corymbose spikes to 10 cm long; bracts elliptic or lanceolate, 6-10 x 2-3 mm long. Calyx tube 4.5-11 mm long, green; lobes triangular, 1-2 mm long. Petals white, fading to deep red, 10-20 x 3-6 mm, oblong. Stamens 10, biseriate. Ovary inferior, 1-celled; style subulate; stigma simple. Fruit not seen.

Onathuthodi Kavu SK47975. *Fl*: Round the year. *Dist*: Old world tropics, cultivated pantropically.

Terminalia L.,

Syst. Nat. ed.12, 2: 665, 674, 1767, *nom. cons.*

- 1. Fruit winged.....2
- 1. Fruits not winged.....3
- 2. Fruit with 3-unequal wings.....*T. paniculata*
- 2. Fruit with 4-5 uniform wings.....*T. crenulata*
- 3. Fruits obovoid or globose.....*T. bellirica*
- 3.Fruits biconvex on both sides.....*T. catappa*

Terminalia bellirica (Gaertn.) Roxb., Pl. Coromandel 2: 54, t. 198. 1805 'bellerica'; Wight, Icon. pl. Ind. orient. t. 91. 1838 & Ill. Ind. Bot. t. 91. 1840; Bedd., Fl. sylv. S. India t. 19. 1869; C.B. Clarke in Hook.f., Fl. Brit. India 2:445. 1878; Gamble, Fl. Madras 463. 1919; Mohanan & Henry, Fl. Thiruvananthapuram 183. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 186. 2006. *Myrobalanus bellirica* Gaertn., Fruct. sem. Pl. 2:90.t.97. 1791. *Thanni*.

Large deciduous, buttressed trees; bark blackish grey, vertically fissured; branchlets sympodial, warty. Leaves densely clustered at the end of branchlets, alternate, ovate-obovate or broadly elliptic, 10-18 x 5-10

cm, acute at base, oblique, obtuse or acute at apex, entire or subcrenulate at margins, coriaceous, glabrous; 6-8 nerved; petiole to 8 cm long. Flowers appearing along with new leaves, yellow in axillary spikes. Calyx tube to 1 mm long, pubescent; lobes 5, to 2 mm long, triangular. Petals 0. Stamens 10; filaments exerted, 2.5-3 mm long. Ovary 1-celled, 1.5 mm long; style to 4 mm long. Drupes subglobose, to 2.8 x 2 cm, softy tomentose, horned. Seed 1, ellipsoid, yellow.

Ayiravilli temple Kavu, Ilamba, SK48747; Indalayappan Kavu, SK 39311. *Fl. & Fr.*: Dec. – Apr. *Dist.*: Indo – Malasia

Terminalia catappa L., *Syst. nat.* (ed.12) 2:674. 1767; Roxb. *Fl. Ind.* 2:430. 1832; Wight & Arn., *Prodr. fl. Ind. orient.* 313. 1834; Wight, *Icon. pl. Ind. orient.* t. 172. 1839; Bedd., *Fl. sylv. S. India* t. 18. 1869; C.B. Clarke in *Hook.f., Fl. Brit. India* 2:445. 1878; Gamble, *Fl. Madras* 463. 1919; Mohanan & Henry, *Fl. Thiruvananthapuram* 183. 1994; Nayar & *al.*, *Flg. Pl. Kerala-Handb.* 187. 2006. *Thalli*.

Trees; branchlets with persistent leaf-scars. Leaves densely clustered at the end of branchlets, alternate, obovate, 18-30 x 10-18 cm, subcordate-cuneate at base, obtuse-rounded at apex, entire at margins, thin-coriaceous, glabrous above, tomentose beneath; lateral nerves 12-15; petiole to 1 cm long; glands 2, at the base of leaf blade, sessile. Flowers in axillary spikes, to 10 cm long. Calyx tube 2 mm long, tomentose; lobes 5, to 1mm long, triangular. Petals 0. Stamens 10; filaments to 3 mm long, Ovary 5 mm long; style to 4 mm long; style to 4 mm long. Drupes ellipsoid, 5-5.5 x 3-3.5 cm, more or less compressed, 2-ridged when dry, glabrous.

Karingal Thottikkara Nagaru Kavu, SK 48791. *Fl & Fr* : Feb – Apr. *Dist.*: Tropical Asia, Malesia, Polynesia and N. Australia.

Terminalia crenulata Heyne ex Roth, Nov. Sp. Pl. 380. 1821; Gamble, Fl. Madras 465. 1919; Bahadur & Gaur, Indian J. For 3: 368. 1980; Mohanan & Henry, Fl. Thiruvananthapuram 183. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 186. 2006. *Pentaptera crenulata* Roxb., Fl. Ind. 2: 438. 1832. *Terminalia tomentosa* (DC.) Wt. & Arn. var. *crenulata* (Heyne ex Roth) C.B. Clarke in Hook.f., Fl. Brit. India 2:448. 1878. *Thembavu*.

Large deciduous trees; bark greyish-brown, vertically fissured; branchlets glabrescent. Leaves alternate or sub-opposite, elliptic or elliptic-oblong, 18-25 x 5.5-7.5 cm, rounded and unequal at base, acute or shortly acuminate at apex, subentire and crenulate at margins, chartaceous; lateral nerves to 15 pairs, parallel; petiole to 2 cm long; gland 2, at the base of leaf blade, stipitate. Flowers in axillary and terminal spikes, to 15 cm long. Calyx tube to 2 mm long, base pubescent, apex glabrous, lobes 5, ovate, to 1.5 mm long. Stamens 10; filaments 4-5 mm long. Ovary 2.5 mm long; 1-celled; style to 4 mm long. Drupes, 4 x 3.5 cm, ovoid, glabrous, 5-winged; wings 1.5 cm across, equal, thin, rounded at apex.

Nanniyode Kavu, SK 49748. *Fl. & Fr.*: Apr. – May. *Dist.*: South India, endemic.

Terminalia paniculata Roth, Nov. Sp. Pl. 383. 1821; Bedd., Fl. sylv. S. India t. 20. 1869; C.B. Clarke in Hook.f., Fl. Brit. India 2:448. 1878; Gamble, Fl. Madras 465. 1919; Mohanan & Henry, Fl. Thiruvananthapuram 184. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 187.

2006. *Pentapetera paniculata* (Roth) Roxb. Fl. Ind. 2: 242. 1832.
Maruthu.

Large deciduous trees; bark brown with shallow vertical grooves, reddish inside. Leaves opposite or subopposite, oblong or ovate-oblong, 12-15 x 5-7 cm, rounded or cordate at base, acute at apex, coriaceous, glabrous; lateral nerves 10-15pairs; petiole to 2 cm long; glands 2, sessile at the base of leaf lamina. Flowers in axillary and terminal paniced spikes. Calyx tube 1 mm long, pubescent; lobes 5, triangular, 1.5 mm long, villous within. Stamens10; filaments 3-4 mm long. Ovary 1-celled, 1 mm long; ovules 2-3, pendulous; style to 4 mm long. Drupes 1 x 1.5 cm, rusty tomentose; wings 3, unequal, median one long.

Indalayappan Kavu, SK 39340; Thengazhiyathu Kavu Thottakkadu, SK 48770. . *Fl. & Fr.*: Aug – Feb. *Dist.*: Peninsula India.

MYRTACEAE Juss.,

Gen. Pl. 322. 1789, *nom.cons.*

- 1. Ovary many celled; seeds numerous.....*Psidium*
- 1. Ovary 2-celled; seeds 1-4.....2
- 2. Calyx tube not produced above the ovary.....*Eugenia*
- 2. Calyx tube produced above the ovary.....*Syzygium*

Eugenia L.

Sp. Pl. 470. 1753.

Eugenia terpnophylla Thw., Enum. Pl. Zelyl. 114.1859; Duthie in Hook.f. Fl. Brit. India 2: 503. 1879; Bedd., Icon. pl. Ind. orient. t. 283. 1874; Trimen, Handb. Fl. Ceylon 2: 181. 1894; Alston in Trimen, handb. Fl. Ceylon 6: 119. 1931; Ashton in Dassan. & Fosb., Rev. Handb. Fl.

Ceylon 2:417. 1981; Santhosh & Yeragi, *Rheedea* 13: 39. 2003; Nayar & *al.*, *Flg. Pl. Kerala-Handb.* 447. 2006.

Medium sized trees; branchlets pale brown, terete; young shoots fulvous pubescent. Leaves elliptic or elliptic-lanceolate, 5-12 x 1.5-4.5 cm, cuneate at base, obtusely caudate-acuminate at apex, hardly revolute at margin, thinly chartaceous, drying pale brown; lateral nerves 6-9 pairs, slender and raised beneath, \pm obscure above intramarginal nerves obscurely 2-tiered, prominently looped, tertiary nerves obscurely laxly reticulate, midrib very slender but prominent beneath; petiole to 10 mm long, slender, drying black. Flowers white, on short bracteate peduncles in dense axillary clusters; bracts small, linear or linear-oblong; pedicels 5 mm long, slender. Calyx to 3 mm long, campanulate; lobes 4, deltoid, acute at apex. Petals 4, to 4x2 mm, narrowly elliptic-oblong, obtuse at apex. Stamens many, inserted on the calyx limb; filaments 3-6.5 mm long, glabrous; anthers elliptic. Ovary 2-celled; ovules many in each cell, in axile placentation. Style slender, glabrous. Berry globose, crowned with calyx segments, to 9 mm across.

Trees, bark flake off; branches appressed–tomentose. Leaves deccussate, oblong or ovate-lanceolate, to 12 x 6 cm, obtuse-cuneate at base, acute at apex, entire at margins, coriaceous, sparsely tomentose above, densely so beneath, pellucid-punctate; lateral nerves 13-18 pairs, prominent beneath; petiole to 1 cm long. Flowers axillary, solitary or in pairs; bracteoles to 8 mm long; pedicels to 1.5 cm long. Calyx –tube subglobose, to 1x0.4 cm, tomentose; lobes 4-5, ovate-lanceolate. Petals 4-5 sometimes more, broadly ovate or linear-lanceolate. Disc broad, thick. Stamens numerous, exserted; filaments white. Ovary globose, to 1 cm long; ovules numerous. berry globose, to 6 x 3.8 cm. Seeds numerous.

Nanniyode Kavu, SK 49749. *Fl. & Fr.*: Round the year. *Dist.*: Native of Tropical America, widely cultivated in the tropics.

Syzygium Gaertn.,

Fruct. Sem. Pl. 1:166. 1788, *nom. cons.*

1.Flowers calyptrate.....	2
1.Flowers not calyptrate.....	3
2.Calyx tube elongate, funnel shaped.....	<i>S. gardeneri</i>
2.Calyx tube not elongated, turbinate.....	<i>S.cuminii</i>
3.Leaves ovate; fruits white.....	<i>S.zeylanicum</i>
3.leaves narrowly elliptic-lanceolate; fruits not white.....	<i>S. lanceolatum</i>

Syzygium cuminii (L.) Skeels, U.S.D.A. Bur. Pl. Induser. Bull. 248:2. 1912; Ashton in Dassan. & Fosb., Rev. Handb. Fl. Ceylon 2:443. 1981; Mohanan & Henry, Fl. Thiruvananthapuram 18. 1994; Nayar & *al.*, Flg.

Pl. Kerala-Handb. 449. 2006. *Myrtus cuminii* L., Sp. Pl. 471. 1753. *Eugenia jambolana* Lam., Encycl. 3:198. 1789; Wight, Icon. pl. Ind. orient.t. 535. 1842; Duthie Hook f. Fl. Brit. India 2:499. 1879. *Syzygium jambolanum* (Lam.) DC., Prodr. 3:259. 1828; Gamble, Fl. Madras 481. 1919. *Njaval*.

Medium sized trees; bark greyish-brown, reddish inside. Leaves decussate, elliptic or ovate-lanceolate, 5-12 x 2.5-6 cm, cuneate-obtuse at base, acuminate at apex, entire at margins, coriaceous, glabrous; petiole to 2.5 cm long. Flowers in axillary and terminal paniced cymes, to 10cm long; pedicels to 4 cm long. Calyx tube turbinate, to 2 mm long, glabrous; lobes 4, obscure. Petals 4, creamy-white, orbicular, concave, fugacious. Stamens numerous; filaments subulate, 2.5 mm long, Ovary 2-celled, to 2 mm long; style subulate, filiform, to 5 mm long. Berry oblong, purple, to 2 x 1.5 cm. Seed solitary.

Mechamkode Kavu, SK 48756. *Fl. & Fr.*: Dec. – Apr. *Dist.*: Indo – Malesia, China and Australia.

Syzygium gardneri Thw, Enum. Pl. 117. 1859; Gamble, Fl. Madras 479. 1919; Ashton in Dassan. & Fosb., Rev. Handb. Fl. Ceylon 2:447. 1981; Mohanan & Henry, Fl. Thiruvananthapuram 188. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 449. 2006. *Eugenia gardneri* (Thw.) Bedd., Man. Bot. 108. 1874; Duthie in Hook.f., Fl. Brit. India 2:489. 1878. *E. cymosa* Lam. var. *rostrata* Duthie in Hook.f., Fl. Brit. India 2:482. 1878.

Large trees; bark yellowish-grey or yellowish-white, smooth, brown inside. Leaves ovate or elliptic-lanceolate, 6-10 x 2-4 cm, obtuse or acute at base, acuminate at apex, glabrous and glossy, membranous; lateral nerves numerous, slender; petiole to 1 cm long. Flowers white in

terminal cymes. Calyx campanulate; lobes truncate, obscure. Petals calyptrate. Fruits spherical, truncate at apex, not crowned with calyx-segment.

Nagaru Kavu Kazhakootam SK 45810. *Fl. & Fr.*: Mar. – Jun. *Dist.*: South India and Sri Lanka.

Syzygium lanceolatum (Lam.) Wight & Arn., *Prodr. fl. Ind. orient.* 330. 1834; Ashton in Dassan. & Fosb., *Rev. Handb. Fl. Ceylon* 2:433. 1981; Nayar & *al.*, *Flg. Pl. Kerala-Handb.* 450. 2006. *Eugenia lanceolata* Lam., *Encycl.* 3:200. 1789; Wight, *Icon. pl. Ind. orient.t.* 530. 1842. *Syzygium wightianum* Wall. ex Wight & Arn., *Prodr. fl. Ind. orient.* 330. 1834; Gamble, *Fl. Madras* 478. 1919. *Eugenia wightiana* (Wall.ex Wight & Arn.) Wight, *Icon. pl. Ind. orient.t.* 529. 1842; Duthie in Hook.f., *Fl. Brit. India* 2:485. 1878.

Medium sized tree; bark greyish-brown, smooth. Leaves narrowly elliptic-lanceolate, 8-12 x 2-3.5 cm, cuneate at base, acute or acuminate at apex, chartaceous, drying grey-green; nerves many, parallel; petiole 5-8 mm long, rather short. Flowers in short terminal or axillary cymes. Calyx tube to 12 x 3 mm, funnel shaped; segments short. Petals 3 mm long, suborbicular. Stamens many, to 6 mm long. Fruit obturbinate, with prominent apical ring of persistent calyx segments.

Virunthiyottu Kavu, SK 48797. *Fl. & Fr.*: Mar – Jun. *Dist.*: South India Sri Lanka.

Syzygium zeylanicum (L.) DC., *Prodr.* 3:260. 1828; Duthie in Hook.f., *Fl. Brit. India* 2:485. 1879; Gamble, *Fl. Madras* 479. 1919; Ashton in

Dassan. & Fosb., Rev. Handb. Fl. Ceylon 2:431. 1981; Mohanan & Henry, Fl. Thiruvananthapuram 192. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 453. 2006.. *Myrtus zeylanica* L., Sp. pl. 675. 1753. *Eugenia zeylanica* (L.) Wight, Ill. Ind. Bot. 15. 1850. *Poochappazham*.

Small trees; bark grey-brown, twigs slender. Leaves lanceolate or ovate-lanceolate, 2.5-6 x 0.8-3 cm, broadly or narrowly cuneate at base, acuminate at apex, thinly coriaceous; lateral nerves 12 pairs, very slender, obscure. Flowers shortly pedicellate, densely clustered in 4 cm long slender terminal racemes. Calyx tube to 5 x 3 mm, funnel shaped, glaucous, with 4 short obtuse or subacute ovate segments. Petals concave, small, fugacious. Stamens to 7 mm long, many, dense. Fruit to 8 mm in diam., broadly ellipsoid or subglobose, milky white on ripening, with 2 mm diam.

Vadakkodu Sri Dharmasastha Kavu, SK 47932; Sree Dharma Sastha Kavu, Thachottu, SK 47984. Valiya Kavu, Chittayikkode, SK 48794. *Fl. & Fr.*: Apr.–Aug. *Dist.*: Peninsular India, Sri Lanka and W. Malesia.

BARRINGTONIACEAE F. Rudolphi, Syst.

Orb. Veg. 56. 1830, *nom. cons.*

Careya Roxb.,

Pl. Coromandel 3:13. 1811, *nom. cons.*

Careya arborea Roxb., Pl. Coromandel 3:14, t. 218. 1811; Bedd., Fl. sylv. S. India t. 205. 1872; C.B. Clarke in Hook.f., Fl. Brit. India 2:511. 1879; Gamble, Fl. Madras 488. 1919; Mohanan & Henry, Fl.

Thiruvananthapuram 193. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 378. 2006. *Pezhu*.

Medium sized deciduous trees; bark thick, rough, brownish, reddish inside. Leaves sub-sessile, obovate, 10-30 x6-15 cm, attenuate at base and decurrent on the petiole, obtuse at apex, crenate-denticulate at margins, coriaceous, glabrous; lateral nerves 10-12 pairs; petiole to 1 cm long. Flowers sessile in short terminal spikes, 5 cm across. calyx campanulate, 2-2.5 cm long; lobes 4, suborbicular, 5 mm long, obtuse. Petals dull white, 3-4 cm long, elliptic-oblong, obtuse or subacute at apex. Stamens many, slightly connate at base. Ovary inferior, 4-celled; stigma capitate. Berry globose, 4-5 cm across, green.

Cherukulathu Kavu, SK 39366. *Fl. & Fr.*: Feb.- Jul. *Dist.*: Tropical Asia.

MELASTOMACEAE Juss.,

Gen. Pl. 328. 1789, *nom.cons.*

- 1. Leaves penninerved; anthers longitudinally dehiscent.....*Memecylon*
- 1. Leaves palmately 3-7- nerved; anthers dehiscent by apical pores.....2
- 2. Flowers 3-merous.....*Sonerila*
- 2. Flowers 4-5-merous.....3
- 3. Stamens unequal.....*Melastoma*
- 3. Stamens equal.....4
- 4. Ovary apically with a collar around the style.....*Clidemia*
- 4. Ovary apically with hairs or bristles.....*Osbeckia*

Clidemia D. Don in

Mem. Wern. Nat. Hist. Soc. 4: 284, 306. 1823.

Clidemia hirta (L.) D. Don, Mem. Wern. Nat. Hist. Soc. 4: 309. 1823; Mohanan & Henry, Fl. Thiruvananthapuram 194. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 410. 2006. *Melastoma hirta* L., Sp. pl. 390. 1753.

Branched undershrubs; branchlets laxly hirsute with spreading hairs. Leaves elliptic or elliptic-ovate, 4-11 x 1.5-5.5 cm, rounded – cordate at base, shortly acuminate at apex, densely pubescent with appressed to patent hairs on both surfaces, basally 5-nerved with many distinct lateral veins; petiole 0.5-3 cm long, hirsute. Flowers white in branched small thyrsus. Hypanthium 2.5-3 mm wide, laxly hirsute with spreading hairs; lobes subulate. Petals 6-9 mm long, obovate-oblong. Anthers 3.8-4.5 mm long, narrowly linear-oblong. Fruits globose, bluish black, juicy.

Chittalloor Devi Temple Kavu, SK 47961; Mechamkode Kavu, 39327. *Fl. & Fr.*: June- Aug. *Dist.*: Native of South America, naturalized in old world.

Melastoma L.,

Sp. Pl. 389. 1753.

Melastoma malabathricum L., Sp. Pl. 390. 1753; Wight, Ill. Ind. Bot. t. 95. 1840; C.B. Clarke in Hook.f., Fl. Brit. India 2: 523. 1879; Gamble, Fl. Madras 495. 1919; Bremer in Dassan. & Fosb., Rev. Fl. Ceylon 6: 159. 1987; Mohanan & Henry, Fl. Thiruvananthapuram 194. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 410. 2006. *Kalathi*.

Shrubs; branchlets covered with adpressed fimbriate brownish scales. Leaves simple, opposite, elliptic, 8-13 x 3-5 cm, acute and 5-nerved from the base, acuminate at apex, adpressed hairy on both sides with fimbriate scales on the petiole. Flowers in few flowered bracteate cymes; hypanthium adnate to the base of ovary. Calyx lobes alternating with inter sepal emergences. Petals 5, obovate, ciliate along the margins. Stamens dimorphic, 5 larger with connective prolonged basally forming a curved appendages, 5 shorter with connective forming two small lobes at the insertion of filaments. Ovary tomentose, 5-celled; ovules numerous; style filiform. Seeds numerous, curved, minutely punctate.

Manthuruthu Kavu, SK 39305. *Fl. & Fr.*: Round the year. *Dist.*: India, Sri Lanka and South East Asia.

Memecylon L.,

Sp. Pl. 349. 1753.

- 1. Leaves acute or obtuse at base.....*M.umbellatum*
- 1. Leaves cordate or rounded at base.....2
- 2. Flowers fascicled on axillary and lateral tubercles.....*M.depressum*
- 2. Flowers on short peduncled umbels.....*M.wightianum*

Memecylon wightianum Triana in Trans. Linn. Soc. London 28: 158. 1871; Ansari & Nair in J. Econ. Tax. Bot. 11(1): 205. 1987; Mohanan & Henry, Fl. Thiruvananthapuram 195. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 413. 2006. *Memecylon deccanense* C.B. Clarke in Hook.f., Fl. Brit. India 2:560. 1879; Gamble, Fl. Madras 505. 1919; Mohanan *et al.* in Bull. Bot. Surv. India 22: 106. 1980.

Shrubs; branchlets sub-quadrangular. Leaves narrowly elliptic-lanceolate, 5-12 x 1.5-2.7 cm, rounded at base, acuminate to shortly caudate at apex, slightly revolute at margins; lateral nerves faint, to 15 pairs. Inflorescence condensed, umbel shaped, to 14 mm in diam. Pedicels to 2 mm long, slightly longer than calyx. Buds obtuse to rounded, with exposed petals. Calyx to 2.5 mm wide, often papillose without, shallowly furrowed with faint radiating wings inside, shallowly 4-toothed; lobes triangular. Anthers to 1.25 mm long; connective with a gland. Fruits globose, to 8 mm in diameter, red turning black when ripe.

Venmaranelloor Kavu, SK 47817. *Fl. & Fr.*: Jan.- May. *Dist.*: Southern Western Ghats, endemic.

Note: Addition to the Flora of Thiruvananthapuram.

Memecylon depressum Benth. ex Triana, Trans. L. Soc. London 25: 158. 865-1866; Gamble, Fl. Madras 505. 1919; Nayar & *al.*, Flg. Pl. Kerala-Handb. 411. 2006. *M. amplexicaule* Roxb. var. *malabarica* C.B. Clarke in Hook.f., Fl. Brit. India 2:559. 1879, p.p.

Shrubs; branchlets subterete. Leaves oblong-lanceolate or elliptic-lanceolate, 8-12 x 3-4.5 cm, rounded or subcordate at base, acute or acuminate at apex, glabrous; lateral nerves 12-15 pairs, faint, slender; Petiole to 2-3 mm long. Flowers fascicled on tubercles; pedicels slender, 2.5 mm long. Calyx campanulate; lobes obscure, pink, 1 mm at mouth. Petals 4, blue. Stamens 8; anthers opening by slits. Ovary 1-celled, ovules a few; style subulate. Berry globose, crowned by calyx limb.

Pulichal Bhagavathi Kavu, SK 48750; Pulickal Kavu, SK 48755. *Fl. & Fr.*: Dec.-Feb. *Dist.*: Southern Western Ghats, endemic.

Note: Addition to the Flora of Thiruvananthapuram.

Memecylon sylvaticum Thw., Enum. Pl. Zeyl. 110. 1825; Bremer, Opera Bot. 50: 15. 1979; Bremer in Dassan. & Fosb., Rev Handb. Fl. Ceylon 6: 218. 1987; Santhosh & al., Journ. Eco.. Tax. Bot. 28: 513. 2004; Nayar & al., Flg. Pl. Kerala-Handb. 413. 2006. *M. laevigatum* Bl. var. *sylvaticum* (Thw.) Clarke in Hook.f., Fl. Brit. India 2: 561. 1879.

Shrubs; branchlets subterete. Leaves opposite, 7-9 x 2.5-4 cm, elliptic or elliptic-ovate, acute or shortly acuminate at base, shortly acuminate and obtuse at the very apex, dark green above, pale beneath. Flowers in axillary or lateral umbellate cymes, blue; peduncle to 4 mm long; pedicels 0 or shorter than the calyx; flower buds rounded or obtuse with exposed petals. Calyx 3-4.5 mm wide, often pillose, deeply furrowed with radiating wings inside. Anthers 1.6-2 mm long, connective with a gland.

Indalayappan Kavu, SK 48797. *Fl & Fr.*: Mar. – Apr. *Dist*: South India and Sri Lanka.

Memecylon umbellatum Burm.f., Fl. Ind. 87. 1768; Gamble, Fl. Madras 504. 1919; Bremer, Opera Bot. 50: 9. t. 3. 1979 & in Dassan. & Fosb., Rev. Handb. Fl. Ceylon 6: 210. 1987; Nayar & al., Flg. Pl. Kerala-Handb. 413. 2006.

Large shrubs; branchlets grey. Leaves opposite, elliptic, 4-8 x 3-3.5 cm, subacute at base, acuminate at apex, entire at margin, coriaceous; petiole to 1.5 cm long. Flowers in axillary or lateral pedunculate umbels, to 3 cm long; bracteoles to 1 mm long; pedicels to 4 mm long. Calyx tube campanulate, to 1.5 mm long; lobes 4, suborbicular. Petals 4, orbicular,

blue, to 3 mm. Stamens 8; filaments to 5 mm long. Ovary to 1.5 mm long, 1-celled; style to 6 mm long. Berry globose, to 6.5 x 5 mm.

Indalayappan Kavu, SK 39322. *Fl. & Fr.*: Mar.- Apr. *Dist.*: South India and Sri Lanka.

Osbeckia L.,

Sp. Pl. 345. 1753.

1.Calyx tube with stalked stellate hairs only.....*O. brachystemon*

1.Calyx tube with both simple and stalked hairs.....2

2.Petals to 10 x 5 mm.....*O. virgata*

2.Petals more than 15 x 8 mm.....*O. aspera*

Osbeckia aspera (L.) Bl., Bijdr. 6:220. 1831; C.B. Clarke in Hook.f., Fl. Brit. India 2:519. 1879, *p.p.*; Gamble, Fl. Madras 488. 1919; Bremer in Dassan. & Fosb., Rev. Fl. Ceylon 6: 166. 1987; Mohanan & Henry, Fl. Thiruvananthapuram 198. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 414. 2006 var. *aspera* ; Hansen, Ginkgoana 4: 82. 1977. *Melastoma asperum* L., Sp. Pl. 389. 1753. *Osbeckia kleinii* Wight & Arn., Prodr. fl. Ind. orient. 323. 1834. *O. courtallensis* Gamble, Kew Bull. 1918: 242. 1918 & Fl. Madras 492. 1919. *O. kewensis* Fischer, Kew Bull. 1938: 34. 1938.

Shrubs; stem sparsely adpressed hairy. Leaves opposite, elliptic, 2.5-4 x 1.5-2.5 cm, rounded or acute at base, acute at apex, densely hairy, 5-ribbed at base; petiole to 3 mm long. Flowers in fairly dense terminal panicles; hypanthium covered with simple and sessile tufts of hairs, to 5 mm long. Sepals 5, oblong, ciliate, apex with tufts of bristles, intersepalary emergences linear, 2 mm long. Petals 5, obovate, 2 cm long, purple.

Stamens 10, equal. Ovary 5-locular, bristly at apex. capsule to 1 x 0.8 cm .

Nagayekshi Kavu, Ayilam, SK 47899. *Fl. & Fr:* Aug.-Apr. *Dist:* South India and Sri Lanka.

Osbeckia virgata D.Don ex Wight & Arn., Prodr. fl. Ind. orient. 323. 1834; Wight, Icon. pl. Ind. orient. t. 376. 1840; Hansen, Ginkgoana 4: 109. 1977; Mohanan & Henry, Fl. Thiruvananthapuram 199. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 416. 2006. *O. cupularis* D.Don ex Wight & Arn.*l.c.* p.p. *O.octandra auct. non* (L.) DC. ; C.B. Clarke in Hook.f., Fl. Brit. India 2:521. 1879; Gamble, Fl. Madras 493. 1919.

Subshrubs; branchlets stiff-hirsute. Leaves oblong-lanceolate, 1-5 x 0.5-1.5 cm, obtuse-subacute at base, acute at apex, entire-crenulate at margins, chartaceous, appressed-hirsute; petiole to 5 mm long. Flowers in 3-8 flowered terminal cymes; bracteoles orbicular, to 1.5 mm long; pedicels to 1.5 mm long. Calyx tube subglobose, 4.5 mm long, simple and stellate hairy; lobes 5, lanceolate, to 2.5 mm. Petals 4-5, obovate, 10 x 5 mm, ciliate. Stamens 10, filaments to 4 mm. Ovary 3 mm long, 5-celled; style to 1 cm long. Capsule globose, to 6 mm. Seeds numerous.

Nanniyode Kavu, SK 48751; Mechamkode Kavu, SK 39360. *Fl. & Fr:* Aug.- Mar. *Dist:* South India, endemic.

Osbeckia brachystemon Naud., Ann. Sci. Nat. Bot. Ser. 3, 14: 457. 1850; Hansen, Ginkgoana 4: 100. 1977; Nayar & *al.*, Flg. Pl. Kerala-Handb. 414. 2006. *O. truncata* D.Don ex Wight & Arn., Prodr. fl. Ind. orient. 322. 1834 p.p.; C.B. Clarke in Hook.f., Fl. Brit. India 2:514. 1879; Gamble, Fl.

Madras 494. 1919. *O. cupularis* D.Don ex Wight & Arn., Prodr. fl. Ind. orient. 323. 1834 p.p.; C.B. Clarke in Hook.f., Fl. Brit. India 2:514. 1879; Gamble, Fl. Madras 494. 1919.

Small herbs; roots thick, nodose; stem 4-gonous, rather slender, densely clothed with simple adpressed long bristly hairs. Leaves elliptic or elliptic-oblong, 2-5 x 0.8-3cm, acute or subobtuse at base, acute at apex; 3-5 nerved from the base, hairy on both surfaces. Flowers 4-5 merous, subcapitate, purple, often with 2-4 leaves under the head; bracts ovate, acute at apex. Calyx 0.6-0.8 cm long, densely clothed with stalked stellate long hairs; tube campanulate; teeth triangular, ciliate with a tuft of bristles from the enlarged glandular apex. Petals 0.6-1.2 cm, purple, ciliate along the margins. Ovary ovoid; ovules many in each cell. Capsule ovoid-oblong, obscurely many ribbed.

Chokkan Kavu, Pachalloor, SK 48752. *Fl. & Fr.*: Oct- Dec. *Dist.*: South India, endemic.

Note: Addition to Flora of Thiruvananthapuram.

Sonerila Roxb.,

Fl. Ind. 1: 180. 1820, *nom.cons.*

Sonerila sahyadrica Giri & Nayar, Bull. Bot. Surv. India 26: 174. 1984; Nayar & *al.*, Flg. Pl. Kerala-Handb. 418. 2006. *Sundhariyila*.

Annual herbs, stem 4-angled; roots tuberous. Leaves ovate or elliptic, 3.5-10x1.8-5 cm, obtuse at base, acute or shortly acuminate at apex, serrulate along the margins, crispate hairy on both sides; petiole to 3 cm long. Flowers 1.2 cm across in scorpioid cymes; peduncles to 8.5

cm long. Pedicels and calyx tube sparsely hairy. Petals pink, orbicular, 0.5 cm across. Stamens 3, equal; anthers yellow, dehisces by apical pores. Ovary 3-celled; ovules many; style filiform; stigma subcapitate. Capsule more or less 6-ribbed. Seeds many, smooth.

Nanniyode Kavu, SK 48819. *Fl. & Fr:* Jul.- Sept. *Dist:* Western Ghats, endemic.

Note: This species is allied to *S. rheedei*, but can easily be distinguished by the short stem (to 3 cm long) with a small hemispheric tuber at the base. This is an addition to the Flora of Thiruvananthapuram.

LYTHRACEAE J.St. Hil.,

Expos. Fam. Nat. 2: 175. 1805, *nom. cons.*

- 1. Stamens indefinite.....*Lagerstroemia*
- 1. Stamens definite usually 8.....*Lawsonia*

Lagerstroemia L.,

Syst. Nat. ed.10: 1068, 1076, 1372. 1759.

- 1. Calyx ribbed.....*L. hirsuta*
- 1. Calyx smooth.....*L. microcarpa*

Lagerstroemia hirsuta (Lam.) Willd., Sp. Pl. 2: 1178. 1799; Nicolson *et al.*, Interp. Hrt. Malab. 166. 1988; Nayar & *al.*, Flg. Pl. Kerala-Handb. 392. 2006. *Adambea hirsuta* Lam. Encycl. 1: 39. 1783. *Lagerstroemia flos-reginae* Retz., Obs. Bot. 5: 25. 1788, *nom. illeg.*; C.B. Clarke in Hook.f., Fl. Brit. India 2:577. 1879; Gamble, Fl. Madras 513. 1919. *L.*

reginae Roxb., Pl. Coromandel t. 65. 1795; Wight, Icon. pl. Ind. orient.t. 413. 1843. *L. speciosa* (L.) Pers. *sensu* Mohanan & Henry, Fl. Thiruvananthapuram 203. 1994. *Manimaruthu*.

Medium sized trees; bark smooth, yellowish-grey, peel off in thin flakes. Leaves elliptic-oblong, 12-20 x 6-8.5 cm, obtuse at base, acute or acuminate at apex, coriaceous. Flowers in axillary paniculate racemes. Calyx tube many ribbed; lobes ovate-acuminate. Petals to 2.5 x 2 cm, mauve coloured, rhomboid, prominently veined. Stamens numerous, inserted at the base of calyx tube. Ovary 6-celled; style elongated. Capsule globose, to 2 cm across, 6-valved.

Nanniyode Kavu, SK 48781. *Fl. & Fr:* Mar.- Nov. *Dist:* India and Burma.

Lagerstroemia microcarpa Wight, Icon. pl. Ind. orient.t. 109. 1839; Bedd., Fl. sylv. S. India t.30. 1869; Mohanan & Henry, Fl. Thiruvananthapuram 202. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 392. 2006. *L. lanceolata* Wall. ex C.B. Clarke in Hook.f., Fl. Brit. India 2:576. 1879; Gamble, Fl. Madras 513. 1919. *L. thomsonii* Koehne in Engl., Pflanzenr. 17: 257. 1903; Gamble, Fl. Madras 513.. 1919. *Venthekku*.

Large trees; bark smooth, greyish-white or yellowish-grey, peels off in long linear flakes. Leaves elliptic, 8-11 x 2.5-4.5 cm, acute at base, acute-acuminate at apex, glabrous, glaucous beneath; lateral nerves 8-10 pairs; petiole 0.5 cm long. Flowers in axillary racemes. Calyx smooth; lobes ovate-acute, refluxed, tomentose. Petals 4 mm long, obovate,

pinkish-white. Stamens numerous, inserted at the base of calyx tube. capsule to 1 cm long, ellipsoid, 4-valved.

Naniode Kavu, SK 48753. *Fl. & Fr.*: Jun.-Feb. *Dist.*: South West India.

Lawsonia L.,
Sp. Pl. 349. 1753.

Lawsonia inermis L., Sp. Pl 349. 1753; Gamble, Fl. Madras 514. 1919. *L. alba* Lam., Encycl. 3: 106. 1789 & Tabl. Encycl.t. 296.f.2. 1792; C.B. Clarke in Hook.f., Fl. Brit. India 2:573. 1879; Nayar & al., Flg. Pl. Kerala-Handb. 395. 2006. *Mailanchi*.

Shrubs; branchlets spine-tipped; bark greenish-brown. Leaves opposite, elliptic-lanceolate, 2-3 x 1-1.5 cm, attenuate at base, acute at apex, entire at margins, subsessile. Flowers in axillary cymose panicles; pedicels short, slender. Calyx 3-5 mm long, campanulate; teeth 4, ovate, 2-3 mm long, acute at apex. Petals creamy-white, 3mm long, suborbicular, margins undulate. Stamens 8, inserted in pairs on the calyx tube; filaments inflexed in bud, 4 mm long; anthers oblong, to 1 mm long. Ovary 4-celled, ovules numerous. Capsule 8 mm across, exceeding calyx tube. Seeds turbinate, to 3 mm long.

Mechamkode Kavu, SK 48788. *Fl. & Fr.*: Jan.-Apr. *Dist.*: Central Asia, India (Cultivated).

Note: Addition to Flora of Thiruvananthapuram.

PASSIFLORACEAE Juss. ex Kunth in

Humboldt *et al.*, Nov. Gen. Sp. 2, ed.4: 126 ed. f.100 1817, *nom.cons.*

1. Flowers unisexual, in paniculate cymes.....*Adenia*

1. Flowers bisexual, solitary, axillary.....*Passiflora*

Adenia Forssk.,

Fl. aegypt. – arab. 77. 1775.

Adenia hondala (Gaertn.) de Wilde, Blumea 15:265. 1967; Mohanan & Henry, Fl. Thiruvananthapuram 207 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 473. 2006. *Granadilla hondala* Gaertn., Fruct. 2:480. 1791. *Modecca palmata* Lam., Encycl. 4:209. 1797; Wight, Icon. pl. Ind. orient.t. 201. 1839; Mast. in Hook. f., Fl. Brit. India 2:601. 1879. *Adenia palmata* (Lam.) Engl., Bot. Jahrb. 14:375. 1892; Gamble, Fl. Madras 1:525. 1919. *Karimudakku*.

Climbing subshrubs; rootstock tuberous. Leaves palmately 3-4 lobed, 10-18 x 16-20 cm; lobes elliptic, acute at apex; petiole to 8 cm long. Flowers unisexual, greenish-yellow, in 2 opposite cymes on a long axillary peduncle, which is produced into a long simple tendril. Male flowers: Calyx campanulate, lobes acute at apex. Petals linear or oblong, ciliate at margins. Stamens distant and the filaments united at base; anthers linear-oblong. Ovary rudimentary. Female flowers: Calyx campanulate. Petals linear or oblong, ciliate at margins. Staminodes 5, erect, flat, strap shaped, united slightly at the base. Ovary globose, shortly stalked, smooth tapering in to 3 long styles. Capsule 3-valved, globose, orange-red, 4 cm across. Seeds arillate, 1 cm in diam., discoid, compressed, muriculate and pitted.

Bhadrakali temple Kavu, Azhakikonam, SK 48769. *Fl. & Fr.*: Mar.–Aug.
Dist.: South India and Sri Lanka.

Passiflora L.,

Sp. Pl. 955. 1753, *nom. cons.*

Passiflora foetida L., Sp. Pl. 959. 1753; Gamble, *Fl. Madras* 524. 1919; de Wilde Steenis, *Fl. Males. I.* 7:410. 1972; Mohanan & Henry, *Fl. Thiruvananthapuram* 207. 1994; Nayar & *al.*, *Flg. Pl. Kerala-Handb.* 473. 2006.

Climbing herbs; stem densely glandular-hispid. Leaves 3-5 lobed, orbicular-ovate; to 8 x 7 cm, lobes ovate, cordate-membranous, adpressed glandular-pubescent serrulate at margins; petiole 2-6 cm long; stipules semi-lunar, divided into filiform segments. Flowers solitary or 2-nate; bracts and bracteoles glandular-pubescent. Calyx lobes ovate-lanceolate, apically spurred, to 1.5 cm long. Petals white, shorter than calyx lobes. Coronal segments in 2 whorls. Gynandrophore 5 mm long. Berry subglobose, yellow, to 2 cm wide.

Chavaru Kavu, Njekkadu, SK 48886. *Fl. & Fr.*: July – Dec. *Dist.*: Native of tropical America; now naturalized in many tropical countries in Asia and Africa.

CUCURBITACEAE Juss.,

Gen. Pl. 393. 1789, *nom. cons.*

1. Male flowers solitary.....*Coccinia*
1. Male flowers in clusters or short racemes.....2

2. Ovary rostrate at apex.....*Solena*
 2. Ovary not rostrate.....*Mukia*

Coccinia Wight & Arn.,

Prodr. fl. Ind. orient. 347. 1834.

Coccinia grandis (L.) Voight., Hort. Suburb. Calc. 59. 1845; Chakravarty in Fasc. Fl. India 2: 24. 1982; Mohanan & Henry, Fl. Thiruvananthapuram 208. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 206. 2006. *Bryonia grandis* L., Mant. 126. 1767. *Coccinia indica* Wight & Arn., Prodr. fl. Ind. orient. 347. 1834. *Cephalandra indica* Naud., Ann. Sc. Nat.Ser. V, 5: 116.1879; C.B. Clarke in Hook.f., Fl. Brit. India 2:621. 1879; Gamble, Fl. Madras 537. 1919. *Koval*.

Perennial glabrous herbs; stem angular, nodose below. Leaves broadly ovate, 5-10 cm across, cordate at base, 5-angled or 3-5 lobed, minutely denticulate along the margins; petiole slender, 2-5 cm long. Flowers white, axillary, solitary. Male flowers: Calyx campanulate, 4-5 mm long; teeth ovate, acute at apex. Corolla 2.5-3.5 cm long ; lobes shorter than the tube. Staminal column 2-3 mm long; anthers 6-7 mm thick. Female flowers: Calyx and Corolla as in male. Staminodes 3, subulate, 2-3 mm long. Ovary 12-15 mm long, style slender, stigma papillose. Fruits ellipsoid, 3-5 x 2-2.5 cm, rounded at both ends, red when ripe. Seeds oblong, 6-7 x 2-4 mm, yellowish.

Bhadrakali Kavu, Karippur, SK 48772. *Fl. & Fr.*: Round the year. *Dist.*: Indo-Malaya to Africa.

Mukia Arn. in

Madras J. Lit. Sci. 12: 50. 1840.

Mukia maderaspatana (L.) M. Roemer, Fam. 2. Peponif. 47. 1846; Mohanan & Henry, Fl. Thiruvananthapuram 209. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 210. 2006. *Cucumis maderaspatanus* L., Sp.Pl. 1012. 1753. *Bryonia scabrella* L.f., Suppl. Pl. 424. 1781; Wight, Icon. pl. Ind. orient. t. 501. 1841. *Mukia scabrella* (L.f.) Arn. in Hook. J. Bot. 3: 276. 1841; C.B. Clarke in Hook.f., Fl. Brit. India 2:623. 1879. *Melothria maderaspatensis* (L.) Cogn. in A & C.DC. Monogr. Phan. 3: 623. 1881; Gamble, Fl. Madras 539. 1919; Chakravarty in Fasc. Fl. India 2: 24. 1982. *Mukkapeerum*.

Tendrillate climbers; branchlets hispid. Leaves ovate-deltoid, 4-7 x 4-6 cm, angular, cordate at base, acuminate at apex, denticulate at margins, scabrid above, shortly hispid beneath, chartaceous; petiole to 4 cm long. Flowers monoecious, male and female in clusters. Male flower: Calyx tube 3 mm long, villous; lobes linear. Corolla yellow, villous without. Stamens 3; filaments to 1.5 mm long; anthers oblong to 2 mm long. Pistillode to 0.5 mm long. Female flowers: Calyx and corolla as in male flowers. Ovary 3 mm long, villous; style to 2.5 mm long. Fruit globose, to 1x0.8 cm, red at maturity. Seeds pitted, 4x2.5 mm.

Kamukarakonam Kavu, SK 42391. *Fl. & Fr.*: Sept.- May. *Dist.*: Paleotropical.

Solena Lour.,

Fl. Cochinch. 477, 514. 1790.

Solena amplexicaulis (Lam.) Gandhi in Saldanha & Nicolson, Fl. Hassan 179. 1976; Nayar & *al.*, Flg. Pl. Kerala-Handb. 210. 2006. *Bryonia amplexicaulis* Lam. Encycl. 1: 496. 1785. *Solena heterophylla* (Lour.) Cogn. in A. & C.DC. Monogr. Phan. 3: 618. 1881; Gamble, Fl. Madras 539. 1919. *Zehneria umbellata* (Arn.) Thw., Enum. Pl. Zeyl. 125. 1859; C.B. Clarke in Hook.f., Fl. Brit. India 2:625. 1879 p.p. *Karuvi*.

Climbing herbs; branchlets glabrous. Leaves ovate, 4-8 x 4-6 cm, cordate at base, obtuse-retuse at apex, minutely denticulate at margins, chartaceous, scabrid above; tendril simple; petiole 0.7-1 cm long; bracts linear. Flowers unisexual, dioecious. Male flowers: calyx tube 4 mm, glabrous; lobes 5, triangular. Corolla campanulate; petals 5, white, oblong-ovate. Stamens 3, inserted at the mouth of calyx tube; filaments free; anthers oblong, 2 mm long, cells arcuate. Pistillode 3-lobed. Female flowers: solitary, 1 cm across. Calyx and corolla as in male flower. Ovary oblong, 3 mm long, apically tapering; style to 4 mm long, basally with an angular disc; stigma 3-lobed. Fruits oblong-ovoid, 1.5 x 1 cm, apically beaked, turgid.

Chathambarakonathu Kavu, SK 48779. *Fl. & Fr.*: Round the year. *Dist.*: Pantropical.

BEGONIACEAE C. Agardh,
Aphor. Bot. 200. 1824, *nom. cons.*

Begonia L.,
Sp. Pl. 1056. 1753.

1. Stem erect; male flowers with 2 perianth.....*B. dipetala* var. *hydrophila*
1. Stem prostrate; male flowers with 4 tepals.....*B. malabarica*

Begonia dipetala Graham var. **hydrophila** (C.B. Clarke) Santhosh & Seema, *Begonian* 72: 140. 2005; Santhosh, *Begonian* 74: 223. 2007. *B. malabarica* Lam. var. *hydrophila* C.B. Clarke in Hook.f., *Fl. Brit. India* 2:655. 1879. *B. malabarica sensu* Mohanan & Henry, *Fl. Thiruvananthapuram* 211. 1994.

Perennial herbs; stem succulent, nodes. Leaves lanceolate, 12-18 x 3-5 cm, unequally cordate at base, acute or acuminate at apex, serrate-dentate at margins, membranous. Flowers pink in axillary cymes. Male flowers: Tepals 2, orbicular, 1 cm across: stamens numerous, filaments unequal; anthers to 2 mm long. Female flowers: Ovary obovoid, 3-celled, 3-winged; ovules numerous on simple axile placenta. Capsule to 1.8 x 1.5 cm, narrowed at base, apically broad, 3-winged.

Naniyode Kavu, SK 48780. *Fl. & Fr.*: Aug – Apr. *Dist.*: Peninsular India and Sri Lanka.

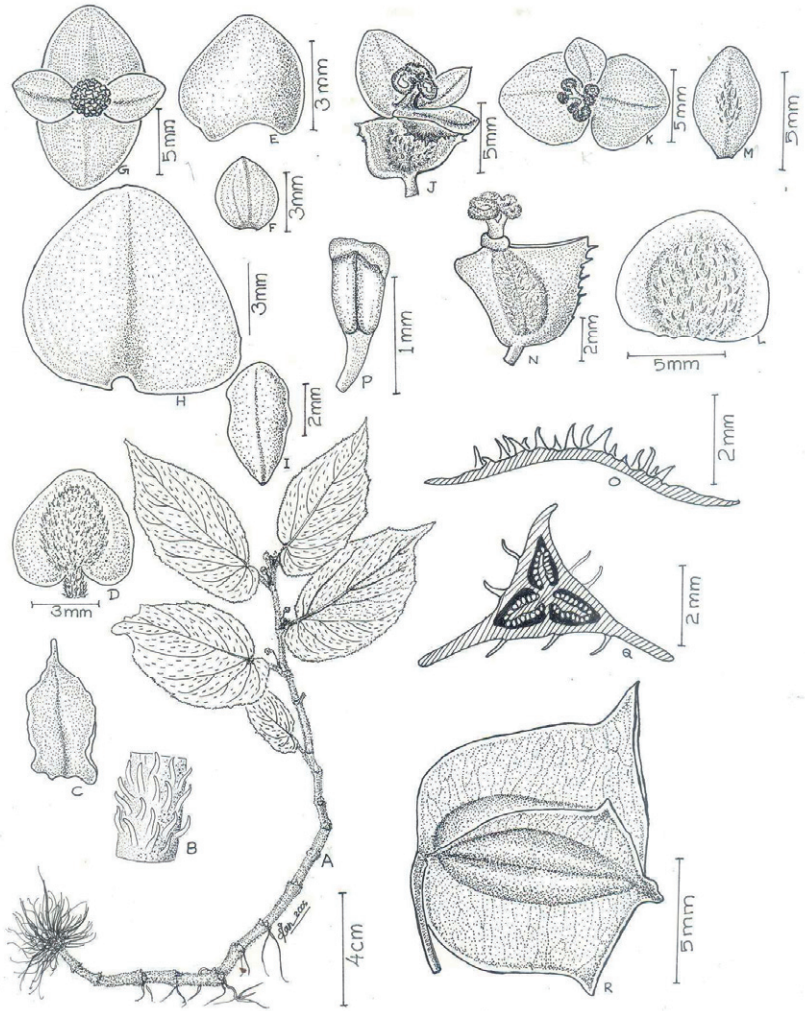
Begonia malabarica Lamk., *Encycl.* 1: 393. 1785; C.B. Clarke in Hook.f., *Fl. Brit. India* 2: 655. 1879; Gamble, *Fl. Madras* 546. 1919, p.p.; Santhosh & al, *Begonian* 72: 137. 2005; Nayar & al., *Flg. Pl. Kerala-Handb.* 142. 2006 *B. malabarica* Lamk. var. *rheddei* A. de Candolle,

Prodr. 15 (1): 392.1864; C.B. Clarke in Hook.f., Fl. Brit. India 2: 656. 1879; *Tsjeria-narinampuli*, Rheede, Hort. Malab. 1689

Caulescent tuberous herbs; stem elongate, glabrous or nearly so. Leaves ovate, 5-13 x 4-9 cm, cordate at base, acute at apex, serrate at margins. Flowers white in 4-6 flowered axillary cymes; bracts 0.6-0.9 cm long, ovate, acuminate, dentate, caducous. Male flowers: Tepals 4, outer broadly elliptic or suborbicular, subentire; inner obovate-oblong. Stamens numerous, free. Female flowers: Tepals 5, inner narrowed; outer often denticulate. Ovary hispid. Style 3, nearly free. Capsule 3-celled, 3 winged, wings subequal. Seeds ellipsoid.

Manthuruthu Kavu, SK 48816. *Fl. & Fr.*: Aug – Oct. *Dist.*: South–West India, endemic.

Note: *Begonia malabarica* was based on Rheede's *Tsjeria-narinampuli* in Hortus Indicus Malabaricus.



***Begonia malabarica* Lamk.** A. Habit; B. A portion of stem; C. Bract; D. Flower bud; E. Outer perianth- Male flower; F. Inner perianth-Male flower; G. Male flower; H. Outer perianth-female flower; I. Inner perianth- female flower; J. Female flower; K. Female flower showing perianths, style and stigma; L. Perianth outer surface-female flower; M. Outer side of inner perianth-female flower; N. Gynoeceium; O. C.S. Of perianth; P. Anther; Q. C.S. Of ovary; R. Mature fruit.

APIACEAE Lindl.,

Nat. Syst. Bot., ed.2. 21. 1836, *nom. cons.*; *nom. alt.* Umbelliferae.

Centella L.,

Sp. Pl. ed. 2. 1393. 1763.

Centella asiatica (L.) Urban in C. Martius, Fl. bras. 11(1) : 287. t . 78. f. 1. 879; Gamble, Fl. Madras 556. 1919; Mohanan & Henry, Fl. Thiruvananthapuram 213. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 64. 2006. *Hydrocolyle asiatica* L., Sp. Pl. 234. 1753; Wight & Arn., Prodr. fl. Ind. orient. 366. 1834; Wight, Icon. pl. Ind. orient.t. 565. 1842; C.B. Clarke in Hook.f., Fl. Brit. India 2:669. 1879.

Prostrate herbs; stem creeping with long stolon, rooting at node. Leaves orbicular-reniform, 1-3 x 1.5-3 cm, cordate at base, rotund at apex, crenate at margins, chartaceous, pubescent; petiole to 5 cm long; sheathing at base. Flowers 2-4 in simple umbels; involucre bracts 2, hooded; pedicels to 0.5 mm. Calyx lobes 5, triangular. Petals 5, purplish, to 1.5 mm long. Stamens 5; filaments 0.5 mm long. Ovary 2-celled; ovuled 1-per cell; style 2, distant. Mericarp laterally flattened, vittae obscure.

Common to almost all sacred groves, Nagaru Kavu, Keezhathalakuzhi, SK 48777. *Fl. & Fr.*: Round the year. *Dist.*: Cosmopolitan.

ALANGIACEAE DC.,

Prodr. 3:203. 1828, *nom. cons.*

Alangium Lam.,

Encycl. 1: 174. 1783, *nom. cons.*

Alangium salvifolium (L.f.) Wang. ssp. **sundanum** (Miq.) Bloem., Bull. Jard. Bot. Buitenzorg III, 16: 156. 1936; Matthew in Nayar, M.P. *et. al* Fasc. Fl. India 19: 5. 1998; Nayar & *al.*, Flg. Pl. Kerala-Handb. 41. 2006. *A. sundanum* Miq. Fl. Ind. Bat. 1: 774. 1856. *A. hexapetalum* Lam., Encycl. 1: 174. 1783. var. *hexapetalum* (Lam.) Wang.; Gamble, Fl. Madras 572. 1919. *A. salvifolium* var. *hexapetalum* Bloem., Blumea 1: 250. 1935.

Stragglers; branchlets stout. Leaves oblong to obovate to elliptic, 10-15 x 3-7 cm, truncate at apex, entire at margins, chartaceous; lateral nerves 5-7, 3-nerved from the base; petiole to 1 cm long. Flowers white, fascicled, axillary to leaves or leaf scars. Calyx 7-toothed, tomentose outside. Petals 7, linear, 1.8 cm long, tomentose without. Stamens 15, filaments villous. Disc lobed. Ovary 1-celled; stigma capitate. Drupe subglobose, 1.2 cm across.

Thiruchittoor Kavu, SK 39315; Nagaru Kavu Kottiyottu, SK 47947. *Fl.* & *Fr.*: Dec.–Jun.

Dist.: Indo-Malesia.

Note.: Addition to the Flora of Thiruvananthapuram.

RUBIACEAE Juss., Gen. Pl. 196.

1789, *nom. cons.*

1. Flowers aggregated in globose heads.....	<i>Morinda</i>
1. Flowers aggregated other than globose heads.....	2
2. Ovules solitary in each cell.....	3
2. Ovules more than 2 in each cell.....	9
3. Plants armed.....	<i>Canthium</i>
3. Plants unarmed.....	4
4. Corolla lobes twisted.....	5
4. Corolla lobes valvate.....	6
5. Style much exerted.....	<i>Pavetta</i>
5. Style shortly exerted.....	<i>Ixora</i>
6. Ovules attached to septum.....	7
6. Ovules basilar, not to septum.....	8
7. Capsule circumscissile.....	<i>Mitracarpus</i>
7. Capsule dehiscent ventrally.....	<i>Spermacoce</i>
8. Corolla tube long, curved.....	<i>Chassalia</i>
8. Corolla tube short, straight.....	<i>Psychotria</i>
9. Fruit a berry.....	10
9. Fruits capsular, or drupes.....	11
10. Prostrate herbs.....	<i>Geophila</i>
10. Erect shrubs.....	<i>Mussaenda</i>
11. Fruit a capsule.....	12
11. Fruit a drupe.....	<i>Psilanthus</i>
12. Trees.....	<i>Hymenodictyon</i>
12. Herbs, undershrubs or shrubs.....	13
13. Calyx teeth 4.....	<i>Hedyotis</i>
13. Calyx teeth 5.....	<i>Ophiorrhiza</i>

Canthium Lam.,
Encycl. 1:602. 1785.

Canthium angustifolium Roxb., Fl. Ind. 2: 169. 1824; Hook.f., Fl. Brit. India 3:135. 1880; Mohanan & Henry, Fl. Thiruvananthapuram 223. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 507. 2006. *Plectronia rheedei* DC. var *angustifolia* (Roxb.) Gamble, Fl. Madras 625. 1921. *Canthium leschnaultii* (DC.) Wight & Arn. in Wight, Cat. 77. 1833 & Prodr. fl. ind. orient. 426. 1834; Wight, Icon. pl. Ind. orient. t. 826. 1844. *Kattakara*.

Scandent shrubs. Leaves 7.5-10 x 2.5-4.5 cm, elliptic-lanceolate, obtuse or rounded at base, acuminate at apex, glabrous and glossy above; lateral nerves 5-6, domatia present at the axils of nerves. Flowers in axillary short cymes. Calyx cupular, 5-toothed, 1.5 x 2 mm. Corolla yellowish-yellow, 0.8 cm across, glabrous within; tube 3 mm long. Stamens 5; filaments 2 mm long; anthers 1.5 mm. Ovary 1 x 1 mm, compressed; style 5 mm long; stigma acute. Drupe obcordate, 0.7 cm across, compressed.

KeezhettiKavu SK 42345. *Fl. & Fr*: Mar. -May. *Dist*: India and Burma.

Chassalia Comm. ex Poir.
Lam., Encycl. Suppl. 2: 450. 1812.

Chassalia ophioxyloides (Wall.) Craib, Gard. Bull. Straits Settlem. 6: 474. 1930; Nayar & al., Flg. Pl. Kerala-Handb. 509. 2006. *Chassalia curviflora* (Wall.) Thw. Enum. Zeyl. 150. 1864. var. *ophioxyloides* (Wall.) Deb & Krishna, Bull. Bot. Surv. India 24: 222. 1983. *Psychotria*

curviflora Wall. in Roxb., Fl. Ind. 2: 167. 1824. *P. ophioxyloides* Wall. in Roxb., Fl. Ind. 2: 167. 1824. *Chassalia curviflora* Wall. ex Kurz, For. Fl. Burma 2: 14. 1877; Hook.f., Fl. Brit. India 3:176. 1880, p.p.; Gamble, Fl. Madras 643. 1921. *Kattukappi*.

Subshrubs; young shoots glabrous. Leaves 8-15 x 3-6 cm, elliptic to obovate or oblanceolate, acuminate at apex, coriaceous, glabrous above and glaucous beneath; lateral nerves 8-10 pairs; petiole to 2 cm long. Flowers in terminal corymbose cymes; pedicels white. Calyx shortly toothed, white. Corolla 1.2 cm long, tube purplish outside, mouth oblique, yellow; lobes acute. Stamens 5; anthers included; filaments very short. Disc annular; style elongated; stigma bilobed. Berry subglobose, 0.6 cm across, purplish.

NagarKavu, Keezhathalakuzhi, SK 48773; Indalayappan Kavu, SK 40531; Thiruchittor Kavu, SK 40567. *Fl. & Fr*: Jul.- Feb. *Dist*: Indo-Malaysia.

Geophila D. Don,

Prodr. Fl. Nepal 136. 1825, *nom. cons.*

Geophila repens (L.) Johnst., Sargentia 8: 281. 1949; Raiz., Indian For. 94: 444. 1968; Nayar & al., Flg. Pl. Kerala-Handb. 511. 2006 *Rondeletia repens* L., Syst. Nat. (ed.10) 928. 1759. *Geophila reniformis* D. Don. Prodr. 136. 1825; Wight, Icon. pl. Ind. orient. t. 54. 1838; Hook.f., Fl. Brit. India 3: 178. 1880; Gamble, Fl. Madras 643. 1921.

Slender prostrate herbs, rooting at nodes. Leaves 2.5-3 cm across, orbicular-cordate, glabrous, shining green above, pale beneath; basally 5-nerved; petiole to 5 cm long, villous. Flowers white, solitary or in few

flowered umbels; peduncle to 4 cm long. Calyx tube short; lobes subulate, to 3 mm long. Corolla 5-merous, tube elongated, hairy at the throat; lobes spreading or recurved, ovate- acute, to 0.7 x 0.4 cm. Anthers 5, included. Style slender, stigma 2-lobed. Berry scarlet, to 0.7 cm across.

Chavaru Kavu, SK 47978. *Fl. & Fr.*: Oct- Apr. *Dist.*: Pantropical.

Hedyotis L.,

Sp. Pl. 101. 1753, *nom. cons.*

A complex genus variously treated by different authors either as a separate genus or in a broad sense. In the present treatment the genus *Hedyotis* considered in broad sense including *Oldenlandia* and *Exallage* etc.

- 1. Undershrubs or shrubs.....*H. stylosa*
- 1. Herbs.....2
- 2. Capsule indehiscent.....*H. auricularia*
- 2. Capsule dehiscent.....3
- 3. Capsule 4-angled.....*H. hermanniana*
- 3. Capsule terete.....4
- 4. Leaves linear, less than 5 mm broad.....5
- 4. Leaves other than linear, more than 7 mm broad.....*H. neesiana*
- 5. Diffuse herbs.....*H. corymbosa*
- 5. Erect herbs.....*H. herbacea*

Hedyotis auricularia L., Sp. Pl. 101. 1753; Bedd., Icon. pl. Ind. orient.t. 27. 1868-1874; Hook.f., Fl. Brit. India 3: 58. 1880; Rao & Hemadri, Ind. For. 99: 375. 1973; Mohanan & Henry, Fl. Thiruvananthapuram 228. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 512. 2006. *Oldenlandia*

auricularia (L.) K.Schum. in Engl. & Prantl, Pflanzemf. 4(4): 25. 1891; Gamble, Fl. Madras 597. 1921. *Exallage auricularia* (L.) Bremek., Verh. Kon. Ned. Akad. Wetensch. Afd. Natuurk., Tweede Sect. (ser.2) 48: 142. 1952.

Diffuse annual herbs; young shoots hispid. Leaves 6 x 3 cm, ovate to ovate-lanceolate, obtuse to acute at base, acuminate at apex, glabrous or slightly pubescent on the nerves above, hairy along the nerves beneath; lateral nerves 4-5pairs, curved; stipules membranous. Flowers white in axillary fascicles. Calyx teeth small, pubescent. Corolla white, 1.5 mm long; lobes oblong, obtuse at apex. Stamens 5, included. Capsule globose, pubescent, 1.5 mm across.

Kannankottu Kavu, SK 48771; Manthuruthu Kavu, SK 39313. *Fl. & Fr.*: Oct.-Dec. *Dist.*: Indo-Malaysia.

Note: Bremekamp (l.c.) treated this species into a separate genus *Exallage*. Fosberg and Sacht (Allertonia 6: 207-210. 1991) described many varieties to this highly polymorphic species. However in the present treatment include all varitations conspecific to the typical form.

Hedyotis hermanniana Dutta, J. Econ.Tax. Bot. 23(3): 734. 1999. *H. biflora* R.Br. ex Wight & Arn., Prodr. fl. Ind. orient. 413. 1834; Mohanan & Henry, Fl. Thiruvananthapuram 228. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 513. 2006. *Oldenlandia biflora* L., Sp. Pl. 119. 1753, non Roxb. 1820; Hook.f., Fl. Brit. India 3:70. 1880; Gamble, Fl. Madras 602. 1921.

Glabrous herbs. Leaves 2-4 x 1-2.5 cm, elliptic-oblong, acute to decurrent at base, obtuse-acute or apiculate at apex; lateral nerves faint; petiole to 1 cm long. Flowers subsessile in racemose panicles. Calyx truncate, 4-angled, to 2.5 mm long; lobes triangular, 1.5 mm long, acute at apex. Corolla white, 5 mm across, campanulate; lobes 4, obovate, 2.7 mm long, acute. Stamens 4; filaments 0.5 mm long; anthers oblong, 0.6 mm, Ovary 1.5 mm long; style to 1 mm; stigma fusiform. capsule 4 x 3 mm, 4-angled, loculicidal, pitted. Seeds pitted.

Nakramkodu Kavu, SK 48803. *Fl. & Fr.*: Nov.-Feb. *Dist.*: Peninsular India and Sri Lanka.

Note: According to Dutta (*l.c.*) *Hedyotis biflora* R. Br. ex Wight & Arn. is a later homonym, hence a new name *H. hermanniana* is proposed.

Hedyotis corymbosa (L.) Lam., Tab. Encycl. 1: 272. 1791; Rao & Hemadri, Indian For. 99: 375. 1973; Mohanan & Henry, Fl. Thiruvananthapuram 228. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 514. 2006. *Oldenlandia corymbosa* L., Sp. Pl. 119. 1753; Hook.f., Fl. Brit. India 3:64. 1880; Gamble, Fl. Madras 600. 1921.

Spreading herbs, branches many, ascending. Leaves 1-2 x 0.1-0.3 cm, linear, obovate to lanceolate, 1-nerved, decurrent at base, acute-apiculate at apex. Flowers white, in pairs or 3; stalk to 1.5 cm. calyx 1 mm long; lobes 4, lanceolate, .2 mm, aristate. Corolla 3 mm wide; lobes 4, lanceolate, 2.5 mm, free upto middle. Stamens 4, sub-exserted. Ovary 1x1.5 mm; style 1 mm long; stigma fusiform, 2-fid. Capsule loculicidal, 3 x 3.5 mm. Seeds 3-gonous, reticulate.

Erumkulngara Bhagavathi Kavu, SK 48803. *Fl. & Fr.*: Nov.- Feb. *Dist.*: Pantropical.

Hedyotis herbacea L., Sp. Pl. 119. 1753; Rao & Hemadri, Indian For. 99: 376. 1973; Mohanan & Henry, Fl. Thiruvananthapuram 229. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 515. 2006. *Oldenlandia heynei* R.Br. ex G.Don, Gen. Syst. 3: 531. 1834; Hook.f., Fl. Brit. India 3:65. 1880. *O. herbacea* (L.) Roxb., Fl. Ind. 1: 445. 1820; Gamble, Fl. Madras 601. 1921.

Erect herbs; stem angled, glabrous. Leaves 0.8-3 x 0.1-0.2 cm, linear-lanceolate, subsessile, acute at apex, glabrous; stipules very short. Flowers solitary or 2-nate, axillary, white. Calyx lobes triangular-subulate. Corolla funnel shaped, 3 mm long; tube slender. Stamens partly exerted. Capsule ovoid or subglobose, didymous, glabrous. Seeds somewhat ellipsoid in outline.

Eezhaveedu Kavu, SK 48800. *Fl. & Fr.*: Jul.- Sept. *Dist.*: Sri Lanka, Continental S.E. Asia, Tropical Africa.

Hedyotis neesiana Arn., Pug. Pl. Ind. Or. 23. 1836; Ridsdale in Dassan. & Clayton, Rev. Handb. Fl. Ceylon 12: 245. 1998; Nayar & al., Flg. Pl. Kerala-Handb. 509. 2006. *H. nitida* Wight & Arn., Prodr. fl. Ind. orient. 412. 1834; Hook.f., Fl. Brit. India 3:61. 1880; Mohanan & Henry, Fl. Thiruvananthapuram 229. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 516. 2006. *H. glabrella* R. Br. ex Bedd., Icon. pl. Ind. orient.t. 36. 1868-1874. *Oldenlandia nitida* (Wight & Arn.) Gamble, Fl. Madras 597. 1921.

Trailing herbs; stem 4-angled, glabrous. Leaves 3-6 x 0.8-1.5 cm, elliptic-lanceolate, subsessile, margins recurved, rigid; lateral nerves

obscure; stipules with many long stiff bristles. Flowers axillary, fascicled or solitary, sessile. Calyx lobes triangular, with stiff hairs. Corolla 2.5 mm long, glabrous. Stamens 5, exserted. Capsule ovoid, glabrous; fruiting calyx lobes erect, stiff.

Chokkan Kavu, SK 48872. *Fl. & Fr.*: Sept.- Dec. *Dist.*: South West India and Sri Lanka.

Hedyotis stylosa R. Br. ex Wight & Arn., *Prodr. fl. Ind. orient.* 407. 1834; Wight, *Icon. pl. Ind. orient.*t. 1027. 1845; Hook.f., *Fl. Brit. India* 3:51. 1880; Nayar & *al.*, *Flg. Pl. Kerala-Handb.* 517. 2006. *Oldenlandia stylosa* (R.Br. ex Wight & Arn.) Kuntze, *Rev. Gen. Pl.* 1: 292. 1891; Gamble, *Fl. Madras* 519. 1921.

Undershrubs; stem sub-quadrangular, glabrous. Leaves 7-13 x 1.5-3 cm, narrowly elliptic-lanceolate, attenuate at base, acuminate-caudate at apex, wavy at margins, dark green above, pale beneath; lateral nerves 4-5 pairs, slender; petiole to 2 cm long. Flowers pale pink in terminal corymbose cymes; bracts linear; pedicels to 1 mm long. Calyx 4-lobed; lobes 2 mm long, reflexed at apex, puberulous without. Corolla tube 2.5 mm long; lobes 4, 1.5mm long, acute at apex. Stamens 4, exserted; filaments to 2 mm long. Style bifid, to 1.5 mm long. Capsule ovoid, dehiscent septically, the 2-cocci dehiscing ventrally.

Nanniyode Kavu, SK 48863. *Fl. & Fr.*: Mar.- Jul. *Dist.*: Peninsular India, endemic.

Note: Addition to Flora of Thiruvananthapuram.

Hymenodictyon Wallich in

Roxb. Fl. Ind. 2:148. 1824, *nom. cons.*

Hymenodictyon orixense (Roxb.) Mabb. in Taxon 31:66. 1982; Mohanan & Henry, Fl. Thiruvananthapuram 233. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 519. 2006. *Cinchona orixense* Roxb., Bot. Descr. Swietenia 21. 1793 & Med. Facts Obs. 6:152. 1795. *Hymenodictyon excelsum* (Roxb.) Wall. in Roxb., Fl. Ind. 2:149. 1824; Wight & Arn., Prodr. fl. Ind. orient. 392. 1834; Wight, Icon. pl. Ind. orient.t. 79. 1838; Hook.f., Fl. Brit. India . *Cinchona excelsa* Roxb. Pl. Coromandel t. 106. 1798.

Medium sized deciduous trees; bark greyish-brown, rough, dull yellow inside. Leaves 10-15 x 8-12 cm, broadly ovate, truncate at base, acuminate at apex, puberulous along the nerves above, pubescent below; lateral nerves 8-10 pairs; stipules interpetiolar leafy. Flowers in terminal and paniculate racemes; bracts 2, leafy. Calyx truncate-subglobose; lobes 5, valvate, triangular, acute at apex. Corolla greenish, 3 mm wide, salver form; lobes 5, valvate, oblong, concave. Stamens 5; anthers oblong, 0.7 cm long, mucronate. Ovary 2-locular; style 1.5 mm long; stigma fusiform, acute. Capsule obovoid, to 2 x 1 cm, loculicidal. Seeds circular, 1 x 0.5 cm, winged.

Nanniyode Kavu, SK 48900. *Fl. & Fr:* Sept–Dec. *Dist:* Indo–Malaysia

Ixora L.,

Sp. Pl. 110. 1753.

1. Flowers red; leaves sessile.....*I. coccinea*
1. Flowers white or pale yellow; leaves petiolate.....2
2. Corolla 0.6 cm long.....*I. brachiata*

2. Corolla more than 1 cm long.....3
 3. Leaves drying black.....*I. nigricans*
 3. Leaves drying brown or other than black.....4
 4. Leaves elliptic-obovate or oblanceolate, fls white....*I. finlaysoniana*
 4. Leaves lanceolate, fls pale yellow..... *I. gamblei*

Ixora brachiata Roxb. ex DC., Prodr. 4:488. 1830; Wight, Icon. pl. Ind. orient. t. 710. 1843; Hook.f., Fl. Brit. India 3:142. 1880; Gamble, Fl. Madras 631. 1921; Husain & Paul, J. Econ. Tax. Bot. (Addl. ser.) 6:161. 1989; Mohanan & Henry, Fl. Thiruvananthapuram 234. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 520. 2006.

Small evergreen trees; bark smooth, grey, young shoots glabrous. Leaves 8-12 x 3-5 cm, elliptic-obovate or oblanceolate, acute to alternate at base, obtuse at apex, glabrous; lateral nerves many, slender; petiole to 2 cm long. Flowers in sessile or shortly peduncled terminal cymes; bracts triangular-cuspidate; bracteoles minute, subulate. Calyx small, urceolate, to 1 mm long; teeth minute, triangular. Corolla white, lobes oblong, deflexed, 2 x 1.5 mm, rounded at apex, deflexed. Stamens 5. Style hairy, not much exserted. Drupes didymous, 0.6 x 0.8 cm, black when ripe.

Punnakkattu Edathara Nagaru Kavvu, SK 48804. *Fl.* & *Fr.*: Jan – May.
Dist.: Western Ghats, endemic.

Ixora coccinea L., Sp. Pl. 110. 1753; Roxb., Fl. Ind. 1: 375. 1832; Wight & Arn., Prodr. fl. Ind. orient. 427. 1834; Wight, Icon. pl. Ind. orient.t. 153. 1839; Hook.f., Fl. Brit. India 3:145. 1880; Gamble, Fl. Madras 2:631. 1921; Husain & Paul, J. Econ. Tax. Bot. (Addl. Ser.) 6: 1989; Mohanan

& Henry, Fl. Thiruvananthapuram 234. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 520. 2006. *Thetti*.

Glabrous shrubs. Leaves 4-10 x 3-6 cm, oblong, subcordate and amplexicaule at base, obtuse apiculate at apex, sessile or nearly so; stipules with a rigid, long, cuspidate point. Flower many in dense, sessile or peduncled corymbiform cymes; pedicels very short; bracts and bracteoles small. Calyx 2 mm long; teeth triangular, 1 mm long, acute at apex. Corolla red; tube slender, 2.5-3 cm long; lobes elliptic-oblong, 4-5 mm long, subacute. Fruits globose, purplish-black, 5-6 mm wide. Seeds deeply ventrally concave, brown.

Pulickal Kavu, SK 47860, Moopuram Kavu, SK 42352; Poolanthara Kavu, 39333; Indalayapan Kavu 39362. *Fl. & Fr*: Round the year *Dist*: Native of Western India, now planted all over the tropics.

Note: A highly variable species showing many intermediate forms.

Ixora finlaysoniana Wallich ex Don, Gen. Hist. 3:572. 1834; Gamble, Fl. Madras2: 629. 1921; Nayar & *al.*, Flg. Pl. Kerala-Handb. 546. 2006.

Small trees. Leaves 10-15 x 4-7 cm, elliptic-ovate to obovate, acute to decurrent at base, broadly acute at apex, coriaceous; lateral nerves 8-10 pairs; petiole to 1 cm. Flowers white in terminal corymbs. Calyx cupular, 1.5 mm long; lobes 4, lanceolate, 4 mm long, membraneous. Corolla white, 1.5 cm across; tube 3 cm; lobes 4, obovate, 7 x 3 mm. Ovary 2 mm long; style 3.5 cm long.

Sri Naduvathan Kavu, SK 47865; Moopuram Kavu, SK 42357. *Fl. & Fr*: Round the year. *Dist*: Native of East Indies, planted ever where.

Ixora gamblei V.S. Ramachandran & V.J. Nair, Fl. Cannanore 220. 1988; Nayar & *al.*, Flg. Pl. Kerala-Handb. 520. 2006. *I. malabarica* (Dennst.) Mabb., Taxon 26:539. 1977; Husain & Paul, J. Econ. Tax. Bot. (Addl. ser.) 6:145. 1989; Mohanan & Henry, Fl. Thiruvananthapuram 234. 1994. *Chiococca malabarica* Dennist., Schluss. 12, 19, 37. 1818. *Ixora lanceolaria* Colebr. ex Roxb., Fl. Ind. 1: 397. 1820; Wight, Icon. pl. Ind. orient.t. 827. 1844 – 1845; Hook.f., Fl. Brit. India 3:138. 1880 p. p.; Gamble, Fl. Madras 630. 1921.

Shrubs; young shoots pubescent. Leaves 3-11 x 2.5-4 cm, elliptic or elliptic-lanceolate, obtuse or truncate at base, acuminate at apex, glabrous above and sparsely pubescent beneath; lateral nerves not prominent. Flowers in dense pubescent cymes. Calyx lobes lanceolate, pubescent. Corolla pale yellow; tube to 1.8 cm long; lobes refluxed, to 1 cm long. Drupes didymous, 0.8 x 1 cm, red.

Pulickal Bhagavathi Kavu, SK 47808; Nanniyode Kavu, SK 39364; Indalayappan Kavu, SK 39369. *Fl. & Fr.*: Oct – Mar. *Dist.*: Southern Western Ghats, endemic.

Ixora nigricans R. Br. ex Wight & Arn., Prodr. fl. Ind. orient. 428. 1834; Wight, Icon. pl. Ind. orient.t. 318. 1840; Hook.f., Fl. Brit. India 3:148. 1880; Gamble, Fl. Madras 631. 1921; Husain & Paul, J. Econ. Tax. Bot. (Addl. Ser.) 6: 111. 1989; Nayar & *al.*, Flg. Pl. Kerala-Handb. 521. 2006. *Irumbarappu*.

Shrubs; young shoots glabrous. Leaves 10-16 x 3-5 cm, oblanceolate, alternate or obtuse at base, acute or acuminate at apex, subcoriaceous, glabrous; lateral nerves 10 pairs; petiole to 1 cm long. Flowers in dense brachiate glabrous cymes. Calyx lobes subulate. Corolla white; tube slender, to 1.8 cm long; lobes oblong, spreading, 4 mm long. Style glabrous; stigma branched and curved. Drupes globose or subglobose, 1 cm wide. Seeds plano-convex, rugose on the back.

Indalayappan Kavu, SK 39335, Cherunilakkodu Kavu, SK 48804. *Fl. & Fr.*: Dec–Mar. *Dist.*: Indo – Malaysia.

Note: Addition to the flora of Thiruvananthapuram.

Mitracarpus Zucc. ex Schult. & Schult. f.,
Mant. 3:210, 399. 1827.

Mitracarpus hirtus (L.) DC., Prodr. 4: 527. 1830; Nicholson, Taxon 26: 574. 1977; Ridsdale in Dassan. & Clayton, Rev. Handb. Fl. Ceylon 12: 330. 1998; Nayar & al., Flg. Pl. Kerala-Handb. 525. 2006. *Mitracarpus villosus* (Sw.) DC., Prodr. 4:572. 1830; Verde., Kew Bull. 30: 317–322. 1975. *Spermacoce villosa* Sw., Prodr. 29. 1788. *Mitracarpus verticillatus* (Schum. & Thonn.) Vatke, Linnaea 40:196. 1876; Sebastine & Ramam., Bull. Bot. Surv. India 9:291. 1968. *Staurospermum verticillatum* Schum. & Thonn., Beskr. Guin. Pl. 73. 1827.

Erect herbs; stem pubescent. Leaves 2.5-4 x 1-1.8 cm, ovate or elliptic, obtuse at base, acute at apex, membranous; basally 5-nerved. Flowers white in axillary capitate clusters. Calyx lobes unequal, 2 larger than the rest, lanceolate. Corolla 1.5 mm long, funnel shaped; lobes valvate. Stamens attached to the mouth of corolla; anthers exerted.

Ovules attached to the middle of septum; style 2-fid. Capsule dehiscence circumscissile. Seeds furrowed on one side.

Pulickal Bhagavathi Kavu, SK 47819; Parayaru Kavu, SK 48808. *Fl. & Fr.*: July – Dec. *Dist.*: Native of Tropical Africa and America, now widely spreading in many tropical Asian Countries.

Morinda L.,

Sp. Pl. 176. 1753.

- 1. Trees.....*M. pubescens*
- 1. Climbing shrubs.....2
- 2. Leaves with lateral nerves 6-8 pairs.....*M.umbellata*
- 2. Leaves with lateral nerves 10-12 pairs.....*M. reticulata*

Morinda pubescens Sm. in Rees. Cyclop. 24. n. 3. 1813; Verdcourt in Kew Bull. 37:543. 1983; Mohanan & Henry, Fl. Thiruvananthapuram 237. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 525. 2006. *M. tomentosa* Heyne ex Roth. Nov. Pl. Sp. 147. 1821. *M. tinctoria* Roxb. var. *tomentosa* (Heyne ex Roth.) Hook.f., Fl. Brit. India 3:156. 1880; Gamble, Fl. Madras 652. 1921. *M. tinctoria* Roxb. Fl. Ind. 1: 543. 1832; Hook.f., Fl. Brit. India 3:156. 1880; Gamble, Fl. Madras 651. 1921. *Manjanathi*.

Trees. Leaves 8-15 x 3-5 cm, elliptic-lanceolate or ovate-lanceolate, cuneate at base, acuminate at apex, glabrous or densely tomentose. Flowers pale yellow in sessile axillary umbels. Calyx rim 4x3 mm. Corolla white, 2 cm across; tube 1.5 cm, glabrous within; lobes 5, oblong, 1cm long. Stamens 5, exserted; filaments 4.5 mm; anthers 5.5 mm, ovary

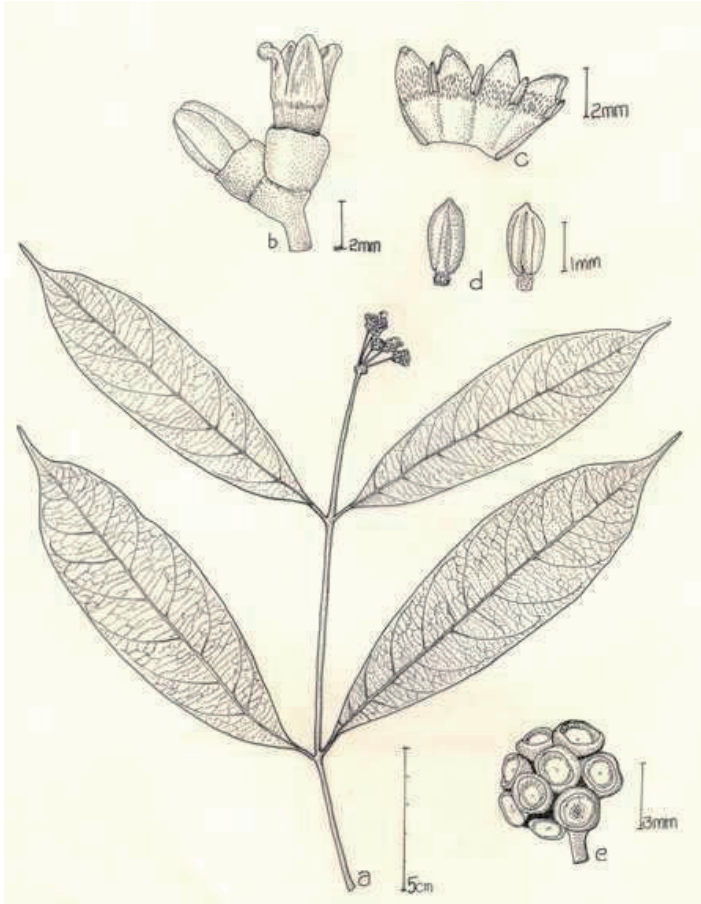
3 mm; style 1.2 cm long; forked from above the middle. Fruits 2cm wide. Seeds oblong or obovoid.

Keezhetti Kavu, SK 42378; Indalayappan Kavu, SK 39334. *Fl. & Fr.*: Mar.- Jun. *Dist.*: Indo-Malaya.

Morinda reticulata Gamble in Bull. Misc. Infor. 248. 1920 & Fl. Pres. Madras 652. 1921; Mohanan & Henry, Fl. Thiruvananthapuram 237. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 526. 2006.

Climbing shrubs. Leaves 18-25 x 2-3.5 cm, oblanceolate or linear-oblong, cuneate at base, caudate –acuminate at apex, coriaceous, glabrous; lateral nerves 8-12 pairs, reticulation prominent. Flowers white in axillary and terminal umbellate heads. Calyx limb a fleshy cushion like ring. Corolla tube more or less funnel shaped; tube 1.5 mm long, villous within. Stamens 4, included. Ovary 1.7 mm; style 4-5 mm long. Fruits 1.5 cm wide.

Valiaveetil thekkedathu Kavu, SK 39347. *Fl. & Fr.*: Jun.-Oct. *Dist.*: Southern Western Ghats, endemic.



Morinda reticulata Gamble. a. A twig, b. A flower and a flower bud, c. Corolla spread out, d. Stamens, e. Fruits.

***Morinda umbellata* L.**, Sp. Pl. 176. 1753; Wight & Arn., Prodr. fl. Ind. orient. 420. 1834; Hook.f., Fl. Brit. India 3:157. 1880; Gamble, Fl. Madras 652. 1921; Nayar & *al.*, Flg. Pl. Kerala-Handb. 526. 2006. *M. scandens* Roxb., Fl. Ind. 2: 202. 1824.

Climbing shrubs. Leaves 6-10 x 2-3.5 cm, elliptic-lanceolate or oblanceolate, rounded or acute at base, acuminate at apex, pubescent,

membraneous. Flowers white in terminal umbellate heads. Calyx 1x1.5 mm. Corolla white, 4mm wide; tube 1 mm, villous within; lobes 4, oblong, recurved, 8 mm long. Stamens 4, included; filaments 0.5 mm; anthers 1 mm. Ovary 1.5 mm; style 4 mm long; stigma 2-lobed. Fruit 1 cm wide. Seeds oblong.

Pulickal Bhagavathi Kavu, SK 47854, Keezhetti Kavu, SK 48849; PerinKavu, SK 48774. *Fl. & Fr:* Mar-May. *Dist:* Pantropical.

Note: Addition to the Flora of Thiruvananthapuram.

Mussaenda L.,
Sp. Pl. 177. 1753.

Mussaenda belilla Buch.-Ham. in Trans. Linn. Soc. London 14: 203. 1823; Ridsdale in Manilal, Bot. Hist. Hort. Malab. 131. 1980; Mohanan & Henry, Fl. Thiruvananthapuram 238. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 526. 2006. *M. laxa* (Hook.f.) Hutch. ex Gamble, Fl. Madras 625. 1921. *M. frondosa* L. var. *laxa* Hook.f., Fl. Brit. India 3:89. 1880. *Vellila*.

Stragglers; stem hirsute. Leaves 7-10 x 4-5.5 cm, ovate-elliptic, cuneate at base, abruptly acuminate at apex, chartaceous; lateral nerves 8-12 pairs, curving upwards; petiole to 2.5 cm long. Flowers deep golden yellow in terminal lax cymes. Calyx teeth linear-subulate, one enlarging leaf like, creamy, persistent, broadly ovate or elliptic, strongly 5-7 nerved. Corolla 2.5-3 cm long; tube slender, very hairy without and at the mouth within; lobes 5, broadly ovate or elliptic, apiculate, pubescent on the back. Stamens 5; attached at the throat; anthers linear. Ovary 2-locular; ovules numerous on each locules. Berries subglobose or obovoid, glabrous, to 1.5 x 1 cm. seeds compressed.

Manthuruthu Kavu, SK 40509; Mechamkode Kavu, SK 40545. *Fl. & Fr.*: Apr.- Nov. *Dist.*: South West India, endemic.

Ophiorrhiza L.,

Sp. Pl. 150. 1753

Ophiorrhiza mungos L., Sp. Pl. 150. 1753; Hook.f., *Fl. Brit. India* 3:77. 1880; Gamble, *Fl. Madras* 607. 1921; Mohanan & Henry, *Fl. Thiruvananthapuram* 240. 1994; Nayar & *al.*, *Flg. Pl. Kerala-Handb.* 531. 2006. *Keerikizhangu*.

Annual diffuse herbs; stem rooting at lower nodes; young shoots puberulous. Leaves 6-11 x 2-4 cm, elliptic, attenuate at base, acute at apex, glabrous, dark green above, glaucous beneath; lateral nerves 8-10 pairs; petiole to 1.5 cm long. Flowers white in terminal cymes; peduncle to 2.5 cm. Calyx lobes obscure; tube short. Corolla 3 mm long; tubular; lobes valvate. Stamens 5, attached to the throat of corolla tube. Disc prominent, 2-lobed. Style filiform. Capsule compressed, 0.8 x 3 mm, glabrous.

Pillaveedu Kavu, SK 47821. *Fl. & Fr.*: Aug.- Oct. *Dist.*: Indo-Malaysia.

Pavetta L.,

Sp. Pl. 110. 1753

Pavetta tomentosa Roxb. ex J.E. Smith in Rees, *Cyclop.* 26: n.2. 1819; Bremek. *Repert. Spec. Nov. Regni Veg.* 37: 113. 1934; Fischer in Gamble, *Fl. Madras* 1879. 1936; Mohanan & Henry, *Fl.*

Thiruvananthapuram 242. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 535. 2006. *P. indica* L. var. *tomentosa* (Roxb. ex J.E.Smith) Hook.f., Fl. Brit. India 3:150. 1880. *Kattu pavetta*.

Large shrubs; tender parts softly tomentose. Leaves 12-15 x 5-8 cm, broadly elliptic-oblong, acute or rounded at base, acute at apex, softly tomentose above and densely so beneath; petiole to 2.5 cm long. Flowers white in much branched terminal cymes. Calyx 3.5 mm long. Corolla 1.5 cm long; lobes 5, oblong, 8 mm long, apiculate. Stamens 5; filaments 0.2 mm; anthers linear-oblong, 4 mm long. Ovary 3 mm long; style 4 cm long; stigma fusiform. Berry 0.7 cm across.

Nanniyode Kavu, SK 48793. *Fl. & Fr.*: May- Jul. *Dist.*: Indo-Malaysia.

Psilanthus Hook.f. in

Hooker's Icon. Pl. 12: 28. 1873, *nom.cons.*

Psilanthus wightianus (Wight. & Arn.) Leroy, Bull. Mus. Hist. Nat. (Paris) ser. (4) 3. Sect. B. Adansonia 3: 252. 1981; Bridson, Kew bull. 42: 455. 1987; Sivarajan *et al.*, Bot. Bull. Academia Sinica 33: 221. 1992; Nayar & *al.*, Flg. Pl. Kerala-Handb. 536. 2006. *Coffea wightiana* Wight & Arn., Prodr. fl. Ind. orient. 436. 1834; Wight, Icon. pl. Ind. orient. t. 1598. 1850; Thw., Enum. Zeyl. 154. 1864; Hook.f., Fl. Brit. India 3: 154. 1880; Gamble, Fl. Madras 636. 1921. *Psilanthus bridsoniae* Sivarajan *et al.*, Bull. Academia Sinica 33: 216. 1992; Deb, in J. Econ. Tax. Bot. 26(1): 242. 2002.

Deciduous shrubs, often with spiniform branches. Leaves to 4 x 2 cm, ovate-elliptic, cuneate or attenuate at base, subacute or obtuse at apex,

green above, grey beneath; stipules triangular, acuminate, to 6x4 mm, pubescent outside and with collaters within the base. Flowers white, usually borne on leafy, spiniform branches; bracts one pair; bracteoles closely set with bracts, much larger. Calyx campanulate, pubescent outside, slightly exceeding the disc. Corolla tube cylindrical, to 1.5 cm long, pubescent outside; lobes 5, oblong or elliptic, to 10x6 mm. Stamens inserted below the throat. Style glabrous; stigma 2-lobed. Fruits broader than long, to 4 x 8 mm.

Valiya Kavu, SK 47964. *Fl. & Fr.*: Nov.- Feb. *Dist.*: Peninsular India and Sri Lanka.

Psychotria L.,

Syst. Nat. ed. 10 906, 929, 1364. 1759, *nom.cons.*

- 1. Fruiting pedicels and peduncle yellow; branches of inflorescence opposite.....*P. flavida*
- 1. Fruiting pedicels and peduncle greenish; branches of inflorescence whorled..... *P. nudiflora*

Psychotria flavida Talbot, *Trees & Shrubs Bombay*, 113. 1894; Gamble, *Fl. Madras* 641. 1921; Deb. & Gang., *J. Econ. Tax Bot. (Addl. Ser.)* 7: 89. 1989; Mohanan & Henry, *Fl. Thiruvananthapuram* 243. 1994; Nayar & *al.*, *Flg. Pl. Kerala-Handb.* 537. 2006.

Small undershrubs; branchlets terete, glabrous. Leaves 10-18 x 3-5 cm. elliptic-oblong, attenuate at base, acute or shortly acuminate at apex, coriaceous, glabrous; lateral nerves 10-12 pairs; petiole to 2.5 cm long; stipules ovate, to 6m long. Flowers white in terminal peduncled

corymbose cymes. Calyx shortly toothed; tube 2.5 mm long. Corolla densely hairy in the throat. Stamens 4. Drupe subglobose, 5 mm wide, bluish-purple; peduncle and pedicels yellow. Seeds smooth.

Pulickal Kavu, SK 47835; Nanniyode Kavu, SK 48778. *Fl. & Fr:* Apr.-Jul. *Dist:* South West India, endemic.

Psychotria nudiflora Wight & Arn., Prodr., fl. Ind. orient. 434. 1834; Hook.f., Fl. Brit. India 3:175. 1880; Gamble, Fl. Madras 641. 1921; Deb. & Gang.. J. Econ. Tax. Bot. (Addl. Ser.) 7: 56. 1989; Mohanan & Henry, Fl. Thiruvananthapuram 244. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 538. 2006. *P. sekharana* Ramam. & Rajan, J. Bombay Nat. Hist. Soc. 80: 621. 1983 (1984).

Small undershrubs; branchlets glabrous. Leaves 10-17 x 2-4.5 cm, lanceolate to oblanceolate, acute to attenuate at base, acute at apex, coriaceous, glaucous below; lateral nerves 11-13 pairs; stipule ovate, bifid at apex. Flowers in dichotomously branched corymbose cymes. Calyx truncate or minutely lobed. Corolla white, 4 mm long, with a ring of hairs at mouth. Stamens attached to the mouth of corolla tube. Style short; stigma 2-lobed. Drupe black at maturity.

Manthuruthu Kavu, SK 48865. *Fl. & Fr:* Mar.- Aug. *Dist:* India.

Spermacoce L.,

Sp. Pl. 102.1753

- 1. Calyx lobes unequal.....*S. mauritiana*
- 1. Calyx lobes unequal.....2
- 2. Stem broadly winged.....*S. latifolia*
- 2. Stem not winged.....*S. articularia*

Spermacoce articularis L.f. , Suppl. Pl. 119. 1782; Sivarajan *et al.*, Proc. Indian Acad. Sci. (Pl. Sci.) 97: 349. 1987; Nayar & *al.*, Flg. Pl. Kerala-Handb. 541. 2006. *Borreria articularis* (L.f.) F.N. Will., Bull. Herb. Boiss. Ser.5.2: 88. 1905; Mohanan & Henry, Fl. Thiruvananthapuram 221 1994. *Spermacoce hispida auct. non L.*, 1753, *sensu* Hook.f., Fl. Brit. India 3: 200. 1881; Deb. & Dutta, J. Econ. Tax. Bot. 5: 1046. 1984.p.p.

Diffuse herbs; stem 4-angled, hispid hairy. Leaves 1-3 x 0.5-1.8 cm, elliptic or obovate, truncate or attenuate at base, acute at apex; lateral nerves 4 pairs. Flowers in axillary fascicles. calyx oblong-globose; lobes 4, equal, obovate, 1.5 mm, acute –apiculate. Corolla pinkish-white, 5.5 mm wide; tube 2.5 mm; lobes 4, oblong, 2.5 mm long. Stamens 4, exserted; anthers 1.5 mm long. Ovary oblong, 3 mm long; style puberulous; stigma recurved. Capsule globose, 6 x 4 mm. Seeds oblong.

Siva temple Kavu, Ambalathara, SK 48795. *Fl. & Fr.*: Oct.- Dec. *Dist.*: S.E. Asia, Malaysia, Tropical Africa.

Spermacoce latifolia Aublet, Hist. Pl. Guiane Fr. 1: 55.t. 19/1. 1775; Verdcourt, Fl. Trop. E. Africa 1: 364. 176; Deb & Dutta, Bull. Bot. Surv. India 18: 216. 1979; Sivarajan *et al.*, Proc. Indian Acad. Sci. (Pl. Sci.) 97: 355. 1987; Mohanan & Henry, Fl. Thiruvananthapuram 221 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 542. 2006. *Borreria eradii* Ravi, J. Bombay Nat. Hist. Soc. 66: 539. 1970.

Diffuse herbs; branches elongated, 4-angled and winged. Leaves 3-5 x 1.5-3 cm, broadly elliptic or ovate, cuneate at base, acute at apex, scabrid on both sides; lateral nerves 5-6 pairs; stipules with subulate

hispid bristles, ovate. Flowers in axillary, a few flowered cymes. Calyx pubescent; lobes 1 mm long, ovate-acuminate. Corolla pinkish-white, 1 cm long. Stamens 4, included. Capsule oblong, 0.4 cm long, densely pubescent. Seeds ellipsoid, reticulate-rugose.

Thachottu Madan Kavu, SK 48754. *Fl. & Fr.*: Aug.- Oct. *Dist.*: Native of Tropical America, introduced in many Asian and African countries.

Spermacoce mauritiana Osea Gideon ex Verdcourt, Kew Bull. 37: 547. 1983; Sivarajan *et al.*, Proc. Indian Acad. Sci. (Pl. Sci.) 97: 356. 1987; Nayar & *al.*, Flg. Pl. Kerala-Handb. 542. 2006. *S. ocymoides auct. non* (Burm.f.) DC. 1830; Gamble, Fl. Madras 654. 1921. *Spermacoce decandellonei* Deb & Dutta, J. Econ. Tax. Bot. 5: 1044. 1984.

Erect or ascending herbs; stem 4-angled, ciliate along the margins. Leaves 0.9-2.8 x 0.6-1.5 cm, ovate or elliptic, cuneate at base, acute at apex, glabrous above, sparsely hispid below; lateral nerves 5-7 pairs. Flowers in axillary whorls or terminal heads; stipule bristles subulate. Calyx lobes of 2 unequal pairs. Corolla white, 2 mm long. Stamens 4. Capsule truncate, compressed, dehiscent transversely, 0.7 mm long. Seeds oblong, reticulate.

Nanniyode Kavu, SK 48757. *Fl. & Fr.*: Sept.- Oct. *Dist.*: Native of tropical America, now widespread in Indo-Malaysia.

ASTERACEAE Dumort.,

Comment. Bot. 55. 1822, *nom.cons.* ; *nom. alt.*: Compositae.

1. Leaves opposite.....	2
1. Leaves alternate.....	10
2. Outer layer of florets rayed.....	3
2. Outer layer of florets not rayed, all tubular.....	8
3. Outer involucral phyllaries spinous.....	<i>Acanthospermum</i>
3. Outer involucral phyllaries not spinous.....	4
4. Pappus bristle plumose.....	<i>Tridax</i>
4. Pappus bristle not plumose or absent.....	5
5. Achenes ciliate along the margins.....	<i>Spilanthes</i>
5. Achenes not ciliate along the margins.....	6
6. Pappus of 2-stout bristles.....	<i>Synendrella</i>
6. Pappus of 2-3 weak bristles or scales.....	7
7. Disc florets 5-lobed; pappus bristly.....	<i>Blainvillea</i>
7. Disc florets 4-lobed; pappus scaly.....	<i>Eclipta</i>
8. Pappus absent.....	<i>Eleutheranthera</i>
8. Pappus present.....	9
9. Pappus of 5-paleaceous scales boardened at base.....	<i>Ageratum</i>
9. Pappus setose.....	<i>Chromolaena</i>
10. Heads sessile on axillary clusters.....	<i>Strutchium</i>
10. Heads otherwise.....	11
11. All florets tubular.....	12
11. Outer florets ligulate.....	16
12. Anthers obtuse at base.....	13
12. Anthers appendaged at base or sagitate.....	14
13. Basal leaves deeply pinnatisect.....	<i>Emilia</i>
13. Basal leaves not pinnatisect.....	<i>Gynura</i>

- 14.Pappus bi-seriate; inner longer.....*Vernonia*
 14.Pappus uni-seriate.....15
 15.Leaves radical; pappus rigid.....*Elephantopus*
 15.Leaves cauline; pappus weak.....*Blumea*
 16.Pappus 0.....*Artemisia*
 16.Pappus present, uniseriate.....*Pentanema*

Acanthospermum Schrank

Pl. Rar. Hort. Monac. adt. 53. 1820.

Acanthospermum hispidum DC., Prodr. 5: 522.1830; Gamble, Fl. Madras 704. 1921; Grierson in Dassan. & Fosberg., Rev. Handb. Fl. Ceylon 1: 206. 1980; Mohanan & Henry, Fl. Thiruvananthapuram 251 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 97. 2006.

Annual herbs; stem pubescent. Leaves 3-7 x 2-4 cm, ovate, cuneate at base, acute at apex, pilose on both sides, sessile. Capitulum small, solitary, axillary, 4-5 mm across; heterogamous, radiate; involucre 2-seriate; outer 5, lanceolate, 4.5 mm, pubescent without; inner one connate, 3 mm, enveloping the ovary or ray florets. Outer florets female; inner one bisexual. Palea membranous, linear-lanceolate, 2.5 mm long, obtuse at apex. Pappus 0. Disc florets: Corolla yellow, 2.5 mm wide; lobes 5, ovate, 1 mm long. Stamens 5; anthers linear. Ray florets 5-7. Corolla creamy-white, 2 mm long. Style 1.5 mm. Achenes of ray florets compressed, smooth; those of disc florets sterile.

Sree Bhuthathan Kavu, Kudappanakunnu, SK 48796. *Fl. & Fr.*: Sept.-Dec. *Dist*: Native of South America, now become a weed in many tropical countries.

Ageratum L.,

Sp. Pl. 839. 1753.

Ageratum conyzoides L., Sp. Pl.839. 1753. Hook.f., Fl. Brit. India 3:243. 1881; Gamble, Fl. Madras 677. 1921; Mohanan & Henry, Fl. Thiruvananthapuram 252. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 98. 2006.

Annual herbs; stem terete, pilose. Leaves 4-8 x 3-5 cm, ovate, truncate to obtuse at base, obtuse or subacute at apex, bluntly serrate at margins; petiole to 4 cm long. Capitulum 5 mm across. Involucre oblong-lanceolate, 4 mm long, serrulate towards the apex. Florets 50-75. Palea 3 mm, finely ciliate along margin. Pappus 2.5 mm long. Corolla 0.8 mm wide; tube 2.5 mm long. Stamens 5; anthers 0.5 mm long. Ovary slightly curved, 1.8 mm long; style 2.5 mm. Achenes slightly curved, narrowed below, sparsely scabrous.

Poolanthara Kavu, SK 48798. *Fl. & Fr:* Aug – Dec. *Dist:* Native of Tropical America, now a common weed in many other tropical countries.

Artemisia L.,

Sp. Pl. 845. 1753.

Artemisia parviflora D.Don, Prodr. Fl. Nepal 181. 1825; Roxb., Fl. Ind. 2: 420. 1832; Hook.f., Fl. Brit. India 3:322. 1881; Gamble, Fl. Madras 713. 1921. *Artemisia japonica* Thunb., Syst. Veg.(ed. 14) 744. 1784; Nayar & *al.*, Flg. Pl. Kerala-Handb.101. 2006 .

Subshrubs; shoots several from the base. Leaves 1-3 x 0.3-5 cm, linear-oblong, apex acute, much reduced and linear towards apices. Panicles terminating the branchlets capitula 1.5 mm wide. Outer involucre ovate, subacute; inner to 1.5 mm. Disc florets: Corolla 0.7 mm across; tube 1.5 mm. Stamens 5; anthers 1 mm long. Ovary sterile; style arms linear, connate. Ray florets: Corolla 0.5 mm long. Ovary 0.3 mm long; style linearly 2-fid, 1.2 mm long, tip truncate. Achenes ellipsoid, 1 mm long.

Sree Bhuthathan Kavu, Vazhayila, SK 48799. *Fl.*: Feb – May. *Dist.*: India and Burma.

Note: Addition to Flora of Thiruvananthapuram.

Blainvillea Cassini in

Cuvier, *Dict. Sci. Nat.* 29: 493. 1823.

Blainvillea acmella (L.) Philip., *Blumea* 6: 350. 1950; Mohanan & Henry, *Fl. Thiruvananthapuram* 254. 1994; Nayar & *al.*, *Flg. Pl. Kerala-Handb.* 102. 2006. *Verbesina acmella* L. *Sp. Pl.* 901. 1753. *Blainvillea latifolia* (L.f.) DC. in Wight, *Contr. Bot. India* 17. 1834; Hook.f., *Fl. Brit. India* 3: 305. 1881. *Eclipta latifolia* L.f., *Suppl.* 378. 1781. *Blainvillea rhomboidea* Cass., *Dict. Sci. Nat.* 29: 494. 1823; Gamble, *Fl. Madras* 706. 1921.

Annual herbs; stem pilose. Leaves 7-10 x 3-5 cm, ovate or obovate-lanceolate, rounded or cuneate at base, acuminate at apex, serrate at margin; pubescent on both sides; petiole to 1.5 cm long. Capitulum 4-5 mm wide, heterogamous, radiate. Involucre campanulate, multiseriate, outer 1-seriate, ovate-rhomboid, 4mm; inner oblong, folded, scarious.

Outer florets female; inner one bisexual. Disc florets: Corolla white, 1.2 mm wide; tubular-campanulate. Stamens 5, included; anthers linear, 0.6 mm, base obtuse. Ovary oblong, compressed, 3-5 angled, 2 mm long. Ray florets: Corolla narrowly tubular, 1.2 mm long; ray 2-lobed. Ovary oblong, compressed, 3-quertrus, scabrous above; style 2 mm, exserted. Achenes truncate, 4mm long.angles projecting.

Nanniyode Kavvu, SK 48758. *Fl. & Fr:* Aug.- Sept. *Dist:* Pantropical Weed.

Blumea DC. in

Arch. Bot (Paris) 2: 514. 1833, *nom.cons.*

Blumea oxydonta DC. in Wight, Contrib. Bot. India 15. 1834; Hook.f., Fl. Brit. India 3:322. 1881; Gamble, Fl. Madras 686. 1921; Randiera, Blumea 10: 280. 1960; Nayar & *al.*, Flg. Pl. Kerala-Handb. 105. 2006.

Prostrate herbs; rootstock thick; stem pubescent. Leaves radical and cauline; radical oblanceolate, obtuse at apex, dentate at margin; cauline one oblong, sessile, dentate at margins; young leaves densely silky. Capitulum a few in axillary and terminal panicles; involucre densely tomentose, mixed with gland tipped hairs. Outer flowers female; inner ones bisexual. Corolla yellow, lobes glandular hairy. Anthers 4-5, sagitate at base, appendaged at apex. Achenes pubescent.

Mechamkode Kavvu, SK 40533. *Fl. & Fr:* Jan- Mar. *Dist:* Indo-Malaysia and S. China.

Chromolaena DC.,
Prodr. 5:133. 1836.

Chromolaena odorata (L.) R. King & H. Robinson, *Phytologica* 20:204. 1970; Mohanan & Henry, *Fl. Thiruvananthapuram* 257. 1994; Nayar & *al.*, *Flg. Pl. Kerala-Handb.* 105. 2006. *Eupatorium odoratum* L., *Syst. Nat.* 1205. 1759; C.B. Clarke, *Compos. Ind.* 30. 1876; Hook.f., *Fl. Brit. India* 3:244. 1881.

Aromatic viscid pubescent subshrubs. Leaves 6-8 x 3-5 cm, ovate-deltoid, acute at base, acute-acuminate at apex, coarsely serrate at margins, puberulous above, pubescent below, chartaceous; 3-nerved at base. Capitula in much branched terminal panicles. Phyllaries many seriate, unequal; ovate-oblong to linear, 7-15 x 0.5-1 mm. Florets bisexual, blue-purple. Corolla tubular-campanulate, gradually widening towards apex; lobes 5, ovate, 0.5 mm long. Stamens 5, sub exserted; filaments filiform, linear. Ovary, 4 mm long, angular; style to 8 mm long; stigma truncate. Achenes 4-angled, black, ciliate along the angles; pappus white, barbellate.

Pulickal Bhagavathi Kavu, SK47850. *Fl. & Fr.*: Nov – Feb. *Dist.*: Native of Tropical America, now a weed in many tropical Asian countries.

Gynura Cass. in

Cuvier, *Dict. Sci. Nat.* 34: 391. 1825, *nom. cons.*

Crassocephalum crepidioides (Benth.) S. Moore, *J. Bot.* 5: 211. 1912; Belcher, *Kew Bull.* 462. 1955; Nair & Srinivasan, *J. Econ. Tax. Bot.* 3: 289. 1982; Mohanan & Henry, *Fl. Thiruvananthapuram* 258. 1994; Nayar

& al., Flg. Pl. Kerala-Handb. 107. 2006 *Gynura crepioides* Benth. in Hook., Niger. Fl. 438. 1849. *Erechites valerianifolia sensu* Fischer in Gamble, Fl. Madras 1882. 1936, *non* DC. 1838

Annual erect herbs; young shoots puberulous. Leaves 6-8 x 2-4 cm, elliptic-lanceolate, acuminate at apex, crenate at margins, glabrous, membranous; petiole to 2 cm long. Capitula 1.5 cm wide. Phyllaries lanceolate, 1.3 cm long. Florets brick red. Corolla 1.5 mm wide; tube 1.2 cm long; lobes 5, ovate-lanceolate. Stamens 5; anthers 3 mm long. Ovary 2 mm long; style to 1.3 cm long, puberulous. Achenes 10-ribbed; pappus white, silky.

Nanniyode Kavu, SK 48607. *Fl. & Fr:* Aug.- Dec. *Dist:* Native of Africa, now introduced into many tropical Asian countries.

Eclipta L.,

Mant. Pl. 157, 286. 1771. *nom. cons.*

Eclipta prostrata (L.) L., Mant. 2: 206. 1771; Koyama, Taxon 30: 505. 1981; Mohanan & Henry, Fl. Thiruvananthapuram 259. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 108. 2006. *Verbesia prostrata* L., Sp. Pl. 902. 1753. *E. alba* (L.) Hassk., Pl. Jav. Rar. 528. 1848; Hook.f., Fl. Brit. India 3: 304. 1881; Gamble, Fl. Madras 705. 1921. *Verbesia alba* L., Sp. Pl. 902. 1753.

- 1. Stem erect, solitary.....var. *prostrata*
- 1. Stem procumbent, tufted..... var. *dixitii*

var. **prostrata**

Erect herbs; stem sparsely strigose with bulbous based hairs. Leaves 4-7 x 0.8-1.3 cm, elliptic or oblong-lanceolate, cuneate and decurrent at base, acute at apex, irregularly serrate-dentate at margin. Capitula 1-3, axillary or terminal, homogamous, disciform. Phyllaries 2-seriate, oblanceolate; outer 4, glabrous or sericeous, 5x1 mm, gradually acuminate; inner 4, strigose without, 7x1 mm. Pappus uniseriate. Corolla 4 mm wide; tube cylindric; lobes 5, equal, oblong. Stamens 5, exserted; filaments filiform. Ovary oblong, 1.5-2 mm, pubescent above, 3-quetrous, hairy above.

Neelakesi Kavu, SK 48809. *Fl. & Fr.*: Dec. – Jun. *Dist.*: Pantropical.

var. **dixitii** Anand Kumar & Khanna, J. Econ. Tax. Bot. 23(3): 713. 1999; Nayar & *al.*, Flg. Pl. Kerala-Handb. 108. 2006.

Herbs, caespitose; stem terete. Leaves 0.5-2 x 0.2-0.5 cm, oblong-lanceolate or oblong-elliptic, cuneate at base, acute or sub-acuminate at apex, densely strigose above. Capitula 4-5 mm wide; peduncle 2-4 mm long. Phyllaries 2-seriate; outer bracts 5, ovate-elliptic, 3.5x2.5 mm; inner elliptic-obovate. Ray florets 2-3 seriate, female. Corolla 2.5 mm long; tube 0.8 mm long. Disc florets numerous. Corolla campanulate. Stamens 4-5, sagittate. Achenes yellowish-brown, oblong-turbinate, dorso-ventrally compressed and sharply angled, hairy above. Pappus partially united forming a cup at the apex.

Sree Aryankuzhi Bhagavathi temple Kavu, SK 48820. *Fl. & Fr.*: Mar.-Jul. *Dist.*: India.

Note: This variety was first described from Betul district of Madhyapradesh and is known only from the type locality. The present finding from Kerala hence form a new record for South India.

Elephantopus L.,

Sp. Pl. 814. 1753.

Elephantopus scaber L., Sp. Pl. 814. 1753; Wight, Icon. pl. Ind. orient. t. 1086. 1846; C.B. Clarke, Compos. Ind. 28. 1876; Hook.f., Fl. Brit. India 3:242. 1881; Gamble, Fl. Madras 625. 1921; Mohanan & Henry, Fl. Thiruvananthapuram 223. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 108. 2006. *Anachuvadi*.

Scapigerous herbs. Leaves subradical, 10-15 x 3.5-5 cm, obovate to oblanceolate, cuneate to acute at base, broadly acute at apex, serrate at margins, chartaceous, strigose above, densely so along the nerves below. Capitula homogamous, disciform. Phyllaries 2-seriate, oblanceolate; outer 4, glabrous or sericeous without, to 5x1 mm; inner 4, strigose without, to 7x1.5 mm. Florets 3-5, purple, bisexual. Pappus 1-seriate. Corolla 4 mm wide; tube cylindric; lobes 5, equal, oblong. Stamens 5, exserted; filaments filiform; anthers oblong-linear, 1.8 mm long. Ovary oblong, narrowed below, 4 mm long; style to 8 mm long. Achenes 10-ribbed.

Sree Thamburan Kavu, Punnankulam, SK 48852. *Fl. & Fr.*: Oct.- Jan.
Dist: Indo-Malaysian to Australia, Philippines, Tropical Africa and Western India.

Eleutheranthera Poir ex Bosc. in
Nouv. Dict. Hist. Nat. 7: 498. 1803.

Eleutheranthera ruderalis (Sw.) Sch.-Bip., Bot. Zeit. 24: 165. 1866;
Sasi. & Nambiar, Indian J. For. 4: 240. 1981; Nayar & *al.*, Flg. Pl.
Kerala-Handb. 108. 2006. *Melampodium ruderale* Sw., Fl. Ind. Occ. 3:
1372. 1806.

Annual herbs; stem glabrecent. Leaves opposite, to 8x4 cm, ovate
or ovate-oblong, cuneate or slightly decurrent on the petiole, sparsely
pilose on both sides; lateral nerves 3-5pairs. Capitula axillary, solitary.
Florets 6-12, bisexual. Involucral phyllaries leafy. Corolla yellow, 3-4
mm long, tubular. Anthers sagittate at base. Achenes ovoid, 3-4 angular,
slightly compressed, narrowed towards apex.

Nanniyode Kavu, SK 48811. *Fl. & Fr*: Nov.- Feb. *Dist*: Native of
Tropical America, now became a weed in many Asian countries.

Note: Addition to the Flora of Thiruvananthapuram.

Emilia Cass.

Bull. Sci. Soc. Philom. Paris 1817: 68. 1817.

Emilia sonchifolia (L.) DC in Wight, Contrib. Bot. India 24. 1834;
Hook.f., Fl. Brit. India 3: 336. 1881; Gamble, Fl. Madras 716. 1921;
Mohanani & Henry, Fl. Thiruvananthapuram 261. 1994. *Muyalchevi*.

Diffuse herbs. Leaves both radical and cauline 6-12 x 1.5-4 cm,
lyrate or obovate, acutely auriculate or decurrent at base, acute or obtuse
at apex. Capitula long peduncled, homogamous. Involucre cylindric.

Phyllaries oblong-lanceolate, 1-seriate. Corolla 1 mm wide; tube 3.5mm; lobes 2 mm. Stamens 5; anthers 1.3 mm. Ovary 1.5 mm; style to 5.5mm, arms dilated; stigma hispid, acute. Achenes pubescent along angles, pale brown.

Virunthiyottu Kavu, SK 48812. *Fl. & Fr:* Mar.- Jul. *Dist:* Pantropical.

Pentanema Cass.,

Bull. Sci. Soc. Philom. Paris 1818: 74. 1818.

Pentanema indicum (L.) Ling in Acta Phyt. Sin. 10: 179. 1965. *Inula indica* L., Sp. Pl. 2: 1236. 1762. *Vicoa indica* (L.) DC. in Wight, Contrib. Bot. India 10. 1834; Wight, Icon. pl. Ind. orient.t. 1148. 1846; Gamble, Fl. Madras 701. 1921; Mohanan & Henry, Fl. Thiruvananthapuram 269. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 126. 2006. *Kammalchedi*.

Annual herbs; branchlets striate. Leaves alternate, 3-5 x 0.4-0.8 cm, lanceolate, amplexicaule and auricled at base, gradually acute at apex, serrulate at margin. capitula solitary, axillary and terminal, heterogamous, radiate. Phyllaries multiseriate, linear-lanceolate, 3 x 0.7 mm, acute. Outer florets female, 1-seriate; inner bisexual. Pappus of disc florets filiform; ray 0. Disc florets: Corolla 0.7 mm wide; tube 2.5 mm; lobes 5, ovate, acute, reflexed. Stamens 5, included; anthers linear, 1.5 mm, tailed at base. Ovary oblong, 0.7 mm; style 2.2 mm. Ray florets: Corolla yellow; tube 1.5 mm, ray oblong, to 6 x 1 mm, shortly 3-toothed above. Ovary oblong, 0.7 mm, glabrescent; style 2 mm. Achenes obovate, narrowed below, obtuse at apex.

Vadakkathil Kavu, SK 48814. *Fl. & Fr.*: Nov.-Feb. *Dist.*: Indo-Malaysian and Tropical West Africa.

Spilanthes N.J. Jacq.,

Enum. Pl. 8, 28. 1760.

1. Heads rayed.....*S. ciliata*

1. Heads not rayed.....2

2. Flowers white; Achenes winged,.....*S. radicans*

2. Flowers pale yellow; Achenes not winged,.....*S. paniculata*

Spilanthes ciliata H.B & K., Nov. Gen. & Sp. Pl. 4:621. 1836; A.H. Moore, Proc. Amer. Acad. Art. Sci. 42: 538. 1907; Sivaraj. & P. Mathew, Ancient Sci. Life 3:171. 1984; Nayar & *al.*, Flg. Pl. Kerala-Handb. 120. 2006. *Kuppamanjal*.

Diffuse herbs; rooting at lower nodes. Leaves 6 x 3 cm, ovate, rounded at base, acute at apex, crenate at margins; petiole to 1.2 cm long. Capitula axillary and terminal, solitary or in panicles. Ray florets 8-12, female, corolla 3-dentate. Disc florets bisexual, lobes papillose within. Stamens 5, sub exserted, nearly free. Achenes of ray florets 3-angled, margins ciliate; of disc florets laterally compressed, margin thickened, prominently ciliate; pappus of 2-week narrow bristles.

KeezhettiKavu, SK 48813. *Fl. & Fr.*: Oct – Jan. *Dist.*: Native of Tropical America, now common in Kerala.

Spilanthes paniculata Wall. ex DC., Prodr. 5:625. 1836; Kosterm. & Philip., Blumea 6:354. 1950; Sivaraj. & P. Mathew, Ancient Sci. Life 3:

171. 1984; Mohanan & Henry, Fl. Thiruvananthapuram 267. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 120. 2006.

Diffuse herbs; rooting at lower nodes; stem sparsely pubescent. Leaves to 6 x 4 cm, ovate, truncate at base, acute at apex, serrate at margins; petiole to 1.5 cm long. Capitula terminal, conical; peduncle to 12 cm long. Corolla yellow, lobes 5. Stamens 5, sub exserted. Achenes narrowly obovate, compressed, sparsely puberulous near apex, minutely ciliate along margins; pappus bristle short, weak..

Thachottu Kavu, SK 48815. *Fl. & Fr:* Sept.–Dec. *Dist:* Indo–Malaysia.

Spilanthes radicans Jacq., Collect. Bot. Chem. Hist. Nat. 11. 1714. 1804; Schrad in DC., Prodr. 5:624. 1836; Nayar & *al.*, Flg. Pl. Kerala-Handb. 120. 2006. *S. ocyimifolia* (Lam.) A.H. Moore, Proc. Amer. Acad. Sci. 42:531. 1907; Sivaraj. & P. Mathew, Ancient Sci. Life 3:169. 1984.

Erect herbs; stem minutely pubescent. Leaves to 7.5 x 5 cm, ovate-acute, acute at base, subentire at margins, membranous; petiole to 2 cm long. Capitula axillary, solitary or paired; peduncles to 4 cm long. Corolla creamy white; lobes 5. Stamens 5, sub exserted; anthers linear, flat, sub sagitate. Ovary obovoid or ellipsoid. Achenes of marginal florets trigonous and disc florets laterally compressed, ellipsoid or obcordate with a wide sinus at apex, margins thickened and densely long ciliate; pappus bristles 1 mm long.

Thripporitta Kavu, SK 48860. *Fl. & Fr:* Oct – Mar. *Dist:* Native of Tropical America.

Struchium P. Browne,

Civ. Nat. Hist. Jamaica 312. 1756.

Struchium sparganophorum (L.) O. Kuntze, Rev. Gen. Pl. 366. 1891; Vasudevan Nair, Bull. Bot. Surv. India 8: 202. 1966; Mohanan & Henry, Fl. Thiruvananthapuram 267. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 120. 2006. *Ethulia sparganophora* L., Sp. Pl. ed. 1171. 1763.

Semi aquatic erect herbs; stem cylindrical, sparsely puberulous. Leaves simple, alternate, to 15 x 4 cm, elliptic, acute at apex, minutely serrate at margins; lateral nerves 5-6 pairs. Inflorescence axillary, globose, homogamous capitula. Phyllaries 4-5 seriate, triangular-oblongate, acuminate at apex. Florets disciform, 4-5 mm long, actinomorphic, bisexual, trimerous. Pappus calyx like three acute scales, 0.5 mm long. Corolla 2 mm long, white; tube 1 mm long, campanulate. Stamens 3; filaments short, filiform, white; anthers sagitate. Ovary 1.5 mm long, with 3 or more vertical ridges; style filiform; stigma bifid. Achenes 1.5 mm long, blackish, with 3 prominent vertical ridges.

Nanniyode Kavu, SK 48817. *Fl. & Fr.*: June – Feb. *Dist.*: Native of Tropical America, now wide spread in Indo-Malaysia and Tropical Africa.

Synedrella J. Gaertn.

Fruct. Sem. Pl. 2:456. 1791. *nom. cons.*

Synedrella nodiflora (L.) Gaertn., Fruct. Sem. Pl. 2:456. t. 7. 1791; C.B. Clarke. Compos. Ind. 139. 1876; Hook.f., Fl. Brit. India 3:308. 1881; Gamble, Fl. Madras 708. 1921; Mohanan & Henry, Fl.

Thiruvananthapuram 267. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 121. 2006. *Verbesina nodiflora* L., Jusl. Cent. Pl. I:28. 1755. *Appakkadu*.

Annual herbs. Leaves opposite, 5-12 x 3-5 cm, elliptic-ovate, rounded to acute at base, acute at apex, serrulate at margins, scabrous above, densely so beneath; petiole to 2 cm long. Capitulum solitary, axillary, heterogamous, radiate. Phyllaries 2-seriate, outer 2 lanceolate, 8 x 2 mm, herbaceous; inner oblong, 5.5 x 2 mm, apex dentate. Outer florets female; inner bisexual. Pappus of 2 awns. Disc florets: Corolla yellow; tube 3 mm, campanulate above; lobes 5. Stamens 5, included; anthers linear, 0.7 mm ovary lanceolate, 3 mm, compressed, hairy. Ray florets: Corolla yellow; tube 2 mm; ray oblong, 1 x 0.7 mm, 2-toothed above. Ovary oblong-obovoid, winged. Achenes of disc florets narrow, compressed or triquetrous, of ray florets compressed, lacerate winged.

Mechamkode Kavu, SK 48818. *Fl. & Fr.*: Aug–Mar. *Dist.*: Native of West Indies; now become a pantropical weed.

Tridax L.,

Sp. Pl. 900. 1753.

Tridax procumbens L., Sp. Pl. 900. 1753; C.B. Clarke. Compos. Ind. 142. 1876; Hook.f., Fl. Brit. India 3: 311. 1881; Gamble, Fl. Madras 711. 1921; Mohanan & Henry, Fl. Thiruvananthapuram 268. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 122. 2006.

Procumbent herbs; rooting at lower nodes; stem pilose. Leaves opposite, 3-5 x 1-2.5 cm, ovate or lanceolate, cuneate at base, acute at apex, coarsely dentate or trilobed, hirsute on both sides; penninerved;

petiole 0.5-1 cm. Capitulum long stalked, solitary or at the forks of dichotomy, 1-1.5 cm long; heterogamous, radiate. Phyllaries multiseriate; outer oblong, 6 x 2 mm, apex acute; inner ones oblong-linear, 7 x 1.5 mm. Florets bisexual. Pappus of slender, setose hairs. Disc florets: Corolla yellow, 2mm wide; tube 6 mm; lobes 5, oblong, ciliate. Stamens 5, sub-exserted; anthers linear. Ovary oblong, 2 mm, pubescent; style to 7.5 mm. Ray florets: Corolla tube narrowly cylindric, 3.5 mm; ray 4 x 3.5 mm, deeply 3-lobed. Ovary oblong, truncate, pubescent. Achenes turbinate, smooth or faintly ribbed.

Common weed in almost all sacred groves. Thekkekonam Dhurga Kavu, SK 48821. *Fl. & Fr.*: Round the year. *Dist.*: Native of tropical America, now widespread throughout the tropics and subtropics.

Vernonia Schreb.,

Gen. Pl. 2: 541. 1791, *nom. cons.*

Vernonia cinerea (L.) Less., *Linnaea* 4: 291. 1829; Hook.f., *Fl. Brit. India* 3: 233. 1881; Gamble, *Fl. Madras* 676. 1921; Mohanan & Henry, *Fl. Thiruvananthapuram* 269. 1994; Nayar & *al.*, *Flg. Pl. Kerala-Handb.* 123. 2006. *Conyza cinerea* L., *Sp. Pl.* 862. 1753. *Poovamkurunthal.*

Erect herbs. Leaves 1-3 x 1-2 cm, ovate-elliptic to oblanceolate, rounded to decurrent at base, acute to acuminate at apex, chartaceous, glabrescent above, pubescent below. Capitula homogamous in terminal corymbose panicles. Phyllaries herbaceous; outer linear-lanceolate, to 3x0.5mm; inner ones oblong to lanceolate, to 4x1 mm, 1-nerved. Pappus 2-seriate; outer setose, 0.5 mm; inner ones barbellate, to 4 mm. Corolla 7

mm; tube 3.5 mm; lobes linear. Stamens 5, included; anthers oblong. Ovary 0.8 mm, narrowed below; style 3.5 mm. Achenes villous.

Venmaranellor Kavu, SK 48827. *Fl. & Fr.*: Jul.- Mar. *Dist.*: Indo-Malaysia to Australia and also in Africa.

LOBELIACEAE R. Br.in

Trans. L. Soc. London 12: 133. 1817, *nom.cons.*

Lobelia L.,

Sp. Pl. 929. 1753.

Lobelia alsinoides Lam., *Encycl.* 3: 588. 1792; Moeliono in Steenis, *Fl. Males.* I, 6: 126. 1960; Haridas & Mukh., *Fl. India Fasc.* 19: 42. 1988; Mohanan & Henry, *Fl. Thiruvananthapuram* 272. 1994; Nayar & *al.*, *Flg. Pl. Kerala-Handb.* 160. 2006.. *L. trigona* Roxb., *Fl. Ind.* 2: 111. 1824; Wight, *Icon. pl. Ind. orient. t.* 1170. 1848; C.B. Clarke in Hook.f., *Fl. Brit. India* 3: 423. 1881; Gamble, *Fl. Madras* 736. 1921.

Annual glabrous herbs; stem trialate. Leaves 0.8-2 x 0.4-1.5 cm, ovate, truncate at base, acute at apex, crenate at margins; lower leaves petiolate; upper sessile. Flowers solitary, axillary; pedicels slender, to 2.5 cm long. Calyx 5-lobed; teeth subulate, 3-4 mm long. Corolla 7 mm long; lobes 5, 2-lipped, blue. Stamens 5; filaments free to half of their length; anthers united; penicellate at apex. Ovary 2-celled; ovules many; stigma 2-lobed. Capsule dehiscent apically. Seeds trigonous, smooth.

Nanniyode Kavu, SK 48880; Valiya Kavu, SK 48822. *Fl. & Fr.*: Aug.- Oct. *Dist.*: Indo-Malaysia.

PLUMBAGINACEAE Juss.,

Gen. Pl. 92. 1789, *nom.cons.*

Plumbago L.,

Sp. Pl. 151. 1753.

Plumbago zeylanica L., Sp. Pl. 151. 1753; Roxb., Fl. Ind. 1: 462. 1823; Hook.f., Fl. Brit. India 3:480. 1882; Mohanan & Henry, Fl. Thiruvananthapuram 273. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 482. 2006. *Velutha koduveli*.

Perennial subshrubs; stem woody, terete, striate. Leaves 4-9 x 2.5-4.5 cm, elliptic-ovate, truncate to attenuate at base, acutely apiculate at apex, glabrous; petiole to 1 cm long, amplexicaule at the very base. Flowers white in elongated spikes to 9 cm long. Calyx to 1.3 cm long, narrowly tubular, densely covered with stalked glands. Corolla tube 1 cm across; tube 1.5 cm long; lobes narrowly obovate, 0.8 cm. Stamens 5; filaments as long as corolla tube; anthers 2 mm. Ovary 3 mm long; style slender to 1 cm long. Capsule oblong, pointed.

Moopuram Kavu, SK 48899. Fl. & Fr: Round the year. *Dist:* Throughout the tropics and subtropics.

SAPOTACEAE Juss.,

Gen. Pl. 151. 1789, *nom. cons.*

- 1.Calyx lobes 1-seriate; stamens 5-6.....*Chrysophyllum*
1.Calyx lobes 2-seriate; stamens 6-12.....2
2.Calyx lobes 6-8.....3

- 2.Calyx lobes4.....4
 3.Leaves coriaceous; calyx lobes 6.....*Manilkara*
 3.Leaves chartaceous; calyx lobes 8.....*Mimusops*
 4.Trees; stamens 8.....*Isonandra*
 4.Shrubs; stamens 16.....*Madhuca*

Chrysophyllum L.,

Sp. Pl. 192. 1753.

Chrysophyllum roxburghii G. Don, Gen. Syst. 4: 33. 1838; Bedd., Fl sylv. S.India t. 236. 1873; C.B. Clarke in Hook.f., Fl. Brit. India 3:535. 1882; Gamble, Fl. Madras 758. 1921; Nayar & *al.*, Flg. Pl. Kerala-Handb. 561. 2006. *C. lanceolatum* (Bl.) DC., Prodr. 8: 162. 188, *non* Cassar. 1843; Vink, Blumea 9: 28. 958; Mohanan & Henry, Fl. Thiruvananthapuram 276. 1994.*Nycterrisition lanceolatum* Bl., Bijdr. 676. 1826.

Large evergreen trees; bark greyish-brown, smooth; young shoots densely brown tomentose. Leaves 10-15 x 2-3.5 cm, oblong, acute at base, caudate-acuminate at apex, glabrous and glossy; lateral nerves parallel; petiole to 1 cm long. Flowers in short umbellate, axillary fascicles. Calyx lobes 5, concave, 2x1.5 mm, thick, obtuse at apex. Corolla lobes 5, ovate, 2 mm long, white, villous along the margins. Stamens 5, included; filaments spatulate, 1.5 mm long; anther cordate. Ovary conical, 1.3 mm, villous without, 5-locular. Berry globose, fleshy, with milky latex, 3-5 cm wide. Seeds 1 x 0.4 cm, oblong.

Manady Devi Temple Kavu, SK 47962. *Fl. & Fr.*: Apr.- Nov. *Dist.*: Indo-Malaysia.

Isonandra Wight,

Icon. Pl. Ind. Orient. 2(1): 4. 1840

Isonandra lanceolata Wight, Icon. pl. Ind. orient. t. 359. 1840; C.B. Clarke in Hook.f., Fl. Brit. India 3:539. 1882; Gamble, Fl. Madras 761. 1921; Jeuken, Blumea 6: 568. 1952; Mohanan & Henry, Fl. Thiruvananthapuram 276. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 562. 2006.

Large shrubs; branchlets slender. Leaves 12-20 x 3.5-8 cm, very variable in shapes, usually oblong or oblong-lanceolate, acute at base, acuminate-caudate at apex; lateral nerves 8-12 pairs; petiole to 1.5 cm long. Flowers in axillary fascicles; pedicels very short. calyx lobes 4, ovate-acute, brown tomentose. Corolla yellow. Stamens 8, uniseriate; anthers lanceolate. Ovary 4-celled; style linear. Berry ellipsoid, orange-yellow, 1 cm long.

Nagayekshi Kavu, Ayilam, SK 47896. *Fl. & Fr.*: Round the year. *Dist.*: South India and Sri Lanka.

Madhuca Buch.-Ham. ex J.F. Gmelin

Syst. Nat. 2: 773, 799. 1791.

Madhuca neriifolia (Moon) H.J. Lam., Bull. Jard. Bot. Buitenz. Ser. 3, 7. 182, 265. 1925; van Royan, Blumea 10:98. 1960; Mohanan & Henry, Fl. Thiruvananthapuram 277. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 563. 2006. *Bassia neriifolia* Moon, Cat. Pl. Ceylon 36. 1824. *B. malabarica* Bedd., For. Man. Bot. 140. 1872; C.B. Clarke in Hook.f., Fl. Brit. India 3:544. 1882; Gamble, Fl. Madras 763. 1921. *Attilippa*.

Medium sized evergreen trees; bark pale brown, reddish inside. Leaves 8-14 x 2-5.5 cm, linear-oblong or narrowly elliptic-oblong, acute at base, acute or obtuse at apex, glabrous and glossy above; lateral nerves 15-20 pairs, slender. Flowers in axillary fascicles; pedicels minutely tomentose. Calyx lobes ovate-acute, to 0.7 x 0.5 cm. Corolla creamy-yellow; lobes tomentose outside. Stamens 16; anthers linear, appendage 1 mm long; filaments villous. Ovary villous, 6-celled. Berry ellipsoid, to 3 cm long, beaked; 1-seeded. Seed brownish-black, shining.

KeezhettiKavu, SK 48822. Sreedharma Sastha Kavu, SK 47847. *Fl. & Fr.* Nov- Mar. *Dist.* South India and Sri Lanka.

Manilkara Adanson,

Fam. Pl. 2: 166, 574. 1763, *nom.cons.*

Manilkara hexandra (Roxb.) Dubard, Ann. Inst. Bot. –Geol. Colon. Marseille (ser.3) 23: 9.f.2. 1915;P. Royen, Blumea 7: 408. 1953; Mohanan & Henry, Fl. Thiruvananthapuram 277. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 564. 2006. *Mimusops hexandra* Roxb., Pl. Coromandel. t. 15. 1795 & Fl. Ind. 2: 238. 1832; C.B. Clarke in Hook.f., Fl. Brit. India 3:544. 1882; Gamble, Fl. Madras 766. 1921. *M. indica* A.DC. in DC. Prodr. 8: 205. 1844; Wight, Icon. pl. Ind. orient.t. 1587. 1850.

Small trees. Leaves 6-9 x 4-5 cm, broadly ovate, cuneate –rounded at base, obtuse to emarginate at apex; lateral nerves closely parallel, impressed above. Flower a few in leafy axils. Calyx lobes 6, in two series of 3 each, 2.5 x 2mm, thick, flat. Corolla white, brownish when dry, 7mm

wide; lobes 18, oblong, to 4.5 mm. Stamens 6, alternating with staminodes; filaments 3 mm long; anthers 2 mm. Ovary globose, to 1 x 1.5 mm, villous without; style to 4.5 mm; stigma flat. Berry ellipsoid, slightly curved, to 1.5 x 0.8 cm. Seed 1.

Chokkan Kavu, SK 47996; Moopuram Kavu, SK 42333. *Fl. & Fr.*: Dec.-Feb. *Dist.*: India, Indo-China and Sri Lanka.

Mimusops L.,

Sp. Pl. 349. 1753.

Mimusops elengi L., Sp. Pl. 349. 1753; Wight, Icon. pl. Ind. orient. t. 1586. 1850; C.B. Clarke in Hook.f., Fl. Brit. India 3:548. 1882; Gamble, Fl. Madras 765. 1921; van Royan, Blumea 6: 594. 1952; Mohanan & Henry, Fl. Thiruvananthapuram 277. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 564. 2006. *Elangi*.

Medium sized evergreen trees; bark dark brown, pink inside; young shoots adpressed tomentose. Leaves 6-10 x 3-5 cm, elliptic or elliptic-ovate, acute or obtuse at base, acute or acuminate at apex, glabrous and glossy above; lateral nerves numerous, slender, close and parallel; petiole to 2 cm long. Flowers creamy-white in axillary fascicles. Calyx lobes 18. Stamens 8, alternating with petaloid staminodes. Ovary 4 mm wide, oblong-globose, villous without. Berry ovoid, to 3 x 2 cm, fleshy. Seed 1, oblong, black, shiny.

Mechamkode Kavu, 40515; Moopuram Kavu, SK 42389. *Fl. & Fr.*: Dec.- Aug. *Dist.*: Indo- Malaysia.

EBENACEAE Gurke in

Engler & Prantl. Nat. Pflanzenf. 4(1): 153. 1891, *nom. cons.*

Diospyros L.,

Sp. Pl. 1057. 1753.

- 1.Sepals and petals 3-each.....*D. ferrea*
1.Sepals and petals 4-5-each.....2
2.Seeds with ruminant albumin; stamens 10.....*D. candolleana*
2.Seeds with the albumin not ruminant; stamens 40.....*D. malabarica*

Diospyros candolleana Wight, Icon. pl. Ind. orient. tt. 1221 & 1222. 1840; C.B. Clarke in Hook.f., Fl. Brit. India 3:566. 1882; Gamble, Fl. Madras 773. 1923; Mohanan & Henry, Fl. Thiruvananthapuram 278. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 221. 2006. *D. canarica* Bedd., Icon. pl. Ind. orient.t. 134. 1869-1874.

Small trees; young shoots pubescent. Leaves 10-15 x 4-6 cm, elliptic-oblong, rounded to attenuate at base, shortly obtusely acuminate at apex, glabrous on both sides; lateral nerves and veins inconspicuous; petiole to 1.25 cm long. Male flowers: sessile in dense axillary clusters. Calyx to 5 mm long, fulvous-silky hairy on both sides; lobes 4-5, ovate-oblong. Corolla twice as long as calyx, tubular, fulvous hairy outside, glabrous inside; lobes 5, shorter than tube. Stamens 10, in pairs; anthers lanceolate. Female flowers: Larger and thicker than male, in short axillary 2-10 flowered cymes. Calyx 9 mm long. Stamines 4-5. Ovary 4-celled. Fruits globose; fruiting calyx flat or shallowly cupuliform. Seeds 3-4, albumen ruminant.

Common to all sacred groves. Moopuram Kavu, SK 48874. *Fl. & Fr.*: May-Sept. *Dist*: Western Ghats, endemic.

Diospyros ferrea (Willd.) Bakh.f. in Gard. Bull. s.s. 7: 162. 1933; Kosterm. in Ceylon J. Sci. 12(2): 98. 1977; Mohanan & Henry, Fl. Thiruvananthapuram 279. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 222. 2006. *Ehretia ferrea* Willd., Phytogr. 1: 4.t.2.f.2.1794. *Maba buxifolia* (Rottb.) A. Juss. in Ann. Mus. Hist. Nat. Paris 5: 418. 1804; C.B. Clarke in Hook.f., Fl. Brit. India 3:551. 1882.p.p; Gamble, Fl. Madras 768. 1923.

Shrubs. Leaves 1-2.5 x 1-1.5 cm, obovate-spathulate, cuneate-attenuate at base, obtuse to emarginate at apex, coriaceous, dark green above, pale beneath; petiole to 2 cm long. Male flowers: in axillary fascicles. Calyx 2.5 mm long, scabrous without; lobes 3. Corolla yellowish, 3 mm wide; lobes 3, ovate, sericeous towards the upper half. Stamens 6; filaments 2 mm; anthers 2.5 mm long, connectives produced. Female flowers: Calyx and corolla as in male flowers. Ovary 2 mm long, pubescent without; style 1.5 mm; stigma 2-3 fid. Berry 5 mm wide.

Mannady Devi temple Kavu, SK 47991; Sree Bhagavathi Kavu, Kariprathala, SK 47828. *Fl. & Fr.*: Jan.- Jun. *Dist*: Peninsular India and Sri Lanka.

Diospyros malabarica (Desr.) Kostel, Allg. Med. Pharm. Fl. 3: 1099. 1834; Nayar & *al.*, Flg. Pl. Kerala-Handb. 223. 2006. *Garcinia malabarica* Desr. in Lam. Encycl. 3: 701. 1792. *Diospyros embryopteris* Pers. Syn. 2: 624. 1807; C.B. Clarke in Hook.f., Fl. Brit. India 3:556. 1882. *D. peregrina* sensu Gurke in Engl. & Prantl. Naturl. Pflazenf. 4(1):

164. 1893; Gamble, Fl. Madras 777. 1923. *Embryopteris glutenifera* Roxb. Cor. Pl. t.70. 1795; Wight, Icon. pl. Ind. orient. tt. 843, 844. 1840.*Panachi*.

Medium sized evergreen trees; branches numerous and spreading; bark smooth, thick, blackish. Leaves 10-25 x 3-7 cm, oblong or oblong-lanceolate, obtuse or subacute at base, acuminate at apex; petiole stout and wrinkled. Male flowers: in shortly peduncled, axillary drooping racemose cymes. Calyx 6 mm long, hairy without; lobes 4, broadly ovate. Corolla 9 mm long; lobes very thick, rounded at apex. Stamens about 40, inserted at the base of corolla tube; filaments hairy. Female flowers: Larger than male, usually solitary, axillary. Calyx deeply divided; lobes 4, broadly ovate, erect. dilate and subcordate at base. Corolla to 1.2 cm long, campanulate, deeply divided; lobes 4, cordate. Staminodes hairy. Ovary sparsely hairy, 8-celled; styles 4. Fruits subglobose, yellow. Seeds 4-8.

Thannikkattu Kavu, SK 48823; Ilankulam Kavu, SK 48836; Pulickal Bhagavathy Kavu, SK 48824. *Fl. & Fr*: Mar.- Jul. *Dist*: Indo-Malaysia.

SYMPLOCACEAE Desf.,

Mem. Mus. Hist. Nat. 6: 9. 1820, *nom.cons.*

Symplocos N.J. Jacq.,

Enum. Syst. Pl. 5, 24. 1760.

Symplocos cochinchinensis (Lour.) S. Moore, J. Bot. 52: 148. 1914, ssp. **laurina** (Retz.) Nooteb. Leiden Bot. Ser. 1: 156. 1976. var. **laurina** Nooteb., Rev. Symplocas. Old World 156. 1975; Mohanan & Henry, Fl. Thiruvananthapuram 281. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 595.

2006. *Dupatris cochinchinensis* Lour., Fl. Cochinch. 1: 314. 1790. *Myrtus laurinus* Retz. Obs. Bot. 4: 26. 1786. *Symplocos spicata* Roxb. Fl. Ind. 2: 541. 1832; Bedd., Fl. sylv. S. India t. 149. 1872; C.B. Clarke in Hook.f., Fl. Brit. India 3:573. 1882.p.p.; Gamble, Fl. Madras 782. 1923.

Small trees; young shoots glabrous. Leaves 6-13 x 3-5 cm, elliptic, cuneate at base, acuminate at apex, dentate-crenate at margins, coriaceous, glossy; lateral nerves 6-8 pairs, nervation faint; petiole to 1.5 cm long. Spikes axillary, with a few branches, to 4 cm long. Calyx glabrous; lobes orbicular, ciliolate along the margins, 1 mm long. Corolla 4 mm long. Stamens about 40, in 5 groups, unequal; filaments to 4 mm long. Ovary globose, 1 mm long; style glabrous, to 5 mm long; stigma subcapitate. Drupes ampliform, 5 mm wide, with an apical ring. Seed oblong.

Mathanathu Kavu, 39315. *Fl. & Fr:* Mar.- Jun. *Dist:* Indo-Malaysia to China and Japan.

OLEACEAE Hoffmanns & Link,

Fl. Portug. 1: 385. 1813-1820, *nom. cons.*

- 1. Corolla lobes imbricate.....*Jasminum*
- 1. Corolla lobes valvate.....2
- 2. Scandent shrubs; leaves 3-ribbed.....*Myxopyrum*
- 2. Trees; leaves penni-nerved.....*Olea*

Jasminum L.,

Sp. Pl. 7. 1753.

- 1. Leaves compound.....2
- 1. Leaves simple.....3

2. Calyx lobes shorter than calyx tube.....*J. azoricum* var. *travancorensis*
 2. Calyx lobes longer than calyx tube.....*J. grandiflorum*
 3. Calyx glabrous.....*J. angustifolium*
 3. Calyx pubescent.....*J. rottlerianum*

Jasminum angustifolium Vahl, Enum. Pl. 1: 29. 1804; Wight, Icon. pl. Ind. orient. t. 698. 1840; C.B. Clarke in Hook.f., Fl. Brit. India 3:598. 1882; Gamble, Fl. Madras 790. 1923; Nayar & *al.*, Flg. Pl. Kerala-Handb. 465. 2006.

Climbing shrubs. Leaves simple, 1-3 x 0.7-2 cm, elliptic-ovate, obtuse to truncate at base, acute at apex, glabrous, shining and dark green above, pale beneath; petiole to 4 mm long. Flowers in 1-3 flowered terminal cymes; bracts linear, 1.5 mm long; pedicel slender, to 2 cm long. Calyx lobes 5, unequal, linear, 5 mm long, sparsely ciliate along the margins. Corolla white, 2.5 cm wide; lobes 5-9, to 1.5 cm long, oblanceolate, acute at apex; tube to 1 cm long. Stamens 2, included in the corolla tube; filaments 1.5 mm long; anthers oblong, 3.5 mm long, apiculate. Ovary to 2 mm long; style to 2.5 cm long. Berry globose, 0.8 cm wide, black at maturity.

Cherunilakkodu Kavu, SK 47875. *Fl. & Fr.*: Apr.- Jul. *Dist.*: Peninsular India and Sri Lanka.

Note: Addition to the Flora of Thiruvananthapuram.

Jasminum azoricum L., Sp. Pl. 7. 1753. var. **travancorensis** (Gamble) Mohanan J. Econ. Tax. Bot. 6: 480. 1985; Mohanan & Henry, Fl. Thiruvananthapuram 284. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 462.

2006. *J. flexile* Vahl, Symb. Bot. 3: 1. 1794. var. *travancorensis* Gamble, Fl. Madras 791. 1923.

Scandent shrubs. Leaves 3-foliolate; leaflets 4-10 x 2-4 cm, truncate or obtuse at base, shortly acuminate at apex, coriaceous, dark green above, pale beneath; petiole to 3 cm long. Flowers in terminal or axillary dichasial cymes; bracts 4 mm long; pedicels to 1.5 cm long. Calyx lobes 5, triangular. Corolla 2.5 cm across, tube to 3 cm long; lobes 5, oblong, 1.4 cm long. Stamens 5, included; filaments 0.5 mm; anthers 2.5 mm long. Ovary 2.5 mm long; style 2.5 cm; stigma linearly fusiform. Berry oblong, 1.2 x 0.7 cm.

Nakrakodu Kavu SK 47925. Ayaniyerathala Devi temple Kavu, SK 42395. *Fl. & Fr.*: Dec. – Feb. *Dist.*: Peninsular India, endemic.

Jasminum grandiflorum L., Sp. Pl. (ed.2) 9. 1762; Wight, Icon. pl. Ind. orient. t. 12576. 1848; C.B. Clarke in Hook.f., Fl. Brit. India 3:603. 1882; Gamble, Fl. Madras 791. 1923; Mohanan & Henry, Fl. Thiruvananthapuram 284. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 465. 2006.

Large scandent shrubs. Leaves compound; leaflets 5-7, elliptic or ovate, 0.9-3 x 0.5-1 cm, acute at base, acute or acuminate at apex. Flowers in lax terminal cymes; bracts ovate-lanceolate, 2 mm long; pedicels slender, 10-15 mm long. Calyx cup 2 mm long; teeth linear, 3 mm long. Corolla white, tube narrow, 15-18 mm long; lobes oblong-elliptic, acute at apex. Stamens 2. Fruits not seen.

Thottakkadu Devi temple Kavu, SK 48825. *Fl*: Round the year. *Dist*: Subtropical North west Himalayas. Cultivated in many tropical countries.

Jasminum rottlerianum Wall. ex A.DC. in DC. , Prodr. 8: 305. 1844; Wight, Icon. pl. Ind. orient.t. 1249. 1848; C.B. Clarke in Hook.f., Fl. Brit. India 3:593. 1882; Gamble, Fl. Madras 789. 1923; Mohanan & Henry, Fl. Thiruvananthapuram 285. 1994. Seema & Nair, J. Econ. Tax. Bot. 26(1): 129. 2002; Nayar & *al.*, Flg. Pl. Kerala-Handb. 463. 2006.

Climbing shrubs; branches fulvous hairy. Leaves 6-8 x 1.5-3 cm, elliptic, rounded at base, acute or acuminate at apex, membranous, pubescent or glabrescent above, softly villous below; lateral nerves 5-6 pairs, nerve axils villous; petiole to 0.5 cm long. Flowers in terminal rather lax flowered cymes; bracts lanceolate, pubescent, 1.2 cm long. Calyx tomentose, lobes curved. Corolla white, tube 2.5 cm long; lobes 5-8, narrowly oblong, to 1x0.3 cm, acute at apex. Stamens 2, included in the corolla tube. Ovary 2-celled; ovules 2 in each cell. Berry ellipsoid, 1.25 cm long, smooth, black.

Nanniyode Kavu, SK 48826. *Fl. & Fr*: Mar.- Jul. *Dist*: South West India and Sri Lanka.

Myxopyrum Blume,

Bijdr. 683. 1826.

Myxopyrum smilacifolium Blume, Mus. Bot. Lug-duno-Batavum 1; 320. 1851; C.B. Clarke in Hook.f., Fl. Brit. India 3:618. 1882.p.p.; Nayar & *al.*, Flg. Pl. Kerala-Handb. 464. 2006. *M. serrulatum* Hill, Kew Bull: 1910: 41. 1910; Gamble, Fl. Madras 798. 1923; Mohanan & Henry, Fl.

Thiruvananthapuram 286. 1994; ssp. *smilacifolium* : Kiew, Blumea 26: 509. 1984. *Chathura mulla*.

Scandent shrubs; brachlets 4-angled. Leaves 10-13 x 3-5 cm, elliptic-ovate or oblong-ovate, rounded or acute at base, acuminate at apex, serrate at margins, 3-nerved from the base; lateral nerves and midrib impressed above and raised below; petiole to 1.2 cm long. Flowers small in axillary or terminal panicles. Calyx tube shortly 4-lobed; lobes linear. Stamens 2. Berry subglobose, to 1 cm wide. Seeds 2.

Keezhettikvu, SK 48876. *Fl. & Fr.*: Feb.- Aug. *Dist.*: Indo-Malaya and China.

Olea L.,

Sp. Pl. 8. 1753.

Olea dioica Roxb., Fl. Ind. 1: 105. 1820; Bedd., Fl. sylv. S. India 3: 153. 1872; C.B. Clarke in Hook.f., Fl. Brit. India 3:612. 1882; Gamble, Fl. Madras 796. 1923; Mohanan & Henry, Fl. Thiruvananthapuram 286. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 464. 2006.

Trees; bark greyish-brown. Leaves 6-12 x 3-5 cm, elliptic-lanceolate, acute at base, acute-acuminate at apex, entire or distantly serrate at margins; petiole to 1 cm long. Flowers polygamous in terminal and axillary cymose panicles. Calyx 4-toothed, to 1 mm long. Corolla white, 4 mm wide, tubular-ovate, 1mm long, acute. Stamens 2, attached below the tube, included; anthers subsessile. Ovary 1.2 mm; style to 0.7 mm; ovules 2 in each cell. Drupe ellipsoid, purple, to 1 cm long. Seed 1.

Pulickal Bhagavathi Kavu, SK 47824; Thottakkattu Devi temple Kavu, SK 40526. *Fl. & Fr:* Nov.- Apr. *Dist:* India.

APOCYNACEAE Juss.,

Gen. Pl. 143. 1789, *nom.cons.*

1. Plants armed.....	<i>Carissa</i>
1. Plants unarmed.....	2
2. Leaves whorled.....	3
2. Leaves alternate or opposite.....	5
3. Trees.....	<i>Alstonia</i>
3. Shrubs or under shrubs.....	4
4. Corolla throat naked.....	<i>Rauvolfia</i>
4. Corolla throat with a ring of scales.....	<i>Nerium</i>
5. Leaves alternate.....	6
5. Leaves opposite.....	8
6. Corolla funnel shaped; fruit indehiscent.....	7
6. Corolla salver shaped; fruits indehiscent.....	<i>Plumeria</i>
7. Leaves linear; flowers yellow.....	<i>Thevetia</i>
7. Leaves oblanceolate; flowers white.....	<i>Cerbera</i>
8. Erect herbs, shrubs or trees.....	9
8. Climbers.....	12
9. Fruit follicles.....	10
9. Fruit drupaceous.....	11
10. Corolla with several coronal scales; anthers exserted.....	<i>Wrightia</i>
10. Corolla without scales at mouth; anthers included.....	<i>Holarrhena</i>
11. Perennial herbs.....	<i>Catharanthus</i>
11. Trees.....	<i>Tabernaemontana</i>
12. Leaves ovate-orbicular, to 25 x 23 cm; flowers large.....	<i>Chonemorpha</i>
12. Leaves elliptic-oblong, to 13x6 cm; flowers small.....	<i>Ichnocarpus</i>

Alstonia R. Br.,

Asclepiadeae: 64. 1810, *nom.cons.*

Alstonia scholaris (L.) R. Br. Mem. Wern. Nat. Hist. Soc. 1: 76. 1811; Wight, Icon. pl. Ind. orient. t. 422. 1841; Hook.f., Fl. Brit. India 3:642. 1882; Gamble, Fl. Madras 810. 1923; Mohanan & Henry, Fl. Thiruvananthapuram 288. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 68. 2006. *Echites scholaris* L., Mant. 1: 53. 1767. *Ezhilam pala*.

Large trees; bark greyish-brown, rough, irregularly cracked and shallowly fissured; latex milky. Leaves in whorls of 5-9, oblong-obovate, 12-15 x 3.5-6 cm, cuneate at base, obtuse or shortly acute at apex, coriaceous; lateral nerves numerous. Flowers in dense capitate cymes. Calyx lobes ovate, 1.5 mm long, puberulous, acute at apex. Corolla 1.5 cm wide, salver form, tube to 1 cm long, inflated over stamens. Stamens 5, attached at throat, included; filaments 0.5 mm long; anthers narrowly cordate. Ovaries 2, free, tomentose at top; style to 5 mm long. Follicle divaricate, cylindric, 15-30 x 0.5-0.8 cm. Seeds compressed, 4x1.5 mm, coma at both ends.

Common to almost all sacred groves. Nagaravavu, Kazhakkootam, SK 47836, Thiruchittoor Kavay, 40561. *Fl & Fr*: Oct.- Feb. *Dist*: Indo-Malaysia to Australia and South China.

Carissa L.,

Syst. Nat. (ed.12) 2: 135,189. 1767. *nom. cons.*

Carissa spinarum L., Mant. Pl. 559. 1771; Hook.f., Fl. Brit. India 3:631. 1882; Gamble, Fl. Madras 805. 1923; Mohanan & Henry, Fl.

Thiruvananthapuram 289. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 70. 2006. *C. diffusa* Roxb., Fl. Ind. 2: 524. 1824; Wight, Icon. pl. Ind. orient.t. 427. 1841.

Shrubs; spines to 3 cm long, forked. Leaves 3-4.5 x 1.5-3 cm, elliptic-ovate, acute at base, acute and mucronate at apex; petiole to 3 mm long. Flowers in terminal and axillary pedunculate cymes. Calyx lobes 5, lanceolate, 2.5 mm long, acuminate. Corolla 1.5 cm across; tube 1.5 cm long; lobes 0.7 cm, oblong, acute at apex. Stamens 5, attached near the middle of tube; anthers 1.8 mm long. Ovary 1 mm; style 4 mm; stigma forked. Berry globose, 0.8 cm across, pointed.

Pulivalam Melethottam Devi temple Kavu, SK 48857. *Fl. & Fr.*: Feb.–Apr. *Dist.*: India, Burma, Sri Lanka.

Catharanthus G. Don.

Gen. Hist. 4: 71, 95. 1837.

Catharanthus roseus (L.) Don, Gen. Hist. 4: 95. 1837; Mohanan & Henry, Fl. Thiruvananthapuram 290. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 75. 2006. *Vinca rosea* L., Syst. nat. (ed.10) 944 – 1759; Hook.f., Fl. Brit. India 3:640. 1882. *Lochnera rosea* (L.) Reichb. Consp. Regni Veg. 134. 1828; Gamble, Fl. Madras 809. 1923. *Kasi thetti*.

Perennial herbs. Leaves 4-10 x 2-4 cm, elliptic-oblong or obovate, acute to cuneate at base, obtusely apiculate at apex; lateral nerves 10-12 pairs. Flowers axillary, solitary or paired, shortly pedicellate. Calyx lobes 5, subequal, 6 mm long. Corolla white or pink, 4 cm across; tube 3 cm

long; lobes 5, ovate – triangular, to 2 cm. Stamens 5; anthers 3 mm. Ovary 4 mm; style 3 cm long. Mericarp 3-4 x 0.3, puberulous.

Nanniyode Kavu, SK 48892. *Fl. & Fr.*: Round the year. *Dist.*: Native of Madagascar, widely naturalized in the tropics.

Cerbera L.,

Sp. Pl. 208. 1753, *nom. cons.*

Cerbera odollam Gaertn, Fruct. 2: 193. t. 124. 1791; Wight, Icon. pl. Ind. orient.t. 441. 1841; Hook.f., Fl. Brit. India 3:638. 1882; Mohanan & Henry, Fl. Thiruvananthapuram 290. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 70. 2006. *C. manghas sensu* Gamble, Fl. Madras 806. 1923.

A small tree or large shrubs, latex milky. Leaves 12-25 x 3.5-6.5 cm, lanceolate, oblanceolate or oblong-obovate, narrowed at base, acuminate at apex; lateral nerves numerous, slender; petiole to 3.5 cm long. Flowers white with yellow throat in terminal pedunculate paniced cymes; pedicels stout; bracts 1.5-2.5 cm long, oblong, caducous. Calyx glabrous; lobes 2-2.5 cm long, linear-oblong, recurved. Corolla tube to 2 cm long; throat nearly closed by 5 pubescent projecting wing like ribs; lobes broadly elliptic, acute. Stamens 5. Ovary of 2-distinct carpels, united by a single style. Fruit a drupe, 5-10 cm long, subglobose, smooth, green. Seed solitary.

Sree Bhadrakali Temple Kavu, SK 47997. *Fl. & Fr.*: Jun.-Oct. *Dist.*: Indo-Malaya to Australia and Pacific.

Chonemorpha G. Don,

Gen. Hist. 4:69, 76. 1837, *nom. cons.*

Chonemorpha grandiflora (Roth) M. R. & S. M. Almeida, J. Bombay Nat. Hist. Soc. 90:427. 1993; Nayar & *al.*, Flg. Pl. Kerala-Handb. 71. 2006. *Echites grandiflora* Roth, Nov. Pl. Sp. 136. 1821. *Echites fragrans* Moon, Cat 20. 1824. *Chonemorpha fragrans* (Moon) Alston, Ann. Ray. Bot. Gard. (Peradenia) 11:203. 1929; Mohanan & Henry, Fl. Thiruvananthapuram 289. 1994 *Echites macrophylla* Roxb., Fl. Ind. 2:13. 1832 *Chonemorpha macrophylla* (Roxb.) G. Don, Gen. Syst. 4:76. 1837; Hook.f., Fl. Brit. India 3:661. 1882; Gamble, Fl. Madras 818. 1923. *Perumkurumba*.

Large woody climbers; branchlets tomentose. Leaves 20-25 x 15-22 cm, broadly elliptic or ovate-orbicular, cordate at base, shortly acuminate at apex, pubescent above and tomentose beneath; lateral nerves c. 10 pairs, stout; petiole to 3 cm long, tomentose. Flowers white in a few flowered axillary and terminal cymes. Calyx glandular within, lobes ovate-deltoid. Corolla salver shaped; lobes longer than the tube, twisted to the right; tube 2.5 cm long. Stamens 5; anthers 1.25 cm long; filaments short hairy. Follicle 22-30 x 1-2 cm, sub tetragonous, glabrous. Seeds 2 cm long; Coma 4.5 cm long white.

Nanniyode Kavu, SK 47966. *Fl. & Fr.*: Apr. – Dec. *Dist.*: Indo-Malaysia.

Holarrhena R. Br.,

Asclepiadeae: 51. 1810.

Holarrhena pubescens (Buch.-Ham.) Wall. ex G. Don, Gen. Syst. 4: 78. 1837; Panigrahi, Taxon 36: 466. 1987; Mohanan & Henry, Fl. Thiruvananthapuram 291. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 71.

2006. *Echites pubescens* Buch.–Ham., Trans. Linn. Soc. London 13: 521.
1821. *Holarrhena antidysenterica* (Roth.) A.DC. in DC., Prodr. 8: 413.
1844; Hook.f., Fl. Brit. India 3:644. 1882; Gamble, Fl. Madras 811. 1923.
Chonemorpha antidysenterica G.Don, Gen. Syst. 4: 76. 1837; Wight,
Icon. pl. Ind. orient.t. 439. 1841. *Kudakappala*.

Small deciduous trees; bark smooth, sap milky. Leaves 12-18 x 8-10 cm, broadly ovate or elliptic, obtuse at base, acute or acuminate at apex, glabrous or puberulent beneath; lateral nerves 10-12 pairs, prominent beneath. Flowers creamy-white in terminal and lateral corymbose cymes. Calyx deeply lobes; lobes oblong-lanceolate, ciliate, 2.5 mm long. Corolla with a ring of hairs at the throat; tube 1.2 cm long; lobes as long as the tube, oblong, obtuse at apex. Stamens 5, included, attached towards the base of the corolla tube; anthers lanceolate. Carpels free; stigma fusiform. Follicles to 25 cm long. Seeds many, 8 mm long.

Nanniyode Kavu, SK 48850. *Fl. & Fr.*: Apr.- Oct. *Dist.*: Indo-Malaysia.

Ichnocarpus R.Br.,

Asclepiadeae: 50. 1810, *nom. cons.*

Ichnocarpus frutescens (L.) W.T. Aiton, Mem. Wern. Nat. Hist. Soc. 1: 62 62 1809; Wight, Icon. pl. Ind. orient. t. 430. 1841; Hook.f., Fl. Brit. India 3:669. 1882; Gamble, Fl. Madras 820. 1923; Mohanan & Henry, Fl. Thiruvananthapuram 292. 1994. *Apocynum frutescens* L., Sp. Pl. 213. 1753. *Quirivelia frutescens* (L.) M.R. & S.M. Almeida, J. Bombay Nat. Hist. Soc. 90: 427. 1993, *nom. illeg.*; Nayar & al., Flg. Pl. Kerala-Handb. 72. 2006. *Pal valli*.

Twining shrubs; young shoots brown tomentose. Leaves 3.5-6 x 1.5-3.5 cm, elliptic-oblong, rounded at base, acute or acuminate at apex, glabrous above, glabrescent or pubescent along the nerves beneath; lateral nerves 5-7 pairs, intercostae reticulate. Flowers white in terminal and axillary paniculate cymes, tomentose. Calyx fulvous, divided half way down; lobes ovate, 0.8 mm long, eglandular. Corolla tube 2.5 mm long; lobes oblong, narrowed at apex. Stamens 5, included, attached towards the apex of corolla tube; anthers lanceolate. Carpels distinct; stigma ovoid. Follicles to 15 cm long, rusty pubescent. Seeds numerous, linear, compressed, comose at one end.

Indalayappan Kavu, SK 40554; Valiya Kavu, SK 48869. *Fl. & Fr.*: Aug.-Mar. *Dist.*: Indo-Malaysia to Australia.

Nerium L.,

Sp. Pl. 209. 1753.

Nerium indicum Mill. Gard. Dict. n.2. 1768; Santapau in Rec. Bot. Surv. India 16(1): 170. 1953. *N. odorum* Sol. in Ait., Hort. kew 1:297. 1789; Hook.f., Fl. Brit. India 3:655. 1882; Gamble, Fl. Madras 821. 1923; Mohanan & Henry, Fl. Thiruvananthapuram 265. 1994. *N. oleander* L., Sp. Pl. 209. 1753; Nayar & al., Flg. Pl. Kerala-Handb. 75. 2006. *Arali.*

Shrubs, sap white. Leaves whorled, 10-20 x 1-2 cm, elliptic-lanceolate, narrowed at both ends, entire, shining green above, paler beneath. Flowers 4-5 cm across in terminal polychasial cymes; bracts ovate. Calyx tubular, 5-partite; lobes lanceolate, 6-8 mm long. Corolla pink; tube short, with fimbriate scale near the mouth; lobes obovate-oblong, 1.5-2.5 cm long. Stamens inserted near the throat. Ovaries

distinct. Follicles lanceolate, 10-15 cm long, acutely angled. Seeds villous with long terminal coma.

KeezhettiKavu, SK 48867. *Fl. & Fr:* Round the year. *Dist:* From Mediterranean through Persia, Afghanistan India to Japan. Cultivated throughout India.

Plumeria L.,

Sp. Pl. 209. 1753.

Plumeria rubra L., Sp. Pl. 209. 1753; Mohanan & Henry, Fl. Thiruvananthapuram 296. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 75. 2006. *P. acutifolia* Poir., Lam. Encycl. (suppl.2) 667. 1812; Wight, Icon. pl. Ind. orient. t. 471 1841; Hook.f., Fl. Brit. India 3:641. 1882; Gamble, Fl. Madras 821. 1923. *Ezha chempakam*.

Trees. Leaves alternate, 20-32 x 7-11 cm, broadly obovate-spathulate, cuneate-attenuate at base, acuminate at apex, subcoriaceous; lateral nerves 30-40 pairs, parallel, arching towards margin. Flowers creamy with yellow centre in terminal, corymbose cymes; peduncle stout. Calyx cupular, 3 mm long; lobes 5, rounded. Corolla 4 cm across, funnel shaped; tube 2 cm long; lobes 5, obovate, to 3 x 2 cm, obtuse. Stamens 5, included; anthers ovate-lanceolate, 2.5 mm long. Ovaries half inferior, globose. Follicle paired, to 28 x 4 cm. seeds flat, winged.

Madavilakathu Kavu, SK 48883. *Fl. & Fr:* Round the year. *Dist:* Native of Tropical America, widely naturalized elsewhere in the tropics.

Rauvolfia L.,
Sp. Pl. 208. 1753.

- 1. Leaves usually 3 per nodes; subequal2
- 1. Leaves 4 per node, 2 much smaller than the rest.....*R. tetraphylla*
- 2. Corolla over 1 cm long.....*R. serpentina*
- 2. Corolla less than 5 mm long.....*R. micrantha*

Rauvolfia micrantha Hook.f., Fl. Brit. India 3: 633. 1882; Gamble, Fl. Madras 808. 1919; Henry *et al.*, Fl. Tamil Nadu, Ser. 2: 79. 1987; Santhosh *et al.* in Ann. Forestry 6(2): 223. 1998; Nayar & *al.*, Flg. Pl. Kerala-Handb. 73. 2006.

Shrubs. Leaves oblanceolate, 8-12 x 2.5-4 cm, acute at base, acuminate-caudate at apex, glabrous; lateral nerves 10-13 pairs. Flowers white in terminal dense cymes; peduncle to 6 cm long, erect. Calyx lobes 5, short. Corolla to 5 mm long. Anthers sagitate; filaments short. Fruits to 8 mm long, acute at apex. Seeds slightly rugose.

Sree Bhagavathy Temple Kavu, SK 47957. *Fl. & Fr.*: Round the year.
Dist: Southern Western Ghats, endemic.

Note: This species is closely allied to *Rauvolfia hookeri* Srinivasan *et* Chitra, another endemic species of the region. But can readily separated from it by the fewer lateral nerves in the leaves, shorter peduncle with densely arranged flowers and the pollen with prominently reticulate exines. Addition to the flora of Thiruvananthapuram.

Rauvolfia serpentina (L.) Benth. ex Kurz, For. Fl. Burma 2: 171. 1877; Hook.f., Fl. Brit. India 3:632. 1882; Gamble, Fl. Madras 807. 1923; Markgraf, Blumea 30: 161. 1984; Mohanan & Henry, Fl. Thiruvananthapuram 293. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 73. 2006. *Ophioxylon serpentinum* L., Sp. Pl. 1043. 1753; Wight, Icon. pl. Ind. orient.t. 849. 1844. *sarpagandhi*, *Amalpori*.

Subshrubs with thick rootstock; latex watery. Leaves 10-16 x 3-6 cm, elliptic-oblong, attenuate at base, acuminate at apex, glabrous; lateral nerves 12-15 pairs, intercostae faint. Flowers white in terminal or axillary umbellate cymes. Calyx red, divided to the base; lobes oblong, 2.5 mm long. Corolla tube 1.7 cm long; lobes oblong, 0.5 cm long. Stamens 5, included. Ovary 2-celled; cells 2-ovuled; style filiform. Fruits connate to half of their length, 0.6 x 0.5 cm. Seed 2-per fruit.

Nanniyode Kavu, SK 48831. *Fl. & Fr.*: Apr. – Oct. *Dist.*: Indo-Malaya.

Rauvolfia tetraphylla L., Sp. Pl. 208. 1753; Rao, Ann. Missouri Bot. gard. 43: 285. 1956; Mohanan & Henry, Fl. Thiruvananthapuram 293. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 75. 2006. *R. canescens* L., Sp. Pl. (ed.2.) 303. 1762; Gamble, Fl. Madras 808. 1923.

Shrubs; branchlets pubescent, grey. Leaves 4-per nodes, 4-10 x 2-5 cm, broadly elliptic or obovate, acute at base, acuminate at apex, pubescent. Flowers greenish-white in terminal and axillary pedunculate cymes; peduncle to 2 cm long. Calyx cupular; lobes orbicular, 1 mm long, ciliate. Corolla 4 mm long; lobes ovate, obtuse, throat villous. Stamens 5, included. Fruits globose, dark purple, 6-8 mm wide.

Kudavoor Sree Bhagavathi Kavu, SK 48831. *Fl. & Fr.*: Round the year.
Dist: Native of West Indies now naturalized in many tropical countries.

Tabernaemontana L.,

Sp. Pl. 210. 1753.

1. Shrubs; mericarp more than 5 cm long.....*T. divaricata*

1. Trees; mericarp less than 4 cm long.....*T. heyneana*

Tabernaemontana divaricata (L.) R.Br. in Roem. & Schult. Syst. 4: 427. 1819; Mohanan & Henry, Fl. Thiruvananthapuram 294. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 76. 2006. *Nerium divaricatum* L., Sp. Pl. 209. 1753. *N. coronarium* Jacq. Collectanea 1: 138. 1787. *Tabernaemontana coronaria* (Jacq.) Willd. Enum. Hort. Berol. 275. 1809; Wight, Icon. pl. Ind. orient.t. 477. 1841; Hook.f., Fl. Brit. India 3:646. 1882. *Ervatamia coronaria* (Jacq.) Stapf. in Oliver, Fl. Trop. Africa 4(1): 127. 1902; Gamble, Fl. Madras 813. 1923. *Nandiarvattam*.

Shrubs; sap white. Leaves 9-15 x 3-5.5 cm, oblanceolate to oblong, cuneate to attenuate at base, acuminate at apex, subcoriaceous; lateral nerves 8-14; petiole to 1 cm long. Flowers white in terminal divaricate lax cymes. Calyx cupular, 4 mm long, puberulous; lobes 5, ovate, 2 mm long. Corolla 3-4 cm across, salver form; tube to 2 cm long; lobes 5, broadly oblong, overlapping to left, 2-2.5 x 0.5-0.8 cm. Stamens 5, attached near the middle of the tube, included. Ovary 1 mm long; style to 1 cm long, ovoid above and beaked into a stigma. Follicles lanceolate, to 10 x 1cm, curved and beaked.

Keezhetti Kavu, SK 47884. *Fl. & Fr.*: Round the year. *Dist*: Native of Himalaya-Burma. Planted elsewhere in tropics.

Tabernaemontana heyneana Wall.in Edward's Bot. Reg. 15: t. 1273. 1829; Hook.f., Fl. Brit. India 3:646. 1882; Leeuwenberg, Rev. Tabernaemontana Old World. 161. 1991; Mohanan & Henry, Fl. Thiruvananthapuram 295. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 74. 2006. *Ervatamia heyneana* (Wall.) Cooke, Fl. Pres. Bombay 2: 134. 1904; Gamble, Fl. Madras 813. 1923. *Koonampala*.

Small deciduous trees; bark greyish, rough. Leaves 10-18 x 3.5-7 cm, elliptic-oblong or oblong-lanceolate, acute at base, shortly acuminate at apex, coriaceous; lateral nerves 12-15 pairs; petiole to 1.5 cm. Flowers white in terminal corymbose cymes. Calyx shortly lobed, to 4 mm long; lobes broadly oblong, obtuse at apex, glandular. Corolla tube to 2.5 cm long; lobes 1.5 cm long, margin crisped. Stamens 5, included. Follicles orange-yellow, to 3 x 1 cm, divaricate. Seeds many, covered with pale arils.

Indalayappan Kavu, SK 40555, Valiaveetil thekkedathu Kavu, SK 40589. *Fl. & Fr.*: Apr.-Oct. *Dist.*: Western Ghats, endemic.

Thevetia L.,

Opera Var. 212. 1758, *nom. cons.*

Thevetia peruviana (Pers.) Merr. Philipp. J. Sci. 9: 130. 1914; Mohanan & Henry, Fl. Thiruvananthapuram 295. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 76. 2006. *Cerbera peruviana* Pers. Syn. Pl. 1: 267. 1809. *Thevetia neriifolia* Juss. ex Steudel, Nom. Bot. (ed.2) 2: 680. 1841; Gamble, Fl. Madras 821. 1923.

Shrubs. Leaves alternate, 10-15 x 0.7-1 cm, linear-lanceolate, cuneate at base, acute at apex, recurved at margins; lateral nerves 16-20 pairs, faint; petiole to 1 cm long. Flowers yellow in terminal cymes, overtopped by axillary branches; peduncle to 2.5 cm long. Calyx lobes 5, unequal, lanceolate, to 1 cm long. Corolla yellow, 5 cm across; funnel shaped, tube 4 cm, throat villous; lobes 5, ovate. Stamens 5, included; anthers oblong-cordate, 2 mm long. Ovary depressed at apex, 2mm long; style to 1.5 mm. Drupe broadly turbinate, to 3.5 cm across, slightly compressed laterally. Seeds a few, flattened.

Keezhetti Kavu, SK 47805. *Fl. & Fr.*: Round the year. *Dist.*: Native of Tropical America, widely naturalized elsewhere in the tropics.

Wrightia R. Br.,

Asclepiadeae: 762. 1810.

Wrightia tinctoria (Roxb.) R. Br., Mem. Wern. Nat. Hist. Soc. 1: 73. 1811; Wight, Icon. pl. Ind. orient. t. 439. 1841; Bedd., Fl. sylv. S. India t. 241. 1872; Hook.f., Fl. Brit. India 3:653. 1882; Gamble, Fl. Madras 815. 1923; Mabb., Taxon 26: 524. 1977; Mohanan & Henry, Fl. Thiruvananthapuram 295. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 74. 2006. *Nerium tinctorium* Roxb., Orient. Repert. 1: 39. 1791. *Koppala*.

Trees; branchlets glabrous, latex milky. Leaves 6.5-15 x 3-6 cm, oblong-lanceolate, acute or rounded at base, caudate-acuminate at apex, membranous, glabrous, glaucous beneath; lateral nerves 7-10 pairs; petiole to 0.3 cm long. Flowers in lax terminal cymes, appearing along with new leaves. calyx 4 mm long; lobes 5, ovate, 2 mm long; lobes 5, oblong, 1.5 cm; corona scales 2-3 series, filiform, fimbriate. Stamens 5;

anthers 5 mm, acute, tip barbed. Ovary 1.5 mm long; style 5 mm.
Follicles paired, terete, to 30 x 0.9 cm, glabrous.

Nanniyode Kavu, SK 48871. *Fl. & Fr.*: Feb.-Nov. *Dist.*: Indo-Malaysia.

ASCLEPIADACEAE R.Br.,

Asclepiadeae: 12,19. 1810, *nom.cons.*

- 1. Erect herbs or shrubs.....2
- 1. Twining herbs or twining shrubs.....3
- 2. Leaves linear-lanceolate, base acute.....*Asclepias*
- 2. Leaves elliptic-oblong, base auriculate.....*Calotropis*
- 3. Corolla tube elongated more than 1 cm long.....*Ceropegia*
- 3. Corolla tube less than 7 mm long.....4
- 4. Corolla lobes alternating with fleshy ridges
 within the sinus.....*Gymnema*
- 4. Corolla lobes without ridges inside.....5
- 5. Corona annular.....*Holostemma*
- 5. Corona not annular.....6
- 6. Corona segments entire.....*Tylophora*
- 6. Corona segments with a fleshy tooth at apex.....*Wattakaka*

Asclepias L.,

Sp. Pl. 214. 1753.

Asclepias curassavica L., Sp. Pl. 214. 1753; Hook.f., Fl. Brit. India 4: 18. 1883; Gamble, Fl. Madras 833. 1923; Mohanan & Henry, Fl. Thiruvananthapuram 296. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 82. 2006.

Erect glabrous herbs or subshrubs. Leaves 6-10 x 1-1.5 cm, linear-lanceolate, acute at both ends, chartaceous; petiole to 1.5 cm long. Flowers in lateral umbellate cymes. calyx deeply divided; lobes lanceolate, to 4 mm long. Corolla red, 1-1.6 cm across, rotate; lobes reflexed, obovate, to 8 x 5 mm. Coronal lobes yellow, 7 mm long. Pollinia pendulous; pollinial bags oblong, flat. Ovaries 1 mm long; style to 2 mm long. Follicle to 7 x 1 cm, tapering at both ends, apex pointed. seeds flattened, winged, 6x3 mm.

Kavil sree Bhagavathi temple Kavu, SK 48866. *Fl. & Fr.*: Mar.- Dec.
Dist: Native of West Indies, now naturalized in some of the .

Calotropis gigantea (L.) R.Br. in Aiton.f. Hortus Kew 2:78. 1811; Wight, Ill. Ind. Bot. tt. 155 & 156. 1850; Hook.f., Fl. Brit. India 4: 17. 1883; Gamble, Fl. Madras 832. 1923; Mohanan & Henry, Fl. Thiruvananthapuram 297. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 82. 2006. *Asclepias gigantea* L., Sp. Pl. 214. 1753. *Erikku*.

Erect subshrubs. Leaves 9-15 x 4-8 cm, elliptic-oblong, auriculate at base, acute at apex, coriaceous; lateral nerves 5-7 pairs. Flowers in terminal and axillary umbellate panicles. Calyx lobes ovate, 5 mm long, puberulous without, glandular and ciliate. Corolla pale purple, 3 cm across; lobes ovate, spreading, 1.5 cm. Pollinia pendulous. Coronal lobes 1 cm long. Ovaries 3 mm long; style to 1 cm long. Follicles 9 x 4 cm., oblong, inflated. Seeds oblong-ovate, plano-convex, 9 x 6 mm; coma long, silky.

Madanada Kavu, SK 48859. *Fl. & Fr.*: Round the year. *Dist.*: Tropical Asia.

Ceropegia L.,

Sp. Pl. 211. 1753.

Ceropegia candelabrum L., Sp. Pl. 211. 1753; Hook.f., Fl. Brit. India 4: 70. 1883; Gamble, Fl. Madras 857. 1923; Ansari, Fl. India Fasc. 16: 12. 1984; Mohanan & Henry, Fl. Thiruvananthapuram 297. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 84. 2006.

Glabrous twining herbs. Leaves 5-7 x 2.5-4.5 cm, elliptic-ovate to ovate-orbicular, acute or rounded at base, obtuse to apiculate at apex; lateral nerves 3-5 pairs, slender; petiole to 2 cm long. Flowers in axillary 3-5 flowered cymes; peduncle longer than petioles. Calyx lobes 5, acuminate 3-4 mm long. Corolla tube greenish yellow, 2 cm long, not much inflated below; lobes yellow, hairy within, beak purplish, densely ciliate within. Pollinia spherical. Outer corona membranous, 0.7 mm long; inner corona spatulate 2.5 mm long. Follicle paired, linearly cylindrical.

Indalayappan Kavu, SK 40566. *Fl. & Fr.*: Sept.–Nov. *Dist.*: South India and Sri Lanka.

Note: Ansari (l.c.) recognized two varieties for this species. Our specimen belongs to the typical variety.

Gymnema R. Br.,

Prodr. 461. 1810.

Gymnema sylvestre (Retz.) R.Br. ex Roem. & Schult. in L., Syst. Veg. 6:57. 1820; Wight, Icon. pl. Ind. orient. t. 349. 1840; Hook.f., Fl. Brit.

India 4:29. 1883; Gamble, Fl. Madras 839. 1923; Nayar & *al.*, Flg. Pl. Kerala-Handb. 89. 2006. *Periploca sylvestris* Retz. Obs. Bot. 2: 15. 1781. *Chakkarakolli*.

Twining shrubs or sub shrubs; branchlets terete. Leaves 3-6 x 1-4 cm, elliptic to ovate or obovate, truncate or obtuse at base, obtusely acute at apex, sub coriaceous, densely tomentose below, often much smaller; lateral nerves 3-4 pairs; petiole to 2 cm long. Flowers small in axillary umbellate cymes. Calyx lobes obovate, 1 mm, scabrous without, obtuse. Corolla 4 mm across. Pollinial bags 0.2 mm. Corona with 5, fleshy process in the sinuses of the lobes. Ovaries 0.7 mm; style 0.5 mm. Follicle paired, linear, to 6 x 0.8 cm. Seeds obovate, marginal, to 1 x 0.3 cm, coma brownish-white.

Mulloor Kavu, SK 48893. *Fl. & Fr.*: June – Dec. *Dist.*: Peninsula India, Sri Lanka Tropical Africa.

Note: Addition to Flora of Thiruvananthapuram.

Holostemma R. Br.,

Asclepiadeae: 31.1810.

Holostemma annulare (Roxb.) K. Schum. in Engl. & Prantl, Pflanzenf. 4(2): 250. 1895; Gamble, Fl. Madras 834. 1923; Nayar & *al.*, Flg. Pl. Kerala-Handb. 90. 2006. *H. ada-kodien* Schult. in Roem. & Schult., Syst. Veg. 6:95. 1820; Mohanan & Henry, Fl. Thiruvananthapuram 298. 1994; . *H. rheedrei* Spreng. ex Wall., Pl. As. Rar. 2: 51. 1831; Hook.f., Fl. Brit. India 4: 21. 1833; Wight, Icon. pl. Ind. orient.t. 597. 1842. *H. Asclepias annularis* Roxb., Fl. Ind. 2:37. 1832. *Adapathiyen*.

Glabrous twining herbs or sub shrubs with tuberous roots. Leaves 4-6 x 2-3.5 cm, ovate or oblong, cordate at base, obtusely acute at apex, chartaceous, puberulous below, penninerved; lateral nerves c.5 pairs; petiole to 3 cm long. Flowers pale purple on short peduncled axillary cymes; bracts and bracteoles scaly. Calyx lobes equal; 4 x 3 mm, ovate, ciliate. Corolla 1.5 cm across; lobes equal, ovate, bent in the middle at right angles, 1.5 cm long. Pollinia pendulous. Corona single, staminal. Ovaries subglobose, 1.5 mm; style to 4.5 mm.

Indalayappan Kavu, SK 48828. *Fl* : Sept – Dec. *Dist*: Peninsular India, Sri Lanka, Burma.

Tylophora R. Br.,

Prodr. 460. 1810.

Tylophora indica (Burm.f.) Merr. Philipp. J. Sci. 19: 373. 1921; Huber in Abeyw. Rev. Handb. Fl. Ceylon 4:91. 1983; Mohanan & Henry, Fl. Thiruvananthapuram 299. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 95. 2006. *Cynanchum indicum* Burm.f., Fl. Ind. 70. 1768. *Tylophora asthatica* (L.f.) Wight & Arn. in Wight, Contrb. Bot. India 51. 1834; Wight, Icon. pl. Ind. orient. t. 1277. 1848; Hook.f., Fl. Brit. India 4:44. 1883; Gamble, Fl. Madras 843. 1923. *Asclepias asthmatica* L.f., Suppl. Pl. 171. 1782. *Vallippala*.

Twining subshrubs, stem pubescent. Leaves 4-8 x 2-5 cm, broadly ovate to ovate-oblong, cordate at base, acute at apex, glabrescent or puberulous above, tomentose below; lateral nerves 5-7 pairs; petiole to 1.5 cm long. Flowers greenish-yellow in axillary subumbellate compound cymes. Calyx lobes linear-lanceolate, 3 mm long. Corolla 1

cm across; lobes 5, to 5 x 3.5 mm. Pollinial bags 0.2 mm. Corona 1.5 mm. Ovaries obconic, 1.5 mm; style to 0.5 mm. Follicle cylindrical, acute at both ends, 7 x 1.5 cm. Seeds ovate, flat, 1.8 x 0.7 cm.

Chamundeswary Kavu, SK 47995. *Fl. & Fr.*: Feb. – Apr. *Dist.*: Indo-Malaysia.

Note: Among the two varieties recognized by Huber (l.c.), our specimen belongs to the typical variety: var. *indica*.

Wattakaka Hasskarl

Flora 40:99. 1857.

Wattakaka volubilis (L.f.) Stapf. in Curtis, Bot. Mag. sub. t. 8976. 1923; Mohanan & Henry, Fl. Thiruvananthapuram 300. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 96. 2006. *Asclepias volubilis* L.f., Suppl. 170. 1782. *Dregea volubilis* (L.f.) Benth. ex Hook.f., Fl. Brit. India 4:46. 1883. *Marsdenia volubilis* (L.f.) Cooke, Fl. Pres. Bombay 2: 166. 1904; Gamble, Fl. Madras 846. 1923. *Hoya viridiflora* R. Br., Mem. Wern. Nat. Hist. Soc. 1:27. 1811; Wight, Icon. pl. Ind. orient. t. 586. 1842. *Kakkakodi*.

Woody twiners; bark brown with shallow vertical grooves. Leaves 6-10 x 4-6 cm, ovate, truncate or cordate at base, acuminate at apex, penninerved; lateral nerves 3-4 pairs; petiole to 3.5 cm long. Flowers in axillary many-flowered umbellate cymes. Calyx lobes lanceolate, 3 mm long, imbricate, coriaceous. Corolla greenish, 1.5 cm across, rotate; lobes ovate, 7 x 4 mm, ciliate, subacute at apex. Pollinial bags sub sessile. Corona single, staminal, fleshy. Ovaries globose, 1.5 mm; style to 1.5 mm. Follicle oblong, 9 x 2.5 cm, blunt at apex. Seeds obovoid, flattened, 7 x 4 mm, coma soft, dull white.

Indalayappan Kavu, SK 40562. *Fl. & Fr.*: Round the year. *Dist.*: Indo-Malaysia and S.W. China.

PERIPLOCACEAE *Schltr. in*

Schumann & Lauterbach, Nachtr. Fl. Schutzgeb. Sedsee 351, 1905, *nom. cons.*

1. Corolla lobes valvate.....*Hemidesmus*
1. Corolla lobes imbricate.....*Cryptolepis*

Cryptolepis R. Brown

Asclepiadeae: 58. 1810.

Cryptolepis buchananii Roem. & Schult., Syst. Veg. 4: 409. 1819; Wight, Icon. pl. Ind. orient. t. 494. 1840; Hook.f., Fl. Brit. India 4:5. 1883; Gamble, Fl. Madras 826 1923; Mohanan & Henry, Fl. Thiruvananthapuram 301. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 87. 2006. *Palvalli*.

Twining shrubs; young shoots glabrous. Leaves 8-12 x 3-5 cm, elliptic or oblong-lanceolate, acute at base, obtuse or apiculate at apex, glabrous and glossy; petiole to 1 cm long. Flowers in lax, few flowered paniculate cymes. Calyx lobes 5, ovate-lanceolate, 2.5 mm, ciliate. Corolla 1.5 cm across; lobes linear-lanceolate, 1 cm long, acute. Stamens 5; filaments 0.3 mm; anthers 0.7 mm; translators oblong. Ovaries 1.5 mm. Follicle paired, 7 x 1.5 cm, stout, basally inflated. Seeds flat, 7 x 3 mm.

Pulickal Bhagavathi Kavu, SK 47863. *Fl. & Fr.*: March – Sept. *Dist.*: India, Burma and Sri Lanka.

Hemidesmus R. Br.,
Asclepiadeae: 45. 1810.

Hemidesmus indicus (L.) R. Br. in Ait. Hort. Kew. (ed.2) 2:75. 1811; Wight, Icon. pl. Ind. orient.t. 594. 1842; Hook.f., Fl. Brit. India 4:5. 1882; Gamble, Fl. Madras 825. 1923; Mohanan & Henry, Fl. Thiruvananthapuram 301. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 89. 2006. *Periploca indica* L., Sp. Pl. 211. 1753.

Twining herbs with woody rootstock. Leaves 4-8 x 1-1.5 cm, elliptic-oblong to linear-lanceolate, young ones often variegated. Flowers sub sessile in axillary fascicles. Calyx lobes imbricate, glandular within. Corolla yellow, 6 mm across; lobes valvate, thick, rugose within. Stamens 5, connivent around styles, filaments incurved. Pollinia sub erect; polinial bags spherical. Corona single, corolline. Ovaries conic; style to 1 mm. Follicle terete, 7-9 cm long, abruptly acuminate at apex. Seed oblong, 8 x 3 mm, coma brownish-white.

Pulickal Bhagavathi Kavu, SK 47881. *Fl. & Fr:* Aug – Dec. *Dist:* India and Sri Lanka.

LOGANIACEAE R. Br. ex Mart.,
Gen. Pl. 2: 133. 1827, *nom. cons.*

1. Leaves 3-ribbed from the base; corolla valvate.....*Strychnos*
1. Leaves penninerved; corolla contorted.....*Fagraea*

Fagraea Thunb. in

Kongl. Vetensk. Acad. Nya Handl. 3: 132. 1782.

Fagraea ceylanica Thunb., Kongl. Ventensk. Aead. Nya Handl. 3:132. t. 4. 1782; C.B. Clarke in Hook.f., Fl. Brit. India 4:83. 1883 '*Zeylanica*'

Gamble, Fl. Madras 865. 1923; Mohanan & Henry, Fl. Thiruvananthapuram 302. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 385. 2006. *F. obovata* Wall. in Roxb., Fl. Ind. 2:33. 1824; Hook.f., Fl. Brit. India 4:83. 1883; Gamble, Fl. Madras 865. 1923. *F. coromandilina* Wight, Icon. pl. Ind. orient. t. 1317. 1848.

Small trees, often epiphytic; branchlets stout with prominent leaf scars. Leaves 12-20 x 4-8 cm, obovate–oblanceolate, acute at base, obtuse at apex, fleshy, glabrous; lateral nerves obscure; petiole to 2.5 cm. Flowers in terminal or axillary corymbose cymes. Calyx tube 5 mm long; lobes obovate, acute – obtuse, 8 mm long. Corolla creamy –yellow, to 5 cm long. Stamens 5, exserted. Ovary 2-celled, ovules numerous, stigma capitate. Berry ellipsoid, to 4 cm long.

Nanniyode Kavu, SK 48861. *Fl. & Fr.*: Mar.–Nov. *Dist.*: Indo – Malaysia.

Strychnos L.,

Sp. Pl. 189. 1753.

1. Trees; corolla lobes 3 mm long, reflexed.....*S. nux-vomica*

1. Climbing shrubs; corolla lobes 2 mm long, erect.....*S. colubrina*

Strychnos colubrina L., Sp. Pl. 198. 1753; Mohanan & Henry, Fl. Thiruvananthapuram 303. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 386. 2006. *S. wallichiana* Steud ex DC., Prodr. 9:13. 1845; Bisset & Philcox, Taxon 20: 543. 1971. *S. rheedei* C.B. Clarke in *Hook.f.*, Fl. Brit. India 4:87. 1883. *S. cinnamomifolia* Thw. var. *wightii* Hill, Kew Bull. 1917: 194. 1917; Gamble, Fl. Madras 869. 1923. *Vallikanjiram*.

Lianas; branchlets terete, glabrous. Leaves 6-8 x 3-5 cm, ovate to broadly elliptic, obtuse or rounded at base, acute to acuminate at apex, glabrous; 3-nerved from a little above the base. Flowers in axillary cymes, pubescent. Calyx lobes ovate, acuminate, 0.5 mm long. Corolla tube to 8 mm long, pilose inside, lobes 2 mm long. Stamens 5, included. Ovary 2-celled, glabrous. Berry 6-8 cm across; seeds discoid.

Common to almost all sacred groves. Indalayappan Kavu, SK 40520; Sree Dharma Sastha Kavu, Karyavattom, SK 48868. *Fl. & Fr.*: Feb – Jun. *Dist.*: Indo–Malaysia.

Strychnos nux-vomica L., Sp. Pl. 189. 1753; Bedd., Fl. sylv. S. India t. 243. 1872; C.B. Clarke in Hook.f., Fl. Brit. India 4:90. 1883; Gamble, Fl. Madras 868. 1923; Mohanan & Henry, Fl. Thiruvananthapuram 303. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 387. 2006. *Kanjiram*.

Medium sized trees; bark yellowish–grey, scurfy, yellow inside. Leaves 7-8.5 x 5-7 cm, broadly elliptic, alternate at base, obtuse or acute at apex, glabrous, 5-nerved from base; petiole to 1.2 cm long. Flowers in terminal cymes, tomentose. Calyx lobes ovate, 1 mm long. Corolla tube 1 cm long; lobes 5, 3 mm long. Stamens 5; filaments 0.1 mm; anthers 1.5 mm. Ovary 1.5 mm, pubescent; style 9 mm; stigma capitate. Berry 5 cm across, thick shelled. Seeds 3-4, orbicular, compressed, 2 cm across.

Indalayappan Kavu, SK 40517. *Fl. & Fr.*: Mar. – Dec. *Dist.*: Indo – Malaysia.

BORAGINACEAE *Juss.*,

Gen. Pl. 128. 1789, *nom. cons.*

Heliotropium *L.*,

Sp. Pl. 130. 1753.

Heliotropium keralense Sivar. & Manilal, *J. Indian Bot. Soc.* 51: 349. 1972; Manilal & Sivaraj., *Fl. Calicut.* 176. 1982; Nayar & *al.*, *Flg. Pl. Kerala-Handb.* 153. 2006.

Herbs. Leaves 6-10 x 2-4 cm, ovate, cuneate at base, obtuse at apex, subentire, membranous; petiole to 8 cm long. Flowers in long scorpioid cymes. Calyx 2.5 mm long, white strigose. Corolla white, villous, 3 mm long. Stamens 5, included. Ovary 4-celled; style terminal with a depressed conical stigmatic ring below the apex. Drupe of 4 nutlets. Nanniyode Kavu, SK 48875. *Fl. & Fr.* Mar.–May. *Dist.* Kerala, endemic

CONVOLVULACEAE *Juss.*,

Gen. Pl. 132. 1789, *nom. cons.*

- 1. Corolla lobes 5.....*Erycibe*
- 1. Corolla entire not lobed.....2
- 2. Styles 2.....*Evolvulus*
- 2. Style 1.....3
- 3. Ovary 1-celled.....*Hewettia*
- 3. Ovary 2 or 4-celled.....4
- 4. Pollen grains smooth.....*Merremia*
- 4. Pollen grains spinulose.....*Ipomoea*

Erycibe Roxb.,

Pl. Coromandel 2: 31. 1802.

Erycibe paniculata Roxb., Pl. Coromandel. 2: 31. t. 159. 1298; C.B. Clarke in Hook.f., Fl. Brit. India 4: 180. 1883; Gamble, Fl. Madras 930. 1923; Hoogland, Blumea 7: 352. 1953; Mohanan & Henry, Fl. Thiruvananthapuram 313. 1994; Nayar & *al.*, Flg. Pl. Kerala-Handb. 193. 2006. *E. wightiana* Graha., Cat. Pl. Bombay 137. 1839; Gamble, Fl. Madras 930. 1923. *E. paniculata* Roxb. var. *wightiana* (Grah.) C.B. Clarke in Hook.f., Fl. Brit. India 4: 180. 1883.

Woody climbers; bark greyish-brown, warty; young shoots reddish-brown tomentose. Leaves 6-12 x 3-5 cm, elliptic or elliptic-obovate, acute at base, obtusely acuminate at apex, coriaceous, glabrous and glossy; lateral nerves 6-8pairs. Flowers in axillary and terminal panicles. Sepals 5, subequal, ovate, obtuse, densely brown tomentose. Corolla white, fragrant, campanulate-rotate, 5 mm long. Stamens 5; attached to a little above the base of corolla tube. Ovary 1-celled; style absent. Fruit 1-seeded.

Common. Nanniyode Kavu, SK 48877; Sreedharma Sastha Kavu, SK 47853. *Fl. & Fr*: Nov.- Mar. *Dist*: India and Sri Lanka .

Evolvulus L.,

Sp. Pl. (ed.2).391. 1762.

- 1. Flowers blue; capsule 2-celled.....*E. alsinoides*
- 1. Flowers white; capsule 1-celled.....*E. nummularius*

Evolvulus alsinoides (L.) L., Sp. Pl. (ed.2) 392. 1762; C.B. Clarke in Hook.f., Fl. Brit. India 4: 220. 1883; Gamble, Fl. Madras 923. 1923; Stearn, Taxon 21: 649. 1972; Mohanan & Henry, Fl. Thiruvananthapuram 313. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 193. 2006. *Convolvulus alsinoides* L., Sp. Pl. 130. 1753. Vishnukranthi.

Suberect herbs; stem wooly pubescent. Leaves 1-1.5 x 0.3-0.7 cm, elliptic or oblong, acute at base, obtusely apiculate at apex, adpressed pilose on both sides; petiole to 2 mm long. Flowers solitary; pedicels to 5 mm long. Calyx lobes 5, lanceolate, 4 x 1 mm, sericeous. Corolla rotate, 1 cm across. Stamens 5, partly exserted. Ovary globose, 0.8 mm long; style 2, to 4 mm. Capsule 5 mm across, 2-celled.

Sree Dhurga temple Kavu, SK 48870. *Fl. & Fr:* Mar.- Aug. *Dist:* Pantropical.

Evolvulus nummularius (L.) L., Sp. Pl. (ed.2) 391. 1762; Balakr., Bull. Bot. Surv. India 6:86. 1964; Mohanan & Henry, Fl. Thiruvananthapuram 313. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 194. 2006. *Convolvulus nummularius* L., Sp. Pl. 175. 1753.

Creeping herbs; stem glabrescent. Leaves 1-1.5 x 0.8-1 cm, broadly ovate to suborbicular, cordate at base, obtuse at apex, glabrous; petiole to 0.5 cm long. Flowers solitary or in pairs, axillary. Calyx lobes 5, ciliate, 2.5 mm, acute. Corolla 6 mm across, shortly tubular-campanulate. Stamens 5, subexserted. capsule 4 mm across, 1-celled.

Nakramkode Kavu, SK 48858. *Fl. & Fr:* Round the year. *Dist:* Native of Tropical America, naturalized in many Afro-Asian countries.

Hewittia Wight & Arn.,
Madras J.Lit. Sci.5: 17, 22. 1837.

Hewittia malabarica (L.) Suresh in Nicolson *et al.*, Interp. Hort. Malab. 88. 1988; Nayar & al., Flg. Pl. Kerala-Handb. 194. 2006. *Convolvulus malabaricus* L., Sp. Pl. 155. 1753. *C. sublobatus* L.f., Suppl. 135. 1782. *C. bicolor* Vahl, Symb. Bot. 3: 25. 1794, *non* Desr. 1792. *Hewittia bicolor* (Vahl) Wight & Arn., Madras J. Lit. Sci. 1(5): 22. 1837; Wight, Icon. pl. Ind. orient. t. 835. 1844; C.B. Clarke in Hook.f., Fl. Brit. India 4: 220. 1883; Gamble, Fl. Madras 924. 1923. *H. scandens* (Milne) Mabberley in Manilal, Bot. Hist. Hort. Malab. 84. 1980; Mohanan & Henry, Fl. Thiruvananthapuram 314. 1994.

Twining herbs; stem pubescent. Leaves 4-8 x 3-5 cm, ovate or broadly ovate, cordate at base, acute at apex, entire at margins, puberulous; basally 3-nerved. Flowers in axillary, a few flowered peduncled cymes; bracts attached to a little below the calyx, linear-lanceolate. Calyx lobes 5, unequal, ovate, outer larger than the inner three. Corolla yellowish with a purple centre. Stamens 5, included, to 1 cm; anthers oblong, 5mm long. Ovary globose, 1.5 mm, pubescent above; style 1.5 cm; stigmas 2, oblong. Capsule globose, 4-valved, 0.8 cm across, beaked with a persistent style. Seeds 4, black, trigonous.

Moopuram Kavu, SK 42385. *Fl. & Fr*: Oct.- Mar. *Dist*: Throughout the Old World tropics.

Ipomoea L.,

Sp. Pl. 159. 1753, *nom. cons.*

1. Leaf blade divided..... *I. mauritiana*

1. Leaf blade undivided..... *I. marginata*

Ipomoea marginata (Desr.) Verdc., Kew Bull. 42(3): 658. 1987; Nayar & al., Flg. Pl. Kerala-Handb. 196. 2006.. *I. sepiaria* J. Koeng ex Roxb. Fl. Ind. 2: 90. 1824; Wight, Icon. pl. Ind. orient. t. 838. 1844; C.B. Clarke in Hook.f., Fl. Brit. India 4: 209. 1883; Gamble, Fl. Madras 916. 1923; Mohanan & Henry, Fl. Thiruvananthapuram 317. 1994 Nayar & al., Flg. Pl. Kerala-Handb. 193. 2006.. *Thiruthali*.

Twining herbs; branchlets hirsute. Leaves 2-4 x 2-3 cm, triangular-cordiform, cordate at base, gradually acute-acuminate at apex, chartaceous, glabrous, petiole to 2 cm long. Flowers shortly pedicellate in subumbellate cymes. Calyx lobes 5, subequal, to 6x4 mm, obovate, obtuse-apiculate. Corolla creamy-white with a purple throat, 4 cm across, salverform; tube 3.5 cm long. Stamens 5, to 2 cm; anthers 2.5 mm. Ovary conical, 1.5mm; style 2.5 cm. Capsule globose, 0.8 cm across. Seeds white-velvety.

Sree Bhagavathi temple Kavu, Kariprathala. SK 42361. *Fl. & Fr:* Dec.-Feb. *Dist:* Pantropical.

Ipomoea mauritiana Jacq., Coll. Bot. 4: 216. 1719; Mohanan & Henry, Fl. Thiruvananthapuram 315. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 202. 2006. *I. paniculata* R.Br., Prodr. 486. 1810; Gamble, Fl. Madras

918. 1923. *I. digitata sensu* C.B. Clarke in Hook.f., Fl. Brit. India 4: 202. 1883, *non* L. 1759. *Palmuthakku*.

Glabrous twining shrubs, with large tuberous roots. Leaves to 8 cm long, palmately 5-9 lobed; lobes ovate, acuminate at apex; petiole to 3.5 cm long. Flowers in axillary, many flowered cymes; peduncles longer than petioles. Sepals orbicular, acute, 1 cm long, glabrous. Corolla pale purple, 4-5 cm long, widely campanulate, glabrous. Stamens 5, unequal. Ovary conical, 1.5 cm; style to 3 cm.

Pannikonam Kavu, SK 47917. *Fl.*: Jul.- Sept. *Dist.*: Native of Tropical America, now pantropical.

Merremia Dennst. ex Endlicher

Gen. Pl. 1403. 1841, *nom. cons.*

Merremia tridentata (L.) Hallier.f. Bot. Jahrb. Syst. 16: 552. 1893; ssp. **hastata** (Desr.) Ooststr., Blumea 3: 317. 1939; Mohanan & Henry, Fl. Thiruvananthapuram 318. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 200. 2006. *Convolvulus tridentatus* L., Sp. Pl. 157. 1753. *C. hastatus* Desr. in Lam. Encycl. 3: 542. 1791, *non* Forsk. 1775. *Merremia hastata* (Desr.) Hall.f., Bot. Jarb. 16, 552. 1893; Gamble, Fl. Madras 929. 1923.

Twining herbs. Leaves simple, 1.5-2.5 x 0.7-1 cm, oblong to pandurate, truncate and hastate to auriculate at base; obtuse or rarely retuse at apex, penninerved, glabrescent. Flowers solitary, axillary. Calyx lobes 5, subequal, ovate, 6 mm long. Corolla creamy to yellow with a purple throat, 1.5 cm across, 1 cm long. Stamens 5, to 6 mm; stigma capitate. Capsule 0.7 cm across, ovoid. Seeds glabrous, brown.

Sree Dharma Sastha Kavvu, SK 48873. *Fl. & Fr.*: Nov.- Mar. *Dist.*: Paleotropics.

Note: Austin & Staples (*Brittonia* 32: 533-536. 1980) have segregated this species into a separate genus *Xenostegia*. But this treatment is not widely accepted, hence here also prefer to keep it under *Merremia*.

SOLANACEAE *Juss.*,

Gen. Pl. 124. 1789, *nom. cons.*

- 1. Fruiting calyx inflated, overtopping the berry..... *Physalis*
- 1. Fruiting calyx neither inflated nor overtopping the berry.....2
- 2. Fruits echinate.....*Datura*
- 2. Fruits smooth.....*Solanum*

Datura L.,

Sp. Pl. 179. 1753.

Datura metel L., Sp. Pl. 179. 1753; Santapau, J. Bombay Nat. Hist. Soc. 47: 657. 1948; Mohanan & Henry, Fl. Thiruvananthapuram 319. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 581. 2006. *D. alba* Nees, Trans. L. Soc. London 17: 73. 1834; Wight, Icon. pl. Ind. orient. t. 852. 1848. *D. fastuosa non* L., 1759; Wight, Icon. pl. Ind. orient. t. 1396. 1848; C.B. Clarke in Hook.f., Fl. Brit. India 4: 242. 1883; Gamble, Fl. Madras 941. 1923. *Ummam*.

Subshrubs. Leaves 8-13 x 4-8 cm, elliptic to angulate, unequally truncate at base, acute at apex, minutely grey-pubescent. Flowers solitary,

erect. Calyx tubular, 6 cm long, glabrous. Corolla creamy-white, 15 cm long, funnel shaped, limb plaited. Stamens 5, attached towards the base of corolla tube. Ovary 0.7 cm; style 10 cm long. Capsule 4 cm across; spines short, stout, 0.7 cm, blunt. Seeds 5 mm long.

Chavaru Kavu, SK 48897. *Fl. & Fr.*: Mar.- Dec. *Dist.*: Paleotropics.

Physalis L.,

Sp. Pl. 182. 1753.

Physalis angulata L., Sp. Pl. 183. 1753; Nayar & al., Flg. Pl. Kerala-Handb. 582. 2006. *P. minima* L., Sp. Pl. 182. 1753; C.B. Clarke in Hook.f., Fl. Brit. India 4: 238. 1883; Gamble, Fl. Madras 939. 1923; Mohanan & Henry, Fl. Thiruvananthapuram 320. 1994. *P. pubescens* Wight, Ill. Ind. Bot. t. 166. B.f.6. 1850, *non* L., 1753. *Njottanjodiyan*.

Annual herbs. Leaves 6-8 x 4-7 cm, elliptic-ovate, obliquely rounded to acute at base, acute at apex, coarsely toothed at margin; petiole to 7 cm long. Flowers solitary, axillary. Calyx lobes 5, trinagular, 3.5 mm long, strigose-pubescent without. Corolla 5 mm across; lobes 5, triangular-ovate, 4 mm, prominently nerved, acute. Stamens 5, unequal; filaments 2-4 mm; anthers oblong, 2.5 mm. Ovary 1.5 mm; style 4 mm. Berry 0.7 cm across. Seeds compressed.

Erathu Kavu, SK 48879. *Fl. & Fr.*: Nov.- Jul. *Dist.*: Tropical Asia, Africa, Australia.

Solanum L.,

Sp. Pl. 184. 1753.

1. Plants unarmed.....*S. americanum*
1. Plants armed.....2
2. Berry 2 cm or more in diameter.....*S. melongena* var. *insanum*

2. Berry 1 cm or less in diameter.....3
 3. Leaves without prickles.....*S. torvum*
 3. Leaves with prickles*S. anguivi*

Solanum americanum Mill., Gard. Dict. (ed.8) 5. 1768; Edmonds, Kew Bull. 103. 1972; Schill & Anders., Bot. J. Linn. Soc. 102: 256. 1990; Nayar & al., Flg. Pl. Kerala-Handb. 583. 2006. *S. nigrum acut. non* L. 1753, *sensu* Gamble, Fl. Madras 936. 1923. *Manithakkali*.

Erect annual herbs; stem glabrous or sparsely hispid. Leaves 6-10 x 3-6 cm, ovate or elliptic, rounded at base, shortly decurrent on the petiole, subentire or bluntly toothed at margins; lateral nerves 5-7 pairs; petiole to 5 cm long. Flowers in extra axillary umbels. Peduncle 1-2 cm long. calyx cupular, 5-lobed. Corolla white, 5 mm across. Berry globose, purplish-black, 0.6 cm across, juicy. Seeds discoid, minutely pitted, 1 mm long.

Kudavoor Sree Bhagavathi temple Kavu, SK 48864. *Fl. & Fr.* Mar.-Nov. *Dist:* Pantropical.

Note: According to Schilling & Anderson (*l.c*), the two closely allied species viz. *S. americanum* and *S. nigrum* can easily be segregated on the size of seed. Seeds are larger (1.8-2.2 mm) in the former and smaller (1-1.2 mm) in the later. This species is an addition to the Flora of Thiruvananthapuram.

Solanum anguivi Lam., Encycl. 2:23. 1794; Hepper, Bot. J. Linn. Soc. 76: 290. 1978; Brumitt, Taxon 32: 29. 1983; Mohanan & Henry, Fl. Thiruvananthapuram 321. 1994.; Nayar & al., Flg. Pl. Kerala-Handb. 583. 2006 *S. indicum auct. non* L. 1753; Wight, Icon. pl. Ind. orient. t. 346.

1840; C.B. Clarke in Hook.f., Fl. Brit. India 4: 234. 1883; Gamble, Fl. Madras 938. 1923. *Putharichunda*.

Armed shrubs; stem and leaves with curved prickles, stellately tomentose. Leaves 9-13 x 6-8 cm, ovate-oblong, unequal at base, acute at apex, shallowly lobed, finely stellate above; petiole to 5 cm long. Flowers in extra-axillary racemes; peduncle 7 cm long. Calyx cupular, lobes 5, to 7 mm long, triangular, prickly. Corolla bluish-purple, 1.5 cm across, finely stellate outside. Stamens 5; filaments 0.5 mm; anthers linear-oblong, 0.8 cm. Ovary 2x2 mm; style 1 cm, pubescent. Berry globose, 8 mm across.

Karathala Kavu (a), SK 42344. *Fl. & Fr*: Sept.- Jan. *Dist*: South East Asia.

Solanum torvum Sw., Nov. Gen. & Sp. Pl. 47. 1788; Wight, Icon. pl. Ind. orient. t. 345. 1840; C.B. Clarke in Hook.f., Fl. Brit. India 4: 234. 1883; Gamble, Fl. Madras 937. 1923; Mohanan & Henry, Fl. Thiruvananthapuram 323. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 585. 2006. *Anachunda*.

Shrubs; stem densely stellately hairy, prickles sparse. Leaves 8-14 x 6-8 cm, ovate, sinuate, cordate a base, stellate-pubescent on both surface, dense on lower sides; lateral nerves 4-5 pairs. Flowers in many flowered corymbose cymes; peduncle to 5 cm long. Calyx lobes oblong, 4 mm, basally connate, pubescent without. Corolla white, 2.5 cm across, lobes longer than the tube. Stamens 5; filaments to 1.5 mm; anthers 7 mm. Ovary 1.5 mm; style 8.5 mm. Berry globose, 1 cm across. Seeds circular, smooth.

Nagaru Kavu, Kazhakkootam, SK 47856. *Fl. & Fr.*: Jul.- Mar. *Dist.*: Pantropical.

Solanum melongena L. var. **insanum** (L.) Prain, Bengal Plants 746. 1903; Gamble, Fl. Madras 937. 1923; Deb, Taxon 38: 139. 1989.p.p.; Nayar & al., Flg. Pl. Kerala-Handb. 586. 2006 *S. insanum* L., Mant. Pl. 46. 1767.

Prickly subshrubs. Leaves 7-12 x 6-8 cm, ovate-oblong, obliquely truncate at base, acute at apex, sinuate-lobed, coriaceous, stellate-pubescent on both sides, prickly; lateral nerves 5-6pairs; petiole to 3.5 cm long, prickly. Flowers 1-3, mostly solitary. calyx lobes 5, lanceolate, 6 mm, thick, stellate-pubescent and prickly without. Corolla violet, 2.5 cm across; lobes ovate, pubescent without. Stamens 5; filaments to 3 mm; anthers 6 mm. Ovary 3 mm; style 1 cm villous. Berry globose, 2.5 cm across, yellow, pendulous. Seeds minutely pitted.

Cherukulathu Kavu, SK 42387. *Fl. & Fr.*: Aug.- Feb. *Dist.*: Paleotropics.
Note: Addition to the Flora of Thiruvananthapuram.

SCROPHULARIACEAE Juss.,

Gen. Pl. 117. 1789, *nom. cons.*

- 1. Corolla rotate; lobes 4.....*Scoparia*
- 1. Corolla 2-lipped or campanulate.....2
- 2. Calyx winged at least in fruits.....*Torenia*
- 2. Calyx not winged.....3
- 3. Calyx lobes foliaceous.....*Bacopa*

3. Calyx lobes not foliaceous.....4
 4. Anther cells stipitate.....*Limnophila*
 4. Anther cells not stipitate.....5
 5. Subshrubs; leaves more than 5 cm long.....*Artanema*
 5. Annual herbs; leaves to 2 cm long.....*Lindernia*

Artanema D. Don in

Sweet, Brit. Fl. Gard. 7: ad t. 234, *nom. cons.*

Artanema longifolium (L.) Vatke, Linnaea 43: 207. 1881; Mohanan & Henry, Fl. Thiruvananthapuram 324. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 568. 2006. *Columnea longifolia* L., Mant. Pl. 90. 1767. *Artanema sesamoides* (Vahl) Benth., Scroph. Ind. 39. 1835; Wight, Icon. pl. Ind. orient. t. 1410. 1849; Hook.f., Fl. Brit. India 4: 274. 1884; Gamble, Fl. Madras 955. 1923.

Erect subshrubs; stem 4-angled, glabrous. Leaves 6-8 x 2-2.5 cm, elliptic or linear-lanceolate, acute at base, acuminate at apex, serrate at margins, sparsely scabrid; lateral nerves 5 pairs; subsessile or shortly petioled. Flowers in terminal racemes; bracts 5 mm long. Calyx lobes 5, imbricate, ovate, acute. Corolla pale purple, 1.5-2 cm long. Stamens 4, didynamous; filaments broadly appendiculate at base. Ovary globose. Capsule globose, 6 mm across, septicidally 2-valved. Seeds many, rugose.

Mechamkode Kavu, SK 40590. *Fl. & Fr.*: Jun.-Dec. *Dist.*: Indo-Malaysia.

Bacopa Aubl.

Hist. Pl. Guiane 128. 1775, *nom. cons.*

Bacopa monnieri (L.) Pennel, Proc. Acad. Nat. Sci. Philadelphia 98: 94. 1946; Philcox, Kew Bull. 33: 679. 1976; Mohanan & Henry, Fl.

Thiruvananthapuram 324. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 568. 2006. *Lysimachia monnieri* L., Cent. Pl. 2:9. 1756. *Moniera cuneifolia* Michaux, Fl. Bor. Amer. 2: 22. 1803; Gamble, Fl. Madras 953. 1923. *Herpestis monniera* (L.) Kunth, Nov. Gen. Sp. 2: 366. 1818, *nom. illeg.*; Hook.f., Fl. Brit. India 4: 272. 1884. *Brahmi*.

Prostrate herbs; stem creeping, braches ascending. Leaves 1-2 x 0.4-0.7 cm, ovate-oblong or spatulate, rounded at apex, punctate above, glabrous, sessile. Flowers solitary, axillary; pedicels to 3 cm long. Calyx 5 partite, unequal; outer two longer, ovate, 7 x 3.5 mm; inner two linear; median one oblong. Corolla white or bluish-white, 8 mm long, lobes subequal. Stamens 4; anthers oblong. Ovary oblong-globose, 2 mm; style slightly deflexed, to 5.5 mm. Capsule oblong-ovoid, 4 mm long.

Nakramkode Kavu, SK 48829. *Fl. & Fr.*: Jul.- Oct. *Dist.*: Paleotropics.

Linnophila R. Br.,

Prodr. 442. 1810, *nom. cons.*

Linnophila aromatica (Lam.) Merrill, Interpr. Rumph. Herb. Amb. 466. 1917; Philcox in Kew Bull. 24: 145. 1970; Mohanan & Henry, Fl. Thiruvananthapuram 326. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 570. 2006.

Aquatic herbs; stem decumbent at the base. Leaves 2-5 x -0.6-1.5 cm, opposite or ternately whorled, lanceolate-oblong, acute at apex, sharply serrate at margin, glabrous; nerves a few, inconspicuous. Flowers in terminal racemes. Calyx 6 mm long, divide to half way down, glandular; lobes lanceolate, acute at apex, subequal. Corolla 1.2 cm long,

purplish. Stamens 4, didynamous, included. Ovary 2-celled; style slender. Capsule 6 mm long, ovoid-oblong, covered by striate calyx.

Nanniyode Kavu, SK 42392. *Fl. & Fr.*: Jun.-Oct. *Dist.*: Indo-Malaysia and N.Australia.

Lindernia Allioni

Melanges Philos. Math. Soc. Roy. Turin 178. 1766.

- 1. Perfect stamens 4, staminodes 0.....*L. crustacea*
- 1. Perfect stamens 2, staminodes 2.....2
- 2. Capsule equalling the calyx.....*L. rotundifolia*
- 2. Capsule longer than calyx..... *L. ciliata*

Lindernia ciliata (Colsm.) Pennel, Brittonia 2: 182. 1936 & J. Arnold Arbor. 2: 253. 1943; Philcox, Kew Bull. 22: 51. 1968; Sivaraj. & P. Mathew, J. Bombay Nat. Hist. Soc. 80: 133. 1983; Mohanan & Henry, Fl. Thiruvananthapuram 329. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 572. 2006. *Gratiola ciliata* Colsm., Prodr. Desc. Grat. 14. 1793. *Bonnaya brachiata* Link. & Otto Ic. Pl. Select. 25. t. II. 1820; Hook.f., Fl. Brit. India 4: 284. 1884. *Illysanthes serrata* (Roxb.) Urban in Berl. Deutsch. Bot. Ges. 2: 436. 1884; Gamble, Fl. Madras 962. 1923. *Gratiola serrata* Roxb., Fl. Ind. 1: 140. 1820.

Small erect herbs. Leaves 1-2 x 0.4-0.8 cm, elliptic- oblong, cuneate at base, acute to obtuse at apex, dentate at margins, penninerved. Flowers in terminal racemes; bracts linear. Calyx lobes 5, lanceolate, 5mm. Corolla white with pink throat, 1 cm across; lobes 5, upper lip oblong, to 6 mm long; lower lip obtuse, to 4 mm long. Stamens 2; anthers

unequal, 1 m. Ovary 1.5 mm; style to 5.5 mm. Capsule linear-lanceolate, 1.5 cm, exceeding the calyx.

Nanniyode Kavu, SK 48832. *Fl. & Fr.*: Jun.-Sept. *Dist.*: Indo-Malaysia.

Lindernia crustacea (L.) F. Muell., *Syst. Cens. Austral. Pl.* 1: 97. 1882; Philcox, *Kew Bull.* 22: 17. 1968; Sivaraj. & P. Mathew, *J. Bombay Nat. Hist. Soc.* 80: 136. 1983; Mohanan & Henry, *Fl. Thiruvananthapuram* 329. 1994; Nayar & al., *Flg. Pl. Kerala-Handb.* 572. 2006. *Capraria crustacea* L., *Mant. Pl.* 87. 1767. *Vandellia crustacea* (L.) Benth., *Scroph. Ind.* 35. 1835; Wight, *Icon. pl. Ind. orient.t.* 863. 1844; Hook.f., *Fl. Brit. India* 4: 274. 1884; Gamble, *Fl. Madras* 959. 1923.

Erect or diffuse herbs, rooting at lower nodes. Leaves 1-1.7 x 1-1.5 cm, ovate, truncate at base, obtuse at apex, serrate at margin, penninerved; petiole to 5 mm long. Flowers in axillary or terminal racemes; pedicels to 1.2 cm long. Calyx 4 mm long, divided to 1/3 from the apex, 5-ribbed; lobes 5, ovate. Corolla purple, 5 mm long. Stamens 4; lower pair with a subulate appendage at the middle of filament. Ovary 1.5 mm long; style 3 mm long. Capsule ovoid, 5 mm long, obtuse at apex. Seeds ellipsoid.

Thaivilakom Sree Najaraja Kavu, SK 47907. *Fl. & Fr.*: Jun- Dec. *Dist.*: Pantropical.

Lindernia rotundifolia (L.) Alston in *Trimen, Handb. Fl. Ceylon* 6 (suppl.) 214. 1931; Sivaraj. & P. Mathew, *J. Bombay Nat. Hist. Soc.* 80: 135. 1983; Mohanan & Henry, *Fl. Thiruvananthapuram* 330. 1994; Nayar & al., *Flg. Pl. Kerala-Handb.* 573. 2006. *Gratiola rotundifolia* L., *Mant.*

Pl. 274. 1767. *Ilysanthes rotundifolia* (L.) Benth. in DC., Prodr. 10: 420. 1846; Hook.f., Fl. Brit. India 4: 284. 1884; Gamble, Fl. Madras 962. 1923.

Decumbent herbs, rooting at lower nodes. Leaves 0.8-1 cm long, broadly ovate to orbicular, truncate at base, obtuse at apex, sessile, basally 3-nerved. Flowers 1-per node; pedicel 0.7 cm long. Calyx divided to the base; lobes lanceolate, sparsely shortly hispid. Corolla white with blotches at the mouth and on lobes. Stamens 2; staminodes glandular-scabrid at base. Ovary 0.7 mm long. Capsule subglobose, 3 mm long.

Sree Bhadrakali temple Kavu, Pachalloor, SK 48833. *Fl. & Fr.*: Oct.-Mar. *Dist.*: South West India, Sri Lanka, Mauritius.

Scoparia L.,

Sp. Pl. 116. 1753.

Scoparia dulcis L., Sp. Pl. 116. 1753; Hook.f., Fl. Brit. India 4: 289. 1884; Gamble, Fl. Madras 964. 1923; Mohanan & Henry, Fl. Thiruvananthapuram 331. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 576. 2006. *Kallurukki*.

Erect annual or perennial herbs. Leaves opposite or ternately whorled, 1-3.5 x 0.5-1.5 cm, obovate, cuneate at base, acute at apex, serrate at margins; lateral nerves 3 pairs; petiole to 5 mm long. Flowers solitary, axillary. Calyx lobes 4, free, oblong, 2-3 mm long, pubescent without, ciliate. Corolla white, 5 mm across, rotate; lobes 4, oblong or spatulate, 3 mm long. Stamens 4, equal, exserted; filaments filiform, 2 mm. Ovary globose, 1.5 mm; style to 2 mm. Capsule subglobose, 3.5 mm wide, septicial, longer than calyx. Seeds 4-angled, reticulate.

Parottukonam Kavu, SK 48878. *Fl. & Fr.*: Round the year. *Dist.*: Naive of tropical America, now became a Pantropical weed.

Torenia L.,

Sp. Pl. 619. 1753.

Torenia travancorica Gamble, Fl. Madras 957. 1923; Hill, Bot. Mag. t. 9615. 1942; Cramer in Dassan. & Fosb., Rev. Handb. Fl. Ceylon 3: 442. 1981; Mohanan & Henry, Fl. Thiruvananthapuram 333. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 578. 2006. *T. asiatica* Hook.f., Fl. Brit. India 4: 277. 1884.p.p. *T. leucosiphon* Alston in Trimen, Handb. Fl. Ceylon 6: 212. 1931.

Decumbent herbs; stem rooting at lower nodes, quadrangular, glabrous. Leaves 1.5-4 x 1-3 cm, ovate or ovate-deltoid, subcordate at base, acute or acuminate at apex, coarsely crenate-serrate, penninerved, scabrous on both sides. Flowers in axillary solitary; bracts linear, 3-3.5 mm long; pedicels to 3 cm long, deflexed in fruits. Calyx tube 9-11 mm long; lobes 6-8 mm, lanceolate. Corolla to 3.5 cm long; tube to 2cm; upper lip oblong-orbicular, dark purple; lower lip pale bluish or bluish-white. Stamens 4. Style glabrous. Capsule linear-cylindric, 0.8-1.5 x 0.2 cm, narrowed at apex, glabrous.

Manthuruthu Kavu, SK 40595; Nanniyode Kavu, SK 48834. *Fl. & Fr.*: Round the year. *Dist.*: South India and Sri Lanka.

BIGNONIACEAE Juss.,

Gen. Pl. 137. 1789, *nom. cons.*

- 1. Calyx spathaceous.....*Spathodea*
- 1. Calyx cupular or campanulate.....2
- 2. Fruit broadly flat, winged.....*Pajanelia*
- 2. Fruit linear, angled or terete.....*Stereospermum*

Pajanelia A. DC. in

Biblioth. Universelle Geneve, ser.2, 17: 130. 1838.

Pajanelia longifolia (Willd.) K. Schum. in Engl. & Prantl, Pflanzenf. 4(3b): 244. 1895; Steenis, Fl. Males. I, 8: 163. 1977; Mohanan & Henry, Fl. Thiruvananthapuram 339. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 145. 2006. *Bignonia longifolia* Willd., Sp. Pl. 3: 306. 1800. *Pajanelia rheedei* Wight, Icon. pl. Ind. orient. tt. 1343, 1344. 1848; C.B. Clarke in Hook.f., Fl. Brit. India 4: 384. 1884; Gamble, Fl. Madras 1000. 1924. *Azhantha*.

Medium sized deciduous trees; bark pale grey. Leaves imparipinnate; leaflets to 20 x 7 cm, ovate, acuminate at apex; lateral nerves to 10 on one half and 6 on the other half, rachis trigonous. Flowers in terminal panicles, large. calyx campanulate, 5-lobed, 4 cm long, unequal. Corolla pale purplish, 8 cm long, white inside. Stamens 4, didynamous. Ovary sessile. Capsule to 40x 7 cm, broadly flat, winged. Seeds winged at both ends.

Nanniyode Kavu, SK 48835. *Fl. & Fr:* Jan.- Jun. *Dist:* Indo-Malaysia.

Spathodea Beauv.,

Fl. Oware 1: 46. 1805.

Spathodea campanulata P. Beauv. Fl. Oware 1: 47.t. 27. 1805; Gamble, Fl. Madras 1000. 1924; Nayar & al., Flg. Pl. Kerala-Handb. 147. 2006.

Handsome trees. Leaves opposite or in whorls of 3; leaflets 3-19, ovate-lanceolate or elliptic, 4-12 x 2-5 cm, rounded at base, acuminate at apex, entire, glabrous above, finely pubescent beneath. Flowers in erect, many flowered dense racemes. Calyx 4-7 cm long, boat shaped, dark – brown tomentose. Corolla campanulate, 8-10 cm long; tube suddenly widened upward; lobes ovate, acute. Stamens 4, included; filaments yellow. Capsule 15-20 x 4-5 cm, lanceolate, narrowed at both ends, erect, glabrous.

Sree Dharma sastha Kavu, Amaravila, SK 48898. *Fl. & Fr.*: Sept.- Feb.
Dist.: Native of Tropical Africa, now planted throughout the tropics..

Stereospermum Cham. in

Linnaea 7: 720. 1833.

Stereospermum colais (Buch.-Ham. ex Dillw.) Mabb., Taxon 27: 553. 1979; Nayar & al., Flg. Pl. Kerala-Handb. 146. 2006. *Bignonia colais* Buch.-Ham. ex Dillw., Rev. Hort. Malab. 28. 1839. *Stereospermum tetragonum* DC., Prodr. 9: 210. 1845; Gamble, Fl. Madras 998. 1924. *S. chelonoides sensu* Wight, Icon. pl. Ind. orient. t. 1341. 1845, *non* (L.f) DC. 1838; C.B. Clarke in Hook.f., Fl. Brit. India 4: 383. 1884. *Pathiri*.

Large trees; bark greyish-brown, slightly rough, creamy-yellow inside. Leaves imparipinnate; leaflets 9-11, elliptic-oblong, 8-12 x 3.5-5

cm, obtuse and slightly unequally at base, caudate-acuminate at apex; lateral nerves 8-10 pairs. Flowers in terminal panicles. Calyx campanulate, 0.7 cm long, bilabiate; lobes rounded. Corolla pale yellow with reddish-brown streaks on the lobes, 1.5 cm across; lobes 5, subequal. Stamens 4; anthers divaricate. Ovary oblong-cylindric, 4 mm; style to 1 cm long. Capsule tetragonous, to 45 cm long, often twisted.

Puthanvila Kavu SK 47914. *Fl. & Fr.*: Feb.- Oct. *Dist.*: Indo-Malaysia.

Note: Addition to Flora of Thiruvananthapuram.

PEDALIACEAE R. Br.,

Prodr. 519. 27. 1810, *nom. cons.*

1. Drupe indehiscent, spiny.....*Pedaliium*

1. Drupe dehiscent, not spiny.....*Sesamum*

Pedaliium D. Royen ex L.,

Syst. Nat. (ed. 10): 1123, 1375. 1759.

Pedaliium murex L., Syst. Nat. (ed.10) 1123. 1759; Wight, Icon. pl. Ind. orient. t. 1615. 1850; C.B. Clarke in Hook.f., Fl. Brit. India 4: 387. 1884; Gamble, Fl. Madras 1001. 1924; Mohanan & Henry, Fl. Thiruvananthapuram 339. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 475. 2006.

Herbs; stem glabrous, fleshy. Leaves 2.5-6 x 2-4 cm, repand-angulate, truncate at base, emarginate at apex, penninerved. Flowers solitary, axillary; pedicels with a pair of yellow glands. Calyx lobes 5, equal, linear, to 3 mm. Corolla yellow, 2 cm across, hispid within. Stamens 4; anthers 0.6 mm; staminodes 2.5 mm. Ovary conical, 1.5 mm,

puberulous; style to 1 cm. Drupe indehiscent, 1.5 x 0.8 cm, apex conical, spiny along the angles.

Idivizhunna Kavu, SK 48894. *Fl. & Fr.*: Sept.- Feb. *Dist.*: Tropical Africa, Pakistan, India and Sri Lanka.

Sesamum L.,
Sp. Pl. 634. 1753.

Sesamum orientale L., Sp. Pl. 634. 1753; Seggeler, *Taxon* 38: 656. 1989; Nayar & al., *Flg. Pl. Kerala-Handb.* 475. 2006. *S. indicum L.*, Sp. Pl. 634. 1753; Wight, *Ill. Ind. Bot.* t. 163. 1850; C.B. Clarke in *Hook.f., Fl. Brit. India* 4: 387. 1884; Gamble, *Fl. Madras* 1002. 1924. *Ellu.*

Erect herbs; young shoots 4-angled, puberulous. Leaves 6-8 x 3-5 cm, elliptic-lanceolate, attenuate at base, serrate or lobed at margins, pubescent on both sides. Flowers solitary, axillary. Calyx lobes 5, persistent, lanceolate, 7 mm long, pubescent. Corolla pink, 2.5 x 1.8 cm; lobed to 1.5 cm. Stamens 4; anthers 3 mm long. Ovary 3.5 mm; style to 1 cm long. Disc yellow. Capsule oblong, to 2 x 0.8 cm, apically beaked, compressed, medially grooved. Seeds black.

Kanjirathummoodu Kavu, SK 48895. *Fl. & Fr.*: July- Sept. *Dist.*: Pantropical.

ACANTHACEAE Juss.,
Gen. Pl. 102. 1789, *nom. cons.*

- 1. Corolla without an upper lip.....*Blepharis*
- 1. Corolla with an upper lip; 2-lipped or subequal.....2
- 2. Anther cells one higher up than the other.....3

2. Anther cells parallel, subequal.....	5
3. Anther cells appendaged at the base.....	4
3. Anther cells not appendaged at the base.....	<i>Leptostachya</i>
4. Both anther cells basally appendaged.....	<i>Justicia</i>
4. Only one anther cell basally appendaged.....	<i>Rungia</i>
5. Corolla lobes equal or subequal.....	6
5. Corolla 2-lipped.....	9
6. Ovules 2 in each cell.....	7
6. Ovules 3 or more per cell.....	8
7. Corolla lobes twisted to the left in bud.....	<i>Strobilanthes</i>
7. Corolla lobes imbricate in bud.....	<i>Asystasia</i>
8. Flowers in pedunculate cymes.....	<i>Dipteracanthus</i>
8. Flowers in sessile cymes.....	<i>Ruellia</i>
9. Calyx lobes 4.....	<i>Barleria</i>
9. Calyx lobes 5.....	10
10. Fertile stamens 4.....	11
10. Fertile stamens 2, with or without staminodes.....	12
11. Ovule 2 in each cell.....	<i>Phaulopsis</i>
11. Ovules 4 or more per cell.....	<i>Hygrophila</i>
12. Ovules 3 or more per cell.....	<i>Andrographis</i>
12. Ovules 2 in each cell.....	<i>Ecbolium</i>

Andrographis Wall. ex Nees in
Wall. Pl. Asiat. Rar. 3: 77, 116. 1832.

1. Erect herbs.....	<i>A. paniculata</i>
1. Diffuse or prostrate herbs.....	<i>A. atropurpurea</i>

Andrographis atropurpurea (Dennst.) Alston, Taxon 26: 539. 1977; Nayar & al., Flg. Pl. Kerala-Handb. 10. 2006. *Justicia atropurpurea* Dennst. Schlüssel 12, 22, 35. 1818. *Andrographis wightiana* Arn. ex Nees in DC. Prodr. 11: 517. 1847; Wight, Icon. pl. Ind. orient. t. 1558. 1850; C.B. Clarke in Hook.f., Fl. Brit. India 4: 503. 1884; Gamble, Fl. Madras 1048. 1924; Mohanan & Henry, Fl. Thiruvananthapuram 342. 1994. *Vallikiriya*.

Diffuse or prostrate herbs. Leaves 3-6 x 1-1.7 cm, ovate or linear-lanceolate, rounded at base, acute at apex, entire at margin. Flowers in elongate sub-paniculate axillary racemes. Calyx lobes 5, subequal, glandular-hairy. Corolla pink with purple lower lip; tubular, 2-lipped. Stamens 2, exserted; anthers unequal. Ovary linear. Capsule linear-oblong, 1-1.5 cm long.

Indalayappan Kavu. SK 40552; Vadakkodu Sree Dharma Sastha Kavu, SK 47936. *Fl. & Fr.*: Dec.- Apr. *Dist.*: India, Sri Lanka.

Andrographis paniculata (Burm.f.) Wall. ex Nees in Wall., Pl. As. Rar. 3: 116. 1832; Wight, Icon. pl. Ind. orient. t. 518. 1842; C.B. Clarke in Hook.f., Fl. Brit. India 4: 501. 1884; Gamble, Fl. Madras 1048. 1924; Mohanan & Henry, Fl. Thiruvananthapuram 342. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 11. 2006. *Justicia paniculata* Burm.f., Fl. Ind.. 9. 1768; Roxb., Fl. Ind. 1: 119. 1820. *Andrographis subspathulata* C.B. Clarke in Hook.f., Fl. Brit. India 4: 502. 1884. *Kiriya*.

Erect herbs. Leaves 5-8 x 1-2 cm, linear-obovate, acute at both ends. Flowers in terminal panicles; pedicels to 7 mm long; bracts lanceolate. Calyx lobes 5. glandular-hairy, acute. Corolla white with pink

tinge, 5 x 2.5 mm; tube 5 mm, glandular hairy without. Stamens 2, bearded, 4 mm long; anthers obovoid, 2 mm. Ovary oblong, 1.5 mm, puberulous; style 1 cm long. Capsule oblong, compressed, minutely hairy.

Irinjayam Kavu, SK 42331. *Fl. & Fr.*: Dec.- Apr. Dist: India and Sri Lanka.

Note: Cramer (1998) recognized two varieties for this species *viz.* var. *paniculata* and var. *glandulosa*. The present specimen represents the typical variety.

Asystasia Blume,

Bijdr. 796. 1826.

1. Leaves grey pubescent, flowers yellow.....*A. gangetica*

1. Leaves glabrescent, flowers

Purple.....*A. chelonoides* var. *quandrangularis*

Asystasia chelonoides Nees in Wall., Pl. As. Rar. 3: 89. 1832 var. **quandrangularis** C.B. Clarke in Hook.f., Fl. Brit. India 4: 494. 1884; Gamble, Fl. Madras 1063. 1924; Mohanan & Henry, Fl. Thiruvananthapuram 343. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 12. 2006.

Subshrubs. Leaves 8-10 x 3-4 cm, elliptic-obovate, gradually narrowed at base, acuminate at apex, entire at margin; lateral nerves 6-8 pairs. Flowers in terminal racemes; bracts 1.5 cm long. Calyx lobes linear, 4 mm long, thinly puberulent. Corolla 2.5 cm long; lobes 5, to 1 cm long. Stamens 2; anthers 2 mm long. Ovary 3 mm long; style 2 cm. Capsule 1.5 x 0.6 cm, beaked, thinly pubescent. Seeds angular, 0.5 cm across.

Erathu Kavu, SK 42339. *Fl. & Fr.*: Jul.-Dec. *Dist.*: South India and Sri Lanka.

Asystasia gangetica (L.) T. And. in Thw., Enum. Pl. Zeyl. 235. 1860; Gamble, Fl. Madras 1063. 1924; Mohanan & Henry, Fl. Thiruvananthapuram 343. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 12. 2006. *Justicia gangetica* L., Cent. Pl. II: 3. 1756. *Asystasia coromandelica* Wight ex Nees in Wall., Pl. As. Rar. 3: 89. 1832; C.B. Clarke in Hook.f., Fl. Brit. India 4: 493. 1884.

Subshrubs. Leaves 2-4 x 1.5-3 cm, elliptic-ovate, truncate to rounded at base, acute to shortly acuminate at apex; lateral nerves 5 pairs; petiole to 2 cm. Flowers in sub-terminal racemes; bracts lanceolate, 3 mm long. Calyx lobes 5, lanceolate, 9 x 1.5 mm, acuminate. Corolla 3 cm across, yellow with purple streaks; tube 2.5 cm. Stamens 2; anthers 3.5 mm. Ovary 3.5 mm; style 2 cm. Capsule 1.5 x 0.5 cm, beaked, apically pointed. Seeds angular, 4mm across.

Cheenivila Kavu, SK 48881. *Fl. & Fr.*: Round the year. *Dist.*: Pantropical.

Blepharis Juss.,

Gen. Pl.103. 1789.

Blepharis maderaspatensis (L.) Roth, Nov. Pl. Spec. 320. 1821; Napper, Kew Bull. 24: 323. 1970; Mohanan & Henry, Fl. Thiruvananthapuram 345. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 15. 2006. *Acanthus maderaspatensis* L., Sp. Pl. 892. 1753. *Blepharis boerhaaviaefolia* Pers. Syn. Pl. 2: 180. 1806; Wight, Icon. pl. Ind. orient. t. 458. 1841; C.B.

Clarke in Hook.f., Fl. Brit. India 4:478. 1884; Gamble, Fl. Madras 1013. 1924. *Hemadhandii*.

Prostrate herbs. Leaves 3-6 x 1.5-2 cm, elliptic-ovate to oblanceolate, rounded to subcordate at base, acutely apiculate at apex, distantly toothed. Flowers in axillary clusters among leaves; bracts in 4 opposite pairs. Calyx lobes 4; outer unequal, 1 and 1.5 cm each; inner one 0.5 cm. Corolla white with pink nerves, 1.2 cm across, lower lip 1.5 cm. Stamens 4, to 5 mm; anthers 3 mm. Ovary 2 x 1.5 mm; style 1.5 mm. Capsule 8 x 4 mm, shining. Seeds 2, suborbicular, flattened, 4 mm long.

Eezhaveedu Kavu, SK 48837. *Fl. & Fr* : Nov – Mar. *Dist* : Tropical Asia and Africa.

Note: According to Nappier (*l.c.*) our plant comes under the typical one:
ssp madraspatensis var. *madraspatensis*.

Barleria L.,

Sp. Pl. 636. 1753, *nom. cons.*

Barleria cristata L., Sp. Pl. 636. 1753; Wight, Icon. pl. Ind. orient. t. 453. 1841; C.B. Clarke in Hook.f., Fl. Brit. India 4:488. 1884; Gamble, Fl. Madras 1060. 1924; Nayar & al., Flg. Pl. Kerala-Handb. 13. 2006. *Mandaram*.

Subshrubs. Leaves 8-10 x 2-4 cm, elliptic-oblong to lanceolate, attenuate at base, acute at apex, ciliate along the margins, thinly sericeous along the nerves below; lateral nerves 6 pairs; petiole to 1.5 cm long. Flowers in axillary cymes, subsessile; bracts lanceolate, 1.2 cm long. Calyx lobes 4; outer 2 obovate, to 2.5 cm long, spinous, ciliate; inner

ones lanceolate, 8 mm long. Corolla purplish-pink, 4 cm across; tube 4 cm. Stamens to 2.5 cm long, hairy; anthers 3 mm. Ovary oblong-conic, 4 mm; style to 4 cm. Capsule to 1.5 cm, oblong. Seeds appressed hairy.

Kavil Sree Bhagavathi temple Kavu, SK 48882. *Fl. & Fr*: Dec.- Apr.
Dist: India, Burma, Indo-China, Philippines .

Note: Addition to the Flora of Thiruvananthapuram.

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Dipteracanthus Nees,

Wallich. Pl. Asiat. Rar. 3: 75, 81. 1832.

Dipteracanthus prostratus (Poir.) Nees, Wall. Pl. Asiat. Rar. 3: 81. 1832; Santapau, J. Bombay Nat. Hist. Soc. 51: 352. 1953; Mohanan & Henry, Fl. Thiruvananthapuram 346. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 17. 2006. *Ruellia prostrata* Poir in Lam., Encycl. 6: 349. 1804; Bedd., Icon. pl. Ind. orient. t. 282. 1868-1874; C.B. Clarke in Hook.f., Fl. Brit. India 4:488. 1884; Gamble, Fl. Madras 1017. 1924.

Diffuse herbs. Leaves 3-5 x 1.5-2.5 cm, ovate-elliptic, truncate-acute at base, acute or obtuse at apex, sparsely strigose; petiole to 1.5 cm long. Flowers pale violet, solitary, axillary; bracteoles 1 cm long, elliptic. Calyx lobes 5, subequal, ciliate. Corolla 2.5 cm long, funnel shaped; lobes 5, subequal. Stamens 4, didynamous; anther cells oblong. Style hairy. Capsule 6 mm long, sparsely pubescent.

Madavilakathu Kavu, SK 48883. *Fl. & Fr*: Oct.-Apr. *Dist*: From East Africa to India, Sri Lanka, Indonesia, and Mulluccas.

Ecboium Kurz in

J. Asiat. Soc. Bengal, Pt. 2, Nat. Hist. 40: 75. 1871.

Ecboium ligustrinum (Vahl) Vollesen, Kew Bull. 44:651. 1989 var. **ligustrinum**; Nayar & al., Flg. Pl. Kerala-Handb. 17. 2006 . *Justicia ligustrina* Vahl, Enum. 1: 118. 1804. *J. laetevirens* Vahl, Enum. 1: 118. 1804. *Ecboium linneanum* Kurz, J. Asiat. Soc. Bengal 40: 75. 1871; C.B. Clarke in Hook.f., Fl. Brit. India 4: 545. 1884; Gamble, Fl. Madras 1074. 1924; Mohanan & Henry, Fl. Thiruvananthapuram 324. 1994. *E. linneanum* var. *dentatum* (Klein ex Link.) C.B. Clarke in Hook.f., Fl. Brit. India 4:545. 1884; Gamble, Fl. Madras 1074. 1924. *E. linneanum* var. *laetevirens* (Vahl) C.B. Clarke in Hook.f., Fl. Brit. India 4:545. 1884; Gamble, Fl. Madras 1074. 1924. *E. viride* (Forrsk.) Alston var. *laetevirens* (Vahl) Raizada, Indian For. 84: 482. 1958.

Shrubs or subshrubs. Leaves 4-10 x 2-5 cm, elliptic-ovate to obovate, attenuate at base, gradually acute at apex, thin-coriaceous; lateral nerves 10-12 pairs; petiole to 4 cm long. Flowers in terminal spikes, to 12 cm long; bracts elliptic, 1-2 x 1.5 cm; bracteoles lanceolate. Calyx lobes 5, sparsely glandular-pubescent, 5 mm long, subequal. Corolla bluish-green, tube 2.5 cm long; lobes of lower lip 1 cm long; tube narrowly cylindrical. Stamens 2, exserted; filaments flattened. Ovary oblong-globose, 3x1 mm; style filiform, 3.5 cm long. Capsule to 2 x 0.7 cm, ovoid, compressed. Seeds 2, orbicular, tuberculate.

Kudavoor Sree Bhagavathi Kavu, SK 48838. *Fl. & Fr.*: Jan.- Jun. *Dist.*: India and Sri Lanka.

Hygrophila R. Br.

Prodr. 479. 1810.

Hygrophila ringens (L.) R. Br. ex Steud., Nom. Bot. ed. 1. 1: 418. 1821, (ed.2) 2: 783. 184; Cramer in Dassan. & Clayton, Rev. Handb. Fl. Ceylon 12: 16. 1998; Nayar & al., Flg. Pl. Kerala-Handb. 20. 2006. *Ruellia ringens* L., Sp. Pl. 635. 1753. *R. salicifolia* Vahl, Symb. Bot. 3: 84. 1794. *Hygrophila salicifolia* (Vahl) Nees in Wall., Pl. As. Rar. 3: 81. 1832; C.B. Clarke in Hook.f., Fl. Brit. India 4: 407. 1885. *H. quadrivalvis* Nees in Wall. Pl. As. Rar. 3: 80. 1832; C.B. Clarke in Hook.f., Fl. Brit. India 4:408. 1884; Gamble, Fl. Madras 1016. 1924. *H. obovata* Wight, Icon. pl. Ind. orient. t. 1489. 1849. *H. erecta* (Burm.f.) Hochr. in Candollea 5: 230. 1934; Mohanan & Henry, Fl. Thiruvananthapuram 347. 1994. *Ruellia erecta* Burm.f., Fl. Ind. 135. 1784.

Herbs. Leaves 2.5-6 x 2-3 cm, elliptic-ovate to obovate, rounded at base, obtuse at apex, entire to crenate; petiole to 2 cm long. Flowers fascicled in whorls at nodes; bracts leafy, 9 mm, obtuse; bracteoles 6 mm. Calyx lobes 5, equal, 9 mm, connate below. Corolla pink, 7 x 0.3 mm across; tube 8 mm; lip equals. Stamens 4; exserted. Ovary 2.5 mm; ovules many; style to 1.5 mm. Capsule short; seeds 8-12; reticulate long and curved.

Manthuruthu Kavu, SK 48840. *Fl. & Fr.*: Nov.- Feb. *Dist.*: India, Sri Lanka to Malacca.

Note: According to Cramer (1998) *H. salicifolia* and *H. quadrivalvis* are conspecific and accordingly he considered the earliest legitimate name *H. ringens* for the combined taxa.

Justicia L.,

Sp. Pl. 15. 1753, *nom. cons.*

- 1. Shrubs.....2
- 1. Subshrubs or herbs.....5
- 2. Bracts white with green nerves.....*J. betonica*
- 2. Bracts without white and green nerves.....3
- 3. Bracteoles absent; leaves linear-lanceolate.....*J. gendarussa*
- 3. Bracteoles present; leaves otherwise.....4
- 4. Bracteoles orbicular.....*J. beddomei*
- 4. Bracteoles elliptic-oblong.....*J. adhatoda*
- 5. Calyx 4-lobed.....*J. prostrata*
- 5. Calyx 5-lobed.....*J. tranquebariensis*

Justicia adhatoda L., Sp. Pl. 15. 1753; Roxb., Fl. Ind. 1: 127. 1820; Mohanan & Henry, Fl. Thiruvananthapuram 348. 1994. *Adhatoda zeylanica* Medikus, Hist. Commentat. Acad. Elect. Sci. Theod.–Palat. 6: 393. 1790; Nayar & al., Flg. Pl. Kerala-Handb. 9. 2006. *A. vasica* Nees in Wall. Pl. As. Rar. 3: 103. 1832; C.B. Clarke in Hook.f., Fl. Brit. India 4: 540. 1885; Gamble, Fl. Madras 1082. 1924.

Shrubs; branchlets grey-pubescent. Leaves 10-20 x 3-8 cm, oblanceolate, acute to attenuate at base, acuminate at apex, entire to minutely crenate at margins; petiole to 4 cm long. Flowers creamy-white in axillary dense spike; bracts leafy, to 2.5 cm long; bracteoles elliptic-oblong, 1.5 cm long. Calyx lobes 5, equal, shortly connate, lanceolate, 1.2 x 0.3 cm. Corolla 2.5 cm long; tube 1.5 cm, throat villous. Stamens 2, attached at the throat of the tube, exserted. Ovary oblong, 3x2 mm, pubescent; style 2.5 cm. Capsule obovoid, 10 x 5mm, basally beaked. Seeds 4, suborbicular, rugose.

Nanniyode Kavu, SK 48841. *Fl. & Fr.*: Nov.- May. *Dist.*: Indo-Malaya.

Justicia beddomei (C.B. Clarke) Bennet in Ind. J. Forestry. 5: 326. 1982. *Adhatoda beddomei* C.B. Clarke in Hook.f., Fl. Brit. India 4:545. 1884; Gamble, Fl. Madras 1082. 1924; Nayar & al., Flg. Pl. Kerala-Handb. 9. 2006. *Justicia gingiana* Sebastine & Ramamurthy, Bull. Bot. Surv. India 6: 99. 1964.

Shrubs. Leaves 7-16 x 3-6 cm, elliptic-lanceolate, acute at base, acuminate at apex, entire or minutely crenate at margins, glabrous; lateral nerves 8-12 pairs; petiole to 2.5 cm long. Flowers in short axillary pedunculate spikes, to 4 cm long; peduncle to 2 cm long; bracts 13 x 5 mm, ovate-oblong or elliptic; bracteoles 1 cm long, elliptic. Calyx 4 mm long, 5-lobed; lobes linear-lanceolate. Corolla 1.5 cm long, white, pubescent without. Stamens 2; filaments glabrous except at base. Ovary glabrous; style hairy at lower portion.

Nanniyode Kavu, SK 48839. *Fl.*: June-Sept. *Dist.*: South India, endemic.

Justicia betonica L., Sp. Pl. 15. 1753; C.B. Clarke in Hook.f., Fl. Brit. India 4:525. 1884; Gamble, Fl. Madras 1078. 1924; Grah., Kew Bull. 43: 586. 1988; Mohanan & Henry, Fl. Thiruvananthapuram 349. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 21. 2006.

- 1. Stem erect.....var. *betonica*
- 1. Stem decumbent, rooting at lower nodes.....var. *ramosissima*

var. **betonica**

Shrubs, branchlets green, striate. Leaves 7-15 x 4-7 cm, ovate-lanceolate, acute–attenuate at base, acuminate at apex, entire at margin; petiole to 3 cm long. Flowers in terminal spikes, 8-13 cm long; bracts and bracteoles similar, elliptic-ovate, 1.5 cm long, white with green nerves. Calyx lobes 5, obovate-lanceolate, 4 x 1.5 mm. Corolla 8x5 mm, pubescent without. Stamens 2, curved, to 6 mm. Ovary oblong, 2 mm; style to 1 cm. Capsule 1.5 x 0.5 cm, apically mucronate with a solid, basal beak.

Mulapallikonam Kavu, SK 48841. *Fl. & Fr.*: Round the year. *Dist.*: Pantropical.

var. **ramosissima** (Nees) C.B. Clarke in Hook.f., *Fl. Brit. India* 4:525. 1884; Cooke, *Fl. Pres. Bombay* 407. 1908; Santhosh *et al.*, *J. Econ. Tax. Bot.*26(1): 142. 2002; Nayar & al., *Flg. Pl. Kerala-Handb.* 22. 2006. *Adhatoda ramosissima* Nees in *Wall.Pl. As. Rar.* 3: 103. 1832.

Diffusely branched, more or less decumbent undershrubs; stem cylindrical, striate, with swollen nodes. Leaves 5-10 x 3.5-4 cm, ovate, acute at base, acuminate at apex, entire at margins, glabrous; main nerves 4-6 pairs. Flowers in terminal secund spikes; bracts ovate, acute, mucronate, white with green veins, glabrous; bracteoles lanceolate, unequal sided, white with green veins. Calyx 5-partite, to 5 mm long; segments linear-lanceolate. Corolla to 1.25 cm long, pubescent without, dull white, 2-lipped; upper lip erect emarginate; lower lip deflexed, 3-lobed. Stamens 4; filaments hairy at their base; lower anther cell with a long spur. Ovary 2-celled; 2-ovuled in each cell; style pubescent. Capsule

softly pubescent, broadly clavate. Seeds 4, suborbicular, densely tuberculately rugose when wetted.

Ayaniyerathala Kavu, Sree Karyam SK 34489. *Fl. & Fr.*: Jan.- Mar. *Dist.*: India.

Note: This variety is differing from the typical variety by the decumbent habit, shorter leaves and narrow bracts and bracteoles. C.B. Clarke (1884) has given the locality as throughout India, but later, Cooke (1908) only has recorded it in Konkan region. The present collection from Kerala hence form a new record for the state.

Justicia gendarussa Burm.f., *Fl. Ind.* 10: 1768; C.B. Clarke in Hook.f., *Fl. Brit. India* 4:532. 1884; Gamble, *Fl. Madras* 1079. 1924; Mohanan & Henry, *Fl. Thiruvananthapuram* 347. 1994; Nayar & al., *Flg. Pl. Kerala-Handb.* 22. 2006. *Gendarussa vulgaris* Nees in *Wall.Pl. As. Rar.* 3: 104. 1832; Wight, *Icon. pl. Ind. orient.* t. 468. 1871. *Vathamkolli*.

Shrubs; branchlets dark purple, terete, smooth. Leaves 8-12 x 1-1.8 cm, linear to oblong-lanceolate, acute at base, acute-obtuse at apex, chartaceous, glabrous; lateral nerves 5-7 pairs; petiole to 2-3 mm long. Flowers in terminal spikes, to 8 cm long; bracts linear, 4 mm long; bracteole 0. Calyx lobes 5, almost free, 5 mm, linear-lanceolate. Corolla 1.5 cm; tube cylindric, 0.9 cm long. Stamens 2, to 5 mm; anthers cells 2 mm. Ovary 2 mm, puberulous; style 1 cm long. Fruit not seen.

Venmaranelloor Kavu, SK 42382. *Fl. & Fr.*: Jan.-Apr. *Dist.*: Indo-Malaya, Philippines and China.

Justicia prostrata (C.B. Clarke) Gamble, *Fl. Madras* 1081. 1924; Graham, *Kew Bull* 43: 597. 1988; Mohanan & Henry, *Fl.*

Thiruvananthapuram 353. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 24. 2006. *J. diffusa* Willd. var. *prostrata* C.B. Clarke in Hook.f., Fl. Brit. India 4: 538. 1884.

Herbs; branchlets striate, bending above nodes. Leaves 1-2 x 0.5-1 cm, ovate or suborbicular, rounded to acute at base, obtuse to acutely apiculate at apex; petiole to 0.7 cm. Flowers in linear terminal spikes; bracts and bracteoles linear, to 2.5 mm long. Calyx lobes 4, almost free, lanceolate, 3 mm, acute. Corolla 4x2 mm; tube 2 mm. Stamens 2, curved, to 2.5mm; anthers cells 0.7 mm. Ovary 1.3 mm, puberulous. Capsule to 4 mm long, oblong, glabrous except at apex.

Nagaru Kavu, Karimamoola, SK 48842. *Fl. & Fr:* Round the year. *Dist:* India and Sri Lanka.

Justicia tranquebariensis L. f., Suppl. Pl. 85. 1781; C.B. Clarke in Hook.f., Fl. Brit. India 4:530. 1885; Gamble, Fl. Madras 1079. 1924; Mohanan & Henry, Fl. Thiruvananthapuram 349. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 24. 2006.

Herbs; branchlets terete, appressed white-pubescent. Leaves 1-1.5 x 0.8-1.2 cm, ovate-suborbicular, rounded to cuneate at base, obtuse-rounded and apiculate at apex; petiole to 0.8 cm long. Flowers usually in terminal spikes, rarely in short axillary spikes also; bracts elliptic to broadly ovate, 8 x 4.5 mm; bracteoles lanceolate, 7 x 1.5 mm. Calyx lobes 5, lanceolate, 7 x 1 mm, 3-nerved. Corolla 0.8 cm across; tube ventricose, 4 mm long. Stamens 2, curved, to 4 mm long. Ovary 1mm, pubescent; style to 6mm. Capsule 0.8 cm, pubescent, pointed above. Seeds orbicular, tuberculate.

Maruthamangalam Madan Kavu, SK 48843. *Fl. & Fr.*: Round the year.
Dist.: Peninsular India and Sri Lanka.

Leptostachya Nees

In Wall. Pl. Asiat. Rar. 3: 105. 1832.

Leptostachya wallichii Nees in Wall. Pl. Asiat. Rar. 3: 105. 1832; Wight, Icon. pl. Ind. orient. t. 1543. 1850; Nayar & al., Flg. Pl. Kerala-Handb. 26. 2006. *Dianthera wallichii* (Nees) Benth. ex Gamble, Fl. Madras 1083. 1924. *D. leptostachya* C.B. Clarke in Hook.f. Fl. Brit. India 4: 542. 1885.

Erect undershrubs. Leaves opposite, 7-14 x 4-6 cm, elliptic or ovate-elliptic, cuneate at base, acuminate at apex, entire to crenate, coriaceous; lateral nerves 5-8 pairs, ascending, dark green above and pale beneath; petiole to 3.5 cm long, green. Flowers white in terminal spikes, to 15 cm long; bracts to 3 mm long, ovate to subulate, hairy; bracteoles to 2.5 mm long, hairy. Calyx lobes 5, to 3 mm long linear, subequal, hairy, lobed to 2/3 from apex. Corolla lobes 5, subequal or slightly bifid, hairy without. Stamens 2; anthers 2-celled, one little higher up than the other, mucous at base. Ovary glabrous.

Sreedharma Sastha Kavu, SK 47939. *Fl. & Fr.*: July- Nov. *Dist.*: South India, endemic.

Note: Graham (Kew Bull. 43(3); 551-624. 1988) treated the genus *Leptostachya* as a peripheral taxa of *Justicia* sect. *Rhaphidospora* (Nees) T.And.

Phaulopsis Willd. ,

Sp. Pl. 3: 4, 342. 1799-1800, *nom.cons.*

Phaulopsis imbricata (Forssk.) Sweet, Hort. Brit. (ed.1) 327. 1827; Mohanan & Henry, Fl. Thiruvananthapuram 350. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 27. 2006. *Ruellia imbricata* Forssk., Fl. aeg.-arab. 113. 1775. *Micranthus oppositifolius* Wendl., Bot. Beobacht 39. 1798; Gamble, Fl. Madras 1022. 1924. *Actheilema reniforme* Nees in Wall. Pl. As. Rar. 3: 94. 1832; Wight, Icon. pl. Ind. orient. t. 1533.1850. *Phaulopsis parviflora* Willd., Sp. Pl. 3: 342. 1800; C.B. Clarke in Hook.f., Fl. Brit. India 4:417. 1884.

Spreading herbs; young shoots glandular-hairy. Leaves 2.5-6 x 1-3 cm, obliquely ovate or elliptic, obliquely acute at base, acute at apex; lateral nerves 4 pairs; petiole to 2.5 cm long; bracts reniform, 8 mm long, obtuse. Calyx lobes 5, unequal, free. Corolla white, 4 x 1.3 mm across; tube 4 mm long; lobes 5. Stamens 4, subexserted or included. Ovary oblong, 1x0.5 mm; style to 3 mm, filiform, hairy. Capsule oblong, 7 x 3 mm, acute. Seeds 4, orbicular.

Manthuruthu Kavu, SK 48844. *Fl. & Fr:* Nov.- Mar. *Dist:* Indo-Malaya, China and Africa

Ruellia L.,

Sp. Pl. 634. 1753

Ruellia tuberosa L., Sp. Pl. 635. 1753; Gamble, Fl. Madras 1017. 1924; Mohanan & Henry, Fl. Thiruvananthapuram 353. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 38. 2006.

Herbs; tender parts hispid. Leaves 3.5-9 x 2-4.5 cm, obovate-lanceolate, cuneate to attenuate at base, obtuse to subacute at apex; petiole to 2.5 cm long. Flowers blue to violet either solitary or in 3-flowered cymes; bracts and bracteoles linear-lanceolate, 5 mm long. Calyx lobes 5, subequal, linear. Corolla 4 cm across; tube 3-3.5 cm long; lobes subequal. Stamens 4, included; anthers 4 mm. Ovary 4 x 1.5 mm; style 2 cm long; stigma 2-lamellate. Capsule oblong, 2.5 cm, glabrous. Seeds orbicular, hairy, 2 mm across.

Kamukarakonam Kavu, SK 48845. *Fl. & Fr.*: Round the year. *Dist.*: Native of West Indies, naturalized in India, Sri Lanka and Indonesia.

Rungia Nees ,

Wallich Pl. Asiat. Rar. 3: 77,109.. 1832.

Rungia parviflora Nees in Wall.Pl. As. Rar. 3: 110. 1832. var. **muralis** C.B. Clarke in Hook.f., Fl. Brit. India 4:550. 1884; Gamble, Fl. Madras 1072. 1924; Nayar & al., Flg. Pl. Kerala-Handb. 29. 2006.

Procumbent herbs. Leaves 1-2.5 x 0.6-1 cm, ovate or elliptic, acute at both ends, glabrous or sparsely puberulous. Flowers white in terminal secund spikes, 1-3 cm long; bracts 4 rows; two rows barren and two rows fertile, similar, margin scarios, shortly acuminate. Calyx lobes 5, subequal, 3.5 mm. Corolla tube 3.5 mm; lobes 5, bilipped. Stamens 2, sub-exserted . Ovary globose, 1 mm, puberulous; style 4.5 mm, hairy. Capsule elliptic-oblong, 5 mm, pubescent.

Myvalli Ela Kavu, SK 48884. *Fl. & Fr.*: Nov.- Feb. *Dist.*: India.

Note: Addition to the Flora of Thiruvananthapuram.

Strobilanthes Blume,
Bijdr. 781, 796. 1826.

Strobilanthes lupulina Nees in Wall.Pl. As. Rar. 3: 85. 1832; C.B. Clarke in Hook.f., Fl. Brit. India 4: 443. 1884; Nayar & al., Flg. Pl. Kerala-Handb. 34. 2006. *Nilgirianthus lupulinus* (Nees) Bremek., Verh. Kon. Ned. Akad. Wetensch. Afd. Natuurk., Tweede Sect. 2, 41(1): 174. 1944. *Strobilanthes heyneanus* Nees in Wall. Pl. As. Rar. 3: 85. 1832 & in DC. , Prodr. 11: 164. 1847; C.B. Clarke in Hook.f., Fl. Brit. India 4:443. 1884; Gamble, Fl. Madras 1072. 1924. *S. rugosus* Wight, Icon. pl. Ind. orient. t. 1619. 1850. *Nilgirianthus heyneanus* (Nees) Bremek., Verh. Kon. Ned. Akad. Wetensch. Afd. Natuurk., Tweede Sect. 2, 41(1): 175. 1944. *Karimkurinji*.

Subshrubs; branchlets obtusely 4-angled. Leaves 6-10 x 4-5.5 cm, broadly elliptic, acute at base, abruptly acuminate at apex, crenate-serrate at margins, sparsely pubescent below and densely lineolate above; lateral nerves 6-7 pairs; petiole to 2.5 cm long. Flowers in axillary capitate spikes; bracts orbicular, concave, obtuse, 1 cm long. Calyx lobes linear, 0.8 cm long. Corolla 2 cm long, strobilate, pale blue; lobes equal. Stamens 4, more or less included; filaments hairy. Ovary glabrous; style hairy. Capsule glabrous.

Manthuruthu Kavu, SK 40516. *Fl. & Fr.*: Nov.- Feb. *Dist.*: South West India and Sri Lanka.

Note: Addition to the Flora of Thiruvananthapuram.

THUNBERGIACEAE *Bremek. In*

Proc. Kon. Ned. Akad. Wetensch. C, 56: 540. 1954.

Thunbergia Retz.in

Physiogr. Salsk. Handl. 1(3): 163. 1780, nom. cons.

1. Erect subshrubs.....*T. erecta*
1. Twining herbs.....*T. alata*

Thunbergia alata Bojer ex Sims in Curtis, Bot. Mag. t. 2591. 1825; C.B. Clarke in Hook.f., Fl. Brit. India 4:391. 1884; Gamble, Fl. Madras 1008. 1924; Mohanan & Henry, Fl. Thiruvananthapuram 355. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 38. 2006.

Twining herbs. Leaves 4-8 x 3-6 cm, hastate or sagitate, mucronate at apex, entire at margin; petiole to 6 cm long, winged. Flowers solitary or paired, axillary; bracts hastate, 2.5cm long, acute; pedicels to 5 cm long. Calyx lobes 15, subulate, unequal, 2-4 mm. Corolla yellow with purple throats, 3 x 2 cm across; tube 1.5 cm long. Stamens 4, curved, flattened; anthers oblong, bearded. Ovary 2.5 mm long; style erect, 1.2 cm long. Capsule depressed-globose, 0.8 x 1cm, with a long apical beak.

Pulickal Bhagavathy Kavu, SK 48847. *Fl. & Fr.*: Round the year. *Dist.*: Native of Tropical Africa, widely cultivated and often found run wild.

Thunbergia erecta (Benth.) T. And., J., Proc. Linn. Soc. Bot. 7: 18. 1863; Gamble, Fl. Madras 1008. 1924; Mohanan & Henry, Fl. Thiruvananthapuram 355. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 38.

2006. *Meyenia erecta* Benth. in Hook. Noger. fl. 476. 1849.
Kakkappoovu.

Erect subshrubs. Leaves 3-8 x 2-4 cm, elliptic-ovate or obovate, rounded at base, acute at apex, entire at margins; petiole to 5 mm long. Flowers solitary or paired; bracteoles 1.5 cm, deciduous. Calyx teeth 15, subulate, glandular hairy. Corolla tube creamy; lobes purple, 4 cm across. Stamens 4; filaments glandular hairy; anthers oblong, 4 mm. Ovary 3 mm; style to 3.5 cm long; stigma 2-lipped. Fruit not seen.

Poovathoor Kavu, SK 48848. *Fl*: Round the year. *Dist*: Native of Tropical Africa, widely cultivated in the tropics.

VERBENACEAE *J. St.-Hil.*,

Expos. Fam. Nat. 1: 245. 1805, *nom. cons.*

1. Leaves digitately 3-5 foliolate.....*Vitex*
1. Leaves simple.....2
2. Corolla actinomorphic.....3
2. Corolla zygomorphic.....4
3. Calyx inflated in fruit.....*Tectona*
3. Calyx not inflated in fruit.....*Callicarpa*
4. Flowers in racemes or cymes.....5
4. Flowers in elongated or globose spikes.....6
5. Stamens 2, calyx ribbed.....*Stachytarpheta*
5. Stamens 4, calyx not ribbed.....*Lantana*
6. Scandent shrubs.....*Premna*
6. Erect trees or shrubs.....7
7. Leaves with a pair of sessile glands at the base of lamina...*Gmelina*
7. Leaves without glands.....*Clerodendrum*

Callicarpa L.,

Sp. Pl. 111. 1753.

Callicarpa tomentosa (L.) Murray in Syst. Veg. (ed.13) 130. 1774; Mohanan & Henry, Fl. Thiruvananthapuram 357. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 617. 2006. *Tomex tomentosa* L., Sp. Pl. 118. 1753. *Callicarpa lanata* L., Mant. Pl. 331. 1771, *nom. illeg.*; C.B. Clarke in Hook.f., Fl. Brit. India 4: 567. 1885; Gamble, Fl. Madras 1092. 1924. *C. wallichiana* Walp, Repert. 4: 125. 1846; Wight, Icon. pl. Ind. orient. t. 1480. 1849. *Poochathekk*.

Small trees; young shoots densely stellate-pubescent. Leaves 15-28 x 8-16 cm, broadly elliptic-ovate, truncate to acute at base, acuminate at apex, densely tomentose below and glabrous above except the nerves; lateral nerves 8 pairs; petiole to 6 cm long. Flowers subsessile in axillary and terminal umbellate cymes; bracts linear 3 mm. Calyx cupular, to 2 mm, obscurely 4-lobed, pubescent without. Corolla purple, regular, 5 mm across, shortly tubular-campanulate. Stamens 4, inserted below between lobes, exserted. Ovary globose, to 1.5 mm, pubescent without. Drupe globose, 4 mm in diam. Seeds oblong.

Nanniyode Kavu, SK 48848. *Fl. & Fr:* Nov.- May. *Dist:* Peninsular India and Sri Lanka.

Clerodendrum L.,

Sp. Pl. 637. 1753.

1. Plants pubescent, flowers white-pale pink.....*C. infortunatum*

1. Plants glabrous, flowers red.....*C. paniculatum*

Clerodendrum infortunatum L., Sp. Pl. 637. 1753; Nayar & al., Flg. Pl. Kerala-Handb. 618. 2006. *C. viscosum auct. non* Vent., Jard. Mal. 1: t. 25. 1803; Mohanan & Henry, Fl. Thiruvananthapuram 358. 1994;. *C. infortunatum auct. non* L.; 1753; Wight, Icon. pl. Ind. orient. t. 1471. 1849, '*infortunata*', C.B. Clarke in Hook.f., Fl. Brit. India 4:594. 1885; Gamble, Fl. Madras 1100. 1924.*Peringalam*

Small trees; young shoots tawny villous. Leaves 10-25 x 6-20 cm, ovate or orbicular, cordate at base, acuminate at apex, entire or denticulate at margins, villous beneath and tomentose above; basally 5-7 nerved; petiole to 9 cm long. Flowers in terminal panicles, to 18 cm long, villous. Calyx lobes lanceolate, 8 mm long, tomentose. Corolla tube 2 cm long, lobes oblong, 8 mm long. Stamens 4, didynamous. Ovary imperfectly 4-celled. Drupe bluish-black, globose, 6 mm across; fruiting calyx enlarged.

PerinKavu, Mevarkara, SK 48851. *Fl. & Fr:* Nov.- Aug. *Dist:* Indo-Malaysia to Philippines and China.

Clerodendrum paniculatum L., Mant. Pl. 90. 1767; C.B. Clarke in Hook.f., Fl. Brit. India 4:593. 1885; Vivek., Bull. Bot. Surv. India 10: 240. 1968; Nayar & al., Flg. Pl. Kerala-Handb. 618. 2006.

Glabrous shrubs; stem sub-quadrangular. Leaves opposite, 10-22 x 8-20 cm, orbicular-cordate, distantly denticulate at margins, basally 7-nerved. Flowers red in terminal panicles of dichotomous cymes. Calyx red, tube short; lobes 5, oblong-obtuse, to 3 mm long. Corolla tube

narrow, cylindric, to 1.5 cm long; lobes 5, spreading, oblong-obtuse, 5 mm. Stamens 5, long exserted, curved.

Manthuruthu Kavu, SK 48889. *Fl.*: Mar.- Sept. *Dist.*: Pantropical

Note: Addition to the Flora of Thiruvananthapuram.

Gmelina L.,

Sp. Pl. 626. 1753.

1. Unarmed trees.....*G. arborea*

1. Armed shrubs or small trees.....*G. asiatica*

Gmelina arborea Roxb., Pl. Coromandel t. 246. 1815; Wight, Icon. pl. Ind. orient. t. 1470. 1849; Bedd., Fl. sylv. S. India t. 253. 1872; C.B. Clarke in Hook.f., Fl. Brit. India 4:581. 1885; Gamble, Fl. Madras 1098. 1924; Mohanan & Henry, Fl. Thiruvananthapuram 358. 1994, Nayar & al., Flg. Pl. Kerala-Handb. 618. 2006 *Kumbil*.

Trees; bark grey or yellowish-grey, smooth; young shoots fulvous tomentose. Leaves 8-16 x 6-12 cm, broadly ovate, truncate at base, acute to acuminate at apex, entire or serrate at margins, coriaceous, glabrous above and fulvous tomentose below, basally 3-erved; lateral nerves 2-3 pairs; petiole to 8 cm. Flowers in terminal panicles, to 12 cm. Calyx 6 mm, velutinous without. Corolla 4-4.5 cm long; lobes 5, to 3 cm long. Stamens 4; anthers 2 mm. Ovary 4 mm, pubescent. Drupe greenish-yellow, 3.5 x 2 cm.

Nanniyode Kavu, SK 49810. *Fl. & Fr.*: Jan.- Apr. *Dist.*: Indo-Malaysia.

Gmelina asiatica L., Sp. Pl. 626. 1753; Wight, Ill. Ind. Bot. t. 174. 1850; C.B. Clarke in Hook.f., Fl. Brit. India 4:582. 1885; Gamble, Fl. Madras 1098. 1924; Mohanan & Henry, Fl. Thiruvananthapuram 359. 1994. *G. parvifolia* Roxb. Pl. Coromandel. t. 162. 1802. *Cheru kumizhu*.

Armed shrubs or small trees; spines to 2.5 cm long, leaf bearing. Leaves 1.5-3.5 x 1-2 cm, elliptic-ovate, cuneate at base, obtuse to acute at apex, entire to irregularly lobed at margins. Flowers in axillary and terminal racemes. Calyx 6 mm long, puberulous without. Corolla golden yellow, 2.5 cm across; lobes 5, to 2.5 cm, acute. Stamens 4, sometimes with a rudimentary one; anthers 2.5 mm. Ovary 4 mm; style 3 cm. Drupe 2.5 x 2 cm.

Chavaru Kavu, SK 48896. *Fl. & Fr*: Mar.- Sept. *Dist*: Peninsular India, Sri Lanka and Bangladesh.

Lantana L.,

Sp. Pl. 626. 1753, *nom. cons.*

Lantana camara L. var. *aculeata* (L.) Moldenke, Torreya 34: 9. 1934 & in Dassan. & Fosb., Rev. Handb. Fl. Ceylon 4: 225. 1983; Mohanan & Henry, Fl. Thiruvananthapuram 359. 1994, Nayar & al., Flg. Pl. Kerala-Handb. 619. 2006 *L. aculeata* L., Sp. Pl. 627. 1753; C.B. Clarke in Hook.f., Fl. Brit. India 4:562. 1885; Gamble, Fl. Madras 1087. 1924. *Poochedi*.

Much branched shrubs; branches 4-angled, armed with short thorns. Leaves 3.5-6 x 2-4 cm, ovate, truncate or obtuse at base, acute at apex, serrate at margins, scabrous above, puberulous below; lateral nerves 5-7 pairs; petiole to 1.5 cm long. Flowers in capitate spikes. Calyx truncate,

membraneous. Corolla 1.5 cm long; tube slightly curved. Stamens 4, included. Ovary 2-celled; stigma oblong. Drupe bluish-black, globose, 3 mm across.

Puthenvila Kavu, SK 48891. *Fl. & Fr*: Round the year. *Dist*: Native of West Indies, now widespread in several tropical countries.

Premna L.,

Mant. Pl. 154, 252. 1771, *nom. cons.*

Premna glaberrima Wight, Icon. pl. Ind. orient. t. 1848. 1849; C.B. Clarke in Hook.f., Fl. Brit. India 4:577. 1885; Gamble, Fl. Madras 1096. 1924; Mohanan & Henry, Fl. Thiruvananthapuram 360. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 620. 2006.

Scandent shrubs; young shoots glabrous. Leaves 9-13 x 4-7 cm, elliptic-oblong or oblanceolate, truncate at base, obtusely acuminate at apex, entire at margins; lateral nerves 5-6 pairs; petiole to 1.5 cm long. Flowers in terminal corymbs, to 7 cm long; bracts small, linear. Calyx obscurely lobed, tomentose. Corolla tubular, 2-lobed, villous within; lobes subequal. Stamens 4, didynamous. Ovary globose, 4-locular. Drupe globose, black at maturity.

Puthanvila Kavu SK 47913. *Fl. & Fr*: Mar.- Jul. *Dist*: South West India. endemic.

Stachytarpheta Vahl,

Enum. Pl. 1: 205. 1804, *nom.cons.*

Stachytarpheta jamaicensis (L.) Vahl, Enum. Pl. 1: 206. 1804; Mohanan & Henry, Fl. Thiruvananthapuram 360. 1994.; Nayar & al., Flg. Pl. Kerala-Handb. 622. 2006 *Verbena jamaicensis* L., Sp. Pl. 19. 1753. *Stachytarpheta indica auct. non* (L.) Vahl var. *Jamaicensis* (L.) Moon, Cat. Pl. Ceylon 68. 1885; Gamble, Fl. Madras 1090. 1924. *S. indica sensu* C.B. Clarke in Hook.f., Fl. Brit. India 4:577. 1885.p.p. *non* (L.) Vahl, 1804.

Subshrubs; branchlets subtetragonous, glabrous. Leaves 4-9 x 2.5–5 cm, obovate, cuneate at base and decurrent on the petiole, obtuse at apex, serrate; lateral nerves 5-6 pairs; petiole to 2 cm long. Flowers pale blue in terminal spikes, to 25 cm long; bracts 7 mm long. Calyx 6 mm long, 4-toothed, puberulous. Corolla 1 cm across; tube 7 mm long; lobes 5. Stamens 2; filaments 1.5 mm long, hairy; anthers 1 mm. Ovary 2 mm; style 7 mm long. Pyrenes 5 mm long. Seed 1.

Poovampara Kavu, SK 48853. *Fl. & Fr:* Jun.- Feb. *Dist:* Pantropical.

Tectona L.f.

Suppl. Pl. 20, 151. 1782, *nom.cons.*

Tectona grandis L.f., Suppl. Pl. 151. 1781; Bedd., Fl. sylv. S. India t. 250. 1872; C.B. Clarke in Hook.f., Fl. Brit. India 4:570. 1885; Gamble, Fl. Madras 1092. 1924; Mohanan & Henry, Fl. Thiruvananthapuram 361. 1994.; Nayar & al., Flg. Pl. Kerala-Handb. 623. 2006 *Thekku*.

Large deciduous trees; bark pale brown, dull inside. Leaves 20-50 x 15-35 cm, broadly elliptic, attenuate at base, acute to acuminate at apex, glabrescent above, stellate-pubescent below; petiole to 3 cm long, stout. Flowers in large terminal panicles, tomentose; bracts 1.2 cm, lanceolate. Calyx campanulate; lobes subequal. Corolla white, 1 cm across; lobes broadly oblong-lanceolate, 6 mm. Stamens as many as and alternating with corolla lobes, exserted. Ovary globose, 2mm long, pubescent without. Drupe globose, 1.5 cm across, enclosed by the inflated calyx.

PerinKavu, Mevarkara, SK 48854. *Fl. & Fr.*: May- Feb. *Dist.*: Indo-Malaya.

Vitex L.,

Sp. Pl. 638. 1753

1. Trees; petiole auriculate.....*V. altissima*

1. Shrubs; petiole not auriculate.....*V. negundo*

Vitex altissima L.f., Suppl. Pl. 294. 1781; Wight, Icon. pl. Ind. orient. t. 1466. 1849; Bedd., Fl. sylv. S. India t. 252. 1872; C.B. Clarke in Hook.f., Fl. Brit. India 4:584. 1885; Gamble, Fl. Madras 1102. 1924; Mohanan & Henry, Fl. Thiruvananthapuram 362. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 623. 2006; *V. alata* Heyne ex Roth. Nov. Pl. Sp. 316. 1821; C.B. Clarke in Hook.f., Fl. Brit. India 4:584. 1885. *Mayila*.

Large trees; bark yellowish-brown, turmeric-yellow inside. Leaves 3-5 foliolate; leaflets subsessile, 10-16 x 3-5 cm, obovate-oblongate, cuneate to acute at base, acuminate at apex, entire at margins; petiole to 12 cm long, narrowly winged. Flowers pale blue in terminal panicles; fascicled on rachis; bracts 3 mm long, lanceolate. Calyx densely

tomentose, shortly 5-lobed. Corolla 7 mm long; tube villous within. Stamens 4; filaments hairy below. Ovary globose, 1 mm, top hairy. Drupe globose, 6 mm across.

Thengazhiyathu Kavu, SK 47938. *Fl. & Fr:* Mar.–Jun. *Dist:* Indo-Malaysia.

Vitex negundo L., *Sp. Pl.* 638. 1753; Wight, *Icon. pl. Ind. orient.* t. 519. 1842; C.B. Clarke in *Hook.f., Fl. Brit. India* 4: 583. 1885; Gamble, *Fl. Madras* 1102. 1924; Mohanan & Henry, *Fl. Thiruvananthapuram* 362. 1994; Nayar & al., *Flg. Pl. Kerala-Handb.* 623. 2006. *Nochi*.

Shrubs, tender parts grey-pubescent. Leaves 3-5 foliolate; leaflets 7-12 x 2-3 cm, oblanceolate, chartaceous, glabrous above, grey-pubescent below; lateral nerves 14 pairs. Flowers in terminal panicles also from the upper axils. Calyx 3 mm, 5-toothed; teeth triangular, acute. Corolla purple, 7 mm across; tube 5 mm; lateral lobes broadly ovate. Stamens 4; filaments 3.5 and 5 mm long; anthers 5 mm. Ovary globose, 1 mm; style 7 mm. Drupe globose, 4 mm across.

Padinjatte Kavu, SK 48890. *Fl. & Fr:* Round the year. *Dist:* Indo-Malaysia to Burma.

LAMIACEAE Lindl.,

Nat. Syst. Bot., ed.2: 275. 1836, *nom. cons.*; *nom.alt.* Labiatae.

- 1. Flowers in dense uninterrupted spikes
 - forming ovoid or globose head.....2
- 1. Flowers in clusters or in interrupted spikes
 - forming lax thyrusus or spikes.....3

2. Leaves upto 3 cm long; calyx 2-lipped.....*Acrocephalus*
 2. Leaves more than 10 cm long; calyx lobes equal.....*Hyptis* (p.p.)
 3. Flowers in unilateral spikes; corolla lobes 4.....*Pogostemon*
 3. Flowers not in unilateral spikes; corolla lobes 5.....4
 4. Calyx 6-10 toothed.....*Leucas*
 4. Calyx 5-toothed or lobed.....5
 5. Anthers 1-celled.....*Ocimum*
 5. Anthers 2-celled.....6
 6. Upper anthers 2-loculed; lower 1-loculed.....*Anisomeles*
 6. All anthers 2-loculed.....*Hyptis* (p.p.)

Acrocephalus Benth.in

Edwards's Bot. Reg. Ad t. 1282. 1829.

Acrocephalus hispidus (L.) Nicols. & Sivadas., Taxon 29: 324. 1980; Mohanan & Henry, Fl. Thiruvananthapuram 364. 1994.; Nayar & al., Flg. Pl. Kerala-Handb. 349. 2006; *Gomphrena hispida* L., Sp. Pl.(ed.2) 1: 326. 1762. *Acrocephalus capitatus* (Roth) Benth. in Edward's Bot. Reg. 15. subt. 1282. 1829; Hook.f., Fl. Brit. India 4: 611. 1885. *Ocimum capitatum* Roth, Nov. Pl. Sp. 276. 1871. *Acrocephalus indicus* (Burm.f.) O. Ktze., Rev. Gen. Pl. 2: 511. 1891; Gamble, Fl. Madras 1115. 1924. *Brunella indica* Burm.f., Fl. Ind. 130. 1768. "prunella".

Annual herbs; stem 4-angled, pubescent. Leaves to 3 x 1.5 cm, oblong or elliptic, attenuate at base, obtuse at apex, serrate-crenate at margins; lateral nerves inconspicuous; petiole to 1 cm long. Flowers in dense whorls forming head to 2 cm long. Calyx 2-lipped, upper lip entire; lower 4-toothed, 3 mm long. Corolla white, 4 mm long, 2-lipped; lobes subequal. Stamens 4; filaments free; anthers 1-celled. Seeds smooth.

Puthanvila Kavu, Ilamba, SK 48855. *Fl. & Fr*: Sept.- Dec. *Dist*: India, Burma, Indonesia.

Anisomeles R. Br.,
Prodr. 503. 1810.

1. Calyx teeth almost as long as the tube..... *A. indica*

1. Calyx teeth half as long as tube.....*A. malabarica*

Anisomeles indica (L.) O. Ktze., Rev. Gen. Pl. 512. 1891; Gamble, Fl. Madras 1140. 1924; Mohanan & Henry, Fl. Thiruvananthapuram 364. 1994.; Nayar & al., Flg. Pl. Kerala-Handb. 351. 2006 ; *Nepeta indica* L., Sp. Pl. 571. 1753. *Anisomeles ovata* R. Br. in Ait.f., Hort. Kew 3:364. 1811; Wight, Icon. pl. Ind. orient. t. 865. 1844-45; Hook.f., Fl. Brit. India 4: 672. 1885. *Karimthumba*.

Erect, woody subshrubs; stem acutely quadrangular; branchlets grooved on opposite sides. Leaves 3-8 x 1.5-4 cm, ovate or obovate, truncate at base, acute or shortly acuminate at apex, coarsely serrate-crenate at margins, tomentose on both sides; lateral nerves 6-8 pairs; slender; petiole to 3 cm. Flowers sessile or nearly so, in densely flowered terminal whorls; floral bracts linear. Calyx lobes 5, equal, 1.2 cm long. Corolla to 1.5 cm long, puberulous without, sericeous within. Stamens 4; filaments to 1.2 cm long; anthers 4 mm long. Ovary 5 mm long. Nutlets oblong-obovoid, 1.5-2 mm long, smooth, dark brown.

Eezhaveedu Kavu, SK 42393; Kunnuvila Devi temple Kavu, SK 42390. *Fl. & Fr*: Feb.- May. *Dist*: Indo-Malaysia and China.

Anisomeles malabarica (L.) R.Br. ex Sims in Curtis, Bot. Mag. t. 2071. 1819; Wight, Icon. pl. Ind. orient. t. 864. 1844-45; Hook.f., Fl. Brit. India 4: 673. 1885; Gamble, Fl. Madras 1140. 1924; Cramer in Dassan. & Fosb. Rev. Handb. Fl. Ceylon 3: 178. 1981. Nayar & al., Flg. Pl. Kerala-Handb. 351. 2006; *Nepeta malabarica* L., Mant. Pl. 566. 1771.

Erect, woody subshrubs. Leaves 5-9 x 1.5-3 cm, oblanceolate, acute at both ends, serrate at margins, subcoriaceous. Flowers in dense whorls in terminal spikes; floral bracts linear, acute. Calyx lobes 5, equal, 1 cm long, narrowly lanceolate, acute. Corolla tubular, 15 mm long; tube 6.5 mm, villous without; upper lip 0.5 mm, lower lip 1.2 cm, pilose. Stamens 4, exserted; filaments pubescent. Ovary 0.5 mm long; style 1.5 cm long. Nutlets oblong, 1-1.5 mm long, pale brown.

Eezhaveedu Kavu, SK 47814. *Fl. & Fr*: Oct.- Mar. *Dist*: Pantropical.

Note: Addition to the Flora of Thiruvananthapuram.

Hyptis N.J. Jacq.

Colect. Bot.: 101, 103. 1787, *nom. cons.*

1. Flowers in axillary, 2-6 flowered cymes.....*H. suaveolens*

1. Flowers in axillary, many flowered globose heads.....*H. capitata*

Hyptis suaveolens (L.) Poit., Ann. Mus. Natl. Hist. Nat. 7: 472. t. 29. f.2. 1806; Hook.f., Fl. Brit. India 4: 630. 1885; Gamble, Fl. Madras 1129. 1924; Mohanan & Henry, Fl. Thiruvananthapuram 365. 1994.; Nayar & al., Flg. Pl. Kerala-Handb. 353. 2006; *Ballota suaveolens* L., Syst. Nat.(ed.10) 1100. 1759.

Erect, strongly aromatic, viscid pubescent subshrubs. Leaves 3-10 x 2-6 cm, ovate, obliquely truncate to acute at base, acute at apex, irregularly serrulate at margins; petiole to 2 cm long. Flowers in short axillary cymes. Calyx campanulate; 10-ribbed; tube 4 mm long, lobes 5, subequal, linear, 4 mm long. Corolla tubular, 5-6 mm long, bluish; upper lip shortly 2-lobed; lower one 3-lobed. Stamens 4, didynamous, partly exerted. Ovary 1 mm; one lobe slightly smaller. Nutlets 2, ovoid or oblong, rugulose, brown.

Nilami Nagar, Kavu, SK 48856. *Fl. & Fr.*: Aug.- Apr. *Dist.*: Native of Tropical America, now a pantropical weed.

Hyptis capitata Jacq., *Ic. Pl. Rar.* 1: 11. t. 114. 1781-86; King in Steenis, *Fl. Males.* 1. 3:1978; Cramer in Dassan. & Fosb. *Rev. Handb. Fl. Ceylon* 3: 156. 1981; Sivaraj. *et al.*, *J. Econ. Tax. Bot.* 7: 224. f. 106. 1985, *non* Mukh. 1940.; Nayar & al., *Flg. Pl. Kerala-Handb.* 353. 2006

Perennial herbs. Leaves 10-16 x 6-8.5 cm, oblong to lanceolate, rounded to subcordate at base, acuminate at apex, crenate-serrate at margin. Flowers in axillary, peduncled heads, to 1 cm across; bracts oblong, 5-7 x 1-2 mm, acute at apex. Calyx tube to 2 mm long, 5-toothed, teeth equal, linear-subulate, pubescent. Corolla white, tube to 3 mm long, villous without, bilipped. Stamens 4, exerted. Style bifid. Nutlets 1-2.

Parottukonam Kavu, SK 48862. *Fl. & Fr.*: Sept.- Apr. *Dist.*: Native of Tropical America, introduced in the Indo-Malaysian countries.

Note: Addition to the Flora of Thiruvananthapuram.

Leucas R. Br.,
Prodr. 504. 1810.

Leucas biflora (Vahl) R. Br., Prodr. 504. 1810; Wight, Icon. pl. Ind. orient. t. 866. 1844-45; Hook.f., Fl. Brit. India 4: 683. 1885; Gamble, Fl. Madras 1150. 1924; Cramer in Dassan. & Fosb. Rev. Handb. Fl. Ceylon 3: 186. 1981; Mohanan & Henry, Fl. Thiruvananthapuram 366. 1994.; Nayar & al., Flg. Pl. Kerala-Handb. 354. 2006.

Procumbent, pubescent herbs; branches finely pubescent. Leaves 1.5-3.5 x 1-2 cm, ovate or broadly ovate, rounded at base, acute at apex, coarsely crenate-serrate at margin, appressed pubescent on both the surfaces; petiole 0.8-1.5 cm long. Flowers 2-6 in axillary clusters; floral bracts subulate, much shorter than calyx, pubescent. Calyx tubular, 8-9 mm long, gradually dilated above. Corolla white, tubular, tube slightly exceeding the calyx; bilipped, pubescent below the stamens within. Stamens 4, didynamous, partly exserted. Ovary 1 mm; style 4.5 mm. Nutlets 2, ovoid or oblong.

Nanniyode Kavu, SK 48887. *Fl. & Fr:* Oct.- Feb. *Dist:* Peninsular India and Sri Lanka.

Ocimum L.,
Sp. Pl. 597. 1753.

1. Leaves obovate; lower lip of calyx
shorter than upper lip.....*O. gratissimum*
1. Leaves elliptic-oblongate; lower lip of calyx as long as or
lower than upper lip.....2
2. Calyx hairy within, enlarged in fruit..... *O. basilicum* var. *pilosum*

2. Calyx glabrous within, not enlarged in fruits..... *O. tenuiflorum*

Ocimum basilicum L., Sp. Pl. 597. 1753. var. *pilosum* Benth. in DC. Prodr. 12: 33. 1848; Gamble, Fl. Madras 1111. 1924; Mohanan & Henry, Fl. Thiruvananthapuram 368. 1994.; Nayar & al., Flg. Pl. Kerala-Handb. 359. 2006

Subshrubs, young shoots and inflorescence axis pilose. Leaves 5-7 x 2-3.5 cm, elliptic-lanceolate, acute to decurrent at base, gradually acute at apex, entire to sparingly serrate at margin. Flowers in thyrsoid racemes of whorls. Calyx lobes 5, upper lip 3 mm; lower lip 4 mm, glabrous without, hairy within, enlarged in fruit. Corolla creamy-white; tube inflated below, 4 mm; lobes 5. Stamens 4; anthers 0.6 mm. Ovary 0.7 mm; style to 9 mm. Seeds mucilaginous.

Vadakkathil Kavu, SK 49001. *Fl. & Fr:* Round the year. *Dist:* Pantropical.

Ocimum gratissimum L., Sp. Pl. 1197. 1753; Hook.f., Fl. Brit. India 4: 608. 1885; Gamble, Fl. Madras 1111. 1924; Cramer in Dassan. & Fosb. Rev. Handb. Fl. Ceylon 3: 112. 1981.; Nayar & al., Flg. Pl. Kerala-Handb. 359. 2006. *Kattu thulasi*.

Subshrubs; branchlets glabrescent, 4-angular. Leaves 4-12 x 2.5-7 cm, obovate, acute at base, acute or shortly acuminate at apex, deeply serrate at margin; petiole to 6 cm long. Flowers in terminal branched vertical racemes. Calyx lobes 5, hirsute without; enlarged in fruit. Corolla white; tube 2.5 mm; lobes 5, pubescent without, acute at apex. Stamens 4; filaments to 4.5 mm, villous at the base; anthers 0.8 mm long. Ovary 1.5 mm long; style to 7 mm long. Nutlets 4.

Poovathoor Kavu, SK 49041. *Fl. & Fr.*: Dec.- Apr. *Dist.*: Pantropical

Note: Addition to the Flora of Thiruvananthapuram.

Ocimum tenuiflorum L., Sp. Pl. 597. 1753; DC., Prodr. 12: 39. 1848.; Nayar & al., Flg. Pl. Kerala-Handb. 366. 2006; *O. sanctum* L., Mant. Pl. 85. 1767; Hook.f., Fl. Brit. India 4: 609. 1885; Gamble, Fl. Madras 1111. 1924; Cramer in Dassan. & Fosb. Rev. Handb. Fl. Ceylon 3: 116. 1981.

Subshrubs; branchlets hispid. Leaves 1-4 x 0.5-2 cm, elliptic-oblongate, truncate at base, acutely apiculate at apex, serrate at margin, undulate; petiole to 2 cm long. Flowers in terminal verticillate racemes. Calyx purplish, lobes 5, hispid, glabrous within, not enlarged in fruit. Corolla white, purplish within, 3.5 mm long. Stamens 4; filaments to 3.5 mm; anthers 0.5 mm. Ovary 0.5 mm; style 4.5 mm long.

Common to almost all sacred groves. Sree Bhadrakali temple, SK 49019. *Fl. & Fr.*: Round the year. *Dist.*: South West and South East Asia; cultivated in other countries.

Note: Addition to the Flora of Thiruvananthapuram.

Pogostemon Desf. in

Mem. Mus. Hist. Nat. 2: 154. 1815.

Pogostemon paniculatus (Willd.) Benth. in Wall., Pl. As. Rar. 1: 30. 1830; Hook.f., Fl. Brit. India 4: 631. 1885; Gamble, Fl. Madras 1132. 1924; Mohanan & Henry, Fl. Thiruvananthapuram 370. 1994.; Nayar & al., Flg. Pl. Kerala-Handb. 363. 2006; *Elsholtzia paniculata* Willd., Sp. Pl. 3: 59. 1800.

Herbs; branchlets slender, obtusely 4-angled, glabrescent. Leaves 8-10 x 3-5 cm, ovate or ovate-elliptic, attenuate at base, acute or acuminate at apex, irregularly serrate-dentate at margins, subchartaceous, glabrescent or sparsely hispid; lateral nerves 5 pairs; petiole to 3 cm long. Flowers in unilateral spikes, to 15 cm long; bracts oblique. Calyx tubular, to 5 mm long, hirsute; subequally 5-lobed. Corolla white; lobes 4, spreading, ciliate. Stamens 4, exserted; filaments sparsely hairy; anthers 2-celled. Ovary 4-partite; style 2-fid at apex. Nutlets ovoid, smooth.

Pulivila Sree Dharma Sastha Kavu, SK 40927. *Fl. & Fr.*: Oct.- Feb. *Dist.*: India and Burma.

NYCTAGINACEAE Juss.,

Gen. Pl. 90. 1789, *nom. cons.*

1. Involucral bracts present, flowers large.....*Mirabilis*

1. Involucral bracts absent, flowers small.....*Boerhaavia*

Boerhaavia L.,

Sp. Pl. 3. 1753.

Boerhavia erecta L., Sp. Pl. 3. 1753; Mohanan & Henry, Fl. Thiruvananthapuram 374. 1994. *B. punarnava* Saha & Krishnamurthy, J. Sci. Industr. Res. 21. C: 254. 1961; Nair, Bull. Bot. Surv. India 9: 283. 1967.; Nayar & al., Flg. Pl. Kerala-Handb. 455. 2006.

Suberect pubescent herbs. Leaves 1.5-3.5 x 0.9-2 cm, rounded to subacute at base, acute to apiculate at apex, glabrescent to puberulous; petiole to 2 cm long. Flowers 2-3 together in lax panicles; pedicels to 0.6

cm; bracts minute, ovate. Perianth pale pink, 2.5-3 mm long; lower parts with 5 faint ribs, upper parts campanulate. Stamens 2-3, slightly exserted. Ovary 5 mm; style 2.5 mm. Fruits obconical, 4-5 mm long, glabrous, truncate at the top.

Punnattu Sree Thamburan Kavu, SK 49024. *Fl. & Fr.*: Nov. – Jan. *Dist.*: India.

Mirabilis L.,

Sp. Pl. 177. 1753.

Mirabilis jalapa L., Sp. Pl. 177. 1753; Gamble, Fl. Madras 1164. 1924; Mohanan & Henry, Fl. Thiruvananthapuram 374. 1994.; Nayar & al., Flg. Pl. Kerala-Handb. 456. 2006. *Nalumanichedi*.

Erect herbs; branchlets succulent, swollen at nodes. Leaves 4-11 x 3-6 cm, triangular-ovate to elliptic, truncate to shortly decurrent at base, acute to acuminate at apex; lateral nerves 5-7 pairs; petiole to 3.5 cm. Flowers in terminal sessile corymbs; shortly stalked, subtended by an involucre of 5, ovate-elliptic, shortly connate bracts, acute at apex, accrescent in fruits. Perianth funnel shaped, 5 cm long. Stamens 5, exserted; filaments to 6.5 cm long. Ovary globose, 1.5 mm long; style to 6 cm long. Fruits globose, to 8 mm across, rugose, black at maturity.

ParottukonamKavu, SK 49070. *Fl. & Fr.*: Round the year. *Dist.*: Native of Peru, now cultivated as an ornamental or medicinal plant in tropics.

AMARANTHACEAE Juss.,
Gen. Pl. 87. 1789, *nom. cons.*

- 1. Leaves alternate.....2
- 1. Leaves opposite.....3
- 2. Ovule pendulous.....*Aerva*
- 2. Ovule erect.....*Amaranthus*
- 3. Anthers 1-celled.....*Alternanthera*
- 3. Anthers 2-celled.....4
- 4. Spikes globose, staminodes absent.....*Gomphrena*
- 4. Spikes elongate, staminodes present.....*Achyranthes*

Achyranthes L.,
Sp. Pl. 204. 1753, *nom. cons.*

Achyranthes aspera L., Sp. Pl. 204. 1753; Wight, Icon. pl. Ind. orient. t. 1777. 1852; Hook.f., Fl. Brit. India 4: 730. 1885; Gamble, Fl. Madras 1176. 1925; Mohanan & Henry, Fl. Thiruvananthapuram 375. 1994.; Nayar & al., Flg. Pl. Kerala-Handb. 42. 2006

Erect subshrubs. Leaves decussate, 3-7 x 2-4 cm, obovate to suborbicular, cuneate at base, obtuse to acute at apex, sparsely pubescent above, densely so beneath; petiole to 1 cm long. Flowers in terminal spikes; bracts 3 mm long, broadly ovate, 1-nerved, acuminate at apex; bracteoles ovate, concave. Tepals 5, lanceolate, 3.5 mm long, truncate to rounded at base, acute at apex. Stamens 5; filaments to 2 mm; staminodes fimbriate, prominently appendaged within; anthers 0.5 mm. Ovary 0.7 mm long, obconic; style 1.7 mm. Fruits oblong-cylindric, truncate at apex, smooth, brown.

Sree Dhurga temple Kavu, Thoppil, SK 49053. *Fl. & Fr*: Round the year.
Dist: Pantropical.

Aerva Forssk.,

Fl. aegypt. -arab. 170. 1775, *nom. cons.*

Aerva lanata (L.) Juss., *Ann. Mus. Natl. Hist. Nat.* 2: 131. 1803; Wight, *Icon. pl. Ind. orient. t.* 723. 1842; Hook.f., *Fl. Brit. India* 4: 728. 1885; Gamble, *Fl. Madras* 1178. 1925; Mohanan & Henry, *Fl. Thiruvananthapuram* 375. 1994.; Nayar & al., *Flg. Pl. Kerala-Handb.* 42. 2006. *Achyranthus lanata* L., *Sp. Pl.* 204. 1753. *Aerva floribunda* Wight, *Icon. pl. Ind. orient. t.* 1776. 1852.

Herbs. Leaves alternate, 1-3 x 0.8-2 cm, ovate to orbicular, attenuate to cuneate at base, obtusely apiculate at apex; petiole to 0.5 cm. Flowers in axillary spicate cluster, to 1.5cm long, ciliate without. Tepals 5, oblong to obovate, base obtuse, 1-1.5 m long, lanate without, Stamens 5; filaments to 0.5 mm long; anthers 0.2 mm long. Ovary 0.4 mm; style to 0.2 mm; stigma 2. Fruit broadly ovoid, acute.

Pulickal Kavu, SK 40917. *Fl. & Fr*: Nov.- Sept. *Dist*: Pantropical.

Alternanthera Forssk.

Fl. aegypt. -arab. 28. lxi 1775.

Alternanthera paronichyoides St. Hil. *Voy. Bres.* 2, 2: 43. 1833; Sundaraj, *J. Bombay Nat. Hist. Soc.* 53: 525. 1956; Veldkamp, *Blumea* 19: 167. 1971; Sivaraj. & P. Mathew, *Indian, J. For.* 7: 51. 1984; Sasi. &

Sivaraj. Fl. Pl. Thrissur For. 369. 1996.; Nayar & al., Flg. Pl. Kerala-Handb. 43. 2006.

Prostrate, branched annual herbs; villous at nodes. Leaves 0.7-1.5 x 0.4- 0.6 cm, obovate-oblong or oblanceolate, narrowed and decurrent at base, acute at apex, entire. Flowers in small, axillary spikes; bracts and bracteoles scarious, white, ovate-oblong, 3 x 1.5 mm, glabrous. Tepals 5, oblong-lanceolate, 2-4 x 1-1.5 mm. Stamens 5, filaments connate at base; pseudo-staminodes ovate-oblong, shorter than filaments. Ovary 1-ovuled; style short. Fruit broadly obcordate, 1.5 mm long, narrowly winged, brown.

Parottukonam Kavu, SK 40921. *Fl. & Fr:* Jun.- Sept. *Dist:* Native of Tropica America, now getting established i Tropical Asia.

Note: Addition to the Flora of Thiruvananthapuram.

Amaranthus L.,

Sp. Pl. 989. 1753.

1. Plants with axillary.....*A. spinosus*

1. Plants unarmed.....*A. viridis*

Amaranthus spinosus L., Sp. Pl. 989. 1753; Wight, Icon. pl. Ind. orient. t. 793. 1843; Hook.f., Fl. Brit. India 4: 718. 1885; Gamble, Fl. Madras 1170. 1925; Mohanan & Henry, Fl. Thiruvananthapuram 377. 1994.; Nayar & al., Flg. Pl. Kerala-Handb. 44. 2006. *Mullan cheera*.

Erect annual herbs; branches grooved; spines axillary, paired or clustered. Leaves 3-9 x 2-4 cm, ovate or elliptic, acute at base, obtuse or acutely emarginate at apex. Flowers in dense axillary clusters and in

terminal and axillary, interrupted spikes; bracts and bracteoles linear, to 3.5 mm long, bristle pointed. Tepals 5, ovate-oblong, 1.5-2 mm long. Stamens 5; filaments 2.5 mm; anthers oblong, 1 mm. Ovary 7 mm; style 2. Capsule ovoid, 1.5 mm long, circumscissile about the middle, rugose.

Thiruchittor Kavu, SK 49050. *Fl. & Fr.*: Jun.- Dec. *Dist.*: Throughout the tropics.

Amaranthus viridis L., Sp. Pl. (ed.2) 1405. 762; Hook.f., Fl. Brit. India 4: 720. 1885; Gamble, Fl. Madras 1171. 1925; Mohanan & Henry, Fl. Thiruvananthapuram 377. 1994.; Nayar & al., Flg. Pl. Kerala-Handb. 44. 2006.

Erect annual herbs. Leaves 2-7 x 1.5-4 cm, ovate to rhomboid, truncate to acute at base, acutely emarginate at apex, entire; petiole to 6 cm long. Flowers in terminal spikes or panicles; bracts and bracteoles ovate, 1.5 mm long. Tepals 5, oblong-linear or oblong-spathulate. Stamens 3, free; filaments to 1 mm long. Ovary 0.7 mm; styles 2. Fruit ovoid, 1.5 mm long, indehiscent, sub-compressed, rugose.

Poolanthara Kavu, SK 49071. *Fl. & Fr.*: Jun.-Oct. *Dist.*: Tropics and subtropics of the old world.

Gomphrena L.,

Sp. Pl. 224. 1753.

1. Flower heads globose or ovoid; bracteoles
crested throughout.....*G. globosa*
1. Flower heads elongate; bracteoles
crested only at apex.....*G. celosioides*

Gomphrena celosioides C. Martius, Beitr. Amaranthac. 93. 1825 & Nova. Acta Phys.-Med. Acad. Caes. Leop.-Carol. Nat. Cur. 13: 301. 1826; Mohanan & Henry, Fl. Thiruvananthapuram 378. 1994.; Nayar & al., Flg. Pl. Kerala-Handb. 46. 2006. *G. decumbens* sensu Gamble, Fl. Madras 1179. 1925, *non* Jacq.

Ascending herbs; branchlets spreading. Leaves 1.5-5 x 0.7-2 cm, lanceolate, obovate to spatulate, obtusely apiculate at apex; petiole to 2 cm long. Flowers in axillary and terminal elongate spicate heads; bracts concave, 4 mm long; bracteoles 5 mm long, truncate-cordate at base. Tepals 5, 1-nerved, acuminate at apex. Stamens 5, staminal sheath 6 mm long; anthers oblong, 1 mm, included. Ovary compressed-globose, 1.3 mm long; style 0.6 mm. Fruit 2 mm long.

Pillaveedu Kavu, SK 49020. Fl. & Fr : Jun.- Jan. *Dist:* Native of South America, widely distributed in the tropics.

Gomphrena globosa L., Sp. Pl. 224. 1753; Wight, Icon. pl. Ind. orient. t. 1784. 1852; Hook.f., Fl. Brit. India 4: 732. 1885; Gamble, Fl. Madras 1179. 1925.; Nayar & al., Flg. Pl. Kerala-Handb. 48. 2006.

Erect or ascending herbs; branches hairy when young. Leaves 3-8 x 1.5-3.5 cm, obovate-lanceolate, acutely apiculate at apex; petiole to 1 cm long. Flowers in terminal globose or depressed-globose spikes; bracts ovate, 4.5 mm long; bracteoles 9 mm long, crested without along the middle. Tepals 5, 1-nerved, 7 mm long. Stamens 5; staminal sheath 7 mm long, teeth deeply 2-lobed; anthers linear, 1.5 mm long. Ovary globose, 0.8 mm long; style 3 mm long. Fruit 2 mm long.

Siva temple Kavu, SK 49015. *Fl. & Fr.*: Round the year. *Dist.*: Native of tropical America, cultivated in the tropics as an ornamental plant.

Note: Addition to the Flora of Thiruvananthapuram.

ARISTOLOCHIACEAE Juss.,

Gen. Pl. 72. 1789, *nom. cons.*.

1. Perianth equally 3-lobed.....*Thottea*

1. Perianth inflated at base and obliquely elongated above...*Aristolochia*

Aristolochia L.,

Sp. Pl. 960. 1753.

Aristolochia indica L., Sp. Pl. 960. 1753; Hook.f., Fl. Brit. India 5: 75. 1886; Gamble, Fl. Madras 1202. 1925; Mohanan & Henry, Fl. Thiruvananthapuram 381. 1994.; Nayar & al., Flg. Pl. Kerala-Handb. 80. 2006. *A. lanceolata* Wight, Icon. pl. Ind. orient. t. 1858. 1852. *Garudakkodi*.

Twining shrubs; branchlets slender. Leaves 2.5-8 x 1.5-3.5 cm, linear-oblong or ovate-oblong, truncate to subcordate at base, obtuse at apex; 3-5 nerved from the base; lateral nerves 3-4; petiole to 2 cm long. Flowers in a few flowered axillary racemes; pedicels to 7 mm long, elongated in fruits. Perianth 4.5 cm long; tube 2.5 cm, puberulous within, lip 3 cm long rolled back, emarginated. Stamens 6; anthers oblong. Ovary glabrous; style to 3 mm; stigmatic lobes 6, erect. Capsule globose-oblong, 3-4 x 2.5-3 cm, 6 valved, grooved and ribbed. Seeds deltoid-ovate, 3-5 mm, laterally winged.

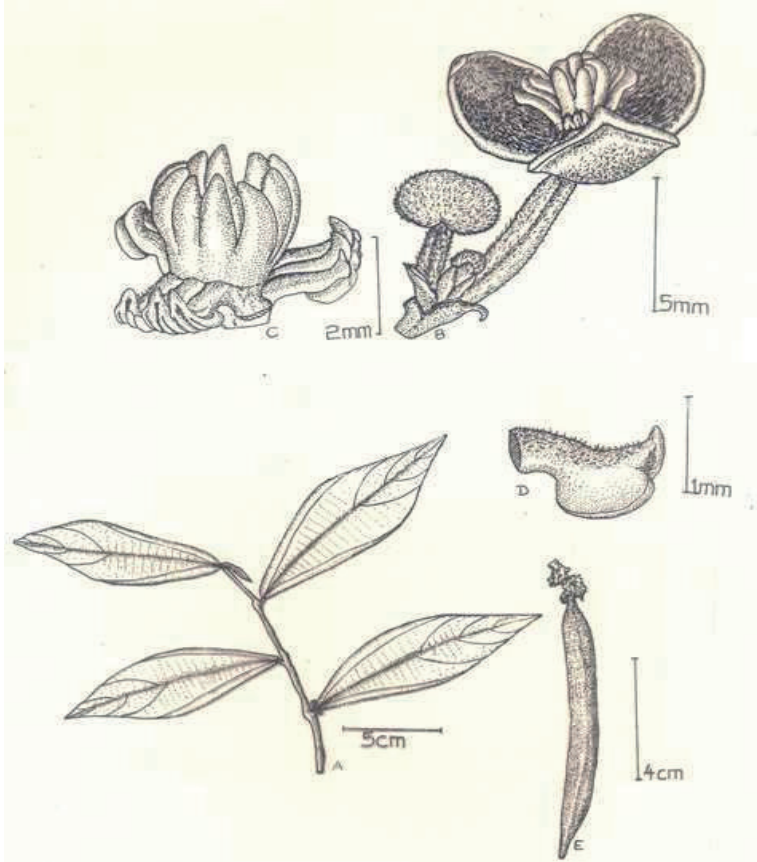
PattapurakKavu, SK 47974. *Fl. & Fr.*: Jul.- Apr. *Dist.*: India, Sri Lanka, Nepal, Bangladesh.

Thottea Rottb. in

Nye Saml. Kongel. Danske Vidensk. Selsk. Skr. 2: 529. 1783.

Thottea siliquosa (Lam.) Ding Hou, *Blumea* 27: 327. 1981. *Apama siliquosa* Lam., *Encycl.* 1: 91. 1783.

Perennial undershrubs, \pm 1 m. height. Stem adpressed pubescent, terete. Leaves alternate, 8-24 x 3.5-8 cm, elliptic-obovate to oblanceolate, acute-rounded at base, gradually acuminate at apex, entire, coriaceous, glabrous above, puberulous beneath; lateral veins 4-6 pairs, prominently raised above, basal pair reaching 2/3 of the lamina; petiole 0.6-1 cm long, deeply channelled. Cymes axillary, 1-2 flowered per axis; peduncle 1-2 per node, 4-6 mm long, pubescent; bracts 2 mm long, elliptic-oblong, villous without, glabrous within. Flowers 2-3 per peduncle, deep purple, 6-8 mm across; perianth segments 3, free upto the base, to 5x5mm, orbicular or suborbicular, acuminate at apex, pubescent without, multicellular cylindrical falcate hairs within. Stamens 8-10, united in 3 bundles; filaments to 1 mm long, covered with uncinatate or hooked hairs on their back, extrorse. Ovary 0.7-1 cm long, linear, subquadrangular, adpressed pubescent; stigmatic lobes 6-10, simple or bifid, covered by uncinatate hairs at apex. Capsule 4-5 cm long, terete-subquadrangular, deep purple, glabrous. Seeds trigonous, rugose.



Thottea siliquosa (Lam.) Ding Hou. A. A twig, B. A flower and a flower bud, C. Gynostemium, D. Stamen, E. A fruit
Fl. & Fr: Throughout the year. *Dist:* Endemic to South India.

PIPERACEAE C. Agardh,

Aphor. Bot. 201. 1824, *nom. cons.*

- 1. Climbing shrubs.....*Piper*
- 1. Erect herbs or sub shrubs.....2
- 2. Leaves large, spikes in axillary umbels.....*Lepianthes*
- 2. Leaves small, spike, solitary.....*Peperomia*

Peperomia Ruiz. & Pavon,

Fl. Perv. Prodr. 8. 1794.

Peperomia pellucida (L.) H.B. & K. Nov. Gen. Sp. 1:64. 1815; Gamble, Fl. Madras 1210. 1925; Mohanan & Henry, Fl. Thiruvananthapuram 383. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 477. 2006. *Piper pellucidum* L., Sp. Pl. 30. 1753.

Succulent much branched annual herbs; stem weak, procumbent, glabrous. Leaves 1.5-3 x 0.8-1.5 cm, broadly ovate, cordate at base, acute at apex, thinly membranous, 5-7 nerved; petiole 6-15 mm long, clasping decurrent along the stem. Spikes solitary, terminal but frequently leaf opposed by overtopping, 2-5 cm long, very slender with glabrous axis. Peduncle 2-5 mm long; bracts 0.2-0.3 mm across. Flowers scarcely immersed. Ovary with a fleshy oblique, subapical stigma. Fruit about 0.8 mm long, globose-ellipsoidal, sessile, pointed at the apex, with an apical stigma, lacking pseudo cupule; blackish brown at maturity.

Sree Bhagavathi temple Kavu, SK 49040. *Fl. & Fr* : July – Nov. *Dist* : Native of South America, widely naturalized in the tropics.

Lepianthes Rafin.,

Sylva Tellur. 84. 1838.

Lepianthes umbellata (L.) Rafin., Sylva Tellur. 84. 1838; Huber in Dassan. & Fosb., Rev. Handb. Fl. Ceylon 6: 289. 1987; Mohanan & Henry, Fl. Thiruvananthapuram 382. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 476. 2006. *Piper umbellatum* L., Sp. Pl. 30. 1753. *Pothomorphe*

subpeltata (Willd.) Miq., Comm. Phytogr. 37. 1840; Wight, Icon. pl. Ind. orient. t. 1925. 1853. *Piper subpeltatum* Willd., Sp. Pl. 1:166. 1798; Hook.f., Fl. Brit. India 5: 95. 1886. *Heckeria subpeltata* (Willd.) Kunth, Linnaea 13:571. 1839; Gamble, Fl. Madras 1208. 1925. *Attanari*.

Sub shrubs, to 1.5 m. tall. Leaves 18-25 cm across, orbicular–cordate, acuminate at apex; basally 15-17 ribbed; petiole to 17 cm long, sheathed at base. Spikes cylindrical, dense flowered in axillary pedunculate umbels. Flowers bisexual, sessile; bracts orbicular–peltate. Stamens 2. Ovary globose–trigonous; stigma 3. Berry trigonous.

Pulivalam Melethottam Nagaru Kavu, SK 47920. *Fl. & Fr* : June – Feb.
Dist : Pantropical.

Piper L.,

Sp. Pl. 28. 1753.

1. Flowers bisexual.....*P. nigrum*

1. Flowers unisexual.....*P. hapnium*

Piper hapnium Buch.–Ham. ex Hook.f., Fl. Brit. India 5: 86. 1880; Gamble, Fl. Madras 1206. 1925; Nayar & al., Flg. Pl. Kerala-Handb. 478. 2006.

Climbing shrubs; stem warty. Leaves 6-12 x 3-6 cm, ovate, cordate at base, acute or acuminate at apex, glabrous above, puberulous along the nerves beneath; basally 5-7 nerved; petiole to 3 cm long; leaves of flowering shoots small and oblique at base. Flowers unisexual in erect cylindrical spikes, yellow; peduncle to 1.5 cm long. Male spikes longer than female. Stamens 2. Ovary globose; stigma 3-5. Fruiting spikes 4-6 cm long.

Thiruchittoor Kavu, SK 40541; Pulivalam Mulethottam Devi temple Kavu, SK 4950. *Fl. & Fr* : July – Sept. *Dist* : Peninsular India, endemic
Note : Addition to the Flora Thiruvananthapuram

Piper nigrum L., Sp. Pl. 28. 1753; Hook.f., Fl. Brit. India 5: 90. 1886; Gamble, Fl. Madras 1206. 1925; Mohanan & Henry, Fl. Thiruvananthapuram 384. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 479. 2006. *Kurumulaku*.

Climbing shrubs; branches terete, glabrous. Leaves 8-22 x 6-10 cm, broadly ovate, rounded to broadly acute at base, shortly acuminate at apex, coriaceous, 7-nerved from base, flattened to impressed above, raised below; petiole to 2.5 cm long. Flowers bisexual in long pendulous spikes; bract concave, margin entire. Stamens 2, on either side of pistil; filaments flat; anther lobes widely separated. Ovary globose-ovoid, 2 x 1.5 mm; styles unequal, spreading and recurved. Berry globose or ovoid, 5 mm across, yellowish – black at maturity.

Alakkattu Kavu SK 47916. *Fl. & Fr*: Jul. – Mar. *Dist* : India.

MYRISTICACEAE R. Br.,

Prodr. 399. 1810, *nom. cons.*

1. Arillus of seeds lacinate towards the apex.....*Knema*
1. Arillus of seeds lacinate almost to the base.....*Myristica*

Knema Lour.,

Fl. Cochinch. 604. 1790.

Knema attenuata (Wall. ex Hook.f. & Thoms.) Warb., Monogr. Myrist. 590. 1875; Gamble, Fl. Madras 1215. 1925; Mohanan & Henry, Fl. Thiruvananthapuram 386. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 440. 2006. *Myristica attenuata* Wall. ex Hook.f. & Thoms., Fl. Ind. 1:157. 1855; Hook.f., Fl. Brit. India 5: 110. 1886. *M. corticosa* Bedd., Fl. sylv. S. India t. 278. 1872.

Trees; young branches tomentose; bark greyish-black or brown, exudation red. Leaves 15-23 x 4-7 cm, oblong-lanceolate, rounded or obtuse at base, acuminate at apex, glabrous beneath; lateral nerves to 25 pairs. Flowers fascicled at the apex of thickened axillary peduncles; bracts deciduous; bracteoles at the base of pedicels. Perianth urceolate, 3-lobed, brown tomentose without. Stamens 10, free, attached around the column. Ovary 1-ovuled; style short; stigma 2, laciniate. Fruits 3.5 cm long, ellipsoid, densely brown tomentose, arillus red.

Onathuthodi Kavu, SK 47972. *Fl. & Fr* : Dec. – Jul. *Dist* : Western Ghats, endemic.

Myristica Gronov.,

Fl. Orient. 141. 1755, *nom. cons.*

Myristica malabarica Lam., Hist. Acad. Roy. Sci. Mem. Math. Phys. (Paris) 162. 1791; Bedd., Fl. sylv. S. India t. 269. 1872; Hook.f., Fl. Brit. India 5: 103. 1886; Gamble, Fl. Madras 1213. 1925; Mohanan & Henry, Fl. Thiruvananthapuram 387. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 441. 2006. *Kattujathi*.

Medium sized evergreen trees; bark greenish–black, smooth, red inside, exudation red. Leaves 8-13 x 2-4 cm, elliptic–oblong, obtuse or rounded at base, acute at apex, coriaceous; lateral nerves slender, faint; petiole to 1.5 cm long. Flowers unisexual, white or creamy white in axillary slender long peduncled cymes. Perianth 3-lobed, ovoid, 4 mm long, glabrous. Anthers 10-20; staminal column produced above the anthers. Ovary 1-0vuled; stigma 2-lobed. Fruits oblong, 7.5 x 3.5 cm, tomentose; arillus red. Seed 1, shining black.

Madanada temple Kavu, SK 49018, Plakkodu, SK 47943; Vattavila Sri Dharma Sastha Kavu, SK 47982; Kamukarakonam Kavu, SK 40523. *Fl.* & *Fr* : Feb – Dec. *Dist* : Western Ghats, endemic.

LAURACEAE Juss.,

Gen. Pl. 80. 1789, *nom. cons.*

- 1. Leafless parasites.....*Cassytha*
- 1. Leafy non parasitic plants.....2
- 2. Leaves 3-ribbed from base or a little above from the base.....3
- 2. Leaves penninerved.....4
- 3. Perianth lobes 4.....*Neolitsea*
- 3. Perianth lobes 6.....*Cinnamomum*
- 4. Flowers bisexual.....*Persea*
- 4. Flowers unisexual.....5
- 5. Leaves alternate; anthers 4-celled.....*Litsea*
- 5. Leaves in pseudo-whorls; anthers 2-celled.....*Actinodaphne*

Actinodaphne Nees in

Wall. Pl. Asiat. Rar. 2: 61, 68. 1831.

Actinodaphne malabarica Balakr., J. Bombay Nat. Hist. Soc. 6: 329. 1967; Mohanan & Henry, Fl. Thiruvananthapuram 389. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 368. 2006. *A. hirsuta* Hook.f., Fl. Brit. India 5: 152. 1886, *non* Bl. 1851; Gamble, Fl. Madras 1231. 1925. *A. hookeri* sensu Bedd., Fl. sylv. S. India t. 296. 1873 p.p., *non* Meissn. 1864.

Medium sized evergreen trees; bark dark grey, smooth, dull yellow inside; young shoots densely fulvous tomentose. Leaves 18-25 x 3-6 cm, elliptic-lanceolate, attenuate at base, acuminate at apex, glabrous and glossy above, villous beneath; lateral nerves 13-15 pairs; petiole to 2 cm long. Flowers unisexual in axillary pedunculate fascicles; bracts 5, imbricate, densely silky brown tomentose, 3mm long. Male flowers: Stamens 9 in 3 whorls; filaments with glandular outgrowth; anthers introrse 4-celled. Ovary rudimentary or absent. Female flowers: Staminodes 9. Ovary ovoid; style small; stigma dilated. Berry globose, 1 cm across; fruiting calyx cupular, entire.

Keezhetti Kavu, SK 49022. *Fl. & Fr:* Sept.- Feb. *Dist:* Southern Western Ghats, endemic.

Cassytha L.,

Sp. Pl. 35. 1753.

Cassytha filiformis L., Sp. Pl. 35. 1753; Wight, Icon. pl. Ind. orient. t. 1847. 1852; Hook.f., Fl. Brit. India 5: 188. 1886; Gamble, Fl. Madras

1241. 1925; Mohanan & Henry, Fl. Thiruvananthapuram 389. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 370. 2006.

Leafless twiners. Flowers bisexual, in terminal or axillary, pedunculate spikes, to 4.5 cm long; 3-merous, 3 mm across. Tepals 6, free, unequal; outer ones ovate-orbicular; inner obovate, 2.5 mm. Fertile stamens 9; filaments 1.5 mm; anthers 2-celled, 1.5 mm; staminodes 3. Ovary 1.5 mm long; stigma capitate. Drupe globose, enclosed within the inflated perianth lobes.

Vadakkottu Sridharma Sastha Kavu, SK 47933. *Fl. & Fr.*: Jun.- Sept.
Dist: Warmer parts of the World.

Cinnamomum Schaeff.,

Bot. Exped. 74. 1760, *nom. cons.*

Cinnamomum malabattrum (Burm.f.) Bl., Rumphia 1: 38, t. 13.f. 3-4. 1836; Kosterm., Bull. Bot. Surv. India 25: 102. 1983 (1985); Mohanan & Henry, Fl. Thiruvananthapuram 392. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 371. 2006. *Laurus malabattrum* Burm.f., Fl. ind. 92. 1768. *Cinnamomum iners auct. non* Bl., 1826; Hook.f., Fl. Brit. India 5: 130. 1886; Gamble, Fl. Madras 1224. 1925. *Vayana*.

Medium sized trees; bark smooth, reddish-brown, dull red inside. Leaves 15-22 x 3-6.5 cm, elliptic-lanceolate or oblong-lanceolate, rounded at base, caudate-acuminate at apex, glabrous and glossy above, tomentose beneath, tender ones often pink. Flowers bisexual in terminal and axillary panicles. Perianth shortly united at base; lobes 6, subequal, persistent, tomentose. Stamens 9, perfect, in 3 rows; staminodes present.

Ovary ellipsoid, to 3 mm long sessile; stigma obliquely peltate. Berry to 2.5 cm long, seated in the enlarged cupular perianth.

Thengazhiyathu Kavu, SK 47942; Mechamkode Kavu, SK 40548; Keezhetti Kavu, SK 42362; Ayaniyerathala Devi temple Kavu, SK 24398. *Fl. & Fr.*: Apr.- Jun. *Dist.*: Western Ghats, endemic.

Litsea Lam.,

Encycl. 3: 574. 1792, *nom. cons.*

Litsea stocksii (Meissn.) Hook.f., Fl. Brit. India 5: 176. 1886; Gamble, Fl. Madras 1236. 1925; Mohanan & Henry, Fl. Thiruvananthapuram 395. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 375. 2006. *Tetranthera oblonga* Nees var. *stocksii* Meissn., DC., Prodr. 15 (1): 201. 1864. *Varikkeer thali*.

Trees; bark pale brown. Leaves 2.5-8 x 1.5-3.5 cm, elliptic-lanceolate, tapering at base, acuminate at apex; lateral nerves 8-12, strong; petiole to 1.3 cm long, stout, glabrous. Flowers yellowish-white in axillary racemiform umbels; peduncle and pedicels pubescent; bracts 4-6, concave, pubescent. Perianth 6-8, hairy. Stamens 12; filaments glabrous; glands stipitate. Ovary ovoid, glabrous; style slender. Fruit 1.3 cm long, ellipsoid, in young, green speckled with white, dark purple when ripe, supported on the cup-shaped perianth tube.

Ayaniyerathala Devi Temple Kavu, SK 42369; Nanniyode Kavu, SK 47953. *Fl. & Fr.*: Sept.- Dec. *Dist.*: Western Ghats, endemic.

Neolitsea (Benth.) Merr.,

Philipp. J. Sci. C, 1, Suppl. 1: 56. 1906, *nom.cons.*

Neolitsea cassia (L.) Kosterm., J. Sci. Res. (Jakarta) 1: 85. 1952; Mohanan & Henry, Fl. Thiruvananthapuram 396. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 376. 2006. *Laurus cassia* L., Sp. Pl. 369. 1753. *Neolitsea zeylanica* (nees) Merr., Philipp. J. Sci. (Suppl.) 1: 57. 1906; Gamble, Fl. Madras 1239. 1925. *Litsea zeylanica* Nees, Amoen. Bot. Bonn. Fasc. 1: 58, t. 5. 1823; Bedd., Fl. sylv. S. India t. 294. 1873; Hook.f., Fl. Brit. India 5: 176. 1886.

Medium sized trees; bark grey, rough. Leaves 6-9 x 3-5cm, elliptic-lanceolate, rounded at base, acute at apex, subcoriaceous, glabrous, dark green above, glossy beneath. Flowers unisexual, dioecious, in umbellules in axillary or extra axillary fascicles; bracts 4, oblong, 4 mm long, deciduous, yellow. Perianth lobes 4. Male flowers: Stamens in three rows, 6 perfect and rest staminodes. Female flowers: Ovary ovoid; style short; stigma peltate. Staminodes 6. Berry globose, 0.8 cm across, subtended by the perianth tube.

Pulickal Bhagavathi Kavu, SK 47826; Vadakkottu Sastha Kavu, SK 49012. *Fl. & Fr*: Apr.-Jul. *Dist*: Indo-Malaya.

Persea Mill.,

Gard. Dict. Abr. ed.4:{1030}. 1754, *nom. cons.*

Persea macrantha (Nees) Kosterm., Reinwardtia 6: 193. 1962; Mohanan & Henry, Fl. Thiruvananthapuram 397. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 377. 2006. *Machilus macrantha* Nees in Wall., Pl. As.

Rar. 2: 70. 1831; Wight, Icon. pl. Ind. orient. t. 1824. 1852; Bedd., Fl. sylv. S. India t. 264. 1872; Hook.f., Fl. Brit. India 5: 140. 1886; Gamble, Fl. Madras 1227. 1925. *Ooravu*

Large trees; bark rough, pale brown, pinkish inside. Leaves 12-18 x 3-6 cm, oblong or oblong-elliptic, acute or cuneate at base, obtuse or acute at apex, dark green above, glaucous beneath; lateral nerves 6-9 pairs; petiole to 3 cm long. Flowers bisexual in terminal panicles, pale yellow. Perianth shortly tubular at base; lobes 6, subequal, glabrous. Fertile stamens 9 in three rows, fourth row sterile; anthers 4-celled. Ovary sessile, 1.5 mm long; style slender, to 2 mm. Berry globose, 1 cm across; perianth lobes reflexed in fruits.

Keezhetti Kavu, SK 42376. *Fl. & Fr*: Nov. – May. *Dist*: Peninsular India and Sri Lanka.

LORANTHACEAE Juss. in

Ann. Mus. Natl. Hist. Nat. 12: 292. 1808, *nom. cons.*

- 1. Flowers bracteate and bracteolate.....*Macrosolen*
- 1. Flowers ebracteate and ebracteolate.....2
- 2. Corolla tube split lengthwise towards one side.....*Helicanthes*
- 2. Corolla tube not as above.....*Dendrophthoe*

Dendrophthoe Mart. in

Flora 13: 109. 1830.

Dendrophthoe falcata (L.f.) Etting. Akad. Wiss, Wien. Math.-Naturwiss. Kl. 32:52,53, 58, t. 13. f. 14. 1872; Wiens in Dassan. & Fosb. Rev. Handb. Fl.

Ceylon 6: 134. 1987; Mohanan & Henry, Fl. Thiruvananthapuram 399. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 388. 2006. *Loranthus falcatus* L.f., Suppl. Pl. 211. 1782. *L. longiflorus* Desr. in Lam., Encycl. 3: 598. 1792: Hook.f. Fl. Brit. India 5: 214. 1886; Gamble, Fl. Madras 1253. 1925. *L. longiflorus* Desr. var. *falcata* (L.f.) Kurz, For. Fl. Burma 2: 321. 1877; Hook.f. Fl. Brit. India 5: 215. 1886; Gamble, Fl. Madras 1253. 1925. *L. longiflorus* Desr. var. *amplexifolia* (DC.) Thw., Enum. Pl. 134. 1859; Hook.f. Fl. Brit. India 5: 215. 1886; Gamble, Fl. Madras 1253. 1925.

Aerial parasites with thick haustoriferous runners; branches greyish-brown, glabrous. Leaves amplexicaule, subopposite, 8-20 x 4-8 cm, ovate-oblong, obtuse at both ends, glabrous; petiole short, 2-5 mm long or 0. Inflorescence axillary, solitary, stout, curved, puberulent or not; peduncle upto 4 cm long, thick; pedicels to 3 mm long; bracts 1 mm long, broadly rounded. Mature floral bud white to pink or bright red upto the neck and with a dark green band just below which, clavate portion bright green. Calyx lobes rudimentary or very minutely lobed. Corolla tube at anthesis 50 mm long, bright red or rose; lobes to 9 x 1 mm, white to red, margin green, sublinear, acute. Filaments bright red, erect, anthers 5 mm long, linear-oblong, yellow. Style to 60 mm long, light reddish-brown, exceeding corolla lobes; stigma dark reddish-brown. Fruits to 17 x 6 mm, oblong, bright pink.

Nanniyode Kavu, SK 47967; Parottukonam Kavu, SK 47825. *Fl. & Fr.*: Round the year. *Dist.*: India and Sri Lanka.

Helicanthes Danser in

Verh. Kon.Ned. Akad. Wetensch., Afd. Natuurk., Tweede.

Sect. 29(6): 55. 1933.

Helicanthes elastica (Desr.) Danser Verh. Kon. Ned. Akad. Wetensch., Afd. Tweede. Sect. 29(6): 55. 1933. *Loranthus elasticus* Desr. in Lam., Encycl. 3: 599. 1792; Wight, Icon. pl. Ind. orient. t. 343. 1840; Hook.f. Fl. Brit. India 5: 216. 1886; Gamble, Fl. Madras 1254. 1925.

Large shrubs with well developed, dichotomously branched haustoria bearing surface runners, usually covering a large portion of host; branchlets woody, terete, dichotomous, green; nodes swollen. Leaves decussate, 5-12 x 2.5-6.5 cm, obovate-lanceolate to elliptic, acute-cuneate at base, acute-acuminate at apex, coriaceous 3-5 nerved from base, shortly petioled. Flowers in axillary fascicles; bracts 0.6 mm, ovate-obtuse. Calyx very small, truncate. Corolla tube 4 cm long, splitting to 2.5 cm from apex; lobes 5, to 25 mm long, linear-lanceolate, spirally twisted, acute at apex. Stamens 5; filaments reddish brown, to 15 mm long; anthers linear-lanceolate, to 6 mm long. Ovary 4 mm long, red; style filiform, 40 mm long; stigma obovoid, deep red. Fruits ovoid-elliptic, red.

PattupurakKavu, SK 47973. *Fl. & Fr.*: Sept. – Dec. *Dist.*: Deccan Peninsula, endemic.

Note: Addition to the Flora of Thiruvananthapuram

Macrosolen (Blume) Rchb.,
Deut. Bot. Herb.-Buch. (Nom.): 73. 1841.

Macrosolen parasiticus (L.) Danser in Blumea 2: 36. 1936; Wiens in Dassan. & Fosb. Rev. Handb. Fl. Ceylon 6: 128. 1987; Nayar & al., Flg. Pl. Kerala-Handb. 389. 2006. *Lonicera parasitica* L., Sp. Pl. 175. 1753. *Loranthus loniceroides* L., Sp. Pl ed.2. 1:473, 762; Wight, Icon. pl. Ind. orient. t.. 203. 1839; Hook.f. Fl. Brit. India 5: 221. 1886. *Elytranthe loniceroides* (L.) G. Don, Gen. Syst. 3: 427. 1834; Gamble, Fl. Madras 1255. 1925.

Parasitic plants with haustoriferous runners; branches stunted, glabrous, grayish-brown, terete or slightly angled. Leaves 5-13 x 2.3-5 cm, ovate-lanceolate, dark green above; petiole 5-15 mm long. Inflorescence spicate, usually 3-4 pairs of decussate apically crowded flowers; peduncle terete, to 1 cm long; bracts 2, rounded, keeled, to 1.75 mm long. Calyx truncate and minutely laciniate at apex. Corolla tube 2.5-4.5 cm long, bright pink; lobes to 1.5 cm long, linear-oblongate, green and pink, reflexed, acute at apex, twisting with age. Stamens 5; anthers to 2 mm long, yellow, oblong-linear. Style to 6 cm long, green, minutely angled, constricted below the stigma; stigma bright red, globose, minutely 2-lobed. Fruits to 11 x 7 mm, green turning dark red at maturity, crowned by calyx segment.

Parottukonam Kavu, SK 49023. *Fl. &Fr*: Nov. – Jun. *Dist*: South West India and Sri Lanka.

Note : Addition to the Flora Thiruvananthapuram

VISCACEAE Batsch,

Tab. Affin. Regni Veg.:240.1802

Viscum L.,

Sp. Pl. 2: 1023.1753.

Viscum orientale Willd., Sp. Pl. 4: 737. 1805; Hok.f., Fl. Brit. India 5: 224. 1886; Gamble, Fl. Madras 1258. 1925; Rao, J. Ind. Bot. Soc. 36(2): 154. 1957; Wiens in dassn. & Fsb. Rev. Handb. Fl. Ceylon 6: 419. 1987; Mohanan & Henry, Fl. Thiruvananthapuram 401. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 628. 2006.

Parasitic shrubs; branchlets erect or drooping; internodes terete and angled towards apex. Leaves 4-5 x 2-2.8 cm, obovate, acute at base, 3-5 ribbed ; shortly petioled. Flowers sessile or sub sessile, 3-together, aillary, middle one female, lateral male; bracts cupular. Berry obovoid, truncate, smooth.

Kaukarakonam Kavu, SK 47990. *Fl. & Fr.*: Apr. – May. *Dist.*: South India and Sri Lanka.

SANTALACEAE R. Br.,

Prodr. 350. 1810, *nom. cons.*

Santalum L.,

Sp. Pl. 349. 1753.

Santalum album L., Sp. Pl. 349. 1753; Bedd., Fl. sylv. S. India t. 256.. 1872; Hook.f., Fl. Brit. India 5: 231. 1886; Gamble, Fl. Madras 1261. 1925; Mohanan & Henry, Fl. Thiruvananthapuram 401. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 556. 2006.

Small trees; branches drooping. Leaves opposite, 3-6 x 2-3 cm, elliptic-lanceolate, acute at base, subacute at apex, entire; petiole to 1.5 cm long. Flowers in terminal and axillary paniculate cymes; peduncle and pedicels short. Perianth campanulate, brownish-purple, segments 5, triangular. Stamens 5; filaments 1 mm; anthers 0.7 mm long, exserted. Ovary globose, 1mm; ovules 2-3, pendulous. Drupes globose, 1 cm across, purplish-black. Seed solitary, globose.

Venmaranelloor Kavu, SK 42384; Moopuram Kavu, SK 47803; Kunnuvula Devi temple Kavu, SK 47802. *Fl. & Fr.*: Dec.-Apr. *Dist.*: Peninsular India.

EUPHORBIACEAE Juss.,

Gen. Pl. 384. 1789, *nom. cons.*

1. Inflorescence a cyathium.....	<i>Euphorbia</i>
1. Inflorescences other than cyathium.....	2
2. Cells of ovary 2-ovuled.....	3
2. Cells of ovary 1-ovuled.....	8
3. Perianth uniseriate.....	4
3. Perianth biseriate.....	<i>Bridelia</i>
4. Small trees or large shrubs.....	5
4. Herbs or subshrubs.....	<i>Phyllanthus</i>
5. Branchlets phyllanthoid.....	<i>Breynia</i>
5. Branchlets not phyllanthoid.....	6
6. Flowers solitary or in fascicles.....	7
6. Flowers in elongated racemes or spikes.....	8
7. Disc present in female flowers.....	<i>Drypetes</i>

7. Disc absent in female flowers.....	<i>Glochidion</i>
8. Ovary 1-celled; fruit indehiscent.....	<i>Antidesma</i>
8. Ovary 2-3 celled; fruit capsular.....	<i>Aporusa</i>
9. Twining herbs with stinging hairs.....	<i>Tragia</i>
9. Erect plants without stinging hairs.....	10
10. Fruits echinate.....	11
10. Fruits not echinate.....	13
11. Herbs.....	<i>Sebastiania</i>
11. Shrubs or Trees.....	12
12. Stamens branched.....	<i>Ricinus</i>
12. Stamens unbranched.....	<i>Mallotus</i>
13. Leaves peltate.....	<i>Macaranga</i>
13. Leaves not peltate.....	14
14. Herbs.....	15
14. Shrubs or small trees.....	16
15. Stamens 8.....	<i>Acalypha</i>
15. Stamens 3-5.....	<i>Micrococca</i>
16. Leaves pinnately nerved.....	<i>Croton</i>
16. Leaves basally 5-7 nerved.....	<i>Jatropha</i>

Acalypha L.,

Sp. Pl. 1003. 1753.

Acalypha lanceolata Willd., Sp. Pl. 4: 524. 1805; Gamble, Fl. Madras 1331. 1925; Mohanan & Henry, Fl. Thiruvananthapuram 405. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 232. 2006. *A. fallax* Muell.-Arg. Linnaea 34: 43. 1865; Hook. f., Fl. Brit. India 5: 416. 1887.

Erect, pubescent annual herbs. Leaves 5-7 x 3-4 cm, broadly elliptic, acute or rounded at base, acute at apex, serrated and ciliate along

the margins, hairy on both surfaces; petiole to 2.5 cm long. Flowers in short, sessile, axillary spikes. Male flowers small, concealed by the uppermost bracts. Calyx 4-5 fid. Stamens 8. Female flowers: Bracts 3 mm across, deeply toothed, hairy, not concealing the fruits. Ovary hispid, 2 mm across. Style 1 mm long, lacinate. Fruits globose, hispid with bulbous based hairs Seeds ovoid, smooth, pale yellow.

Pillaveedu Kavu, SK 49002. *Fl. & Fr:* Aug.- Dec. *Dist:* India to Polynesia.

Antidesma L.,

Sp. Pl.1027. 1753.

1. Stamens 2; pistillode 0.....*A. acidum*

1. Stamens 3; pistillode present.....*A. alexiteria*

Antidesma acidum Retz., Obs. Bot. 5: 30. 1788; Mohanan & Henry, Fl. Thiruvananthapuram 405. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 233. 2006. *A. diandrum* (Roxb.) Roth, Nov. Pl. Sp. 369. 1821; Hook.f., Fl. Brit. India 5: 361. 1887.p.p.; Gamble, Fl. Madras 1298. 1925. *Stilago diandra* Roxb., Pl. Corom. t. 166. 1802. *Antidesma lanceolarium* Wall. ex Wight, Icon. pl. Ind. orient. t. 766. 1844.

Small trees. Leaves 4-9 x 1.5-4 cm, narrowly elliptic or lanceolate, acute at base, acuminate at apex; lateral nerves 6 pairs, faint, slender; petiole to 3.5 mm long. Flowers in slender terminal spikes, bracteoles concave, 7 mm. Male flowers: Tepals 5, ovate, 1.5 mm, basally connate. Stamens 2; filaments 1 mm long, sunken within the hairy disc; anthers

0.3mm. Pistillode 0. Female flowers: Tepals as in male flowers. Ovary obovoid, 0.7 mm, 1-celled. Drupe oblong, 6 mm long. Seed 1.

Padinjatte Kavu, SK 49013. *Fl. & Fr*: Jul- Dec. *Dist*: Indo-Malaysia.

Antidesma alexiteria L., Sp. Pl.1027. 1753, in part; Hook.f., Fl. Brit. India 5: 359. 1887; Mohanan & Henry, Fl. Thiruvananthapuram 405. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 234. 2006. *A. zeylanicum* Lam., Encycl. 1: 207. 1782; Gamble, Fl. Madras 1297. 1925.

Shrubs. Leaves 5-8 x 2.5-3.5 cm, obovate to rhomboid, acute to cuneate at base, acutely apiculate at apex, subcoriaceous; lateral nerves 6-8 pairs; petiole to 5 mm long. Flowers in terminal and axillary spikes, sessile, 2.5 mm across. Tepals 3, free, concave, thinly pubescent without. Male flowers: Stamens 3, inserted in the disc; filaments 3 mm long; anthers 0.5 mm long. Pistillode acute, 0.3 mm. Female flowers: Ovary globose, 1.5 mm long. Drupe Globose, 5 x 4 mm. Seed 1.

Madanada Kavu, Chathambara, SK 42325. *Fl. & Fr* : Mar. – Nov. *Dist*: Peninsular India and Sri Lanka.

Aporusa Blume,
Bijdr. 514. 1825-1826.

Aporusa lindleyana (Wight) Baill., Etud. Gen. Euphorb. 645. 1858; Bedd., Fl. sylv. S. India t. 286. 1872; Hook.f., Fl. Brit. India 5: 349. 1887; Gamble, Fl. Madras 1309. 1925; Mohanan & Henry, Fl. Thiruvananthapuram 407. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 235. 2006. *Scypha lindleyana* Wight, Icon. pl. Ind. orient. t. 361. 1840. *Vetti*.

Medium sized trees; bark pale brown, pink inside. Leaves 8-16 x 2.5-4.5 cm, oblong or elliptic, obtuse at base, obtusely acuminate at apex, glabrous; lateral nerves 8-10 pairs; petiole to 2 cm long. Male flowers: in axillary catkin like spikes. Perianth uniseriate; lobes 4. Stamens 3-4. Female flowers: pedicelled, racemes to 1.5cm long, tomentose. Ovary 2-celled; ovules 2 in each cell. Styles 2, bifid. Fruit ovoid, .2 cm long, 2-4 valved. Seeds plano-convex, completely covered with yellowish pulpy arils.

Keezhetti Kavu, SK 42368. *Fl. & Fr.*: Dec.- May. *Dist.*: Peninsular India and Sri Lanka.

Breynia J.R. Forst & J.G. Forst.

Char. Gen. Pl. 73. 1775, *nom. cons.*

Breynia retusa (Dennst.) Alston, Ann. Roy. Bot. Gard. (Peredeniya) 11: 204. 1929; Airy Shaw, Kew Bull. 26: 227. 1972; Mohanan & Henry, Fl. Thiruvananthapuram 408. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 237. 2006. *Phyllanthus retusua* Dennst., Schluss. Hort. Malab. 24. 1818. *Breynia patens* (Roxb.) Rolfe, J. Bot. 20: 359. 1882; Hook.f., Fl. Brit. India 5: 329. 1887; Gamble, Fl. Madras 1304. 1925. *Phyllanthus patens* Roxb., Fl. Ind. 3: 667. 1832. *Melanthesa turbinata* Wight, Icon. pl. Ind. orient. t. 1897. 1852.

Large shrubs or small trees. Leaves 1.5-3 x 1-1.5 cm, elliptic or ovate, rounded or subacute at base, obtuse at apex, entire at margins; petiole to 3 mm long. Flowers unisexual, axillary, pendulous. Male flowers: Perianth tube 4 mm long. Staminal column 7 mm long, narrowed at base; anthers 1 mm long, oblong. Female flowers: 6 mm across. perianth thick-fleshy. Ovary cupular, obscurely 6-lobed, 1.5 mm long;

style 0.7 mm long, exserted, 3-fid. Capsule depressed-globose, 8 mm across.

Nanniyode Kavu, SK 49042. *Fl. & Fr.*: Feb.- Sept. *Dist.*: Indo-Malaya.

Bridelia Willd.,

Sp. Pl. 4(2): 978. 1806 .

1. Trees.....*B. retusa*

1. Scandent shrubs.....*B. scandens*

Bridelia retusa (L.) A. Juss., Euphorb. Gen. 109, t. 7, f. 22. 1824; Thw., Enum. Pl. Zeyl. 279. 1861; Bedd., Fl. sylv. S. India t. 260. 1872; Hook.f., Fl. Brit. India 5: 268. 1887 p.p.; Gamble, Fl. Madras 1280. 1925; Airy Shaw, Kew Bull. 26: 230. 1972; Mohanan & Henry, Fl. Thiruvananthapuram 409. 1994; Chakraborty *et al.*, J. Econ. Tax. Bot. 26(2): 320. 2002; Nayar & al., Flg. Pl. Kerala-Handb. 237. 2006. *Cluytia retusa* L., Sp. Pl. 1042. 1753. *Mulluvenga*.

Trees; young ones armed with sharp thorns; bark greyish-brown, reddish inside. Leaves 8-15 x 4.5-8 cm, broadly elliptic-oblong, obtuse or truncate at base, obtuse or acute at apex, coriaceous; lateral nerves 20-25 pairs; petiole to 1 cm long. Flowers in axillary and terminal paniculate spikes. Tepals 10, biseriate; outer pale brown with reddish shades; inner 2 mm long, ovate-acute, yellow. Stamens 5, filaments connate. Ovary globose, 2-celled; style 2; stigma deeply 2-fid. Drupe globose, black, 7 mm across.

Keezhetti Kavu, SK 49025; Parottukonam Kavu, SK 47830. *Fl. & Fr.*: Aug.- Dec. *Dist.*: Indo-Malaya.

Bridelia stipularis Muell.-Arg in DC., Prodr. 15: 499. 1866; Hook.f., Fl. Brit. India 5: 270. 1887 p.p.; Nayar & al., Flg. Pl. Kerala-Handb. 237. 2006. *B. scandens* (Roxb.) Willd., Sp. Pl. 4: 979. 1806; Gamble, Fl. Madras 1281. 1925; Airy Shaw, Kew Bull. 26: 230. 1972; Mohanan & Henry, Fl. Thiruvananthapuram 409. 1994; *Chytia scandens* Roxb., Pl. Coromandel. t. 173. 1802.

Scandent shrubs; branchlets brown tomentose. leaves 6-9 x 4-6 cm, elliptic-oblong, rounded or subcordate at base, obtuse at apex, glabrous above and minutely tomentose below; lateral nerves 7-10 pairs; petiole to 5 mm long. Tepals 10, biseriate; outer 5, ovate-acute, 1.5 mm long, tomentose; inner 5, spatulate, 1.5 mm long, yellowish. Stamens 5, monadelphous. Ovary globose. Drupes oblong, to 7 x 4.5 mm, black. Moopuram Kavu, SK 42396. *Fl. & Fr:* Dec.- Mar. *Dist:* Peninsular India.

Croton L.,

Sp. Pl.1004. 1753.

- 1. Herbs.....*C. bonplandianus*
- 1. Scandent shrubs.....*C. caudatus* var. *obovoideus*

Croton bonplandianus Baill., Adansonia 4: 339. 1864; Mohanan & Henry, Fl. Thiruvananthapuram 411. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 240. 2006. *C. sparsiflorus* Morong, Ann. New York Acad. Sci. 7: 221. 1893; Gamble, Fl. Madras 1316. 1925.

Herbs; young parts with white warty outgrowth. Leaves 2.5-4.5 x 1-2 cm, ovate-lanceolate, acute at base, gradually acuminate at apex, serrulate at margin; lateral nerves 5-7 pairs; petiole to 1.5 cm long.

Flowers in terminal racemes, to 13 cm long; bracts small; pedicels to 1 mm long, gland 2 on either sides. Male flowers to 4 mm across. Tepals 10; outer calycine, ovate, 1mm long; inner corolline; lobes oblong, 2mm long, villous. Staminal filaments 2 mm; anthers 0.5 mm long. Female flowers to 2.5 mm across. Tepals 5, lanceolate, 1.5 mm long, valvate. Ovary 1.5 mm long, tomentose. Capsule oblong, depressed at apex, to 6 x 4 mm, warty. Seed oblong.

Kanjirathummoodu Kavu, SK 49003. *Fl. & Fr.*: Jan.- Jun. *Dist.*: Native of South America, now became a pantropical weed.

Croton caudatus Geisl., *Croton Monogr.* 73. 1807; Hook.f., *Fl. Brit. India* 5: 388. 1887; Gamble, *Fl. Madras* 1315. 1925; Airy Shaw, *Kew Bull.* 26: 245. 1972& 37: 14. 1982. var. **obovoideus** Balakr. & Chakrab., *Bull. Bot. Surv. India* 25: 190. 1983 (1985); Nayar & al., *Flg. Pl. Kerala-Handb.* 240. 2006.

Large scandent shrubs; bark rough, brown; branchlets stellate-tomentose. Leaves 7-12 x 4-8 cm, ovate, cordate at base, caudate – acuminate at apex, toothed and stalked glandular at margins, stellate pubescent on both sides, leaf base with 3-5 stalked glands on either side on lower surface; 3-5 nerved at base. Flowers pale yellow in terminal racemes. Male flowers: Tepals 10, two seriate; outer ovate-acute, 5 mm long; inner little longer. Stamens many from a villous receptacle; filaments free. Female flowers: Ovary oblong or subglobose, styles 3. Capsule oblong, apically depressed, scabrid, to 2 x 1.5 cm.

Puthanvila Kavu SK 47905. *Fl. & Fr.*: Mar.- Sept. *Dist.*: South India, endemic.

Note: Addition to the Flora of Thiruvananthapuram.

Drypetes Vahl,

Ecolg. Amer.3: 49. 1807.

Drypetes sepiaria (Wight & Arn.) Pax Hoffm. in Engl. Pflanzenf. IV 147. XV: 271. 1922; Santhosh *et al.*, J. Econ. Tax. Bot. 26(1): 142. 2002; Nayar & al., Flg. Pl. Kerala-Handb. 243. 2006. *Hemicyclea sepiaria* Wight & Arn. Edinburgh New Philos. J. 14: 297. 1833; Wight, Icon. pl. Ind. orient. t. 1872. 1852; Hook.f., Fl. Brit. India 5: 337. 1887; Gamble, Fl. Madras 1299. 1925.

Small trees. Leaves 3.5-8 x 1-3.5 cm, elliptic, rounded at base, acute to retuse at apex, entire at margin, thick-chartaceous; lateral nerves 6-8 pairs, obscure. Flowers 5-8 in axillary fascicles; pedicels to 0.5 cm long. Male flowers: 6 mm across. Tepals 4, unequal, concave, finely ciliate. Stamens 4-8; filaments to 2 mm. Disc flat, crenate. Female flowers: Ovary ovoid, 1-locular, 2.5 mm long; stigma broad, cupular, fimbriate. Disc saucer shaped. Drupe globose, 0.8 cm across.

Moopuram Kavu, SK 42332. *Fl. & Fr*: Jan.- Jun. *Dist*: Peninsular India and Sri Lanka.

Note: This species was earlier record only from Tamil Nadu for India. The present finding from Moopuram Kavu shows its extended distribution to Kerala.

Euphorbia L.,
Sp. Pl. 450. 1753

Euphorbia hirta L., Sp. Pl. 454. 1753; Gamble, Fl. Madras 1275. 1925; Mohanan & Henry, Fl. Thiruvananthapuram 415. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 245. 2006. *E. pilulifera auct. non* L. 1753; Hook.f., Fl. Brit. India 5: 250. 1887. *Nilappala*.

Erect hispid herbs. Leaves decussate, 1.5-2.5 x 0.8-1.2 cm, oblong, obliquely truncate at base, acute or subacute at apex, serrulate at margin, 3-nerved from base; petiole to 3 mm long. Cyathia in axillary cymes. Involucre campanulate, glands 5, red. Male florets: 4-6, ebracteolate; anthers 0.2 mm long. female florets: Ovary 0.8 mm across; styles 3, bifid, erect; stigma obtuse. Capsule 2 mm across, pubescent. Seeds 4-angled.

Nakramkode Kavu, SK 47818. *Fl. & Fr:* Round the year. *Dist:* Pantropical.

Jatropha L.,
Sp. Pl. 1006. 1753, *nom. cons.*

1. Leaves glandular at margins.....*J. gossypifolia* var. *elegans*
1. Leaves not glandular at margins.....*J. curcas*

Jatropha curcas L., Sp. Pl. 1006. 1753; Hook.f., Fl. Brit. India 5: 383. 1887; Gamble, Fl. Madras 1340. 1925; Mohanan & Henry, Fl. Thiruvananthapuram 418. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 249. 2006.

Large shrubs; branches terete, glabrous. Leaves entire or shallowly 5-lobed, 8-15 x 6-13 cm, truncate to cordate at base, acute at apex; petiole to 15 cm long. Flowers in terminal dichotomous cymes with solitary terminal female and the rest male flowers. Male flowers: Tepals 10, 2-seriate; outer ones equal, ovate-obovate, 4 mm long; inner tepals obovate, to 6x 2.5 mm, villous within. Stamens 10, bi-seriate; filaments to 3 mm long. Female flowers: tepals 10, biseriate; outer unequal. Ovary to 2x1.5 m; style to 5 mm long. Capsule globose, 2.5-3 cm long, light yellow, indehiscent. Seeds ellipsoid, carunculate at base.

Pulickal Kavu, SK 49037. *Fl. & Fr.*: Apr.- Sept. *Dist.*: Native of Tropical America, planted as hedges in many tropical countries.

Jatropha gossypifolia L. var. ***elegans*** Muell. - Arg. in DC., Prodr. 15(2): 1087. 1866; Back & Bakh.f. Fl. Java 1: 494. 1963; Nayar & al., Flg. Pl. Kerala-Handb. 250. 2006. *J. gossypifolia auct. non* L. 1753; Hook.f., Fl. Brit. India 5: 383. 1887; Gamble, Fl. Madras 1340. 1925; Mohanan & Henry, Fl. Thiruvananthapuram 418. 1994. *Kattavanakku*.

Shrubs; branchlets glandular-hairy. Leaves 7.5-13 x 6-15 cm, orbicular or broadly obovate in outline, deeply 3-5 lobed, cordate or subcordate at base, acute at apex, glandular-hairy at margins; petiole to 6-10 cm long. Flowers in terminal corymbose panicles; peduncles to 8 cm long, hairy. Outer tepals 2-3 mm, glandular hairy; inner ones dark red, obovate, 4-6 mm long. Stamens 8, biseriate; outer 5 and inner 3; filaments basally connate. Ovary 2 x 2 mm; style 1.5 mm long. Capsule oblong, 1.7 x 1.5 cm, trigonous, glabrous. Seeds oblong.

PerinKavu, SK 49060. *Fl. & Fr.*: Round the year. *Dist.*: Native of Tropical America, planted in gardens of other tropical countries.

Note: *Jatropha gossypifolia* L. var. *gossypifolia* has greenish yellow petals and green leaves.

Macaranga Thouars,

Gen. Nova. Madagasc. 26. 1806.

Macaranga peltata (Roxb.) Muell.-Arg. in DC., Prodr. 15(2) 1010. 1866; Gamble, Fl. Madras 1326. 1925; Mohanan & Henry, Fl. Thiruvananthapuram 418. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 250. 2006. *Osyris peltata* Roxb., Fl. Ind. 3: 755. 1832. *Macaranga roxburghii* Wight, Icon. pl. Ind. orient. t. 1949, f.4. 1853; Hook.f., Fl. Brit. India 5: 448. 1887. *M. tomentosa* Wight, Icon. pl. Ind. orient. t. 1949, f.1. 1853; Bedd., Fl. sylv. S. India t. 287. 1872. *Vatta*.

Medium sized trees; bark greyish-brown, reddish inside, exudation red, gummy. Leaves 16-20 x 10-15 cm, ovate-orbicular, peltate, acuminate at apex; lateral nerves 8-10, radiating from the centre; petiole 10-18 cm long. Flowers in lax axillary panicles. male flowers: Perianth uniseriate, 3-lobed. Stamens 3, free; filaments to 0.6 mm long; anthers 0.3 mm. Female flowers: Solitary. Perianth 2-4. Ovary 1.5 mm long, echinate; style 4 mm long. Capsule 6 mm across, echinate when young, black at maturity.

Cherunilakkodu Kavu, SK 47890. *Fl. & Fr.*: Jan.- Apr. *Dist.*: India, Burma.

Mallotus Lour.,

Fl. Cochinch. 601, 635. 1790.

Mallotus tetracoccus (Roxb.) Kurz., J. Asist. Soc. Bengal, Pt. 2, Nat. Hist. 42: 245. 1873; Airy Shaw, Kew Bull. 26: 298. 1972; Mohanan & Henry, Fl. Thiruvananthapuram 422. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 252. 2006. *Rottlera tetracocca* Roxb., Fl. Ind. 3: 826. 1832. *R. peltata* Wight, Icon. pl. Ind. orient. t. 1873. 1852. *Mallotus albus* auct. non (Roxb.) Muell.-Arg. Pax. in Engl. Pflanzenr. IV. 147. VII : 168. 1914. *M. albus* var. *occidentalis* Hook.f., Fl. Brit. India 5: 429. 1887; Gamble, Fl. Madras 1321. 1925.

Trees; branchlets tomentose. Leaves 9-20 x 9-18 cm, broadly ovate to deltoid or suborbicular, acute to acuminate at apex, entire or irregularly toothed, glabrous above and densely white fulvous tomentose below, 3-5 nerved at base with 6-9 lateral nerves; petiole to 20 cm long. Flowers sessile, fascicled on the peduncle in spicate panicles; male panicles longer than female, fulvous tomentose. Male flowers: 7 mm across. Tepals 4, ovate, 2 mm long. Stamens on a fleshy receptacles; filaments to 3 mm long. Female flowers: 5 mm across. Tepals 4, united at base. Ovary 0.8 x 0.7 cm, 4-locular; style 3 mm long; stigma acute. Capsule 3-4 valved, 2 cm across; echinate with soft wooly spines. Seeds angular, black.

Myvalli Ela Kavu, Ayilam. SK 47895. *Fl. & Fr.*: Jun.-Apr. *Dist.*: India, Sri Lanka, S.W. China.

Micrococca Benth. in
Hooker, Niger. Fl. 503. 1849.

Micrococca mercurialis (L.) Benth. in Hooker, Niger. Fl. 503. 1849; Gamble, Fl. Madras 1328. 1925; Mohanan & Henry, Fl. Thiruvananthapuram 422. 1994. *Tragia mercurialis* L., Sp. Pl. (ed.3) 1391. 1764. *Claoxylon mercurialis* Thw., Enum. Pl. Zeyl. 271. 1861; Hook.f., Fl. Brit. India 5: 412. 1887; Nayar & al., Flg. Pl. Kerala-Handb. 239. 2006.. *Kunukkittatti*.

Annual herbs. Leaves 2-4 x 1.5-2.5 cm, ovate or ovate-lanceolate, acute at base, shortly acuminate at apex, serrate at margins, puberulous; lateral nerves 4-pairs; petiole to 2 cm long. Flowers in slender, lax, interrupted axillary spikes. Male flowers: 1.5 mm across. Tepals 3, equal, ovate, 1-nerved, 0.8 mm long. Stamens 3-5, free, exserted. Glands 8, free. Female flowers: 2 mm across. Tepals 3, lanceolate, 1.5 mm long. Ovary 3-lobed, 2mm across, 3-locular; ovules 3; styles 3. Capsule 5 mm across, 3-lobed. Seeds globose, minutely arillate.

Phyllanthus L.,
Sp. Pl. 981. 1753.

- 1. Stamens 5.....*P. tenellus*
- 1. Stamens 3.....2
- 2. Tepals 5.....*P. amarus*
- 2. Tepals 6.....3
- 3. Capsules verrucose.....*P. urinaria*
- 3. Capsules not verrucose..... 4
- 4. Leaves orbicular.....*P. rotundifolius*
- 4. Leaves linear-elliptic or lanceolate.....*P. airy-shawii*

Phyllanthus airy-shawii Brunel & Roux, Nord. J. Bot. 4: 470. 1984; Mitra & Nair, Taxon 37: 470. 1988; Nayar & al., Flg. Pl. Kerala-Handb. 254. 2006. *P. debilis* sensu Hook.f., Fl. Brit. India 5: 299. 1887; Gamble, Fl. Madras 1290. 1925; Webster, J. Arnold Arb. 38: 307. 1957; Airy Shaw, Kew Bull. 26: 92. 1971, *non* Klein ex Willd. 1805.

Annual herbs. Leaves variable, 1-3.5 x 0.1-0.5 cm, linear-elliptic or lanceolate, obtuse to attenuate at base, acute at apex; petiole to 1 mm long; stipules 1.2-1.8 mm long. Flowers in axillary unisexual cymules. Male flowers: Pedicels at anthesis 0.8 mm long. Tepals 6, biseriate, subequal, hyaline, 0.5-0.6 x 0.5 mm, obovate. Disc segments 6, roundish. Stamens 3; filaments connate into a column; anthers sessile at the top of the column, dehiscing horizontally. Female flowers: Pedicels 1.2 mm long. Perianth 6, biseriate, 1.5 x 0.9 mm, oblong-obovate. Disc saucer shaped, obtusely and shallowly 6-lobed along margins. Capsule 2.5 mm across, oblate, rounded. Seeds trigonous.

Parottukonam Kavu, Pananvila, SK 49043. *Fl. & Fr.*: Round the year.
Dist: Peninsular India and Sri Lanka.

Note: Addition to the Flora of Thiruvananthapuram.

Phyllanthus amarus Schum & Thonn. Kongl. Danske Vidensk. Selsk. Skr. 4: 195. 1829; Airy Shaw, Euphorb. Borneo 182. 1975; Mohanan & Henry, Fl. Thiruvananthapuram 423. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 254. 2006. *P. niruri auct. non* Hook.f., Fl. Brit. India 5: 298. 1887; Gamble, Fl. Madras 1290. 1925. *Keezhanelli*.

Herbs. Leaves 0.5-1 x 0.2-0.5 cm, oblong, obtuse at both ends, glabrous, glaucous below; petiole to 1.5 mm long; stipules lanceolate, 1 mm, scarious. Male flowers: 1 mm across. Tepals 5, ovate, 0.7 mm long, obtuse at apex. Stamens 3, exserted; filaments connate, 0.2 mm; anthers 0.3 mm, dehiscence transverse. Disc glands 5. Female flowers: to 1.7 mm across. Tepals 5, oblong, 0.7 mm, obtuse at apex. Ovary globose, 0.5 mm; style 0.4 mm, suberect, recurved. Disc ovate, acute. Capsule 2 mm across, dry dehiscent, glabrous. Seeds vertically muriculate.

Poolanthara Kavu, SK 42319. *Fl. & Fr.*: Round the year. *Dist.*: Indo-Malaysia.

Phyllanthus rotundifolius Klein ex Willd., Sp. Pl. 4: 584. 1805; Hook.f., Fl. Brit. India 5: 299. 1887; Gamble, Fl. Madras 1290. 1925; Henry *et al.*, Fl. Tamil Nadu India Ser.1. Analysis 2: 236. 1987; Santhosh *et al.*, J. Econ. Tax. Bot. 26(2): 486. 2002; Nayar & al., Flg. Pl. Kerala-Handb. 257. 2006.

Annual herbs; stem and branches usually angular, flowering branches spreading, to 8 cm long. Leaves 4-9 x 3-8 mm, orbicular or broadly obovate, rounded at base, obtuse or acute at apex, coriaceous, glabrous on both surfaces; petiole short, glabrous; stipules to 1.5 cm long, subulate-lanceolate. Flowers monoecious, 2-3 males and one female together in leaf axils, shortly pedicellate. Male flowers: Perianth 6, 1-nerved, to 1 mm long, acute or shortly acuminate at apex; disc glands 6, slightly wrinkled or warted; stamens 3, filaments connate to near the top, anthers dehiscing transversely. Female flowers: Perianth 6, to 1.8 mm long, ovate, acute at apex, mid rib broad; disc annular, crenulate at apex; ovary to 0.7 mm long, depressed globose, glabrous; styles spreading,

bifid. Capsule to 2 mm across; depressed globose, smooth, faintly lobed. Seeds marked with about 7 longitudinal lines on the back.

Punnattu Sri Thamburan Kavu, SK 49078. *Fl. & Fr.*: Jul.- Feb. *Dist.*: India (Tamil Nadu, Karnataka and Kerala), Sri Lanka, Arabia and Tropical Africa.

Phyllanthus urinaria L., Sp. Pl. 982. 1753; Roxb., Fl. Ind. 3: 660. 1832; Hook.f., Fl. Brit. India 5: 283. 1887; Gamble, Fl. Madras 1289. 1925; Webster, J. Arnold Arb. 38: 94. 1958; Mohanan & Henry, Fl. Thiruvananthapuram 425. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 257. 2006.. *P. leprocarpus* Wight, Icon. pl. Ind. orient. t. 1895. f.4. 1852.

Herbs. Leaves 0.5-2 x 0.2-0.6 cm, oblong, obtuse at base, apiculate at apex, minutely ciliate at margins; stipules linear to subulate; bracts linear, 1 mm long. Male flowers: 1.5 mm across. Tepals 6, orbicular, 0.4 mm long. Stamens 3, connate; anthers sessile, subglobose, 0.5 mm, dehiscence vertical. Disc 6-lobed. Female flowers: 2 mm across. Tepals 6, obovate-oblong, 0.6 mm. Ovary 0.8 mm; styles horizontally spreading. Disc annular. Capsule 3-valved, globose, verrucose, 4 mm across. Seeds triquetrous, testa transversally ridged.

Kottiyottu Kavu, SK 42320. *Fl. & Fr.*: Round the year. *Dist.*: Pantropical .

Phyllanthus tenellus Roxb., Fl. Ind. 3: 668. 1832; Muell.-Arg. in DC., Prodr. 15(2): 338. 1866; Hook.f., Hook. Ic. Pl. 1569. 1887; Webster, J. Arnold Arb. 38: 52.f.6.1957, et 37: 257. Pl. f. 3. 1956; Mitra, Bull. Bot. Surv. India 27 (1-4): 154. 1985; Nayar & al., Flg. Pl. Kerala-Handb. 257. 2006.

. Erect herbs; branchlets terete; stipules 1 mm long, lanceolate-acuminate. Leaves 0.5-1.8 x 0.3-0.9 mm, obovate-oblongate, cuneate at base, obtuse or subacute at apex, dark or bright green above, paler beneath. Flowers in axillary bisexual cymes on deciduous branchlets. Male flowers: Pedicels at anthesis 0.5-1 mm long. Perianth lobes 5, hyaline, 0.5-0.7 mm long, broadly obovate, obtuse or rounded at apex. Disc 5, obovate-cuneate. Stamens 5, filaments free; anthers dehiscing longitudinally. Female flowers: Pedicels 3-5 mm long, terete. Perianth lobes 5, triangular-ovate, 0.5-0.8 x 0.5 mm. Styles 3, free. Capsule 1.7 mm across, obovate, rounded. Seeds trigonous, semicircular on the back.

Nanniyode Kavu, SK 49047. *Fl. & Fr.*: Round the year. *Dist.*: Native of Mascarene Islands. Now widely distributed in the tropics.

Ricinus L.,

Sp. Pl. 1007. 1753.

Ricinus communis L., Sp. Pl. 1007. 1753; Hook.f., Fl. Brit. India 5: 457. 1887; Gamble, Fl. Madras 1335. 1925; Mohanan & Henry, Fl. Thiruvananthapuram 425. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 258. 2006. *avanakku*.

Shrubs. Leaves 10-20 x 3-8 cm, palmatifid, 6-10 lobed, peltate; lobes lanceolate, acuminate at apex, serrate at margins; petiole to 20 cm long. Flowers in terminal panicles; male flowers below and female flowers above. Male flowers: Perianth cupular, 3-5 lobed, lanceolate, 4 mm long. Stamens numerous; filaments connate and repeatedly branched; anthers 4 mm long. Female flowers: 6 mm across. Tepals 5, subequal, lanceolate, 5 mm long. Ovary globose, echinate, 3 mm long. Capsule 3-lobed, 2 cm across, prickly. Seeds oblong.

Sree Dharma Sastha Kavu, Amaravila, SK 49026. *Fl. & Fr:* Round the year. *Dist:* Native of N.E. tropical Africa, widely cultivated throughout the tropics.

Sebastiania Spreng.,

Neue Entd. 2: 118. 1821.

Sebastiania chamaelea (L.) Muell.-Arg. in Dc. Prodr. 15(2): 1175. 1866; Hook.f., Fl. Brit. India 5: 475. 1887; Gamble, Fl. Madras 1344. 1925; Airy Shaw, Kew Bull. 26: 339. 1972; Mohanan & Henry, Fl. Thiruvananthapuram 426. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 259. 2006. . *Kuttiyavanakku*.

Herbs. Leaves 3-7 x 0.4-0.9 cm, linear-lanceolate, cuneate at base, acute or obtuse at apex, minutely dentate at margins; petiole to 0.3 cm long. Flowers in axillary spikes. Male flowers: minute, 5 mm across. Tepals unequally 5-partite, ovate, 2 mm long, rounded-acute at apex. Stamens 3, free, exserted; anthers globose, 0.2 mm long. Female flowers: 1 mm across, solitary, axillary or below the male flowers in the spikes. Tepals 3, ovate. Ovary 3-lobed, echinate, 3-locular; styles 3. Capsule 3-lobed, 5 mm across. Seeds oblong.

Therikunnathu Nagaru Kavu, SK 49048. *Fl. & Fr:* July- Dec. *Dist:* Indo-Malaysia to Australia.

Tragia L.,

Sp. Pl.980. 1753.

Tragia involucrata L., Sp. Pl. 980. 1753; Hook.f., Fl. Brit. India 5: 465. 1887.p.p.; Gamble, Fl. Madras 1332. 1925; Mohanan & Henry, Fl.

Thiruvananthapuram 427. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 261. 2006. *Vallichoriyanam*.

Scandent herbs with stinging hairs. Leaves 3-7 x 1-2.5 cm, elliptic-ovate, acute at base, acuminate at apex, serrate at margins; lateral nerves 6-8 pairs, basal pairs prominent, opposite. Flowers in axillary spikes. Male flowers: 1.5 mm across. Tepals 3, to 1.5 mm long; bracts spatulate. Stamens 3; anthers 0.3 mm long. Female flowers: 3 mm across. Tepals 6, to 1.5 mm long. Ovary 1.5 mm across; style 3, to 0.5 mm. Capsule 0.6 - 1 cm, hispid, 3-lobed. Seeds globose.

Thripporitta Kavu, SK 49067. *Fl. & Fr.*: Aug. –Nov. *Dist.*: India, Burma, Ceylon and China.

MORACEAE Link,

Handbuch 2: 444. 1831, *nom. cons.*

- 1.Flowers enclosed in syconia.....*Ficus*
- 1.Flowers not enclosed in syconia.....2
- 2.Male flowers on globose or oblong heads.....*Artocarpus*
- 2.Male flowers on disciform receptacle.....3
- 3.Leaves to 5 cm long; female flowers with 4 perianth lobes.....*Streblus*
- 3.Leaves more than 10 cm long;
female flowers without perianth.....*Antiaris*

Antiaris toxicaria Lesch., Ann. Mus. Natl. Hist. Nat. 16: 478, t. 22. 1820; Hook.f., Fl. Brit. India 5: 537. 1888; C. Fischer in Gamble, Fl. Madras 1367. 1928; Corner in Dassan. & Fosb., Rev. Handb. Fl. Ceylon 3: 288. 1981; Mohanan & Henry, Fl. Thiruvananthapuram 430. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 431. 2006. *A. innoxia* Bl., Rumphia 1: 172, t.

54. 1835; Bedd., Fl. sylv. S. India t. 307. 1873. *A. saccidora* Dalz. in Kooker's J. Bot. Kew Gard. Misc. 3: 232. 1851; Wight, Icon. pl. Ind. orient. t. 1958. 1853. *Arayanjil*

Deciduous trees; bark greyish-white, smooth, creamy-white inside, fibrous; latex watery or milky. Leaves 10-16 x 3-5 cm, elliptic-oblong, rounded or cordate at base, obtusely acuminate at apex, entire and distantly crenulate; lateral nerves 8-10 pairs; subsessile or petiole to 3 mm long. Male flowers: crowded in axillary receptacles surrounded by bracts. Tepals 4, narrowly spathulate, imbricate. Stamens 3-8; filaments erect. Female flowers: Perianth 0. Ovary adnate to the involucre. Drupe pyriform or obovoid, 1.5-2.5 x 1-2 cm, fleshy, red. Seed 1.

Erumkulangara Bhagavathi temple Kavu, SK 47956; Manthuruthu Kavu, SK 40501.

Fl. & Fr.: Jan.- Apr. *Dist.*: Indo-Malaysia to Australia and Africa.

Artocarpus J.R. Forst. & G. Forst.,
Char. Gen. Pl. 51. 1775, *nom. cons.*

- 1. Young branches and leaves glabrous.....*A. heterophyllus*
- 1. Young branches and leaves hirsute.....*A. hirsutus*

Artocarpus heterophyllus Lam., Encycl. 3: 210. 1789; Corner in Dassan. & Fosb., Rev. Handb. Fl. Ceylon 3: 217. 1981; Mohanan & Henry, Fl. Thiruvananthapuram 430. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 432. 2006. *A. integrifolius* auct. non L.f., 1781; Wight, Icon. pl. Ind. orient. t. 678. 1840; Hook.f., Fl. Brit. India 5: 541. 1888; C. Fischer in Gamble, Fl. Madras 1369. 1928.

Large trees; bark dark greyish-brown. Leaves 10-15 x 4-7 cm, obovate or oblong-obovate, cuneate at base, acute or obtuse at apex, entire; lateral nerves 6-9 pairs; petiole to 2 cm long. Flowers unisexual in spikes enclosed by spathe like bracts. Female flowers from the trunk and mature branches. Perianth fleshy in fruits. Sorosis to 30x25 cm. seeds oblong, smooth, glossy.

Karimbi Kavu, SK 40577; Manthuruthu Kavu, SK 40507. *Fl. & Fr.*: Nov.- May. *Dist.*: South India and Sri Lanka.

Artocarpus hirsutus Lam., *Encycl.* 3: 210. 1789; Wight, *Icon. pl. Ind. orient.* t. 1957. 1853; Hook.f., *Fl. Brit. India* 5: 541. 1888; C. Fischer in Gamble, *Fl. Madras* 1369. 1928; Mohanan & Henry, *Fl. Thiruvananthapuram* 431. 1994; Nayar & al., *Flg. Pl. Kerala-Handb.* 432. 2006.

Large trees; bark brownish-black; latex milky. Leaves 10-22 x 8-12 cm, broadly ovate or elliptic, truncate or rounded at base, acuminate at apex, entire at margin, coriaceous; lateral nerves 8-12 pairs, arching near the margin; petiole to 3 cm long; stipules to 4 cm long, densely tawny strigose. Male spikes linear-oblong, to 15 cm long. Female receptacle erect. Male flowers: Tepals 2, united below. Stamen 1; anthers exerted, ovate. Female flowers: Perianth tubular, confluent below with the receptacle. Sorosis echinate, to 12 x9 cm, tomentose, yellow when ripe, edible. Seeds ovoid, white.

Common to all sacred groves. Ayaniyerathala Devi temple Kavau, SK 40502; Venmaranellor Kavau, SK 40599. *Fl. & Fr.*: Nov- Apr. *Dist*: Peninsular India, endemic.

Ficus L.,

Sp. Pl. 1059.1753.

- 1. Leaves opposite; internodes of branchlets hollow.....*F. hispida*
- 1. Leaves alternate; internodes solid.....2
- 2. Figs sessile.....3
- 2. Figs pedunculate.....6
- 3. Leaves glabrous.....4
- 3. leaves pubescent or tomentose.....5
- 4. Leaves oblong, acuminate at apex.....*F. tsjahela*
- 4. Leaves elliptic-ovate, shortly caudate at apex.....*F. talbotii*
- 5. Leaves obtuse at apex; figs globose.....*F. benghalensis*
- 5. Leaves acute-acuminate at apex; figs
oblong or subovate.....*F. drupacea*
- 6. Leaves scabrid or hispid above; figs scabrid.....*F. exasperata*
- 6. Leaves neither scabrid nor hispid above;
figs puberulous.....*F. callosa*

Ficus benghalensis L., Hort. Cliff. 471. (4). 1737, & Sp. Pl. 1059. 1753; King in Ann. Roy. Bot. Gard. (Calcutta) 1: 26.t. 13. 1887; Hook.f., Fl. Brit. India 5: 499. 1888; C. Fischer in Gamble, Fl. Madras 1361. 1928; Nayar & al., Flg. Pl. Kerala-Handb. 433. 2006. *Peral*.

Large trees with spreading branches and sending down aerial roots; young parts softly pubescent. Leaves 10-20 x 5-15 cm, ovate, orbicular-ovate or elliptic, rounded or subcordate at base, obtuse at apex,

glabrescent above, minutely pubescent beneath; petiole to 5 cm long; stipules ovate from a truncate base. Figs globose, 1.5- 2 cm across, sessile in axillary pairs; bright red; basal bracts 3, orbicular. Male flowers near the mouth of receptacle, many. Tepals 4, lanceolate. Stamen 1. Female flowers: Tepals 4. Ovary with elongated style. Achene ovoid, brown.

Onathuthodi Kavvu, SK 47930; Keezhetti Kavvu, SK 42353; Kunnuvula Devi temple Kavvu, SK 42373. *Fl. & Fr.*: Apr.- Jun. *Dist.*: Tropics.

Note : Addition to the Flora of Thiruvananthapuram.

Ficus callosa Willd., Mem. Acad. Roy. Sci. Hist. (Berlin) 102. 1798; King in Hook.f., Fl. Brit. India 5: 516. 1888; C. Fischer in Gamble, Fl. Madras 1364. 1928; Corner in Dassan. & Fosb., Rev. Handb. Fl. Ceylon 3: 263. 1981; Nayar & al., Flg. Pl. Kerala-Handb. 434. 2006.

Medium sized trees; bark grey, smooth, dull white inside, latex watery. Leaves 18-25 x 8-13 cm, broadly oblong or elliptic, rounded or obtuse at base, obtusely acute at apex; lateral nerves to 15 pairs, parallel; petiole to 7 cm long. Figs solitary, 2-2.5 cm across, greenish, subglobose, puberulous; peduncle to 1.5 cm long. Male flowers: numerous, scattered, pedicellate. Tepals 3. Stamens 1 or 2; filaments short, slender. Female flowers: Perianth deeply 3-4 fid. Style elongated; stigma deeply 2-fid. Achenes obovoid.

Thengazhiyathu Kavvu, SK 47940; Mechamkode Kavvu, SK 40503. *Fl. & Fr.*: Mar. – June. *Dist.*: Indo-Malaysia.

Note : Addition to the Flora of Thiruvananthapuram.

Ficus drupacea Thumb. var. **pubescens** (Roth) Corner, Gard. Bull. s.s. 17:382. 1960 & in Dassan. & Fosb., Rev. Handb. Fl. Ceylon 3: 247. 1981; Nayar & al., Flg. Pl. Kerala-Handb. 434. 2006. *F. mysorensis* Heyne ex Roth in Roem. & Schult., Syst. Veg. 1:508. 1817; King in Hook.f., Fl. Brit. India 5: 500. 1888; C. Fischer in Gamble, Fl. Madras 1361. 1928. *F. mysorensis* Heyne ex Roth var. *pubescens* Roth in Roem. & Schult., Syst. Veg. 1:508. 1817.

Trees, bark; young shoots brown pubescent. Leaves 8-16 x 3.5-8 cm, broadly elliptic-oblong, rounded or subcordate at base, acute-acuminate at apex, brown pubescent below when young; lateral nerves 8-12 pairs, parallel; petiole to 1.5 cm long. Figs sessile in axillary pairs, oblong or sub ovate, 2 cm long, orange yellow when young; basal bracts ovate-obtuse, tomentose. Male flowers: near the apex of the receptacle. Stamens 1; anthers cells sub-globular. Female flowers: Tepals 4. Style elongate. Achenes ovoid.

Madan Kavu, karimammoola, SK 47810; Indalayappan Kavu, SK 40539. *Fl. & Fr*: Mar. –Apr. *Dist*: India to Indo-China and Sri Lanka.

Note: Addition to the Flora of Thiruvananthapuram.

Ficus exasperata Vahl, Enum. Pl. 2:197. 1806; Corner in Dassan. & Fosb., Rev. Handb. Fl. Ceylon 3: 274. 1981; Mohanan & Henry, Fl. Thiruvananthapuram 431. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 434. 2006. *F. asperrima* Roxb., Fl. Ind. 3:554. 1832; Wight, Icon. pl. Ind. orient. t. 633. 1840; King in Hook.f., Fl. Brit. India 5: 522. 1888; C. Fischer in Gamble, Fl. Madras 1366. 1928. *Theragam*.

Small trees; bark greyish–brown, smooth; aerial root absent. Leaves 8-12 x 3-6 cm, elliptic or obovate, rounded at base, acute or acuminate at apex, scabrous on both sides; lateral nerves 4-6 pairs; petiole to 4 cm long. Figs axillary, solitary, globose, scabrid, yellow when ripe, 1 cm long; peduncle to 1 cm long. Stamen 1. rarely 2.

Mechamkode Kavu, SK 40525; Nagaruvu Kavu, Karimammoola, SK 47945. *Fr.*: Feb.–Apr. *Dist.*: India, Sri Lanka, East Africa and Arabia.

Ficus hispida L.f., *Suppl. Pl.* 442. 1781; King in Hook.f., *Fl. Brit. India* 5: 522. 1888; C. Fischer in Gamble, *Fl. Madras* 1367. 1928; Corner, *Gard. Bull. s.s.* 21:89. 1965 & Dassan. & Fosb., *Rev. Handb. Fl. Ceylon* 3: 277. 1981; Mohanan & Henry, *Fl. Thiruvananthapuram* 433. 1994; Nayar & al., *Flg. Pl. Kerala-Handb.* 435. 2006. *F. oppositifolia* Roxb., *Pl. Coromandel.* t. 124. 1798; Wight, *Icon. pl. Ind. orient.* t. 638. 1843.

Small trees; young shoots hispid. Leaves 10-18 x 6-10 cm, opposite, oblong or obovate–oblong, rounded or cordate at base, acute or acuminate at apex, membranous, hispid-pubescent; lateral nerves 5-7 pairs, basally 3-5 nerved; petiole to 2.5 cm. Figs fascicled on trunk or on elongated pendulous or trailing leafless branches. Figs depressed globose, yellowish, 2-2.5 cm across; peduncle to 1 cm long.

Cherunilakkodu Kavuvu, SK 47867. *Fr.*: Sept.–May. *Dist.*: Indo–Malaysia to Australia and S. China.

Ficus talbotii King, *Ann. Roy. Bot. Gard (Calcutta)* 1:t. 63. 1887; Hook.f., *Fl. Brit. India* 5: 512. 1888; C. Fischer in Gamble, *Fl. Madras*

3:1363. 1928; Corner in Dassan. & Fosb., Rev. Handb. Fl. Ceylon 3: 254. 1981; Nayar & al., Flg. Pl. Kerala-Handb. 437. 2006.

Large evergreen epiphyte trees; aerial roots absent; bark thick, green, smooth. Leaves 5-12 x 2.5-5 cm, elliptic-ovate, rounded to acute at base, shortly caudate at apex; petiole to 1.5 cm long; lateral nerves 6-9 pairs. Figs axillary or on leafless branchlets 2-3, sessile, depressed – globose, 0.5–0.7 cm across, yellow on ripening; bracts 3, ovate –concave. Male flowers: few, on near the mouth of receptacle, sessile. Sepals 3. Stamens 1. Fertile flowers: style short, lateral. Achenes ovoid or obovoid.

Nanniyode Kavu, SK. 49038. *Fl. & Fr.*: Oct.–Feb. *Dist.*: Pantropical

Note : Addition to the Flora of Thiruvananthapuram.

Ficus tsjahela Burm.f., Fl. Ind. 227. 1768 ‘tjakela’; King in Hook.f., Fl. Brit. India 5: 514. 1888; C. Fischer in Gamble, Fl. Madras 1362. 1928; Corner in Dassan. & Fosb., Rev. Handb. Fl. Ceylon 3: 237. 1981; Mohanan & Henry, Fl. Thiruvananthapuram 434. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 437. 2006.

Deciduous trees; bark dark brown, red inside. Leaves 13-20 x 6-8 cm, oblong, rounded at base, acuminate at apex, coriaceous, glabrous and glossy; lateral nerves 6-10 pairs, parallel; basal pair opposite; petiole 0.6 cm long; stipules foliaceous, linear-oblong, yellowish-red. Figs in clusters, 2-6, sessile, axillary to leaves and leaf scars, 6-7 mm across, greenish. Achenes ovoid.

Nagaru Kavu 49058, Kazhakkootam, SK 47870, Kallarathekkal Kavu, SK 47915.

Fr: Apr.- Jun. *Dist:* Peninsular India and Sri Lanka.

Streblus Lour.,

Fl. Cochinch. 599, 614. 1790

Streblus asper Lour., Fl. Cochinch. 615. 1790; Hook.f., Fl. Brit. India 5: 489. 1888; C. Fischer in Gamble, Fl. Madras 1353. 1928; Corner in Dassan. & Fosb., Rev. Handb. Fl. Ceylon 3: 281. 1981; Nayar & al., Flg. Pl. Kerala-Handb. 438. 2006. *Epicapus orientalis* Bl., Bijdr. 488. 1825; Wight, Icon. pl. Ind. orient. t. 1961. 1853. *Paruva*.

Small trees; bark grey; branchlets often arrested and thorny. Leaves 3-5 x 1-2.5 cm, elliptic to obovate, acute at base, acute or acuminate at apex, subentire or serrate at margin, scabrid; lateral nerves 5-6 pairs; petiole to 0.5 cm long. Male flowers: in peduncled capitate clusters. Perianth lobes 4, free, imbricate. Stamens 4. Female flowers solitary, pedicelled. Style central, with 2-elongated stigmatic lobes. Drupes enclosed by the fleshy perianth, globose, to 7 mm across, yellow.

Pulickal Bhagavathi Kavu, SK 47858; Keezhetti Kavu, SK 47944. *Fl. & Fr:* Jan.-Oct. *Dist:* Indo-Malaysia and China.

ULMACEAE Mirb.,

Elem. Physiol. Veg. Bot. 2: 905. 1815, *nom. cons.*

- 1. Leaves penni-nerved, fruit a samara.....*Holoptelia*
- 1. Leaves 3-nerved from base, fruit a drupe.....*Trema*

Holoptelia Planch. in

Ann. Sci. Nat. Bot. ser. 3,10:259, 266 1848.

Holoptelia integrifolia (Roxb.) Planch, Ann. Sci. Nat. Bot. (Ser.3) 10:266. 1848; Wight, Icon. pl. Ind. orient. t. 1968. 1853; Hook.f., Fl. Brit. India 5: 481. 1888; C. Fischer in Gamble, Fl. Madras 1348. 1928; Nayar & al., Flg. Pl. Kerala-Handb. 608. 2006. *Ulmus integrifolia* Roxb. Pl. Coromandel. t.78. 1798; Bedd., Fl. sylv. S. India t. 310. 1873. *Aval*.

Deciduous trees; young shoots pubescent. Leaves 8-14 x 4-9 cm, elliptic-ovate, rounded to sub cordate at base, acute at apex, appressed pubescent; lateral nerves 8-10 pairs, flattened above, raised below; petiole to 1 cm long. Flowers sessile and fascicled on old shoots. Male flowers and bisexual flowers are mixed. Tepals 4, free, to 1.5 mm, concave, pubescent. Stamens 7-9, biseriate; filaments to 1.8 mm long; anthers introrse. Ovary compressed-ovate, to 2 x 1.5 mm, stalk elongating in fruits; style arms 2. Fruit a dry, winged, compressed samara, 1 x 0.7 cm; wings membranous, 3 cm across, reticulate.

Puthanvila Kavu SK 47910; Virunthiyottu Kavu, Attingal, SK 47948. *Fl.*

& *Fr.*: Feb.- May. *Dist.*: India, Burma, Sri Lanka.

Note: Addition to the Flora of Thiruvananthapuram.

Trema Lour.,

Fl. Cochinch. 539, 562. 1790.

Trema orientalis (L.) Bl., Mus. Bot. 2: 61. 1856; Hook.f., Fl. Brit. India 5: 484. 1888; C. Fischer in Gamble, Fl. Madras 1350. 1928; Mohanan & Henry, Fl. Thiruvananthapuram 429. 1994; Nayar & al., Flg. Pl. Kerala-

Handb. 608. 2006. *Celtis orientalis* L., Sp. Pl. 1044. 1753; Roxb. Fl. Ind. 2:65. 1832; Wight, Icon. pl. Ind. orient .t. t. 602 & 603. 1842. *Sponia wightii* Planch., Ann. Sci. Nat. Bot. (ser.3) 10:322. 1848; Wight, Icon. pl. Ind. orient. t. 1971. 1853. *Amathali*.

Evergreen trees; young parts appressed-pubescent. Leaves 8-12 x 3-6 cm, broadly lanceolate or obovate, obliquely subcordate at base, acuminate at apex, serrulate at margins, 3-nerved from the base; lateral nerves 4-5 pairs; impressed above, raised beneath. Flowers unisexual in axillary clustered cymes; 5-merous. Tepals 5, free, concave, 1.5 mm, hirsute, finely ciliate, acute. Stamens 5; filaments 1.5 mm, long; anthers 1 mm. Pistillode oblong, 0.7 mm. Ovary 1.5 mm; style arms 2. Drupe globose, 4 x 3 mm. Seeds ovoid to globose, 3 x 2 mm.

Parottukonam Kavu,SK 42329. *Fl. & Fr*: Round the year. *Dist*: Indo-Malaysia to Australia, Polynesia, Tropical Africa and China.

URTICACEAE Juss.,

Gen. Pl. 400. 1789, *nom. cons.*

- 1. Leaves 1-nerved.....*Pilea*
- 1. Leaves 3-5 nerved.....*Pouzolzia*

Pilea Lindl.

Collect. Bot. ad t. 4. 1821, *nom. cons.*

Pilea microphylla (L.) Liebm. Kongel. Danske Vidensk. Sels. Naturvidensk. Math. Afh. (ser.2) 5(2): 296. 1851; Hook.f., Fl. Brit. India 5: 551. 1888; C. Fischer in Gamble, Fl. Madras 1379. 1928; Mohanan & Henry,

Fl. Thiruvananthapuram 438. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 613. 2006. *Parietaria microphylla* L. Syst. Nat. (ed.10) 1308. 1759. *Pilea mucosa* Lindl., Coll. Bot. t. 4. 1821, var. *microphylla* (Sw.) Wedd. Monogr. Urtic. 174. 1856. *Urtica microphylla* Sw., Fl. Ind. occid. 1:305. 1797.

Monoecious herbs. Leaves 0.3-0.4 x 0.1-0.2 cm, elliptic-ovate, acute at base, subacute to obtuse at apex, 1-nerved; petiole to 1 mm long. Flowers minute, in stalked, umbellate clusters. Male flowers: 1.5 mm across. Tepals 4, free, 0.7 mm long, concave, obtuse at apex. Stamens 4; filaments 0.7 mm. Female flowers: 0.4 mm across. Tepals 2-4 toothed, connate. Ovary ellipsoid, 0.5 mm long. Achenes ellipsoid, 1 mm long.

Chokkan Kavu, SK 49051. *Fl. & Fr*: Round the year. *Dist*: Native of S. America, naturalizes in many tropical Countries.

Pouzolzia Gaudich.,

Voy. Uranie, Bot. 503. 1830.

Pouzolzia zeylanica (L.) Benn., Pl. Jav. Rar. 1:67. 1838; Nayar & al., Flg. Pl. Kerala-Handb. 615. 2006. *Parietaria zeylanica* L., Sp. Pl. 1052. 1753. *Pouzolzia indica* (L.) Gaud., Voy. Bonite Bot. 503. 1826; Wight, Icon. pl. Ind. orient.t. 1980. f. 1. & 2100. f.40. 1853; Hook.f., Fl. Brit. India 5: 581. 1888; C. Fischer in Gamble, Fl. Madras 1382. 1928. *Parietaria indica* L., Mant. Pl. 128. 1767.

Slender procumbent herbs. Leaves alternate, 2-4 x 1.5-2 cm, elliptic-ovate, rounded at base, acute at apex, sparsely strigose above; petiole to 2.5 cm long. Flowers in sessile, axillary clusters. Male flowers:

bracts 2, concave; flower bud rounded. Tepals 4, ovate, 1.5 mm, acute at apex. Stamens 4; filaments to 2.5 mm long. Female flowers: 1 mm across. Tepals 4, connate, sericeous without. Ovary obovoid; style linear, 1 mm long. Achenes 2 winged.

Vliya Kavu, Chittayikkode, SK 423338. *Fl. & Fr:* Aug – Dec. *Dist:* South East Asia.

Note: Addition to the flora of Thiruvananthapuram.

CYCADACEAE Pers.,

Syn. Pl.2: 630. 1807, *nom. cons.*

Cycas L.,

Sp. Pl. 1188. 1753.

Cycas circinalis L., Sp. Pl. 1118. 1753; Hook.f., Fl. Brit. India 5: 656. 1888; C. Fischer in Gamble, Fl. Madras 1394. 1934. *Kana*.

Small trees, to 12 m tall. Leaves 60-120 cm long; leaflets 80-100 pairs to 30 x 1 cm, linear-elliptic, acuminate at apex. Male cone shortly peduncled, to 45 cm long, cylindrical-ovoid. Female cone about 30 cm long, ferruginous tomentose. Seeds ovoid, orange coloured.

Puthanvila Kavu SK 47911; Madan Kavu, Meverkara, SK 47928. *Fr:* Dec. Feb. *Dist:* Pantropical

GNETACEAE Lindl.,

Edwards Bot. Reg. 20: sub t. 1686.

Gnetum L.,

Syst. Nat., ed.12, 2:612, 637. 1767.

Gnetum edule (Willd.) Bl., Nov. Pl. Expos. 31. 1833; Robinson in Phillip., J. Sci. Bot. 7: 419. 1912; Nicolson *et al.*, Interpret. Hort. Malab. 34. 1988. *Thoa edulis* Willd., Sp. Pl. 4: 477. 1805. *G. scandens* sensu Brandis, For. Fl. 502. 1874, non Roxb. 1832; Hook.f., Fl. Brit. India 5: 642. 1888. *Gnetum ula* Brongn in Duperrey. voy. Coquille 12. 1829; Markgraf in Bull Jard. Bot. Buitenzorg. ser. 3. 10:469. t.6. f.4. 1930; Mohanan & Henry, Fl. Thiruvananthapuram 441. 1994. *G. funiculare* Wight Icon. pl. Ind. orient. t. 1955. 1852. *Kari Odal*.

Climbers. Leaves 10-17 x 3-6 cm, oblong or ovate-oblong, rounded at base, acuminate at apex, smooth and shining, black when dry; petiole to 1.5 cm long. Male bracts closely imbricate; female interrupted. Fruiting spikes to 25 cm long, pendulous, curved. Seeds oblong to 4 cm long, terete, orange coloured when ripe.

Indalayappan Kavu, SK 40508.; Keezhetti Kavu, SK 42360. *Fl. & Fr:* Mar-Sept. *Dist:* Indo - Malaya..

ORCHIDACEAE Juss.,

Gen. Pl. 400. 1789, *nom. cons.*

- 1.Epiphytes.....2
1.Terrestrial plants.....*Eulophia*
2.Leaves ensiform, without midrib.....*Oberonia*

2. leaves not ensiform, midrib present.....	3
3. Plants with distinct pseudobulbs.....	4
3. Plants without pseudobulbs.....	5
4. Leaves articulate at base.....	<i>Cymbidium</i>
4. Leaves not articulate at base.....	<i>Bulbophyllum</i>
5. Leaf apex 3-toothed, teeth acute.....	<i>Vanda</i>
5. Leaf apex unequally 2-lobed, teeth rounded.....	6
6. Lip spurred.....	<i>Acampe</i>
6. Lip not spurred.....	<i>Dendrobium</i>

Acampe Lindl.,

Fol. Orchid. 4. 1853, *nom. cons.*

Acampe praemorsa (Roxb.) Blatt. & Mc Cann, J. Bombay Nat. Hist. Soc. 35:495; Jayaw. in Dassan. & Fosb., Rev. Handb. Fl. Ceylon 2:231. 1981; Abraham & Vatsala, Intr. Orch. 450. 1981; Sathish & Manilal, Cat. Ind. Orchids 18. 1994; Mohanan & Henry, Fl. Thiruvananthapuram 446. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 723. 2006. *Epidendrum praemorsum* Roxb., Pl. Coromandel 34. t. 43. 1795. *Saccolabium praemorsum* (Roxb.) Hook.f., Fl. Brit. India 6: 62. 1890. *Acampe wightiana* Lindl., Folia Orch. Acampe 2. 1853; C. Fischer in Gamble, Fl. Madras 1447. 1928. *Vanda wightiana* Lindl. ex Wight, Icon. pl. Ind. orient. t. 1670. 1851.

Robust epiphyte herbs; stem elongated, woody. Leaves distichous, 10-20 x 1-3 cm, linear, thick, coriaceous, obliquely bilobulate at apex. Flowers densely arranged in leaf opposed corymbs, yellow with reddish-brown transverse bands. Sepals and petals similar, inflexed. Lip creamy-white with narrow red streaks, fleshy, mid lobe ovate-obtuse, margin

crispate, lateral lobes small, entire, obtuse, margin crispate, lateral lobes small, entire, spur short, papillose within. Pollinia two, globose, waxy.

Keezhetti Kavu, SK 49004. *Fl.* Mar–Apr. *Dist.* South India and Sri Lanka.

Bulbophyllum Thouars,

Hist. Orchid. Tabl. Esp. 3, 1822, *nom.cons.*

Bulbophyllum sterile (Lam.) Suresh in Nicolson *et al.*, *Interpr. Rheede's Hort. Malab.* 298. 1988; Nayar & al., *Flg. Pl. Kerala-Handb.* 728. 2006. *Epidendrum sterile* Lam., *Encycl. Meth. Bot.* 1: 189. 1783. *Bulbophyllum neilgherrense* Wight, *Icon. pl. Ind. orient.* t. 1650. 1851; Hook.f., *Fl. Brit. India* 5: 761. 1890; C. Fischer in Gamble, *Fl. Madras* 1418. 1928; Abraham & Vatsala, *Intr. Orch* 334. f. 74. 1981.

Robust epiphytes; pseudobulbs 4-angled, green, smooth, to 4 cm long. Leaves 10-15 x 2-4 cm, elliptic–oblong or narrowly elliptic, narrowed at base, acute or acuminate at apex. Flowers yellow speckled with purple, densely or laxly arranged in lateral inflorescence. Bracts to 4 mm long. Sepals subequal, 5-7 mm long. Petals minute, ovate–acuminate, serrate at margins 2 mm long. Lips orange–yellow with two auricles at base. Column erect.

Cherukulathu Kavu, SK 40558. *Fl. & Fr.* Jan.–May. *Dist.* S. India, endemic.

Note: Addition to the Flora of Thiruvananthapuram.

Cymbidium Sw.,

Nova Acta. Regiae Sci. Soc. Upsal. Ser. 2, 6:70. 1799.

Cymbidium aloifolium (L.) Sw. Nov. Act. Soc. Upsal 6: 73. 1799; Wight, Icon. pl. Ind. orient. t. 1687, 1688. 1851; Hook.f., Fl. Brit. India 6: 8. 1890 p.p.; C. Fischer in Gamble, Fl. Madras 1436. 1928; Abraham & Vatsala, Intr. Orch. 305, f. 68. 1981; Jayaw. in Dassan. & Fosb., Rev. Handb. Fl. Ceylon 2:183 . 1981; Mohanan & Henry, Fl. Thiruvananthapuram 452. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 731. 2006.

Robust epiphytes. Leaves thick, 20-30 x 1.5-2 cm, broadly linear, unequally 2-lobed at apex, pale green above. Flowers yellow with red median stripe on pendulous racemes, to 30 cm long; pedicels 2 cm long. Sepals to 2 x 0.6 cm; lateral sepals slightly falcate. Petals similar to sepals or slightly smaller. Lip reddish-purple, yellow at base, trilobed; side lobes erect, midlobe deflexed, slightly saccate at base. Column long, arched. Chokkan Kavu, SK 49049. *Fl. & Fr.*: Mar.- May. *Dist.*: Indo-Malaysia.

Dendrobium Sw.,

Nova Acta. Regiae Sci. Soc. Upsal. Ser. 2, 6:82, 1799, *nom. cons.*

Dendrobium macrostachyum Lindl., Gen., Sp. Orch. 78. 1830; Wight, Icon. pl. Ind. orient.t. 1647. 1851; Hook.f., Fl. Brit. India 5: 735. 1890; C. Fischer in Gamble, Fl. Madras 1416. 1928; Abraham & Vatsala, Intr. Orch. 355, ff. 84, 85. 1981; Jayaw. in Dassan. & Fosb., Rev. Handb. Fl. Ceylon 2:90. f. 41 1981; Mohanan & Henry, Fl. Thiruvananthapuram 453. 1994; Sathish & Manilal, Cat. Ind. Orchids. 19. 1994; Nayar & al., Flg. Pl. Kerala-Handb.733. 2006.

Pendulous epiphyte subshrubs; stem terete, tufted, smooth. Leaves distichous, 4-8 x 1.5-2.5 cm, oblong or ovate-lanceolate, acute at apex. Flowers dull yellow, in leaf opposed fascicles from the nodes. Sepals and petals similar, to 1.5 x 0.6 cm, oblong-lanceolate or obovate. Lips clawed, obscurely 3-lobed; lateral lobes enclosing the column, midlobe quadrately oblong, ovate, obtuse, margin crenulate.

Punnakkattu Edathara Nagaru Kavu, SK 47977. *Fl.* Apr.–May. *Dist:* India and Sri Lanka.

Eulophia R. Br. ex Lindl.in

Bot. Reg. ad t. 686. 1823, *nom. cons.*

Eulophia epidendrea (Retz.) C. Fischer in Gamble, *Fl. Madras* 1434. 1928; Abraham & Vatsala, *Intr. Orch.* 294. f. 64. 1981; Jayaw. in Dassan. & Fosb., *Rev. Handb. Fl. Ceylon* 2:168. 1981; Mohanan & Henry, *Fl. Thiruvananthapuram* 458. 1994; Nayar & al., *Flg. Pl. Kerala-Handb.* 738. 2006. *Serapias epidendrea* Retz., *Obs. Bot.* 6: 65. 1791. *Eulophia virens* R. Br., *Bot. Reg. Sub. t.* 573. 1822; Wight, *Icon. pl. Ind. orient. t.* 913. 1845; Hook.f., *Fl. Brit. India* 6:1. 1890.

Terrestrial herbs; pseudobulb conical, to 6x3 cm. Leaves 15-30 x 1-2 cm, linear, acuminate at apex. Flowers greenish-white, from the side of pseudobulb; pedicels with ovary 2 cm long. Sepals and petals linear, 1-1.5 x 0.1-0.2 cm, cuspidate at apex. Lip 1 cm long, obovate-oblong, white, side lobes erect, conical and forming a tube embracing the column; midlobe sub-quadrangle, margins crinkled; spur short, incurved; column long, arched.

Therukunnathu Nagaru Kavu, SK 49090. *Fl*: Nov.- Dec. *Dist*: India and Sri Lanka.

Oberonia Lindl.,

Gen. Sp. Orch. Pl. 15. 1830, *nom. cons.*

1. Mid lobe of lip bifid at apex.....*O. verticillata*

1. Mid lobe of lip triangular, blunt and obtuse at apex.....*O. tenuis*

Oberonia verticillata Wight, Icon. pl. Ind. orient. t. 5(3). t. 1626. 1852; Hook.f., Fl. Brit. India 5: 677-78. 1888; C. Fischer in Gamble, Fl. Madras 1406. 1928; Abraham & Vatsala, Intr. Orch. 419. 1981; Mohanan & Henry, Fl. Thiruvananthapuram 466. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 752. 2006.

Erect epiphytes. Leaves 4-5 x 0.5-0.7 cm, oblong-ensiform, acute at apex. Flowers pale yellow in long drooping verticels; bracts 1.5 mm long, hyaline, serrate at margins. Sepals hyaline, pilose, sub orbicular, acute at apex, 2 mm long. Petals sub obovate, entire or slightly undulate at margins, obtuse at apex, lip punctate, side lobes small, mid lobe, 2 fid at apex, sinus narrow, short.

Vattavila Sree Dharma Sastha Kavu, SK 49072. *Fl*: Dec.-Feb. *Dist*: South India and Sri Lanka.

Oberonia tenuis Lindley, Fol. Orch. Oberonia 3. 1859; Hook.f., Fl. Brit. India 5: 682. 1890; Trimmen, Handb. Fl. Ceylon 4:138. 1898; Jayaw. in Dassan. & Fosb., Rev. Handb. Fl. Ceylon 2:36. f. 41 1981; Nayar et al.,

Fl. Trop. Bot. Garden 89. 1986; Nayar & al., Flg. Pl. Kerala-Handb. 752. 2006. *Malaxis tenuis* Reichb. f. in Walp. Ann. 6:211. 1861.

Tufted epiphyte. Leaves 4-8 x 0.5-1 cm, ensiform-lanceolate, acute-acuminate, thin. Flowers light reddish-brown in terminal racemes, to 10 cm long. Floral bracts to 3 mm long, ovate; dorsal sepal ovate-oblong, to 1.4 mm long; lateral sepals orbicular, obtuse at apex, to 0.9 mm long. Petals lanceolate to 1.2 mm long; lip to 1.6 mm; lateral lobes linear, midlobe trifid, neck long, mid lobe triangular, blunt and obtuse; column very short; Pollinia 4. Fruit a stalked, globular and shining capsule, to 2.5 mm long.

Manthuruthu Kavu, SK 49090. *Fl. & Fr.*: Mar.-Jul. Dist: South India and Sri Lanka.

Note: Addition to the Flora of Thiruvananthapuram.

Vanda W. Jones ex R. Br. in
Bot. Reg. ad t.506, 1820.

1. Sepals and petals spathulately oblong.....*V. spathulata*
1. Sepals and petals not as above.....2
2. Midlobe of lip 17 x 12 mm, panduriform, narrowed base,
bifid at apex.....*V. tessellata*
2. Midlobe of lip 5.5 x 2-3 mm, oblong, not narrowed at
base, broad truncate at apex.....*V. testacea*

Vanda spathulata (L) Spreng. Syst. Veg. 3: 719. 1828; Lindl. Gen. Sp. Orch. 216. 1833; Wight, Icon. pl. Ind. orient. t. 915. 1844-1845; Hook.f., Fl. Brit. India 6: 50. 1890; C. Fischer in Gamble, Fl. Madras 1444. 1928; Abraham & Vatsala, Intr. Orch. 438. 1981; Mohanan & Henry, Fl. Thiruvananthapuram 471. 1994. *Epidendrum spathulatum* L., Sp. Pl. 952.1753. *Taprobanea spathulata* (L.) Christ., Lindleyana 7: 92. 1992; Nayar & al., Flg. Pl. Kerala-Handb. 761. 2006

Epiphytic herbs . Leaves 5-9 x 1-1.5 cm, narrowly elliptic-oblong, acute at apex, fleshy, coriaceous, speckled with brown. Flowers in extra axillary long racemes, peduncle very long, to 35 cm long; shimmering yellow. Sepals and petals similar, 1.5-1.8 cm long, obovate-elliptic. Lip with red dots.

Moopuram Kavu, SK 49046. *Fl*: Oct.-Nov. *Dist*: South India and Sri Lanka.

Vanda tessellata (Roxb.) Hook. ex Don in Loud., Hort. Brit. 372. 1830; C. Fischer in Gamble, Fl. Madras 1445. 1928; Abraham & Vatsala, Intr. Orch. 438. 1981; Nayar & al., Flg. Pl. Kerala-Handb. 763. 2006. *Epidendrum tessellatum* Roxb., Pl. Coromandel t. 42. 1795. *Vanda roxburghii* R.Br., Bot. Mag. Reg. 6: t. 506. 1820; Wight, Icon. pl. Ind. orient. t. 916. 1845; Hook.f., Fl. Brit. India 6: 52. 1890.

Epiphytes; stem covered by leaf sheaths; aerial roots stout. Leaves 13-20 x 1-1.8 cm, linear-oblong, unequally lobed at apex, keeled, glabrous, coriaceous. Flowers in axillary, 3-8 flowered racemes, to 12 cm long; greenish-white. Sepals subequal, to 2 cm long, laterals elliptic, acute at apex; dorsal one ovate-acute. Petals to 2 cm, ovate-acute. Lip 3-

lobed; lateral lobes erect; midlobe bilobed at apex; spur conical. Column to 8 mm long. Capsule to 9 cm long, ribbed, clavate.

Venmaranelloor Kavu, SK 42333. *Fl. & Fr.*: Jun.- Oct. *Dist.*: India, Burma, China and Sri Lanka.

Note: Addition to Flora of Thiruvananthapuram.

Vanda testacea (Lindl.) Reich.f., Gard. Chrom.2, 66, 1877; Abraham & Vatsala, *Intr. Orch.* 436. 1981; Nayar & al., *Flg. Pl. Kerala-Handb.* 763. 2006. *Aerides testacea* Lindl. , *Gen. Sp. Orch.* 238. 1835. *Vanda parviflora* Lidl., *Bot. Mag. Reg.* 30. Misc. 45. 1844; Wight, *Icon. pl. Ind. orient.* t. 1669. 1852; Hook.f., *Fl. Brit. India* 6: 50. 1890; C. Fischer in Gamble, *Fl. Madras* 1444. 1928.

Epiphytic herbs; aerial roots slender. Leaves distichous, 8-15 x 0.4-0.7 cm, unequally lobed at apex, keeled, coriaceous, glabrous. Flowers in axillary, 5-10 flowered racemes; greenish-yellow with purple lip. Sepals subequal, 1 cm long, dorsal one spathulate, incurved at apex. Petals to 1 cm long, concave, spathulate. Lip sessile, 3-lobed; lateral lobes erect, rounded, mid lobe to 6 mm long; spur funnel shaped, to 3 mm long. Column short. Capsule clavate.

Nanniyode Kavu, SK 49064. *Fl. & Fr.*: Mar.- Jul. *Dist.*: India, Burma and Sri Lanka.

Note: Addition to Flora of Thiruvananthapuram.

ZINGIBERACEAE Lindl.,
Key Bot. 69. 1835, *nom. cons.*

- 1. Flowers in racemes or panicles.....2
- 1. Flowers in spikes.....3
- 2. Leaves to 18 cm long; labellum deeply bifid at apex...*Globba* (p.p.)
- 2. Leaves over 30 cm long; labellum emarginate at apex.....*Alpinia*
- 3. Spikes terminal on the leafy stem.....4
- 3. Spikes lateral or on the rhizome.....5
- 4. Ovary 1-celled; filaments 2-appendaged.....*Globba* (p.p.)
- 4. Ovary 3-celled; filaments not appendaged.....*Kaempferia* (p.p.)
- 5. Bracts basally connate, pouched.....*Curcuma*
- 5. Bracts not as above.....6
- 6. Lateral staminodes petaloid; connective
of anther crested.....*Kaempferia* (p.p.)
- 6. Lateral staminodes not petaloid; inconspicuous or absent;
connective of anther not crested.....*Zingiber*

Alpinia Roxb.,
Asiat. Res. 11:350. 1810, *nom. cons.*

- 1. Inflorescence unbranched; labellum with a long claw.....*A. galanga*
- 1. Inflorescence unbranched; labellum without claw.....*A. calcarata*

Alpinia calcarata Rosc., Trans. Linn. Soc. London 8:347. 1807; Rosc., Monandr. t. 68. 1824; Baker in Hook.f., Fl. Brit. India 6: 254. 1892; C. Fischer in Gamble, Fl. Madras 1495. 1928.; Nayar & al., Flg. Pl. Kerala-Handb. 840. 2006.*Chittaratha*.

Rhizomatous herbs. Leaves sessile, to 40 x 3 cm, linear–lanceolate, narrowed at base, acuminate at apex, glabrous on both surfaces; ligule to 1 cm long, ciliate. Flowers in terminal unbranched racemes; bracts absent. Calyx to 6 mm long, 3-lobed, unilaterally split. Corolla tube shorter than the calyx; pubescent at the throat within; lobes oblong, to 1.5 cm long. Labellum obovate, to 3 cm long, emarginate at apex; lateral staminodes subulate. Stamens to 2 cm long; anthers pubescent. Ovary sericeous, to 4 mm long.

Thengazhiyathu Kavu, SK 49069. *F* : Dec – Mar. *Dist*: India, cultivated in other part of the World.

Note: Addition to the Flora of Thiruvananthapuram.

Alpinia galanga (L.) Sw., Obs. 2. 1791; Thw., Enum. Pl. Zeyl. 319. 1861; Baker in Hook.f., Fl. Brit. India 6: 253. 1892; C. Fischer in Gamble, Fl. Madras 1493. 1928; Mohanan & Henry, Fl. Thiruvananthapuram 475. 1994.; Nayar & al., Flg. Pl. Kerala-Handb. 840. 2006. *Maranta galanga* L., Sp. Pl. (ed.2) 3:1762. *Langaus galanga* (L.) Stuntz. U.S.D.A. Bur. Pl. Industr. Bull. no. 261:21. 1912. *Malayinchi. Kolinchi*.

Rhizomatous herbs. Leaves 30-60 x 4-15 cm, oblong–lanceolate, cordate or rounded at base, acuminate at apex; bracts to 2 cm long; bracteoles similar to bracts. Calyx to 1 cm long. Corolla greenish–white; lobes to 1.5 cm long, rounded at apex. Labellum white, veined with lilac, to 2 cm long. Lateral staminodes small, subulate. Anther cells parallel; filament to 2 cm long. Ovary 2 mm long, glabrous. Capsule to 1 cm across, globose, orange – red.

Manthuruthu Kavu, SK 49052. *Fl* : Dec – Mar. *Dist*: India, cultivated in other part of the World.

Curcuma L.,

Sp. Pl. 2. 1753, *nom. cons.*

1. Leaf base cordate at base.....*C. ecalcarata*

1. Leaf base rounded or attenuate at base.....*C. longa*

Curcuma ecalcarata Sivaraj. *et* Indu, Notes Roy. Bot. Gard. Edinburg 41:321. 1983.; Nayar & al., Flg. Pl. Kerala-Handb. 843. 2006.

Rhizomatous herbs; roots tuberous. Leaves 15-20 x 3-6 cm, elliptic-oblong to lanceolate. Spikes from the centre of the leaves; lower bracts to 4.5 cm long, oblong, obtuse at apex. Calyx to 1 cm long, truncate at apex. Corolla to 2.5 cm; lobes unequal; dorsal lobes larger hooded; labellum 3-lobed. Staminodes bright yellow, oblong, obtuse at apex; anthers not spurred at base.

Nakramkode Kavu, SK 49033. *Fl.*: Sept – Nov. *Dist*: South India, endemic.

Note: Addition to the flora of Thiruvananthapuram.

Curcuma longa L., Sp. Pl. 1: 2. 1753, pro max parte. Baker in Hook.f., Fl. Brit. India 6: 214. 1890; C. Fischer in Gamble, Fl. Madras 1483. 1928. Burt., Notes Roy. Bot. Gard. Edinburgh 35: 209. 1977.; Nayar & al., Flg. Pl. Kerala-Handb. 847. 2006.

Rhizomatous herbs; rhizomes orange–yellow within. Leaves 30-50 x 4-8 cm, lanceolate or oblong–lanceolate, rounded or attenuate at base, acuminate at apex. Flowers appearing with the leaves and central to the leaf tuft. Coma bract white and green. Fertile bracts to 6 cm long. Bracteoles to 3.5 cm long. Corolla white; labellum with a yellow band.

Onathuthodi Kavu, SK 49014. *Fl* : June–July. *Dist*: Native of India, cultivated throughout the tropics.

Note: Addition to the flora of Thiruvananthapuram.

Globba L.,

Mant. Pl. 143, 170. 1771.

1.Bracts persistent; anthers winged.....*G. marantina*

1.Bracts deciduous; anthers not winged.....*G. ophioglossa*

Globba marantina L., Mant. 170. 1771; Smith, Exot. Bot. 2: 85, t. 103. 1806; Baker in Hook.f. Fl. Brit. India 6: 206. 1890.; *G* Nayar & al., Flg. Pl. Kerala-Handb. 845. 2006. *bulbifera* Roxb., Asiat. Res. 11:358. 1810; Baker in Hook.f. Fl. Brit. India 6: 206. 1890; C. Fischer in Gamble, Fl. Madras 1481. 1928. *G. marantinoides* Wight, Icon. pl. Ind. orient. t. 2001. 1853.

Herbs. Leaves 12-18 x 3-5 cm, oblong or broadly lanceolate, attenuate at base, acute at apex, minutely puberulous below; ligule short. Flowers in terminal spikes. Bracts to 2 cm long, broadly ovate, those at base of the spikes subtending ovoid bulbils. Calyx 4-5 mm long, 3-lobed. Corolla yellow; tube to 1 cm long; lobes ovate, 4 mm long. Labellum

deeply bifid. Filament to 15 mm long; anthers with two spreading appendages on each side.

Nanniyode Kavu, SK 42320. *Fl. & Fr.*: Jul.- Nov. *Dist.*: Indo-Malaysia.

Note: Addition to the flora of Thiruvananthapuram.

Globba ophioglossa Wight, *Icon. pl. Ind. orient.* t. 2002. 1853; Baker in Hook.f. *Fl. Brit. India* 6: 202. 1890; C. Fischer in Gamble, *Fl. Madras* 1480. 1928; Mohanan & Henry, *Fl. Thiruvananthapuram* 453. 1994.; Nayar & al., *Flg. Pl. Kerala-Handb.* 845. 2006.

Rhizomatous herbs. Leaves 18-26 x 2.5-6 cm, elliptic-lanceolate, acuminate at apex, rounded or subcordate at base, ligules short, rounded, densely hairy. Flowers orange-yellow in terminal panicles; bracts to 5x2 mm, oblong. Calyx 3-toothed, minutely ciliate or even glabrous. Corolla tube longer than calyx tube. Labellum narrow, 2-lobed at apex; lateral staminodes petaloid; filaments appendaged; anthers not winged. Capsule globose, smooth.

Valiya Kavu, Chittayikkode, SK49044. *Fl. & Fr.*: Jun.-Oct. *Dist.*: South West India.

Kaempferia L.,

Sp. Pl. 2. 1753.

- 1. Flowers borne terminal to leaves.....*K. galanga*
- 1. Flowers and leaves borne on separate branches
of rhizomes.....*K. rotunda*

Kaempferia rotunda L., Sp. Pl. 1: 3. 1753; Thw., Enum. Pl. Zeyl. 316. 1861; Baker in Hook.f., Fl. Brit. India 6: 222. 1890; C. Fischer in Gamble, Fl. Madras 1484. 1928.; Nayar & al., Flg. Pl. Kerala-Handb. 847. 2006. *Chengazhineer kizhangu*.

Rhizomatous herbs. Leaves 15-35 x 6-12 cm, oblong, acuminate at apex, mottled green above, purplish beneath. Flowers appearing before the leaves, sessile, 4-6 flowered. Bracts to 3.5 cm long, imbricating. Bracteoles bi-dentate, to 2.5 cm long. Calyx to 6 cm long. Corolla tube a little longer than the calyx; lobes white. Lateral staminodes white, to 5 cm long, oblong. Labellum lilac in colour. Anther crest longer than thecae.

Irinjayam Kavu, SK 49005. *Fl.*: Apr.–Jun. *Dist.*: India and Malay Islands. Widely cultivated in the tropics.

Note: Addition to the flora of Thiruvananthapuram.

Kaempferia galanga L., Sp. Pl. 2. 1753; Baker in Hook.f., Fl. Brit. India 6: 219. 1890; C. Fischer in Gamble, Fl. Madras 1484. 1928; Mohanan & Henry, Fl. Thiruvananthapuram 475. 1994.; Nayar & al., Flg. Pl. Kerala-Handb. 847. 2006. *Kacholam*.

Herbs. Leaves a few, 10-15 x 6-10 cm, broadly ovate or elliptic-oblong, acuminate at apex. Inflorescence sessile, terminal, enclosed by the imbricating leaf sheath. Bracts to 4 x 1 cm. Bracteoles to 3.5 cm long. Calyx 3 cm long. Corolla tube to 5 cm long; lobes white, to 2.5 cm. Lateral staminodes white, to 2 cm long, obovate. Labellum slightly broader than long, bi-lobed at apex; lobes white with violet band. Anthers sessile, crest bi-lobed, strongly reflexed.

Indalayappan Kavu, SK 49008. *Fl .& Fr* : Mar – Jun. *Dist*: India, Sri Lanka and Malay Islands.

Zingiber Boehm. in

Ludwig, *Def. Gen. Pl.* ed.3: 89. 1760, *nom. cons.*

Zingiber zerumbet (L.) Smith., *Exot. Bot.* 2:105. t. 112. 1806; Baker in Hook.f., *Fl. Brit. India* 6: 247. 1892; C. Fischer in Gamble, *Fl. Madras* 1490. 1928; Mohanan & Henry, *Fl. Thiruvananthapuram* 474. 1994.; Nayar & al., *Flg. Pl. Kerala-Handb.* 847. 2006. *Kattinchi*.

Rhizomatous herbs. Leaves sessile, 20-35 x 4-10 cm, lanceolate or oblong–lanceolate, narrowed at base, acuminate at apex; ligule to 3.5 cm long. Inflorescence borne separately from the leaves; peduncle to 60 cm long; sheath to 6 cm long, rounded at apex. Bracts to 3 cm long, ovate. Bracteoles to 1.5 cm long. Labellum coloured, to 2 cm long, sub orbicular, emarginate; staminodes 1.5 cm long, ovate. Anthers 1.5 cm long, crest somewhat shorter. Ovary 4 mm, glabrous.

Manthuruthu Kavu, SK 49006. *Fl* : Nov – Dec. *Dist*: India – Sri Lanka.

COSTACEAE (Meissn.) Nakai in

J. Jap. Bot. 17: 203. 1941.

Costus L.,

Sp. Pl. 1:2. 1753.

Costus speciosus (Koen.) Smith, *Trans. Linn. Soc. London* 1: 249. 1791; Baker in Hook.f., *Fl. Brit. India* 6: 249. 1892; C. Fischer in Gamble, *Fl. Madras* 1490. 1928; Mohanan & Henry, *Fl. Thiruvananthapuram* 475.

1994.; Nayar & al., Flg. Pl. Kerala-Handb. 842. 2006. *Bankesea speciosa* Koen. in Retz., Obs. 3:75. 1783. *Channakkoova*.

Herbs to 3 m tall; stem much branched. Leaves spirally arranged on the stem, 20-30 x 4-6 cm, oblong, narrowly rounded below, acuminate at apex, glabrous above, silky below. Flowers in terminal more or less condensed globose inflorescence. Bracts to 1.5 cm long, ovate – acute, green flushed red or bright red. Bracteoles 1 cm long. Calyx 2-3 cm long, tri-lobed. Corolla tube equal to or shorter than the calyx; lobes ovate – acuminate. Labellum 5-8 cm wide, suborbicular, white with a creamy yellow medium band. Stamens to 5 cm long, yellow at apex, hairy on the back.

Mechamkode Kavu, SK 49054; Sree Bhagavathi Kavu, Kariprathala, SK 49075. *Fl.* & *Fr.*: Aug.- Dec. *Dist.*: Indo – Malaysia to Australia.

MARANTACEAE Petersen in

Engler & Prantl, Nat. Pflanzenfam. 2(6): 33. 1888, *nom. cons.*

Stachyphrynium K. Schumm.,

Engl., Pflanzenr. 11: 45. 1902.*nom.cons.*

Stachyphrynium spicatum (Roxb.) K. Schumm. in Engl. Pflanzenr. 11: 46. 1902; Gamble, Fl. Madras 1494. 1928.; Nayar & al., Flg. Pl. Kerala-Handb. 721. 2006. *Phrynium spicatum* Roxb., Fl. Ind. 1: 5. 1820.

Stemless herbs; rootstock usually creeping. Leaves 10-25 x 4-8 cm, oblong, rounded at base, caudate-acuminate or cuspidate at apex, glabrous, coriaceous; petiole slender, much longer than the blade, callus

below the blade, pilose. Flowers white in subsessile spikes, 2.5-4 cm long; bracts ovate to 2 cm long. Sepals narrow, hyaline. Corolla tube longer than the sepals; lobes oblong. Staminal appendage large. Stamens petaloid. Ovary 3-celled, 1-ovule in each cell. Capsule 3-seeded. Seeds triquetrous.

Indalayappan Kavu, SK 40513. *Fl. & Fr.*: Jun.-Jul. *Dist.*: South West India, endemic.

Note: Addition to the flora of Thiruvananthapuram.

MUSACEAE Juss.,

Gen. Pl. 61. 1789, *nom. cons.*

Ensete Horan.,

Prodr. Monogr. Scitam. 8, 40. 1862.

Ensete superbum (Roxb.) Cheesm., Kew Bull. 3: 100. 1948; Roxb., Fl. Coromandel t. 223. 1811; Wight, Icon. pl. Ind. orient. t. 2017-2018. 1853; Hook.f., Fl. Brit. India 6: 261. 1892; C. Fischer in Gamble, Fl. Madras 1497. 1928.; Nayar & al., Flg. Pl. Kerala-Handb. 721. 2006. *Kalluvazha*.

Large perennial herbs; pseudobulbs swollen at base. Leaves 2-3 x 0.3-0.5 m, oblong, narrowed at sub cordate at base, acuminate at apex; petiole to 1 cm long, sheathing at base, grooved above. Spikes terminal, drooping; bracts large, deciduous, 12-20 x 8-15 cm, maroon. Flowers unisexual, clustered; lower female, upper male. Perianth lobes 6, in two rows; 5 of them united, inner one free, linear. Stamens 5. Berry trigonous. Seeds smooth, hard, trigonous, dark brown.

Planted in Thripporitta Kavu, SK 49029. *Fl* : Once in 4-6 years. *Dist*: South West India, endemic.

Note : Addition to the Flora of Thiruvananthapuram.

HYPOXIDACEAE R. Br. in

Flinders, *Voy. Terra Austr.* 2: 576, 1814, *nom. cons.*

1. Flowers axillary, solitary or in 1-3 flowered racemes.....*Curculigo*

1. Flowers in many flowered racemes.....*Molineria*

Curculigo Gaertn.,

Fruct. Sem. Pl. 1: 63. 1788.

Curculigo orchioides Gaertn., *Fruct.* 1: 63, t. 16. 1788; Hook.f., *Fl. Brit. India* 6: 279. 1892; C. Fischer in Gamble, *Fl. Madras* 1502. 1928; Mohanan & Henry, *Fl. Thiruvananthapuram* 476. 1994; Nayar & al., *Flg. Pl. Kerala-Handb.* 716. 2006. *C. malabarica* Wight, *Icon. pl. Ind. orient.* t. 2043. A. 1853. *Nilappana*.

Herbs with tuberous roots; rhizomes elongated. Leaves radical, sessile, 10-16 x 1-2 cm, lanceolate, narrowed at base, acute at apex; at base; bracts lanceolate. Flowers yellow, solitary or 1-3 axillary racemes. Perianth tube 3 cm long; lobes 6, to 7 mm long. Stamens 6; filaments erect; anthers basifixed. Ovary 3-celled; ovules many in each cell; style subulate; stigma capitate.

Thengazhiyathu Kavu, SK 40974. *Fl* . & *Fr* : May – Jul. *Dist*: India and Java.

Molineria Colla in

Mem. Reale Accad. Sci. Toriro 31: 331. 1826.

Molineria trichocarpa (Wight) Balakr., J. Bombay Nat. Hist. Soc. 53: 330. 1966; Mohanan & Henry, Fl. Thiruvananthapuram 476. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 718. 2006. *Hypoxis trichocarpa* Wight, Icon. pl. Ind. orient. t. 2045. 1853, p.p. *Molineria finlaysoniana* Wall. ex Baker, J. Linn. Soc. Bot. 17:121. 1878; C. Fischer in Gamble, Fl. Madras 1502. 1928. *Curculigo finlaysoniana* Wall. ex Hook.f., Fl. Brit. India 6: 279. 1892.

Rhizomatous perennial herbs; tubers elongate. Leaves 16-35 x 2-5 cm, elliptic-lanceolate, attenuate at base, plicate, acuminate at apex, glabrous, petiole to 30 cm long. Flowers polygamous, yellow in bracteate racemes, 4-5 mm long, oblong, obtuse at apex, pubescent. Stamens 6; filaments filiform; anthers deeply linear-hastate. Ovary pilose, 3-celled. Fruit oblong, terete.

Thaivilakom Sri Nagaraja Kavu, SK 49055. *Fl.* & *Fr* : Mar – Sept. *Dist*: Peninsular India and Sri Lanka.

AGAVACEAE Endl.

Ench. Bot. 105. 1841, *nom. cons.*

Dracaena Vandel ex. L.,

Syst. Nat. (ed. 12) 2: 229, 246 & Mant. Pl. 9, 63. 1767.

Dracaena terniflora Roxb., Fl. Ind. 2:159. 1824; Hook.f., Fl. Brit. India 6: 328 1892; C. Fischer in Gamble, Fl. Madras 1521. 1928; Mohanan &

Henry, Fl. Thiruvananthapuram 477. 1994.; Nayar & al., Flg. Pl. Kerala-Handb. 636. 2006.

Erect shrubs. Leaves 20-25 x 3.5-6 cm, elliptic-lanceolate or oblong-lanceolate, cuneate at base, acuminate at apex, coriaceous, glabrous. Flowers white or greenish-white in terminal racemes; bracts lanceolate or ovate-obtuse, concave; 3-4 mm long. Perianth tubular, to 4 mm long; lobes 5, linear-oblong, reflexed, to 8 mm long. Stamens 6; filaments filiform; anthers versatile. Ovary 3-celled. Berry 3-lobed, red. Seeds 5-7 mm across.

Indalayappan Kavu, SK 49038. *Fl. & Fr.*: Round the year. *Dist.*: India and South East Asia.

DIOSCOREACEAE R. Br.,

Prodr. 294. 1810, *nom. cons.*

Dioscorea L.,

Sp. Pl. 1032. 1753, *nom. cons.*

1. Leaves 3-5 foliolate.....*D. pentaphylla*
1. Leaves unifoliolate.....2
2. Leaves opposite.....*D. oppositifolia*
2. Leaves alternate.....*D. wallichii*

Dioscorea oppositifolia L., Sp. Pl. 1033. 1753; Wight, Icon. pl. Ind. orient.t. 813. 1844; Hook.f., Fl. Brit. India 6: 292. 1892; C. Fischer in Gamble, Fl. Madras 1512. 1928; Mohanan & Henry, Fl.

Thiruvananthapuram 479. 1994.; Nayar & al., Flg. Pl. Kerala-Handb. 701. 2006.

Climbing shrubs; branchlets terete, glabrous. Leaves opposite, 5-8 x 3-4.5 cm, oblong-obovate or elliptic-oblong, obtuse at base, acuminate at apex, 3-ribbed from base, glabrous, coriaceous. Flowers unisexual; male flowers in paniced spikes; female flowers solitary. Tepals 6, biseriate, glabrous, ovate, acute at apex, to 1.5 mm long. Stamens 6. Capsule obovoid, to 3 x 2.5 cm, stipitate, wings subequal.

Nanniyode Kavu, SK 49039. *Fl. & Fr.*: Oct.- Jan. *Dist.*: India, Burma, Sri Lanka, Thailand.

Dioscorea pentaphylla L., Sp. Pl. 1032. 1753; Wight, Icon. pl. Ind. orient. t. 814. 1844; Hook.f., Fl. Brit. India 6: 289. 1892; C. Fischer in Gamble, Fl. Madras 1511. 1928; Mohanan & Henry, Fl. Thiruvananthapuram 479. 1994.; Nayar & al., Flg. Pl. Kerala-Handb. 701. 2006. *D. jacquemontii* Hook.f., Fl. Brit. India 6: 290. 1892.

Twiners; stem terete, pubescent, prickly. Leaves 3-5 foliolate; leaflets 8-13 x 3.5-7 cm, ovate or elliptic, narrowed at base, acute to acuminate at apex. Flowers unisexual; male flowers in short axillary clustered racemes, to 2 cm long, grey-tomentose; female spikes solitary, to 25 cm long. Tepals 6; outer 3 tomentose; inner glabrous. Stamens 3, staminodes 3. Ovary oblong, 3-ribbed. Capsule oblong, 3-winged, glabrous.

Manthuruthu Kavu, SK 40549; Indalayappan Kavu, SK 49009; Kunnuvila Devi temple Kavu, SK 47840. *Fl. & Fr.*: Oct.- Jan. *Dist.*: India to Malaysia.

Dioscorea wallichii Hook.f., *Fl. Brit. India* 6: 295. 1892; C. Fischer in Gamble, *Fl. Madras* 1512. 1928; Mohanan & Henry, *Fl. Thiruvananthapuram* 479. 1994.; Nayar & al., *Flg. Pl. Kerala-Handb.* 702. 2006.

Twiners; stem terete, prickly at base. Leaves alternate, to 10 cm across, reniform or broadly ovate, cordate at base, abruptly acuminate at apex, 7-10 ribbed from base, coriaceous, glabrous. Flowers unisexual; male flowers in axillary, paniced spikes, to 4 cm long; bracteoles ovate, cuspidate, to 5 mm long. Tepals biseriate, ovate-obtuse, to 1.5 mm long. Stamens 6. Pistillode ovoid, acute.

Nakrakodu Kavu SK 47924; Mathanathu Kavu, SK 40599; Parottukonam Kavu, SK 42359. *Fl. & Fr.*: Oct.- Jan. *Dist.*: India, Burma and Thailand.

LILIACEAE Juss.,

Gen. Pl. 48. 1789, *nom. cons.*

1. Leaves reduced to needle like cladode.....*Asparagus*

1. Leaves well developed.....*Gloriosa*

Asparagus L.,

Sp. Pl. 313. 1753.

Asparagus racemosus Willd., *Sp. Pl.* 2: 152. 1799; Wight, *Icon. pl. Ind. orient.* t. 2056. 1853; C. Fischer in Gamble, *Fl. Madras* 1517. 1928;

Mohan & Henry, Fl. Thiruvananthapuram 481. 1994.; Nayar & al., Flg. Pl. Kerala-Handb. 714. 2006. *Sathavari*.

Perennial climbers. Leaves reduced to needle like cladode, green, 2-6 in whorls, to 10 mm long, linear, falcate. Flowers white in axillary or extraaxillary racemes; bracts minute; pedicels slender. Perianth petaloid, 6-partite. Stamens 6, arising from the base of the perianths. Ovary 3-celled. Berry globose, pulpy, red at maturity.

Indalayappan Kavu, SK 40570; Kamukarakonam Kavu, SK 40573. *Fl. & Fr.*: Aug.- Dec. *Dist.*: Paleotropics.

Gloriosa L.

Sp. Pl. 305. 1753.

Gloriosa superba L., Sp. Pl. 305. 1753; Wight, Icon. pl. Ind. orient. t. 2047. 1853; Hook.f., Fl. Brit. India 6: 358. 1892; C. Fischer in Gamble, Fl. Madras 1519. 1928; Mohan & Henry, Fl. Thiruvananthapuram 482. 1994.; Nayar & al., Flg. Pl. Kerala-Handb. 717. 2006. *Menthoni*.

Tuberous climbers. Leaves alternate, 10-15 x 2-4 cm, ovate-lanceolate, apex produced into a coiled tendril. Flowers crimson red with yellow stripes, in terminal racemes; pedicels long. Perianth petaloid, to 9 cm long, margins flexuous, reflexed. Stamens 6; filaments to 5 cm long, slender, glabrous. Ovary 3-celled; ovules many; style filiform. Capsule ellipsoid, 5-7 cm long. Seeds globose.

Nakrakodu Kavvu SK 47923; Pulickal Kavvu, SK 49016. *Fl. & Fr.*; Aug.-Sept. *Dist.*: Indo-Malaysia to Africa and Madagascar.

SMILACACEAE Vent.,

Tabl. Regne Veg. 2: 146. 1799, *nom. cons.*

Smilax L.,

Sp. Pl. 1028. 1753.

Smilax zeylanica L., Sp. Pl. 1029. 1753; Hook.f., Fl. Brit. India 6: 309. 1892; C. Fischer in Gamble, Fl. Madras 1518. 1928; Mohanan & Henry, Fl. Thiruvananthapuram 482. 1994.; Nayar & al., Flg. Pl. Kerala-Handb. 719. 2006. *S. macrophylla* Roxb., Fl. Ind. 3: 793. 1832; Hook.f., Fl. Brit. India 6: 310. 1892. *S. ovalifolia* Roxb., Fl. Ind. 3: 794. 1832; Wight, Icon. pl. Ind. orient. t. 809. 1844.

Prickly climbers with tendrils. Leaves alternate, 8-16 x 4-9 cm, ovate-orbicular or oblong, cordate or rounded at base, acuminate at apex, 3-5 ribbed from base, glabrous, coriaceous; petiole to 2.8 cm long. Flowers unisexual, greenish-white in pedunculate umbels; peduncle to 3 cm long. Perianth 6; outer 3 larger than inner 3, to 7 mm long. Stamens 6 in male flowers. Ovary 3-lobed; style 3-fid in female flowers. Berry globose, to 7 mm across.

Keezhetti Kavvu, SK 47946; Indalayappan Kavvu, SK 49065. *Fl. & Fr.*: Nov- Apr. *Dist.*: India, Burma, Indo-China and Malaysia.

PONTEDERIACEAE Kunth

in Humboldt et al., Nov. Gen. Sp. 1,(ed.4) 265, *nom. cons.*

Monochoria C. Presl.,

Reliq. Haenk. 1: 127. 1827.

Monochoria vaginalis (Burm.f.) C. Presl, Rel. Haenk. 1: 128. 1827 in obs.; Hook.f., Fl. Brit. India 6: 363. 1892; C. Fischer in Gamble, Fl. Madras 1529. 1928; Mohanan & Henry, Fl. Thiruvananthapuram 483. 1994.; Nayar & al., Flg. Pl. Kerala-Handb. 836. 2006. *Pontederia vaginalis* Burm.f., Fl. Ind. 80. 1768; Roxb., Pl. Coromandel t. 110. 1799.*Karimkoovalam*.

Aquatic herbs; stem short. Leaves radical, to 12 x 8cm, broadly ovate-lanceolate, cordate at base, acuminate at apex, entire at margins, glabrous; petiole to 20-35 cm long. Flowers blue in spicately racemes. Perianth 6, free, petaloid, oblong, acute at apex, to 8 mm long. Stamens 6, unequal, longer filaments appendaged. Ovary 3-celled; style 3-fid. Capsule oblong, to 8 mm long, ribbed. Seeds many.

Valiya Kavu, SK 49016. *Fl. & Fr:* July-Dec. *Dist:* Indo-Malaysia and Japan.

COMMELINACEAE R. Br.,

Prodr. 268. 1810, *nom. cons.*

- 1. Flowers enclosed in spathe.....*Commelina*
- 1. Flowers not enclosed in spathe.....2
- 2. Fertile stamens 6, flowers secund.....*Floscopa*
- 2. Fertile stamens 2-3.....*Murdannia*

Commelina L.,
Sp. Pl. 40. 1753.

Commelina paleata Hassk. in Miq. Pl. Jungh. 139. 1852; Hook.f., Fl. Brit. India 6: 372. 1892; C. Fischer in Gamble, Fl. Madras 1539. 1928; Mohanan & Henry, Fl. Thiruvananthapuram 486. 1994.; Nayar & al., Flg. Pl. Kerala-Handb. 660. 2006.

Diffuse herbs; rooting at lower nodes. leaves 5-14 x 0.7-1.5 cm, linear-lanceolate or elliptic-lanceolate, subcordate at base, acuminate at apex, glabrous. Flowers blue, spathe ovate-cordate. Sepals 3, subequal, to 3 mm long. Petals unequal, clawed, to 7 mm long. Stamens 3; staminodes 2. Capsule 3-valved. Seeds ellipsoid, dull black.

Nanniyode Kavu, SK 49010. *Fl. & Fr.*: Apr.- Oct. *Dist.*: South West India and Java.

Floscopa Lour.,
Fl. Cochinch. 189, 192. 1790.

Floscopa scandens Lour, Fl. Cochinch. 193. 1790; Hook.f., Fl. Brit. India 6: 390. 1892; C. Fischer in Gamble, Fl. Madras 1552. 1928; Mohanan & Henry, Fl. Thiruvananthapuram 487. 1994.; Nayar & al., Flg. Pl. Kerala-Handb. 663. 2006.

Decumbent or subscaudent herbs; rooting at lower nodes. Leaves 5-8 x 1.5-2.5 cm, elliptic-lanceolate, cuneate at base, acuminate at apex, sheath villous at mouth. Flowers pale pink in terminal secund racemose inflorescence. Sepals 3, viscid-pubescent, elliptic-acute, to 3 mm long.

Petals 3, unequal. Stamens 3; staminodes 3; filaments glabrous. Ovary stalked; style long, coiled. Capsule 2-valved, 2 seeded. Seeds hemispheric, pitted on one side; transversely striate.

Valiya Kavu, SK49095. *Fl. & Fr.*: Sept.- Feb. *Dist.*: India to Malaysia.

Murdannia Royle,

Ill. Bot. Himal. Mts. T. 95. 1839, *nom. cons.*

Murdannia pauciflora (Wight) Bruckn. in Engl. & Prantl, Pflanzenfam. ed. 2., 15a: 173. 1930; Mohanan & Henry, Fl. Thiruvananthapuram 488. 1994.; Nayar & al., Flg. Pl. Kerala-Handb. 665. 2006. *Aneilema pauciflorum* Wight, Icon. pl. Ind. orient. t. 2077. 1853; Hook.f., Fl. Brit. India 6: 378. 1892; C. Fischer in Gamble, Fl. Madras 1545. 1928. *Murdannia wightii* Rao & Kammathy, Notes Roy. Bot. Gard. Edinburgh 25(2): 184. 1964.

Diffuse herbs, rooting at lower nodes. Leaves sessile, 2-5 x 0.8-1.7 cm, ovate or elliptic, cordate at base, acute at apex, sheath ciliate on one side. Flowers solitary, axillary; pedicel to 8 mm long, deflexed. Sepals 3, oblong-acute, to 4 mm long. Petals 3, pale yellow, oblong-acute, glabrous. Stamens 3; staminodes 3; filaments glabrous, declinate. Capsule oblong, trigonous, glabrous. Seeds many.

Valiya Kavu, SK 49057. *Fl. & Fr.*: Sept.- Nov. *Dist.*: South India and Malaya.

ARECACEAE Schultz.

Sch., Nat. Syst. Pflanzenr. 317. 1832, *nom. cons.*

- 1. Climbing Shrubs.....*Calamus*
- 1. Erect trees2
- 2. Leaves simple.....*Borassus*
- 2. Leaves compound.....3
- 3. Leaves bipinnate.....*Caryota*
- 3. Leaves pinnate.....*Areca*

Areca L.,

Sp. Pl. 1189. 1753.

Areca catechu L., Sp. Pl. 1189. 1753; Hook.f., Fl. Brit. India 6: 405. 1892; C. Fischer in Gamble, Fl. Madras 1555. 1928; Mohanan & Henry, Fl. Thiruvananthapuram 490. 1994.; Nayar & al., Flg. Pl. Kerala-Handb. 655. 2006.

Graceful trees; stem annulate with raised rings. Leaves pinnate, 100-200 cm long; leaflets numerous, 30-65 cm long. Flowers numerous, enclosed by a yellowish spathe. Male flowers minute; female flowers much larger than male, at the base of spadix. Perianths accrescent, segments orbicular. Ovary 1-celled. Fruits 3-5 cm long, smooth.

KeezhettiKavu, SK 47815. *Fl. & Fr:* Round the year. *Dist:* Cultivated in many tropical countries for its fruits.

Borassus L.,
Sp. Pl. 1187. 1753.

Borassus flabellifer L., Sp. Pl. 1187. 1753; Hook.f., Fl. Brit. India 6: 482. 1892; C. Fischer in Gamble, Fl. Madras 1562. 1928; Mohanan & Henry, Fl. Thiruvananthapuram 491. 1994.; Nayar & al., Flg. Pl. Kerala-Handb. 650. 2006. *B. flabelliformis* Roxb., Pl. Coromandel. tt. 71 & 72. 1798.

Large trees. Leaves 60-170 cm diameter, palmately fan-shaped, margins split into 60-90 segments with acuminate apex and spinulate margins. Male spadices branched; female simple. Perianths 6, biseriate, obovate-spathulate. Stamens 6; anthers subsessile. Ovary subtrigonus, 3-4 celled; ovules basilar, erect. Fruit a large subglobose drupe; pericarp thinly fleshy.

Myvalli Ela Kavu, SK 47894. *Fl. & Fr.*: Round the year. *Dist.*: India, Burma, Sri Lanka, Malaya and Tropical Africa.

Calamus L.,
Sp. Pl. 325. 1753.

- 1. Stem to 0.8 cm thick; ochrea present....*C. thwaitesii* var. *canaranus*
- 1. Stem to 6 cm thick; ochrea absent.....*C. travancoricus*

Calamus thwaitesii Becc. ex Becc. & Hook.f., Fl. Brit. India 6: 441. 1893, var. **canaranus** Becc., Ann. Roy. Bot. Gard. (Calcutta) 11: 138. 1908; C. Fischer in Gamble, Fl. Madras 1567. 1931; Mohanan & Henry, Fl. Thiruvananthapuram 492. 1994.; Nayar & al., Flg. Pl. Kerala-Handb. 653. 2006.

Robust climbing canes; stem sheath armed with black spines, to 2 cm long. Leaves to 3 m long, rachis with spines; leaflets clustered, 30-55 x 1-3 cm, spinulose along the margins; flagellum to 9 m long. Flowers unisexual; male and female inflorescence is superficially similar. Fruits ovoid or obovoid, to 1.8 cm long, brownish, covered with grey –brown scales; scales grooved along the middle and dark brown near the margins.

Indalayappan Kavu, SK 40571; Sree Dharma Sastha Kavu, Thachottu, SK 40583. *Fl. & Fr.*: Mar.- Aug. *Dist.*: Western Ghats, endemic.

Calamus travancoricus Bedd., ex Becc. & Hook.f., Fl. Brit. India 6: 452. 1893; Becc., Rec. Bot. Surv. India 2: 207. 1903 & Ann. Roy. Bot. Gard. (Calcutta) 11: 95. 310. 1908; C. Fischer in Gamble, Fl. Madras 1567. 1931; Mohanan & Henry, Fl. Thiruvananthapuram 492. 1994.; Nayar & al., Flg. Pl. Kerala-Handb. 653. 2006. *Vallichooral*.

Slender climbing cane; stem sheath green, spiny; spines to 0.5 cm long; ochrea papery, to 1.5 cm long. Leaves 40-50 cm long; rachis armed with short spines; leaflets in groups of 3-4, distant, to 16 x 2.5 cm, lanceolate, acuminate at apex, 3-5 ribbed; ribs unarmed; flagellum to 1.5 cm long. Flowers unisexual in flagelliferous spadix; bracts to 1.5 cm long. Fruits ovoid, to 1 cm long, apiculate, scaly; scales yellow suffused with brown at the edges.

Nanniyode Kavu, SK 47970; Keezhetti Kavu, SK 47812. *Fl. & Fr.*: Oct.- May. *Dist.*: Peninsular India, endemic.

Caryota L.,

Sp. Pl. 1189. 1753.

Caryota urens L., Sp. Pl. 1189. 1753; Hook.f., Fl. Brit. India 6: 422. 1892; C. Fischer in Gamble, Fl. Madras 1560. 1931; Moore & Dransfield, Taxon 28: 70. 1979; Mohanan & Henry, Fl. Thiruvananthapuram 492. 1994.; Nayar & al., Flg. Pl. Kerala-Handb. 654. 2006. *Choondappana*.

Trees; trunk stout, annulate. Leaves bipinnate; pinnae 5-7 pairs; leaflets fan-shaped, irregularly serrate at apex. Inflorescence basipetal; spathe 3- 5; spadices short peduncled; branches pendulous. Flowers unisexual, in monoecious triads with female flower in the centre. Male flowers: Perianth 6, biseriate; outer orbicular ; inner linear-oblong. Stamens numerous. Female flowers: Perianth 6, biseriate, orbicular. Ovary trigonous; stigma sessile, 3-lobed. Fruits globose, purple.

Puthanvila Kavu SK 47914; Keezhetti Kavu, SK 47879; Parottukonam Kavu, SK 42371. *Fl. & Fr*: Round the year. *Dist*: India, Burma, Malaya and Sri Lanka.

PANDANACEAE R. Br.,

Prodr. 340. 1810, *nom. cons.*

Pandanus Parkinson,

J. Voy. South Seas. 46. 1773.

Pandanus fascicularis Lam., Encycl. 1: 372. 1783; Hook.f., Fl. Brit. India 6: 485. 1893; Mohanan & Henry, Fl. Thiruvananthapuram 494. 1994.; Nayar & al., Flg. Pl. Kerala-Handb. 766. 2006. *P. tectorius auct.*

non Soland. ex Parkins. 1773. *P. odoratissimum* L.f. Suppl. 424. 1781.
nom. illeg.; C. Fischer in Gamble, Fl. Madras 1570. 1931. *Thazha*.

Gregarious shrubs with stilt roots. Leaves 90-150 x 5-8 cm, narrowly linear- linear, caudate-acuminate at apex, midribs and margins spinulose. Flowers unisexual in dioecious spadices. Male spadices cylindrical, racemed. Female solitary. Perianth absent. Anthers 3-5 mm long. Fruits connate.

Manthuruthu Kavu, SK40571. *Fl. & Fr:* Mar.- Apr. *Dist:* Indo-Malaya , China to Polynesia.

ARACEAE Juss.,

Gen. Pl. 23. 1789, *nom. cons.*

- 1. Climbing shrubs.....*Pothos*
- 1. Erect herbs.....*Lagenandra*

Lagenandra Dalz. in

Hooker's J. Bot. Kew Gard. Misc. 4. 1852.

Lagenandra ovata (L.) Thw., Enum. Pl. Zey. 334. 1864; C. Fischer in Gamble, Fl. Madras 1576. 1931; Mohanan & Henry, Fl. Thiruvananthapuram 497. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 645. 2006. *Arum ovatum* L., Sp. Pl. 967. 1753.

Rhizomatous herbs. Leaves 12-38 x 5-13 cm, elliptic-oblong, obtuse at base, cordate at apex, undulate or entire at margins, dark green above pale beneath; petiole to 20 cm long. Spathe purple- dark purple, limb broad, caudate-acuminate, to 25 cm long. Male flowers are at the

apex of spadix. Stamens 1-2, sessile. Ovaries numerous, at the base of spadix; stigma subsessile; peltate. Berries black.

Padayarakam Kavu, SK 47954. *Fl. & Fr*: Oct.- Mar. *Dist*: India and Sri Lanka.

Pothos L.,

Sp. Pl. 968. 1753.

Pothos scandens L., Sp. Pl. 968. 1753; Wight, *Icon. pl. Ind. orient. t.* 776. 1844; Hook.f., *Fl. Brit. India* 6: 551. 1893; C. Fischer in Gamble, *Fl. Madras* 1592. 1931; Mohanan & Henry, *Fl. Thiruvananthapuram* 498. 1994; Nayar & al., *Flg. Pl. Kerala-Handb.* 646. 2006.

Root climbers. Leaves alternate, 5-8 x 1-2.5 cm, ovate-acuminate or ovate-lanceolate, acute at base, coriaceous, glabrous; petiole winged, to 4 cm long; retuse at apex. Flowers bisexual in axillary peduncled inflorescence, spathe small, persistent, deflexed; spadix globose, to 3 mm across. Perianth 6, oblong-obtuse. Stamens 6; anthers exerted. Ovary ovoid; stigma sessile. Berries ellipsoid, to 6 mm long, orange-red.

Kunnuvula Devi temple Kavu, SK 40574; Manthuruthu Kavu, SK 40575; Keezhetti Kavu, SK 49096. *Fl. & Fr*: Nov.- Jan. *Dist*: Indo-Malaysia to Madagascar.

ERIOCAULACEAE P. Beauv. ex Desv. in

Ann. Sci. Nat. (Paris) 13: 47. 1828, *nom. cons.*

Eriocaulon L.,

Sp. Pl. 87.. 1753.

Eriocaulon truncatum Buch.- Ham. ex Mart. in Wall. *Pl. Asiat. Rar.* 3: 29. 1831; Hook.f., *Fl. Brit. India* 6: 578. 1893; Fyson, *J. Indian Bot.* 2: 199. 1921; C. Fischer in Gamble, *Fl. Madras* 1619. 1931; Mohanan &

Henry, Fl. Thiruvananthapuram 501. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 708. 2006.

Herbs. Leaves radical, 3-5 x 0.2-0.4 cm, linear-lanceolate; sheath shorter than leaves. Heads subglobose, to 5 mm across. Involucral bracts hyaline, to 3 mm long, obovate, obtuse at apex. Floral bracts obovate, concave, to 2 mm long. Male flowers: Sepals 2, obovate, concave, connate at base. Petals 3, minute with black gland at apex. Stamens 6; anthers black. Female flowers: Sepals 2, black, to 1.5 mm long. Petals 3, to 1.5 mm, linear, white-ciliate, dark glands at apex. Ovary 3-lobed; style 3-fid.

Manthuruthu Kavu, SK 40583. *Fl. & Fr:* Jun.- Sept. *Dist:* India, China, Burma Sri Lanka, Malaya and Philippines.

CYPERACEAE Juss.,

Gen. Pl. 26. 1789, *nom. cons.*

- 1.Glumes all distichous.....2
- 1.Glumes spiral at least at apex.....3
- 2.Stigmas 3.....*Cyperus*
- 2.Stigmas 2.....*Kyllinga*
- 3.Hypogynous bristles present.....*Scleria*
- 3.Hypogynous bristles absent.....4
- 4.Style base persistent.....*Fimbristylis*
- 4.Style base deciduous.....*Bulbostylis*

Bulbostylis Kunth,

Enum. Pl. 2: 205. 1837, *nom.cons.*

Bulbostylis barbata (Rott.) Kunth ex C.B. Clarke in Hook.f., Fl. Brit. India 6:651. 1893; C. Fischer in Gamble, Fl. Madras 1662. 1931; Koyama in Dassan. & Fosb., Rev. Handb. Fl. Ceylon 5: 327. 1985; Mohanan & Henry, Fl. Thiruvananthapuram 503. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 667. 2006. *Scirpus barbatus* Rottb., Descr. Pl. Rar. Programm. 27. 1772 & Descr. Ic. Rar. Pl. 52. t. 17: f. 4. 1773.

Tufted annuals. Culms setaceous, glabrous, to 15 cm long. Leaves shorter than stem, capillary, glabrous. Involucral bracts 1-3, capillary, slightly longer than the heads. Spikelets 5-8, capitate, compressed, oblong. Glumes imbricate, ovate, to 2.2 mm long with decurved short awn, yellowish-green turns rusty-brown at age, keeled, ciliolate. Stamen 1, exserted. Style 3-fid. Achenes obovoid, trigonous, reticulate.

Thengazhiyathu Kavu, SK 49076. *Fl. & Fr.:* Aug.- Nov. *Dist.:* Old world tropics and Southern USA.

Note: Of the two subspecies recognized by Koyama (L.c.), our specimen represented by ssp. *barbata*.

Cyperus L.,

Sp. Pl. 44. 1753.

- 1. Leaves shorter than stem.....*C. haspan*
- 1. Leaves longer than or as long as the stem.....2
- 2. Spikelets terete, glumes distant.....*C. distans*
- 2. Spikelets compressed, glumes closely imbricate.....*C. compressus*

Cyperus distans L.f., Suppl. Pl. 103. 1781; C.B. Clarke in Hook.f., Fl. Brit. India 6: 607. 1893; C. Fischer in Gamble, Fl. Madras 1640. 1931; Koyama in Dassan. & Fosb., Rev. Handb. Fl. Ceylon 5: 189. 1985; Nayar & al., Flg. Pl. Kerala-Handb. 673. 2006.

Solitary or tufted perennials. Culms slender, to 60 cm long, triquetrous, thickened at base. Leaves shorter than or equalling the culms, to 8 mm wide. Involucral bracts leafy, longer than inflorescence. Inflorescence spreading, compound. Spikes lax, to 20 flowered. Glumes broadly oblong, or ovate-oblong, to 2 mm long, obtuse, keeled, 5-nerved, margins hyaline winged. Stamens 3, connective slightly produced. Style 3-fid. Achene oblong, trigonous, to 1.7 mm long, dark brown at maturity.

Thiruchittor Kavu, SK 49093. *Fl. & Fr.*: Sept.- Jan. *Dist.*: Throughout the tropics.

Note: Addition to the Flora of Thiruvananthapuram.

Cyperus compressus L., Sp. Pl. 46. 1753; C.B. Clarke in Hook.f., Fl. Brit. India 6: 605. 1893; C. Fischer in Gamble, Fl. Madras 1640. 1931; Koyama in Dassan. & Fosb., Rev. Handb. Fl. Ceylon 5: 194. 1985; Mohanan & Henry, Fl. Thiruvananthapuram 506. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 671. 2006.

Tufted annuals. Culms to 40 cm long. Leaves with purple streaks, tufted towards the base of the stem, linear, as long as or shorter than the culms. Inflorescence compound; involucral bracts 2-5, foliaceous. Spikelets compressed, oblong, to 3 mm long. Glumes ovate, to 4 mm long, herbaceous or chartaceous, keeled, 3-nerved on both sides. Stamens 3.

Style longer than ovary. Achenes obovoid, triquetrous, shortly beaked, to 1.5 mm long.

Venmaranelloor Kavu, SK 40600. *Fl. & Fr.*: Jul.- Dec. *Dist.*: Pantropical

Note: Koyama (l.c.) recognized two subspecies for this species and according to him our specimen represented by ssp. *compressus*.

Cyperus haspan L., Sp. Pl. 45. 1753; C.B. Clarke in Hook.f., Fl. Brit. India 6: 600. 1893; C. Fischer in Gamble, Fl. Madras 1640. 1931; Koyama in Dassan. & Fosb., Rev. Handb. Fl. Ceylon 5: 203. 1985; Mohanan & Henry, Fl. Thiruvananthapuram 508. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 673. 2006.

Tufted perennials. Culms to 50 cm long, trigonous. Leaves few, flat, linear-lanceolate, shorter than the culms. Involucral bracts 2-3, leafy, spreading, unequal. Inflorescence compound, digitately arranged. Spikelets linear-lanceolate, to 8 mm long, digitate, 10-50 flowered. Glumes ovate-oblong, keeled, mucronate at apex. Stamens 3. Style as long as the nut. Achenes trigonous, to 0.5 mm long, obovoid, creamy-yellow.

Chavaru Kavu, SK 49077. *Fl. & Fr.*: Oct.- Jan. *Dist.*: Tropics and subtropics of the world.

Fimbristylis Vahl,

Enum. Pl. 2: 285. 1805, *nom. cons.*

- 1. Stigma 2; achenes biconvex.....*F. dichotoma*
- 1. Stigma 3; achenes trigonous.....*F. tenera*

Fimbristylis dichotoma (L.) Vahl, Enum. Pl. 2: 287. 1805; C.B. Clarke in Hook.f., Fl. Brit. India 6: 635. 1893; Rao, Fl. Pl. Travancore 432. 1914; C. Fischer in Gamble, Fl. Madras 1658. 1931; Mohanan & Henry, Fl. Thiruvananthapuram 515. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 681. 2006. *Scirpus dichotomous* L., Sp. Pl. 50. 1753. *S. diphyllus* Retz., Obs. Bot. 5: 15. 1788. *Fimbristylis diphylla* (Retz.) Vahl, Enum. Pl. 2: 289. 1805; C.B. Clarke in Hook.f., Fl. Brit. Ind. 6: 636. 1893; Rao, Fl. Pl. Travancore 432. 1914.

Tufted perennials. Culms erect to 50 cm long. Leaves 8-45 x 0.2-0.3 cm, linear, flat. Spikelets solitary, 3-9 mm, ovate. Involucral bracts 2-7, basal 1 or 2 leaf like. Glumes suberect, broadly ovate, boat shaped, to 2.5 mm long, mucronate at apex. Stamens 2. Achenes obovate to broadly obovate, to 1.2 mm long, rounded or truncate at apex.

Thiruchittor Kavu, SK 40585. *Fl. & Fr.*: Jun.-Nov. *Dist.*:Cosmopolitan.

Note: Koyama (l.c.) recognized three subspecies and two forma in ssp. *dichotoma*. Our specimen belong to the typical one.

Fimbristylis tenera Schult., Mant. 2: 57. 1824; C.B. Clarke in Hook.f., Fl. Brit. India 6: 642. 1893; C. Fischer in Gamble, Fl. Madras 1660. 1931; Koyama in Dassan. & Fosb. Rev. Handb. Fl. Ceylon 5: 293. 1985; Nayar & al., Flg. Pl. Kerala-Handb. 686. 2006.

Tufted slender annuals. Culms erect to 30 cm long, trigonous, glabrous. Leaf blades half as long as the culms. Spikelets 2-6 mm long, linear, terete, pale brown. Glumes spirally disposed, suberect, broadly deltoid –ovate, to 2 mm long, deeply boat shaped, keeled, acuminate at apex. Stamens 1or 2. Achenes globular-obovoid, to 0.8 mm long, trigonous with highly convexed sides, creamy-white to greyish.

Nanniyode Kavu, SK 40578. *Fl. & Fr.*: Oct.- Dec. *Dist.*: India, Sri Lanka, Tropical Africa and Pakistan.

Note: Addition to the Flora of Thiruvananthapuram.

Kyllinga Rottb.

Desr. Icon. Rar. Nov. Pl. 12. 1773, *nom. cons.*

Kyllinga nemoralis (J. & G. Forst.) Dandy ex Hutchinson & Dalziel, Fl. W. Trop. Afr. 2: 487. 1936; Koyama in Dassan. & Fosb. Rev. Handb. Fl. Ceylon 5: 249. 1985; Nayar & al., Flg. Pl. Kerala-Handb. 689. 2006. *Thryocephalon nemoralis* J. & G. Forst., Char. Gen. Pl. 130. 1776. *Kyllinga monocephala* Rottb., Descr. Rar. Ic. Pl. 13.t. 4. F.4. 1773; C.B. Clarke in Hook.f., Fl. Brit. India 6: 588. 1893; C. Fischer in Gamble, Fl. Madras 1624. 1931.

Stoloniferous herbs; stolons with tubers at intervals. Leaves linear-lanceolate, to 28 cm long. Involucral bracts 4, unequal, deflexed or spreading, to 13 cm long. Heads globose, central one larger with 2-3 smaller lateral heads. Spikelets compressed. Glumes 4, lower two narrow, keeled, upper two boat shaped, keeled, winged on the upper half, wing ciliate. Achenes oblong-obovate or suborbicular, biconvex, to 1.5 mm long, brown at maturity.

Thachoor Kavu, SK 49091. *Fl. & Fr.*: Jun.- Mar. *Dist.*: Pantropical.

Note: Addition to Flora of Thiruvananthapuram.

Scleria P.J. Bergius in

Kongl. Vetensk. Acad. Handl. 26: 142, 1765.

1a. Disc present below the ovary.....*S. laevis*

1b. Disc absent.....*S. corymbosa*

Scleria corymbosa Roxb., Fl. Ind. 3: 574. 1832; C.B. Clarke in Hook.f., Fl. Brit. India 6: 686. 1894; C. Fischer in Gamble, Fl. Madras 1677. 1931; Koyama in Dassan. & Fosb. Rev. Handb. Fl. Ceylon 5: 351. 1985; Mohanan & Henry, Fl. Thiruvananthapuram 519. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 698. 2006.

Tall stout perennials; rhizomes creeping. Culms robust, trigonous, to 2.5 m tall. Leaves all along the stems, sheath glabrous; ligule triangular, glabrous, to 70x2.2 cm . Involucral bracts foliate, oblong-lanceolate, shorter than panicles. Spikelets bisexuals and male only. Male spikelets lanceolate. Stamens 3. Bisexual spikelets ovoid. Achenes ovoid, shining white. Disc entire.

Nanniyode Kavu, SK 49028. *Fl. & Fr.*: Oct.- Nov. *Dist.*: South East Asia and China.

Scleria laevis Retz., Obs. 4: 13. 1786; Koyama in Dassan. & Fosb. Rev. Handb. Fl. Ceylon 5: 345. 1985; Mohanan & Henry, Fl. Thiruvananthapuram 519. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 698. 2006. *S. herbecarpa* Nees in Wight, Contrib. Bot. 117. 1834; C.B. Clarke in Hook.f., Fl. Brit. India 6: 685. 1894; C. Fischer in Gamble, Fl. Madras 1677. 1931.

Perennial herbs, woody, rhizomes horizontal. Culms winged, to 75 cm long; sheath winged. Leaves to 35 cm long, linear-lanceolate. Male spikelets lanceolate, peduncled, to 4 mm long. Stamens 3. Female spikelets sessile, born towards the base of branchlets, obovoid, to 6 mm long. Achenes globose, terete, to 2.5 mm long, rounded or apiculate at apex.

Valiya kau, SK 49029. *Fl. & Fr.*: Dec.- Mar. *Dist.*: South East Asia and China.

POACEAE (R.Br.) Barnhart in

Bull. Torrey Bot. Club 22: 7. 1895, *nom. cons.*

1.Spikelets breaking up at maturity.....	2
1.Spikelets falling entire at maturity.....	9
2. Spikelets with 2 more fertile florets.....	3
2. Spikelets with 1 fertile floret.....	7
3.Lemmas 5-nerved.....	<i>Lophatherum</i>
3.Lemmas 1-3 nerved.....	4
4.Inflorescence racemose.....	<i>Cynodon</i>
4.Inflorescence paniculate.....	5
5. Spikelets in panicles.....	<i>Eragrostis</i>
5. Spikelets not in panicles.....	6
6. Spikelets awned.....	<i>Dactyloctenium</i>
6. Spikelets not awned.....	<i>Eleusine</i>
7.Stamens 6 or more.....	<i>Oryza</i>
7.Stamens 2 or 3.....	8
8.Lemmas 3-5nerved.....	<i>Aristida</i>
8.Lemmas 2-nerved.....	<i>Perotis</i>

9. Spikelets unisexual; florets in bead like bracts.....	<i>Coix</i>
9. Spikelets bisexual; florets not in bead like bracts.....	10
10. Spikelets longer than the lower glumes.....	11
10. Spikelets as long as both the glumes.....	21
11. Spikelets falling off with bristles.....	<i>Pennisetum</i>
11. Spikelets falling off without bristles.....	12
12. Spikelets in secund spike like racemes.....	13
12. Spikelets not in secund spike racemes.....	19
13. Lemmas of upper florets with hyaline margins.....	14
13. Lemmas of upper florets without hyaline margins.....	15
14. Spikelets awned.....	<i>Alloperopsis</i>
14. Spikelets not awned.....	<i>Digitaria</i>
15. Lower glumes absent.....	16
15. Lower glumes present.....	17
16. Spikelets adaxial.....	<i>Axonopus</i>
16. Spikelets abaxial.....	<i>Paspalum</i>
17. Spikelets adaxial.....	<i>Brachiaria</i>
17. Spikelets abaxial.....	<i>Oplismenus</i>
18. Spikelets in spicate panicles.....	<i>Sacciolepis</i>
18. Spikelets in open panicles.....	19
19. Spikelets gibbous.....	<i>Cyrtococcum</i>
19. Spikelets not gibbous.....	<i>Panicum</i>
20. Spikelets of similar pairs.....	<i>Impereta</i>
20. Spikelets in each pair dissimilar.....	21
21. Joints of rachis not swollen.....	<i>Chrysopogon</i>
21. Joints of rachis swollen.....	22
22. Upper lemma awned.....	<i>Ischaemum</i>
22. Upper lemma unawned.....	23
23. Sessile spikelets globose.....	<i>Heckelochloa</i>

23.Sessile spikelets not globose.....*Rottboellia*

Allopteroopsis J.S. Presl. ex C.B. Presl.,

Rel. Haenk. 343. t. 47. 1830.

Allopteroopsis cimicina (L.) Stapf in Prain, Fl. Trop. Afr. 9: 487. 1919; Hook.f., Fl. Brit. India 7: 64. 1896; C. Fischer in Gamble, Fl. Madras 1766. 1934; Bor, Grass. Burm. Cey. Ind. Pak. 276. 1960; Sreekumar & Nair, Fl. Kerala Grasses 214. 1991; Mohanan & Henry, Fl. Thiruvananthapuram 524. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 768. 2006.

Annuals. Culms erect or decumbent; nodes glabrous or tubercled hairy. Leaves 4-7 cm long, ovate-lanceolate, oblong, oblong-lanceolate, rounded or cordate at base, midrib hairy; ligules truncate, fimbriate. Racemes 3-12 cm, digitate; rachis angular, scabrid. Spikelets broadly elliptic, 2-4 mm long, pedicelled; lower glumes ovate-lanceolate, 1.5-2 mm, shortly acuminate, 2-keeled. Lower florets male; upper bisexual. First lemma ovate, 2-3 mm, 5-nerved; palea narrowly elliptic, 1-1.5 mm, 2-lobed at apex. Stamens 3. Second lemma elliptic, 2-3 mm, aristate, subcoriaceous-chartaceous, margins ciliate; palea ovate, 2-3 mm long, 2-keeled. Ovary oblong. Grains ovate, 1-1.5 mm, laterally compressed.

Naduvathan Kavu, SK 49035. *Fl. & Fr.*:: Round the year. *Dist.*:: Indo-Malaysia to Australia to Tropical Africa

Aristida L.,

Sp. Pl. 82. 1753 .

Aristida setacea Retz, Obs. Bot. 4: 22. 1786; Hook.f., Fl. Brit. India 7: 22. 1896; Rang. & Tad. Handb. S. Ind. Grass. 225. t. 173. 1921; C.

Fischer in Gamble, Fl. Madras 1809. 1934; Bor, Grass. Burm. Cey. Ind. Pak. 412. 1960; Sreekumar & Nair, Fl. Kerala Grasses 328. 1991; Mohanan & Henry, Fl. Thiruvananthapuram 525. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 770. 2006.

Perennial. Culms 30-150 cm long. Leaves 20-50 cm long, linear-lanceolate, rounded or shallowly cordate at base, acuminate at apex, convolute. Panicles flabelliform, contracted. Spikelets linear-lanceolate or lanceolate, 8-20 mm long. Lower glumes lanceolate or oblong-lanceolate, 6-12 mm, aristate. Upper glumes lanceolate or oblong-lanceolate, 6-12 mm long, aristate. Lemma linear-lanceolate, 8-12 mm, 3 awned. Palea small, oblong, hyaline. Stamens 3; anthers bright yellow. Ovary oblong or linear. Grains cylindrical, black.

Nanniyode Kavu, SK 49034. *Fl. & Fr.*: Round the year. *Dist.*: India, Burma, Sri Lanka to Mascarene Islands.

Axonopus P. Beauv.,

Ess. Agrostogr. 12, 154. 1812.

Axonopus compressus (Sw.) P. Beauv. Ess. Agrost. 12: 154. 1812; Bor, Grass. Burm. Cey. Ind. Pak. 278. 1960; Sreekumar & Nair, Fl. Kerala Grasses 216. 1991; Mohanan & Henry, Fl. Thiruvananthapuram 527. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 774. 2006. *Milium compressum* Sw. Prodr. Veg. Ind. Occ. 24. 788.

Perennial. Culms 10-50 cm long, creeping and stoloniferous. Leaves 2-25 cm long, oblong-linear-lanceolate, rounded or shallowly cordate at base, acute or slightly rounded at apex, ciliate at margins.

Racemes 2-6, binate; rachis trigonous. Spikelets oblong, elliptic or elliptic-lanceolate, 2-2.5 mm long, sessile or shortly pedicelled. Lower glumes absent or rudimentary. Upper glumes ovate, elliptic or elliptic – lanceolate, 2-2.5 mm long. First lemma ovate-acute, 2-2.5 mm long, faintly 5-nerved, softly villous on the dorsal sides. Second lemma ovate-oblong, 1.5-2 mm long. Palea oblong, 1.5-2 mm long. Florets bisexual. Stamens 3; anthers white with violet margins. Grains oblong.

Common. Thiruchittor Kavu, SK 49061. *Fl. & Fr.*: Round the year. *Dist.*: Native of S. United States, introduced into many tropical countries.

Brachiaria (Trin.) Griseb.,
Ledebour. Fl. Ross. 4: 469. 1853.

Brachiaria distachya (L.) Stapf. in Prain, Fl. Trop. Afr. 9:565. 1919; C. Fischer in Gamble, Fl. Madras 1769. 1934; Bor, Grass. Burm. Cey. Ind. Pak. 281. 1960; Sreekumar & Nair, Fl. Kerala Grasses 219. 1991; Mohanan & Henry, Fl. Thiruvananthapuram 528. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 776. 2006.

Annuals or perennials. Culms to 50 cm long, creeping or decumbent, rooting at lower nodes; nodes glabrous or sparsely bearded. Leaves 5-20 cm long, linear-lanceolate, rounded or shallowly cordate at base; ligules fimbriate. Racemes 2 or 3; rachis flat. Spikelets elliptic, 2-3 mm long, solitary. Lower glumes obovate or broadly ovate, 1-1.5 mm, acute at apex. Upper glumes broadly ovate, 2-3 mm long. First lemma more akin to upper glumes. Palea oblong, to 2 mm long, hyaline, 2-nerved. Second lemma ovate, 2-2.5 mm long, rugulose. Palea ovate-

oblong or elliptic, 2-2.5 mm, rugulose. Lodicules obovate, 2-nerved at apex. Stamens 3; anthers 1 mm long. Ovary elliptic. Grains elliptic.

Sree Indalayappan Kavu, SK 49006. *Fl. & Fr.*: Round the year. *Dist.*: India, Pakistan, Sri Lanka, Burma and Thailand.

Chrysopogon Trin.,

Fund. Agrost. 187. 1820, *nom. cons.*

Chrysopogon aciculatus (Retz.) Trin. Fund. Agrost. 181. 1820; C. Fischer in Gamble, Fl. Madras 1738. 1934; Bor, Grass. Burm. Cey. Ind. Pak. 115. 1960; Sreekumar & Nair, Fl. Kerala Grasses 59. 1991; Mohanan & Henry, Fl. Thiruvananthapuram 531. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 780. 2006.

Perennials; culms to 80 cm long, creeping and decumbent. Leaves 2-13 cm long, linear-lanceolate, cordate at base, acute or blunt at apex, serrulate at margins. Panicle pyramidal. Sessile spikelets lanceolate, 3-4 mm long; lower glumes lanceolate, 3-4 mm long; upper glumes boat shaped, keeled, ciliate; first lemma obovate, 2.5-3 mm, acute; second lemma ovate-lanceolate, 2.5-3 mm long, aristate; palea oblong, 1.5-2 mm long; lodicules obovate, wavy at apex; stamens 3; ovary oblong. Pedicelled spikelets lanceolate or linear-lanceolate, 4-5 mm long, unawned; lower glumes lanceolate, 4-5 mm long, margins ciliate; upper glumes lanceolate, 4-5 mm long, margin ciliate; first lemma lanceolate, 3-4 mm; second lemma ovate-lanceolate, 2.5-3 mm; stamens 3.

Thachoor Kavu, SK 49007. *Fl. & Fr.*: Jul.- Dec. *Dist.*: Paleotropics.

Coix L.,

Sp. Pl. 972. 1753.

Coix lacryma-jobi L., Sp. Pl. 972. 1753; Hook.f., Fl. Brit. India 7:100. 1896; Rang. & Tad. Handb. S. Ind. Grass. 141. t. 126. 1921; C. Fischer in Gamble, Fl. Madras 1705. 1934; Bor, Grass. Burm. Cey. Ind. Pak. 264. 1960; Sreekumar & Nair, Fl. Kerala Grasses 207. 1991; Mohanan & Henry, Fl. Thiruvananthapuram 532. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 783. 2006.*Poochakuttikai*.

Annuals. Culms to 100 cm long, densely tufted. Leaves 10-45 cm long, lanceolate or linear-lanceolate, cordate at base, acuminate at apex, glabrous or bulbous based hairy. Inflorescence of peduncled, false spikes. Male spikelets 2-3, elliptic or elliptic-lanceolate, 5-15 mm. Lower glumes ovate-elliptic, 5-15 mm. Upper glumes elliptic-lanceolate or oblong-lanceolate, 5-12 mm, acuminate. First lemma elliptic-lanceolate, acuminate, 5-10 mm. Palea elliptic-lanceolate or oblong-lanceolate, 5-10 mm. Stamens 3. Second lemma elliptic or elliptic-lanceolate, 5-8 mm long. Palea elliptic-lanceolate or oblong-lanceolate, 4-8 mm long. Stamens 3. Female spikelets globose or ovoid, 5-15 mm long. Lower glume ovate-oblong, acute. Upper glume ovate. Lower floret female or barren. Upper floret female. Second lemma ovate-oblong, 6-15 mm. Palea ovate-oblong, 5-12 mm.

Bhadrakali temple Kavu, Azhakikonam, SK 49060. *Fl. & Fr.*: July-Mar. *Dist.*: Tropical Asia.

Cynodon Rich. in

Persoon. Syn. Pl. 1: 85. 1805, *nom. cons.*

Cynodon dactylon (L.) Pers. Syn. Pl. 1: 85. 1805; Hook.f., Fl. Brit. India 7: 288. 1896; Rang. & Tad., Handb. S. Ind. Grass. 250. t. 190-191. 1921;

C. Fischer in Gamble, Fl. Madras 1835. 1934, excl. var. *intermedius*; Bor, Grass. Burm. Cey. Ind. Pak. 469. t. 52. 1960; Sreekumar & Nair, Fl. Kerala Grasses 360. 1991; Mohanan & Henry, Fl. Thiruvananthapuram 533. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 784. 2006.

Perennials. Culms slender with slender rhizomes; nodes glabrous. Leaves 0.5-8 cm long, lanceolate or linear-lanceolate, rounded or slightly cordate at base, acuminate at apex; ligules fimbriate; rachis flat. Spikelets oblong-lanceolate or elliptic-lanceolate, 2-3 mm long. Lower glumes lanceolate, 0.5-2 mm long. Upper glumes lanceolate, 1.5-2 mm long. Lemma ovate-oblong, 2-3 mm long, keeled. Palea boat shaped. Stamens 3; anthers 1-1.5 mm long. Ovary oblong. Grains 1-1.5 mm long.

Nanniyode Kavu, SK 49079. *Fl. & Fr.*: Apr.- Nov. *Dist.*: Cosmopolitan.

Cyrtococcum Stapf.

in Prain, Fl. Trop.Afr. 9: 15. 1917.

Cyrtococcum trigonum (Retz.) A. Camus in Bull. Mus. Hist. Nat. Paris 27: 118. 1921; C. Fischer in Gamble, Fl. Madras 1785. 1934; Bor, Grass. Burm. Cey. Ind. Pak. 292. 1960; Sreekumar & Nair, Fl. Kerala Grasses 232 . 1991; Mohanan & Henry, Fl. Thiruvananthapuram 535. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 785. 2006. *Panicum trigonum* Retz. Obs. Bot. 3: 9. 1783; Hook.f., Fl. Brit. India 7: 56. 1896.

Annuals. Culms to 50 cm long, creeping or trailing. Leaves 1-5 cm long, lanceolate or elliptic-lanceolate, cuneate or narrowed at base, acute or acuminate at apex, ligules ovate. Panicles contracted. Spikelets obovate or oblong, 1-2 mm long. Upper glumes ovate or ovate-oblong, 1.5-2 mm. Lower floret empty. Upper floret bisexual. First lemma ovate

or ovate-oblong, 1.5-2 mm. Second lemma deltoid, 1-1.5 mm. Palea oblong, to 1 mm long. Stamens 3; anthers to 1 mm long.

Chittalloor Devi temple Kavu, SK 49045. *Fl. & Fr.*: Aug.-Dec. *Dist.*: India, Burma and Sri Lanka.

Dactyloctenium Willd.

Enum. Pl. 1029. 1809.

Dactyloctenium aegyptinum (L.) P. Beauv. Ess. Agrost. Expl. Pl. 15. 1812; C. Fischer in Gamble, Fl. Madras 1840. 1934; Bor, Grass. Burm. Cey. Ind. Pak. 489. 1960 ; Mohanan & Henry, Fl. Thiruvananthapuram 535. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 786. 2006. *Cynosurus aegyptius* L., Sp. Pl. 72. 1753. *Eleusine aegyptia* (L.) Desf. Fl. Atlant. 1: 85. 1798; Hook.f., Fl. Brit. India 7: 295. 1896; Rang. & Tad. Handb. S. Ind. Grass. 276. t. 208-209. 1921.

Annuals. Culms to 60 cm long, rooting at lower nodes; nodes glabrous. Leaves 2-25 cm long, linear-lanceolate or oblong-lanceolate, rounded or shallowly cordate at base, acuminate at apex, glabrous or hispid. Spikelets ovate or oblong, 2-4 mm long. Lower glumes boat shaped, 1.5 m long, keeled. Upper glumes ovate-elliptic, 1.5-2 mm long, aristate, arista geniculate, 1.5-2 mm long. Palea ovate-lanceolate, 1-1.5 mm, acuminate. Stamens 3. Grains obovate to triangular, 1 mm long, transversely rugose.

Kannankottu Kavu, SK 49036. *Fl. & Fr.*: Round the year. *Dist.*: Paleotropics.

Digitaria Haller,

Hist.Stirp. Helv. 2: 244, 1768, *nom. cons.*

1. Spikelets 1-2mm long; lower glumes absent.....*D. longiflora*

1. Spikelets 2-4 mm long; lower glumes present.....*D. ciliaris*

Digitaria ciliaris (Retz.) Koel. Descr. Gram. 27. 1802; Veldkamp, Blumea 21: 32. 1973; Sreekumar & Nair, Fl. Kerala Grasses 237 . 1991; Mohanan & Henry, Fl. Thiruvananthapuram 536. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 787. 2006. *Panicum ciliare* Retz. Obs. Bot. 4: 16. 1786. *Digitaria adscendens* (H.B.K.) Henr. in Blumea 1: 92. 1934; Bor, Grass. Burm. Cey. Ind. Pak. 298. 1960. *Panicum adscendens* H.B.K. Nov. Gen. et Sp. 1: 97. 1816. *Digitaria marginate* Link, Enum. Hort. Berol. 1: 102. 1821; C. Fischer in Gamble, Fl. Madras 1764. 1934 p.p.; *Paspalum sanguinale* (L.) Lam. var. *rotteri* Hook.f., Fl. Brit. India 7: 15. 1896,p.p. *Digitaria sanguinalis* (L.) Scop. var. *ciliaris* Rang. & Tad. Handb. S. Ind. Grass. 53. t. 71-72. 1921.

Annuals. Culms 20-120 cm long, tufted, erect or decumbent. Leaves 2-25 cm long, linear or linear-lanceolate, rounded or shallowly cordate at base, acuminate at apex, villous or glabrous. Racemes 2-12. Rachis winged, serrate. Spikelets binate, one sessile and other pedicelled, elliptic or elliptic-lanceolate, 2.5-3.5 mm long. Lower glumes triangular. Upper glumes lanceolate, 2-2.5 mm. Lower floret empty. Upper bisexual. First lemma elliptic or elliptic-lanceolate, 2.5-3.5 mm long. Second lemma elliptic or elliptic-lanceolate, to 3 mm long. Palea elliptic-lanceolate, acuminate, 2.5-3 mm long. Stamens 3. Ovary to 1.5 mm long.

Karichayil Kavu, SK 49080. *Fl. & Fr.*: Round the year. *Dist.*: Paleotropics.

Digitaria longiflora (Retz.) Pers. *Syn. Pl.* 1: 85. 1805; Rang. & Tad. *Handb. S. Ind. Grass.* 59. t. 76-77. 1921; C. Fischer in Gamble, *Fl. Madras* 1765. 1934; Bor, *Grass. Burm. Cey. Ind. Pak.* 302. 1960; Veldkamp, *Blumea* 21: 66. 1973; Sreekumar & Nair, *Fl. Kerala Grasses* 239. 1991 ; Mohanan & Henry, *Fl. Thiruvananthapuram* 536. 1994; Nayar & al., *Flg. Pl. Kerala-Handb.* 788. 2006. *Paspalum longiflorum* Retz. *Obs. Bot.* 4: 15. 1786; Hook.f., *Fl. Brit. India* 7: 17. 1896.p.p.

Annuals. Culms to 50 cm long, creeping or geniculate. Leaves to 12 cm long, oblong-lanceolate or elliptic lanceolate, rounded or shallowly cordate at base, acute at apex. Racemes 2-3 rarely 4, digitate. Spikelets ovate-elliptic or broadly elliptic, 1-2 mm long, greenish-yellow. Lower glume absent. Upper glume ovate- elliptic or broadly elliptic, 1-2mm long. Lower florets empty. Upper bisexual. First lemma similar to the upper glume. Second lemma ovate-elliptic, to 1.5 mm long. Palea broadly elliptic, to 1.5 mm long. Stamens 3.

Karimkada Kavu, SK 49097. *Fl. & Fr.*: Round the year. *Dist.*: Paleotropics.

Eragrostiella Bor in

Indian Forester 6: 269. 1940.

Eragrostiella bifaria (Vahl) Bor in *Ind. Forester* 66: 270. 1940; Bor, *Grass. Burm. Cey. Ind. Pak.* 494. 1960; Sreekumar & Nair, *Fl. Kerala Grasses* 374. 1991; Nayar & al., *Flg. Pl. Kerala-Handb.* 795. 2006.

Eragrostis coromandeliana (Koen. ex Rottl.) Trin. in Mem. Acad. Sci. Petersb. Ser. 6, 1: 415. 1830; Hook.f., Fl. Brit. India 7: 326. 1896. 'coromandelina'. *Poa coromandelina* Koen. ex Rottl. in Ges. Natur. Freunde Berlin. Neu Schrift 4: 191. 1803. *Eragrostis bifaria* (Vahl) Wight ex Steud. Nom. Bot. ed. 2.1: 562. 1840; Hook.f., Fl. Brit. India 7: 325. 1896; Rang. & Tad., Handb. S. Ind. Grass. 307. t. 227. 1921; C. Fischer in Gamble, Fl. Madras 1828. 1934.

Perennial. Culms tufted, erect. Leaves to 15 cm long, acicular to linear-lanceolate. Spikes to 30 cm long, lax, leaden grey. Spikelets ovate-acute, ovate-lanceolate or oblong-lanceolate, 8-35 flowered, greyish. Lower glume lanceolate, 2-3 mm long. Upper glumes ovate-lanceolate, 2-2.5 mm long. Lemma ovate-acute, 2-3 mm long. Palea ovate-elliptic, 2-2.5 mm long. Stamens 3. Ovary ovate-oblong or ellipsoid.

Erumkulangara Kavu, SK 49061. *Fl. & Fr.*: Sept.- Jan. *Dist.*: India.

Note: This species is known to occurring in Kerala only from Palghat District. The present finding hence form a new record for south Kerala. An addition to Flora of Thiruvananthapuram District.

Eragrostis Wolf,

Gen. Pl. 23. 1776.

1. Rachilla persistent.....*E. uniloides*

1. Rachilla not persistent.....*E. tenella*

Eragrostis tenella (L.) P. Beauv. ex Roem. & Schult. Syst. Veg. 2: 576. 1817; Bor, Grass. Burm. Cey. Ind. Pak. 513. 1960; Sreekumar & Nair, Fl. Kerala Grasses 390. 1991; Mohanan & Henry, Fl. Thiruvananthapuram

540. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 797. 2006. *Poa tenella* L., Sp. Pl. 69. 1753. *Eragrostis plumosa* (Retz.) Link, Hort. Berol. 1: 192. 1827; C. Fischer in Gamble, Fl. Madras 1826. 1934. *Poa plumosa* Retz., Obs. Bot. 4: 20. 1786. *Eragrostis tenella* (L.) P. Beauv. ex Roem. & Schult. var. *plumosa* (Retz.) Stapf in Hook.f., Fl. Brit. India 7: 315. 1896.

Annuals. Culms to 60 cm long, tufted. Leaves 2-15 cm long, linear-lanceolate or lanceolate, rounded at base, acuminate at apex. Panicles elliptic or pyramidal in outline. Spikelets ovate or oblong-ovate. Lower glume ovate-lanceolate, 0.5-1 mm long. Upper glume oblong-lanceolate, to 1.25 mm long. Lemma ovate-oblong, to 1.25 mm long. Palea oblong-lanceolate or elliptic-lanceolate. Stamens 3. Grains elliptic or ovate-elliptic.

Chokkan Kavu, SK 49010. *Fl. & Fr.*: Mar.- Dec. *Dist.*: Paleotropics.

Eragrostis uniloides (Retz.) Nees ex Steud. Syn. Pl. Glum. 1: 264. 1854; C. Fischer in Gamble, Fl. Madras 1826. 1934; Bor, Grass. Burm. Cey. Ind. Pak. 515. 1960; Sreekumar & Nair, Fl. Kerala Grasses 392 . 1991; Mohanan & Henry, Fl. Thiruvananthapuram 540. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 798. 2006. *Poa uniloides* Retz., Obs. Bot. 5: 19. 1789. *Eragrostis amabilis auct. non* Wight & Arn. ex Nees 1838; Stapf. in Hook.f., Fl. Brit. India 7: 317. 1896; Rang. & Tad., Handb. S. Ind. Grass. 295. t. 218. 1921.

Annuals. Culms tufted, to 80 cm long. Leaves 1-20 cm long, rounded or shallowly cordate at base, acuminate at apex. Panicle narrowly oblong to broadly ovate in outline. Spikelets ovate-oblong, 6-40 flowered. Lower glumes oblong-lanceolate, to 1.5 mm long. Upper

glumes ovate-lanceolate, to 2 mm long . Lemma broadly ovate to ovate-lanceolate, to 2.5 mm long. Palea elliptic, to 2 mm long. Stamens 3. Grains obovoid-ellipsoid.

Erathu Kavu, SK 49087. *Fl. & Fr.*: Round the year. *Dist.*: Paletropics.

Heckelochloa O. Kuntze

Rev. Gen. Pl. 2: 776. 1891.

Heckelochloa granularis (L.) O. Kuntze, Rev. Gen. Pl. 2: 776. 1891; C. Fischer in Gamble, Fl. Madras 1758. 1934; Bor, Grass. Burm. Cey. Ind. Pak. 159. 1960; Sreekumar & Nair, Fl. Kerala Grasses 111. 1991; Mohanan & Henry, Fl. Thiruvananthapuram 541. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 801. 2006. *Cenchrus granularis* L. Mant. Pl. 2: 575. 1771. *Manisuris granularis* (L.) L.f. Nov. Gram. Gen. 40. 1779; Hook.f., Fl. Brit. India 7: 150. 1896; Rang. & Tad., Handb. S. Ind. Grass. 180. t. 147. 1921.

Annuals. Culms to 60 cm long. Leaves 2-20 cm long, rounded or shallowly cordate at base, blunt at apex, coarsely hispid. Racemes to 1.5 cm long. Sessile spikelets globose, to 2mm long, awn less; lower glumes hemispherical or cup shaped, to 2 mm long, pitted or tubercled; upper glumes ovate-oblong, to 1.5 mm long; lower florets empty; upper florets bisexual; first lemma broadly ovate; second lemma ovate; palea similar to lemma; stamens 3; ovary oblong. Pedicelled spikelets broadly ovate-acute, to 2.5 mm long; lower glume broadly ovate or ovate-lanceolate, to 2.5 mm long; upper glumes boat shaped, to 2.5 mm long; lowest florets empty; upper male or empty; first lemma broadly ovate, to 2 mm; second lemma ovate-lanceolate, to 1.5 mm; palea similar to lemma; stamens 3.

Idivizhunna Kavu, SK 49030. *Fl. & Fr.*: Jul.- Feb. *Dist.*: Pantropical.

Impereta Cirillo

Pl. Rar. Neap. 2: 26. t. 11. 1792.

Impereta cylindrica (L.) Raeusch. Nom. Bot. ed.3: 10. 1797; Sreekumar & Nair, Fl. Kerala Grasses 114. 1991; Mohanan & Henry, Fl. Thiruvananthapuram 543. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 803. 2006. *Lagurus cylindricus* L., Syst. Nat. ed.10. 878. 1759. *Impereta cylindrica* (L.) P. Beauv. var. *major* (nees) C.E. Hubb. ex Hubb. et Vaughan, Grass. maur. 96. 1940; Bor, Grass. Burm. Cey. Ind. Pak. 170. 1960. *I. koenigii* (Retz.) P. Beauv. var. *major* Nees, Fl. Afr. Austr. 90. 1841. *I. cylindrica* (L.) P. Beauv. var. *Koenigii* Dur. et Schinz. Consp. Flor. Afr. 5: 694. 1894; C. Fischer in Gamble, Fl. Madras 1704. 1934. *I. arundinacea* Cyr. Pl. Rar. Neap. 2: 26. 1792; Hook.f., Fl. Brit. India 7: 106. 1896.p.p.; Rang. & Tad., Handb. S. Ind. Grass. 147. t. 128. 1921.

Perennials. Culms to 150 cm long, densely tufted from the scaly rhizomes. Leaves 4-50 cm long, linear-lanceolate or lanceolate, narrowed at base, acuminate at base. Panicles spiciform, cylindrical, to 20 cm long. Spikelets similar, pedicelled, lanceolate or elliptic-lanceolate, to 4.5 mm long, awnless; lower glume lanceolate to 3 mm long; upper glumes similar, but bigger; lower florets empty; upper florets bisexual; first lemma oblong-lanceolate, to 2 mm long; second lemma elliptic-lanceolate, to 1.5 mm long. Stamens 2; anthers to 3.5 mm long. Ovary oblong.

Kamukarakonam Kavu, SK 49088. *Fl. & Fr.*: Round the year. *Dist.*: Paleotropics.

Ischaemum L.,
Sp. Pl. 1049. 1753.

1. Racemes adpressed together and appeared as solitary; lower glumes of sessile spikelets nodulose.....*I. fischeri*
1. Racemes 2, not adpressed together; lower glumes of sessile spikelets not nodulose.....*I. indicum*

Ischaemum fischeri Ravi *et* Kiran Raj in Bull. Bot. Acad. Sinica 42: 227. 2001; Nayar & al., Flg. Pl. Kerala-Handb. 806. 2006.

Annuals. Culms 20-80 cm long, creeping and rooting at lower nodes, geniculate or rarely erect. Leaves 1-10 cm long, lanceolate or linear-lanceolate, rounded or shallowly cordate at base, acuminate at apex. Racemes 2, adpressed together and appears as solitary, to 10 cm long. Sessile spikelets oblong to oblong-elliptic, 5-7 mm long, including the 1 mm long ciliate callus. Lower glumes oblong-elliptic, 4-6 mm long, laterally keeled and incurved on the margins with the keels thickened and 2 or 3 nodulose in the lower parts, 11-13 nerved. Upper glumes coriaceous, lanceolate, boat shaped, 3.5-5 mm long. Lower lemma hyaline, elliptic to elliptic-lanceolate, 3.5-5 mm long, 3-nerved. Lower palea hyaline, elliptic to elliptic-lanceolate, 3.5-5 mm long. Upper lemma hyaline, oblong to oblong-elliptic, 3-4.5 mm long. Upper palea hyaline, oblong-elliptic, 3.5-5 mm long, 2-nerved. Pedicelled spikelets: Pedicels to 2 mm long, ciliate on the outer angles. Lower glumes obliquely oblong-

elliptic, 4-6.5 mm long, laterally keeled and broadly winged along one side, 1-2 nodulose or not towards the base on the other side with the wings scabrid on the margins, subacute, often unequally notched at the apex. Upper glumes, lower lemma, lower palea and upper palea similar to those of the sessile spikelets. Upper lemma hyaline, oblong to oblong-elliptic, 3-4 mm long. Lodicules 2, cuneate at base and truncately lobed at apex. Stamens 3; anthers to 3 mm long. Ovary 0.5 mm long; style to 2 mm long. Grains ellipsoid to oblong-ellipsoid, pale white.

Nanniyode Kavu, SK 49083; Manthuruthu Kavu, SK 49059. *Fl. & Fr.*: Oct.- Apr. *Dist.*: Kerala and Tamil Nadu, endemic.

Note: *Ischaemum fischeri* is closely allied to *I. rangacharianum* but easily distinguished by the perennial habit, culms creeping and rooting at nodes and mat forming, acuminate leaf base, 1-2 peduncles, lower glumes of sessile spikelets 2-3 nodulose with obtusely ridged nodules separated by shallower furrows, lower glumes of sessile spikelets not pilose instead it is sparsely scaberulous outside.

Ischaemum indicum (Houtt.) Merrill var. *indicum* subvar. *indicum*; Sreekumar & Nair, *Fl. Kerala Grasses* 137. 1991; Mohanan & Henry, *Fl. Thiruvananthapuram* 545. 1994; Nayar & al., *Flg. Pl. Kerala-Handb.* 806. 2006. *Phleum indicum* Houtt, *Nat. Hist.* II. 13:198. t. 90. f. 2. 1782. *Ischaemum ciliare* Retz. var. *prorepens* Hack. in DC. *Monogr. Phan.* 6:226. 1889; Hook.f., *Fl. Brit. India* 7: 134. 1896.

Annuals. Culms to 80 cm long, creeping and rooting at lower nodes. Leaves 0.5-8 cm long, lanceolate or linear-lanceolate, rounded at base, acute at apex, glabrous or sparsely hairy. Racemes usually 2. Sessile

spikelets ovate-oblong, 4-5 mm long; callus shortly bearded; lower glumes oblong or ovate-oblong, to 5 mm long, acuminate at apex, broadly winged on either side in the upper half; upper glumes boat shaped, to 5 mm long, aristate; lower floret male; upper bisexual; first lemma ovate-lanceolate, to 4mm long; palea elliptic-lanceolate, to 3.5 mm long; stamens 3; second lemma notched, awned, to 4 mm long; palea oblong, to 3.5 mm long. Pedicelled spikelets ovate, to 5mm long, acute, awned; lower glumes ovate-lanceolate, to 4 mm long, acuminate, winged on one side; upper glumes and florets similar to those of the sessile spikelets.

Chavaru Kavu, Njekkadu, SK 49094. *Fl. & Fr.*: Jan.- Aug. *Dist.*: India to South East Asia.

Lophatherum Brongn.

in Duperrey, Monde, Phan. 49. t. 1831.

Lophatherum gracile Brogn. in Duper. Voy. Coq. Bot. 50. t. 8. 1831; Hook.f., Fl. Brit. India 7: 331. 1896; C. Fischer in Gamble, Fl. Madras 1847. 1934; Bor, Grass. Burm. Cey. Ind. Pak. 460. 1960; Sreekumar & Nair, Fl. Kerala Grasses 354. 1991; Mohanan & Henry, Fl. Thiruvananthapuram 547. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 812. 2006.

Perennial. Culms loosely tufted, to 150 cm long. Leaves 10-25 cm long, oblong-lanceolate or lanceolate, rounded at base, acuminate at apex. Spikelets lanceolate or elliptic-lanceolate, to 10 mm long. Lower glumes ovate-oblong, to 4 mm long. Upper glumes ovate-oblong, to 6 mm long;

fertile lemmas ovate or elliptic, cuspidate. Paleas elliptic-lanceolate, to 6 mm long; sterile lemmas to 8 mm long, elliptic-lanceolate. Stamens 3.

Kanjirathumoodu Kavu, SK 49047. *Fl. & Fr.*: Aug.- Dec. *Dist.*: Pantropics.

Oplismenus P. Beauv.

Fl. Owar. 2: 14. 1810, *nom. cons.*

Oplismenus compositus (L.) P. Beauv. *Ess. Agrost.* 54. 168. 1812; Hook.f., *Fl. Brit. India* 7: 66. 1896; C. Fischer in Gamble, *Fl. Madras* 1778. 1934; Bor, *Grass. Burm. Cey. Ind. Pak.* 317. 1960; Sreekumar & Nair, *Fl. Kerala Grasses* 257. 1991; Mohanan & Henry, *Fl. Thiruvananthapuram* 548. 1994; Nayar & al., *Flg. Pl. Kerala-Handb.* 815. 2006.

Annuals. Culms to 100 cm long, rambling or trailing, creeping and rooting at lower nodes. Leaves 1-12 cm long, ovate or elliptic-lanceolate, oblique at base, acute or shortly acuminate at apex. Spikelets paired, elliptic or elliptic-lanceolate, 3-4 mm long. Lower glumes lanceolate, to 3 mm long, awned. Upper glumes ovate-elliptic, aristate. Lower florets barren. Upper floret bisexual. First lemma ovate, to 4 mm long. Palea lanceolate, to 2 mm long. Second lemma elliptic, to 3 mm long. Palea elliptic, 2-3 mm long. Stamens 3. Grains dorsally compressed, oblong.

Nagaru Kavu, Plavilakam, SK 49079. *Fl. & Fr.*: Sept.- Jan. *Dist.*: Paleotropics.

Oryza L.,

Sp. Pl. 333. 1753.

Oryza meyeriana (Zoll. & Mor. ex Steud.) Baill. subsp. *granulata* (Nees & Arn. ex Watt) Tateoka in Bot. Mag. Tokyo 75: 460. 1962; Sreekumar & Nair, Fl. Kerala Grasses 431. 1991; Mohanan & Henry, Fl. Thiruvananthapuram 549. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 816. 2006. *O. granulata* Nees et Arn. ex Watt, Dict. Econ. Prod. Ind. 5: 500. 1891; Hook.f., Fl. Brit. India 7: 93. 1896; Bor, Grass. Burm. Cey. Ind. Pak. 604. 1960. *O. meyeriana* Baill. Hist. Pl. 12: 166. 1894; C. Fischer in Gamble, Fl. Madras 1845. 1934. *Kattunellu*.

Perennial. Culms to 100 cm long densely tufted. Leaves to 25 cm long, oblong-lanceolate, lanceolate or linear-lanceolate, rounded or subcordate at base. Spikelets ovate-oblong, to 6 mm long, seated on a short pedicels, awn less. Glumes reduced to two expanded projections on the top of the pedicels. First lemma absent or rudimentary. Second lemma boat shaped, to 6 mm long, awn less. Palea elliptic or oblong-elliptic. Stamens 6.

Kudavoor Sree Bhagavathi Kavu, SK 49063. *Fl. & Fr.*: Jul.- Feb. *Dist.*: Indo-Malaysia.

Panicum L.,

Sp. Pl. 55. 1753.

Panicum trypheron Schult., Syst. Veg. 2: Mant. 244. 1824; Hook.f., Fl. Brit. India 7: 47. 1896; Rang. & Tad. Handb. S. Ind. Grass. 96. t. 101. 1921; C. Fischer in Gamble, Fl. Madras 1783. 1934; Bor, Grass. Burm. Cey. Ind. Pak. 331. 1960; Majumdar in Bull. Bot. Soc. Bengal 27: 47.

1973; Sreekumar & Nair, Fl. Kerala Grasses 273. 1991; Mohanan & Henry, Fl. Thiruvananthapuram 551. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 819. 2006

Annuals. Culms to 75 cm high, erect or geniculate. Leaves 4-35 cm long, linear-lanceolate, rounded or shallowly cordate at base, acute or acuminate at apex. Panicles oblong or elliptic. Spikelets elliptic-lanceolate or ovoid, to 4 mm long, acuminate at apex. Lower glumes broadly ovate, to 2 mm long. Upper glumes ovate-lanceolate, to 3.5 mm long, shortly acuminate. First lemma ovate-oblong, to 3.5 mm long. Palea oblong, to 1.5 mm long. Second lemma oblong, obtuse, 3 mm long. Palea oblong-elliptic. Lodicules 2, oblanceolate. Stamens 3. Ovary ovate. Grains ovate or orbicular.

Moopuram Kavu, SK 49034. *Fl. & Fr.*: Jul.- Dec. *Dist.*: Indo-Malaya and China.

Paspalum L.

Syst. Nat. (ed.10) 2: 846, 855, 1359. 1759.

1. Spikelets obovate or orbicular, obtuse at apex.....*P. scrobiculatum*
1. Spikelets ovate-elliptic or lanceolate, acute at apex....*P. vaginatum*

Paspalum scrobiculatum L., Mant. Pl. 1: 29. 1767; Hook.f., Fl. Brit. India 7: 10. 1896; Rang. & Tad., Handb. S. Ind. Grass. 49. t. 69-70. 1921; C. Fischer in Gamble, Fl. Madras 1772. 1934; Bor, Grass. Burm. Cey. Ind. Pak. 340. 1960; Sreekumar & Nair, Fl. Kerala Grasses 287. 1991; Mohanan & Henry, Fl. Thiruvananthapuram 553. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 821. 2006. *P. orbiculare* Forst. Fl. Ins. Aust. prodr. 7.

1786; C. Fischer in Gamble, Fl. Madras 1772. 1934; Bor, Grass. Burm. Cey. Ind. Pak. 340. 1960. *P. commersonii* Lam. Tab. Encycl. 1: 175. t. 43/1. 1791; Bor, Grass. Burm. Cey. Ind. Pak. 335.t. 38. 1960.

Annuals or perennial. Culms to 100 cm high, densely tufted. Leaves 2-40 cm long, lanceolate, linear-lanceolate, rounded or shallowly cordate at base, acute or acuminate at apex. Racemes usually 2; rachis flat. Spikelets ovate, obovate or orbicular, to 3 mm long. Lower glumes absent. Upper glume ovate or orbicular, to 3 mm long. Lower florets barren. Upper floret bisexual. First lemma ovate or orbicular, to 3mm long. Second lemma ovate, to 2.5 mm long. Palea ovate-oblong or orbicular, to 2 mm long. Stamens 3. Grains elliptic.

Mulampallikonam Kavu, SK 49068. *Fl. & Fr.*: Round the year. *Dist.*: Paleotropics.

Paspalum vaginatum Sw., Prodr. Veg. Ind. Occ. 21. 1788; C. Fischer in Gamble, Fl. Madras 1772. 1934; Bor, Grass. Burm. Cey. Ind. Pak. 341. 1960; Brummitt in Taxon 32: 281. 1983; Mohanan & Henry, Fl. Thiruvananthapuram 553. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 821. 2006. *P. distichum sensu* Bor, Grass. Burm. Cey. Ind. Pak. Append. II. 1970, *non* L. 1759.; Sreekumar & Nair, Fl. Kerala Grasses 286. 1991.

Annuals or biennials. Culms to 100 cm long, densely tufted. Leaves 2-40 cm long, lanceolate, linear-lanceolate, rounded or shallowly cordate at base, acute or acuminate at apex. racemes usually 2; rachis flat. Spikelets ovate, obovate or orbicular, to 3 mm long. Lower glumes absent. Upper glume ovate or orbicular, to 3 mm long. Lower florets barren. Upper florets bisexual. First lemma ovate or elliptic-lanceolate. Upper

lemma ovate-oblong, to 2.5 mm. Palea ovate-oblong or oblong, to 2.5 mm. Stamens 3. Ovary oblong.

Mathanathu Kavu, SK 49081. *Fl. & Fr.*: May- Dec. *Dist.*: Paleotropics.

Pennisetum Rich. ex Pers.,

Syn. Pl. 1: 72. 1805.

Pennisetum polystachyon (L.) Schult. Syst. Veg. Mant. 2: 146. 1824; C. Fischer in Gamble, Fl. Madras 1792. 1934; Bor, Grass. Burm. Cey. Ind. Pak. 346. t.39. 1960; Sreekumar & Nair, Fl. Kerala Grasses 291. 1991; Mohanan & Henry, Fl. Thiruvananthapuram 554. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 822. 2006. *Panicum polystachyon* L. Syst. Nat. (ed.10) 2: 870. 1759. *Pennisetum setosum* (Sw.) L.C. Rich. in Pers. Syn. Pl. 1: 72. 1805; Hook.f., Fl. Brit. India 7: 87. 1896. *Cenchrus setosus* Sw. Prodr. Veg. Ind. Occ. 26. 1788.

Annuals or perennials. Culms to 150 cm long, densely tufted. Leaves 5-30 cm long, linear or linear-lanceolate, rounded or shallowly cordate at base. rachis angular with sharp edged decurrent wings. Involucre enclosing one sessile spikelets. Spikelets lanceolate, to 4 mm long. Lower glume ovate-acute, to 1 mm long. Upper glume ovate-lanceolate, to 3.5 mm long; Lower floret male or barren. upper floret bisexual. First lemma ovate-lanceolate, to 3.5 mm long. palea short. second lemma oblong-acute, to 3 mm long. Stamens 3. Ovary oblong. Grains lanceolate.

Myvalli Ela Kavu, SK 49089. *Fl. & Fr.*: Round the year. *Dist.*: Paleotropics.

Perotis Aiton,

Hort. Kew 1: 85.3: 506. 1785.

Perotis indica (L.) O. Kuntze, Rev. Pl. 2: 787. 1891; C. Fischer in Gamble, Fl. Madras 1814. 1934; Bor, Grass. Burm. Cey. Ind. Pak. 611. t. 72.1960; Sreekumar & Nair, Fl. Kerala Grasses 434. 1991; Mohanan & Henry, Fl. Thiruvananthapuram 554. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 822. 2006.

Annuals. Culms erect or geniculate, to 80 cm long. Leaves 0.5-5 cm, oblong or oblong-lanceolate, rounded or cordate at base, acute or acuminate at apex, glabrous and scabrid along the margins. Racemes to 20 cm long. Spikelets linear-lanceolate, to 3 mm long. Glumes linear-lanceolate, subequal, to 3 mm long. Lemmas linear-lanceolate. Palea linear-lanceolate. Stamens 3. Grains linear, terete.

Nagaru Kavu, Kottiyottu, SK 49092. *Fl. & Fr.*: Round the year. *Dist.*: Indo-Malaysia.

Rottboellia L.f.,

Suppl. Pl. 13, 114. 1782, *nom.cons.*

Rottboellia cochinchinensis (Lour.) W.D. Clayton in Kew Bull. 35 (4): 817-818. 1981; Sreekumar & Nair, Fl. Kerala Grasses 183. 1991; Mohanan & Henry, Fl. Thiruvananthapuram 556. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 824. 2006. *Stegosia cochinchinensis* Lour., Fl. Cochin. 1: 51. 1790. *R. exaltata* L.f. Suppl. Pl. 114. 1781, *non* (L.) L.f. Nov. Gram. Gen. 23. 37. 1779; Hook.f., Fl. Brit. India 7: 156. 1896; Rang. &

Tad. Handb. S. Ind. Grass. 175. t. 145. 1921; C. Fischer in Gamble, Fl. Madras 1759. 1934; Bor, Grass. Burm. Cey. Ind. Pak. 206. t. 13.1960.

Annuals. Culms to 150 cm long; supported below by stilt roots. Leaves 5-65 cm, linear-lanceolate, narrowed or rounded at base, acuminate at apex, midrib prominent. Spikelets terete, to 15 mm long. Sessile spikelets ovate, to 4 mm long, sunken in cavities of joints, callus annular, glabrous; lower glumes broadly ovate or ovate-oblong, to 5 mm long; upper glumes boat shaped, to 5 mm long; lower florets male or rarely empty; upper florets bisexual; first lemma elliptic or ovate-lanceolate, to 5 mm long; palea ovate-lanceolate, to 4 mm long; lodicules 2, oblanceolate; stamens 3; second lemma boat shaped, to 4 mm long; palea ovate-lanceolate; ovary oblong. Pedicelled spikelets ovate-lanceolate, oblong or elliptic, to 5 mm long to 5 mm long; lower glumes elliptic-oblong, to 5 mm long, acute; upper glume boat shaped, to 4 mm long.

Parottukonam Kavu, SK49084. *Fl. & Fr.*: Aug.- Mar. *Dist.*: Paleotropics.

Sacciolepis Mash, in

Britton, Man. Fl. N. Statl. 89. 1901.

Sacciolepis indica (L.) A. Chase in Proc. Biol. Soc. Wash. 21: 8. 1908; C. Fischer in Gamble, Fl. Madras 1787. 1934; Bor, Grass. Burm. Cey. Ind. Pak. 357. 1960; Sreekumar & Nair, Fl. Kerala Grasses 298. 1991; Mohanan & Henry, Fl. Thiruvananthapuram 557. 1994; Nayar & al., Flg. Pl. Kerala-Handb. 825. 2006. *Aira indica* L. Sp. Pl. 1753, *in errata*. *Panicum indicum* L. Mant. Pl. 2: 184. 1771. *non* Mill. 1768; Hook.f., Fl. Brit. India 7: 41. 1896.

Annuals. Culms to 100 cm high, tufted, slender. Leaves 1-20 cm long, linear-lanceolate or linear, rounded or shallowly cordate at base, midrib prominent. Panicles spiciform to 8 cm long. Spikelets ovate-acute, elliptic or elliptic-lanceolate. Lower glumes ovate-acute, to 1.5 mm long. Upper glumes ovate-oblong, to 3 mm long. Upper florets bisexual. First lemma ovate-lanceolate to 3 mm long. Palea a minute scale or even absent in certain specimens. Second lemma oblong-acute. Palea oblong-acute, to 1 mm long. Stamens 3.

Nagayekshi Kavu, SK 49085. *Fl. & Fr.*: Round the year. *Dist.*: Indo-Malaysia.

BAMBUSACEAE Burnett,

Outl. Bot. 375. 1835.

Bambusa Schreb.

Gen. Pl. 236. 1789, *nom. cons.*

Bambusa bambos (L.) Voss in Vilmorin, *Blumen-gartnerei* 1: 1189. 1896; Nayar & al., *Flg. Pl. Kerala-Handb.* 774. 2006. *Arundo bambos* L., *Sp. Pl.* 81. 1753. *Bambusa arundinacea* (Retz.) Willd., *Sp. Pl.* 81. 1799; Hook.f., *Fl. Brit. India* 7: 395. 1896; Gamble, *ann. Roy. Bot. Gard. Calcutta* 7: 51. t. 48. 1896; C. Fischer in Gamble, *Fl. Madras* 1859. 1934; Holtum in *taxon* 8; 67. 1956; Mohanan & Henry, *Fl. Thiruvananthapuram* 563. 1994. *Bambos arundinacea* Retz. *Obs. Bot.* 5: 24. 1788.

Culms to 30 m tall; internodes hollow. Culm sheath to 20 cm long, orange-yellow. Leaves 10-15 cm long, linear-lanceolate, rounded at base,

acuminate at apex; ligules narrow, white, hairy. Spikelets 3-7 flowered in panicles. Lemma to 7 mm long, ovate-lanceolate. Palea 2-keeled. Lodicule 3. Stamens 6. Ovary glabrous.

Manthuruthu Kavu, SK 49099. *Fl. & Fr.*: Aug. – Mar. *Dist.*: India, Burma and Sri Lanka.

Note: Being a polyploid species its exact flowering cycle is not known.

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